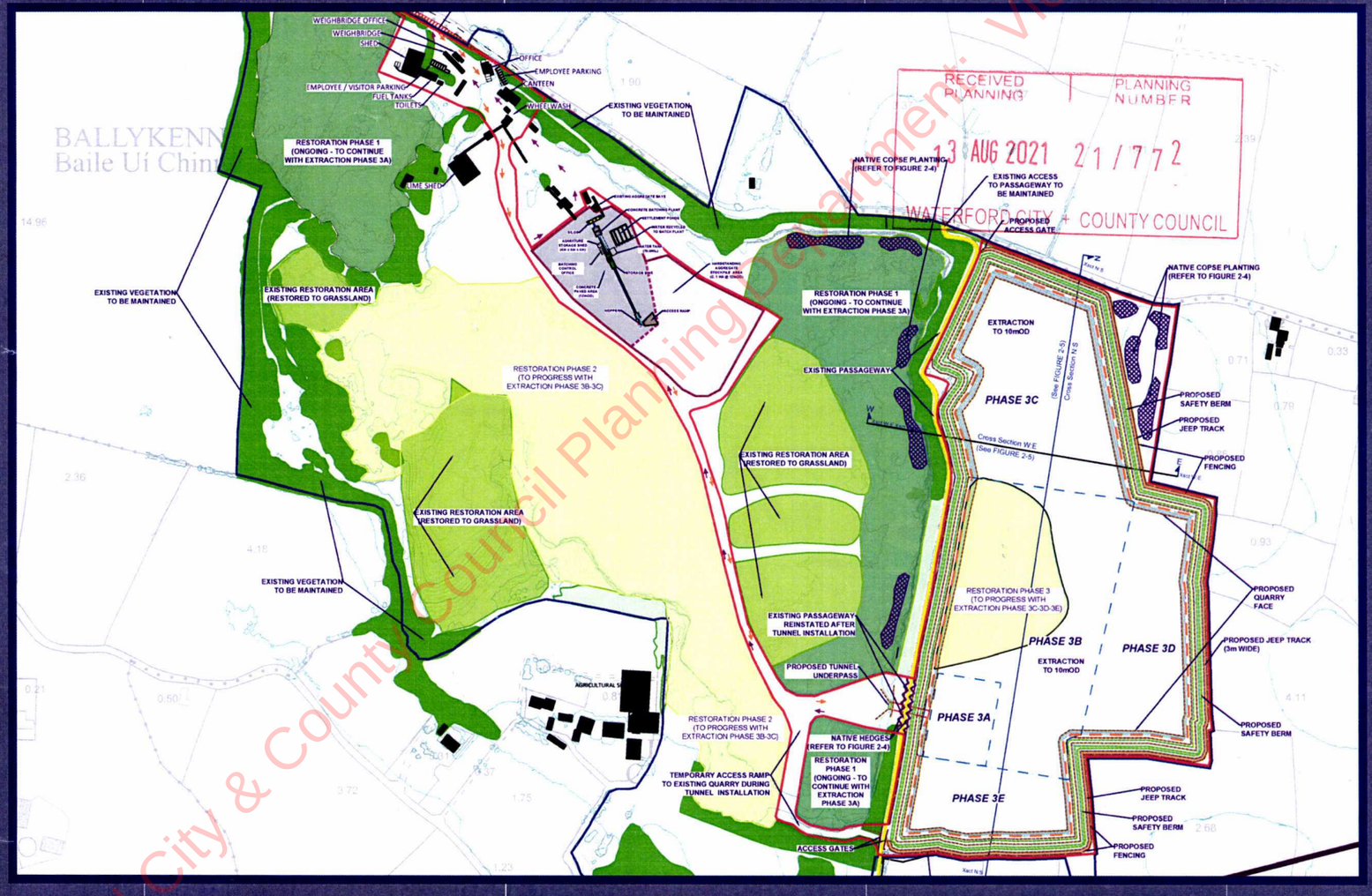
ROADSTONE LIMITED

Eastern Satellite Quarry and New Concrete Plant Ballykennedy, Kilgreany and Canty Townlands, Dungarvan, Co. Waterford

ENVIRONMENTAL IMPACT ASSESSMENT REPORT



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INTRODUCTION

Background

8.1 This Chapter of the Environmental Impact Assessment Report (EIAR), prepared by SLR Consulting Ireland, addresses the potential effects on air quality of the planned development of a satellite quarry on lands to the east of Cappagh Quarry, Co. Waterford and the construction and operation of a new concrete batching plant in front of the northern face of the existing quarry.

8.2 Cappagh Quarry is located in the townlands of Ballykennedy and Kilgreany, approximately 8km west of the town of Dungarvan. The proposed satellite quarry is almost entirely located in the adjoining townland of Canty to the east, with only a relatively small area (in the north-western corner) located within Kilgreany townland. The satellite quarry will be separated from the existing quarry by a local access passageway, which will be retained.

8.3 The development, within an overall application site area of 18.2 hectares (45.0 acres) comprises:

- development of a satellite quarry immediately to the east of Cappagh Quarry (previously permitted under Planning Permission 06/1599 and An Bord Pleanála PL 24.225443) and the local access passageway which delineates its eastern boundary. The satellite quarry will extend to 13.6 hectares (33.6 acres), of which approximately 9.7 hectares (24.0 acres) will be extracted;
- construction of a 40m long sub-surface reinforced concrete tunnel underpass (with internal cross-section measuring 6m wide by 5.5m high) under the existing local access passageway (previously permitted under Planning Permission 920/97) to connect the existing quarry to the proposed satellite quarry at quarry floor level;
- stripping of overburden soils at the satellite quarry for use in construction of environmental bunds and ongoing site restoration works and subsequent excavation of a single quarry bench in limestone bedrock using mechanical excavation and blasting techniques. The proposed quarry faces will vary in height from approximately 8m to 20m and the quarry floor will not extend below 10mOD or into the underlying groundwater body (consistent with Condition 2 of the existing quarry planning permission);
- processing (crushing and screening) of excavated rock to produce aggregates;
- demolition of an existing derelict house in the north-western corner of the proposed satellite quarry, removal of existing internal hedgerows, construction of new perimeter fence and installation of access gates leading from the local access passageway to a perimeter track running above and around the satellite quarry;
- temporary diversion of a section of the existing local access passageway to facilitate construction and installation of the proposed tunnel underpass and re-instatement of the access passageway above it thereafter;
- provision of a temporary access gate and ramp at the existing quarry to facilitate the temporary haulage of materials to and from the satellite quarry and across the existing passageway until the proposed tunnel underpass is in place;
- demolition of concrete supports for former crushing plant;
- construction and operation of a new concrete batching facility (which comprises 4 No. cement silos, batching / mixing unit, aggregate storage bins, an aggregate loading hopper and connecting conveyor systems), all on a concrete paved area on the existing quarry floor,in front of the northern quarry face;
- provision of a batching control office and admixture storage shed;

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- construction of a closed loop concrete recycling facility, comprising a concrete truck wash out area, settlement lagoons and 70,000 litre water storage / recycling tank immediately behind (north of) the concrete batching plant;
- construction of an aggregate storage hardstanding area (covering approximately 1 hectare) immediately to the east of the proposed concrete batching plant;
- continued use of established site infrastructure in service of the proposed satellite quarry and new concrete batching plant;
- removal and replanting of the existing boundary hedge, re-alignment of the boundary wall and demolition / removal of an existing structure to the east of the existing quarry access junction in order to provide enhanced sightlines for traffic egressing the quarry;
- implementation of a progressive restoration scheme (in phases) in tandem with extraction activities across the satellite quarry area.

8.4 Further information on the proposed development, site activities, environmental management systems and controls at the application sites are provided in the Chapter 2 of this EIA Report.

8.5 The proposed satellite quarry development to the east of Cappagh Quarry will have the potential to generate fugitive dust emissions and particulates (PM_{10}), which may result in impacts on local air quality. Combustion emissions (primary PM_{10}, and oxides of nitrogen) from exhaust emissions associated with the rock extraction and the production and transportation of aggregates may also have the potential to impact on local air pollution.

8.6 The proposed development will have a maximum annual output of c. 400,000 of tonnes per year, from all combined existing and future extraction, processing and added value activities. This is consistent with the maximum output levels permitted by the current quarry planning permission.

8.7 It is anticipated that, based on the projected maximum output levels, that the proposed development(s) at the application site will not generate more than 100 HGV return trips to and from the quarry per day (equivalent to 100 HGV movements inward and 100 HGV movements outward per day). The development will also generate some light vehicular traffic, principally by employees and visitors travelling to and from the quarry.

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Scope of Work

8.8 The main focus of this assessment is the potential impact on local residential amenity of fugitive dust emissions and particulate matter generated by the proposed satellite quarry development and readymix concrete production activities. Dust emissions are likely to arise in the course of the following activities:

- soil stripping, earthworks and topsoil stockpiling (site preparation and restoration works);
- short-term demolition works;
- construction and installation of the concrete tunnel underpass;
- handling and processing of excavated rock;
- transfer, end-tipping and stockpiling of aggregates;
- construction and operation of concrete production plant;
- trafficking by heavy goods vehicles (HGVs) over paved / unpaved surfaces;
- landscaping and final restoration activities.

8.9 With respect to the potential for air quality impacts, the key objective at the application site is to manage activities in order to ensure that air emissions are prevented where possible and the effects of any residual releases are minimised.

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8.10 This EIA Report Chapter describes and assesses the existing air quality baseline characteristics of the area at and around Cappagh Quarry based on site specific surveys and EPA data. Air emissions arising from the proposed extraction and concrete production activities at the application site are then applied to these baseline conditions and the resulting air quality impacts assessed. Mitigation measures are identified where required, to eliminate and reduce these impacts insofar as practical.

8.11 The following sections of this Chapter describe the potential air quality impacts associated with the planned development activities. The following issues are addressed separately:

- relevant legislation, standards and guidance;
- baseline conditions pertaining to measured (or estimated) existing air quality levels around the existing quarry footprint;
- methodology used to assess the potential impacts of planned activities on air quality at local properties;
- assessment of the impacts;
- description of mitigation measures that are incorporated into the construction, design and operation of the quarry and concrete batching pant to eliminate or reduce the potential for increased air quality impacts (if required);
- summary of any residual impacts and reinstatement;
- summary of cumulative impacts;
- monitoring proposals.

Consultations / Consultees

8.12 In the course of preparing this Environmental Impact Assessment Report, a pre-planning consultation meeting was held outdoors at the application site on 19th May 2021 between the local area planner for Waterford City and County Council and representatives of SLR Consulting Ireland and Roadstone Limited (Meeting Ref. No. PQ202191).

8.13 At the meeting, details of the proposed development were outlined and several issues of interest or concern to the Planning Authority were identified and discussed, including the potential impact of environmental emissions on neighbouring residents and property.

8.14 As part of a formal pre-planning consultation process, a number of relevant prescribed bodies and consultees, including the local Environmental Health Officer, were contacted by SLR Consulting Ireland by email and post in early March 2021. Each was provided with a summary report and preliminary drawings in respect of the development and invited to provide feedback, particularly on issues which were of concern to them or which they considered should be addressed by an EIA Report. Details of the consultation are presented in Chapter 1 of this EIAR.

8.15 Following a review of published development plans and a site survey, it was considered that there was no requirement for any further formal external consultations to be carried out in respect of air quality for the purposes of this assessment. There was however significant consultation with other specialist contributors to this EIA Report.

Contributors / Author(s)

8.16 The air quality impact assessment presented in this Chapter was prepared by SLR Consulting Ireland. The lead consultant for the study was Aldona Binchy MSc. Eng PIEMA Environmental Engineering.

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Limitations / Difficulties Encountered

8.17 This assessment is compiled on the basis of published regional and local data, guidance documents, and site-specific field surveys. No difficulties were encountered in compiling the required information.

REGULATORY BACKGROUND

8.18 The following sections describe the main legislative policy requirements in respect of air quality associated with the proposed development.

Legislation

Air Quality Standards

8.19 The Government's policy on air quality within Ireland is set out in the Air Quality Standards (AQS) Regulations 2011. The CAFE Directive was transposed into Irish legislation by the Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011). It replaces the Air Quality Standards Regulations 2002 (S.I. No. 271 of 2002), the Ozone in Ambient Air Regulations 2004 (S.I. No. 53 of 2004) and the EPA Act 1992 (Ambient Air Quality Assessment and Management) Regulations 1999 (S.I. No. 33 of 1999). The 4th Daughter Directive was transposed by the Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations 2009 (S.I.no. 58 of 2009).

8.20 The AQS sets out a framework for reducing hazards to health from air pollution and ensuring that international commitments are met in Ireland.

8.21 The AQS sets standards and objectives for ten priority pollutants. Standards establish concentrations of pollutants in the atmosphere which can broadly be taken to provide a certain level of environmental quality. Objectives are policy targets, often expressed as maximum concentrations, not to be exceeded (either without exception, or with a limited number of exceedances within a specified timescale).

8.22 Under the AQS, the following pollutants are monitored and controlled:

- nitrogen oxides;
- sulphur dioxide;
- carbon monoxide;
- ozone;
- particulate matter (PM10, PM2.5 and black smoke);
- benzene and volatile organic compounds;
- heavy metals; and
- polycyclic aromatic hydrocarbons.

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8.23 These pollutants are monitored at 32 stations across the country and together they form the national ambient air quality network. A summary of relevant air quality limit values in relation to human health are presented in Table 8-1. Air quality limit values in relation to vegetation protection are presented separately in Table 8-2.

8.24 The air quality monitoring network is coordinated and managed by the EPA, as the National Reference Laboratory for air quality. The results of the monitoring are compared to limit values set out in EU and national legislation on ambient air quality. Map-based assessments of air quality are prepared and published by the EPA.

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Table 8-1
Relevant Air Quality Limit Values for Protection of Human Health

HUMAN HEALTH	LIMIT OR TARGET VALUE			INFORMATION AND ALERT THRESHOLDS (WHERE APPLICABLE)		LONG TERM OBJECTIVE
POLLUTANT	AVERAGING PERIOD	VALUE	MAXIMUM NUMBER OF ALLOWED OCCURRENCES	PERIOD	THRESHOLD VALUE	
Nitrogen Dioxide (NO_2)	Hour Year	200 µg/m³ 40 µg/m³	18 0	1 hour alert	400 µg/m³ Exceeded for 3 consecutive hours	
Sulphur Dioxide (SO_2)	Hour Day	350 µg/m³ 125 µg/m³	24 3	1 hour alert	500 µg/m³ Exceeded for 3 consecutive hours	
Particulate matter with aerodynamic diameter of less than 10µm (PM_{10})	Day Year	50 µg/m³ 40 µg/m³	35 0			
Particulate matter with aerodynamic diameter of less than 2.5µm ($PM_{2.5}$)	Year	25 µg/m³ 20 µg/m³ (ECO)				0 8.5 to 18 µg/m³

Table 8-2
Summary of Air Quality Limit Values : Protection of Vegetation

VEGETATION	CRITICAL LEVEL OR TARGET VALUE		LONG-TERM OBJECTIVE	
POLLUTANT	AVERAGING PERIOD	VALUE	VALUE	DATE
Nitrogen dioxide (NOx)	Calendar year	30 µg/m³		
Sulphur Dioxide (SO2)	Calendar year and winter (October to March)	20 µg/m³		

Planning Policy and Development Control

National Spatial Strategy (NSS) / National Planning Framework – Project Ireland 2040

8.25 The National Planning Framework 2040 (published in February 2018) is a national planning framework for Ireland. The framework provides the policies for all regional and local plans. In the framework, the extractive industries are recognised as important for the supply of aggregates and construction materials to variety of sectors. It emphases that the planning process will play a key role in realising the potential of the extractive industries and protecting reserves of aggregates and minerals. Aggregates and minerals will continue to be enabled where this is compatible with protection of the environments.

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8.26 There are no specific policies in relation to air emissions in NPF for extractive or production of construction aggregates and materials. The general objective is to facilitate development and to protect the environment at the same time.

Local Planning Policy – Waterford County Development Plan

8.27 The current Waterford County Development Plan was adopted in 2011 and remains in force pending adoption of a replacement plan. Although the plan sets out multiple policies and objectives for the planning and sustainable development of the County, it does not identify any specific policies and objectives in respect of air quality.

Guidelines Extractive Industry Emissions Limit Values

8.28 Section 261 of the Planning and Development Act 2000 (as amended), which regulated a significant proportion of established extractive development, came into effect in April 2004. The planning guidelines[1] for the extractive industries *'Quarries and Ancillary Activities – Guidelines for Planning Authorities'* were published by the Department of the Environment, Heritage and Local Government at around the same time.

8.29 Separately, in 2006, the EPA published complementary guidance aimed at quarry operators, planning authorities and the general public *Environmental Management Guidelines for Environmental Management in the Extractive Industry (Non-Scheduled Minerals)*[2].

8.30 The Irish Concrete Federation (ICF), the trade body representing the interests of quarry operators and producers of construction materials, has also published the ICF Environmental Code to provide guidance for its members on best practice in the environmental management of quarries. The document was last updated in 2005.

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Specific Guidance Relating to Air Quality / Dust Nuisance

8.31 A range of monitoring techniques exist for dust deposition rates (i.e. Bergerhoff and Frisbee gauges). There are currently no Irish, European Union (EU) or World Health Organisation (WHO) statutory standards or limits appropriate for the assessment of deposited dust and its propensity to generate annoyance.

8.32 Industry standard criteria levels for the gravimetric assessment of dust deposition from extractive industry in Ireland are set out in the DoEHLG (2004) planning guidelines for the extractive industry, the ICF Guidelines (2005) and EPA (2006) Environmental Management Guidelines. Each of these Guidelines recommend the use of the Bergerhoff method for measuring dust deposition. In line with this approach, the guidelines recommend the TA Luft dust deposition limit value of 350mg/m^2/day (total dust deposition averaged over a 30-day period), measured at site boundaries

8.33 When the rate of accumulation of the coarser fraction of dust (referred to as deposited dust) is sufficiently rapid to cause fouling or discolouration, then it is generally considered to introduce a nuisance. The point at which an individual perceives dust deposition as a nuisance and causes a complaint is highly subjective.

8.34 The action of wind over dry ground will carry dust particles into the air. Although large emissions of dust occur naturally, man-made dust events are caused by a range of activities including agriculture, road traffic, construction works (including the handling and storage of soils and particulate matter) and by vehicles using paved and unpaved haul roads.

[1] Quarries and Ancillary Activities – Guidelines for Planning Authorities (DoEHLG, 2004)
[2] https://www.epa.ie/pubs/advice/general/EPA_management_extractive_industry.pdf

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8.35 For operations involving the mechanical break up of solids, the most common concern regarding dust emissions is the potential nuisance effect from the larger fractions of dust.

Guidance on Assessment of Mineral Dust Impacts for Planning

8.36 Guidance on the assessment of the impacts of extractive operations on air quality has been prepared by the Institute of Air Quality Management (IAQM, 2016)[3]. This guidance uses a simple distance-based screening process to identify those operations where the dust impacts are unlikely to be significant and therefore require no further assessment. Where more detailed assessment is required, a basic assessment framework is presented which employs the Source-Pathway-Receptor approach to evaluate risk of impacts and effects.

Air Quality and Ecological Receptors

8.37 A majority of the research on the effects of particulate matter on vegetation has focussed on the chemical effects of alkaline dusts. A summary of a review of available research on behalf of the UK's Department for the Environment Transport and Regions (DETR) concluded that:

"The issue of dust on ecological receptors is largely confined to the associated chemical effect of dust, and particularly the effect of acidic or alkaline dust influencing vegetation through soils."

8.38 An Interim Advice Note (IAN) prepared as a supplement for Volume 11, Section 3, Part 1 of the UK DMRB (Design Manual for Roads and Bridges) and now incorporated into LA 105) suggests that only dust deposition levels above 1,000mg/m^2/day are likely to affect sensitive ecological receptors. This level of dust deposition is approximately five times greater than the level at which most dust deposition may start to cause a perceptible nuisance to humans. It states that most species appear to be unaffected until dust deposition rates are at levels considerably higher than this.

Assessment of Air Quality Impacts on Designated Nature Conservation Areas

8.39 Guidance on the assessment of the air quality impacts of development on designated nature conservation sites WAS prepared by the Institute of Air Quality Management (IAQM, 2019). This guidance is also useful to evaluate the effects of air pollution on habitats and species using air quality assessment.

8.40 The predicted scale of dust effects may be classified as either 'significant', or not 'significant'. Where effects are predicted to be 'significant', further mitigation is likely required before the proposals are to be acceptable under planning policy.

Air Quality and Health Effects

8.41 The main health effects of air pollution can include stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma. These conditions can lead to sickness and ill health as well as premature mortality.

8.42 Two recent EPA reports, *Air Quality in Ireland 2015*[4] and *Ireland's Environment, An Assessment 2016*[5] detail the main air quality trends based on monitoring from the national ambient air quality network. There are monitored exceedances of the WHO guideline values for ozone, PM_{10} and $PM_{2.5}$ at a number of sites though there are no current exceedances of the lower (less protective) EU standards at the existing monitoring locations in Ireland. The reports also highlight the main challenges of

[3] http://www.iaqm.co.uk/text/guidance/mineralsguidance_2016.pdf

[4] Environmental Protection Agency, 2016. Air Quality in Ireland 2015 - Key Indicators of Ambient Air Quality. Available at:https://www.epa.ie/pubs/reports/air/quality/Air%20Quality%20Report%202015.pdf

[5] Environmental Protection Agency, 2016. Ireland's Environment, An Assessment 2016. Available at: http://www.epa.ie/pubs/reports/indicators/SoE_Report_2016.pdf

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reducing air pollution from key sources such as particulate matter emissions from solid fuel burning (e.g. peat, coal and wood) in the residential sector and NOx emissions from vehicles in the transport sector.

8.43 A summary of relevant Air Quality limit values in relation to human health was presented previously in Table 8-1.

Site Specific Emission Limits

8.44 Condition No. 8 of Pl Ref No. PD 06/1599 and ABP PL24.225443 imposes the following condition:

(1) Dust levels from the site shall not exceed 350 milligrams per square metre per day averaged over 30 days when measured at the boundary of the site. The developer shall submit to the planning authority for agreement details of ongoing dust monitoring programmes within three months from the date of this order. The details to be submitted shall include monitoring locations, commencement date and the frequency of monitoring results. Details of all dust suppression measures shall likewise be agreed with the planning authority within three months from the date of this order.

(2) All vehicles carrying fine dry loads shall be covered prior to exiting the site."

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Study Area

8.45 The proposed development is located at Cappagh Quarry, approximately 8km west of Dungarvan and 13km east of Lismore, Co. Waterford, in the townlands of Ballykennedy, Kilgreany and Canty. The application site is located south of the N72 National Secondary Route which runs between Dungarvan and Cappoquin.

8.46 Traffic / HGVs going to and from the quarry development will predominantly travel via the N72, the L2019 Local Road running south to Whitechurch Crossroads and the L2018 which runs east up to the existing quarry entrance. Some will also travel via the R671 Regional Road (from Youghal) and the L2019 Local Road up to Whitechurch Crossroads. The existing site access was permitted under previous planning permission and will continue to be used for the purposes of the proposed development, albeit with some modifications to achieve improves sightlines.

8.47 The lands surrounding the application site predominantly comprise farm fields. The application site is not subject to any statutory or non-statutory nature conservation designations. Dwellings in the vicinity of application site are generally located along the local road network and comprise farmsteads or isolated on-off residences, with some occasional small clusters. The nearest dwellings to the application site boundary are shown in Figure 8-1.

Baseline Study Methodology

Baseline Dust Monitoring

8.48 Ongoing, baseline dust monitoring has been undertaken by Southern Scientific Services Ltd in order to measure compliance with the 350mg/m^2/day emission limit around the existing quarry footprint.

8.49 Monitoring was undertaken using the 'Bergerhoff method' referred to in the TA Luft Air Quality Standard. The 'Bergerhoff' dust deposition gauge used in the survey comprises a plastic collection bottle with protective basket, mounted on a post and set at 1500mm above ground level. The input of atmospheric borne particular material into the collection bottle takes place over a pre-determined measurement period (usually one month) by exposing it to the environment. The total dust collected

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in the bottle is expressed as deposition of total particulate matter (mg/m^2/day) arising from human activity in the area surrounding the application site.

PM_{10} Monitoring

8.50 The application site and surrounding area are located in Air Quality Zone D, categorised as rural Ireland. The location with the longest continuous PM_{10} air quality monitoring record within a similar Zone D area is located at Kilkitt, Co. Monaghan. As such, it is considered the most appropriate dataset available for assessment of air quality baseline concentrations within the study area.

8.51 Malone O'Regan Environmental was previously commissioned by Roadstone Ltd. to carry out ambient PM_{10} monitoring at Cappagh Quarry. An Osiris TNO4361 PM_{10} monitor was used to carry out the monitoring. The recorded results are cumulative PM_{10} concentrations, comprising background suspended PM_{10} concentration in the area and any suspended PM_{10} particles arising from activities at the quarry.

Sources of Information

8.52 A desk study was carried out to examine all relevant information relating to air quality conditions around the application site. Met Eireann, the National Meteorological Service, was consulted in relation to the climate / weather data in respect of the study area (https://www.met.ie/climate-ireland/1971-2000/rosslare.html). The EPA website was examined to note information on baseline air monitoring data around the application site (http://www.epa.ie/air/quality/data/).

8.53 Information published on its website by the National Parks and Wildlife Service (NPWS) (http://webgis.npws.ie/npwsviewer/), (part of the Department of the Environment, Community and Local Government, DoECLG), in respect of designated ecological sites, protected habitats and species was also reviewed, together with Ordnance Survey maps and aerial photography (http://map.geohive.ie/mapviewer.html).

Field Survey / Monitoring / Inspection Works

8.54 Dust deposition surveys were undertaken at and around the application site by Southern Scientific Services Ltd, at monitoring locations shown in Figure 8-1. The dust deposition monitoring results recorded over this period are presented and reviewed as part of this assessment. A survey of the extent of existing residential housing around the application site was also undertaken.

8.55 The locations of baseline dust deposition monitors are shown on Figure 8-1 are as follows:

- D1 – north-east of the landholding / application area;
- D2 – north-west of the landholding / application area;
- D3 – west of the landholding / application area;
- D4 – south of the landholding / application area.

8.56 Malone O'Regan Environmental (MOR) was commissioned by Roadstone Ltd. to carry out ambient PM_{10} monitoring at the quarry in September 2020. A PM_{10} monitor was placed at Location 1 (close to the existing eastern quarry face) between the 14th and 18th of September 2020 and at Location 2 (at the north-west boundary, close to the existing quarry access) between the 21st and 25th of September 2020. The PM_{10} monitoring locations are shown on Figure 8-1.

8.57 During the survey periods, typical extraction related activities were ongoing around the existing quarry (including rock crushing and aggregate screening, stockpiling and transport).

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Background Air Quality

8.58 As previously noted, the closest air quality monitoring location to the quarry in a similar Zone D area is located at Kilkitt, Co. Monaghan. Monitoring stations continuously monitor concentrations of particulate matter with an aerodynamic diameter of less than 10µm (PM_{10}). Recent annual mean concentrations monitored at Kilkitt (published on the EPA website[6]) are presented in Table 8-3 below.

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Table 8-3
Background PM_{10} Concentrations

YEAR	ANNUAL MEAN (µg/m³)	NUMBER OF DAYS >50µg/m³
2014	9	2
2015	9	1
2016	8.1	0
2017	7.8	0
2018	9	0
2019	7	0

8.59 Table 8-3 indicates that PM_{10} concentrations monitored at the Kilkitt monitoring site are below the annual mean Air Quality Standards (AQS) of 40µg/m³ and comply with the requirement that a 24-hour mean of 50µg/m³ should not be exceeded more than 35 times in a calendar year.

8.60 For rural areas, such as those surrounding the application site, the primary source of PM_{10} would be residential solid fuel emissions and local agricultural or rural based activities for deposited dust.

8.61 The results of the PM_{10} monitoring undertaken by Malone O'Regan at Cappagh, at Location 1 and Location 2, referenced above, are presented in Tables 8-4 and 8-5 respectively below. The monitoring report is reproduced in Appendix 8-B.

Table 8-4
PM_{10} Monitoring Results Monitoring Location 1

MONITORING PERIOD	MONITORED PM_{10} µg/m³ 24 HOUR MEAN	% of 24 HOUR MEAN AQS	% OF ANNUAL MEAN AQS
14/09/2020	16.8	33.6	42.0
15/09/2020	12.5	25.0	31.3
16/09/2020	19.6	39.2	49.0
17/09/2020	18.8	37.6	47.0
18/09/2020	15.9	31.8	39.8
Average for Monitoring Period (14th - 18th September 2020)	16.7	33.4%	41.8%

[6] Secure Archive For Environmental Research Data – http://erc.epa.ie/safer/.

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Table 8-5
PM_{10} Monitoring Results Monitoring Location 2

MONITORING PERIOD	MONITORED PM_{10} µg/m³ 24-HOUR MEAN	% of 24-HOUR MEAN AQS	% OF ANNUAL MEAN AQS
21/09/2020	16.2	33.6	32.4
22/09/2020	7.6	25.0	15.2
23/09/2020	5.6	39.2	11.2
24/09/2020	6.5	37.6	13.0
25/09/2020	6.1	31.8	12.2
Average for Monitoring Period (21st - 25th Sept 2020)	8.4	16.8%	21%

8.62 The recorded PM_{10} concentrations at both monitoring locations were below the Air Quality Standards (AQS) limits on all five (5 No.) monitoring days, and the average concentration over the 5-day monitoring period was below the 24-hr mean AQS limit.

Dust Deposition Monitoring

8.63 The results of the dust deposition monitoring undertaken by Southern Scientific Services Ltd. between January 2018 and June 2021 are presented in Table 8-6 below.

Table 8-6
Dust Deposition Monitoring Results

MONITORING PERIOD		D1 (mg/m²/day)	D2 (mg/m²/day)	D3 (mg/m²/day)	D4 (mg/m²/day)
Jan-18	Total	162	505	128	452
	Inorganic	104	*505*	52	191
Feb-18	Total	110	215	394	249
	Inorganic	23	87	244	145
March-18	Total	131	200	883	242
	Inorganic	79	131	263	173
April 2018	Total	191	432	1346	2103
	Inorganic	84	34	247	376
May 2018	Total	202	235	903	426
	Inorganic	45	129	*392*	101
Jun-18	Total	878	158	152	226
	Inorganic	384	79	79	131
July-18	Total	523	623	86	332
	Inorganic	59	36	18	59
Aug 2018	Total	213	185	73	314
	Inorganic	112	34	11	22
Sept 2018	Total	418	315	814	244
	Inorganic	212	60	168	65

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MONITORING PERIOD		D1 (mg/m²/day)	D2 (mg/m²/day)	D3 (mg/m²/day)	D4 (mg/m²/day)
Oct-18	Total	234	132	1009	120
	Inorganic	120	84	240	42
Nov-18	Total	1027	162	296	597
	Inorganic	*644*	58	145	284
Dec-18	Total	215	89	293	172
	Inorganic	115	47	104	100
Jan-19	Total	215	89	293	172
	Inorganic	115	47	104	100
Feb-19	Total	301	112	1142	175
	Inorganic	252	56	*533*	112
March-19	Total	224	72	96	80
	Inorganic	88	48	56	<10
April-19	Total	484	1756	410	No access
	Inorganic	200	*622*	347	No access
May-19	Total	595	186	354	1207
	Inorganic	120	96	102	294
June-19	Total	655	168	122	197
	Inorganic	238	75	41	58
July-19	Total	Contaminated	145	133	168
	Inorganic	Contaminated	93	75	53
Aug-19	Total	389	354	209	220
	Inorganic	232	162	116	104
Sept-19	Total	751	78	973	1280
	Inorganic	228	24	108	198
Oct-19	Total	742	197	331	348
	Inorganic	249	70	81	209
Nov-19	Total	549	173	168	615
	Inorganic	168	84	75	190
Dec-19	Total	Contaminated	232	870	296
	Inorganic	Contaminated	104	278	122
Jan-20	Total	Contaminated	65	Contaminated	201
	Inorganic	Contaminated	33	Contaminated	65
Feb-20	Total	347	190	Contaminated	228
	Inorganic	250	92	Contaminated	109
March-20	Total	312	96	240	198
	Inorganic	204	54	114	126
March to June -20	Total	235	185	144	268
	Inorganic	146	85	46	48

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MONITORING PERIOD		D1 (mg/m²/day)	D2 (mg/m²/day)	D3 (mg/m²/day)	D4 (mg/m²/day)
Jul-20	Total	835	559	168	1153
	Inorganic	192	180	84	264
Aug-20	Total	429	391	570	184
	Inorganic	130	65	217	65
Sep-20	Total	715	468	110	410
	Inorganic	236	84	84	405
Oct-20	Total	288	138	54	114
	Inorganic	102	84	36	54
Nov-20	Total	342	206	228	429
	Inorganic	119	103	125	146
Dec-20	Total	Damaged	189	265	194
	Inorganic	Damaged	102	1202	76
Jan-21	Total	168	123	600	151
	Inorganic	56	56	314	34
Feb-21	Total	505	99	70	226
	Inorganic	296	46	<10	139
March-21	Total	306	264	745	270
	Inorganic	198	180	*396*	174
Apr-21	Total	255	133	122	25
	Inorganic	76	61	56	15
May-21	Total	870	116	847	133
	Inorganic	*377*	93	*400*	70
Jun-21	Total	341	1707	377	698
	Inorganic	82	*474*	76	199

8.64 As may be seen, the recorded baseline mineral (inorganic) dust deposition rates at Cappagh Quarry are below the compliance deposition limit of 350mg/m²/ day, with few exceptions. Where exceedances are noted, it is principally due to organic matter recorded in the sample.

Meteorology : Dispersion of Emissions

8.65 The most important climatological parameters governing the atmospheric dispersion of particles are as follows:

- wind direction : determines the broad transport of the emission and the sector of the compass into which the emission is dispersed; and
- wind speed will affect ground level emissions by increasing the initial dilution of particles in the emission. It will also affect the potential for dust entrainment.

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8.66 Rainfall is also an important climatological parameter in the generation of dust; sufficient amounts of rainfall can suppress dust at the source and eliminate the pathway to the receptor. According to Arup (1995)[7], rainfall greater than 0.2mm per day is sufficient to suppress dust emissions.

Local Wind Speed and Direction Data

8.67 The closest weather station with sufficient records of wind direction and wind speed considered representative of conditions experienced at the application site is Johnstown Castle Meteorological Station. A windrose for the average conditions recorded at Johnstown Castle over a ten-year period is presented in Figure 8-2. The predominant wind direction is from the south-western quadrant. Moderate to high-speed winds (>2 m/s) occur for approximately 89% of the time.

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Rainfall Data

8.68 Relevant rainfall data applicable to the overall site has been obtained from the Irish Meteorological Service website for the Rosslare Metrological Station, located approximately 90km north-east of the application site. The annual average days with rainfall greater than 0.2mm is 173 days per year. Natural dust suppression (from rainfall) is therefore considered to be effective for 47% of the year.

Sensitive Receptors

Ecological Receptors

8.69 The application site is not subject to any statutory nature conservation designation. There is one Natura 2000 site within a 2km radius of the application site at Cappagh, this site is identified in Table 8-7.

Table 8-7
Natura 2000 or Designated Site(s) within a 2km of Application Site

NATURA 2000 SITE	SITE CODE	LOCATION AT CLOSEST POINT TO APPLICATION SITE (m)
Blackwater River (Cork/Waterford) SAC	002170	1379

8.70 Based on the nature, size and scale of the planned development, it is considered that the maximum distance for which the project should be evaluated in terms of Natura 2000 or designated nature sites is up to a maximum radius of 2km unless there are any potential source-pathway-receptor links between the proposed development at Cappagh and any Natura 2000 or designated site(s) beyond this distance. At a distance greater than 2km, and in the absence of any potential source-pathway-receptor link, it is generally considered that no Natura 2000 or designated sites would be affected by any direct loss of habitat or otherwise impacted upon.

8.71 At a distance of 1,379m from the application site , at its closest point, the Blackwater River SAC lies within the potential zone of influence of the proposed development at Cappagh Quarry and as such, it is therefore deemed appropriate to screen it in as part of this air quality assessment.

Human Receptors

8.72 Sensitive locations are those where people may be exposed to dust from existing or planned activities. Locations with a high sensitivity to dust include hospitals and clinics, hi-tech industries,

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[7] Arup Environmental, Ove Arup and Partners (1995) The Environmental Effects of Dust from Surface Mineral Workings, HMSO, London (ISBM 11 75 3186 3)

painting and furnishing and food processing. Locations classed as being moderately sensitive include schools, residential areas, and food retailers.

8.73 Receptors have been identified within a 1 km distance of the application site boundary at Cappagh. The relevant receptors are listed in Table 8-8 below and their locations are shown in Figure 8-1. As residences are clustered in some areas, receptors have been identified at the nearest location to the application site boundary.

8.74 There are 52 sensitive receptors identified within the 1km of the application area of the application site, identified in Table 8-8 below.

Table 8-8
Sensitive Receptors within the 1km of the Application Area

RECEPTOR REFERENCE	RECEPTOR	SENSITIVITY	DISTANCE (m) / DIRECTION FROM APPLICATION / EXTRACTION AREA (APPROX.)
R1	Residential	Medium	935 NW
R2	Residential	Medium	612 NW
R3	Residential	Medium	519 NW
R4	Residential / Farm	Medium	452 NW
R5	Residential	Medium	419 NW
R6	Residential	Medium	692 N
R7	Residential	Medium	770 N
R8	Residential	Medium	824 N
R9	Residential	Medium	855 N
R10	Residential	Medium	871 N
R11	Residential	Medium	920 N
R12	Residential	Medium	969 N
R13	Residential	Medium	673 N
R14	Residential	Medium	89 NE
R15	Residential	Medium	195 NE
R16	Residential	Medium	229 NE
R17	Residential	Medium	286 NE
R18	Residential	Medium	466 NE
R19	Residential	Medium	879 NE
R20	Residential	Medium	876 NE
R21	Residential	Medium	962 NE
R22	Residential	Medium	774 SE
R23	Residential	Medium	672 SE
R24	Residential	Medium	603 SE
R25	Residential	Medium	473 SE

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RECEPTOR REFERENCE	RECEPTOR	SENSITIVITY	DISTANCE (m) / DIRECTION FROM APPLICATION / EXTRACTION AREA (APPROX.)
R26	Residential / Farm	Medium	375 SE
R27	Residential / Farm	Medium	339 SE
R28	Residential	Medium	236 S
R29	Residential / Farm	Medium	185 S
R30	Residential	Medium	200 S
R31	Residential	Medium	207 S
R32	Residential	Medium	174 SW
R33	Residential / Farm	Medium	206 SW
R34	Residential	Medium	318 SW
R35	Residential	Medium	502 SW
R36	Residential / Farm	Medium	576 SW
R37	Residential	Medium	588 SW
R38	Residential / Farm	Medium	1040 SW
R39	Residential	Medium	1040 SW
R40	Residential	Medium	984 SW
R41	Residential	Medium	1027 SW
R42	Residential	Medium	926 SW
R43	Residential / Farm	Medium	800 SW
R44	Residential	Medium	892 SW
R45	Residential	Medium	1224 SW
R46	Residential	Medium	1251 SW
R47	Residential	Medium	789 S
R48	Residential	Medium	750 S
R49	Residential	Medium	926 S
R50	Residential	Medium	946 S
R51	Residential	Medium	987 S
R52	Residential	Medium	993 S

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IMPACT ASSESSMENT METHODOLOGY

Evaluation Methodology

8.75 Fugitive dust emissions and particulate matter arising from the application site activities have the potential to affect existing sensitive receptors in the area due to a potential increase in airborne dust deposition.

8.76 Increased combustion emissions (primarily oxides of nitrogen) from vehicle exhaust emissions associated with the proposed extraction and concrete production activities also have the potential to contribute to local air pollution.

8.77 The significance of impacts due to emissions from the application site are dependent upon the magnitude of the emissions, the prevailing meteorological conditions for the location, and the proximity of sensitive locations to the emission sources.

8.78 This impact assessment is based upon a comparison of the baseline (both current and projected without the new development proposals) situation against the air quality impacts resulting from the 'with development' proposal scenario. The potential for 'in-combination' effects from other planned or proposed sources or air pollutants in the area has also been considered.

8.79 Each of the activities associated with extraction development have been assessed for potential air quality impacts including:

- emission from preparatory works, including demolition, construction and stripping, placement and stockpiling of soil (construction stage earthworks / trackout);
- emissions from rock extraction and processing
- emissions from the transfer, end-tipping and stockpiling of aggregates;
- concrete production activities;
- PM_{10} contribution from operational activities; and
- traffic exhaust emissions.

8.80 The methodology used in each assessment is presented in the sub-sections below which also provide an explanation of the significance criteria to describe the impacts of the proposed development on air quality.

8.81 For the purposes of environmental assessment of releases of dust from construction and mineral activities, the classifications of PM_{10} and 'deposited dust' are typically applied. The impacts associated with PM_{10} are related to potential health impacts while deposited dust is related to potential nuisance effects. The assessment of the potential impacts of each fraction has, therefore, been undertaken separately.

Significance Criteria

8.82 The following air quality specific significance criteria have been used to assess the significance of air quality impacts in preference to overall descriptors of significance.

8.83 To determine the significance of particulate matter effects associated with the development, an evaluation of the sensitivity of the surrounding area is required. Receptors can demonstrate different sensitivities to changes in environment and are classified as per Table 8-9 below (and IAQM Construction Dust Guidance).

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Table 8-9
Methodology for Defining Sensitivity to Dust and PM_{10} Effects

SENSITIVITY OF AREA	HUMAN RECEPTORS	ECOLOGICAL RECEPTORS(A)
Very High	Very densely populated area More than 100 dwellings within 20m Local annual mean PM_{10} concentrations exceed the Objective. Works continuing in one area of the site for more than 1-year	European Designated sites
High	Densely populated area. 10-100 dwellings within 20m of site. Local annual mean PM_{10} concentrations close to the Objective (36 – 40µg/m^3)	Nationally Designated sites
Medium	Suburban or edge of town Less than 10 receptors within 20m Local annual mean PM_{10} concentrations below the Objective (30 – 36µg/m^3)	Locally designated sites
Low	Rural area; industrial area No receptors within 20m Local annual mean PM_{10} concentrations well below the Objective (<30µg/m^3) Wooded area between site and receptors	No designations
Notes: (a)-Only applicable if ecological habitats are present which may be sensitive to dust effects.		

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8.84 Table 8-10 below illustrates how the interaction of magnitude and sensitivity results in the significance of an environmental effect, with the application of mitigation measures as per the IAQM Construction Dust Guidance.

Table 8-10
Impact Significance Matrix – Dust Effects (With Mitigation)

SENSITIVITY OF SURROUNDING AREA	RISK OF SITE GIVING RISE TO DUST OR PM_{10} EFFECTS		
	HIGH	MEDIUM	LOW
Very High	Slight Adverse	Slight Adverse	Negligible
High	Slight Adverse	Negligible	Negligible
Medium	Negligible	Negligible	Negligible
Low	Negligible	Negligible	Negligible

Construction Stage Dust Impacts - Methodology

8.85 The Institute of Air Quality Management (IAQM) assessment of risk at construction stage is determined by considering the predicted change in conditions as a result of the proposed development. The risk category for potential effects arising from preparatory site works is divided into three potential activities:

- earthworks;

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- construction activities; and
- trackout.

8.86 Based on the scale and nature of the works including areas, soils and operations at the site, a dust emission class is defined for each of the activities. These dust emission classes are then used to determine the risk categories presented below. These risk categories determine the potential risk of dust soiling effects assuming no mitigation measures are applied.

8.87 Table 8-11 illustrates how the interaction of distance to the nearest receptor and the dust emission class results in the determination of risk category from ***earthworks activities***.

Table 8-11
Determination of Risk Category from Earthworks Activities

DISTANCE TO NEAREST RECEPTOR		DUST EMISSION CLASS		
HUMAN	ECOLOGICAL	LARGE	MEDIUM	SMALL
<20	-	High Risk Site	High Risk Site	Medium Risk Site
20 – 50	-	High Risk Site	Medium Risk Site	Low Risk Site
50 – 100	<20	Medium Risk Site	Medium Risk Site	Low Risk Site
100 – 200	20 – 40	Medium Risk Site	Low Risk Site	Negligible
200 – 350	40 – 100	Low Risk Site	Low Risk Site	Negligible

8.88 Table 8-12 illustrates how the interaction of distance to the nearest receptor and the dust emission class results in the determination of risk category from ***construction activities***.

Table 8-12
Determination of Risk Category from Construction Activities

DISTANCE TO NEAREST RECEPTOR		DUST EMISSION CLASS		
HUMAN	ECOLOGICAL	LARGE	MEDIUM	SMALL
<20	-	High Risk Site	High Risk Site	Medium Risk Site
20 – 50	-	High Risk Site	Medium Risk Site	Low Risk Site
50 – 100	<20	Medium Risk Site	Medium Risk Site	Low Risk Site
100 – 200	20 – 40	Medium Risk Site	Low Risk Site	Negligible
200 – 350	40 – 100	Low Risk Site	Low Risk Site	Negligible

8.89 Table 8-13 illustrates how the interaction of distance to the nearest receptor and the dust emission class results in the determination of risk category from ***trackout movements***.

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Table 8-13
Determination of Risk Category from Trackout Movements

DISTANCE TO NEAREST RECEPTOR		DUST EMISSION CLASS		
HUMAN	ECOLOGICAL	LARGE	MEDIUM	SMALL
<20	-	High Risk Site	Medium Risk Site	Medium Risk Site
20 – 50	<20	Medium Risk Site	Medium Risk Site	Low Risk Site
50 – 100	20 – 100	Low Risk Site	Low Risk Site	Negligible

8.90 Mitigation measures are recommended based on the evaluation of risk in accordance with the IAQM Dust and Air Emissions Mitigation Measures Guidance.

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Operation Stage Dust Impacts - Methodology

8.91 A staged approach has been adopted to the assessment of operations stage impacts generated by rock extraction and processing and concrete production activities. This ensures that the approach taken for the assessment of risk is proportional to the risk of an unacceptable impact being caused. As such, where a simple review of the situation shows that risk of a health or nuisance impact is negligible, this will be sufficient. In cases where the risk cannot be regarded as insignificant, a more detailed assessment may be required, such as a quantitative screening assessment or an advanced dispersion modelling exercise, as appropriate.

8.92 Guidance on the assessment of the impacts of extractive operations on air quality has been prepared by the Institute of Air Quality Management (IAQM). This guidance uses a simple distance-based screening process to identify those operations where the dust impacts are unlikely to be significant and therefore require no further assessment. Where assessment that is more detailed is required, a basic assessment framework is presented which employs the Source-Pathway-Receptor approach to evaluate risk of impacts and effects.

8.93 The predicted scale of dust effects may be classified as either 'significant', or not 'significant'. Where effects are predicted to be 'significant', further mitigation is likely required before the proposals are to be acceptable under planning policy.

8.94 A semi-quantitative assessment of fugitive dust emissions from the proposed extraction and concrete production activities has been undertaken. The assessment has been undertaken by constructing a conceptual model that takes into consideration the potential sources, surrounding receptors, and the pathway between source and receptor in order to assess the magnitude of risk of impact on local amenities.

8.95 The distance from the source to the sensitive receptor is crucial. The initial risk screening stage (Tier 1) focuses upon the potential for dust generation at the site and the distance between source and receptors. In Tier 1 of the assessment, a representative selection of dust sensitive receptors in each direction of the application site is identified within the 1km study area.

8.96 Further assessment is considered to be required for those receptors within 500m of dust generating activities. Receptors within 500m of dust generating processes progress onto a Tier 2 assessment. Other residential receptors beyond 500m are considered too far away to be impacted by potential dust from the application site and not considered any further in this assessment.

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8.97 Tier 2 involves identifying source-pathway-receptor linkages and a semi-quantitative assessment of the likelihood and magnitude of any effects that could be associated with each pollutant linkage. This assessment takes account of:

- wind direction and speed data (to estimate frequency of exposure);
- proximity to source (to estimate magnitude of exposure);
- sensitivity of receptor; and
- occurrence of natural dust suppression (rainfall patterns).

8.98 This information is used to inform a semi-quantitative assessment of the likely magnitude of impact and is based upon professional experience of the assessor as the issue of dust nuisance on local receptors is a subjective issue, where public perception on what constitutes 'acceptable' levels varies from one person to the next. Assigning significance to nuisance impacts is qualitative and involves a judgement based on the likely magnitude, frequency, duration and reversibility (or recovery) of the impact. In this context, significant impact is taken to mean what is generally not publicly acceptable and desirable.

8.99 Note that the Tier 2 risk screening assessment **does not take into account proposed mitigation measures** to be implemented at the proposed development. These will include provision of perimeter screening berms, dust suppression measures etc., identified in the section dealing with Mitigation Measures later in this Chapter.

8.100 Following the results of the risk assessment, mitigation measures are detailed and the residual impact assessed. The detailed methodology used within the assessment is described in more detail in Appendix 8-A.

PM_{10} Contribution from Site-Based Activities : Methodology

8.101 In terms of whether the PM_{10} concentration in the local area is likely to exceed the AQS, the following information has been reviewed:

- existing PM_{10} concentrations; and
- expected additional contribution of PM_{10} from site operations.

8.102 In terms of estimating the potential magnitude of impact from site operations, a UK edition of the LAQM Technical Guidance (LAQM.TG(03)) stated that fugitive dust from stockpiles and quarry operations can potentially contribute up to 5µg/m^3 towards annual mean background concentrations of the coarse fraction of particulates (2.5 – 10µm diameters) in the surrounding area.

8.103 Given that the nature and scale of proposed future activities around Cappagh Quarry will be comparable to pre-existing / prior activities, the potential PM_{10} impact is likely to be lower than that indicated by the LAQM guidance. To ensure a robust assessment of potential PM_{10} impacts, one approach might be to apply the upper limit of 5µg/m^3 to represent potential future development contribution to annual background / ambient PM_{10} concentrations to assess whether the Air Quality Standards objective is likely to be exceeded.

Traffic Emissions - Methodology

8.104 Atmospheric emissions related to site proposals are primarily associated with the exhaust emissions from heavy goods vehicles (HGVs). The decision as to whether an assessment of potential impact is required is based upon the criteria set out in the DMRB (Design Manual for Roads and Bridges).

8.105 The criterion for assessment of air quality contained within the latest guidance (LA 105) focuses on roads with relatively high changes in flows or high proportion of HGV traffic. Affected roads are defined as those that meet any of the following criteria:

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- road alignment will change by 5m or more; or
- daily traffic flows will change by 1,000 Annual Average Daily Traffic (AADT) movements or more; or
- HGV flows will change by 200 AADT or more; or
- daily average speed will change by 10 km/hr or more; or
- peak hour speed will change by 20km/hr or more.

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ASSESSMENT OF IMPACTS

Construction Stage Impacts – Assessment

8.106 An overview of the sources and processes associated with the preparatory site works and the construction / infrastructure installation activities, and their respective potential for dust deposition (both dust and smaller particles), is presented below in Table 8-14.

Table 8-14
Site Activities: Sources of Dust Emissions

ACTIVITY	SOURCE	EMISSION POTENTIAL	COMMENTS
Demolition, Construction, Earthworks and Trackout	Excavators / Dozers / HGVs	High - dry or fine materials during strong windy weather	Temporary, variable from day to day depending on prevailing meteorological conditions, level, and location of activity. Soils immediately used to construct berms, used in restoration works or placed in stockpiles.
		Low – coarse or wet materials during conditions of low wind speed	

8.107 During the demolition, construction, site preparatory works (comprising soil stripping, perimeter bund construction, initial quarry excavation, tunnel underpass construction, materials transfer, landscaping and restoration works) will be completely confined within the application site and the wider quarry area.

8.108 Considering this, together with the separation distance to receptors and the boundary screening provided by existing vegetation, the dust risk category for these construction activities is assessed as 'low risk' to 'negligible'. A summary of the determined risk category for the various activities around the application site is presented in Table 8-15 below.

Table 8-15
Site Activities: Risk of Dust Emissions

SOURCE	RISK OF DUST SOILING EFFECTS	ECOLOGICAL EFFECTS
Earthworks	Negligible	Negligible
Construction	Negligible	Negligible
Trackout	Negligible	Negligible

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8.109 While the overall risk category has been assessed as 'negligible, if the soils stripping activities were not mitigated, the effects of dust during dry and windy conditions could possibly lead to occasional increases in nuisance dust immediately surrounding the application area. However, these are not considered to be significant given the limited duration of such meteorological conditions and the limited change in the extent and scale of the proposed activities.

Operational Stage Dust Impact – Assessment

8.110 When commenced and operational, the principal air quality impacts generated by the satellite quarry operation and concrete production activities will be dust and traffic related emissions. An overview of the sources and processes associated with the extraction activities, and their respective potential for dust deposition, is presented Table 8-16 below.

Table 8-16
Sources of Particulate Emissions

ACTIVITY	SOURCE	EMISSION POTENTIAL	COMMENTS
Material transfer to processing area	On-site vehicle, Dry loose material.	High when dry material being handled during strong windy weather	Emissions due to prevailing meteorological conditions and amount of dry loose material. Emissions due to re-suspension of loose material on surfaces.
Processing of rock	Processing plant, Dry loose material	High when dry material being processed during strong windy weather	Emissions due to prevailing meteorological conditions (high winds).
Material transfer to storage area	On-site vehicle, Dry loose material	High when dry material being handled during strong windy weather	Emissions due to prevailing meteorological conditions and amount of dry loose material. Emissions due to re-suspension of loose material on surfaces.
Material storage	Dry loose material in stockpiles	High when dry material being stored during strong windy weather	Emissions due to prevailing meteorological conditions (high winds).
Material loading to HGV	On-site vehicle, Dry loose material	High when dry material being handled during strong windy weather	Emissions due to prevailing meteorological conditions and amount of dry loose material. Emissions due to re-suspension of loose material on surfaces.
Material loading to concrete batching Plant	On-site vehicle, Dry loose material	High when dry material being handled during strong windy weather	Emissions due to prevailing meteorological conditions and amount of dry loose material. Emissions due to re-suspension of loose material on surfaces.
Transfer off site / traffic off site	HGV / Road vehicles	Low - on paved road surfaces	Dependant on the amount of loose material on road surface available for re-suspension and track out.

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Human Receptors

8.111 A total of 52 receptors were identified within the c.1km study area around the application site. Using the tiered assessment methodology, 17 of these receptors located within 500m have progressed onto a Tier 2 assessment as they are considered to have a greater risk of dust impact. Each receptor is assessed against the frequency of exposure and the distance from the source to the receptor (i.e. the pathway) in accordance with the methodology described in Appendix 8-A.

8.112 The frequency of exposure of each receptor is based upon the frequency of winds capable of carrying dust particles blowing in the direction, from the source to the receptor, on days when rainfall does not inhibit dust from becoming airborne. Representative data on the local wind climate is therefore required for this section of the assessment.

8.113 The wind-rose presented in Figure 8-2 (for Johnstown Castle Meteorological Station) indicates that the predominant wind direction is from the south-west. The potential for the generation of airborne dust will increase with wind speed, with winds greater than 3m/s capable of carrying airborne dust[8].

8.114 A wind rose showing the frequency of winds at wind speeds of greater than 2m/s is presented in Figure 8-2 with the individual frequencies for each 10-degree compass sector used within the assessment. In this assessment, wind speeds over 2m/s were used as this is how the data on percentage occurrence of wind frequency and wind speed is calculated and presented by Met Eireann. For this reason therefore, the impact assessment presented herein is conservative.

8.115 A summary of the risk assessment of dust impacts at the selected Tier 2 properties / locations arising from the proposed development activities (in the absence of any mitigation measures) is presented in Table 8-17 below.

Table 8-17
Dust Risk Assessment Screening (Without Mitigation Measures)

RECEPTOR REFERENCE	DISTANCE FROM OPERATIONS (m)	RELEVANT WIND DIRECTION [(A)]	POTENTIAL EXPOSURE DURATION [(B)]	RELATIVE WIND / DISTANCE RANK [(C)]	RISK EVALUATION
R4	452 NW	110-150	1.598	1/2	Insignificant
R5	460 NW	90-130	2.021	1/2	Insignificant
R14	89 NE	210-270	17.672	6/6	Moderate Adverse
R15	195 NE	210-270	17.672	6/5	Moderate Adverse
R16	229 NE	210-270	17.672	6/4	Slight Adverse
R17	286 NE	210-270	17.627	6/4	Slight Adverse
R18	466 NE	210-270	17.672	6/2	Acceptable
R25	437 SE	280-320	5.358	2/2	Insignificant
R26	375 SE	280-320	5.358	2/3	Insignificant
R27	339 SE	280-320	5.358	2/3	Insignificant
R28	236 S	300-340	6.157	3/4	Acceptable

[8] Department of the Environment, Transport and the Regions, 1995. *The Environmental Effects of Dust from Surface Mineral Workings – Volume 2. Technical Report. December 1995.*

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RECEPTOR REFERENCE	DISTANCE FROM OPERATIONS (m)	RELEVANT WIND DIRECTION (A)	POTENTIAL EXPOSURE DURATION (B)	RELATIVE WIND / DISTANCE RANK (C)	RISK EVALUATION
R29	185 S	300-340	6.157	3/5	Slight Adverse
R30	200 S	330-10	3.384	2/4	Acceptable
R31	207 S	330-10	3.384	2/4	Acceptable
R32	174 SW	30-80	4.23	2/5	Acceptable
R33	206 SW	30-90	4.7	2/4	Acceptable
R34	318 SW	40-90	4.277	2/3	Acceptable

Table Notes:

(A) – relevant wind direction based on upwind sector which would potentially convey from site towards the receptor.

(B) – Potential duration of exposure based on frequency of moderate to high wind speed (adjusted for dry days only) as described in the methodology in Appendix 8-A.

(C) – Ranking as per methodology in Appendix 8-A

Refer to Figure 8-1 for Receptor Locations

8.116 From Table 8-17 above, it is observed that the risk of impact from dust emissions associated with the proposed development at Cappagh (without any mitigation measures in place) varies from :

- Insignificant at R4, R5, R25, R26, R27;
- Acceptable at R18, R28, R30, R31,R32; R33, R34;
- Slight Adverse at R16, R17, R29 and
- Moderate Adverse at R14, R15.

8.117 Using the screening assessment tool, the Air Quality Assessment (outlined in Appendix 8-A) considers that there is generally an insignificant to moderate adverse risk that dust may cause an impact at sensitive receptors within 500m of the source of the dust generated activities.

8.118 Note that this assessment ***does not take into account*** implementation of mitigation measures within the proposed development including provision of perimeter screening berms and strengthened boundary vegetation / screen planting, dust suppression measures etc. (as outlined in the Mitigation Measures section below). The assessment is also considered to be conservative on the basis of the moderate wind speeds included in the risk evaluation.

Ecological Receptors

8.119 The quarry and application site are not subject to any statutory nature conservation designation. Based on the findings of the semi-quantitative assessment above, the fact that the nearest designated nature site (River Blackwater SAC) is

- located at a significantly greater distance (approximately 1 3km away at its closest point);
- lies west of, and upwind of, the quarry and application site;
- is separated and screened from the site by intervening hedgerows and trees,

it is concluded that the planned development will have an insignificant dust deposition impact and that this ecological site can be screened out from any further dust impact assessment.

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Traffic Emissions - Assessment

8.120 For the purposes of assessment, it has been assumed that the projected traffic movements associated with the proposed development will generate a maximum of 200 HGV movements (equivalent to 100 return trips) per day, although levels on most days will likely be less than this.

8.121 In view of

- the existing permitted levels of quarry output and associated HGV traffic movements across the local road network;
- the reduction in traffic levels from previously permitted levels which will apply for over the life of the proposed development;
- the fact that none of the roads in the surrounding local road network meet any of the traffic / alignment criteria set out in LA 105,

it is considered that the extent of any traffic related change arising from future satellite quarry development and readymix concrete production activity can be deemed 'negligible' in terms of its resultant impact on local air quality and that no further air quality assessment is necessary.

8.122 On this basis, the impact of combustion emissions (primarily oxides of nitrogen) from vehicle exhaust emissions associated with the transfer and/or transportation of materials are screened out, and it is determined that there is no potential for emissions to contribute to local air pollution.

PM_{10} Contribution from Extraction / Production Activities - Assessment

8.123 In terms of PM_{10}, the maximum annual mean measured baseline background concentration is taken as 9µg/m³ for the years 2014, 2015 and 2018 at the Kilkitt monitoring station.

8.124 The average PM_{10} concentrations recorded by on-site monitoring at Cappagh Quarry in September 2020 was 16.7µg/m³ at Location 1 (close to the existing eastern quarry face) and 8.4µg/m³ at Location 2 (near the site entrance). These data take account of ongoing quarrying activities at Cappagh Quarry and are comparable to, or slightly elevated above, baseline background levels recorded in a comparable rural environment.

8.125 As the concentrations of the coarse particulate fraction (2.5µm–10µm diameter) recorded at the quarry are well below the annual threshold concentration of 40µg/m³, the impact of quarrying activities on ambient PM_{10} concentrations is assessed as insignificant.

8.126 Given the limited magnitude of change in the extent and scale of planned activities at the quarry, the available monitoring data are taken to be representative of ambient PM_{10} concentrations likely to arise over the life of the proposed satellite quarry development on the lands to the east of the existing quarry. As such, any potential future impact in relation to increased ambient PM_{10} concentrations is classified as 'negligible'.

Unplanned Events (Accidents)

8.127 Accidents, malfunctions and unplanned events refer to events or upset conditions that are not part of any activity or normal operation of the proposed development planned by the Applicant. Even with the best planning and the implementation of preventative measures, the potential exists for accidents, malfunctions or unplanned events to occur during the proposed extraction and concrete production activities.

8.128 Many accidents, malfunctions and unplanned events are, however, preventable and can be readily addressed or prevented by good planning, design, emergency response planning, and mitigation. In terms of air quality impact, the following unplanned events could have an effect on the local area:

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- equipment malfunction;
- vehicle collision;
- dry and windy weather conditions with dust suppression equipment malfunction;
- accidental material spillages during transport.

8.129 In relation to air quality, the impacts of any unplanned events are considered to be negligible. If unplanned events were not mitigated, the effects of dust during dry and windy conditions could possibly lead to occasional increases in nuisance dust and 24-hour mean PM_{10} concentration immediately surrounding the quarry and application site. However, these are not considered to be significant given the limited duration of such meteorological conditions and the likely limited scale of any incident.

Cumulative / Synergistic Impacts

8.130 In essence, cumulative impacts are those which result from incremental changes caused by other past, present or reasonably foreseeable actions together with those generated by the proposed development. Therefore, the potential impacts of the proposed development cannot be considered in isolation but must be considered in addition to impacts already arising from existing or planned development.

8.131 This air quality impact assessment herein indicates that the planned satellite quarry and readymix concrete production activities will not contribute to a significant increase in local air pollution by way of excessive air / dust emissions. There are no other significant sources of air emissions approved or planned within 2km of the application site and no potential for significant cumulative impacts has been identified. The cumulative impact of the proposed development is therefore classified as insignificant.

Interaction with Other Impacts

8.132 The potential impact on air quality by the project on sensitive receptors including sensitive ecological receptors and people living in the area has been fully assessed in this chapter. The overall impact of the project on these receptors is further considered in Chapter 4 Population and Human Health and Chapter 5 Biodiversity.

MITIGATION MEASURES

8.133 A large range of mitigation measures are recommended for implementation at the application site at Cappagh Quarry. Specific mitigation measures are listed in Table 8–18 below:

Table 8-18
Particulate Emission Mitigation Measures

SOURCE / RECEPTOR	EMISSION POTENTIAL	RECOMMENDED MITIGATION MEASURES	EFFECTIVENESS
Excavators / HGV Loading	High – dry or fine material during strong windy weather	Minimise drop heights when handling materials. Maximise use of excavated soil in construction of vegetated screening berms or in quarry restoration works. Dampen materials using mist cannon, sprinklers or water bowser	High

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SOURCE / RECEPTOR	EMISSION POTENTIAL	RECOMMENDED MITIGATION MEASURES	EFFECTIVENESS
	Low – material of high moisture content during conditions of low wind speed	Minimise drop heights when handling material. Protect from wind where possible.	High
On-site Vehicles	High when travelling over un-surfaced and dry site roads.	Minimise length of on-site haul routes.	High
		Use of mist cannon / sprinklers / water bowser to dampen haul routes during dry weather periods.	High
		Restrict vehicle speeds to less than 20kph. Install signage and undertake staff training.	High
		Routing of traffic and away from any surrounding sensitive receptors.	High
Road Vehicles (transfer off-site)	Low / Moderate on paved road surfaces	Use of road sweeper to reduce the amount of material available for re-suspension.	Moderate / High
		Travel over paved surfaces / access road.	High
		Direct all HGVs through wheelwash facility with overhead spray bar	High
Stockpiles	High when dry or fine material being stored or handled during strong windy weather	Seed / vegetate surfaces of completed perimeter mounds and stockpiles of restoration soils.	High
		Locate stockpiles to take advantage of any available shelter from wind.	High
		Use of mist cannon / sprinklers / bowser to moisten materials during periods of dry and windy weather	High
		Limit mechanical disturbance of materials more likely to become airborne and/or time operations having regard to expected weather conditions	High
Moderate and Slight Adverse Risk Receptors	High – during dry and strong windy weather	Hardstanding areas/site roads, stockpiles with the potential to give rise to dust will be regularly watered as appropriate during dry and/or windy conditions by dust canon, sprinklers or water bowser.	High

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Trackout Measures

8.134 When adverse conditions apply (dry, windy weather), water from a bowser will be sprayed on dry unpaved road / track surfaces in order to minimize dust rise. Any paved surfaces around the site and/or along the access road leading in and out of the quarry will also be sprayed as required.

8.135 All heavy goods vehicles leaving the application site will be routed through the existing wheelwash facility in order to remove and / or dampen any particulate materials attaching to the undercarriage and to prevent transport of fine particulates off-site, onto the local public road network.

8.136 An overhead spraybar will dampen materials being transported off-site in the back of HGV / articulated tipper trucks. As required by the current planning permission, vehicles carrying loads of fine, dry particulate materials (which may be more likely to become airborne) will continue to be covered prior to exiting the quarry.

Good Practice Measures

8.137 Effective site management practices are critical to demonstrate the willingness of the quarry operator to control dust emissions. Monitoring of dust deposition and recording of any complaints shall be carried out to take appropriate measures to reduce emissions in a timely manner.

8.138 Training on dust mitigation measures shall be provided to site-based staff. Training will also cover an 'emergency preparedness plan' to react quickly in case of any failure of dust mitigation measures.

8.139 The existing water spray / sprinkler system will be extended along the haul routes from the existing quarry into the proposed satellite quarry area. For other areas, a mist cannon (also known as a dust control cannon) and/or water bowser will be available at all times to dampen down stockpiled / particulate materials and/or unpaved surfaces when adverse (dry, windy) conditions apply and it is impractical to extend or operate the sprinkler system.

RESIDUAL IMPACT ASSESSMENT

8.140 With the range of mitigation measures to be implemented and design measures to be incorporated into the working scheme, it is considered that the risk of dust related impacts at receptors generated by the proposed site activities will be further reduced.

8.141 After an assessment of potential adverse effects produced by the development it was concluded that there would be no significant adverse air quality effects for both human and ecological receptors which could cumulatively impact the site or the surrounding area. Overall, the effects of the proposed development on air quality have been considered to be insignificant to acceptable. A summary of the residual dust risk impact assessment at the closest sensitive receptors is provided in Table 8-19 below.

Table 8-19
Residual Dust Risk Assessment (With Mitigation Measures)

RECEPTOR REFERENCE	RISK EVALUATION
R4	Insignificant
R5	Insignificant
R14	Acceptable
R15	Acceptable
R16	Insignificant
R17	Insignificant
R18	Insignificant
R25	Insignificant

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RECEPTOR REFERENCE	RISK EVALUATION
R26	Insignificant
R27	Insignificant
R28	Insignificant
R29	Insignificant
R30	Insignificant
R31	Insignificant
R32	Insignificant
R33	Insignificant
R34	Insignificant

8.142 On the basis of the assessment presented above, it is concluded that the proposed development, with the range of mitigation measures to be implemented and design measures incorporated into the working scheme, will not have a dust deposition impact on any assessed receptors.

MONITORING

8.143 Dust deposition monitoring will be undertaken at the application site for the duration of extraction activities at the proposed satellite quarry area (in accordance with EPA and DoEHLG guidelines). Dust monitoring will be undertaken at the existing monitoring locations established under the current planning permission (albeit with monitoring station D1 relocated further east) and at 3 No. additional locations (designated D5 to D7) around the south-eastern corner of the satellite quarry area, as shown in Figure 8-3.

8.144 Dust monitoring locations shall be reviewed and revised where and as / when necessary. The results of the dust monitoring shall be submitted to Waterford City and County Council on a regular basis for review and record purposes.

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FIGURES

Figure 8-1
Receptor and Dust Monitoring Locations

Figure 8-2
Windrose for Johnstown Castle Meteorological Station

Figure 8-3
Proposed Dust Monitoring Locations

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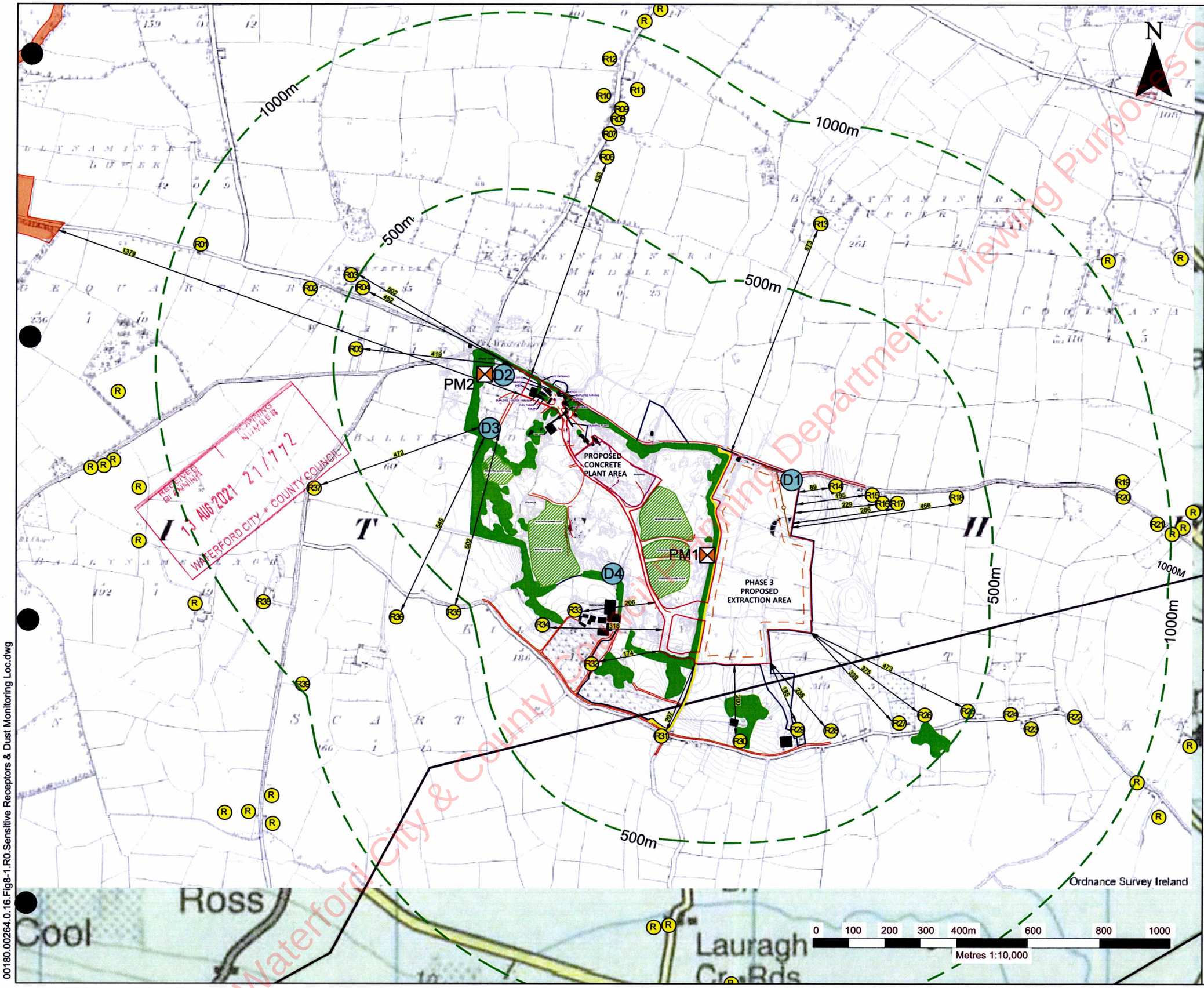

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NOTES

1. VECTOR SURVEY EXTRACT FROM ORDNANCE SURVEY IRELAND
2. ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY IRELAND/GOVERNMENT OF IRELAND
3. SURVEY COMPLETED ON 2ND FEBRUARY 2018 BY ASM IRELAND AND UPDATED IN DECEMBER 2020.

LEGEND

- ROADSTONE LAND INTEREST (C. 58.9 HA)
- PLANNING APPLICATION AREA (C. 18.2 HA)
- PROPOSED EXTRACTION AREA (C. 9.7 HA)
- PROPOSED CONCRETE PLANT & AGGREGATE STORAGE AREA (C. 1.9 HA)
- EXISTING PASSAGEWAY
- EXISTING GROUND CONTOUR (mOD)
- BUILDINGS
- OVERHEAD TRANSMISSION LINES
- RESIDENCE LOCATIONS
- DUST MONITORING LOCATIONS
- PM10 MONITORING LOCATIONS
- BLACKWATER RIVER SPECIAL AREAS OF CONSERVATION (SITE CODE 002170)
- 500M & 1000M OFFSET FROM PLANNING APPLICATION AREA

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ENVIRONMENTAL IMPACT ASSESSMENT REPORT

EASTERN SATELLITE QUARRY AND NEW CONCRETE PLANT
CAPPAGH QUARRY, COUNTY WATERFORD

SENSITIVE RECEPTORS & EXISTING DUST MONITORING LOCATIONS & EIAR DUST SURVEY LOCATIONS

FIGURE 8-1

Scale	Date
1: 10,000 @ A3	JULY 2021

00180.00264.0.16.Fig8-1.R0.Sensitive Receptors & Dust Monitoring Loc.dwg

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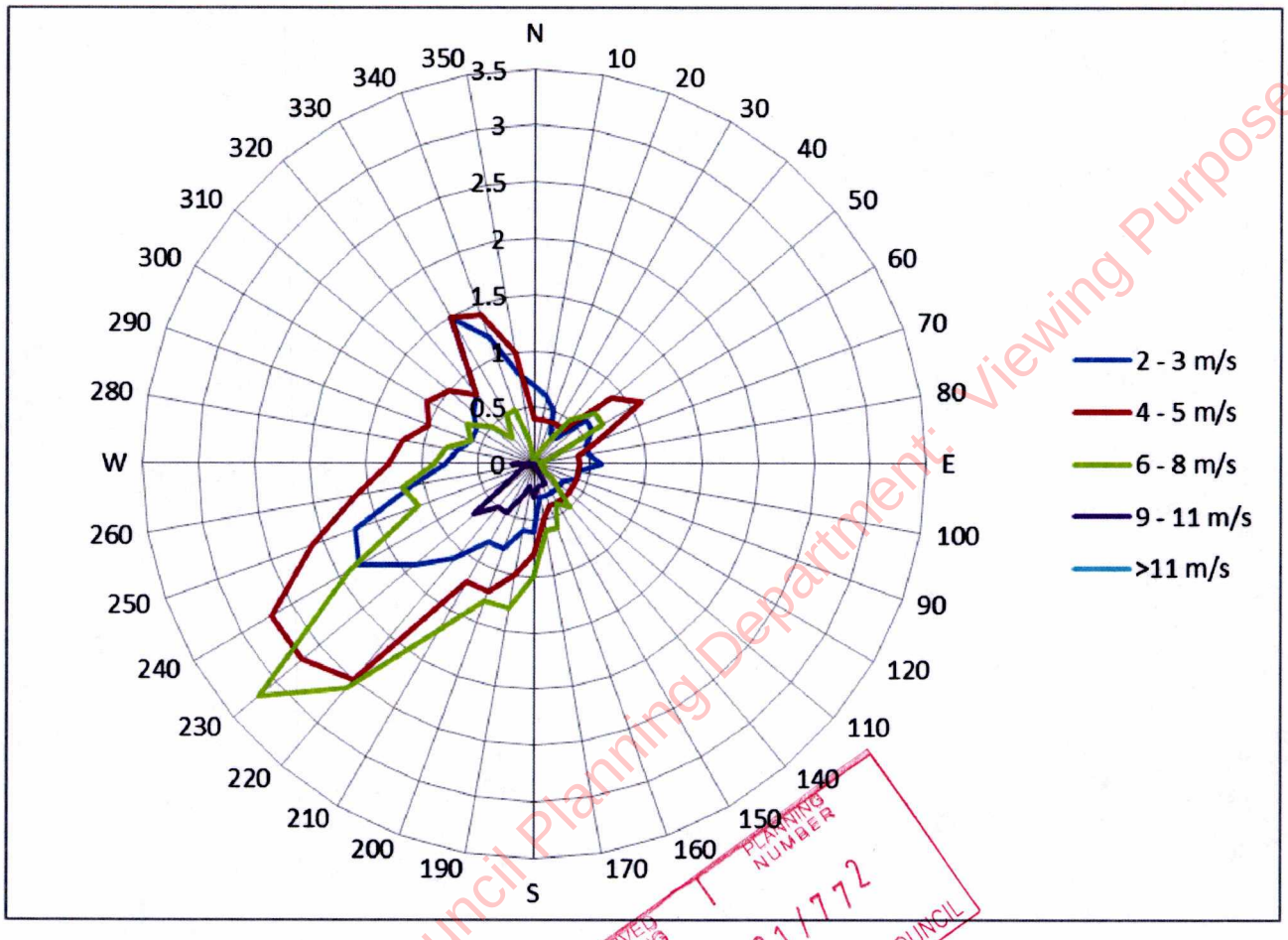
Figure 8-2
Windrose for Johnstown Castle Meteorological Station



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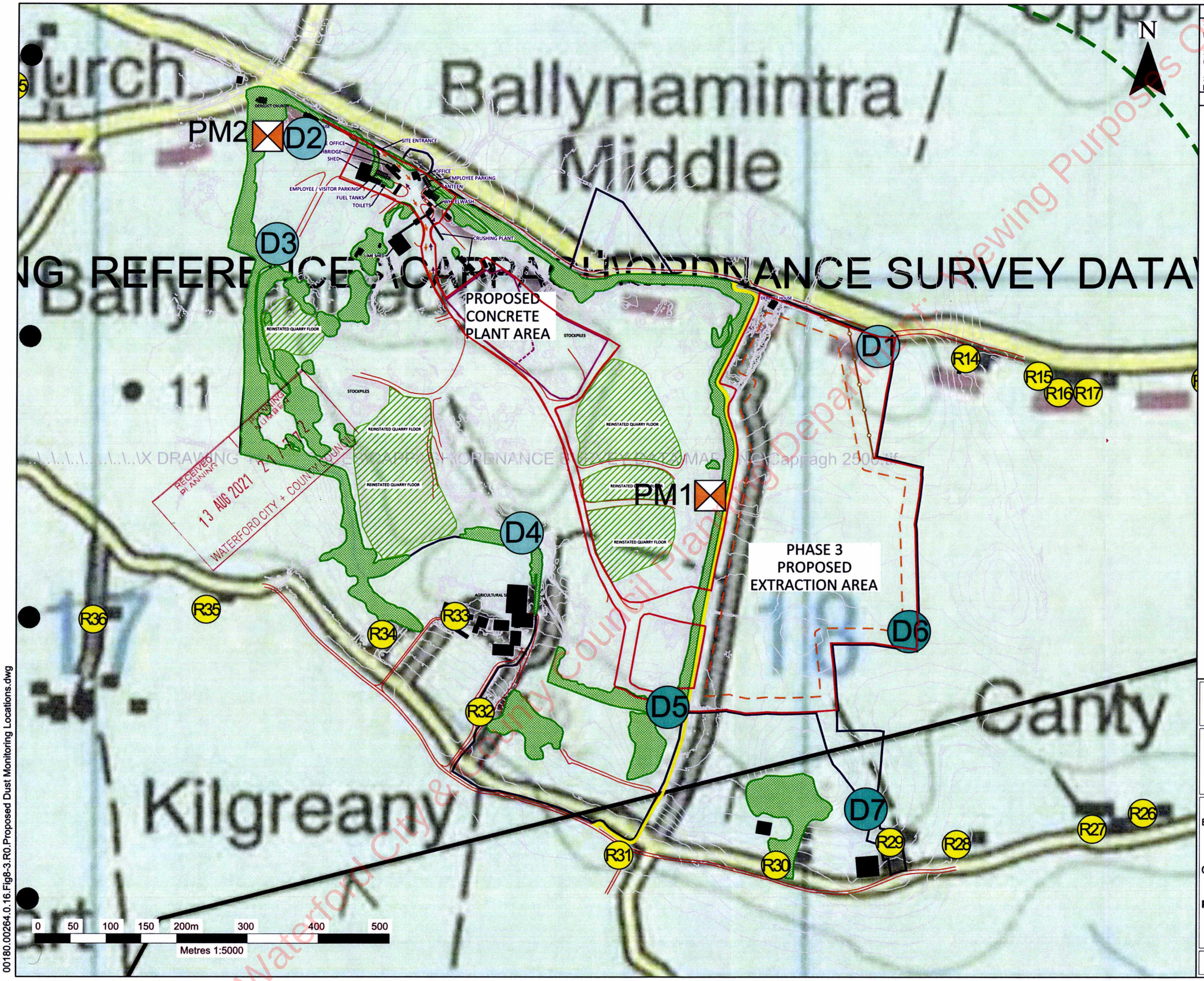

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- PM PM10 MONITORING LOCATIONS

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SENSITIVE RECEPTORS & PROPOSED DUST MONITORING LOCATIONS

FIGURE 8-3

Scale	Date
1: 5,000 @ A3	JULY 2021

00180.00264.0.16.Fig8-3.R0.Proposed Dust Monitoring Locations.dwg

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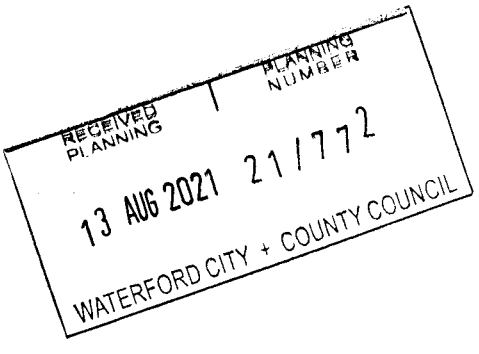
APPENDIX 8-A

Dust Risk Screening Assessment Methodology



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DUST RISK SCREENING ASSESSMENT METHODOLOGY

The methodology applied in the assessment is a semi-quantitative risk assessment methodology, in which the probability of an impact occurring and the magnitude of the impact, if it were to occur, are considered. This methodology is the Tier 2 assessment of the dust assessment methodology. In the event that identified dust sensitive receptors are not screened out within Tier 1, this approach provides a mechanism for identifying the areas where mitigation measures are required, and for identifying mitigation measures appropriate to the risk presented by the development, (i.e. the assessment does not take account of proposed mitigation being put in place).

The magnitude of the potential risk at each receptor is classified depending on the frequency of exposure and the distance from the site to the receptor. Frequency of exposure is represented by the percentage of moderate to high winds (over 3m/s) from the direction of the site.

The screening assessment tool assesses the significance of the distance from site and the frequency of exposure of each receptor by assigning a ranked number. Receptors with a higher potential for dust impacts would therefore result in a higher value whilst receptors with lower potential would expect to carry a lower value. The value corresponding to an evaluation of risk is a product of the significance of the distance and frequency of exposure, each is assigned a value representing its significance. The multiplication of the two values assigned gives a total, which is then corresponded to a qualitative term of risk magnitude.

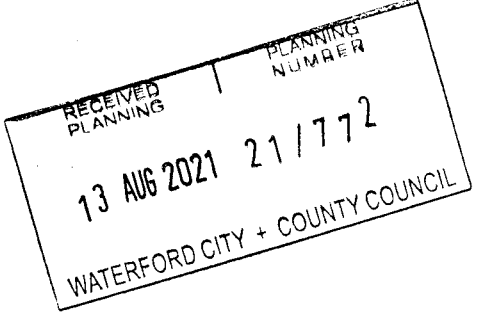
Frequency of Exposure Criterion

The potential for any site to emit dust is greatly influenced by weather. Increased wind speed increases the potential for the generation of airborne dust due to the suspension and entrainment of particles in airflow. A worst-case situation would be strong, warm, drying winds which increase the rate at which dust is lifted from an untreated surface and emitted into the air. Wind can also have the effect of spreading dust over a large area. Conversely, rainfall decreases dust emissions, due to both surface wetting and increasing the rate at which airborne dust is removed from air. An article on dust generation from quarry/pit operations[9] suggests that rainfall of greater than 0.2mm per day is considered sufficient to effectively suppress windblown dust emissions.

The frequency of exposure to dust emissions represents the percentage of time that wind speeds capable of carrying airborne dust (greater than 3m/s) are blowing from the site to the direction of the receptor. Frequencies are calculated based on meteorological data. For screening assessment wind speeds greater than 2m/s were considered as this is how data on percentage occurrence of wind frequency and wind speed is calculated and presented by Met Eireann. For this reason, the assessment is considered to be conservative.

For the screening assessment, a value of 1mm would be used for the criteria to classify days as 'dry' or 'wet'; five times the recommended value, using annual average rainfall data. The average number of days when rainfall exceeds 1mm would be provided for each month and calculated over the year to provide an average.

The resulting frequency of moderate to high wind speeds with the potential of carrying airborne dust towards receptors would then be classified into the criteria in Table 8 A-1 with the respective rank value assigned.



[9] Leeds University. Good Quarry. http://www.goodquarry.com/article.aspx?id=55&navid=2

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Table 8 A- 1
Frequency of Exposure – Risk Classification

RISK CATEGORY	CRITERIA
1	Frequency of winds (>2 m/s) from the direction of the dust source on dry days are less than 3%
2	The frequency of winds (>2 m/s) from the direction of the dust source on dry days are between 3% and 6%
3	The frequency of winds (>2 m/s) from the direction of the dust source on dry days are between 6% and 9%
4	The frequency of winds (>2 m/s) from the direction of the dust source on dry days are between 9% and 12%
5	The frequency of winds (>2 m/s) from the direction of the dust source on dry days are between 12% and 15%
6	The frequency of winds (>2 m/s) from the direction of the dust source on dry days are greater than 15%

Distance to Source Criterion

In assessing dust impacts, the distance from the source to the sensitive location is crucial, as airborne and deposited dust tend to settle out close to the emission source. Smaller dust particles remain airborne for longer, dispersing widely and depositing more slowly over a wider area.

Guidance indicates that larger dust particles (greater than 30µm) will largely deposit within 100m of sources. Smaller particles (less than 10µm) are only deposited slowly. Concentrations decrease rapidly on moving away from the source, due to dispersion and dilution.

To allow for this effect of distance, buffer zones are often defined by mineral planning authorities around potentially dusty activities to ensure that sufficient protection is provided. They have not been established in any rigorous scientific way, but usually range from 50m to 200m. The 1995 UK DoE Guidance on dust from surface mineral working's, however, recommends a stand-off distance of 100-200m from significant dust sources (excluding short-term sources), although it is recognised that these distances can be reduced if effective mitigation measures are identified and implemented. In terms of identifying sensitive locations therefore, and to represent an extreme worst-case scenario, consideration only needs to be given to sensitive receptors within 500m of the site boundary. Receptors at a distance greater than 500m have therefore been screened out in Tier 1 of the assessment.

The criteria for classifying the distance from receptor to source and thus assigning a rank value has therefore been based on the various references to dust behaviour described above. The rank classifications are presented below in Table 8 A-2. A risk category is maintained for receptors in excess of 500m for circumstances where although a receptor is beyond 500m from the dust source, its sensitivity for example is sufficient for it to be taken onto a Tier 2 assessment.

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Table 8 A- 2
Distance to Source – Risk Classification

RISK CATEGORY	CRITERIA
1	Receptor is more than 500m from the dust source
2	Receptor is between 400m and 500m from the dust source
3	Receptor is between 300m and 400m from the dust source
4	Receptor is between 200m and 300m from the dust source
5	Receptor is between 100m and 200m from the dust source
8	Receptor is less than 100m from the dust source

Sensitivity of Receptors

Sensitive locations are those where the public may be exposed to dust from the site. Locations with a high sensitivity to dust include hospitals and clinics, hi-tech industries, painting and furnishing and food processing. Locations classed as being moderately sensitive include schools, residential areas and food retailers. Table 8 A-3 below[10] shows examples of dust sensitive facilities.

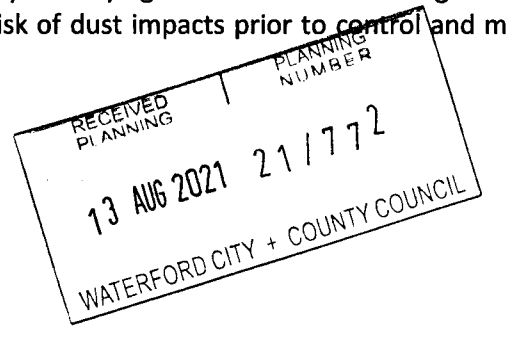
Table 8 A- 3
Examples of Dust Sensitive Facilities

HIGH SENSITIVITY	MEDIUM SENSITIVITY	LOW SENSITIVITY
Hospitals and clinics	Schools and residential areas	Farms
Retirement homes	Food retailers	Light and heavy industry
Hi-tech industries	Greenhouses and nurseries	Outdoor storage
Painting and furnishing	Horticultural land	
Food processing	Offices	

Evaluation of Risk

Once a rank value has been assigned to the frequency of exposure and distance to source, an overall risk can be evaluated by combining the two risk categories, along with consideration of the sensitivity of the receptor. For low sensitivity receptors the risk of dust impact is considered to be significantly lower than for medium and high sensitivity receptors. Therefore, a factor of 0.5 would be applied to the final risk evaluation ranking.

For each receptor, the relative magnitude of risk is given by identifying which of the score categories in Table 8 A-4 it falls into. This final evaluation represents the risk of dust impacts prior to control and mitigation measures being employed on site.



[10] **Ireland M. (1992)** "Dust: Does the EPA go far enough?", Quarry Management, pp23-24.

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Table 8 A-4
Risk Evaluation Ranking (Without Mitigation)

MAGNITUDE OF RISK	SCORE
Insignificant	7 or less
Acceptable	8 to 14
Slight Adverse	15 to 24
Moderate Adverse	25 or more

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APPENDIX 8-B

Malone O'Regan Technical Note on PM_{10} Monitoring at Cappagh Quarry

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TECHNICAL NOTE

MALONE O'REGAN ENVIRONMENTAL

E1710, Roadstone PM_{10} Monitoring

RE: MONITORING OF AMBIENT PM_{10} AT CAPPAGH QUARRY, CO. WATERFORD

1 INTRODUCTION

Malone O'Regan Environmental (MOR) was commissioned by Roadstone Ltd. to carry out ambient PM_{10} monitoring at their quarry in Cappagh, Co. Waterford (the Site).

MOR installed a PM_{10} monitor (Osiris TNO4361) at Location 1 (adjacent the eastern boundary of the Site) from the 14th September to the 18th September 2020 and at location 2 (north west boundary of the site) from the 21st September to the 25th September 2020. The monitor was installed by experienced MOR staff and set up and calibrated in accordance with the manufacturer's instructions. Both locations of the monitor are shown in Figure 1 below.

The monitoring results include cumulative PM_{10} concentrations comprising:

- Background suspended PM_{10} concentration in the area; and
- Suspended PM_{10} resulting from the Cappagh Quarry activities.

During this period, the Cappagh Quarry was carrying out typical activities at the Site (crushing, screening, stockpiling and transport).

Figure 1: PM_{10} Monitoring Locations

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2 MET DATA

The wind rose for the two (2 No) monitoring periods for Moore Park (the nearest synoptic station) are shown in Figure 2-1 and Figure 2-2 along with summary tables detailing the daily wind speed and rainfall at Moore Park during both monitoring events Table 2-1 and 2-2.

Figure 2-1: Wind rose from the 14th to the 18th September 2020 (based on Met Éireann Data Moore Park)

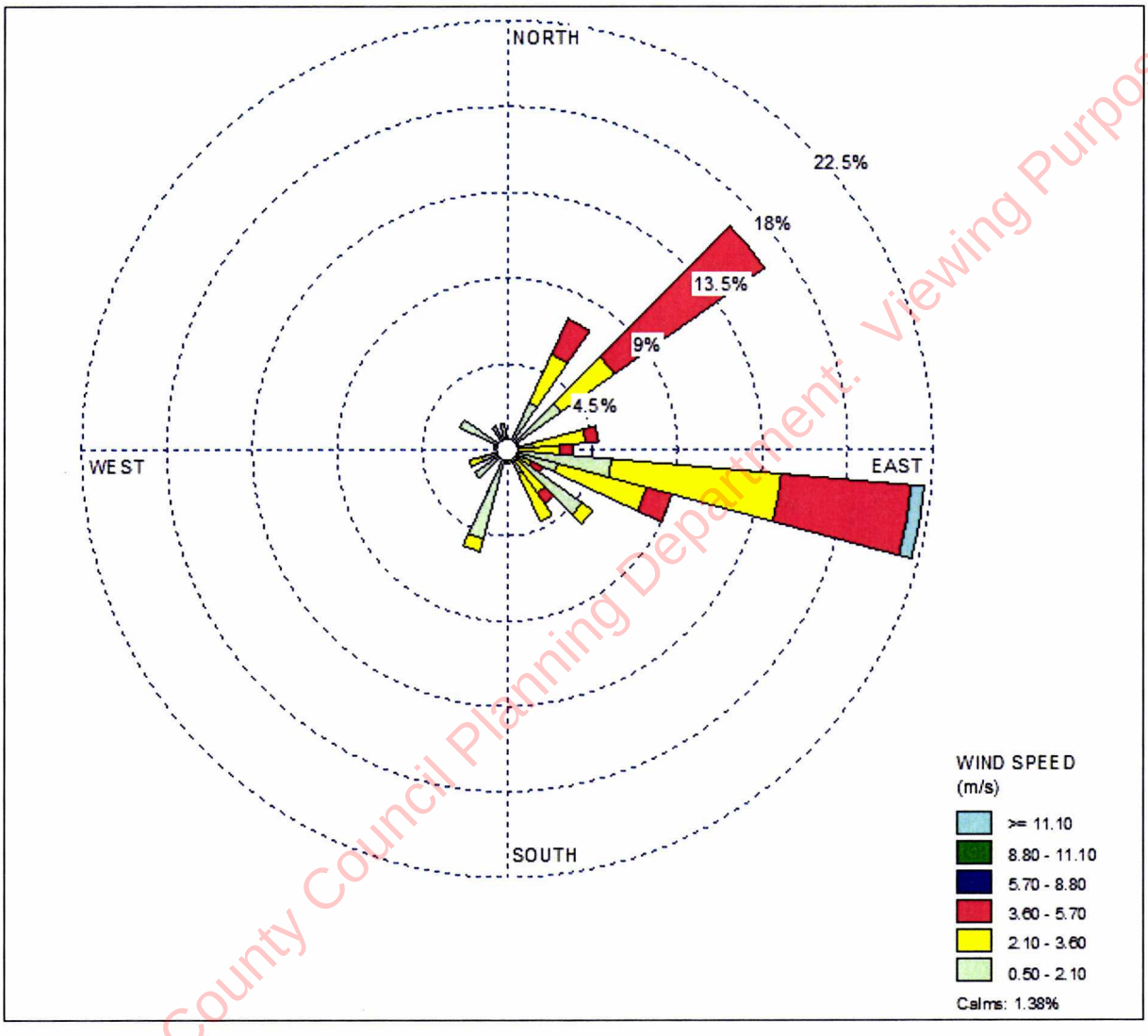

Table 2-1: Met Éireann Data from the 14th to the 18th September 2020 (Moore Park)

Date	Mean wind speed (m/s)	Rain fall (mm)
14/09/2020	2.9	0
15/09/2020	2.0	0
16/09/2020	1.2	0.1
17/09/2020	2.2	0
18/09/2020	2.9	0

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Figure 2-2 Wind rose from the 21st to the 25th of September 2020 (based on Met Éireann Data Moore Park)

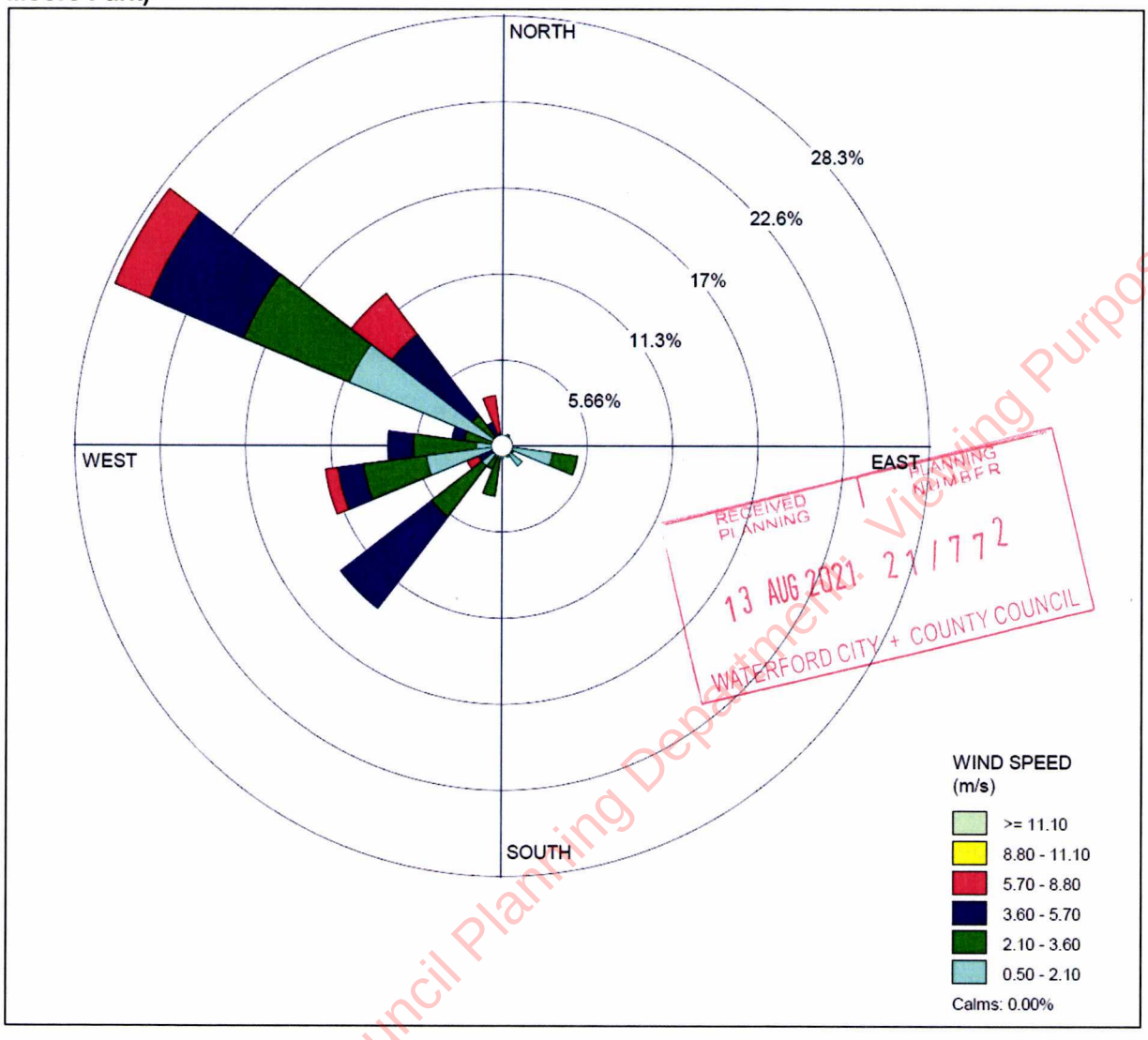

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Table 2-2: Met Éireann Data from the 21st to the 25th September 2020 (Moore Park)

Date	Mean wind speed (m/s)	Rain fall (mm)
21/09/2020	1.3	0
22/09/2020	2.6	2.5
23/09/2020	2.4	7.7
24/09/2020	4.8	3.6
25/09/2020	3.9	0

3 AIR QUALITY STANDARDS

Table 3-1 below lists applicable air quality standards (AQS) for PM_{10}, set out in Air Quality Directive (2008/50/EC) and S.I. No. 180 of 2011.

Table 3-1: Air Quality Standards (AQS) for PM_{10}

Pollutant	Concentration	Maximum No. of Exceedances permitted	Exceedance Expressed as Percentile	Measured as
Particulates (PM_{10})	50 µg/m^3	35 times in a year	90.40th percentile	24-hour mean
	40 µg/m^3	None	-	Annual mean

4 BACKGROUND AIR QUALITY

EU legislation on air quality requires that all Member States divide their territory into zones for the assessment and management of air quality. The current trends in air quality in Ireland are reported in the EPA publication *Air Quality in Ireland (Key Indicators of Ambient Air Quality) – Annual Report 2016- 2019*, which is the most up to date report on air quality in Ireland.

For ambient air quality management and monitoring in Ireland, four zones, A, B, C and D are defined in the AQS Regulations (S.I. No. 180 of 2011) and are defined as follows:

- **Zone A:** Dublin Conurbation;
- **Zone B:** Cork Conurbation;
- **Zone C:** 24 cities and large towns. Includes Galway, Limerick, Waterford, Clonmel, Kilkenny, Sligo, Drogheda, Wexford, Athlone, Ennis, Bray, Naas, Carlow, Tralee, Dundalk, Navan, Newbridge, Mullingar, Letterkenny, Celbridge and Balbriggan, Portlaoise, Greystones and Leixlip; and
- **Zone D:** Rural Ireland, i.e. the remainder of the State excluding Zones A, B & C.

Table 4-1 below shows the baseline air quality data for a number of Zone D monitoring stations.

Table 4-1: Annual Mean Concentrations of Pollutants Measured in Zone D

Monitoring Station	Total Particulates PM10 Annual Mean (µg/m^3)			
	2016	2017	2018	2019
Castlebar	11.9	11.2	11	16
Cobh	-	-	15	13
Claremorris	10.1	10.8	12	11
Kilkitt	8.1	7.8	9	7
Roscommon Town	-	-	12	12
Enniscorthy	17.3	-	-	18
Macroom	-	-	-	28

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Monitoring Station	Total Particulates PM10 Annual Mean (µg/m³)			
	2016	2017	2018	2019
Tipperary Town	-	-	-	9
Average Zone D	**11.9**	**9.9**	**11.8**	**14.3**

Cappagh Quarry is located in Zone D, i.e. rural Ireland, and therefore value of 14.3 µg/m³ is applicable to the general locality.

5 MONITORING RESULTS

Table 5-1 below details PM_{10} monitoring results for the Cappagh Quarry at monitoring location 1 from the 14th to the 18th of September 2020, and Figure 5-1 shows these results in a graphical format, together with annual and 24-hour AQS for PM_{10}.

Roadstone staff reports that activities that took place during the monitoring period include typical quarry activities: crushing, screening, and transport.

The PM_{10} concentrations were below the limits on all five (5No.) monitoring days, and the average concentration over the 5-day monitoring period was below the 24-hr mean AQS limit.

Table 5-1: PM_{10} Monitoring Results Monitoring Location 1

Monitoring period	Monitored PM_{10} µg/m³ 24 hour mean	% of 24 hour mean AQS	% of annual mean AQS
14/09/2020	16.8	33.6	42.0
15/09/2020	12.5	25.0	31.3
16/09/2020	19.6	39.2	49.0
17/09/2020	18.8	37.6	47.0
18/09/2020	15.9	31.8	39.8
Average for the monitoring period (14th to the 18th September 2020)	16.7	33.4%	41.8%

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Figure 5-1: Graphical representation of PM_{10} monitoring data at monitoring location 1

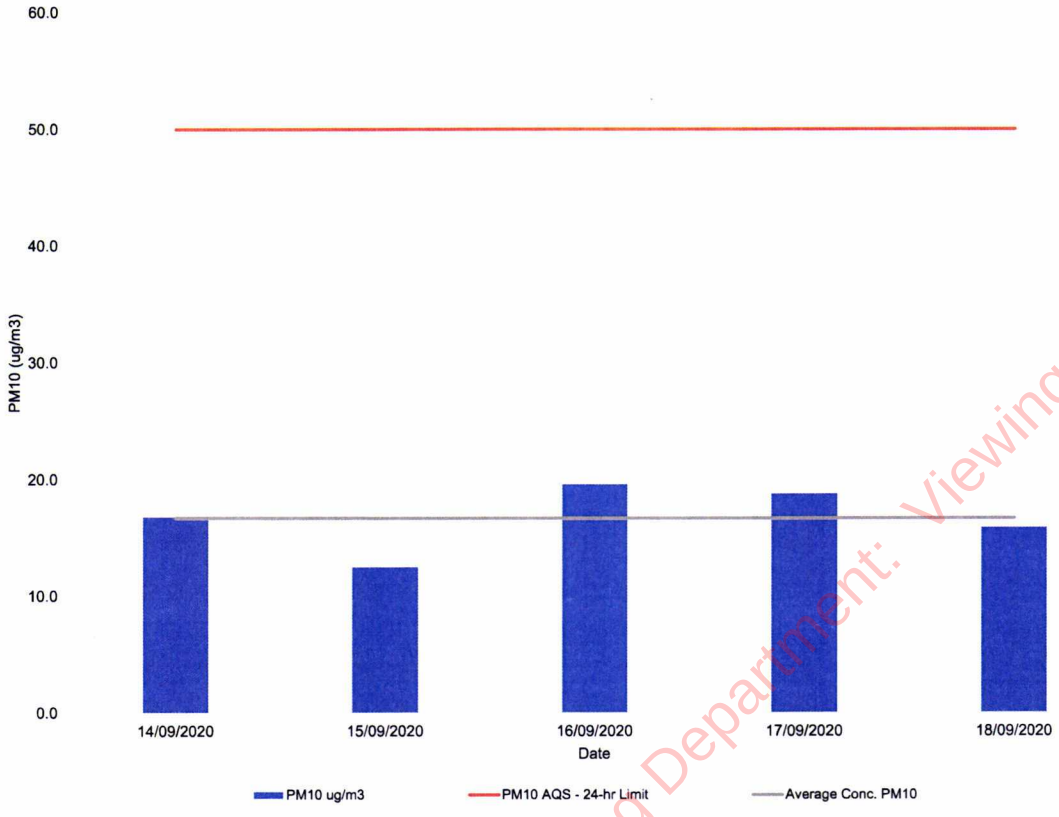

Table 5-2 below details PM_{10} monitoring results for the Cappagh Quarry from the 21st to the 25th of September 2020, and Figure 5-2 shows these results in a graphical format, together with annual and 24-hour AQS for PM_{10}.

Roadstone staff reports that activities that took place during the monitoring period include typical quarry activities: crushing, screening, and transport.

The PM_{10} concentrations were below the limits on all five (5No.) monitoring days, and the average concentration over the 5-day monitoring period was below the 24-hr mean AQS limit.

Background air quality data for Zone D can be taken on average to be 14.3 µg/m3 (refer to Table 4-1), and this is in line with the monitored data at monitoring location 2. The EPA classifies this as 'good' air quality (PM_{10} 1 to 16 µg/m3).

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Table 5-2: PM_{10} Monitoring Results Monitoring Location 2

Monitoring period	Monitored PM_{10} µg/m³ 24 hour mean	% of 24 hour mean AQS	% of annual mean AQS
21/09/2020	16.2	33.6	32.4
22/09/2020	7.6	25.0	15.2
23/09/2020	5.6	39.2	11.2
24/09/2020	6.5	37.6	13.0
25/09/2020	6.1	31.8	12.2
Average for the monitoring period (21st to the 25th September 2020)	8.4	16.8%	21%

Figure 5-2: Graphical representation of PM_{10} monitoring data at monitoring location 2

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6 CONCLUSION

Based on the PM_{10} data presented the following can be concluded:

- The overall average Annual Mean concentration based on the monitoring completed by the EPA between 2016-2019 of PM_{10} for the Zone D, i.e. rural monitoring locations, is 14.3 µg/m3. This value is considered to be appropriate background PM_{10} value for the Site.
- Over the monitoring period for Location 1, the average 24-hour mean for the monitoring period was 16.7 µg/m3 which is 33.4% of AQS daily limit value of 50 µg/m3. The PM_{10} concentrations were below the limits on all five (5No.) monitoring days, and the average concentration over the 5-day monitoring period was below the 24-hr mean AQS limit.
- Over the monitoring period for Location 2, the average 24-hour mean for the monitoring period was 8.4 µg/m3 which is 16.8% of AQS daily limit value of 50 µg/m3. The PM_{10} concentrations were below the limits on all five (5No.) monitoring days, and the average concentration over the 5-day monitoring period was below the 24-hr mean AQS limit.

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APPENDICES

Appendix 9-A Climate Change : Legislative Framework / Policy Context

Appendix 9-B Development Vulnerability Assessment Methodology

Appendix 9-C Development Vulnerability Assessment

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INTRODUCTION

Background

9.1 This Chapter of the Environmental Impact Assessment Report (EIAR) addresses potential effects of the planned future development of a satellite quarry immediately to the east of Cappagh Quarry and the construction and operation of a new concrete batching plant within the existing quarry footprint on climate.

9.2 Cappagh Quarry is located in the townlands of Kilgreany and Ballykennedy, approximately 8km west of the town of Dungarvan, Co. Waterford. The proposed satellite quarry is almost entirely located in the adjoining townland of Canty to the east, with a relatively small area (in the north-western corner) located within Kilgreany townland.

9.3 The development, within an overall application site area of 18.2 hectares (45 acres) comprises:

- development of a satellite quarry immediately to the east of Cappagh Quarry (previously permitted under Planning Permission 06/1599 and An Bord Pleanála PL 24.225443) and the local access passageway which delineates its eastern boundary. The satellite quarry will extend to 13.6 hectares (33.6 acres), of which approximately 9.7 hectares (24.0 acres) will be extracted;
- construction of a 40m long sub-surface reinforced concrete tunnel underpass (with internal cross-section measuring 6m wide by 5.5m high) under the existing local access passageway (previously permitted under Planning Permission 920/97) to connect the existing quarry to the proposed satellite quarry at quarry floor level;
- stripping of overburden soils at the satellite quarry for use in construction of environmental bunds and ongoing site restoration works and subsequent excavation of a single quarry bench in limestone bedrock using mechanical excavation and blasting techniques. The proposed quarry faces will vary in height from approximately 8m to 20m and the quarry floor will not extend below 10mOD or into the underlying groundwater body (consistent with Condition 2 of the existing quarry planning permission);
- processing (crushing and screening) of excavated rock to produce aggregates;
- demolition of an existing derelict house in the north-western corner of the proposed satellite quarry, removal of existing internal hedgerows, construction of new perimeter fence and installation of access gates leading from the local access passageway to a perimeter track running above and around the satellite quarry;
- temporary diversion of a section of the existing local access passageway to facilitate construction and installation of the proposed tunnel underpass and re-instatement of the access passageway above it thereafter;
- provision of a temporary access gate and ramp at the existing quarry to facilitate the temporary haulage of materials to and from the satellite quarry and across the existing passageway until the proposed tunnel underpass is in place;
- demolition of concrete supports for former crushing plant;
- construction and operation of a new concrete batching facility (which comprises 4 No. cement silos, batching / mixing unit, aggregate storage bins, an aggregate loading hopper and connecting conveyor systems), all on a concrete paved area on the existing quarry floor, in front of the northern quarry face;
- provision of a batching control office and admixture storage shed;

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- construction of a closed loop concrete recycling facility, comprising a concrete truck wash out area, settlement lagoons and 70,000 litre water storage / recycling tank immediately behind (north of) the concrete batching plant;
- construction of an aggregate storage hardstanding area (covering approximately 1 hectare) immediately to the east of the proposed concrete batching plant;
- continued use of established site infrastructure in service of the proposed satellite quarry and new concrete batching plant;
- removal and replanting of the existing boundary hedge, re-alignment of the boundary wall and demolition / removal of an existing structure to the east of the existing quarry access junction in order to provide enhanced sightlines for traffic egressing the quarry;
- implementation of a progressive restoration scheme (in phases) in tandem with extraction activities across the satellite quarry area.

9.4 Further information on the proposed development, site activities, environmental management systems and controls at the application sites are provided in the Chapter 2 of this EIA Report.

Scope of Work

9.5 The following sections of this Chapter describe the potential climate change impacts associated with the proposed satellite quarry development and readymix concrete production activities. The following issues are addressed separately:

- climate change legislative framework / policy context;
- analysis of evolving environmental baseline trends;
- identifying climate change concerns in relation to proposed development;
- assessing effects (cumulative effects and uncertainty);
- identifying alternatives and mitigation measures;
- identifying monitoring and adaptive management.

Consultations / Consultees

9.6 In the course of preparing this Environmental Impact Assessment Report, a pre-planning consultation meeting was held outdoors at the application site on 19th May 2021 between the local area planner for Waterford City and County Council and representatives of SLR Consulting Ireland and Roadstone Limited (Meeting Ref. No. PQ202191).

9.7 As part of a formal pre-planning consultation process, a number of relevant prescribed bodies and consultees were also contacted by SLR Consulting Ireland by email and post in early March 2021. Details of the consultation process and of the feedback provided are presented in Chapter 1 of this EIAR.

9.8 Following a review of published development plans and site surveys, it was considered that there was no requirement for any further formal external consultations to be carried out in respect of climate for the purposes of this assessment. There was however significant consultation with other specialist contributors to this EIA Report.

Contributors / Author(s)

9.9 The climate impact assessment presented in this Chapter was prepared by SLR Consulting Ireland. The lead consultant for the study was Aldona Binchy MSc. Eng PIEMA Environmental Engineering.

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Limitations / Difficulties Encountered

9.10 There are currently no published guidelines and established methodology providing specifically for assessment of climate impacts from quarrying activities in Ireland. This Chapter of the EIA Report has therefore been prepared on the basis of general cross-sectoral guidance.

Legislative Framework / Policy Context

9.11 In recent years, there has been increasing public awareness about the implications of past, ongoing and continued future emissions of greenhouse gases on the earth's climate. The implications of such change will potentially have significant impact on local communities and national populations across the world. The ever increasing awareness and acceptance of this reality has, in recent years, prompted significant public policy development around emissions and climate change.

9.12 An overview of the legislative framework and policy context which informs this assessment of potential climate impacts of the proposed satellite quarry and new concrete production plant at Cappagh Quarry is presented in Appendix 9-A. This provides background detail in respect of the following :

- National Policy on Adaption to Climate Change
  - Sectoral Adaption Plans
  - Local Level Adaption
- Regulation / Control of Greenhouse Gas Emissions
  - Paris Agreement (2015)
  - Kyoto Protocol (2008-2012)
  - EU 2021-2030 Targets for non-ETS sector emissions- Effort Sharing Regulations
  - Energy White Paper (2015)
- Future Management of Flood Risk
- EIA Directive 2014/52/EU
- Published Guidelines
  - Guidance on Integrating Climate Change and Biodiversity into EIA
  - Assessing Greenhouse Gas Emissions and Evaluating their Significance
  - Climate Change and Major Projects
  - Sector Planning Guidelines for Climate Change Adaption
  - Local Authority Strategy Development Guidelines.

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RECEIVING ENVIRONMENT

Climate Environmental Baseline

Regional Context

9.13 Observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising sea level are unequivocal evidence of warming of the climate system globally. Global mean temperature has increased by 0.8°C compared with pre-industrial times for land and oceans, and by 1.0°C for land alone. Most of the observed increase in global average temperatures is very likely due to increases in anthropogenic greenhouse gas concentrations.

9.14 In future years, landmasses are expected to warm more than the oceans at northern middle and high latitudes. Despite possible reductions in average summer precipitation over much of Europe, precipitation amounts exceeding the 95th percentile are very likely in many areas; thus episodes of severe flooding may become more frequent despite the general trend towards drier summer conditions. In an ensemble-based approach using outputs from 20 global climate models (GCMs), the Mediterranean, north-east and north-west Europe are identified as warming hot spots but with regional and seasonal variations in the pattern and amplitude of warming. Regional climate models (RCMs) also project rising temperatures for Europe until the end of the 21st century, with an accelerated increase in the second half of the century.

9.15 For precipitation, the larger-scale summer pattern shows a gradient from increases in Northern Scandinavia to decreases in the Mediterranean region. By contrast, increases in wintertime precipitation primarily north of 45°N are a consistent feature of RCM projections over Europe, with decreases over the Mediterranean. Overall, then, there are consistent projections of change for northern and north-west Europe, including Ireland.

9.16 Ireland has a typical maritime climate, with relatively mild and moist winters and cool, cloudy summers. The prevailing winds are south-westerly in direction. The climate is influenced by warm maritime air associated with the Gulf Stream which has the effect of moderating the climate, and results in high average annual humidity across the country. The area of least precipitation is along the eastern seaboard of the country, in the rain shadow of the Leinster uplands.

9.17 Mean seasonal temperature will change across Ireland. A number of studies have applied selected IPCC Special Reports on Emissions Scenarios (SRESs) to model climatic changes across Ireland at a regional scale. Despite the different methods and scenario combinations used, there is agreement in projected changes in temperature for Ireland. However, there are more disparities in the magnitude and sign (ie. +/-) for the precipitation changes projected for the island.

9.18 Table 9-1 summarises climate impact projections for Ireland, estimates of projections confidence are derived from published projection data from the Local Authority Adaptation Strategy Development Guidelines[1].

Table 9-1
Climate Impacts Projections : 30-Year Overview[1]

Variable	Summary	Confidence	Projected Changes
Sea Levels Rise	Strong increase	High	Projections of sea level rise to 2100 suggest a global increase in the range of 0.09-0.88m with a mean value of 0.48m. For 2050, it is reasonable to assume a sea level rise in the region of 25cm above present levels. It should be noted that due to a limited understanding of some important effects that contribute to rates of increase, these estimates of sea level rise may prove optimistic, and estimates of up to 4-6 m have been projected by some models.

[1] Local Authority Adaptation Strategy Development Guideline, EPA 2016

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Variable	Summary	Confidence	Projected Changes
Storm Surge	Strong increase	Medium	An increase in the number of intense cyclones and associated strong winds are expected over the north - east Atlantic. By the 2050s, storm surge heights in the range of 50-100cm are expected to increase in frequency for all coastal areas with exception of the southern coast.
Coastal Erosion	Moderate increase	Low	Currently approximately 20% of Ireland's coastline is at risk of coastal erosion, particularly areas of the south and east coast and also in isolated areas on the west coast. Rates of increase will be determined by local circumstances; however, it is expected that areas of the south-west are likely to experience the largest increase.
Cold Snaps / Frost	Moderate decrease (winter/night)	High	By mid-century, minimum temperatures during winter are projected to increase by ~2^{0}C in the southeast and ~2.9^{0}C in the north. This change will result in fewer frost days and milder night-time temperatures.
Heatwaves	Strong increase (summer)	High	Seven significant heatwaves (defined as 5+ days@>25^{0}C) have been recorded in Ireland over the past 30 years, resulting in approximately 300 excess deaths. By mid-century, a projected increase in summer maximum daily temperature of approximately 2^{0}C will likely intensify heatwaves, with maximum temperatures increasing and heatwave duration lengthening.
Dry Spells	Strong increase (summer)	Medium	There have been eight periods of insignificant rainfall in Ireland in the past 40 years. Of these, the events of 1976, 1995 and 2018 were the most severe, averaging 52, 40 and 54 days in duration respectively across Irish rainfall stations. An approximate 20% decrease in summer precipitation in many areas is strongly indicated under a high emissions scenario. This decrease is likely to result in progressively longer periods without significant rainfall, posing potentially severe challenges to water sensitive sectors and regions.

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Variable	Summary	Confidence	Projected Changes
Extreme Rainfall	Strong increase (winter)	Low	Heavy precipitation days (in which more than 20mm of rain falls) are likely to increase in frequency in winter. By the 2050s an increase in the number of heavy precipitation days of around 20% above the level of 1981-2000 is projected under both low-medium and high emissions scenarios. This may have serious consequences for flood risk in sensitive catchments.
Flooding	Moderate increase (winter)	Low	An Irish Reference Network of hydrometric stations has been established to assess signals of climate charge in Irish hydrology. This network has detected an increasing trend in high river flows since 2000. Projections of future flows are beset by uncertainty at the catchment scale, but a broad signal of wetter winters and drier summers is evident across a number of independent studies.
Wind Speed	Minor increase (winter)	Medium	Observed wind speed over Ireland has not changed significantly in recent times, but it is anticipated that the distribution of wind will alter slightly in future, with winters marginally windier and summers marginally less so. Though the average wind speed is anticipated to change in only a minor way over the coming decades, the frequency of extreme windstorms is expected to increase due to alternations in the origin and track of tropical cyclones.

Local Context

9.19 The weather records from Rosslare Metrological Station, located approximately 90km to the north-east are considered most likely to be representative of conditions experienced at the application site.

9.20 The moderating influence of the Atlantic Ocean is felt throughout Ireland. The annual mean temperature for different areas in Ireland varies between mountainous regions, lowlands and the coast. Mean daily maximum temperatures are typically between 8.8 to 18.5°C and mean daily minimum temperatures are typically between 4.1 to 12.7°C for the area surrounding Rosslare (refer to Table 9-3).

9.21 The east of Ireland, which is sheltered from Atlantic frontal systems, is sunnier than the west. The mean daily duration recording of sunshine for the south-east (Rosslare) is 4.3 hours. December is the dullest month, with 1.8 hours of mean daily duration. May is the sunniest month, with 6.9 hours of mean daily duration, explained largely by its long days and finer weather.

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Table 9-2
Temperature Averages at Rosslare 1978-2007 (°C)

Temperature	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Mean Daily Max	8.8	8.5	9.9	11.3	13.6	16.3	18.3	18.5	16.8	14.0	11.3	9.5	13.1
Mean Daily Min	4.2	4.1	5.1	6.3	8.6	11.0	12.7	12.9	11.6	9.3	6.7	5.2	8.1
Mean Temperature	6.5	6.3	7.5	8.8	11.1	13.6	15.5	15.7	14.2	11.6	9.0	7.4	10.6

9.22 Results from the synoptic meteorological station at Johnstown Castle indicate that the main wind direction is from a west and south-westerly direction. The lowest frequency is for winds blowing from the North and North-East. A windrose for the wind data recorded at Johnstown Castle station is presented in Figure 9-1 .

9.23 During the period 1981-2010, long-term monthly rates of precipitation between 49.9mm and 109.3mm were recorded at Rosslare station, with winter months receiving the heaviest amounts. The mean of the Met Eireann records indicates that average annual rainfall around the application site is approximately 905.5mm / year. The average rainfall data indicates that the greatest daily total (89.2mm) falls in the month of June; refer to Table 9-3.

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Table 9-3
Average Precipitation at Rosslare (mm) 1978-2007

Rainfall (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Mean Monthly Total	88.4	70.8	69.1	59.1	55.7	54.9	49.9	71.6	75.0	109.3	100.9	100.8	905.5
Greatest Daily Total	42.7	32.0	42.2	32.0	29.4	31.6	41.4	89.2	42.2	88.6	43.8	48.9	89.2

IMPACT ASSESSMENT

Methodology

9.24 In Ireland some sectors have independently begun the process of identifying key vulnerabilities for their activities. The report by the Irish Academy of Engineering, Ireland at Risk Critical Infrastructure – Adaptation for Climate Change (The Irish Academy of Engineering, 2009) and the report by the Heritage Council and Fáilte Ireland (the National Tourism Development Authority), Climate Change, Heritage and Tourism, Implications for Ireland's Coast and Inland Waterways (ed. Kelly and Stack, 2009) are examples of initiatives of this kind.

9.25 Other research work on adaptation in specific sectors has been carried out or commissioned by other Government Departments/bodies such as the OPW, CoFoRD (programme of competitive forest research for development research programme, etc. (e.g. CLIMADAPT).

9.26 A National Climate Change Vulnerability Scoping Study (Sweeney and Coll, 2012) was undertaken to identify first generation vulnerabilities for Ireland based on a sensitivity analysis across key sectors. The analysis identified a clustering of impacts and their importance in relation to an assessment of likely resilience by sector. The assessment methodology used was an impacts-first, science-first classical approach. The priority sectors identified are biodiversity and fisheries; water resources and the built coastal environment; forestry and agriculture.

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9.27 As each sector develops its sectoral adaptation plan (under the Climate Action and Low Carbon Development Act 2015), detailed vulnerability and risk analysis will be required. Some preliminary work has been undertaken on costing the impacts of climate change in Ireland. This is now being supported by more detailed analysis of the current and future costs of flood risk management.

9.28 The implementation of adaptation is being supported by the development of a suite of guidelines, tools and approaches. These include the Local Authority Adaptation Strategy Development Guideline; and the Irish climate information platform "Climate Ireland", which includes data, information, tools and approaches for local level adaptation decision making. Work is ongoing to develop sectoral decision-making tools and supports.

9.29 There are no specific tools developed for assessing climate change for extraction industry. The Climate Change and Major Project guidelines on how to make investments resilient to climate change provides a methodology for undertaking a vulnerability and risk assessment.

9.30 Climate change adaptation and mitigation re to be increasingly integrated in the preparation and approval of proposed development. Adaptation seeks to ensure adequate resilience of proposed development to the adverse impacts of climate change based on Vulnerability. Mitigation seeks to reduce the emissions of greenhouse gases.

Development Vulnerability

9.31 The aim of the vulnerability assessment is to identify the relevant climate hazards foreseen at the development location. Main steps include identifying and combining the sensitivity and exposure of the project which will describe the vulnerability, while the risk will be determined by likelihood and impact. Adaptation through project options, appraisal, and planning will depend on the assessed project vulnerability and risk.

9.32 Timescale for the project vulnerability and risk assessment shall correspond to the lifespan of the project. During the lifespan, there could be significant changes in frequency and intensity of weather events due to climate change, which should be taken into account. Detailed methodology charts for development vulnerability assessment are presented in Appendix 9-B.

Greenhouse Gases Emissions

9.33 All projects have the potential to emit greenhouse gas (GHG) emissions to atmosphere during the construction, operational and decommissioning phase of the development. Direct GHG emissions may be caused by operational activities and project commissioning / decommissioning. Indirect GHG emissions may be due to increased demand for energy and indirect GHG generating activities. Indirect GHG activities linked to the development projects may include transport, space heating of buildings / offices or loss of habitats that provide carbon sequestration, (e.g. through land-use change).

9.34 The significance of a project's GHG emissions should be based on its net impact, which may be positive or negative. Where GHG emissions cannot be avoided, the significance of a project's emissions shall be reduced by mitigation or project design. Where GHG emissions remain significant but cannot be reduced further approaches to compensate project emissions should be considered.

9.35 Currently in Ireland, there is no set methodology to evaluate significance criteria or a defined threshold for GHG emissions for the mineral extraction industry. Due to the inconsistences between the different methods and their assumptions for assessment, there is no single agreed method by which to assess a project carbon budget. The method of assessment varies according to the type and scale of the development.

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9.36 Due to a lack of guidelines and an established methodology, the assessment of significance of the GHG emissions is based on whether the development's GHG emissions cumulatively represent a considerable contribution to the global atmosphere and whether the development as continued or extended will replace existing development that would have a higher GHG profile.

9.37 Where the GHG emissions cannot be avoided, the mitigation should aim to reduce the development emissions at all stages.

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Development Vulnerability Assessment

9.38 The aim of the vulnerability assessment is to identify the relevant climate hazards for the project at the foreseen location. A development vulnerability assessment for the proposed satellite quarry and concrete production plant is presented in Appendix 9-C.

9.39 Based on the development vulnerability assessment, measures to improve the resilience of the project to extreme rainfall, flood, flash flood, storms, and winds are required.

Greenhouse Gas Emissions Assessment

9.40 For the purpose of this assessment, GHG emissions have been calculated for the proposed development based on annual energy use at the proposed satellite quarry development at Cappagh in future years.

9.41 For the purposes of this climate assessment, it has been assumed that the projected traffic movements associated with the satellite quarry and related quarry activities will generate a maximum of 200 two-way HGV movements (equivalent to 100 return trips) per day for 300 days in a year, although levels on most working days will likely be less than this. For the purposes of this assessment, it has also been assumed that the average distance travelled for each delivery will be 25km each way (or 50km in total).

9.42 It is estimated that c. 2,000 litres of diesel will be consumed each week (for 50 weeks per year) to power crushing plant and on-site loading plant and equipment. It is also assumed that the concrete production plant, weighbridge, wheelwash, pumps and lighting and heating for site offices, welfare facilities and other buildings will collectively consume 10,000kWh of electrical power per week.

9.43 Total annual GHG emissions associated with the proposed site activities are presented in Table 9-4.

Table 9-4
GHG Emissions Calculations

Type	Annual Value	Distance Travelled (km)	Conversion factor	Calculated	Total annual CO_2e kg
Traffic (trips)	30,000 No.	50	0.71266	1,068,990	-
Energy (Diesel)	100,000 litres		2.60016[a]	260,016	-
Electrical Power (Offices / Concrete Plant)	500,000 kWh		0.35[b]	175,000	
TOTAL					1,504,006

[a] Conversion factor for 2017 for Scope 1 Protocol for fuels: diesel.

Conversion factor for Irish power grid 0.35kg CO_2 / kWh (www.smartgriddashboard.eirgrid.com)

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9.44 Based on the calculated total of 1,504,006 CO_{2e} kg (1,504 CO_{2e} tonnes) and a comparison to Ireland's 2018 emissions value of 60.51 MTonnes of CO_{2e}, it is assessed that proposed operations would represent a maximum of just 0.0025% of Ireland's annual CO_{2e} emissions for the duration.

9.45 Based on the scale and extent of proposed activities, GHG emissions generated by the proposed satellite quarry and concrete plant are assessed as not making a significant contribution to the global atmosphere.

MITIGATION

9.46 Mitigation is designed to increase the resilience of the development, or wider environmental receptors, to climate change and focuses on increasing capacity to absorb climate related shocks.

Project Adaptation against Expected Climate Change Effects

9.47 In the context of climate change, measures to increase the adaptive capacity of the proposed development and disaster risk reduction strategies can be developed with a view to reducing vulnerability and increasing its resilience. Significant incidents related to the climate change that affect operation of the proposed development should be recorded for future analysis.

9.48 Based on a development vulnerability assessment (refer to Appendix 9-C), measures to improve the resilience of the project to extreme rainfall, flash flood, storms, and winds are required. Table 9-5 details specific mitigation measures for the proposed development relating to climate change adaptation.

Table 9-5
Mitigation Measures Related to Climate Change Adaptation

Main Concerns Related to:	Proposed Alternatives or Mitigation Measures
Extreme Rainfall, Flood, Flash Flood	Consider changes / flexibility in operations that provide for increased run-off across paved areas and possible increases in seasonal groundwater levels.
	Design / provide adequate surface water drainage / discharge to ground.
Storms and Winds	Ensure activities / production can proceed safety during high winds and storms
	Ensure the choice of equipment deployed on the project is weather efficient.
Risk Reduction Mechanism	Secure insurance for damage of assets / site incidences.

Proposed Reduction of GHG Emissions

9.49 The Applicant will implement a GHG monitoring programme at Cappagh Quarry. Based on the GHG monitoring results, the company will establish short, medium, and long-term objectives and targets for a GHG reduction programme and energy management plan.

9.50 Table 9-6 details specific mitigation measures for the Cappagh Quarry in respect of the GHG reduction programme.

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Table 9-6
Mitigation Measures Related to GHG Reduction Programme

Main Concerns Related to:	Proposed Alternatives or Mitigation Measures
Increased demand for energy	Consider using renewable energy sources / suppliers. Use low carbon construction materials where possible.
Direct GHG emissions	Use energy efficient machinery / energy.
GHG emissions related to transport	Unnecessary equipment / transport journeys should be avoided by management of transport and travel demands. Equipment should not be left idling.

MONITORING

Project Adaptation against Expected Climate Change Effects

9.51 A framework and set of indicators shall be developed to assess project preparedness for adaptation against climate change. Provision shall be made for a periodic review of plans and the allocation of reporting responsibilities for a regime to measure and evaluate progress on adaptation.

9.52 This process shall include regular feedback and/or updates from implementation efforts on a regular basis. Enhancement and monitoring related to projects' predicted impacts with climate change should be set out in an Environmental Management Plan.

GHG Emissions

9.53 Monitor, report and review progress in achieving GHG reductions at the quarry.

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FIGURES

Figure 9-1
Windrose for Johnstown Castle Meteorology Station

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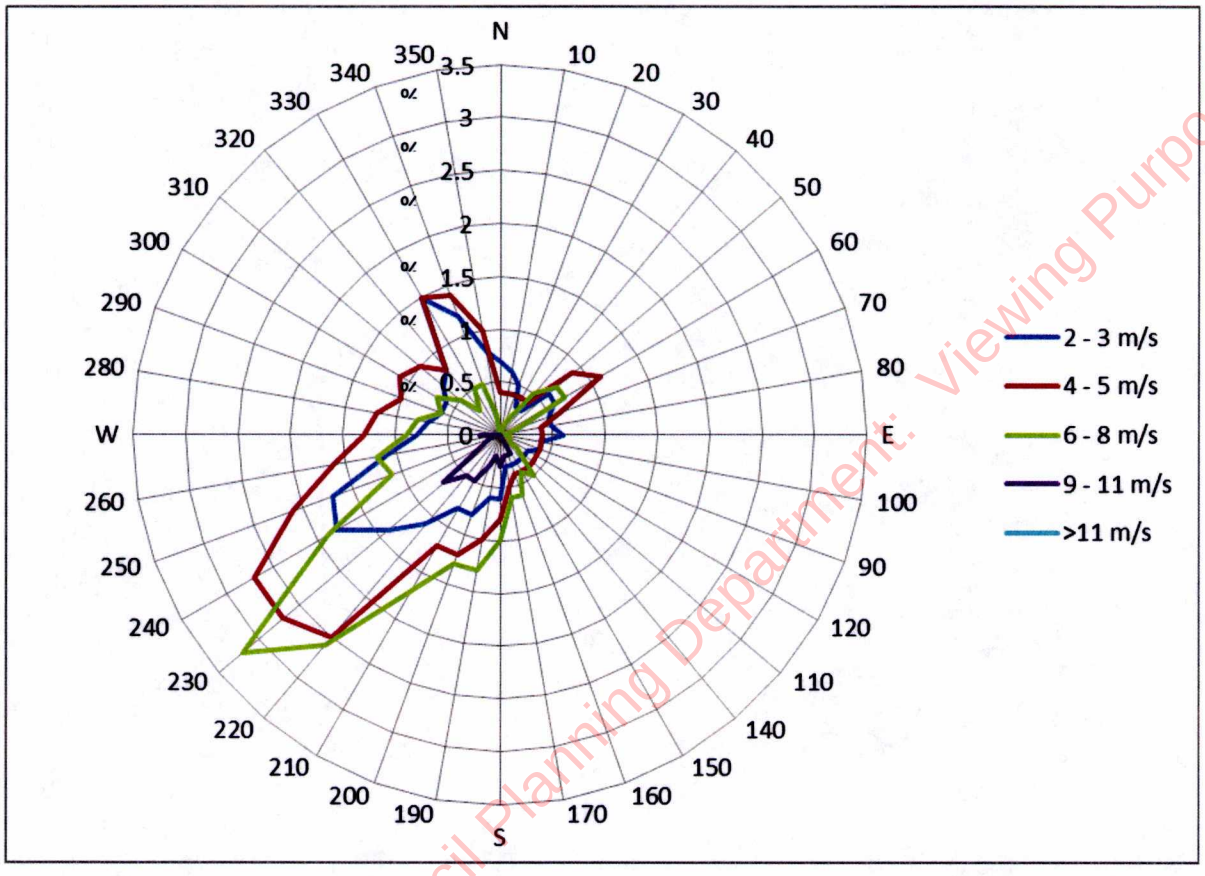
Figure 9-1
Windrose for Johnstown Castle Meteorology Station



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APPENDICES

Appendix 9-A
Climate Change : Legislative Framework / Policy Context

Appendix 9-B
Development Vulnerability Assessment Methodology

Appendix 9-C
Development Vulnerability Assessment

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APPENDIX 9-A

CLIMATE CHANGE : LEGISLATIVE FRAMEWORK / POLICY CONTEXT

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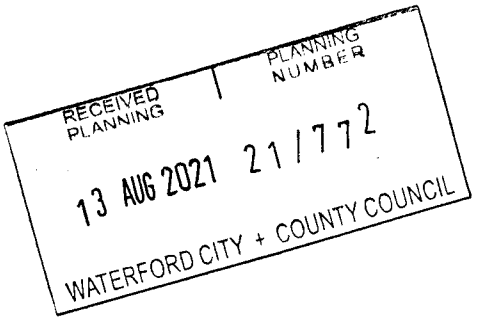

Introduction

In recent years, there has been increasing public awareness about the implications of past, ongoing and continued future emissions of greenhouse gases on the earth's climate. The implications of such change will potentially have significant impact on local communities and national populations across the world. The ever increasing awareness and acceptance of this reality has, in recent years, prompted significant public policy development around emissions and climate change.

An overview of the legislative framework and policy context which informs this assessment of the potential climate impacts of the proposed satellite quarry and new concrete production plant at Cappagh Quarry is presented herein below.

National Adaptation to Climate Change

The Irish National Policy Position establishes the fundamental national objective of achieving transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050. It sets out the context for the objective; clarifies the level of GHG mitigation ambition envisaged; and establishes the process to pursue and achieve the overall objective. Specifically, the National Policy Position envisages that policy development will be guided by a long-term vision based on:

- an aggregate reduction in carbon dioxide (CO_2) emissions of at least 80% (compared to 1990 levels) by 2050 across the electricity generation, built environment and transport sectors;
- in parallel, an approach to carbon neutrality in the agriculture and land-use sector, including forestry, which does not compromise capacity for sustainable food production.

The evolution of climate policy in Ireland will be an iterative process based on the adoption by Government of a series of national plans over the period to 2050. Greenhouse gas mitigation and adaptation to the impacts of climate change are to be addressed in parallel national plans – respectively through National Mitigation Plans and National Climate Change Adaptation Frameworks. The plans will be continually updated, as well as being reviewed on a structured basis at appropriate intervals, and at a minimum, every five years. This will include early identification and ongoing updating of possible transition pathways to 2050 to inform sectoral strategic choices.

The Climate Action and Low Carbon Development Act 2015[2] was enacted in December 2015. The Act identified and provided for the development and submission to Government of national mitigation and adaptation plans. It also established the institutional and governance framework within which these plans can be developed and implemented on a cyclical basis.

The Department of Communications, Climate Action and Environment (DCCAE) published a National Adaptation Framework (NAF) in January 2018[3]. The NAF sets out the national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts.

The NAF builds on the work already carried out under the National Climate Change Adaptation Network (NCCAF, 2012). Under the NAF a number of Government Departments will be required to prepare sectoral adaptation plans in relation to a priority area that they are responsible for. Local authorities are required to prepare local adaptation strategies NAF also aims to improve the enabling environment for adaptation through ongoing engagement with civil society, the private sector and the research community.

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[2] https://www.dccae.gov.ie/en-ie/climate-action/legislation/Pages/Climate-Action-and-Low-Carbon-Development-Act-2015.aspx

[3] https://www.dccae.gov.ie/en-ie/climate-action/topics/adapting-to-climate-change/national-adaptation-framework/Pages/default.aspx

Sectoral Adaptation Plans

Under the National Adaptation Framework (NAF), Government Departments have to prepare Sectoral Adaptation Plans. Twelve sectors under 7 Government Departments will prepare plans. The deadline for submitting plans to Government is 30 September 2019. The sectors are :

- Seafood - Department of Agriculture, Food and the Marine;
- Agriculture - Department of Agriculture, Food and the Marine;
- Forestry - Department of Agriculture, Food and the Marine;
- Biodiversity - Department of Culture, Heritage and the Gaeltacht;
- Built and Archaeological Heritage - Department of Culture, Heritage and the Gaeltacht;
- Transport infrastructure - Department of Transport, Tourism and Sport;
- Electricity and Gas Networks - Department of Communications, Climate Action and Environment;
- Communications networks - Department of Communications, Climate Action and Environment;
- Flood Risk Management - Office of Public Works;
- Water Quality - Department of Housing, Planning and Local Government;
- Water Services Infrastructure - Department of Housing, Planning and Local Government;
- Health - Department of Health.

The aggregate and extractive industries were not specifically required under the National Adaptation Framework (NAF) to prepare sectoral adaptation plans in line with the requirements of the Climate Action and Low Carbon Development Act.

Under the non-statutory 2012 Framework, four Government Departments prepared draft sectoral plans covering 5 sectors. These plans are :

- Sectoral Adaptation Plan for Flood Risk Management (OPW, 2015);
- Adaptation Planning - Developing Resilience to Climate Change in the Irish Agriculture and Forest Sector (DAFM, 2017);
- Adaptation Planning - Developing Resilience to Climate Change in the Irish Transport Sector (DTTAS, 2017);
- Adaptation Plan for the Electricity and Gas Networks Sector (DCCAE, 2017).

Government Departments must develop statutory sectoral adaptation plans in accordance with the NAF and with a six-step adaptation planning process described in Sectoral Planning Guidelines for Climate Change Adaptation. This Department published the guidelines for the use of the sectors required to prepare statutory sectoral adaptation plans under the Framework. The guidelines aim to ensure that a coherent and consistent approach to adaptation planning will be adopted by the key sectors in Ireland. Completed plans could include actions that :

- Integrate adaptation into key sectoral plans and policies;
- identify and understand the key vulnerabilities, risks, and opportunities facing their sectors. This should include major cross cutting risks;
- ensure that plans related to emergencies assigned to a sectoral department as lead Government department under the Strategic Emergency Planning Guidelines are climate proofed;
- identify and collect information on the costs and benefits of adaptation within their sectors;

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- build capacity within their sectors to cope with climate change;
- identify and address key research gaps within their sectors;
- improve co-ordination with the local government sector;
- develop appropriate monitoring and verification systems within their sectors.

Local Level Adaptation

The National Adaptation Framework identifies the critical role to be played by local authorities in addressing climate change adaptation. This will effectively build on their existing expertise and experience as first responders in emergency planning scenarios. Under the NAF each local authority will also be developing their own adaptation strategies in line with guidelines developed for the sector. Local authorities had been set a deadline for the completion of local adaptation strategies of 30 September 2019.

The NAF explores how local authorities might adopt a joint or regional approach to adaptation planning. In January 2018 the DCCAE entered into a five-year financial commitment of €10m to establish four Climate Action Regional Offices (CAROs). Building on a business case prepared by the local government sector itself, this commitment recognises the significant obligation which has been placed on local government to develop and implement its own climate action measures, as well as the need to build capacity within the sector to engage effectively with climate change – both in terms of mitigation and adaptation.

The Climate Action Regional Offices are being operated by a lead local authority in four different regions that have be grouped together based on a climate risk assessment with a focus on the predominant risk(s) in each geographical area. The establishment of these offices will enable a more coordinated engagement across the whole of government and will help build on the experience and expertise which exists across the sector.

Table 9A-1 summarises the adaptation actions to climate change in Ireland.

Table 9A - 1
Summary of Adaptation to Climate Change Actions in Ireland[4]

Item	Status	Programs
National Climate Adaptation Strategy	Legislation enacted. Statutory Framework adopted	Climate Action and Low Carbon Development Act 2015 National Adaptation Framework
Action Plans	Sectoral Adaptation Plans in development. Local authority plans in development.	Local Authority Adaptation Strategy Development Guidelines (2016) Sectoral Planning Guidelines for Climate Change Adaptation Local Authority Adaptation Support Tool

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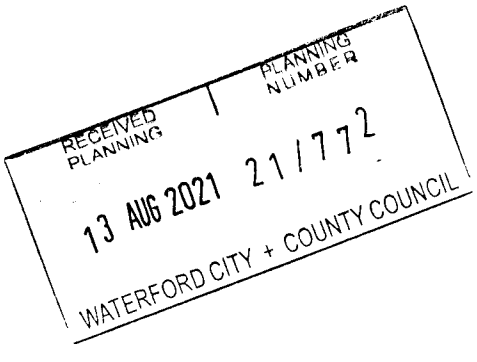

[4] http://climate-adapt.eea.europa.eu/countries-regions/countries/ireland

Item	Status	Programs
Impacts, Vulnerability and Adaptation Assessments	National Vulnerability Assessment	2012 National Climate Change Vulnerability Scoping Study Climate Change Impacts on Biodiversity in Ireland (2013) Climate change Impacts on Phenology in Ireland(2013) COCOADAPT (2013) 2013 HydroDetect Project Robust Adaptation to Climate Change in the Water Sector in Ireland (2013) Ensemble of Regional Climate Projections for Ireland(2015) Urb-ADAPT Sectoral Adaptation Plan for Flood Risk Management (OPW, 2015) Adaptation Planning - Developing Resilience to Climate Change in the Irish Agriculture and Forest Sector (DAFM, 2017) Adaptation Planning - Developing Resilience to Climate Change in the Irish Transport Sector (DTTAS, 2017) Adaptation Plan for the Electricity and Gas Networks Sector (DCCAE, 2017)
Research Programs	EPA Research Programme (Climate Pillar)	http://www.epa.ie
Climate services / Met Office	Established	http://www.met.ie
Web Portal	Established	http://www.climateireland.ie
Monitoring, Indicators, Methodologies	In development	
Training, Education	Ongoing / in development	http://www.climateireland.ie

Regulation / Control of Greenhouse Gas Emissions

Ireland is a party to both the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, which together provide an international legal framework for addressing climate change.

In December 2015, an ambitious new legally binding, global agreement on climate change was agreed in Paris. The Paris Agreement aims to restrict global temperature rise to well below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C. It aims to increase global ability to adapt to the adverse impacts of climate change and to foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten sustainable food production. It also seeks to achieve a balance between anthropogenic emissions by sources, and removals by sinks, of greenhouse gases in the second half of this century.

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The first Irish National Mitigation Plan[5] represents an initial step to set us on a pathway to achieve the level of decarbonisation required. It is a whole-of-Government Plan, reflecting in particular the central roles of the key Ministers responsible for the sectors covered by the Plan – Electricity Generation, the Built Environment, Transport and Agriculture, as well as drawing on the perspectives and responsibilities of a range of other Government Departments.

The measures that will be implemented through the plan will lay foundations for transitioning Ireland to a low carbon, climate resilient and environmentally sustainable economy by 2050. To support this ongoing work, the Plan also includes over 100 individual actions for various Ministers and public bodies to take forward.

Emissions reduction measures and actions set out in this National Mitigation Plan are aligned with and build upon commitments made in the 2015 Energy White Paper. This paper will be guided by the following strategic objectives :

- policy will contribute to reductions in Ireland's greenhouse gas emissions and enhancement of sinks in a manner that achieves the optimum benefits at least cost;
- a stable and predictable policy and regulatory framework will be underpinned by rigorous analysis and appraisal, supported by strong research and analytical capacity;
- the Government will pursue investment, innovation and enterprise opportunities towards building a competitive, low carbon, climate-resilient and environmentally sustainable economy; and
- the citizen and communities will be at the centre of the transition.

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Paris Agreement

The Paris Agreement which entered into force on 4 November 2016 aims to tackle 95% of global emissions through 188 Nationally Determined Contributions (NDCs) which will increase in ambition over time. Ireland's contribution to the Paris Agreement will be via the NDC tabled by the EU on behalf of its Member States. This is a binding target for an overall reduction of at least 40% in greenhouse gas emissions by 2030 (relative to 1990 levels). The target will be delivered by the EU by 2030 through reductions in the Emissions Trading Scheme (ETS) and non-ETS sectors of 43% and 30% respectively (relative to 2005).

Kyoto Protocol (2008 – 2012)

The EPA has overall responsibility for the national greenhouse gas inventory in Ireland's national system, which was established in 2007 under Article 5 of the Kyoto Protocol[6]. The EPA's OCLR[7] performs the role of inventory agency in Ireland and undertakes all aspects of inventory preparation and management as well as the reporting of Ireland's submissions annually in accordance with the requirements of Decision 280/2004/EC and the UNFCCC.

Ireland currently accounts for GHG emissions under the Kyoto Protocol. The Kyoto Protocol required Ireland to limit total national greenhouse gas emissions to 314.2 Mtonnes of CO_{2eq} over the five-year period 2008 – 2012 which is equivalent to 62.8 Mtonnes of CO_{2eq} per annum. The Kyoto Protocol limit is calculated as 13% above Ireland's 1990 baseline value which was established and fixed at 55.61Mtonnes of CO_{2eq} following an in-depth review of Ireland's 2006 greenhouse gas inventory submission to the UNFCCC.[8]

[5] https://www.dccae.gov.ie/en-ie/climate-action/topics/national-mitigation-plan/Pages/default.aspx

[6] http://unfccc.int/kyoto_protocol/items/2830.php

[7] http://www.epa.ie/mobile/about/org/oclr/

[8] http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/nc6_br1_ire.pdf

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EU 2021-2030 Targets for non-ETS sector emissions- Effort Sharing Regulations[9]

Under the EU Commission's Climate and Energy Package, sectors of the economy not covered by the EU ETS must reduce emissions by 30% by 2030 compared to 2005 as their contribution to the overall target.

The non-ETS sectors cover those sectors that are outside the EU Emissions Trading Scheme and includes agriculture, transport, built environment (residential, commercial/institutional), waste and non-energy intensive industry.

2015 Energy White Paper

The White Paper on Energy Policy, Ireland's Transition to a Low Carbon Energy Future 2015-2030, published in 2015, sets out a framework to guide energy policy in the period to 2030. The White Paper recognises that a radical transformation of our energy system is required to meet our national, EU and international climate objectives and sets a course for an energy sector where the State will provide the supports that enable consumers to become active energy citizens. It posits a policy approach where our energy system will change from one that is almost exclusively led by Government and utilities to one where individuals and communities are agents of change in the way Ireland generates, transmits, stores, conserves and uses energy. It sets out a vision, a framework and over 90 actions for Irish energy policy up to 2030 as we transition to a low carbon society and economy by 2050.

Future Management of Flood Risk

The Catchment Flood Risk Assessment and Management (CFRAM) Programme[10] (see www.cfram.ie) is the mechanism established to facilitate future adaptation to climate change. It provides for long-term flood risk management in Ireland and the embedment of flood risk assessment in the future development of capital projects. The future scenario flood maps produced under the CFRAM Programme will facilitate this approach, inform other industrial sectors, and provide a valuable resource for local adaptation planning and sustainable land use management and planning.

EIA Directive 2014/52/EU

Directive 2014/52/EU[11] of the European parliament and of the Council of 16 April 2014, amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment had to be transposed into national law by 16 May 2017, necessitating changes in laws, regulations, and administrative provisions across a number of legislative codes.

Key changes introduced in the 2014 Directive (in Annex IV - Information referred to in Article 5(1) – Information for the Environmental Impact Assessment Report) and the national transposing regulations (the European Union (Planning and Development)(Environmental Impact Assessment) Regulations, S.I. No. 296 of 2018) include a requirement for information on the impact of a project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change to be provided in the Environmental Impact Assessment Report.

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[9] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32018R0842

[10] https://www.cfram.ie/

[11] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0052

Published Guidelines

Guidance on Integrating Climate Change and Biodiversity into EIA (EC, 2012)[12]

EU Guidelines provide recommendations on how to integrate climate change and biodiversity in Environmental Impact Assessment (EIA). The need for action on climate change and biodiversity loss is recognised across Europe and around the world. The guidelines include an explanation as to why climate change and biodiversity are so important in EIA, present the relevant EU-level policy background, provide advice on how to integrate climate change and biodiversity into selected stages of the EIA process. The annexes provide sources of further reading and links to other relevant information, data, and tools.

Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2017)[13]

IEMA Guidance provides information to assist practitioners with addressing greenhouse gas (GHG) emissions assessment and mitigation in statutory and non-statutory Environmental Impact Assessment (EIA). It complements IEMA's earlier guide on Climate Change Resilience and Adaptation and builds on the Climate Change Mitigation and EIA overarching principles. The requirement to consider this topic has resulted from the 2014 amendment to the EIA Directive.

Climate Change and Major Projects (EC, 2016)[14]

This publication provides guidance for assessing vulnerability and risk from Climate Change for major projects funded by the European Regional Development Fund (ERDF) and the Cohesion Fund and listed in the concerned operational programmes.

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Sectoral Planning Guidelines for Climate Change Adaptation[15]

The guidelines aim to ensure that a coherent and consistent approach to adaptation planning is adopted by the key sectors in Ireland. Sectors preparing sectoral adaptation plans under the NAF are required to prepare their plans in line with the process described in these guidelines while also being aware of the overall requirements regarding the development of sectoral adaptation plans.

Local Authority Adaptation Strategy Development Guidelines[16]

Guidance was produced to provide a consistent and coherent process for local authorities in helping them develop local adaptation strategies and contain information on the process of developing an adaptation strategy :

- provide background information on what adaptation entails and provides the rationale behind implementing a local scale adaptation strategy;
- outline the initial steps required in launching a strategy development process, describing key roles and who can fulfil them, and setting out important factors to consider in the early stages of strategy development;
- explains how to assess the role that weather extremes and periods of climate variability currently play within the local jurisdiction, and it describes why doing so is a fundamental element of working towards a more climate-resilient future;

[12] http://ec.europa.eu/environment/eia/pdf/EIA%20Guidance.pdf

[13] https://www.iema.net/policy/ghg-in-eia-2017.pdf

[14] https://ec.europa.eu/clima/sites/clima/files/docs/major_projects_en.pdf

[15] https://www.dccae.gov.ie/en-ie/climate-action/topics/adapting-to-climate-change/national-adaptation-framework/Pages/Sectoral.aspx

[16] https://www.dccae.gov.ie/en-ie/climate-action/topics/adapting-to-climate-change/national-adaptation-framework/Pages/Localadaptation.aspx

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- moves from the present to the identification of future climate risks, describing a staged risk assessment process and positioning the adaptation strategy within more detailed risk assessments undertaken during shorter term decision-making processes such as statutory plan-making;
- on the basis of the risk assessment process undertaken determination of adaptation goals and objectives and the types of adaptation actions that are available and outlines how each might be identified, assessed, prioritised and implemented is described;
- outlines the steps required to move from a phase of planning to one of implementation, and it explains the importance of monitoring and evaluation in ensuring that the strategy is achieving its anticipated adaptation objectives.

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APPENDIX 9-B

DEVELOPMENT VULNERABILITY ASSESSMENT METHODOLOGY

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DEVELOPMENT VULNERABILITY ASSESSMENT METHODOLOGY

The scale for assessing the likelihood of a climate hazard is presented in Table 9B-1. The output of the likelihood analysis is an estimation of the likelihood for each of the essential climate variables and hazards.

Table 9B-1
Scale of Likelihood of Climate Hazard

TERM	QUALITATIVE	QUANTITATIVE
Rare	Highly unlikely to occur	5%
Unlikely	Unlikely to occur	20%
Moderate	As likely to Occur	50%
Likely	Likely to Occur	80%
Almost certain	Very likely to occur	95%

The scale for assessing the potential impact of a climate hazard is presented in Table 9B-2. The impact analysis provides an assessment of the potential impact of each of the essential climate variables and hazards.

Table 9B-2
Example Table for Climate Hazard Impact Analysis

RISK AREAS	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC
Asset damage, engineering, operational					
Safety and Health					
Environment					
Social					
Financial					
Reputation					

The matrix for assessing the sensitivity of project to climate hazards is presented in Table 9B-3. The sensitivity is summarised, along with the ranking of the relevant climate variables and hazards relating to the project.

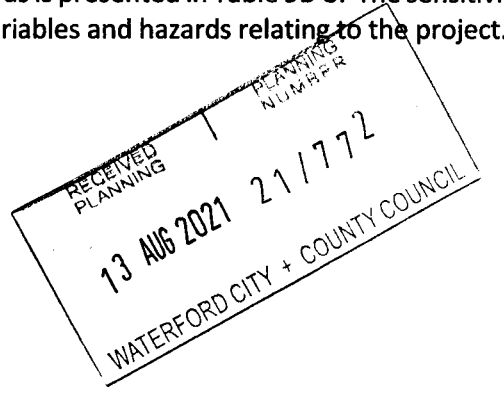

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Table 9B-3
Example Table for Sensitivity of Project to Climate Hazards

	Extreme rainfall, flood , flash flood	Heath	Drought	Wildlife Fires	Storms and winds	Landslides	Cold Spells and snow	Freeze –thaw damage	Rising sea levels
On site assets									
Inputs - Water									
Inputs - Energy									
Outputs - product									
Transport links									

The matrix for assessing exposure of a project to climate hazards is presented in Table 9B-4. The exposure analysis ranks climate variables and hazards as low, medium or high based on current and future climate.

Table 9B-4
Example Table of Exposure of the Project to Climate Hazards

	Extreme rainfall, flood , flash flood	Heat	Drought	Wildlife Fires	Storms and winds	Landslides	Cold Spells and snow	Freeze –thaw damage	Rising sea levels
Current Climate									
Future Climate									

An example of the vulnerability of a project to climate hazards is presented in Table 9B-5. The vulnerability combines the sensitivity and the exposure analysis.

Table 9B- 5
Example Table for Vulnerability Analysis of Project to Climate Hazards

SENSITIVITY	EXPOSURE (CURRENT & FUTURE CLIMATE)		
	Low	Medium	High
Low			
Medium			
High			

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APPENDIX 9-C

DEVELOPMENT VULNERABILITY ASSESSMENT

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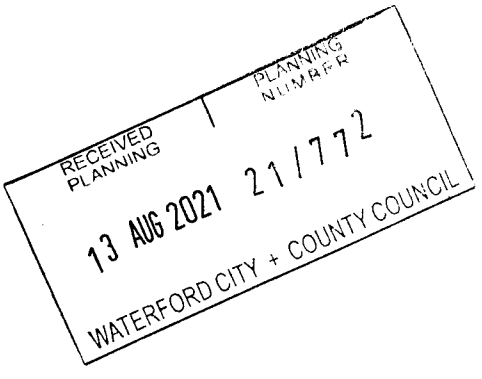

DEVELOPMENT VULNERABILITY ASSESSMENT

The likelihood analysis of the proposed development to climate hazards is presented in Table 9C-1.

The proposed development has been assessed to be moderate affected by extreme rainfall, flash (pluvial) flood, storms and winds. The proposed development would be unlikely affected to cold spells, landslides and snow. The proposed development would not be affected by heat, drought, wildlife fires and freeze – thaw damage. The proposed development will not be affected by rising sea level.

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Table 9C-1
Analysis of Likelihood of Climate Hazards

	Extreme rainfall, flash flood	Flood	Heat	Drought	Wildlife Fires	Storms and winds	Landslides	Cold Spells and snow	Freeze –thaw damage	Rising sea levels
Rare		✓	✓	✓	✓				✓	✓
Unlikely							✓	✓		
Moderate	✓					✓				
Likely										
Almost certain										

Table 9C-2 shows the climate hazard impact analysis of the proposed development. It was assessed that climate hazards will have major impacts on health and safety, the environment and financial areas, moderate impacts on asset damage and engineering, operational, social and reputation areas.

Table 9C-2
Climate Hazard Impact Analysis

RISK AREAS	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC
Asset damage, engineering, operational			✓		
Safety and Health				✓	
Environment				✓	
Social			✓		
Financial				✓	
Reputation			✓		

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Table 9C-3 below assesses the sensitivity of the project to climate hazard. It was assessed that site assets, energy inputs and transport links are of high sensitivity to extreme rainfall, flood, flash floods, storms and winds; water inputs will be highly sensitive to droughts. On site assets will be medium sensitive to cold spells and snow and freeze – thaw damage. Transport links will be medium sensitive to cold spells and snow.

Table 9C-3
Sensitivity of Project to Climate Hazards

	Extreme rainfall, flash flood	Flood	Heath	Drought	Wildlife Fires	Storms and winds	Landslides	Cold Spells and snow	Freeze –thaw damage	Rising sea levels
On site Assets	High	Low	Low	Low	Low	High	Low	Medium	Medium	Low
Inputs - Water	Low	Low	Low	High	Low	Low	Low	Low	Low	Low
Inputs - Energy	High	Low	Low	Low	Low	High	Low	Low	Low	Low
Transport Links	High	Low	Low	Low	Low	High	Low	Medium	Low	Low

In Table 9C-4, the exposure of the planned development to climate hazards was assessed. In the current climate, the exposure of the development to extreme rainfall, flood, flash flood, storms and winds has been assessed to be medium. In the future, the development was assessed to have high exposure to rainfall, flash flood, storms, and winds.

Table 9C 4
Exposure of the Development to Climate Hazards without Mitigation

	Extreme rainfall, flash flood	Flood	Heat	Drought	Wildlife Fires	Storms and Winds	Landslides	Cold Spells and Snow	Freeze –thaw damage	Rising sea levels
Current Climate	Medium	Low	Low	Low	Low	Medium	Low	Low	Low	Low
Future Climate	High	Low	Low	Low	Low	High	Low	Low	Low	Low

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Table 9C-5 shows the vulnerability analysis of the project to climate hazards; it combines the sensitivity and the exposure analysis. The project was assessed to be most sensitive to extreme rainfall, flash flood, storms, and winds.

Table 9C-5
Vulnerability Analysis of Project to Climate Hazards

SENSITIVITY	EXPOSURE (CURRENT & FUTURE CLIMATE)		
	Low	Medium	High
Low	Rising sea levels, Flood, Landslides, Freeze –thaw damage, Drought, Heat, Wildlife Fires		
Medium		Cold Spells and Snow	
High			Extreme Rainfall, Flash Flood, Storms and Winds

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Appendix 10-B Noise Assessment

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INTRODUCTION

Background

10.1 This Chapter of the Environmental Impact Assessment Report (EIAR), prepared by SLR Consulting Ireland, addresses the potential noise and vibration effects of the planned development of a satellite quarry on lands to the east of Cappagh Quarry, Co. Waterford and the construction and operation of a new concrete batching plant in front of the northern face of the existing quarry.

10.2 Cappagh Quarry is located in the townlands of Ballykennedy and Kilgreany, approximately 8km west of the town of Dungarvan. The proposed satellite quarry is almost entirely located in the adjoining townland of Canty to the east, with only a relatively small area (in the north-western corner) located within Kilgreany townland. The satellite quarry will be separated from the existing quarry by a local access passageway, which will be retained.

10.3 The development, within an overall application site area of 18.2 hectares (50.1 acres) comprises:

- development of a satellite quarry immediately to the east of Cappagh Quarry (previously permitted under Planning Permission 06/1599 and An Bord Pleanála PL 24.225443) and the local access passageway which delineates its eastern boundary. The satellite quarry will extend to 13.6 hectares (33.6 acres), of which approximately 9.7 hectares (24.0 acres) will be extracted;
- construction of a 40m long sub-surface reinforced concrete tunnel underpass (with internal cross-section measuring 6m wide by 5.5m high) under the existing local access passageway (previously permitted under Planning Permission 920/97) to connect the existing quarry to the proposed satellite quarry at quarry floor level;
- stripping of overburden soils at the satellite quarry for use in construction of environmental bunds and ongoing site restoration works and subsequent excavation of a single quarry bench in limestone bedrock using mechanical excavation and blasting techniques. The proposed quarry faces will vary in height from approximately 8m to 20m and the quarry floor will not extend below 10mOD or into the underlying groundwater body (consistent with Condition 2 of the existing quarry planning permission);
- processing (crushing and screening) of excavated rock to produce aggregates;
- demolition of an existing derelict house in the north-western corner of the proposed satellite quarry, removal of existing internal hedgerows, construction of new perimeter fence and installation of access gates leading from the local access passageway to a perimeter track running above and around the satellite quarry;
- temporary diversion of a section of the existing local access passageway to facilitate construction and installation of the proposed tunnel underpass and re-instatement of the access passageway above it thereafter;
- provision of a temporary access gate and ramp at the existing quarry to facilitate the temporary haulage of materials to and from the satellite quarry and across the existing passageway until the proposed tunnel underpass is in place;
- demolition of concrete supports for former crushing plant;
- construction and operation of a new concrete batching facility (which comprises 4 No. cement silos, batching / mixing unit, aggregate storage bins, an aggregate loading hopper and connecting conveyor systems), all on a concrete paved area on the existing quarry floor,in front of the northern quarry face;
- provision of a batching control office and admixture storage shed;

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- construction of a closed loop concrete recycling facility, comprising a concrete truck wash out area, settlement lagoons and 70,000 litre water storage / recycling tank immediately behind (north of) the concrete batching plant;
- construction of an aggregate storage hardstanding area (covering approximately 1 hectare) immediately to the east of the proposed concrete batching plant;
- continued use of established site infrastructure in service of the proposed satellite quarry and new concrete batching plant;
- removal and replanting of the existing boundary hedge, re-alignment of the boundary wall and demolition / removal of an existing structure to the east of the existing quarry access junction in order to provide enhanced sightlines for traffic egressing the quarry;
- implementation of a progressive restoration scheme (in phases) in tandem with extraction Further information on the proposed development, site activities, environmental management systems and controls at the application sites are provided in the Chapter 2 of this EIA Report.

10.4 When fully operational, the proposed development will have a maximum annual output of c. 400,000 of tonnes per year, from all combined existing and future extraction, processing and added value activities. This is consistent with the maximum output levels permitted by the current quarry planning permission.

10.5 Allowing for periodic variations in demand, it is anticipated that, based on the projected maximum output levels, that the proposed development(s) at the application site will generate a combined ***maximum*** of 100 HGV return trips per day (equivalent to 100 HGV movements inward and 100 HGV movements outward per day). The development will also generate some light vehicular traffic, principally by employees and visitors travelling to and from the quarry.

10.6 The noise impact assessment presented herein describes and assesses the existing noise baseline characteristics of the local area. The anticipated effects of the proposed satellite quarry development and concrete production activities are then applied to these baseline conditions and the resulting noise impacts assessed. Mitigation measures are identified where necessary to eliminate or minimise adverse impacts, insofar as practical.

10.7 An operational vibration assessment has also been undertaken and is largely informed by previous experience gained in undertaking blasts at the existing quarry and by ground-borne vibrations, measured / recorded at properties in close proximity to the quarry.

10.8 In order to assist the understanding of acoustic terminology and the relative change in noise, a glossary of terms and phrases, which specifically relate to this Chapter of the EIAR, is provided in Appendix 10-A.

Scope of Work

10.9 The following sections of this EIAR Chapter describe the potential noise impacts associated with the proposed development. The following issues are addressed separately:

- regulatory control framework for noise and vibration
- methodology used to assess potential impacts from activities at properties (dwellings and farms) and sensitive ecological receptors;
- baseline conditions pertaining to existing background / ambient noise levels around the site;
- existing vibration levels;
- noise and vibrations impact evaluation criteria;
- prediction of the noise and vibrations levels and identification of potential impacts;

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- assessment of severity of impacts, with reference to the evaluation criteria;
- description of mitigation measures that will be incorporated into the design and operation of the scheme to eliminate or minimise the potential for noise and vibrations impact;
- a summary of any residual impacts; and
- monitoring proposals.

Consultations / Consultees

10.10 In the course of preparing this Environmental Impact Assessment Report, a pre-planning consultation meeting was held outdoors at the application site on 19th May 2021 between the local area planner for Waterford City and County Council and representatives of SLR Consulting Ireland and Roadstone Limited (Meeting Ref. No. PQ202191).

10.11 At the meeting, details of the proposed development were outlined and several issues of interest or concern to the Planning Authority were identified and discussed, including the potential impact of environmental emissions on neighbouring residents and property.

10.12 As part of a formal pre-planning consultation process, a number of relevant prescribed bodies and consultees, including the local Environmental Health Officer, were contacted by SLR Consulting Ireland by email and post in early March 2021. Each was provided with a summary report and preliminary drawings in respect of the development and invited to provide feedback, particularly on issues which were of concern to them or which they considered should be addressed by an EIA Report. Details of the consultation are presented in Chapter 1 of this EIAR.

10.13 Following a review of published development plans and a site survey, it was considered that there was no requirement for any further formal external consultations to be carried out in respect of noise and vibration for the purposes of this assessment. There was however significant consultation with other specialist contributors to this EIA Report.

Contributors / Author(s)

10.14 The air quality impact assessment presented in this Chapter was prepared by SLR Consulting Ireland. The lead consultant for the study was Aldona Binchy MSc. Eng PIEMA Environmental Engineering.

Limitations / Difficulties Encountered

10.15 This assessment is compiled on the basis of published guidance documents, and site-specific field surveys. No difficulties were encountered in compiling the required information.

REGULATORY CONTROL FRAMEWORK : NOISE

10.16 The following sections address the statutory planning / policy requirements and regulatory control of noise and vibration generated by development activity. Currently, there is no national or regional legislation which specifically addresses noise and vibration generated by mineral extraction and production of aggregates and construction materials. However, there are a number of guidance documents that are relevant in the context of both noise and vibration action planning.

Planning Policy and Development Control

10.17 The National Planning Framework (NPF) 2040 (published in February 2018) is a national planning framework for Ireland. The framework provides the policies for all regional and local plans. In the framework, the extractive industries are recognised as important for the supply of aggregates and construction materials to a variety of sectors.

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10.18 National Planning Framework Objective 65 addresses noise related impact of development and identifies a requirement for Planning Authorities to :

"Promote the pro-active management of noise where it is likely to have significant adverse impacts on health and quality of life and support the aims of the Environmental Noise Regulations through national planning guidance and Noise Action Plans."

10.19 There are no specific policies in relation to noise emissions in NPF for mineral extraction or production of construction aggregates and materials. The stated general development objective is to facilitate the development while at the same time protect the environment.

Local Planning Policy - Waterford County Development Plan 2011-2017

10.20 The current Waterford County Development Plan which was adopted in 2011 has been extended and remains in force. The plan contains general guidance for noise impacts to be addressed under existing legislation. Specifically, Noise Pollution Objective ENV 13 states :

"It is the objective of the Council to prevent public noise and light nuisance through the regulation of industrial, construction and commercial activities".

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Quarries and Ancillary Activities

10.21 The EPA publication *Environmental Management Guidelines for Environmental Management in the Extractive Industry (Non-Scheduled Minerals)*[1].recommends the following in respect of noise:

In relation to quarry developments and ancillary activities, it is recommended that noise from the activities on site shall not exceed the following noise ELVs at the nearest noise-sensitive receptor:

Daytime : 08:00–20:00 h L_{Aeq} (1h) = 55 dBA

Night-time : 20:00–08:00 h L_{Aeq} (1h) = 45 dBA

Note: 95% of all noise levels shall comply with the specified limit value(s). No noise level shall exceed the limit value by more than 2 dBA.)

10.22 The DoEHLG (2004) Guidelines for Planning Authorities (*Quarries and Ancillary Activities: Guidelines for Planning Authorities*[2]) recommends similar limit values.

Site Specific Emission Limits for Noise

10.23 Condition No. 5 of Pl Ref No. PD 06/1599 and ABP PL24.225443 imposes the following condition:

(1) During the operational phase of the proposed development, the noise level from within the premises, measured at noise sensitive locations in the vicinity, shall not exceed –

(a) an $LA_{eq,T}$ value of 55 dB(A) during the period 0800 to 2000 hours from Monday to Friday (inclusive), and during the period 0800 to 1400 hours on Saturdays.

(b) an $LA_{eq,T}$ value of 45 dB(A) at any other time.

(2) All sound measurements shall be carried out in accordance with ISO Recommendations R 1996, "Assessment of Noise with Respect to Community Response" as amended by ISO Recommendations R 1996/1, 2 and 3, "Description and Measurement of Environmental Noise", as appropriate.

Reason: To protect the amenities of properties in the vicinity of the site.

[1] https://www.epa.ie/pubs/advice/general/EPA_management_extractive_industry.pdf
[2] https://www.epa.ie/pubs/advice/general/EPA_management_extractive_industry.pdf

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Guidelines for Noise Impact Assessment (IEMA)

10.24 The *Guidelines for Noise Impact Assessment* produced by the Institute of Environmental Management and Assessment (IEMA) are generally recognised as established good practice standards for scope, content, and methodology of noise impact assessment.

10.25 These guidelines address the key principles of noise impact assessment and are applicable to all development proposals where noise effects are likely to occur. These guidelines state that for any assessment, the noise level threshold and significance should be determined by the assessor, based upon the specific evidence and likely subjective response to noise. An example impact scale offered by the IEMA guidelines is shown in Table 10-1.

Table 10-1
Example Impact Scale from the Change in Sound Levels (IEMA)

Long-Term Impact Classification	Short-Term Impact Classification	Sound Level Change dB L_{pAeqT} (+ive or -ive) T = either 16hr day or 8hr night
Negligible	Negligible	≥ 0 dB and < 1 dB
	Minor	≥ 1 dB and < 3 dB
Minor	Moderate	≥ 3.0 dB and < 5 dB
Moderate	Major	≥ 5.0 dB and < 10 dB
Major		≥ 10.0

10.26 The criteria above reflect the key benchmarks that relate to human perception of sound. A change of 3dB is generally considered to be the smallest change in environmental noise that is perceptible to the human ear under most normal conditions. A 10dB change in noise represents a doubling or halving of noise level. The difference between minimum perceptible change and doubling or halving of the noise level is split to provide greater definition to the assessment of changes in noise level

10.27 To determine the overall noise impact, the magnitude and sensitivity Noise Effects Descriptors are presented in Table 10-2.

Table 10- 2
Noise Effects Descriptors (IEMA)

Very Substantial	Greater than 10 dB L_{Aeq} change in sound level perceived at a highly sensitive noise receptor
Substantial	Greater than 5 dB L_{Aeq} change in sound level at a noise-sensitive receptor, or a 5 to 9.9 dB L_{Aeq} change in sound level at a highly sensitive noise receptor
Moderate	A 3 to 4.9 dB L_{Aeq} change in a sound level at a sensitive or highly sensitive noise receptor, or a greater than 5 dB L_{Aeq} change in sound level at a receptor of some sensitivity
Slight	A 3 to 4.9 dB L_{Aeq} change in a sound level at a receptor of some sensitivity
None / Not Significant	Less than 2.9 dB L_{Aeq} change in sound level and/or all receptors of negligible sensitivity to noise or marginal to the zone of the influence of the proposed development

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10.28 As recognised in the IEMA guidance, there are however many factors which affect people's perception and their responses to noise. Guidance on assessment of the magnitude of noise impact and the significance of the effects are presented in Table 10-3.

Table 10- 3
Relationship between Noise Impact, Effect and Significance (IEMA)

Magnitude (Nature of Impact)		Description of Effect (on a Specific Sensitive Receptor)	Significance
Substantial	Beneficial	Receptor Perception = Marked Change Causes a material change in behaviour and/ or attitude, e.g. individuals begin to engage in activities previously avoided due to preceding environmental noise conditions. Quality of life enhanced due to change in character of the area.	More Likely to be Significant (Greater justification needed- based on impact magnitude and receptor sensitivities- to justify a non-significant effect) ↕ (Greater justification needed- based on impact magnitude and receptor sensitivities- to justify a significant effect) Less Likely to be Significant
Moderate		Receptor Perception = Noticeable Improvement Improved noise climate resulting in small change in behaviour and/or attitude, e.g. turning down volume of television; speaking more quietly; opening windows. Affects the character of the area such that there is a perceived change in the quality of life.	
Slight		Receptor Perception = Just Noticeable Improvement Noise impact can be heard, but does not result in any change in behaviour or attitude. Can slightly affect character of the area but not such that there is a perceived change in quality of life.	
Negligible		N/A = no discernible effect on receptor	Not Significant
Slight	Adverse	Receptor Perception = Non-intrusive Noise impact can be heard, but does not cause change in behaviour or attitude, e.g. turning up volume of television, speaking more loudly; closing windows. Can slightly affect the character of the area but not such that there is a perceived change in the quality of life.	Less Likely to be Significant Greater justification needed- based on impact magnitude and receptor sensitivities- to justify a significant effect) ↕ Greater justification needed- based on impact magnitude and receptor sensitivities- to justify a non-significant effect) More Likely to be Significant
Moderate		Receptor Perception = Intrusive Noise impact can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; closing windows. Potential for non-waking sleep disturbance. Affects the character of area such that there is a perceived change in the quality of life.	
Substantial		Receptor perception = Disruptive Causes material change in behaviour and /or attitude, e.g. avoiding certain activities during periods of intrusion. Potential for sleep disturbance resulting in getting to sleep, premature awakening, and difficulty in getting back to sleep. Quality of life diminished due to change in character of area.	
Severe		Receptor Perception = Physically Harmful Significant Changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or psychological effects, e.g. regular sleep deprivation / awakening ; loss of appetite, significant , medically definable harm, e.g. auditory and non-auditory.	Significant

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British Standard 5228: 2009+A1:2014

10.29 British Standard 5228-1:2009+A:2014 *Noise and Vibration Control on Construction and Open Sites, Part 1: Noise* (BS5228) sets out a methodology for predicting noise levels arising from a wide variety of construction and related activities. It can be used to predict noise levels arising from construction and operational stage activities at extraction sites, including associated earthmoving / restoration operations. BS5228 also sets out tables of sound power levels generated by a wide variety of mobile equipment.

10.30 Noise levels generated by site operations and experienced at local receptors will depend upon a number of variables, the most significant of which are:

- the amount of noise generated by plant and equipment being used at the development site, generally expressed as a sound power level;
- the periods of operation of the plant at the development site, known as the "on-time";
- the distance between the noise source and the receptor, known as the "stand-off";
- the attenuation due to ground absorption or barrier screening effects; and
- any reflections of noise due to the presence of hard vertical faces (ie. walls).

Design Manual for Roads and Bridges

10.31 The Design Manual for Roads and Bridges DMRB (LA 111) considers the following criterion to understand the need for further assessment:

is the project likely cause change in the baseline noise levels of 1dB $L_{A10,18hr}$ in the do -minimum year compared to do- something opening year;

is the project likely cause change in the baseline noise levels of 3 dB $L_{A10,18hr}$ in the do – something future year compared to do- minimum opening year;

does the project involve construction of new road links within 600m of noise sensitive receptors;

would there be a reasonable stakeholder's expectation that an assessment is undertaken.

AQTAG09 - Guidance on Effects of Industrial Noise on Wildlife

10.32 AQTAG09 (Air Quality Technical Advisory Group 09) guidance provides guidance to assist planning and/or licensing officials handling pollution prevention and control applications for industrial installations on relevant noise emissions and relates these to the requirements of the Habitats Regulations.

10.33 The Habitats Directive (92/43/EEC) specifies that, where specific noise from industry, measured at the habitat / nest site is below the levels in Table 10-4, it is considered unlikely that it will have an adverse impact on designated species. Where noise levels are exceeded, a more detailed noise assessment will be required.

Table 10- 4
Specific Noise Levels at Habitat / Nest Site

Parameter	Noise Level, dB
$L_{Amax,F}$	80
$L_{Aeq,1hr}$	55

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Noise and Human Health

10.34 Environmental noise exposure response relationships and thresholds for health endpoints for industry are not available at European or Irish level in legislation or guidelines.

WHO Environmental Noise Guidelines

10.35 World Health Organisation (WHO) Europe have produced the WHO Environmental Noise Guidelines 2018 for the European Region as a regional update to the WHO Community Noise Guidelines. The Guidelines include a review of evidence on the health effects of environmental noise to incorporate significant research carried out in recent years. The guidelines provide recommendation for protecting human health from exposure to environmental noise from various sources. The guidelines assess several environmental noise sources such as aircraft, rail, road, wind turbines and leisure noise.

10.36 EU Directive 2002/49/EC on the assessment and management of environmental noise introduced annual average indicators of noise exposure (L_{den} and L_{night}) as long-term exposure indicators, which differ from those used in the earlier WHO Guidelines for Community Noise (1999).

REGULATORY CONTROL FRAMEWORK : VIBRATION

10.37 There is currently no legislation regulating or controlling ground-borne vibration from rock basting and extractive activity more generally. A number of guidance documents which are relevant in the context of vibration action planning for the proposed development are referenced below.

Quarries and Ancillary Activities

10.38 The EPA publication *Environmental Management Guidelines for Environmental Management in the Extractive Industry (Non-Scheduled Minerals)*[3] recommends the following limit values for ground-borne vibrations and air overpressure:

Ground-borne vibration

Peak particle velocity = 12 mm per second, measured in any of the three mutually orthogonal directions at the receiving location (for vibration with a frequency of less than 40 hertz).

Air overpressure

125 dB (Linear maximum peak value), with a 95 % confidence limit. Any blasting will be restricted to normal hours (e.g. 11:00 -17:00 hrs Monday to Friday). Advance notification of blasting will be provided to nearby residents within 600m through use of written notes, signage at site entrance, telephone, or warning sirens or a combination of these methods.

10.39 The DoEHLG (2004) Guidelines for Planning Authorities (*Quarries and Ancillary Activities: Guidelines for Planning Authorities*[4]) recommends similar limit values.

British Standard 7385-2:1993

10.40 British Standard 7385-2:1993 *Evaluation and Measurement for Vibration in Buildings – Part 2: Guide to Damage Levels from Ground-borne Vibration* gives guidance on vibration limits to prevent building damage. It is applicable to blasting associated with rock extraction.

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[3] https://www.epa.ie/pubs/advice/general/EPA_management_extractive_industry.pdf
[4] https://www.epa.ie/pubs/advice/general/EPA_management_extractive_industry.pdf

10.41 The damage threshold criteria provided in BS7385 are based on systematic studies using a carefully controlled vibration source in the vicinity of buildings. Vibration limits for transient vibrations (such as those associated with blasting operations), above which cosmetic damage could occur, are indicated in Table 10-5 below.

Table 10- 5
Transient Vibration Guide Values for Cosmetic Damage

TYPE OF BUILDING	PPV (mm/sec) 4 TO 15 Hz	PPV (mm/sec) 15 Hz AND ABOVE
Reinforced or framed structures Industrial and heavy commercial buildings	50 mm/sec	50 mm/sec
Unreinforced or light framed structures Residential or light commercial buildings.	15 mm/sec at 4Hz increasing to 20 mm/sec at 15 Hz	20 mm/sec at 15Hz increasing to 50 mm/sec at 40 Hz and above.

10.42 The definition of "cosmetic damage" is the formation of hairline cracks or the growth of existing cracks in plaster, dry wall surfaces, or mortar joints. BS7385-2 notes that the probability of damage tends towards zero at a peak component particle velocity of 12.5mm/sec.

Site Specific Emission Limits for Vibration

10.43 Condition No. 7 of Pl Ref No. PD 06/1599 and ABP PL24.225443 imposes the following condition

Vibration levels from blasting shall not exceed a peak particle velocity of 12 millimetres per second, measured in any three mutually orthogonal directions at any sensitive location. The peak particle velocity relates to low frequency vibration of less than 40 hertz where blasting occurs no more than once in seven continuous days. Where blasting operations are more frequent, peak particle velocity limit is reduced to eight millimetres per second. Blasting shall not give rise to air overpressure values at sensitive locations which are in excess of 125 d(B) (Linear) maximum peak with a 95% confidence limit. No individual air overpressure value shall exceed the limit value by more than 5 dB (Linear).

Reason: In the interest of residential amenity.

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Study Area

10.44 The proposed development is located at Cappagh Quarry, approximately 8 km west of Dungarvan and 13km east of Lismore, Co. Waterford, in the townlands of Ballykennedy, Kilgreany and Canty. The application site is located south of the N72 National Secondary Route which runs between Dungarvan and Cappoquin.

10.45 Traffic / HGVs to and from the quarry development will predominantly travel via the N72, the L2019 Local Road which runs south to Whitechurch Crossroads and the L2018 which runs east up to the existing quarry entrance. Some will also travel via the R671 Regional Road (from Youghal) and the L2019 Local Road up to Whitechurch Crossroads. The existing quarry access was permitted under previous planning permission and will continue to be used for the purposes of the proposed development, albeit with some modifications to achieve improves sightlines.

10.46 The lands surrounding the application site predominantly comprise farm fields. The application site is not subject to any statutory or non-statutory nature conservation designations. Dwellings in the vicinity of application site are generally located along the local road network and generally comprise farmsteads and isolated one-off properties, with occasional small residential clusters. The nearest dwellings to the application site boundary are shown in Figure 10-1.

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Baseline Study Methodology : Noise

10.47 Environmental noise surveys were carried outby SLR Consulting Ireland to capture typical background noise levels at the noise-sensitive receptors closest to the application site. The methodology of the surveys and the results are set out below. The weather conditions during the survey periods were acceptable for noise monitoring, being generally dry with little or no wind.

10.48 The baseline noise measurements were taken using a Type 1 sound level meter (Larson Davis 831 SLM). The sound level meter was calibrated before the measurements, and its calibration checked after by the operator. No calibration drifts were found to have occurred during surveys. All noise equipment had been calibrated to a traceable standard by UKAS (United Kingdom Accreditation Service) accredited laboratories within 12 months preceding the surveys.

10.49 At the measurement positions, the following noise level indices were recorded:

- $LA_{eq,T}$ is the A-weighted equivalent continuous noise level over the measurement period, and effectively represents an "average" value.
- $LA_{90,T}$ is the A-weighted noise level exceeded for 90% of the measurement period. This parameter is often used to describe the background noise.
- $LA_{10,T}$ is the A-weighted noise level exceeded for 10% of the measurement period. This parameter is often used to describe traffic noise.

10.50 Environmental baseline noise surveys were undertaken by SLR staff at the nearest noise sensitive receptors to the application site on 10th April 2019 and repeated on the 4th and 5th of November 2020. The weather conditions were favourable, with no winds (<2m/s), between 80% and 100% cloud cover and temperatures of between 7°C - 10°C. Noise measurements were undertaken over four, non-consecutive, 15-minute intervals during the designated daytime period (07:00 to 19:00). The monitoring periods selected are considered to give representative daytime noise levels at each noise sensitive location.

10.51 During the surveys, the sound level meter was located in free-field conditions (i.e. at least 3.5m from the nearest vertical reflecting surface, with the microphone approximately 1.5m above ground level).

10.52 All noise levels are recorded in 'A-weighted' decibels, dB(A). A-weighting is the process by which noise levels are corrected to account for the non-linear frequency response of the human ear. All noise levels are quoted in dB(A) relative to a sound pressure of 20 Pa.

Baseline Study : Vibrations

10.53 At the existing quarry, vibration monitoring is carried out at each blasting event. All monitoring results are routine recorded and filed as part of the Environmental Management System (EMS) which is in operation at the quarry.

10.54 During each blasting event at the existing quarry both Ground Vibration and Air Blast (Air Overpressure) are monitored at a minimum at one sensitive location (i.e. the location nearest to the blast).

Sources of Information

10.55 A desk study was carried out to gather all relevant information relating to noise conditions around the application site. Further information was gathered through a site visit and technical assessments consistent with current standard methodologies and published best practice guidelines. This yielded the data required to allow an assessment of likely significant effects of the proposed development on sensitive receptors within its zone of influence.

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Field Survey / Monitoring : Noise

10.56 The noise monitoring locations identified for the purposes of the baseline noise survey are shown in Figure 10-1 and comprise the following:

- BN1 at residences closest to the north-eastern boundary, along the public road;
- BN2 at the residences closest to south-eastern boundary, along the public road;
- BN3 at a residence closest to south – western boundary, along the public road;
- BN4 at a residence closest to north – western boundary, along the public road.

10.57 Noise monitoring results for the baseline survey on are provided in Table 10-6; logarithmic average ambient (L_{Aeq}) values are provided in Table 10-7 below.

10.58 The following observations are made in respect of the baseline noise monitoring undertaken around the application site:

Measured baseline noise levels at monitoring point BN1 were mainly dominated by road traffic noise on the adjacent local road (farm machinery), natural noises were audible when other noise abated;

Measured baseline noise levels at BN2 were mainly dominated by road traffic noise on the adjacent local road (farm machinery), natural noises were audible when traffic abated.

Measured baseline noise levels at BN3 were mainly dominated by road traffic noise on the adjacent local road, natural noises were audible when traffic abated.

Measured baseline noise levels at BN4 were mainly dominated by road traffic noise on the adjacent local road, natural noises were audible when traffic abated.

10.59 The November 2020 measurements were undertaken when rock breaking was carried out inside the quarry.

Table 10- 6
Summary of Measured Noise Levels, Free Field dB

DATE	TIME	LOCATION	$L_{AEQ,T}$(dB)	$L_{A10,T}$(dB)	$L_{A90,T}$(dB)
10/04/2019	09:36 - 09:51	BN1	60.8	51.7	35.0
10/04/2019	11:18 - 11:34	BN1	58.1	44.4	33.1
10/04/2019	12:19 - 12:34	BN1	60.1	49.5	34.2
10/04/2019	13:20 - 13:35	BN1	56.4	47.9	33.5
04/11/2020	11:56 - 12:11	BN1	55	45	32
04/11/2020	13:51 - 14:06	BN1	55	45	33
05/11/2020	08:07 - 08:22	BN1	54	53	38
05/11/2020	11:08-11:23	BN1	52	43	31
10/04/2019	10:00 - 10:15	BN2	49.3	44.4	35.3
10/04/2019	10:38 - 10:53	BN2	53.6	46.6	36.4
10/04/2019	11:42 - 11:57	BN2	56.4	57.0	39.2
10/04/2019	12:40 - 12:55	BN2	47.0	48.1	38.8
04/11/2020	13:21 – 13:36	BN2	56	58	30

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DATE	TIME	LOCATION	$L_{AEQ,T}$(dB)	$L_{A10,T}$(dB)	$L_{A90,T}$(dB)
04/11/2020	15:08 - 15:23	BN2	49	43	32
05/11/2020	09:29 – 09:44	BN2	46	42	35
05/11/2020	10:18 – 10:33	BN2	49	43	33
10/04/2019	10:20 - 10:35	BN3	47.0	48.8	36.8
10/04/2019	10:58 - 11:13	BN3	44.1	44.7	35.3
10/04/2019	11:59 - 12:14	BN3	51.3	45.8	35.3
10/04/2019	12:58 - 13:13	BN3	55.4	44.5	34.7
04/11/2020	12:55 - 13:10	BN3	45	45	36
04/11/2020	14:46 – 15:01	BN3	49	45	37
05/11/2020	09:01 - 09:16	BN3	42	44	39
05/11/2020	09:56 – 10:11	BN3	48	41	35
04/11/2020	12:24 – 12:39	BN4	50	46	36
04/11/2020	14:21 – 14:36	BN4	58	47	36
05/11/2020	08:31 - 08:46	BN4	55	50	40
05/11/2020	10:46 – 11:01	BN4	54	45	34

10.60 The ambient and background noise levels (L_{Aeq}) reported in Table 10-6 above include a continuous noise contribution from ongoing activities in and around Cappagh Quarry. Comparison of ambient noise levels with periodic or intermittent noise (L_{A10}) indicates that the averaged ambient noise levels are strongly influenced by intermittent passing traffic along the local road network.

10.61 Table 10-7 below identifies the closest receptors affected by noise emissions from activities at the application site, clustered according to nearest noise monitoring location.

Table 10- 7
Summary of Measured Noise Levels, Free Field dB (Average Values)

LOCATION	RECEPTORS EFFECTED	PERIOD	$L_{AeqAVGE}$
BN1	R14, R15, R16,R17,R18	Daytime	57.3
BN2	R25, R26, R27, R28, R29, R30, R31	Daytime	52.4
BN3	R32, R33, R34, R35, R37	Daytime	49.7
BN4	R4, R5,	Daytime	55.1

Field Monitoring : Vibration

10.62 Historical blasting operations at the Cappagh Quarry have been monitored at neighbouring residences by the Applicant's in-house blasting and shot firing team. The blast monitoring locations are shown on Figure 10-1 and are described as follows:

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- V1 (on request) Located south of the existing quarry footprint and west of proposed satellite quarry area.
- V2 Located north-west of the existing quarry footprint.
- V3 (on request) Located south-east of the existing quarry.
- V4 (on request) Located within the application site boundary, in the north-east corner.
- V5 (on request) Located towards the southern end of the application site.
- V6 (on request) Located within Applicant's property boundary.

Blast monitoring results for Cappagh Quarry are provided in Table 10-8 .

Table 10- 8
Blast Monitoring Results

DATE	LOCATION OF SEISMOGRAPH	DISTANCE (m)	AIR OVERPRESSURE dB(L)	PEAK PARTICLE VELOCITY (mm/sec)		
				TRANS	VERT	LONG
09-Apr-10	V1	195	123	4.1	3.5	3.5
09-Apr-10	V3	232	116	1.2	1.8	2.5
24-Jun-10	V1	194	120			
24-Jun-10	V5	295	Monitor did not trigger			
17-Oct-11	V1	261	120	1.3	2.5	2
2012	-	-	No blasts took place during 2012			
22-Jan-13	V2	335	116	1.3	1.5	0.9
03-Apr-13	V2	273	125	2.5	1.9	1.3
01-Aug-13	V1	232	122	1.2	1.4	1.7
04-Sep-14	V1	151	119	1.9	2.5	2.7
11-Sep-14	V1	495	117	0.6	0.8	0.6
03-Feb-15	V1	462	123	0.6	1	0.9
03-Feb-15	V3	778	122	0.6	0.4	0.7
28-Apr-15	V1	143	120	1.7	2.4	3.7
28-Apr-15	V3	412	110	1.1	0.8	1.2
12-May-15	V1	425	122	0.6	1.1	1.2
12-May-15	V3	756	121	0.5	0.3	0.7
23-Oct-15	V1	153	111.5	0.365	0.54	0.54
23-Oct-15	V3	481	Monitor did not trigger			
30-Oct-15	V1	455	111.8	0.508	0.889	0.635
30-Oct-15	V3	788	109	0.3	0.3	0.52
26-May-16	V1	470	Monitor did not trigger			
26-May-16	V3	806	120	0.6	0.4	0.5
01-Jun-16	V1	140	111	0.51	0.64	0.51
01-Jun-16	V3	485	Monitor did not trigger			

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DATE	LOCATION OF SEISMOGRAPH	DISTANCE (m)	AIR OVERPRESSURE dB(L)	PEAK PARTICLE VELOCITY (mm/sec)		
				TRANS	VERT	LONG
16-Jun-16	V1	188	116	1.17	0.92	1.6
16-Jun-16	V3	294	118	1.39	1.42	1.16
29-Sep-16	V1	457	114.9	0.567	0.733	0.567
29-Sep-16	V3	796	113	0.55	0.32	0.51
06-Oct-16	V1	148	118.7	2.128	0.938	2.853
06-Oct-16	V3	448	114	1.08	0.7	2.38
26-May-17	V1	175	116.6	2.168	1.45	1.332
26-May-17	V3	297	115.3	0.828	0.638	1.364
2018	-	No blasts took place during 2018				
2019	-	No blasts took place during 2019				
21-Aug-20	V1	157	<88	4.209	2.39	3.035
21-Aug-20	V3	541	Monitor did not trigger			

10.63 All the vibrations levels recorded are within recognised threshold and planning compliance limits.

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Sensitive Receptors

Human Receptors

10.64 Sensitive locations are those where people may be exposed to noise from the existing or planned activities. The closest receptors to the application site have been identified and assessed on the basis of their distance from the application site boundary. This is a cautious approach, as noise generating activities are often located at greater distances within the site. The relevant receptors are listed in Table 10-7 and their locations are shown in Figure 10-1.

10.65 There are 17 sensitive receptors identified within the study area of the application site. A list of the closest sensitive receptors in each direction surrounding the site and their distance from the site boundary at its closest point are outlined in Table 10-9 below.

Table 10- 9
Noise Sensitive Receptors

RECEPTOR REFERENCE	RECEPTOR	SENSITIVITY	DISTANCE (m) FROM EXTRACTION BOUNDARY	DISTANCE (m) FROM CONCRETE PLANT BOUNDARY	DISTANCE (m) FROM TUNNEL CONSTRUCTION
R04	Residential	Medium	1130	730	1320
R05	Residential	Medium	1070	665	1230
R14	Residential	Medium	150	750	445
R15	Residential	Medium	245	586	535
R16	Residential	Medium	270	622	545
R17	Residential	Medium	320	676	580
R18	Residential	Medium	480	840	745

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RECEPTOR REFERENCE	RECEPTOR	SENSITIVITY	DISTANCE (m) FROM EXTRACTION BOUNDARY	DISTANCE (m) FROM CONCRETE PLANT BOUNDARY	DISTANCE (m) FROM TUNNEL CONSTRUCTION
R25	Residential	Medium	500	1065	745
R26	Residential	Medium	400	970	640
R27	Residential	Medium	370	928	590
R28	Residential	Medium	265	815	445
R29	Residential	Medium	210	755	390
R30	Residential	Medium	230	700	345
R31	Residential	Medium	240	634	360
R32	Residential	Medium	300	449	345*
R33	Residential	Medium	355	330	355*
R34	Residential	Medium	450	413	460*

** with allowance for HGV traffic movement at closer distance at passageway crossing / ramp*

Ecological Receptors

10.66 The application site is not subject to any statutory nature conservation designation. There is one Natura 2000 site designated under the EU Habitats Directive (92/43/EEC) located within a 2km radius of the application site, identified in Table 10-10 below.

Table 10- 10
Natura 2000 or Designated Site(s) within a 2km of Application Site

NATURA 2000 SITE	SITE CODE	LOCATION AT CLOSEST POINT TO APPLICATION SITE (m)
Blackwater River (Cork/Waterford) SAC	002170	1300

10.67 Based on the nature, size and scale of the planned development, it is considered that the maximum distance for which the project should be evaluated in terms of Natura 2000 or designated nature sites is up to a maximum radius of 2km unless there are any potential source-pathway-receptor links between the proposed development at Cappagh and any Natura 2000 or designated site(s) beyond this distance. At a distance greater than 2km, and in the absence of any potential source-pathway-receptor link, it is generally considered that no Natura 2000 or designated sites would be affected by any direct loss of habitat or otherwise impacted upon.

10.68 At a distance of 1300m from the application site, at its closest point, the Blackwater River SAC lies within the potential zone of influence of the proposed development at Cappagh Quarry and as such, it is therefore deemed appropriate to screen it in as part of this noise assessment.

NOISE IMPACT ASSESSMENT

10.69 To determine the noise impact generated by the proposed satellite quarry development and concrete production activities, SLR Consulting Ireland carried out a noise prediction assessment, whereby the levels of noise were calculated at the nearest noise sensitive receptors (residences), as identified in Figure 10-1.

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10.70 Operational noise rating ($L_{Ar, 1hr}$) predictions at each receptor location are based on the methodology set out in BS5228: Part 1 (2009)+ A1:2014 *"Code of Practice for Noise and Vibration Control on Construction and Open Sites"*

10.71 For the purposes of this impact assessment, no reduction has been applied for noise screening around the application site during the site preparatory works including soil stripping, perimeter berm construction, concrete plant construction and some quarry restoration activities.

10.72 A noise reduction of -10dB(A) has been adopted for partial noise screening by perimeter screening banks around the application site in assessing noise impacts for tunnel construction.

10.73 A noise reduction of -20dB(A) has been adopted for full noise screening by existing quarry faces and existing / proposed perimeter berms around the application site in assessing noise impacts for rock extraction, processing and concrete production activities during the operational phase. In all likelihood, greater noise attenuation will be provided by the high quarry faces and proposed vegetation planting, and the actual noise reduction will be greater.

10.74 For the purposes of the assessment, it is assumed that all potential operational noise sources are active and arise continuously and simultaneously during assessment hours and that the attenuation distance to the selected receptors is calculated from the extraction site boundary (as indicated in Figure 10-1) and from the noise source.

10.75 On the basis of the methodology outlined above, it is considered that the noise impact assessment presented herein is sufficiently robust and conservative and represents a worst-case scenario. Detailed noise assessment calculations are provided in Appendix 10-B.

10.76 The EPA (2006) Environmental Management Guidelines for Quarries and Ancillary Activities and the DoEHLG (2004) Guidelines for Planning Authorities both recommend a noise emission limit, applied to the nearest noise-sensitive receptors, of 55dB $L_{Aeq, 1hr}$ during daytime working hours (defined as 07:00 to 18:00 hours). A limit of 70dB $L_{Aeq, 1hr}$ is permitted for periods of up to eight weeks in any working year at nearby noise sensitive receptors to facilitate ant necessary construction or temporary site works.

10.77 As set out in Annex D of the updated Environmental Noise Standard, ISO 1996-2:2007(E), a prominent, discrete tonal component may be detected in one-third octave spectra if the level of a one-third octave band exceeds the level of the adjacent bands by some constant level difference (the appropriate level difference varies according to frequency and is greater at lower frequencies).

10.78 The noise characteristics of the plant and equipment which will be deployed in extraction and production activities at Cappagh and considered by this noise assessment are shown in Table 10-11 below.

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Table 10- 11
Noise Sources

PLANT	OCTAVE BAND SOUND PRESSURE LEVELS @ 10m, Hz								L_{AEQ} @ 10m
	63	125	250	500	1k	2k	4k	8k	
EXCAVATOR	72	71	74	73	69	66	63	58	75
MOBILE SCREENER	93	86	79	78	75	71	69	62	81
MOBILE CRUSHER	93	86	79	81	75	71	66	59	82
LOADING SHOVEL	84	88	81	74	74	71	66	65	80
HGV	80	76	73	70	69	66	63	58	74
CONCRETE PLANT	83	74	66	69	70	78	60	55	80
ROCK BREAKER	79	75	73	74	77	77	75	70	83

10.79 Other than the rock breaker, the plant and equipment used at the quarry will not generate impulsive or tonal noise. For all items of plant except the rock breaker, no penalty was therefore applied to the predicted operational $L_{Ar,\ 1hr}$ noise level for presence of tonal or impulsive elements or for prediction of resultant noise level at each receptor.

10.80 A penalty of +5dB(A) was applied in respect of the tonal noise associated with rock breaking activities at the quarry. Rock breaking is only required occasionally at the quarry to reduce larger ('oversize') blocks of rock which have not been adequately fragmented in blasting and cannot therefore be fed directly to the crushing plant. For noise assessment purposes, it is conservatively assumed that a breaker operates at the quarry for one half day per week (ie. one tenth of the overall operational time at the quarry).

Noise Prediction – Construction Stage

10.81 The noise prediction / assessment was undertaken to calculate the level of noise generated by proposed site activities at the nearest sensitive receptors, shown on Figure 10-1. Detailed noise assessment calculations are provided in Appendix 10-B.

Soil Stripping, Berms Construction and Restoration

10.82 The following noise sources have been considered in the noise assessment for the initial site operations, during the preparatory / construction stage works which will include activities such as soil stripping, perimeter berm construction, construction of the concrete plant and some quarry restoration activities

- Excavator;
- HGV.

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10.83 For the purposes of the noise assessment, it is assumed that an excavator will be used continuously to carry out the soil stripping / earthworks, with one HGV in attendance on-site at all times. Resultant noise levels at nearest receptors are shown in Table 10-12 below.

Table 10- 12
Soil Stripping, Berms Construction and Restoration Noise Levels: Cappagh Quarry

RECEPTOR	PERIOD	NOISE LIMIT $L_{AEQ, 1HR}$ dB(A)	OPERATIONAL $L_{AEQ, 1HR}$ dB(A)*	DIFFERENCE
R04	Daytime	70.0	39	-31
R05	Daytime	70.0	40	-30
R14	Daytime	70.0	57	-13
R15	Daytime	70.0	53	-17
R16	Daytime	70.0	52	-18
R17	Daytime	70.0	50	-20
R18	Daytime	70.0	47	-23
R25	Daytime	70.0	47	-23
R26	Daytime	70.0	48	-22
R27	Daytime	70.0	49	-21
R28	Daytime	70.0	52	-18
R29	Daytime	70.0	54	-16
R30	Daytime	70.0	53	-17
R31	Daytime	70.0	53	-17
R32	Daytime	70.0	51	-19
R33	Daytime	70.0	50	-20
R34	Daytime	70.0	47	-23

10.84 It can be seen from the results in Table 10-12 above that the noise criterion limits for the short-term preparatory / construction works (70dB(A)) are complied with at all sensitive locations assessed.

Rock Excavation / Tunnel Construction

10.85 The following noise sources have been considered in undertaking the noise assessment for the initial rock excavation and tunnel construction activities for the proposed development:

- Excavator;
- Rock Breaker;
- Mobile Crusher;
- Mobile Screener;
- Front End Loader;
- HGV;
- Concrete Plant.

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10.86 The resultant $L_{Ar,\ 1hr}$ noise prediction for each receptor location is presented in Table 10-13 below. Table 10-13 also shows the comparison between the predicted operational $L_{Ar,\ 1hr}$ noise level and a more onerous noise limit of 55dB(A) adopted at each receptor.

Table 10- 13
Rock Excavation / Tunnel Construction Noise Levels: Cappagh Quarry

RECEPTOR	PERIOD	NOISE LIMIT $L_{AEQ,\ 1HR}$ dB(A)	OPERATIONAL $L_{AEQ,\ 1HR}$ dB(A)*	DIFFERENCE
R04	Daytime	55.0	45	-10
R05	Daytime	55.0	45	-10
R14	Daytime	55.0	52	-3
R15	Daytime	55.0	51	-4
R16	Daytime	55.0	51	-4
R17	Daytime	55.0	50	-5
R18	Daytime	55.0	48	-7
R25	Daytime	55.0	48	-7
R26	Daytime	55.0	49	-6
R27	Daytime	55.0	50	-5
R28	Daytime	55.0	52	-3
R29	Daytime	55.0	53	-2
R30	Daytime	55.0	54	-1
R31	Daytime	55.0	54	-1
R32	Daytime	55.0	55	0
R33	Daytime	55.0	55	0
R34	Daytime	55.0	53	-2

**Operational Noise Level = Predicted Noise Level with a 5 dB penalty*

10.87 It can be seen from the results in Table 10-13 above that the noise levels generated solely by proposed initial excavation and tunnel construction activities, even in a worst-case scenario, are generally at or below the prescribed noise limit at all nearby residential noise sensitive locations.

Noise Prediction - Operational Stage

10.88 The following noise sources have been considered in undertaking the noise assessment for the operational stage of the proposed development:

- Excavator;
- Rock Breaker;
- Mobile Crusher;
- Mobile Screener;
- Front End Loader;

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- HGV;
- Concrete Plant.

10.89 The operational $L_{Ar,\ 1hr}$ noise prediction for each receptor location is presented in Table 10-14 below. Table 10-14 also shows the comparison between the predicted operational $L_{Ar,\ 1hr}$ noise level and the prescribed noise limit of 55dB(A)at each receptor.

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Table 10- 14
Operational Noise Levels: Cappagh Quarry

RECEPTOR	PERIOD	NOISE LIMIT $L_{AEQ,\ 1HR}$ dB(A)	OPERATIONAL $L_{AEQ,\ 1HR}$ dB(A)*	DIFFERENCE
R04	Daytime	55.0	35	-20
R05	Daytime	55.0	36	-19
R14	Daytime	55.0	51	-4
R15	Daytime	55.0	47	-8
R16	Daytime	55.0	46	-9
R17	Daytime	55.0	45	-10
R18	Daytime	55.0	41	-14
R25	Daytime	55.0	41	-14
R26	Daytime	55.0	43	-12
R27	Daytime	55.0	43	-12
R28	Daytime	55.0	46	-9
R29	Daytime	55.0	48	-7
R30	Daytime	55.0	48	-7
R31	Daytime	55.0	47	-8
R32	Daytime	55.0	45	-10
R33	Daytime	55.0	45	-10
R34	Daytime	55.0	43	-12

**Operational Noise Level = Predicted Noise Level with a 5 dB penalty*

10.90 It can be seen from the results in Table 10-14 above that the noise levels generated solely by proposed extraction and concrete production activities, even in a worst-case scenario, are comfortably below the prescribed noise limit at all nearby residential noise sensitive locations.

10.91 To identify the potential impact of ongoing, continuous site activities, predicted specific $L_{Aeq,\ 1hr}$ dB(A) noise levels have been logarithmically added to existing ambient noise levels. The cumulative levels have been compared to the existing ambient noise levels at each of the noise sensitive locations for each time-period. The cumulative assessment is presented in Table 10-15 .

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Table 10- 15
Cumulative Operational Noise Levels: Cappagh Quarry

RECEPTOR	PERIOD	EXISTING BASELINE $L_{AEQ,T}$ dB(A)	OPERATIONAL $L_{AR,\ 1HR}$ dB(A)*	CUMULATIVE $L_{AEQ,T}$ dB(A)*	DIFFERENCE	SHORT TERM IMPACT	LONG TERM IMPACT
R04	Daytime	55.1	35	55.1	0	Negligible	Negligible
R05	Daytime	55.1	36	55.2	0	Negligible	Negligible
R14	Daytime	57.3	51	58.2	1	Minor	Negligible
R15	Daytime	57.3	47	57.7	0	Negligible	Negligible
R16	Daytime	57.3	46	57.6	0	Negligible	Negligible
R17	Daytime	57.3	45	57.5	0	Negligible	Negligible
R18	Daytime	57.3	41	57.4	0	Negligible	Negligible
R25	Daytime	52.4	41	52.7	0	Negligible	Negligible
R26	Daytime	52.4	43	52.8	0	Negligible	Negligible
R27	Daytime	52.4	43	52.9	1	Minor	Negligible
R28	Daytime	52.4	46	53.4	1	Minor	Negligible
R29	Daytime	52.4	48	53.8	1	Minor	Negligible
R30	Daytime	52.4	48	53.6	1	Minor	Negligible
R31	Daytime	52.4	47	53.6	1	Minor	Negligible
R32	Daytime	49.7	45	51.1	1	Minor	Negligible
R33	Daytime	49.7	45	50.9	1	Minor	Negligible
R34	Daytime	49.7	43	50.5	1	Minor	Negligible

10.92 With reference to the Guidelines for Noise Impact Assessment published by the Institute of Environmental Management and Assessment (IEMA), the cumulative long-term noise impact from the proposed development at all receptors, once it is established, is determined to be NEGLIGIBLE in a worst-case scenario. In the short term, impacts are assessed to be MINOR at receptors R14 and R27 to R34.

10.93 In view of the above findings, it is considered that mitigation measures to reduce the noise impacts of plant associated with the planned development are not strictly required to mitigate long term noise impacts arising at the application site. Notwithstanding this, and in line with accepted best practice, a number of measures will be implemented at the proposed quarry development to minimise the noise levels generated by site operations.

Ecological Receptors

10.94 As previously noted, Cappagh Quarry and the application site are not subject to any statutory nature conservation designation and the nearest designated nature site (River Blackwater SAC) is located at a distance of approximately 1 3km, at its closest point.

10.95 The operational $L_{Ar,\ 1hr}$ noise prediction for ecological receptor location is presented in Table 10-16 below. It also presents a comparison between the predicted operational $L_{Ar,\ 1hr}$ noise level and the prescribed noise limit for protection of wildlife.

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Table 10- 16
Operational Noise Levels at Ecological Receptors at Cappagh

RECEPTORS	PERIOD	NOISE LIMIT $L_{AEQ,\ 1HR}$ dB(A)	OPERATIONAL* $L_{AEQ,\ 1HR}$ dB(A)	DIFFERENCE
Blackwater River SAC	Daytime	55.0	33	-22.0

*Operational Noise Level = Predicted Noise Level without the 5 dB penalty

10.96 As can be seen, the noise criterion limits for protection of wildlife arising from the planned activities at Cappagh are comfortably met at the Blackwater Reiver SAC nearest .

Traffic

10.97 For the purposes of assessment, it is assumed that the total volume of traffic generated in the future by all extraction and production activities at Cappagh (including production of aggregates , concrete and ground lime) will not exceed a maximum of 100 round-trips (or a total of 200 HGV movements in or out of the quarry) per day. On most days, traffic levels will likely be less than this, it is estimated will average around 40 return trips (or 80 movements) per day.

10.98 In view of

- the existing permitted levels of quarry output and associated HGV traffic movements across the local road network;
- the reduction in total traffic levels from previously permitted levels which will apply over the life of the proposed development;

it is considered that the extent of any change and the likely impact of the satellite quarry development and concrete production activity can be deemed negligible in terms of traffic and that no further assessment is necessary.

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VIBRATION IMPACT ASSESSMENT

10.99 Rock extraction at Cappagh Quarry will be carried out by blasting and blasted rock materials will be removed for further processing (crushing) by mechanical excavators.

10.100 The duration of a blast in terms of noise is of short duration. Blasting-induced vibration is also of short duration and transient in nature. A typical blast comprises a number of drilled holes into which explosive charges are placed. The charged holes are detonated individually by use of detonators, each with a different micro-second delay.

10.101 The number of blasts carried out at the quarry over a defined period is ultimately dependent on demand for aggregates and other quarry products (including concrete). Drilling of holes for blasting will involve the use of a mobile rig to drill holes through the upper rock surface, parallel to the active / exposed quarry face. The extent and duration of drilling prior to each rock blast will vary with the number and depth of charge holes required. Drilling of holes will be carried out during permitted operational hours.

10.102 The closest vibration sensitive receptors (within 500m) to the blasting activities within the application area are identified in Table 10-17 overleaf. Attenuation of ground-borne vibration increases with distance such that vibration impacts reduce with increased distance from the blast site.

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Table 10- 17
Vibration Sensitive Receptors

RECEPTOR REFERENCE	RECEPTOR	DISTANCE (m) FROM EXTRACTION BOUNDARY
R04	Residential	1130
R05	Residential	1070
R14	Residential	150
R15	Residential	245
R16	Residential	270
R17	Residential	320
R18	Residential	480
R25	Residential	500
R26	Residential	400
R27	Residential	370
R28	Residential	265
R29	Residential	210
R30	Residential	230
R31	Residential	240
R32	Residential	300
R33	Residential	355
R34	Residential	450

Residences

10.103 The principal cause of complaints from blast-induced vibration is usually attributed to the fear of damage and/or nuisance rather than actual physical damage or nuisance itself. The human body is very sensitive to vibration and this can result in concerns being raised at vibration levels well below the threshold of cosmetic damage to buildings, or levels identified in planning conditions.

10.104 In general terms a person will become aware of blast-induced vibration at levels of around 0.3mm/second peak particle velocity (ppv). However, people are very poor at determining relative magnitudes of vibration, for example, the difference between 4.0mm/sec ppv and 6.0mm/sec ppv is unlikely to be distinguishable by an individual person. Even though vibration levels between 0.6 mm/sec ppv and 50.0 mm/sec ppv are routinely experienced in everyday life within a property and are considered wholly safe, when similar levels are experienced through blasting operations, it is not unusual for such levels to give rise to subjective concern.

10.105 Table 10-18 gives examples of vibration levels routinely generated with a conventional residential property.

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Table 10- 18
Vibration Levels Generated by Everyday Activities

ACTIVITY	VIBRATION LEVEL (PEAK PARTICLE VELOCITY, mm/sec)
Walking, measured on a wooden floor	1.0 to 2.5
Door slam, measured on a wooden floor	2.0 to 5.0
Door slam, measured over the doorway	12.0 to 35.0
Foot stamps, measured on a wooden floor	5.0 to 50.0

10.106 With regard to physical damage to properties, extensive research has been carried out around the world, the most prominent being undertaken by the United States Bureau of Mines (USBM). Damage to a structure could occur if the dynamic stresses induced in a structure exceeds the allowable design stress for the specific building material. Classifications of building damage range from very fine plaster cracking up to major cracking of structural elements.

10.107 When defining damage to buildings, the following classification is applied:

- Cosmetic – the formation of hairline cracks or the growth of existing cracks in plaster, dry wall surfaces, or mortar joints.
- Minor – the formation of large cracks or loosening or falling of plaster on dry wall surfaces, or cracks through bricks / concrete blocks.
- Major or Structural – damage to structural elements of the building

10.108 Studies by USBM concluded that vibration levels in excess of 50 mm/sec ppv are required to cause structural damage. It should be noted that this limit is set for worst-case structural conditions and that it is independent of the number of blasting events and their durations.

10.109 British Standard 7385-2:1993 *Evaluation and Measurement for Vibration in Buildings – Part 2: Guide to Damage Levels from Ground-borne Vibration* gives guidance on vibration limits to prevent building damage. It is applicable to blasting associated with mineral extraction. The damage threshold criteria provided in the standard are based on systematic studies using carefully controlled vibration sources in the vicinity of buildings. Vibration limits for transient vibrations (such as those associated with blasting operations), above which cosmetic damage could occur, are identified in Table 10-5 of this EIA Chapter. It notes that the probability of damage **tends towards zero** at a peak component particle velocity below 12.5mm/sec.

10.110 Historical blast monitoring results at Cappagh Quarry confirm that past blasting operations undertaken at the quarry have complied with the DoEHLG (2004) and EPA (2006) recommended threshold limit values both for ground-borne vibration (12 mm/sec peak particle velocity) and air overpressure (125 dBL Linear max peak with a 95% confidence limit).

10.111 The comprehensive environmental monitoring programme implemented at the quarry and the monitoring results presented previously in Table 10-8 confirms that it has always operated within the recommended blasting emission limit values set out in the best practice guidelines for the sector and by existing planning conditions.

10.112 Based on the above, it is concluded that any future blasting operations within the eastern satellite quarry area at Cappagh Quarry will not have a significant impact on any sensitive receptors.

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Ecological Receptors

10.113 The impact from blasting activities for ecological receptors largely comprises disturbance (including noise, vibration, and visual disturbance). Increases in human disturbance, including noise and visual disturbance from human activity, can have a range of impacts on an ecological receptor depending upon its sensitivity and the nature and duration of the disturbance and its timing.

10.114 The response of individual species to increased levels of human disturbance will depend upon several factors including the sensitivity, reproductive status, previous exposure to human disturbance, behaviour during the event, species tolerance to disturbance, location in relation to the source, availability of alternative nearby habitat, and environmental factors (i.e. topography, vegetation and atmospheric conditions which can influence noise levels). The level of disturbance will also be dependent upon the existing ambient noise levels and maximum noise levels.

10.115 Any future blasting operations at the eastern satellite quarry area will be undertaken subject to the emission limit values recommend by the EPA and DoEHLG guidance and set by existing planning conditions (maximum peak particle velocity of 12mm/sec and maximum air overpressure of 125dB with a 95% confidence limit). Ground borne vibration is likely to be limited in extent to the area immediately around the satellite quarry.

10.116 At a distance of 1300m west of the quarry at its closest point, the Blackwater River SAC is considered to be sufficiently distant that no changes in baseline disturbance levels are predicted to occur within its boundaries which would affect any of its Annex II qualifying species. It is noted that as the satellite quarry extends further eastwards, extraction activities will become further removed from the designated site. As a consequence, with no likely exposure to hazard, no effects are predicted on any qualifying Annex II species, or on the integrity of the Blackwater River SAC.

Farm Animals

10.117 The impact from blasting activities for farm livestock receptors would primarily consist of disturbance (including noise, vibration, and visual disturbance). At the present time, there is very limited research available in the field of farm animal response to blasting operations, specifically with regards changes or defects in social interactions or any potential influence on their wellbeing.

10.118 Quarry operator experience has found that cattle seem to be accommodating with regards to blasting operations. Where cattle reaction to a first-time blast fired in closed proximity, will be upsetting with immediate observable reactions showing fright and running a short distance – maybe 10m to 20m – before then reverting to grazing. On subsequent blasts, it is frequently observed that they will only lift their heads momentarily before resuming grazing. After several blasts, no specific reaction was shown most of the time.

10.119 On the basis of operator observed response therefore, changes in baseline disturbance levels as a result of the eastern satellite quarry development are predicted to be minimal at nearby livestock farms. The only notable change will be in the location of blasting within the satellite quarry area.

10.120 In blasting, the distance between blast source and receptors is a major operational consideration in reducing potential impacts. The greater the separation distance, the lesser the noise or air blast effect. Blast management planning can help to manage blast impacts on farm livestock located in any fields adjoining the proposed satellite quarry area.

10.121 Blast clearance areas established around each blast help to ensure that personnel / public and farm livestock are not injured by the blasting process. To establish clearance areas, advance notice of blasting is routinely provided to farms within 500m of the quarry to give them an opportunity to move farm livestock away from the blast location.

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10.122 As part of this development, Roadstone is also proposing to limit blasting activities at the satellite quarry area to between 11.00 hours and 15.00 hours Monday to Friday to ensure that it does not clash with milking times for local dairy herds (and thereby avoid any blast related stress which could be caused to livestock during milking).

10.123 With implementation of the blast managements plans, it is considered that farm livestock will have no likely exposure to hazard or undue stress and consequently no effects are predicted for any livestock on nearby farms.

Cumulative Impacts

10.124 In essence, cumulative impacts are those which result from incremental changes caused by other past, present or reasonably foreseeable actions together with those generated by the proposed development. Therefore, the potential impacts of the proposed development cannot be considered in isolation but must be considered in addition to impacts already arising from existing or planned development.

10.125 This noise impact assessment indicates that the planned satellite quarry development and concrete production activities will not contribute to a significant increase in noise levels within the surrounding environment nor will it give rise to any damaging ground-borne vibration.

10.126 A planning search undertaken to determine if there were any other planned developments in the vicinity of the application site did not identify any other potentially significant source of noise or ground-borne vibration, either approved or planned within 2km of the application site. As a result, no potential for significant cumulative impacts has been identified. The cumulative impact of the proposed development on local noise and vibration levels is therefore assessed as insignificant.

'Do-nothing Scenario'

10.127 At present, the noise environment within the study area is dominated by road traffic noise generated by cars and occasional HGV traffic along the local road network (some of it from existing operations at Cappagh Quarry). Some natural sounds such as farmyard animals or barking dogs are also audible.

10.128 Over time, it is anticipated that the volume of road traffic in general, will increase as economic activity increases and that this in turn is likely to lead to a gradual increase in ambient and background noise levels.

Interaction with Other Impacts

10.129 The potential impact of noise generated by the proposed development on sensitive receptors including local residents and sensitive ecological receptors has been assessed in this Chapter of the EIAR. The impact of the proposed development activity on these receptors is further considered in Chapter 4 'Population and Human Health' and Chapter 5 'Biodiversity'.

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MITIGATION MEASURES

Noise

10.130 Where necessary, the three established strategies for impact mitigation are avoidance, reduction and remedy. Where it is not possible or practical to mitigate all impacts, then the residual impacts must be clearly described in accordance with the system for impact description set out in the EPA Guidelines. The adoption of Best Practicable Means is generally considered to be the most effective means of controlling noise emissions.

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10.131 Notwithstanding the findings of the impact assessment presented above, which determined that the proposed development and activities at Cappagh Quarry will have negligible noise impact, and in line with best operating practice, the following measures will be implemented wherever practicable across the application site to minimise the potential noise impacts of on-site activities:

Screening :-

- screening berms will be constructed along the perimeter of the satellite quarry prior to commencement of extraction activities and will act as acoustic barriers to the closest residences;
- existing perimeter hedge planting will be retained along the boundary of the existing quarry;
- existing perimeter hedgerows around the satellite quarry will be retained and additional vegetation planting will be provided on perimeter berms to further enhance existing hedgerow screening effects. Additional screening will be provided by planting in the north-eastern corner of the satellite quarry – across a 0.6ha area which will not be extracted;
- screening berms will be inspected on a regular basis and maintained as necessary.

Plant :-

- all mobile crushing will take place on the quarry floor, behind newly exposed quarry faces
- where required, particularly at initial construction stage, mobile crushing will take place behind temporary stockpiles;
- all mobile plant used at the development will have noise emission levels that comply with the limiting levels defined in EC Directive 86/662/EEC and any subsequent amendments;
- all plant items will be properly and regularly maintained and operated according to the manufacturers' recommendations, in such a manner as to avoid causing excessive noise (i.e. all moving parts are kept well lubricated, all cutting edges are kept sharpened, the integrity of silencers and acoustic hoods are maintained);
- all plant will be fitted with effective exhaust silencers which are maintained in good working order to meet manufacturers' noise rating levels. Any defective silencers will be replaced immediately.

Traffic :-

- any deliveries to the quarry will be programmed to arrive during daytime hours only;
- care will be taken when unloading vehicles to reduce or minimise potential noise disturbance to local residents;
- access / internal haul roads will be kept clean and maintained in a good state of repair, i.e. any potholes are filled and large bumps removed, to avoid unwanted rattle and "body-slap" from heavy goods vehicles;
- vehicles waiting within the quarry will be prohibited from leaving their engines running and there will be no unnecessary revving of engines.

10.132 Experience from other sites has shown that by implementing these measures, ambient noise levels from site activities and operations can be reduced by up to 5dB(A).

Vibration

10.133 Historical blast monitoring results indicate that the air overpressure levels and the ground-borne vibration levels (i.e. measured peak particle velocity) complied with recognised DoEHLG (2004) / EPA (2006) limit values for the extractive sector.

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10.134 The blast design and blasting methodology for the site operations carried out at the quarry have, and will continue to be, optimised to ensure that any resulting ground borne vibration levels are comfortably within the prescribed limits.

- The following measures shall be implemented at the application site to minimise disturbances due to any future blasting operations. These mitigation measures are in accordance with the 'best practice / mitigation' measures described in Section 3.2 of the DoEHLG (2004) guidelines:
- Blasting will be restricted to between 11.00 hours and 15.00 hours Monday to Friday in order to ensure that it does not clash with milking times for local dairy herds;
- Blasting shall not be carried out on Saturdays, Sundays or public holidays;
- Notification of each blast shall be given in writing or by other means 48 hours in advance of each blast to all residences and farms within 500m radius of the quarry;
- Blast notifications shall be provided by pre-blast and post-blast siren warnings;
- All blasting operations shall be carried out by a certified 'shotfirer' in accordance with the relevant health and safety regulations;
- The optimum blast ratio shall be maintained, and the maximum instantaneous charge shall be optimised;
- The blast design and blasting methodology uses the monitoring results to optimise and ensure consistent blast designs;
- Blast clearance area shall be established for nearby farm livestock (depending on the location of the blast) with the support and co-operation of local farmers.
- Blast dates and time are scheduled and agreed between the quarry manager, blast engineer, explosives supervisor and Gardaí.

10.135 Efficient blasts use as much of the explosive energy as possible for rock fragmentation. By implication therefore, any energy dissipated through ground vibration and air overpressure is inefficient use of energy which would otherwise be used to fragment rock. It is therefore in the Applicant's economic interest to ensure that there is continual, ongoing optimisation of blast design to ensure efficient and effective blasting. The added benefit in optimising blast design is that it also minimises potential environmental impacts.

10.136 To avoid any risk of damage to properties in the vicinity of the application site, the ground-borne vibration levels from blasting will be limited to a peak particle velocity of 12mm/sec. To minimise impact on local residences a blasting protocol shall be implemented which will include best practice mitigation measures described in Section 3.2 of the DoEHLG (2004) guidelines. Regard will also be had to relevant Health and Safety guidance.

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RESIDUAL IMPACT ASSESSMENT

Noise

10.137 The worst-case scenario noise assessment has shown that in accordance with the scale in the Guidelines for Noise Impact Assessment produced by the Institute of Environmental Management and Assessment (IEMA), the cumulative noise impact from plant associated with the development at all receptors is NEGLIGIBLE.

10.138 Table 10-19 summarise the impacts, mitigation measures and residual impact for operational plant noise at each of the noise sensitive receptors considered by this assessment.

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Table 10- 19
Operational Noise Summary Table

RECEPTORS	INCREASE IN OPERATIONAL NOISE $L_{AEQ, 1HR}$ dB(A)	IMPACT WITHOUT MITIGATION MEASURES		MITIGATION	REDUCTION IN NOISE FROM MITIGATION $L_{AEQ, 1HR}$ dB(A)	INCREASE IN OPERATIONAL NOISE $L_{AEQ, 1HR}$dB(A)	RESIDUAL SHORT-TERM IMPACT	RESIDUAL LONG-TERM IMPACT
		SHORT TERM	LONG TERM					
R04	0	Negligible	Negligible	Not Required	-5	0	Negligible	Negligible
R05	0	Negligible	Negligible	Not Required	-5	0	Negligible	Negligible
R14	1	Minor	Negligible	Short term Required	-5	0	Negligible	Negligible
R15	0	Negligible	Negligible	Not Required	-5	0	Negligible	Negligible
R16	0	Negligible	Negligible	Not Required	-5	0	Negligible	Negligible
R17	0	Negligible	Negligible	Not Required	-5	0	Negligible	Negligible
R18	0	Negligible	Negligible	Not Required	-5	0	Negligible	Negligible
R25	0	Negligible	Negligible	Not Required	-5	0	Negligible	Negligible
R26	0	Negligible	Negligible	Not Required	-5	0	Negligible	Negligible
R27	1	Minor	Negligible	Short -term Required	-5	0	Negligible	Negligible
R28	1	Minor	Negligible	Short term Required	-5	0	Negligible	Negligible
R29	1	Minor	Negligible	Short term Required	-5	0	Negligible	Negligible
R30	1	Minor	Negligible	Short term Required	-5	0	Negligible	Negligible
R31	1	Minor	Negligible	Short term Required	-5	0	Negligible	Negligible
R32	1	Minor	Negligible	Short term Required	-5	0	Negligible	Negligible
R33	1	Minor	Negligible	Short term Required	-5	0	Negligible	Negligible
R34	1	Minor	Negligible	Short term Required	-5	0	Negligible	Negligible

Vibration

10.139 Based on the proven past performance at the quarry and available historical blasting results, it is concluded that blasting operations carried out within the application site will not have any residual impact on nearby sensitive receptors.

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MONITORING

10.140 Noise and vibration deposition monitoring will be undertaken at the application site for the duration of extraction activities at the proposed eastern satellite quarry (in accordance with EPA and DoEHLG guidelines).

10.141 Noise monitoring will be undertaken at six monitoring locations around the extended quarry footprint. These locations, designated N1 to N6, are shown in Figure 10-2. As can be seen, all except monitoring location N1, located to the north-west of the quarry along the public road, are located within the Roadstone property boundary.

10.142 All future blasts carried out at the quarry will be monitored to confirm vibration and air overpressure is within the acceptable range for extractive activities and comply with planning conditions. The vibration monitoring will be undertaken at four permanent locations around the extended quarry footprint (designated V1 to V4), as also indicated in Figure 10-2. Additional monitoring stations can also be established periodically off-site at adjoining residential properties at the request of their owners.

10.143 Noise and vibration monitoring locations shall be reviewed and revised where and as / when necessary. The results of the noise monitoring shall be submitted to Waterford City and County Council on a regular basis for review and record purposes.

10.144 Ground-borne vibration and air overpressure will be measured utilising portable seismographs, located at nearby residences (subject to the owner's agreement). Air overpressure will be measured utilising a calibrated microphone, incorporated into the seismograph. Each seismograph shall be calibrated in accordance with the manufacture's requirements.

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FIGURES

Figure 10-1
Noise Receptors and EIAR Monitoring Locations

Figure 10-2
Proposed Noise Monitoring Locations

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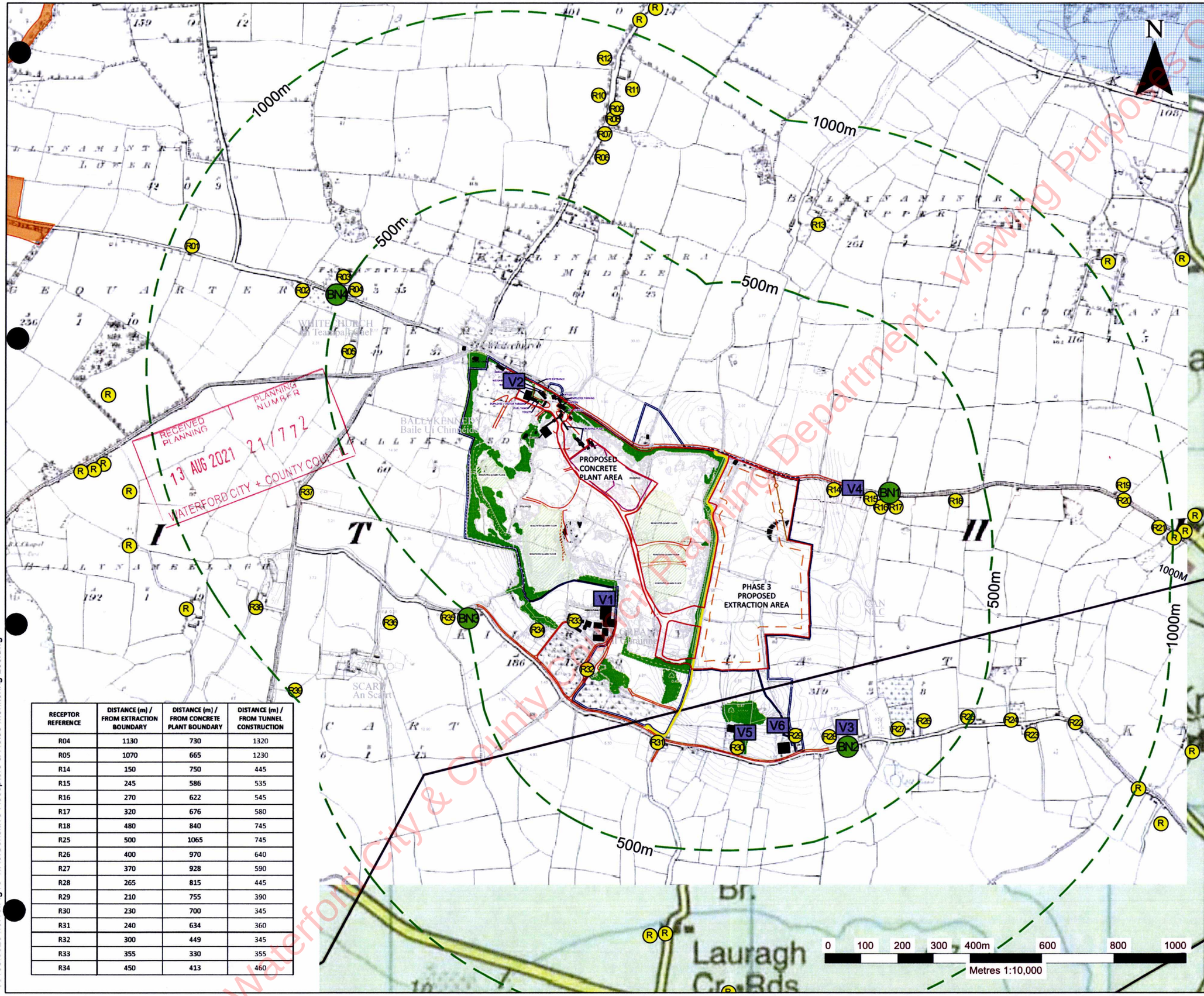

RECEPTOR REFERENCE	DISTANCE (m) / FROM EXTRACTION BOUNDARY	DISTANCE (m) / FROM CONCRETE PLANT BOUNDARY	DISTANCE (m) / FROM TUNNEL CONSTRUCTION
R04	1130	730	1320
R05	1070	665	1230
R14	150	750	445
R15	245	586	535
R16	270	622	545
R17	320	676	580
R18	480	840	745
R25	500	1065	745
R26	400	970	640
R27	370	928	590
R28	265	815	445
R29	210	755	390
R30	230	700	345
R31	240	634	360
R32	300	449	345
R33	355	330	355
R34	450	413	460

NOTES

1. VECTOR SURVEY EXTRACT FROM ORDNANCE SURVEY IRELAND

2. ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY IRELAND/GOVERNMENT OF IRELAND

3. SURVEY COMPLETED ON 2ND FEBRUARY 2018 BY ASM IRELAND AND UPDATED IN DECEMBER 2020.

LEGEND

- ROADSTONE LAND INTEREST (C. 58.9 HA)
- PLANNING APPLICATION AREA (C. 18.2 HA)
- PROPOSED EXTRACTION AREA (C. 9.7 HA)
- PROPOSED CONCRETE PLANT & AGGREGATE STORAGE AREA (C. 1.9 HA)
- EXISTING PASSAGEWAY
- EXISTING GROUND CONTOUR (mOD)
- BUILDINGS
- OVERHEAD TRANSMISSION LINES
- R — RESIDENCE LOCATIONS
- BN1 — BASELINE NOISE MONITORING LOCATIONS
- V4 — VIBRATION MONITORING LOCATIONS
- BLACKWATER RIVER SPECIAL AREAS OF CONSERVATION (SITE CODE 002170)
- 500M & 1000M OFFSET FROM PLANNING APPLICATION AREA

Roadstone

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ROADSTONE LTD.
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

EASTERN SATELLITE QUARRY AND NEW CONCRETE PLANT
CAPPAGH QUARRY, COUNTY WATERFORD

SENSITIVE RECEPTORS & EIAR NOISE SURVEY LOCATIONS

FIGURE 10-1

Scale: 1: 10,000 @ A3

Date: JULY 2021

00180.00264.0.16.Fig10-1.R0.Sensitive Receptors & Noise Monitoring Loc.dwg

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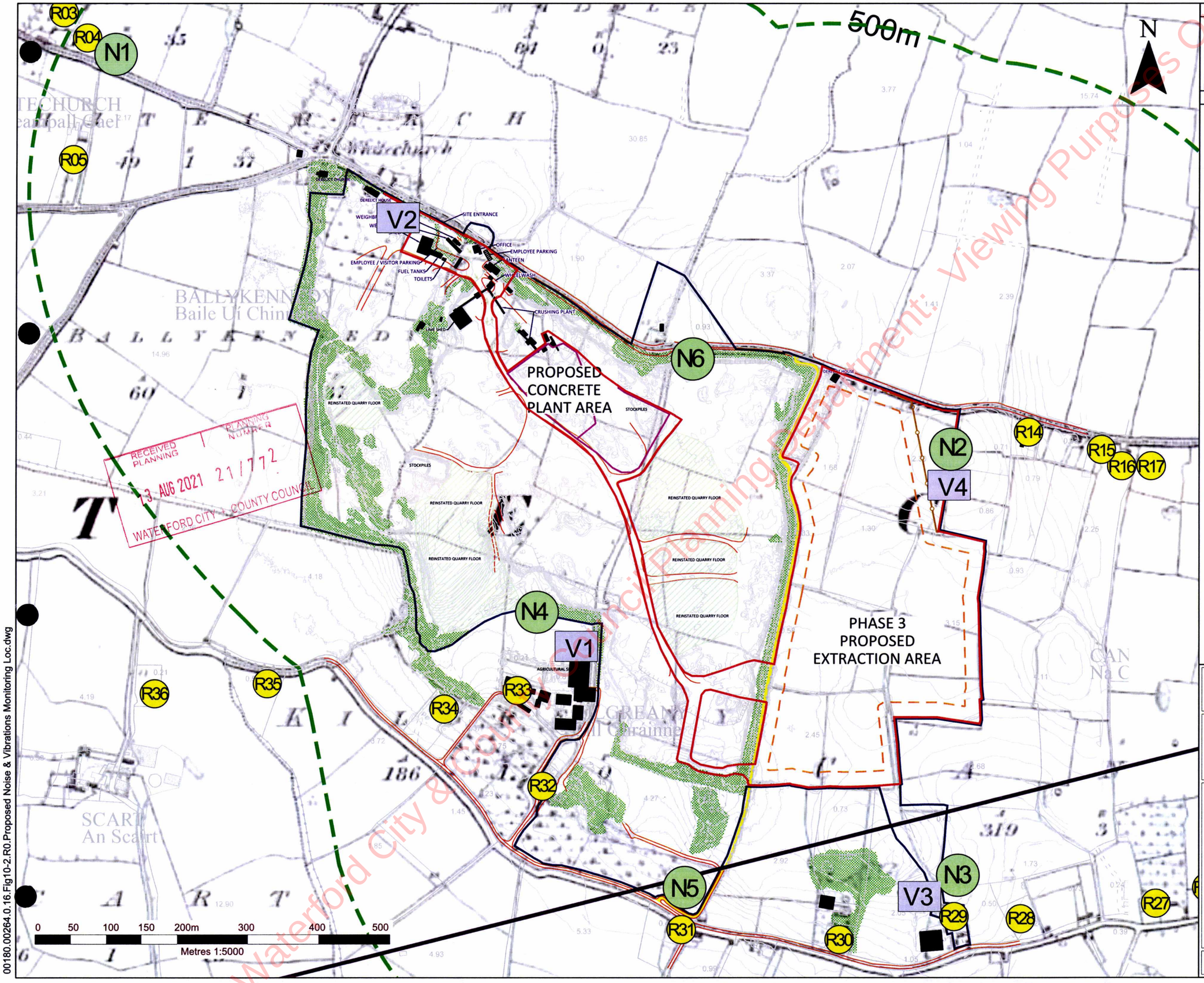

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2. ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY IRELAND/GOVERNMENT OF IRELAND
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- R RESIDENCE LOCATIONS
- N1 NOISE MONITORING LOCATIONS
- V4 VIBRATION MONITORING LOCATIONS

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CAPPAGH QUARRY, COUNTY WATERFORD

SENSITIVE RECEPTORS & PROPOSED NOISE & VIBRATION MONITORING LOCATIONS

FIGURE 10-2

Scale	Date
1: 5,000 @ A3	JULY 2021

00180.00264.0.16.Fig10-2.R0.Proposed Noise & Vibrations Monitoring Loc.dwg

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APPENDICES

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APPENDIX 10-A
GLOSSARY OF TERMINOLOGY

In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided.

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale, is used. The decibel scale typically ranges from 0dB (the threshold of hearing) to over 120dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

Table 10A-1
Noise Levels Commonly Found in the Environment

Sound Level	Location
0dB(A)	Threshold of hearing
20 to 30dB(A)	Quiet bedroom at night
30 to 40dB(A)	Living room during the day
40 to 50dB(A)	Typical office
50 to 60dB(A)	Inside a car
60 to 70dB(A)	Typical high street
70 to 90dB(A)	Inside factory
100 to 110dB(A)	Burglar alarm at one metre away
110 to 130dB(A)	Jet aircraft on take off
140dB(A)	Threshold of Pain

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Acoustic Terminology

dB (decibel) The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure ($2x10^{-5}$ Pa).

dB(A) A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.

L_{Aeq} is defined as the notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.

L_{10} & L_{90} If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The L_n indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence, L_{10} is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly, L_{90} is the 'average minimum level' and is often used to describe the background noise. It is common practice to use the L_{10} index to describe traffic noise.

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L_{Amax} is the maximum A-weighted sound pressure level recorded over the period stated. L_{Amax} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.

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APPENDIX 10-B NOISE ASSESSMENT

Construction Stage : Demolition, Construction, Soil Stripping, Berms Construction and Restoration Activities

Activity	Receptor	Activity LAeq (dB) at 10m Distance		Reflection	Screening	Activity Distance (m)	Noise Attenuated with Distance dB(A)	Operational Noise Levels dB(A)		
		Excavator	HDV	dB(A)	dB(A)			Excavator	Dumper	
Soil Stripping, Berms Construction and Restoration	R04	75	74	3	0	1130	-41	37	36	39
	R05	75	74	3	0	1070	-41	37	36	40
	R14	75	74	3	0	150	-24	54	53	57
	R15	75	74	3	0	245	-28	50	49	53
	R16	75	74	3	0	270	-29	49	48	52
	R17	75	74	3	0	320	-30	48	47	50
	R18	75	74	3	0	480	-34	44	43	47
	R25	75	74	3	0	500	-34	44	43	47
	R26	75	74	3	0	400	-32	46	45	48
	R27	75	74	3	0	370	-31	47	46	49
	R28	75	74	3	0	265	-28	50	49	52
	R29	75	74	3	0	210	-26	52	51	54
	R30	75	74	3	0	230	-27	51	50	53
	R31	75	74	3	0	240	-28	50	49	53
	R32	75	74	3	0	300	-30	48	47	51
	R33	75	74	3	0	355	-31	47	46	50
	R34	75	74	3	0	450	-33	45	44	47

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Construction Stage : Tunnel Construction

Activity	Receptor	Activity L_{Aeq} (dB) at 10m Distance									Activity Distance (m)							Noise Attenuated with Distance dB(A)							Activity L_{Aeq} (dB)									
		Excavator	Mobile Crusher	Mobile Screener	Loading Shovel	HGV	Concrete Plant	Rock Breaker	Reflection dB(A)	Screening dB(A)	Excavator	Mobile Crusher	Mobile Screener	Loading Shovel	HGV	Concrete Plant	Rock Breaker	Excavator	Mobile Crusher	Mobile Screener	Loading Shovel	HGV	Concrete Plant	Rock Breaker	Excavator	Mobile Crusher	Mobile Screener	Loading Shovel	HGV	Concrete Plant	Rock Breaker	Duration Activity Correction	Penalty	Operational Noise Levels dB(A)
Tunnel Construction	R04	75	81	82	80	74	80	83	3	-10	1320	1320	1320	1320	1320	730	1320	-42	-42	-42	-42	-42	-37	-42	26	32	33	31	25	36	24	-10	5	45
	R05	75	81	82	80	74	80	83	3	-10	1230	1230	1230	1230	1230	665	1230	-42	-42	-42	-42	-42	-36	-42	26	32	33	31	25	37	24	-10	5	45
	R14	75	81	82	80	74	80	83	3	-10	445	445	445	445	445	750	445	-33	-33	-33	-33	-33	-38	-33	35	41	42	40	34	35	33	-10	5	52
	R15	75	81	82	80	74	80	83	3	-10	535	535	535	535	535	590	535	-35	-35	-35	-35	-35	-35	-35	33	39	40	38	32	38	31	-10	5	51
	R16	75	81	82	80	74	80	83	3	-10	545	545	545	545	545	620	545	-35	-35	-35	-35	-35	-36	-35	33	39	40	38	32	37	31	-10	5	51
	R17	75	81	82	80	74	80	83	3	-10	580	580	580	580	580	675	580	-35	-35	-35	-35	-35	-37	-35	33	39	40	38	32	36	31	-10	5	50
	R18	75	81	82	80	74	80	83	3	-10	745	745	745	745	745	840	745	-37	-37	-37	-37	-37	-38	-37	31	37	38	36	30	35	29	-10	5	48
	R25	75	81	82	80	74	80	83	3	-10	745	745	745	745	745	1065	745	-37	-37	-37	-37	-37	-41	-37	31	37	38	36	30	32	29	-10	5	48
	R26	75	81	82	80	74	80	83	3	-10	640	640	640	640	640	970	640	-36	-36	-36	-36	-36	-40	-36	32	38	39	37	31	33	30	-10	5	49
	R27	75	81	82	80	74	80	83	3	-10	590	590	590	590	590	930	590	-35	-35	-35	-35	-35	-39	-35	33	39	40	38	32	34	31	-10	5	50
	R28	75	81	82	80	74	80	83	3	-10	445	445	445	445	445	815	445	-33	-33	-33	-33	-33	-38	-33	35	41	42	40	34	35	33	-10	5	52
	R29	75	81	82	80	74	80	83	3	-10	390	390	390	390	390	755	390	-32	-32	-32	-32	-32	-38	-32	36	42	43	41	35	35	34	-10	5	53
	R30	75	81	82	80	74	80	83	3	-10	345	345	345	345	345	700	345	-31	-31	-31	-31	-31	-37	-31	37	43	44	42	36	36	35	-10	5	54
	R31	75	81	82	80	74	80	83	3	-10	360	360	360	360	360	635	360	-31	-31	-31	-31	-31	-36	-31	37	43	44	42	36	37	35	-10	5	54
	R32	75	81	82	80	74	80	83	3	-10	345	345	345	345	245	450	345	-31	-31	-31	-31	-28	-33	-31	37	43	44	42	39	40	35	-10	5	55
	R33	75	81	82	80	74	80	83	3	-10	355	355	355	355	255	330	355	-31	-31	-31	-31	-28	-30	-31	37	43	44	42	39	43	35	-10	5	55
	R34	75	81	82	80	74	80	83	3	-10	460	460	460	460	360	415	460	-33	-33	-33	-33	-31	-32	-33	35	41	42	40	36	41	33	-10	5	53
	SAC	75	81	82	80	74	80	83	3	-10	1300	1300	1300	1300	1300	1300	1300	-42	-42	-42	-42	-42	-42	-42	26	32	33	31	25	31	24	-10	5	43

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Operational Stage : Rock Extraction and Concrete Production

Activity	Receptor	Activity L_{Aeq} (dB) at 10m Distance							Reflection dB(A)	Screening dB(A)	Activity Distance (m)						Noise Attenuated with Distance dB(A)								Activity L_{Aeq} (dB)							Duration Activity Correction	Penalty	Operational Noise Levels dB(A)
		Excavator	Mobile Crusher	Mobile Screener	Loading Shovel	HGV	Concrete Plant	Rock Breaker			Excavator	Mobile Crusher	Mobile Screener	Loading Shovel	HGV	Concrete Plant	Rock Breaker	Excavator	Mobile Crusher	Mobile Screener	Loading Shovel	HGV	Concrete Plant	Rock Breaker	Excavator	Mobile Crusher	Mobile Screener	Loading Shovel	HGV	Concrete Plant	Rock Breaker			
Cappagh Satellite Quarry Processing Activities	R04	75	81	82	80	74	80	83	3	-20	1130	1130	1130	1130	1130	730	1136	-41	-41	-41	-41	-41	-37	-41	17	23	24	22	16	26	15	-10	5	35
	R05	75	81	82	80	74	80	83	3	-20	1070	1070	1070	1070	1070	665	1073	-41	-41	-41	-41	-41	-36	-41	17	23	24	22	16	27	15	-10	5	36
	R14	75	81	82	80	74	80	83	3	-20	150	150	150	150	150	750	153	-24	-24	-24	-24	-24	-38	-24	34	40	41	39	33	25	32	-10	5	51
	R15	75	81	82	80	74	80	83	3	-20	245	245	245	245	245	590	245	-28	-28	-28	-28	-28	-35	-28	30	36	37	35	29	28	28	-10	5	47
	R16	75	81	82	80	74	80	83	3	-20	270	270	270	270	270	620	273	-29	-29	-29	-29	-29	-36	-29	29	35	36	34	28	27	27	-10	5	46
	R17	75	81	82	80	74	80	83	3	-20	320	320	320	320	320	675	319	-30	-30	-30	-30	-30	-37	-30	28	34	35	33	27	26	26	-10	5	45
	R18	75	81	82	80	74	80	83	3	-20	480	480	480	480	480	840	489	-34	-34	-34	-34	-34	-38	-34	24	30	31	29	23	25	22	-10	5	41
	R25	75	81	82	80	74	80	83	3	-20	500	500	500	500	500	1065	501	-34	-34	-34	-34	-34	-41	-34	24	30	31	29	23	22	22	-10	5	41
	R26	75	81	82	80	74	80	83	3	-20	400	400	400	400	400	970	406	-32	-32	-32	-32	-32	-40	-32	26	32	33	31	25	23	24	-10	5	43
	R27	75	81	82	80	74	80	83	3	-20	370	370	370	370	370	930	370	-31	-31	-31	-31	-31	-39	-31	27	33	34	32	26	24	25	-10	5	43
	R28	75	81	82	80	74	80	83	3	-20	265	265	265	265	265	815	264	-28	-28	-28	-28	-28	-38	-28	30	36	37	35	29	25	28	-10	5	46
	R29	75	81	82	80	74	80	83	3	-20	210	210	210	210	210	755	210	-26	-26	-26	-26	-26	-38	-26	32	38	39	37	31	25	30	-10	5	48
	R30	75	81	82	80	74	80	83	3	-20	230	230	230	230	230	700	228	-27	-27	-27	-27	-27	-37	-27	31	37	38	36	30	26	29	-10	5	48
	R31	75	81	82	80	74	80	83	3	-20	240	240	240	240	240	635	237	-28	-28	-28	-28	-28	-36	-27	30	36	37	35	29	27	29	-10	5	47
	R32	75	81	82	80	74	80	83	3	-20	300	300	300	300	300	450	297	-30	-30	-30	-30	-30	-33	-29	28	34	35	33	27	30	27	-10	5	45
	R33	75	81	82	80	74	80	83	3	-20	355	355	355	355	355	330	356	-31	-31	-31	-31	-31	-30	-31	27	33	34	32	26	33	25	-10	5	45
	R34	75	81	82	80	74	80	83	3	-20	450	450	450	450	450	415	448	-33	-33	-33	-33	-33	-32	-33	25	31	32	30	24	31	23	-10	5	43
	SAC	75	81	82	80	74	80	83	3	-20	1300	1300	1300	1300	1300	1300	1300	-42	-42	-42	-42	-42	-42	-42	16	22	23	21	15	21	14	-10	5	33

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Figure 11-1 Surrounding Land Use

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INTRODUCTION

Background

11.1 This chapter of the Environmental Impact Assessment Report, prepared by SLR Consulting Ireland, addresses the potential effect of the planned future development of a satellite quarry immediately to the east of Cappagh Quarry and the construction and operation of a new concrete batching plant within the existing quarry footprint on material assets.

11.2 Cappagh Quarry is located in the townlands of Kilgreany and Ballykennedy, approximately 8km west of the town of Dungarvan, Co. Waterford. The proposed satellite quarry is almost entirely located in the adjoining townland of Canty to the east, with only a relatively small area (in the north-western corner) located within Kilgreany townland.

11.3 The proposed development, within an overall application site area of 18.2 hectares (45.0 acres) provides for the following:

- development of a satellite quarry immediately to the east of Cappagh Quarry (previously permitted under Planning Permission 06/1599 and An Bord Pleanála PL 24.225443) and the local access passageway which delineates its eastern boundary. The satellite quarry will extend to 13.6 hectares (33.6 acres), of which approximately 9.7 hectares (24.0 acres) will be extracted;
- construction of a 40m long sub-surface reinforced concrete tunnel underpass (with internal cross-section measuring 6m wide by 5.5m high) under the existing local access passageway (previously permitted under Planning Permission 920/97) to connect the existing quarry to the proposed satellite quarry at quarry floor level;
- stripping of overburden soils at the satellite quarry for use in construction of environmental bunds and ongoing site restoration works and subsequent excavation of a single quarry bench in limestone bedrock using mechanical excavation and blasting techniques. The proposed quarry faces will vary in height from approximately 8m to 20m and the quarry floor will not extend below 10mOD or into the underlying groundwater body (consistent with Condition 2 of the existing quarry planning permission);
- processing (crushing and screening) of excavated rock to produce aggregates;
- demolition of an existing derelict house in the north-western corner of the proposed satellite quarry, removal of existing internal hedgerows, construction of new perimeter fence and installation of access gates leading from the local access passageway to a perimeter track running above and around the satellite quarry;
- temporary diversion of a section of the existing local access passageway to facilitate construction and installation of the proposed tunnel underpass and re-instatement of the access passageway above it thereafter;
- provision of a temporary access gate and ramp at the existing quarry to facilitate the temporary haulage of materials to and from the satellite quarry and across the existing passageway until the proposed tunnel underpass is in place;
- demolition of concrete supports for former crushing plant;
- construction and operation of a new concrete batching facility (which comprises 4 No. cement silos, batching / mixing unit, aggregate storage bins, an aggregate loading hopper and connecting conveyor systems), all on a concrete paved area on the existing quarry floor,in front of the northern quarry face;
- provision of a batching control office and admixture storage shed;

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- construction of a closed loop concrete recycling facility, comprising a concrete truck wash out area, settlement lagoons and 70,000 litre water storage / recycling tank immediately behind (north of) the concrete batching plant;
- construction of an aggregate storage hardstanding area (covering approximately 1 hectare) immediately to the east of the proposed concrete batching plant;
- continued use of established site infrastructure in service of the proposed satellite quarry and new concrete batching plant;
- removal and replanting of the existing boundary hedge, re-alignment of the boundary wall and demolition / removal of an existing structure to the east of the existing quarry access junction in order to provide enhanced sightlines for traffic egressing the quarry;
- implementation of a progressive restoration scheme (in phases) in tandem with extraction activities across the satellite quarry area.

11.4 Given an assessed aggregate reserve at the satellite quarry of 3.36 million tonnes and a projected market demand for quarried stone and concrete consuming between 185,000 tonnes and 215,000 tonnes of aggregate per annum, the life of the proposed development will be approximately 16 to 18 years. Allowing additional time for preparatory and establishment works and post quarrying restoration works, it is anticipated that the operational life of the development will be up to 20 years.

11.5 The proposed development will not generate any increase in output over and above the current maximum level of 400,000 tonnes per annum permitted by Planning Ref. No. 06/1599 and An Bord Pleanála Ref. No. PL24.225443.

11.6 When fully operational, traffic generated by all existing and planned future on-site extraction, processing and added value activities combined will generate a maximum of 100 daily HGV return trips, equivalent to 100 HGV movements inward and 100 HGV movements outward. It will also generate up to 20 return trips for cars and light vans (equivalent to 20 movements inward and 20 movements outward).

11.7 Further details on the proposed development (site infrastructure, operations, environmental management systems, and controls etc.) are provided in Chapter 2 of this EIA Report.

Scope of Work / EIA Scoping

11.8 Article 3(1) of the amended EIA Directive provides the revised headings by which an EIA Report is to be written. According to the EPA Advice Notes on Current Practice (EPA (2003),

> *"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".*

11.9 Under Schedule 6 of the Planning and Development Regulations (2001) as amended, material assets are taken to refer to architectural and archaeological heritage and cultural heritage.

11.10 The more recently published EPA guidelines in relation to the preparation of EIAR[1] 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."*

11.11 The specific headings in the guidelines in relation to material assets refer to built services, roads and traffic and waste management. Chapter 14 of this EIAR address transport and traffic aspects while

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

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Chapter 12 addresses architectural heritage, archaeological heritage and cultural heritage separately to this Chapter.

11.12 This material assets impact assessment comprises the consideration of existing resources pertinent to the proposed development and the application site that are not addressed elsewhere in this EIA Report 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 In the course of preparing this Environmental Impact Assessment Report, a pre-planning consultation meeting was held outdoors at the application site on 19th May 2021 between the local area planner for Waterford City and County Council and representatives of SLR Consulting Ireland and Roadstone Limited (Meeting Ref. No. PQ202191). At the meeting, details of the proposed development were outlined in the course of a site walkover and issues of interest or concern to the Planning Authority were identified and discussed. No specific concerns were raised by the Local Authority in respect of materials assets, other than possible impacts on the local road network. Details of this consultation are presented in Chapter 1 of this EIAR.

11.14 As part of a formal pre-planning consultation process, a number of relevant prescribed bodies and consultees were also contacted by SLR Consulting Ireland by email and post in early March 2021. Each was provided with a summary report and preliminary drawings in respect of the development and invited to provide feedback, particularly on issues which were of concern to them or which they considered should be addressed by an EIA Report.

11.15 Following a review of published development plans and the site survey, it was considered that there was no requirement for any further formal consultations to be carried out in respect of materials assets for the purposes of this assessment. Some consultations were undertaken with other specialist contributors to this EIA Report. The impact of the proposed development on agricultural land, water supplies and roads is addressed in Chapters 6, 7 and 14 of this EIA Report.

Contributors / Author(s)

11.16 This Chapter of the EIAR was originally drafted by Crystal Leiker, a Senior Planner with SLR Consulting Ireland. Crystal is a qualified Social Scientist and Town Planner with five years' experience. She holds a Bachelor of Social Science and a MA Planning and Sustainable Development- both from University College Cork. She is a member of the Irish Planning Institute and the Royal Town Planning Institute.

11.17 The Chapter was subsequently reviewed and updated by Aislinn O'Brien, Principal Planner with SLR Consulting Ireland. Aislinn is a qualified Town Planner with over 14 years' experience. She is also and a member of the Irish Planning Institute and the Royal Town Planning Institute.

Limitations / Difficulties Encountered

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

REGULATORY BACKGROUND

Guidelines and Technical Standards

11.19 This chapter of the EIA Report has been prepared on the basis of the EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2017).

11.20 There are no technical standards relevant to this Chapter of the EIA Report

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Legislation

11.21 There is no specific legislation relevant to this Chapter of the EIA Report. However, the information provided within this chapter is informed by

- Section 37D and 171A of the Planning and Development Act, 2000 (as amended);
- Section 94 / Schedule 6 of the Planning and Development Regulations, 2001 (as amended); and,
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

Planning Policy and Development Control

11.22 This Chapter of the EIA Report is informed by the National Planning Framework (NPF) 2040, the Regional Spatial and Economic Strategy (RSES) for the Southern Regional Assembly (2020) and the current Waterford County Development Plan (CDP) 2011-2017. The development plan remains in force as the preparation of the replacement plan which will cover both Waterford City and County areas following their amalgamation in 2014 was paused / delayed in order to allow the Council to align the new plan with the provisions of the RSES for the Southern Region, which was only formally adopted in January 2020.

Significant Risks

11.23 The proposed development is a relatively conventional project providing for the development of a satellite quarry on lands adjoining a long-established quarry (and linked to it by a tunnel underpass), as well as the construction and operation of a new concrete batching plant within the existing quarry. The nature and extent of the works involved do not present any risk of a major accident or disaster which would give rise to uncontrolled emissions of dangerous substances to air, land or water which could, in turn, give rise to significant adverse impacts on material assets in the surrounding local area.

RECEIVING ENVIRONMENT

Study Area

11.24 As previously noted, the application site comprises an existing active quarry (known locally as Cappagh Quarry) located in the townlands of Ballykennedy and Kilgreany to the west of Dungarvan and a planned satellite quarry which is almost entirely located in the adjoining townland of Canty.

11.25 For the purposes of this Chapter on Material Assets, the study area principally comprises the townlands of Ballykennedy, Kilgreany and Canty in Co. Waterford, the properties, enterprises, facilities, amenities and infrastructure located therein and in the townlands which immediately surround them, typically within 1km of the existing quarry and application site boundary.

Baseline Study Methodology

11.26 The baseline study comprised a desk-top review of online and published resources, information provided by the Applicant and information presented in other Chapters of this EIAR. Ordnance Survey maps and aerial photography of the local area were also examined.

Sources of Information

11.27 All baseline information not contained within other chapters of this EIA Report was obtained from the following resources:

- Myplan.ie (www.myplan.ie);

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- Historic Environment Viewer (www.webgis.archaeology.ie/historicenvironment);
- Waterford County Development Plan 2011-2017;
- OSi Maps;
- Aerial photography;
- Open Streetmaps (www.openstreetmaps.org).

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Site Context

11.28 The application site comprises a current hard rock quarry located in the townlands of Kilgreany and Ballykennedy, Co. Waterford and 6.6 km west of Dungarvan, Co. Waterford and existing agricultural lands to the east of it. It lies approximately 1.4 km south of the N72 National Secondary Road which runs locally between Dungarvan and Cappoquin and continues westwards across to Killarney Co. Kerry.

11.29 The proposed development is located in a rural area, on lands which are located in a locally flat to gently undulating topography. Within the surrounding area, land use is primarily agricultural. There are farmsteads and isolated one-off housing development located long the local road network, principally to the north-east and south of the application site. There are also two protected structures located immediately beyond the north-western corner of the site.

11.30 The existing quarry and application site are located immediately south of the L2018 Local Road which runs between the R672 Regional Road at Ballynamuck West (on the north-western outskirts of Dungarvan) and the N72 National Secondary Road at Ballynahemery, immediately east of Finisk Bridge. For much of its length, the L2018 Local Road also forms part of the Sean Kelly Cycle Trail which links a number of towns across West Waterford.

11.31 Access to, and egress from Cappagh Quarry, the proposed satellite quarry and the new concrete batching plant will be provided via the existing quarry access junction with the L2018 Local Road which was previously permitted under WCC Planning Ref. No. PD06/1599 and An Bord Pleanála Reference No. PL 24.225443.

11.32 The existing quarry entrance is located within the 80km/h speed limit. Existing visibility splays of 4.5m x 90m are available in both directions at this junction, which is in accordance with design requirements of the previous Waterford County Development Plan (2005).

Infrastructure

Roads

11.33 Traffic exiting the quarry and heading for the N72 National Secondary Road initially travels westwards along the L2018 Local Road to Whitechurch Crossroads, immediately west of the existing quarry access. Thereafter, it turns right onto the L2019 Local Road and continues in a northerly direction for 1.5km, up to its junction with the N72. Alternatively, it can continue straight through Whitechurch Crossroads along the L2018 for 1.8km, running westwards at first before then turning northwards towards its junction with the N72 at Ballynahemery.

11.34 Traffic travelling to the R671 Regional Road, and to the N25 National Primary Road and Youghal, Co. Cork thereafter, turns left onto the L2019 Local Road at Whitechurch Crossroads and continues in a south-westerly direction for 2.5km up to its junction with the R671 at Knocknascagh Crossroads.

Water Supply

11.35 The quarry and application site are not located within a drinking water protection area. The closest designated source protection area is the Dungarvan Public Water Supply (PWS), approximately 1.5km

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to the north-east at its closest point and the Lismore-Cappoquin Public Water Supply (PWS) approximately 4.5km to the north-west at its closest point.

11.36 The wellfield which provides the public water supply to Dungarvan is approximately 5.5km to the east of the site, close to the River Colligan, and comprises four groundwater abstraction wells to a maximum depth of 27.5m bgl. The wells have a maximum abstraction rate of 7,194m^3/day (equivalent to 7.19 million litres/day) based on a seven-day pumping test.

11.37 A source protection report for the Dungarvan PWS was produced by the GSI (1998) and numerical modelling was undertaken to identify the inner and outer source protection zones for the supply wells. Further details in respect of the scheme are presented in Chapter 7 of this EIA Report and in Figure 7-5 thereof.

11.38 The existing quarry and application site lie outside the identified source protection zones to the PWS wells.

Local Groundwater Abstraction and Wells

11.39 The GSI online database identifies a number of groundwater boreholes within c. 2km of the application site. A local well survey was undertaken and identified a number of dwellings in the local area that have individual private groundwater wells for domestic supplies. The nearest domestic dwelling is located just over 100m to the east of the proposed satellite quarry area (and down-gradient in terms of groundwater flow direction).

11.40 It is understood from the local well survey that there are no mains water supply or group water scheme supplies in the area around the site.

11.41 A local well screening was carried out by Tobin Consulting Engineers in 2006 for the S261 application for the site, based on the GSI well database. Twelve groundwater abstractions were identified.

Utilities

11.42 Electric power, lighting and heating to existing site offices and staff welfare facilities at the quarry are all currently provided via a connection to the electricity distribution network.

11.43 Two high voltage electricity transmission lines run a short distance beyond the south-eastern corner of the Roadstone property boundary. A 220kV line runs approximately 100m south of the proposed satellite quarry at its closest point, while a 100kV line runs approximately 1.3km to the south-east. Lower voltage, overhead electricity distribution lines criss-cross the surrounding rural landscape.

11.44 Process water for site activities is provided from an on-site groundwater production well. Site staff at the quarry use, and will continue to use, the existing toilet, hand washing and welfare facilities provided at the main site offices and staff canteen. Water is supplied to these facilities from the existing on-site well. Potable water is not sourced from the well however and bottled drinking water will continue to be delivered to the quarry on a regular basis, as required.

11.45 Wastewater from the existing facilities is currently fed via a sewerage pipe to an existing septic tank. Treated effluent is discharged to ground via a percolation area.

Settlements and Housing

11.46 The application site lies approximately 1.5 km south of the N72 National Secondary Road running between the settlements of Dungarvan and Cappoquin. Within the surrounding area, land use is primarily agricultural. Dwellings in the vicinity of the existing quarry and application site generally comprise farmsteads and one-off housing and are principally located along the local road network.

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Local Enterprise

11.47 Aside from the existing quarry, the only other rural based enterprise in the study area immediately surrounding it, is that associated with family farms and related agricultural / food production activities.

11.48 There are a number of rural based enterprises in the wider area, beyond the immediate study area. Cappagh Fishing Lakes in Ballinamintra Upper, approximately 1.5km north of the quarry, on the northern side of the N72 National Secondary Road provides facilities for leisure anglers at a number of privately owned lakes.

11.49 Woodhouse windfarm is a 20 MW windfarm located 3km south-west of the quarry. It is operated by the ESB and comprises a total of 8 No. 2.5MW turbines. MMG Ireland is a metal fabricator and galvanising business located in Ballinameela, approximately 1.6km west of the quarry. Keereen Quarries is another rural quarry located approximately 3.5km south-west of Cappagh Quarry, on the western side of the R671 Regional Road.

Social and Community Infrastructure

11.50 There is no social or community infrastructure in the immediately vicinity of the quarry and application site, nor in the study area around it.

11.51 There are two national schools located at some distance, outside of the study area. Whitechurch National School is located approximately 2km south-west of the quarry, along the L2019 Local Road, close to the Knocknascagh Crossroads and the junction with the R671 Regional Road. Carriglea National School is located in Ballyduff townland approximately 4km east of the quarry, along the L2018 Local Road

11.52 Community facilities include St. James Church, located approximately 1.3km south-west of the quarry along the L2019 Local Road. Further along the road, Ballinameela Community Centre and Ballinameela GAA club are both located adjacent to Whitechurch National School, 2km south-west of the quarry. West Waterford Golf club is located approximately 3.5km south-east of the quarry in Coolcormuck townland.

11.53 Carriglea Convent is a facility which provides residential, respite and day services to people with an intellectual disability and is currently located approximately 2.8km east of the quarry.

Waste Management

11.54 No extractive waste has been generated by the existing quarry development. Given its high quality, all natural, site-won bedrock material extracted to date has been used in the production of aggregates, construction materials or ground agricultural limestone. Any overlying soils and subsoils which were stripped to expose the bedrock resource have either been re-used in the construction of perimeter screening berms or have been stockpiled around the quarry pending re-use at a later date in the restoration of the quarry to a grassland / scrub habitat.

11.55 There are currently no existing permitted or licensed waste management facilities in the immediate vicinity of the application site. There is however a licensed waste facility located approximately 4km to the west of the existing quarry at Cappagh.

11.56 Operated by Molaisin Compost Limited under a Local Authority permit since 2005, a waste licence was granted by the EPA in August 2010 for the reception, storage, and biological treatment of biowaste where the annual intake exceeds 10,000 tonnes. The quantity of waste to be accepted at the facility is limited to 20,000 tonnes per annum to include non-hazardous biosolids which include

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industrial and sewage sludges and other non-hazardous biodegradable materials (green waste) to produce Class 1 compost.

Existing and Future Land Use

11.57 The area surrounding the application site principally comprises extractive lands and agricultural land supporting rural farm-based enterprises, together with residential properties located along the local road network.

11.58 None of the lands in the immediate vicinity of the application site which are currently used for extractive or agricultural purposes are zoned for any specific form of future development in the Waterford County Development Plan 2011-2017 (as extended).

Sensitive Receptors

11.59 The location and spatial distribution of residential properties units in the vicinity of the application site is presented in Figure 11-1. Review of this figure indicates that there are approximately 52 residential receptors which may be classified as sensitive within 1km of the application boundary. Of these,

- there are 3 dwellings at or within 200m of the proposed development boundary;
- there are 15 dwellings between 200m and 500m of the proposed development boundary;
- there are 34 dwellings between 500m and 1000m of the proposed development boundary.

11.60 In assessing impacts arising from the proposed development, greatest focus and attention is placed on those residences / enterprises located within 500m of the application site as they are considered to be at greater risk of potential impact.

11.61 Potential effects on the amenity of the area surrounding the application site arising as a result of the proposed development relate mainly to potential nuisance from noise, blast vibrations, dust, traffic, and visual effects. Any such effects would persist for the duration of the proposed development and would effectively cease on completion of extraction and concrete production activities.

11.62 An inspection of the wider area beyond has identified schools and other facilities at a greater distance from the quarry and application site but which are considered too remote (>1km) to be impacted directly by any change associated with the proposed satellite quarry development and readymix concrete production activities.

IMPACT ASSESSMENT

Evaluation Methodology

11.63 The evaluation of effects on built services and waste comprises a qualitative assessment based on an analysis of potential effects on the environment undertaken in other sections of this EIA Report. The assessment also takes into account a review of relevant literature and professional judgement in relation to impacts on built services and waste.

Infrastructure

Construction Stage Impacts – Roads

11.64 The existing access passageway which separates the eastern boundary of the existing quarry from the proposed satellite quarry provides a link for local landowners and residents between the Whitechurch Road (L2018 Local Road) and the Canty Road which runs broadly parallel, but 800m to the south.

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11.65 Until the proposed tunnel underpass link to the satellite quarry is constructed and installed, access between the existing quarry and satellite quarry will be made by way of a temporary haulage route which will cross the existing local access passageway at the southern end of each quarry. The haulage route will run between the access gates installed either side of the passageway and down a temporary ramp into the existing quarry (refer to Figure 2-7 of this EIA Report).

11.66 To facilitate opening of a temporary excavation across the local access passageway and the proposed installation and backfilling of a tunnel underpass linking the quarries on either side, it will be necessary to temporarily close the passageway to traffic for the duration of these works and to divert any occasional light vehicular or agricultural traffic which may use it away from the works area and along a temporary track which follows established field boundaries.

11.67 Following completion of the tunnel underpass and subsequent backfilling to ground level, the access passageway will be re-instated to the same alignment and standard as at the present time. Perimeter bunds and chainlink fencing will also be re-established either side of the passageway and bunds will be planted with a mix of native plants and hedging to re-establish the visual screening provided by vegetation. Further details in respect of the temporary passageway diversion are presented in Chapter 2 of this EIA Report.

11.68 Although crossing of the passageway by haulage traffic and the temporary passageway diversion will not significantly disrupt traffic movements flows between the two local roads, it will give rise to minor inconvenience to those in the local community who currently use the passageway. The short-term, construction stage impacts will ultimately be reversed following the completion of the tunnel underpass and subsequent reinstatement of the passageway over it.

Operational Stage Impacts – Roads

11.69 When fully operational, the proposed satellite quarry and readymix concrete production plant development could generate up to 60,000 HGV movements per annum, which equates to approximately 200 HGV movements per day. When staff and visitor traffic is included, the total number of daily movements trips arising will be up to 240 per day.

11.70 Link capacity analysis was carried out on the L2018, the L2019 Local Road (north and west of the Whitchurch Crossroads), the R671 Regional Road and the N72 National Secondary Road. In all cases, it was determined that these roads will continue to operate within capacity for each of the assessment years 2022, 2027 and 2037.

11.71 Junction capacity analysis at the junction of the quarry access and the L2018, the junction of the L2018 and the L2019 (at Whitechurch Crossroads) and at N72 and R671 junctions indicate that they will continue to operate within capacity for each of the assessment years 2022, 2027 and 2037.

11.72 Traffic generated by the proposed development will continue to use the same quarry site entrance previously permitted under planning permission PD 06/1599 and An Bord Pleanála Reference Number: PL 24.225443.

11.73 Prior to commencement of extractive or production activity, works will be undertaken to improve sightlines at the quarry access and ensure that they comply with modern design standards and the requirements of the current Waterford County Development Plan. These works which entail the existing boundary wall and hedge line being set back and existing structures to the east being removed, will enhance the road safety aspects of the development.

11.74 An assessment of likely development impacts on the local road network, presented in Chapter 14 of this EIA Report, concluded that the proposed development will not have a likely significant effect on either traffic safety or the existing capacity of local roads and junctions.

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Post-Operational Stage Impacts – Roads

11.75 On completion of the proposed final restoration scheme across the existing quarry footprint and that of the proposed satellite quarry, there will be a permanent reduction in HGV traffic movements over the local road network leading to and from the existing quarry / application site, with consequent reduction in HGV traffic levels and an improvement in road service levels.

Construction and Operational Stage – Water Supply

11.76 The hydrogeological impact assessment presented in Chapter 7 of this EIA Report has identified the potential for operational activities to impact groundwater quality given the karstified nature of the underlying bedrock and the proximity of local domestic supplies and the Dungarvan Public Water Supply boreholes further afield.

11.77 With respect to these receptors and the potential for adverse impacts, critical mitigation measures will focus on continued working above the groundwater table and ensuring the safe storage and management of fuels and other hazardous materials at the existing quarry / application site during the operational stage. Several of the referenced measures are already implemented at the quarry to safely manage these materials and to prevent accidental leaks or spills and have been demonstrably effective in ensuring no impact on the underlying groundwater quality at the quarry. Further details are provided in Chapter 7 of this EIA Report.

Utilities

Construction and Operational Stage Impacts

11.78 Electric power, lighting and heating to existing site offices and staff welfare facilities at the quarry are all currently provided via a connection to the electricity distribution network. This existing electrical connection will also be used to provide a power supply to the new readymix concrete batching plant.

11.79 Two high voltage electricity transmission lines run a short distance beyond the south-eastern corner of the Roadstone property boundary. A 220kV line runs approximately 100m south of the proposed satellite quarry at its closest point, while a 100kV line runs approximately 1.3km to the south-east. Lower voltage, overhead electricity distribution lines criss-cross the surrounding rural landscape.

11.80 Process water will be supplied to the proposed development from the existing groundwater production well on-site. Water demand will be minimised by re-using water captured at the concrete recycling facility and settlement tanks beside the concrete batching plant in concrete production and truck wash out activities. Potable water is not sourced from the on-site well however and bottled drinking water will continue to be delivered to the site on a regular basis, as required.

11.81 Wastewater from existing on-site facilities will continue to be fed via a sewerage pipe to the existing septic tank. Treated effluent is discharged to ground via a percolation area.

11.82 The proposed development will not give rise to any short-or long-term impacts on any existing services or utilities within or around the application site.

Post-Operational Stage Impacts

11.83 On completion of backfilling and restoration activities across the existing quarry / application site, there will be no further impact or demand on existing utilities and services, nor will there be any long-term risk to groundwater resources at the application site.

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Waste

Construction and Operational Stage Impacts

11.84 No extractive waste will be generated by the proposed development. Soils and subsoils stripped to facilitate rock extraction will be used for construction of perimeter screening berms and either immediately used or stored for restoration works at the existing quarry and/or application site.

11.85 Management systems will be established and implemented at the site preparation / establishment stage to control and manage all potential waste streams, to avoid waste generation where possible and to maximise re-use or re-cycling opportunities thereafter during the operational phase. The development will comply with all waste management obligations and ensure that waste management activities present no adverse environmental impacts on the local environment.

11.86 Oils and lubricants, including waste materials, are stored under cover, on spill pallets. Internal bunding is also used to contain any potential leaks or spills of potentially hazardous oils or waste liquid. Drums or tanks holding waste oil or lubricant are emptied at intervals by a licensed waste contractor and disposed off-site at a suitably licensed waste facility.

11.87 The proposed development will not therefore have any significant impact on waste generation or waste management infrastructure over the short- or long-term

Post-Operational Stage Impacts

11.88 On completion of final restoration activities, it is considered that the development will not have any effect on waste generation or on local waste management infrastructure over the long-term.

Sensitive Receptors

Construction and Operational Stage Impacts

11.89 The operational stage of the development entails the phased extraction of rock across the satellite quarry area, production of readymix concrete at the batching plant area and ongoing phased restoration works across the quarry floor. These activities will be ongoing for a period of up to 20 years.

11.90 Implementation of the good site practices and proposed mitigation measures will ensure that the residual effects arising from the proposed development on nearby properties are acceptable and not significant.

11.91 As previously noted, precautions / mitigation measures will also be applied to ensure that any potential impact of site-based activities on the groundwater resource underlying the application site (e.g. accidental oil or fuel spills) and its associated abstraction / use down-gradient will be minimised. These measures are described in detail in Chapter 7 of this EIAR.

Post-Operational Stage Impacts

11.92 The impact of the proposed development on nearby properties will be eliminated on completion of restoration works and cessation of site activities.

11.93 When restored to long-term agricultural use, the application site will blend into the surrounding landscape. The assessment of landscape and visual impacts presented in Chapter 13 of this EIAR concluded that the proposed development will, on completion, have an overall negligible impact on the local landscape character and on local views into the application site.

11.94 On this basis, it is considered that there would be no likely significant long-term effects on residential property and amenity as a result of the proposed development.

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Existing and Future Land Uses

11.95 The proposed satellite quarry, involving extraction across approximately 9.7 hectares down to a projected final floor level of 10mOD, will give rise to a change in existing land use, from existing agricultural use to extractive development over the proposed 20-year operational life.

11.96 In the longer-term, the proposed restoration of both the existing quarry and proposed satellite quarry will restore the quarry floor to a grassland / scrub habitat. This will help to merge the disturbed landform into the surrounding rural landscape. The restored lands within each quarry area are unlikely however to be as productive from an agricultural perspective as any surrounding undisturbed or undeveloped land.

11.97 The proposed development will not effect, or interfere with, any established agricultural or rural enterprise activities on surrounding landholdings over the short and/or long term.

Unplanned Events

11.98 According to the EPA guidelines, unplanned events, such as accidents, can include *"spill from traffic accidents, floods or landslides 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)"*.

11.99 In this instance, the vulnerability of the proposed development to accidents, unplanned events or natural disasters is relatively limited owing to

- the relatively straight-forward nature of the proposed extractive works and concrete production activities;
- the nature of the materials to be handled on-site and the relatively rural location of the proposed works;
- the proven capability and performance of the plant, equipment and technologies to be used in executing the works and
- the well-established procedures which will be employed to manage and control the works.

11.100 Unplanned events in relation to the proposed development could potentially relate to:

- instability arising from over-steep excavations or stockpiling of aggregates at the quarry;
- spill from vehicles moving within the site;
- flooding.

11.101 Effects arising from unplanned events will not have any impact on material assets considered herein. Effects of unplanned events on human health, water and the local environment are addressed in Chapters 4, 6 and 7 of this EIA Report.

Cumulative / Synergistic Impacts (if any)

11.102 A search of the Waterford County Council online planning search facilities indicates that no other major developments are planned or have been granted planning permission in the last five years in the vicinity of the application site or in surrounding townlands. As such there is no potential for other development to create significant adverse cumulative impacts on the local environment and material assets in particular.

Transboundary Impacts

11.103 Given the location and site context of the application site, it is not anticipated that the impacts of the proposed development will have any significant transboundary effects on material assets.

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Interaction with Other Impacts

11.104 It is anticipated that the effects of the proposed development on material assets will not interact with any other media apart from groundwater. These impacts are assessed in detail in Chapter 7 (Water) of this EIA Report.

'Do-nothing Scenario'

11.105 In a "do nothing scenario", the proposed extraction and concrete production activities would not proceed at the application site and the existing disturbed landform which exists across the current quarry footprint would ultimately be restored to grassland / scrub habitat, with little other than occasional agricultural related activity on the land over the longer term. This would create no significant potential adverse impact in relation to existing material assets, specifically infrastructure, utilities, waste or land-use.

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MITIGATION MEASURES

Construction and Operational Stage Impacts

11.106 The mitigation of the construction and operational stage impacts of the proposed development in respect of ecology, water, air quality, noise, cultural heritage and traffic are detailed in the relevant Chapters of this EIA Report.

11.107 It is not considered that any additional mitigation measures, over and above those proposed for environmental emissions, are required in respect of infrastructure, utilities or sensitive receptors, other than those set out in other chapters of this EIA Report.

Post-Operational Stage Impacts

11.108 It is not considered that there are any long-term, post-operational impacts associated with the proposed development that require mitigation in respect of material assets, other than those identified elsewhere in other relevant chapters of this EIA Report.

MONITORING

11.109 Monitoring, over and above those proposed for environmental emissions in other Chapters of this EIA Report, is not required or proposed specifically in respect of material assets.

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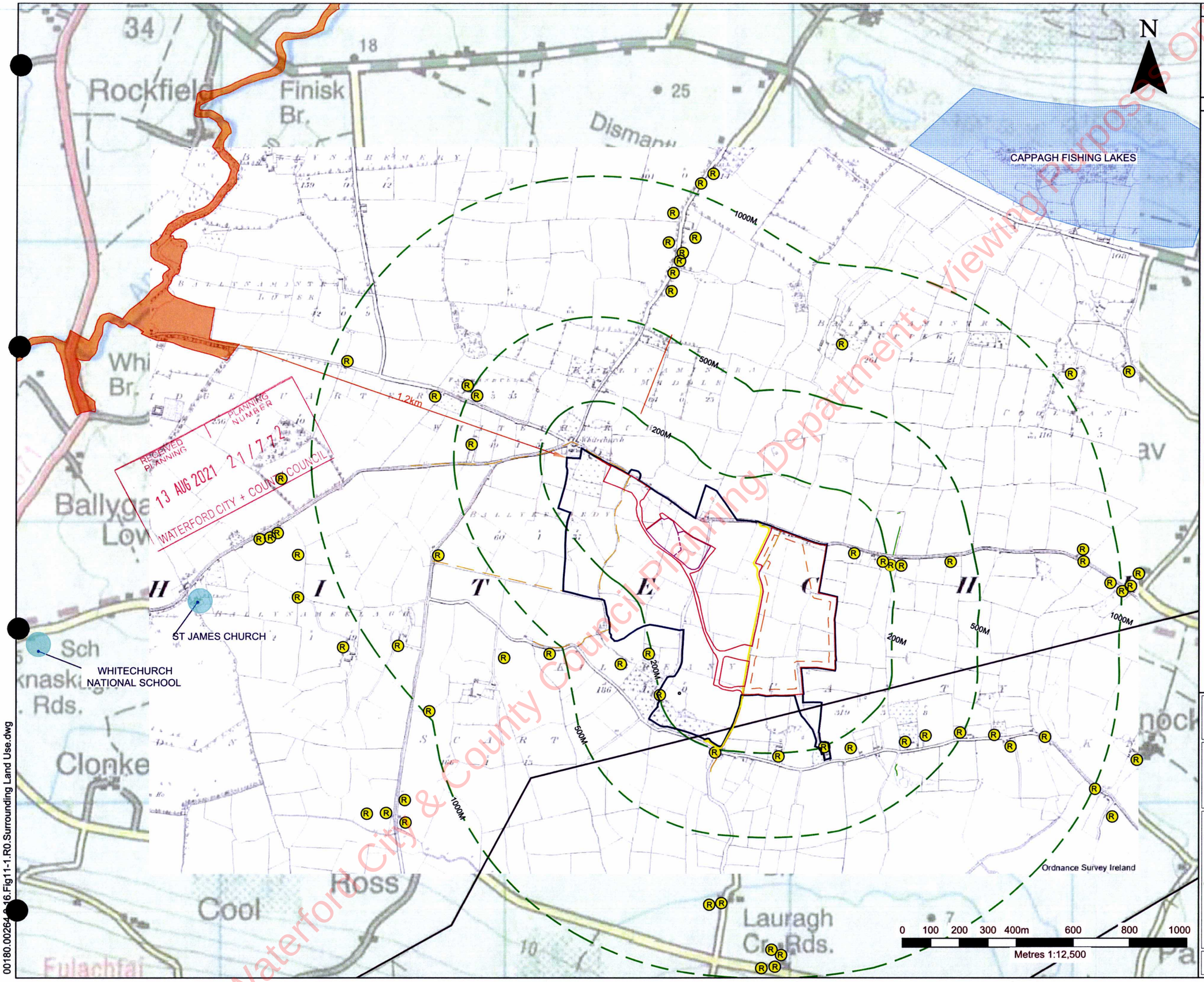

NOTES

1. MAPPING EXTRACT FROM 6 INCH MAP SHEET **WD030** FROM ORDNANCE SURVEY IRELAND AND DISCOVERSY SHEET NO. 82

2. ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY IRELAND/GOVERNMENT OF IRELAND

LEGEND

- ROADSTONE LAND INTEREST (C. 58.9 HA)
- PLANNING APPLICATION AREA (C. 18.2 HA)
- PROPOSED EXTRACTION AREA (C. 9.7 HA)
- PROPOSED CONCRETE PLANT & AGGREGATE STORAGE AREA (C. 1.9 HA)
- EXISTING PASSAGEWAY
- OVERHEAD TRANSMISSION LINES
- RESIDENCE LOCATIONS
- 1KM OFFSET FROM PLANNING APPLICATION AREA
- BLACKWATER RIVER SPECIAL AREAS OF CONSERVATION (SITE CODE 002170)

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ROADSTONE LTD.
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

EASTERN SATELLITE QUARRY AND NEW CONCRETE PLANT
CAPPAGH QUARRY, COUNTY WATERFORD

SURROUNDING LAND USE

FIGURE 11-1

Scale	Date
1: 12,500 @ A3	JULY 2021

00180.00264-G-16.Fig11-1.R0.Surrounding Land Use.dwg

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INTRODUCTION

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Background

12.1 This Chapter of the Environmental Impact Assessment Report (EIAR), commissioned by SLR Consulting Ireland on behalf of Roadstone Ltd. addresses the impacts on the archaeological, architectural and cultural heritage of a proposed new satellite quarry to be developed immediately to the east of Cappagh Quarry and the construction and operation of a new concrete batching plant on a hardstanding area on the quarry floor at the northern end of the existing quarry.

12.2 The proposed development straddles the three townlands of Kilgreany, Ballykennedy and Canty in County Waterford and is located approximately 8km west of the town of Dungarvan. The overall application site extends across the part of the existing quarry and 7 No agricultural fields to the east (to be developed as a satellite quarry) and covers an area of 18.2 hectares (45.0 acres).

12.3 The proposed development comprises

- development of a satellite quarry immediately to the east of Cappagh Quarry (previously permitted under Planning Permission 06/1599 and An Bord Pleanála PL 24.225443) and the local access passageway which delineates its eastern boundary. The satellite quarry will extend to 13.6 hectares (33.6 acres), of which approximately 9.7 hectares (24.0 acres) will be extracted;
- construction of a 40m long sub-surface reinforced concrete tunnel underpass (with internal cross-section measuring 6m wide by 5.5m high) under the existing local access passageway (previously permitted under Planning Permission 920/97) to connect the existing quarry to the proposed satellite quarry at quarry floor level;
- stripping of overburden soils at the satellite quarry for use in construction of environmental bunds and ongoing site restoration works and subsequent excavation of a single quarry bench in limestone bedrock using mechanical excavation and blasting techniques. The proposed quarry faces will vary in height from approximately 8m to 20m and the quarry floor will not extend below 10mOD or into the underlying groundwater body (consistent with Condition 2 of the existing quarry planning permission);
- processing (crushing and screening) of excavated rock to produce aggregates;
- demolition of an existing derelict house in the north-western corner of the proposed satellite quarry, removal of existing internal hedgerows, construction of new perimeter fence and installation of access gates leading from the local access passageway to a perimeter track running above and around the satellite quarry;
- temporary diversion of a section of the existing local access passageway to facilitate construction and installation of the proposed tunnel underpass and re-instatement of the access passageway above it thereafter;
- provision of a temporary access gate and ramp at the existing quarry to facilitate the temporary haulage of materials to and from the satellite quarry and across the existing passageway until the proposed tunnel underpass is in place;
- demolition of concrete supports for former crushing plant;
- construction and operation of a new concrete batching facility (which comprises 4 No. cement silos, batching / mixing unit, aggregate storage bins, an aggregate loading hopper and connecting conveyor systems), all on a concrete paved area on the existing quarry floor,in front of the northern quarry face;

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- provision of a batching control office and admixture storage shed;
- construction of a closed loop concrete recycling facility, comprising a concrete truck wash out area, settlement lagoons and 70,000 litre water storage / recycling tank immediately behind (north of) the concrete batching plant;
- construction of an aggregate storage hardstanding area (covering approximately 1 hectare) immediately to the east of the proposed concrete batching plant;
- continued use of established site infrastructure in service of the proposed satellite quarry and new concrete batching plant;
- removal and replanting of the existing boundary hedge, re-alignment of the boundary wall and demolition / removal of an existing structure to the east of the existing quarry access junction in order to provide enhanced sightlines for traffic egressing the quarry;
- implementation of a progressive restoration scheme (in phases) in tandem with extraction activities across the satellite quarry area.

12.4 The overall satellite quarry area of 13.9 hectares comprises the proposed extraction area (of approximately 9.7 hectares), the perimeter access track, the 2m high perimeter vegetated safety / screening berm and other associated landscaping / screening areas.

12.5 The total volume of limestone bedrock to be extracted from the proposed satellite quarry area is 1,400,000m^3, equivalent to approximately 3,360,000 tonnes assuming an in-situ rock density of 2.4tonnes/m^3.

12.6 The application site location and the surrounding study area are shown on the statutory Record of Monuments and Places (RMP) map for Co. Waterford in Figure 12-1. Full details of the proposed development are provided in Chapter 2 of the EIAR Report.

Scope of Work / Methodology

12.7 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).

12.8 The study involved detailed investigation of the archaeological and historical background of the application site, the Applicant's landholding and the surrounding area, extending 1km from the proposed development boundary (refer to Figure 12-1).

12.9 This area was examined using information from the Record of Monuments and Places of County Waterford, the Waterford County Development Plan, lists of archaeological excavations and cartographic and documentary sources. A field assessment was carried out to identify and assess any known archaeological sites and previously unrecorded features and portable finds within the application site.

12.10 An impact assessment and mitigation strategy have been prepared. An impact assessment is undertaken to identify the potential adverse impacts that the proposed development may have on the existing cultural resource, while a mitigation strategy is designed to avoid, reduce or offset any adverse impacts.

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12.11 The application site is situated in south-west County Waterford, to the west of Dungarvan and to the south of the N72 Dungarvan to Cappoquin road. It is situated on flat to undulating ground which is see in pasture and arable land. The soil of the area is generally an acid brown earth developed from sandstone and limestone and glacial till. The underlying bedrock is limestone (Gardiner and Radford 1980).

Consultations / Consultees

12.12 In the course of preparing this assessment, consultations were undertaken with the National Monuments Service. Extracts from the Record of Monuments and Places for Co. Waterford are presented on a map of the local area surrounding the application site in Figure 12-1. RMP sites included on the Records of Monuments and Places statutory mapping are identified by black circles. The application site is delineated by a red line.

12.13 As part of a formal pre-planning consultation process, a number of relevant prescribed bodies and consultees, including the Development Applications Unit (DAU) of the Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media were contacted by SLR Consulting Ireland by both email and post in early March 2021 In light of feedback and recommendations provided by DAU in April 2021, a full geophysical survey of the proposed satellite quarry area was commissioned and carried out by Earthsound Archaeological Geophysics in July 2021.

Contributors / Author(s)

12.14 The assessment was prepared by Dr. Charles Mount who is a member of the Institute of Archaeologists of Ireland and has more than thirty 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.

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Limitations / Difficulties Encountered

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

REGULATORY BACKGROUND

12.16 The following paragraphs set out the regulatory background regarding cultural impact assessments in Ireland in general and the site-specific planning background relevant to this cultural impact assessment.

Legislation

12.17 No specific Irish legislation exists governing cultural heritage assessments.

Planning Policy and Development Control

12.18 The County Waterford Development Plan 2011-2017 (extended) is the statutory plan which outlines the Local Authority's development policies and objectives. The plan includes a number of specific objectives and policies which are relevant to this assessment (i.e., regarding cultural heritage) and these are referenced below.

Cultural Heritage

12.19 Chapter 8 of the Waterford County Development Plan 2011-2017 outlines the Local Authority's policies in respect of cultural heritage within the County.

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Architecture and Protected Structures

12.20 There are several policy objectives set out in Section 8.3 of the plan in respect of protected structures. These state:

- **AH1** It is a policy of the Council to protect the architectural heritage and to encourage sensitive development or appropriate re-use of buildings to promote economic development and regeneration.
- **AH2** It is the policy of the Council to administer incentives for the protection of the architectural heritage of the County through administration of the Conservation Grant Scheme and by way of reduction of development levies for improvements to Protected Structures.
- **AH3** It is the policy of the Council to maintain a Record of Protected Structures within the County to protect all the structures or parts of structures which are of historical, architectural, artistic, archaeological, social, scientific, technical and cultural interest.
- **AH4** It is the policy of the Council to promote sympathetic re-use of structures. Proposed works to accommodate such change of use shall not detract from the building or not adversely damage or disturb protected species, and the new use shall make a positive contribution to the character of the building / streetscape or setting.
- **AH5** It is the policy of the Council to protect the main building and curtilage of Protected Structures from any works which would visually or physically detract from the special character of the main structure or any structures within the curtilage. Demolition of a Protected Structure can only be considered in exceptional circumstances and the onus will be on the developer to provide the strongest justification for such an action.
- **AH6** The Planning Authority shall consider the change of use of Protected Structures, provided that it can be shown that the structure, character, appearance and setting will not be adversely affected or where it can be shown it is necessary to have an economic use to enable its upkeep.

Archaeological Heritage

12.21 There are also several policy objectives set out in Section 8.38 of the plan in respect of Archaeological Heritage. These state:

- **AH14** It is the policy of the Council to protect, conserve and preserve the integrity of archaeological monuments and their settings and archaeological objects within the County, and those buildings and sites which have been identified on the RMP.
- **AH15** It will be an objective of the planning authority to secure the preservation (i.e.: preservation in-situ or, as a minimum, preservation by record) of all archaeological monuments included in the Record of Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act, 1994, and of site features and objects of archaeological interest generally. In securing such preservation, the planning authority will have regard to the advice and recommendations of the Department of Environment, Heritage and Local Government, both in respect of whether or not to grant planning permission and in respect of the conditions to which permission, if granted, should be granted.
- **Objective AH3 It** is an objective of the Plan to ensure that development in the vicinity of a site of archaeological interest shall not be detrimental to the character of the archaeological site or its setting by reason of its location, scale, bulk or detailing. When considering development in the vicinity of all archaeological sites including town

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defences, the planning authority will require the preparation of an archaeological assessment detailing the potential impact of any development on upstanding structures, buried structures and deposits. The report will also include a visual impact assessment to ensure adequate consideration of any potential visual impact the proposed development may have on any upstanding remains.

Guidelines

12.22 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

12.23 This cultural heritage assessment has not identified any significant risks to the natural, social or cultural environment as a result of the proposed development.

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RECEIVING ENVIRONMENT

Study Area

12.24 The overall study area, which is centred on the application site, as shown in Figure 12-1.

Baseline Study

12.25 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 at the application site.

Paper Study

12.26 This element essentially comprises a search of published documents and archives. The following sources were examined and a list of sites and areas of archaeological potential compiled:

- Record of Monuments and Places (RMP) for County Waterford
- The Sites and Monuments Record (SMR)
- Available aerial photography
- Cartographic and written sources relating to the study area
- Waterford County Development Plan 2011-17 (extended)
- The National Inventory of Architectural Heritage

The Record of Monuments and Places

12.27 The RMP 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 comprise 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.

12.28 Several recorded monuments were noted within the study area around the application site. All available information on these sites is provided in Appendix 12-A.

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Cartographic Sources

12.29 Cartographic sources include the 1st and 2nd Editions of the Ordnance Survey six-inch maps. Documentary sources provide more general historical and archaeological background.

The County Development Plan

12.30 The County Development Plan identifies those structures listed for preservation within County Waterford.

Field Inspection

12.31 A field inspection was carried out on the 13th of May 2016 to determine the location, extent of any archaeological sites and assess their significance and to also identify any previously unrecorded or suspected sites and portable finds.

RECEIVING HISTORICAL AND ARCHAEOLOGICAL LANDSCAPE

The Landscape

12.32 The application site is located in the townlands of Ballykennedy, Kilgreany, and Canty in County Waterford. It is mapped on OS Six Inch Sheets No. 30, to the west of Dungarvan and to the south of the N72 Dungarvan to Cappoquin Road.

Historical and Archaeological Background

12.33 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 within the study area.

12.34 The application site is situated in the civil the parish of Whitechurch and the barony of Decies without Drum.

The Prehistoric Period

12.35 There are no megalithic tombs known from the study area or surrounding landscape, however, Neolithic burials have been found in Kilgreany cave in the study area (Molleson 1985), while Neolithic material was uncovered from Ballynamintra Lower Cave (RMP WA030:13). The Bronze Age is represented by several sites and finds. There is an oval grass covered mound from Cappagh (RMP WA030:80) to the north of the study area which could be a burial mound. There is a Fulacht Fia known from Ballynamintra Upper (RMP WA030:19). A hoard of two Early Bronze Age Type Ballyvalley axes was found just outside the study area, in Knockaun townland while quarrying in 1934 (Harbison 1969 37, No. 226). Another large hoard of Late Bronze Age weapons and tools was found at Knockmaon in the south-east of the study area about 1898 (WA030-40). This evidence is indicative of prehistoric activity within the study area in the Neolithic and Bronze Age.

The Early Medieval Period

12.36 In the Early Medieval period the study area was part of the territory of the Déisi Muman. The Déisi are first mentioned in the Annals of the Four Masters (AFM) in A.D. 265 where it states they were expelled from their territory (in Meath) by Cormac son of Art, son of Conn of the Hundred Battles, forcing them to move to Munster.

12.37 They are next mentioned in A.D. 666 when Bran Finn, son of Maelochtraigh, chief of the Déisi of Munster, was slain (AFM). By 853 the Vikings had established a short-lived settlement at

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Waterford but returned in the year 912 and established a strong fort (AFM 912) which eventually grew into the Norse town.

12.38 By the eleventh century the Ua Faelain sept had emerged as the lords of Déisi and the death of Gillabhrighde Ua Faelain, lord of the Déisi, was noted in 1085 (AFM). In 1168 Ua Faelain, lord of the Deisi-Mumhan, killed the grandson of Conchobhar Ua Briain who had killed Muircheartach Ua Briain, King of Munster (AFM). In 1013 Mothla, son of Domhnall, son of Faelan, lord of the Deisi-Mumhan was killed at the battle of Clontarf.

12.39 Settlement in the Early Medieval period is indicated by the presence of enclosed farmsteads known as ringforts. There is a ringfort known in Knockaun townland (WA030-025) and the remains of a circular scarped platform in Canty townland that may be the remains of a ringfort (WA030-21). Early Medieval activity is also indicated by the horizontal watermill excavated in Coolnanav townland in 1959 (WA030-20).

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The Medieval Period

12.40 Waterford City was captured by the Norman Lord Richard fitz Gilbert de Clare in 1170. The Annals note that the Normans captured the King of the Déisi, Melaghlin O'Phelan (Ua Faelain), and his son, who were helping defend the town (AFM). In 1171 Waterford was given to the King, Henry II, who visited the city the same year and had it garrisoned. In 1204 Domhnall O'Phelan granted the province of Dungarvan to King John and died the following year (Otway-Ruthven 1980, 43). In 1215 King John granted Thomas fitz Anthony Custody of Decies and Desmond. Fitz Anthony granted some of these lands to John d'Evreux and in 1229, following fitz Anthony's death, d'Evreux was granted a charter by King Henry III for lands in the parish of Whitechurch including the townlands in the study area of Cappagh and Ballykennedy and Ballynamintra. d'Evreux probably controlled the whole study area at this time (Sweetman 1875, No. 1680).

12.41 Thomas fitz Anthony died in 1227 and Decies passed through his daughter Margery to John fitz Thomas. In 1259 Prince Edward granted John fitz Thomas all the lands of Decies and Desmond which belonged to Thomas fitz Anthony with custody of the Castle of Dungarvan (Sweetman 1877, 629). John fitz Thomas was an ancestor of the Earls of Desmond and through him Decies passed to them.

12.42 The process of sub-infeudation is normally associated with the construction of timber castles, known as Motte and Baileys. These earthwork fortifications were used to house and defend the Norman lords and their retinues while they set about the process of pacifying and organizing their new fiefs. However, there are only four mottes known from Waterford and the closest to the study area is at Gallowshill (RMP 31:67) in Dungarvan.

12.43 Manorialism describes the organisation of the feudal rural economy and society characterised by the vesting of legal and economic power in a Lord supported economically from his own direct landholding and from the obligatory contributions of a legally subject part of the peasant population under his jurisdiction. In Ireland the Lord's Manor House was also sometimes enclosed by a rectangular moat and these sites are referred to as moated sites. They are a useful indicator of Anglo-Norman settlement. However, there are no moated sites known in the study area or surrounding landscape, and the nature of Anglo-Norman settlement in the study area is unknown.

12.44 Thomas fitz Anthony's daughter Margery married John Fitzthomas, ancestor of the Earls of Desmond. Their descendant, James, 7th Earl of Desmond, who died in 1462, granted to his younger son Gerald the territory of Decies, an area extending roughly between the rivers Blackwater and Mahon in Co. Waterford. Gerald established his headquarters at the castle of Dromana, on a cliff above the Blackwater to the south of Cappoquin. After this the Lords of Decies gradually established an independent lordship. In 1564, the 15th Earl of Desmond sought to

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enforce his feudal rights on Sir Maurice Fitzgerald, Lord of Decies. Sir Maurice refused to yield and sought the help of Thomas Butler, 10th Earl of Ormond. The Earls of Desmond and Ormond fought a private war which resulted in the Battle of Affane on the River Blackwater, where the Earl of Desmond was defeated and taken prisoner.

12.45 The fifteenth century was characterised by the decline of Anglo-Norman power in Ireland which had been ebbing since the early fourteenth century. Part of the response to this was the construction of masonry tower houses from the fifteenth century (Sweetman 1999, 137). There are no examples in the study area. In the surrounding landscape there is an example, now levelled, at Clonkerdin (RMP WA030:32) to the east of the study area. A standing example at Cappagh (RMP WA030:6) just to the north of the study area probably belonged to Sir James Fitzgerald, son of Gerald Fitzgerald, lord of Decies, who moved from Cappagh to Dromana when he became lord of Decies. Knockmaon tower house (RMP30:41) is situated just to the south-west of the study area.

The Post-Medieval Period

12.46 Following the Fitzgerald rebellion of 1579, Knockmaon was forfeited and granted to Christopher Hatton. Subsequently Hatton sold the lands to Sir Richard Osborne. In the Civil Survey of 1655, it notes that in 1640, Sir Richard Osborne of Knockmaon (d. 1685) held Knockmaon, Cappagh, Ballynahemery, Coolnanav, Kilgreany and Scart, his brother Nicholas Osborne held Ballynamintra, and Richard Boyle, Earl of Cork, had acquired Canty (Simington 1942). The Book of Survey and Distribution (unpublished Manuscript National Library of Ireland) indicates that they retained their lands after the war of the three Kingdoms. By 1837 Lewis (1837) noted that Cappagh had come into the hands of Richard Ussher.

Kilgreany Cave Historical Significance

12.47 Kilgreany Cave is a small natural limestone cave on a SW-facing escarpment (H c. 10-15m, Dowd 2002). Its archaeological significance lies in the fact that it contained animal remains from the last Ice Age as well as human remains and archaeological material from the prehistoric and medieval periods. All this material has been removed and all that remains in situ is the natural cave. Although the cave was not placed on the Record of Monuments in 1995, it was designated in 1996 with its placement on the Statutory Register of Historic Monuments.

12.48 In 1928 John Kaye Charlesworth, a Geologist, suggested that if there were any traces of Palaeolithic man to be found in Ireland, they would be found in the south of the country which was free of ice during the last glaciation. The Bristol Speleogical Society came to Ireland in the summer of 1928 and with E.K. Tratman, they identified Kilgreany as suitable for investigation.

12.49 In the excavation work, they identified artefacts and found evidence of occupation from the Neolithic and Bronze Age periods. A skeleton of a woman (A) was found in a Neolithic hearth, below this was the remains of animals which would have been alive in this area during the Ice Age - Reindeer, Brown Bear, Artic Lemming and Irish Elk. Near this layer skeleton (B) was found with the bones of Ice Age animals and Tratman believed that he found the earliest evidence of humans in Ireland.

12.50 In 1934 H.L. Movius and the Harvard Archaeological Expedition carried out a further excavation at Kilgreany cave. Movius noted that in the same layer that skeleton (B) was found there was also artefacts from much later periods. He concluded that skeleton (B) was actually of Neolithic date. More than twenty years after these discoveries the Kilgreany skeletons were submitted for dating to the British Museum. Skeleton (A) was dated to 4580 +- 150 BP - the Neolithic period. Kilgreany burial B has recently been dated by C14 analysis to 4820 ± 60 BP, which is closely contemporary

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with burial A. The burials appear to have been laid on the cave-floor and partially protected by cairns, rather than inserted into the floor.

12.51 The strata at the cave had been disturbed but an interpretation of human activity there consisting of three phases - Neolithic burial, the deposition of a possible Late Bronze Age hoard, and early medieval occupation represented by hearths - can be made (Dowd 2002). All the archaeological material has been removed from the cave and what remains *in situ* is the natural cave.

12.52 In 2007 as part of a previous planning application for the quarry (Planning Reg No 06/1599), an archaeological assessment of Kilgreany Cave was carried out which included a geophysical survey (Licence 07/016) carried out by Target Archaeological Geophysics on an area of 5.63 hectares that extended from the cave to the current application site. The assessment was undertaken in order to define the location, form and extent of any additional potential cave entrances, and to determine the locations of any associated or previously unrecorded archaeological remains.

12.53 The presence of one oval stone lined enclosure, measuring c. 120 m x 80 m in diameter, with further potential annexes, was recorded close to the cave. The presence of two magnetically strong hearth-like structures and a potential rectangular structure were also indicated.

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BUILDINGS

Protected Structures

12.54 The Waterford County Development Plan 20011-17 (extended) was examined as part of the baseline study for this chapter of the EIAR Report. The review established that there are no Protected Structures situated within the application site. There is one building within the study area listed as a Protected Structure. This building is situated immediately north-west of the existing quarry and 0.7km north-west of the proposed eastern satellite quarry. It will not be directly or indirectly impacted by the proposed development (see below and Figure. 12-1).

12.55 *Ballykennedy Church Structure No. 668*

Detached three-bay double-height single-cell Board of First Fruits Church of Ireland church, built 1831, with single-bay three-stage entrance tower to west on a square plan. In use, 1927. Now in ruins. Pitched roof now gone, with no trace of rainwater goods surviving on squared rubble stone eaves. Roof to tower not visible behind parapet (presumed to be gone) with cast-iron rainwater goods. Irregular coursed squared sandstone walls (random rubble stone wall to east) with cut-stone dressings to tower, including diagonal stepped clasping buttresses to first stage, stringcourses to each stage, and battlemented parapet on stringcourse having cut-stone coping, and corner pinnacles. Pointed-arch window openings to nave with cut-stone sills, and chamfered surround to chancel (east) having hood moulding over. Lancet window openings to first and to top (bell) stage to tower (paired to top (bell) stage) with cut-stone sills forming sill courses, and chamfered surrounds. No fittings surviving to window openings with remains of louvered panel fittings to top (bell) stage to tower. Pointed-arch door opening to tower with cut-stone block-and-start surround having chamfered reveal, hood moulding over, and timber boarded door having overpanel. Set back from road in own grounds with random rubble stone boundary wall to perimeter having pair of cut-stone piers with stringcourses, cut-stone capping, and wrought iron double gates. Also, graveyard to side with various cut-stone grave markers, c.1700 - c.1950.

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Non-designated Structures

12.56 The National Inventory of Architectural Heritage (NIAH) was examined on 23 April 2019 as part of the baseline study for this Chapter of the EIAR. There are no additional structures within the application site or the study area listed in the NIAH which are not already included in the Record of Protected Structures.

Non-designated Field Inspection

12.57 On the 13th of May 2016, survey fieldwork was carried out to identify any additional non-designated structures in the vicinity of the application site. This involved assessing all upstanding Structures that are marked on the 1927 edition of the six-inch Ordnance Survey mapping within 300m of the application site (see Figure 12-1).

The review established that there are three structures in this area that are not of heritage interest (see below).

Canty Cottage No. 1 Plate 12-1

It is proposed to demolish this structure. No heritage interest. Ruined cottage, single storey with corrugated roof.

Canty Cottage No. 2 Plate 12-2

No heritage interest. Single storey three bay cottage with slate roof and chimney at each gable. Extension with roof lights built to rear and all windows replaced with uPVC.

Kilgreany Farmhouse No.3 Plate 12-3

No heritage interest. Single storey three bay cottage with corrugated roof and single chimney. Animal shed appended at west.

ARCHAEOLOGY

Archaeological Assessment

Recorded Monuments

12.58 Examination of the Record of Monuments and Places for Co. Waterford indicated that there are no Recorded Monuments located within the application site (Figure 12-1 and Appendix 12-A). There are no Recorded Monuments situated within 200m of the application site. Kilgreany Cave (WA030-18) was delisted from the SMR and was not included in the Record of Monuments and Places and is considered further below.

12.59 The closest Recorded Monument is Canty Enclosure (WA030-21) which is situated 0.5 km south-east of the application site. This monument and the remaining monuments in the study area are all considered to be situated at too great a distance from the proposed application site to be directly or indirectly impacted by the proposed development (refer to Appendix 12-A for a list of Record of Monuments and Places (RMP) Sites within the study area).

Register of Historic Monuments

12.60 Kilgreany Cave Dwelling WA030-18- and Ballynamintra Middle Cave Dwelling WA030-15- were placed into the Register of Historic Monuments in 1996. Kilgreany Cave Dwelling is situated over 200m south-west of the application site and will not be directly or indirectly impacted by the proposed development. Ballynamintra Middle Cave Dwelling is also considered to be too far distant to be directly or indirectly impacted by the proposed development.

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Undesignated Monuments

12.61 Examination of the Sites and Monuments Record (SMR) which is maintained by the Dept. of Culture, Heritage and the Gaeltacht on 23rd April 2019 indicated that there are no sites listed in the SMR situated within the application site.

12.62 There is one additional undesignated monument listed in the SMR within the study area. WA030-84- in Coolnanav townland comprises a pair of caves (see Appendix 12-B), located 1.2 km north-east of the application site. These caves will not be directly or indirectly impacted by the proposed development.

Cartographic Sources

12.63 The Ordnance Survey 1st and 2nd edition maps of the area were examined, but no additional sites were noted.

Place Name Evidence

12.64 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 place names were looked up in the Placenames Database of Ireland at Logainm.ie. The placenames refer primarily to natural features, livestock, crops and some personal names and individuals. The monuments referred to are the church at Whitechurch, however there are no churches known in Kilgreany or Killeeshal townlands

Canty	The dispraised places
Cappagh	Tillage plot
Coolatoor	Corner field
Coolnanav	Corner of the oxen
Ballykennedy	O'Kennedy's town
Ballynamintra Middle, Upper	Widow's town
Farranbullen	Land of the loaf
Kilgreany	Graine's church
Killeeshal	Low church
Knockaun	Hillock
Lauragh	Thing
Scart	Thicket
Whitechurch	Tempall Geal

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Archaeological Investigations

12.65 Examination of the excavations.ie database of Irish excavation reports indicated that there has been one excavation and one geophysical investigation in the study area in Kilgreany cave which uncovered archaeological material (see below).

12.66 Kilgreaney Cave
Prehistoric cave deposits
SMR 30:18
Unlicensed excavation

As previously noted, the Bristol Speleogical Society came to Ireland in the summer of 1928 and under E.K. Tratman they identified Kilgreany cave as suitable for excavation.

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12.67 They found evidence of occupation from Neolithic and Bronze Age periods. A skeleton of a woman (A) was found in Neolithic hearth, below this another hearth was found in which were the remains of animals which would have been alive in this area during the Ice Age - Reindeer, Brown Bear, Artic Lemming and Irish Elk. Near this layer skeleton (B) was found and the fact that it was found with the bones of Ice Age animals led Tratman to believe that he found the first evidence of man in Ireland.

12.68 In 1934 H.L. Movius and the Harvard Archaeological Expedition carried out a further excavation at Kilgreany. Movius noted that in the same layer that skeleton (B) was found there was also pottery, bones etc., from much later periods. He concluded that skeleton (B) was not in fact the remains of Ireland's oldest man from the Stone Age period but in fact of Neolithic date.

12.69 Evidence was also found of ox, sheep, goat, pig, horse, dog, wild boar, red deer, hare, rabbit, badger, otter, fox, wolf, wild cat marten, stoat, fieldmouse, bat, hedgehog Bear, lynx and artic lemming. Turkey, duck, song thrush, fieldfare, blackbird, redwing, pigeon, heron, crane, peregrine falcon and the snowy owl.

12.70 Cappagh, Kilgreany Townland County Waterford
Geophysical Survey
Licence 07/016
SMR 30:18
Target Archaeological geophysics
A geophysical survey was undertaken in 2007 over a section of pastureland situated adjacent to Cappagh Quarry, in the townland of Kilgreany, near Cappoquin, in County Waterford. The survey was commissioned by John A. Wood Limited. The purpose of the geophysical survey was to define the location, form and extent of potential cave entrances, where present within the investigation area, and to determine the locations of any associated or previously unrecorded archaeological remains.

12.71 The survey recorded a high level of variation throughout Areas 1 – 6 which is due to the underlying soils and bedrock. The magnetic range of this variation complicated interpretation as archaeological features generally produce more subtle signatures. However, the presence of one oval stone lined enclosure, measuring c. 120 m x 80 m in diameter, and with further potential annexes, was recorded in Areas 3, 4, 5 & 6. A sub-rectangular arrangement of anomalies is also suggested in Area 3, although these responses were less well-defined, and therefore interpretation remains tentative.

12.72 The presence of two magnetically strong hearth-like structures and a potential rectangular structure were also indicated in Areas 3 & 4. Elsewhere in the data, further linear responses and trends were detected. Whilst an archaeological interpretation for these should not be excluded, a natural / agricultural or more recent landscaping effect is suggested. No clear anomalies suggesting the presence of cave openings are apparent in the data. However, the presence of deep hollows in the bedrock may be present in the western sections of Areas 3 & 4. None of the features identified by the excavation or geophysical survey will be impacted by the proposed development.

Aerial Photographs

12.73 Examination of the Ordnance Survey 1995, 2000 and 2005 imagery as well as Google Earth imagery from 2015 and 2018 and Bing imagery from 2011 did not indicate any additional potential cultural heritage sites.

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Other Sources

12.74 Examination of the finds registers and topographical files held by the National Museum of Ireland revealed that, apart from the Kilgreany cave assemblage, the following artefacts have been reported to the National Museum.

Knockmaon Hoard

12.75 The hoard consisted of a sword, a Socketed spearhead, two Socketed axeheads, 2 tanged chisels, a Socketed gauge, a Socketed knife and a Socketed knife with curved double-edge blade. NMI 1906:434 and P. 1948:145-151; Eogan 1983, 163-4, No. 144.

12.76 Several standard artefact corpus studies were also consulted, and no other artefacts were identified (Mount 1997, Harbison 1969, Simpson 1990, Eogan 1965, 1983, 2000, Kavanagh 1991, O'Flaherty 1995, Raftery 1984).

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Field Assessment

12.77 Field inspection was carried out on the 13th of May 2016. This involved an inspection of all the lands in the application site. Refer to Plate 12.4 for the reference field numbers. No additional structures, monuments or items of heritage interest were identified.

Area 1 is a long and narrow south-sloping rectangular field of pasture which has been partly soil-stripped and is partly overgrown. Enclosed by stony banks and matured hedges and trees. There is no visible trace of any heritage material (Plate 12.5).

Area 2 is a long and narrow south-sloping rectangular field of tillage which had been tilled and planted at the time of the visit. Enclosed by stony banks and matured hedges and trees. There is no visible trace of any heritage material (Plate 12.6).

Area 3 is a southwest-sloping rectangular field of tillage which had been tilled and planted at the time of the visit. Enclosed by stony banks and matured hedges and trees. There is no visible trace of any heritage material (Plate 12.7).

Area 4 is a southeast-sloping rectangular field of tillage which had been tilled and planted at the time of the visit. Enclosed by stony banks and matured hedges and trees. There is no visible trace of any heritage material (Plate 12.8).

Area 5 is a south-sloping rectangular field of pasture rising at southeast to a low knoll. Enclosed by stony banks and matured hedges. There is no visible trace of any heritage material (Plate 12.9).

Area 6 is a south-sloping large rectangular field of tillage which had been tilled and planted at the time of the visit. Enclosed by stony banks and matured hedges and trees. There is no visible trace of any heritage material (Plate 12.10).

Area 7 is an undulating rectangular field of pasture with a low knoll at northeast. Enclosed by stony banks and matured hedges. There is no visible trace of any heritage material (Plate 12.11).

Area 8 is the existing area of extraction that has been quarried to geological levels. This area is where the proposed concrete plant and stockpile is located. There is no visible trace of any heritage material.

Geophysical Survey

12.78 Following pre-planning consultation with the Development Applications Unit (DAU) of the Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media, formal feedback provided in April 2021 included a recommendation that a geophysical survey should be undertaken on the

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agricultural lands to be developed as a satellite quarry. A copy of the consultation feedback provided by the DAU is reproduced in Appendix 12-C.

12.79 On foot of the DAU recommendations ,a full magnetometer survey (Licence No. 21R0158) was commissioned from Earthsound Archaeological Geophysics. The survey was undertaken at a sample resolution of 0.5m x 0.25m across the proposed satellite quarry footprint in July 2021.

12.80 The surveyed lands contained a general overprint of geological activity manifested as diffuse weak magnetic signatures which are difficult to distinguish from archaeological anomalies. In addition, the lands contain a substantial amount of strong magnetic anomalies and dipoles. These could originate from geological activity or have been caused by the spreading of green manure over the area. The presence of the geological interference and potential green manure has caused a confusing magnetic picture in which archaeological remains are difficult to distinguish from geological signatures and in which weak archaeological features could have been masked or remain undetected.

12.81 The geophysical survey revealed the presence of numerous features relating to agricultural activity including relict field boundaries (both recorded in historic OS mapping and previously unknown), field sub-divisions and cultivation furrows. A series of arcing ditches and cut features were also detected which could relate to archaeological or agricultural activity.

12.82 On the basis of the geophysics report an assessment of the potential of the anomalies being archaeological has been made (see Table 12-1 below and geophysical survey report reproduced in Appendix 12-D). Twenty of the 47 identified anomalies are assessed as moderate to high potential of being archaeological and 27 as non-archaeological agricultural divisions.

Table 12.1
Table 12.1 Assessment of Geophysical Anomalies

Anomaly	Description	Potential of being Archaeological
M1	A circular anomaly located in the northeast of the survey area. It measures 34m by 27m and may constitute a circular archaeological ditch.	High, possibly archaeological
M2	A curvilinear ditch which corresponds to a historic feature recorded on OS mapping.	Low-boundary on OS 1st ed.
M3	A semi-circular ditch, 36m in length and with a potential diameter of 21m. This ditch may constitute an enclosure and appears to surround four possible pits or postholes. These features are likely to be archaeological in origin.	High, possibly archaeological
M4	A curvilinear ditch measuring 162m in length. This relict field boundary is associated with a series of ditches which form perpendicular divisions on its southern edge.	Low-boundary on OS 1st ed.
M5	A curvilinear ditch, 29m in length. Given the slight arc within its form, this feature could represent archaeological activity or represent a further agricultural division associated with M4.	Low-prob relict agricultural division
M6	A semi-circular ditch, 23m in length and with a potential diameter of 13m. This anomaly could represent an archaeological enclosure ditch. It appears to have been dissected by a linear ditch on its western edge. This linear ditch 46m in length, may be contemporary and archaeological in origin or may represent a later agricultural division.	High, possibly archaeological
M7	A series of isolated circular magnetically-positive anomalies located in the northeastern portion of the survey area. They range in diameter between 2m and 5m and could represent archaeological or agricultural pits or post-holes.	High, possibly archaeological

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Anomaly	Description	Potential of being Archaeological
M8	Two parallel linear anomalies located in the west of the survey area. The southernmost of these anomalies represents a historic field boundary which is recorded on OS mapping and measures 42m in length. The northernmost anomaly extends to a total length of 39m and is probably also associated with historic field systems.	Low-parallels boundary on OS 1st ed.
M9	A right-angled ditch which once probably joined to a bend in the extant field boundary. It is likely to relate to a relict field system.	Low-prob relict agricultural division
M10	Two curvilinear ditches which run across the southern half of the northeast field. Measuring 71m and 49m in length, these features could relate to archaeological or agricultural processes.	High, possibly archaeological
M11	Three arcing ditches which appear to form a large oval ditched enclosure. They are truncated by M10 and an extant field boundary and appear to enclose an area 78m N-S and 60m E-W. Contained within this archaeological enclosure are a number of apparent sub-divisions.	High, possibly archaeological
M12	Two sub-circular ditches which are located near the centre of M11. Measuring 19m and 39m in length these appear to represent internal features and divisions within the archaeological enclosure M11. The larger of the two anomalies is likely to represent a central enclosure, 16m in diameter.	High, possibly archaeological
M13	A sub-circular ditch which appears to abut the southeastern portion of enclosure M11. Measuring 35m in length and c.14m in diameter this feature represents a subdivision within enclosure M11.	High, possibly archaeological
M14	A series of ditches which form a rectangular feature, measuring 47m by 21m. It is likely that this feature overcuts M11 and probably relates to an agricultural division or boundary.	Low-prob relict agricultural division
M15	A curvilinear possible ditch, 44m in length which could relate to agricultural, archaeological or geological processes.	High, possibly archaeological
M16	An isolated possible pit or post-hole which could be of archaeological or agricultural origin.	Moderate potential of being archaeological
M17	Two interconnecting ditches; the larger of these crosses the length of the modern field and appears to possibly respect M11. This relict field boundary is joined to a right-angled ditch which probably represents a field sub-division.	Low-prob relict agricultural division
M18	Two parallel ditches, 17m and 27m in length. These ditches could be archaeological in origin or associated with agricultural processes and could represent the northern return of the sub-division within M17.	Low-prob relict agricultural division
M19	An arcing ditch, 26m in length which could be archaeological, agricultural or geological in origin.	High, possibly archaeological
M20	Two interconnecting ditches, 60m and 27m in length. While an archaeological origin cannot be completely ruled out these features are more likely to be agricultural in origin.	Low-prob relict agricultural division
M21	A linear ditch, 71m in length. This feature is likely to represent a relict agricultural boundary.	Low-parallels existing boundary
M22	A linear ditch, 125m in length which is likely to represent a relict agricultural boundary, most likely associated with M21 and M25.	Low-parallels existing boundary
M23	A right-angled ditch, 30m in length which probably represents an agricultural boundary.	Low-parallels existing boundary
M24	An arcing ditch, 35m in length which could be archaeological, agricultural or geological in origin.	High, possibly archaeological

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Anomaly	Description	Potential of being Archaeological
M25	Two linear ditches which correspond to historic features recorded on OS mapping.	Low-boundary on OS 1st ed.
M26	A linear ditch, 106m in length. This feature is possibly associated with M27 and is cut by M25. It could represent an archaeological or agricultural boundary.	Low-prob relict agricultural division
M27	Two concentric arcing ditches, 31m and 50m in length. These could be archaeological, agricultural or geological in origin.	High, possibly archaeological
M28	A curvilinear ditch, 23m in length which is cut by two possible pits. A third possible pit is located very close to this ditch which could be of agricultural or archaeological origin.	High, possibly archaeological
M29	A curvilinear ditch, 63m in length. This boundary ditch could be archaeological or agricultural in origin and may be associated with either M30 or M31.	Moderate potential of being archaeological
M30	A right-angled cut feature which is cut by a possible pit. This feature could be archaeological or agricultural in origin.	Low-prob relict agricultural division
M31	An arcing ditch, 45m in length. This potential archaeological enclosure appears to bound three possible pits and may be cut by M29.	High, possibly archaeological
M32	A curvilinear ditch, 38m in length which could be of archaeological or agricultural origin.	Low-prob relict agricultural division
M33	A linear ditch, 70m in length which could relate to an archaeological or agricultural boundary.	Low-prob relict agricultural division
M34	A linear ditch which corresponds to historic features recorded on OS mapping.	Low-boundary on OS 1st ed.
M35	A series of interconnecting linear ditches which span between M34 and the extant field boundary. These interconnecting ditches are likely to represent field subdivisions.	Low-prob relict agricultural division
M36	Two parallel curvilinear ditches, 50m in length which appear to be connected to M37 and could be of archaeological or agricultural origin.	Low-prob relict agricultural division
M37	A semi-circular negative magnetic anomaly, measuring 28m in length. This feature could represent a stone feature or stone cut ditch and appears to be archaeological in origin, interlinking with M36 and enclosing three possible pits or post-holes. This enclosure would be approximately D-shaped and measure 29m in diameter.	High, possibly archaeological
M38	A linear ditch, 102m in length which could be of archaeological or agricultural origin.	Low-prob relict agricultural division
M39	A linear ditch, 120m in length which could be of archaeological or agricultural origin and could be related to M38 and M45.	Low-prob relict agricultural division
M40	A linear ditch which corresponds to historic features recorded on OS mapping.	Low-boundary on OS 1st ed.
M41	Two isolated magnetic responses which are likely to be associated with pits or post-holes of archaeological or agricultural origin.	Moderate potential of being archaeological
M42	A curvilinear ditch, 17m in length which could be of archaeological or agricultural origin.	High, possibly archaeological

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Anomaly	Description	Potential of being Archaeological
M43	A short linear feature, 10m in length which could relate to a ditch or may represent a highly magnetic cultivation furrow.	Low potential
M44	A linear ditch, 48m in length which could be of archaeological or agricultural origin.	Low-prob relict agricultural division
M45	A curvilinear ditch, 95m in length which probably represents an agricultural boundary which interlinks with M39.	Low-prob relict agricultural division
M46	An arcing ditch, 26m in length which could be of archaeological or agricultural origin.	High, possibly archaeological
M47	A linear ditch, 17m in length which is likely to represent an agricultural subdivision leading from M40.	Low-prob relict agricultural division

ASSESSMENT OF POTENTIAL IMPACTS

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Direct Impacts

12.83 The proposed development of a satellite quarry on the lands to the east of the existing quarry will have an impact on a series of arcing ditches and cut features detected by magnetometer survey which could relate to archaeological or agricultural activity, as detailed in the earlier section of this Chapter presenting the findings of the geophysical survey.

12.84 Kilgreany Cave : The field in which Kilgreany cave is situated does not form part of the current development proposal and the cave will be preserved in situ. The proposed eastern satellite quarry is located approximately 230m to the north-east of the cave. The only potential impacts from the development proposal on Kilgreany Cave is blast borne vibration and changes to the setting of the cave.

12.85 Although it is proposed to demolish Structure 1, at the northern end of the proposed satellite quarry area, this ruined cottage, a single storey structure with a corrugated roof is not considered to be of heritage interest.

Indirect Impacts

12.86 No indirect impacts on cultural heritage or archaeology have been identified by the assessment.

Interactions with Other Impacts

12.87 No interaction with other impacts has been identified by the assessment.

Cumulative Impacts

12.88 Potential archaeological features within the application site are sub-surface with no surface expression and are not sensitive to cumulative developments.

Do Nothing Impacts

12.89 If the proposed development were not to proceed, there would be no negative impact on any feature of cultural heritage interest.

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Worst Case Impact

12.90 No worst case impact has been identified by the assessment.

Unplanned Events

12.91 No impacts on any known items of cultural heritage in the application area or the vicinity arising from unplanned events associated with the proposal have been identified by the assessment.

MITIGATION MEASURES

Direct Impacts

12.92 The anomalies identified by the geophysical survey will be archaeologically tested under licence to determine their archaeological significance in advance of the proposed satellite quarry development on the lands to the east of Cappagh Quarry. Any anomalies that are confirmed by testing to be of archaeological significance will be preserved by record in advance of development.

12.93 Potential vibration arising at Kilgreany Cave will be mitigated through the control and monitoring of ground-borne vibrations to ensure they are within prescribed threshold limits.

12.94 BS 7385 *Valuation and measurement for vibration in buildings. Guide to damage levels from groundborne vibration* states that there should typically be no cosmetic damage to structures if transient vibration does not exceed 15 mm/s at low frequencies, rising to 20 mm/s at 15Hz and 50 mm/s at 40Hz and above. In order to avoid window and render damage to buildings the limit for air blast (air overpressure level) is normally 125 dB (Lin peak) when measured with instrumentation that has a linear response down to 2Hz.

12.95 It is noted that the proposed eastern satellite quarry will be nowhere closer to the cave than any previous extraction that has taken place at Cappagh Quarry and that the satellite quarry is generally located at a greater distance. Potential blast related impacts on the cave will be mitigated through the control and monitoring of ground-borne vibrations to ensure they are within prescribed threshold limits. Provided these limits are not breached, there is no reason to believe that blast borne vibration has any potential to impact Kilgreany Cave.

12.96 Seismograph data recorded from blast monitoring location V1 which is approximately 260m from the existing area of extraction and to the north-west of the cave did not record a peak particle velocity (PPV) higher than 2.863 millimetres per second or an air overpressure greater than 123 dB(L) between 2011 and 2016. The proposed vibration limit in the current planning permission is 12 millimetres per second, measured in any three mutually orthogonal directions at any sensitive location. The peak particle velocity relates to low frequency vibration of less than 40 hertz where blasting occurs no more than once in seven continuous days.

12.97 Where blasting operations are more frequent, the peak particle velocity limit is reduced to eight millimetres per second. Blasting is not permitted to give rise to air overpressure values at sensitive locations which are in excess of 125 dB (Linear) maximum peak (with a 95-percentile confidence limit). No individual air overpressure value is permitted to exceed the limit value by more than 5dB (Linear).

12.98 Continued application of these limits for the proposed satellite quarry will ensure that there is no impact on Kilgreany Cave from blast borne vibration. It is proposed to continue blast monitoring in fields to the south-west and south of the application site to monitor future blast borne vibration and ensure compliance with these limits.

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12.99 Changes to the existing setting of the cave within the landscape will be mitigated by the construction of a screening berm 8m wide and 2m high around the perimeter of the satellite quarry and by perimeter landscaping works. These will provide visual screening to the quarry and ensure that it is not visible from Kilgreany Cave and thereby preserve the cave's setting.

Indirect Impacts

12.100 No indirect impacts warranting specific mitigation measures were identified by this cultural heritage assessment.

RESIDUAL IMPACTS

Direct Impacts

12.101 Following implementation of the mitigation strategies identified herein, there will be no direct impact on any features of cultural heritage interest arising from the proposed development.

Indirect Impacts

12.102 There shall be no indirect residual impacts on any features of cultural heritage interest arising from the proposed development.

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PLATES

Plate 12- 1
Non-designated Structure in the Vicinity of Proposed Development : Cottage, Canty.

Plate 12- 2
Non-designated Structure in the Vicinity of Proposed Development : Cottage, Canty.

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Plate 12- 3
Non-designated Structure in the Vicinity of Proposed Development : Cottage, Kilgreany.

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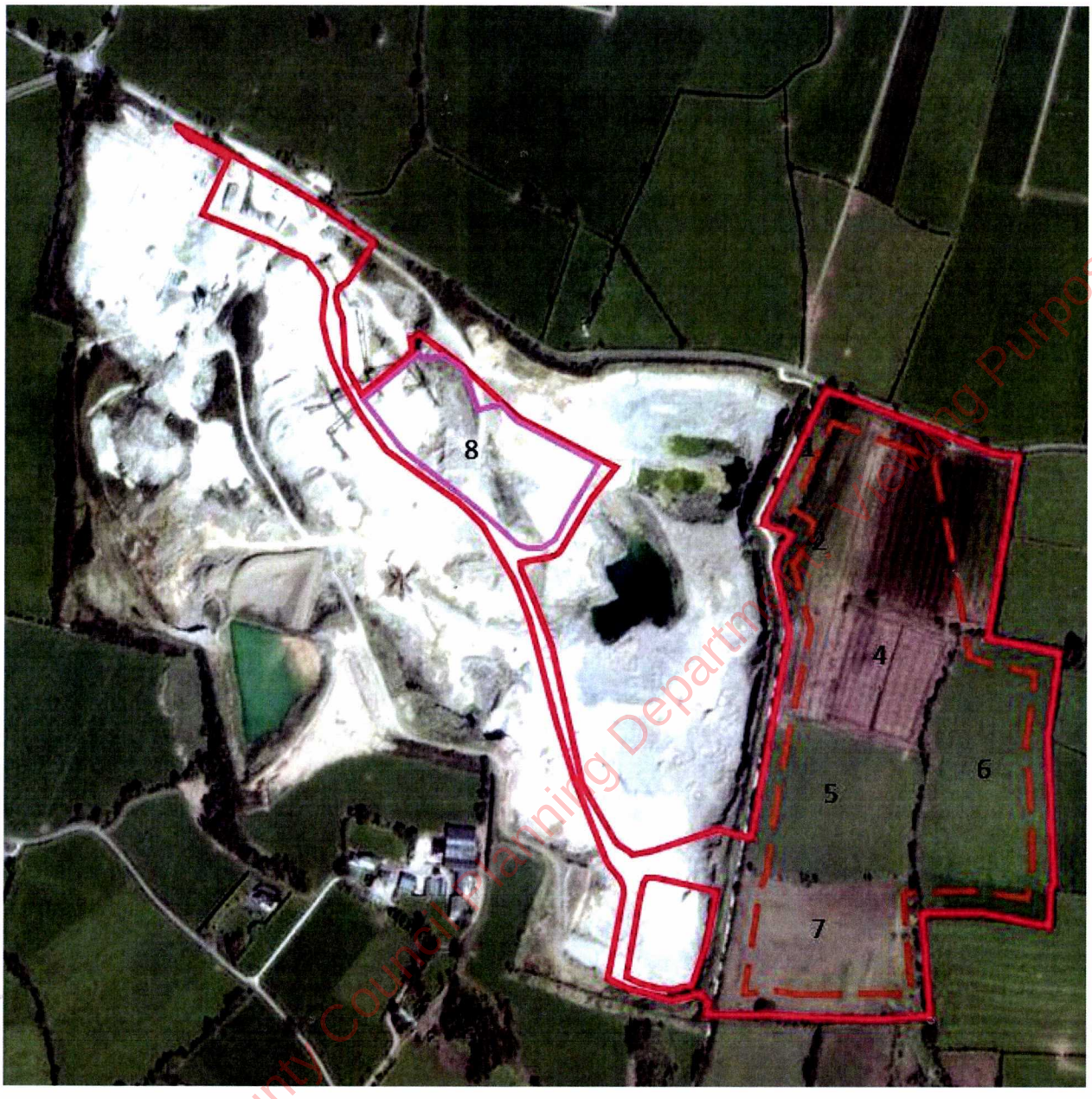

Plate 12- 4
Aerial Image of Application Site outlined in Red with the Fieldwork Areas Numbered.

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Plate 12- 5
Field 1 Looking North

Plate 12- 6
Field 2 Looking North

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Plate 12- 7
Field 3 Looking Northeast

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Plate 12- 8
Field 4 Looking South

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Plate 12- 9
Field 5 Looking Northwest

Plate 12- 10
Field 6 Looking North

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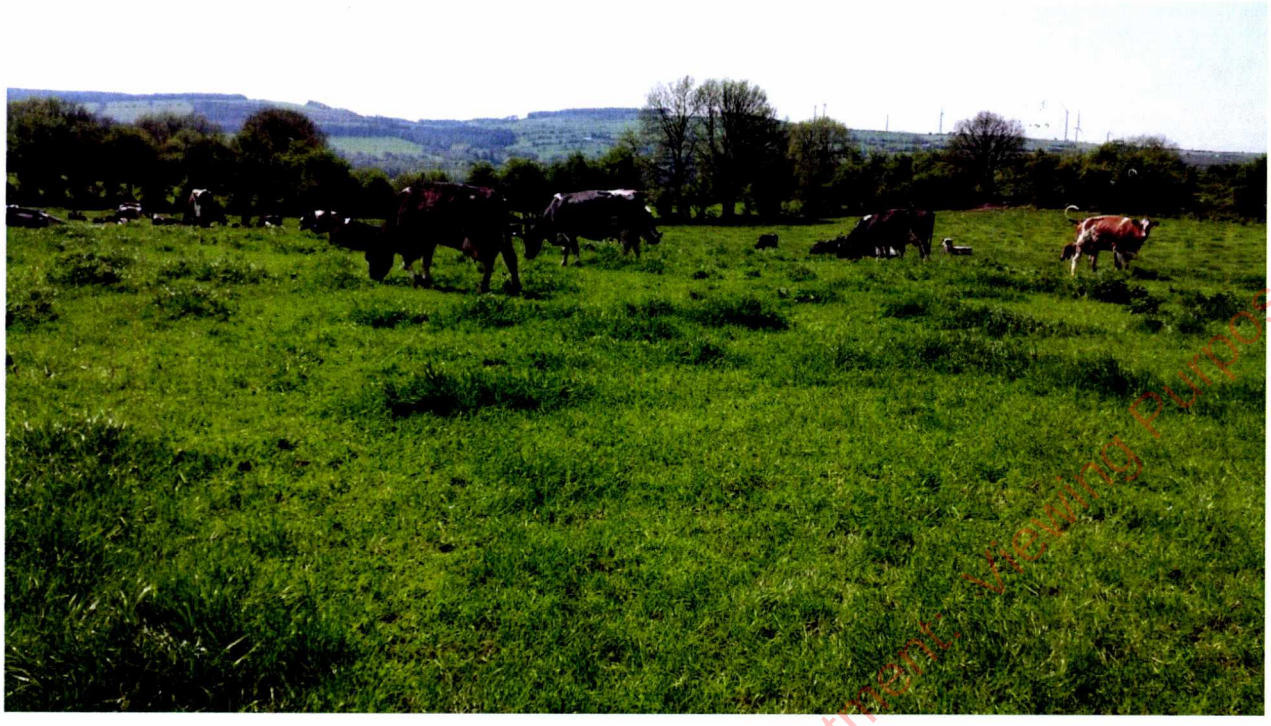

Plate 12- 11
Field 7 Looking South

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FIGURES

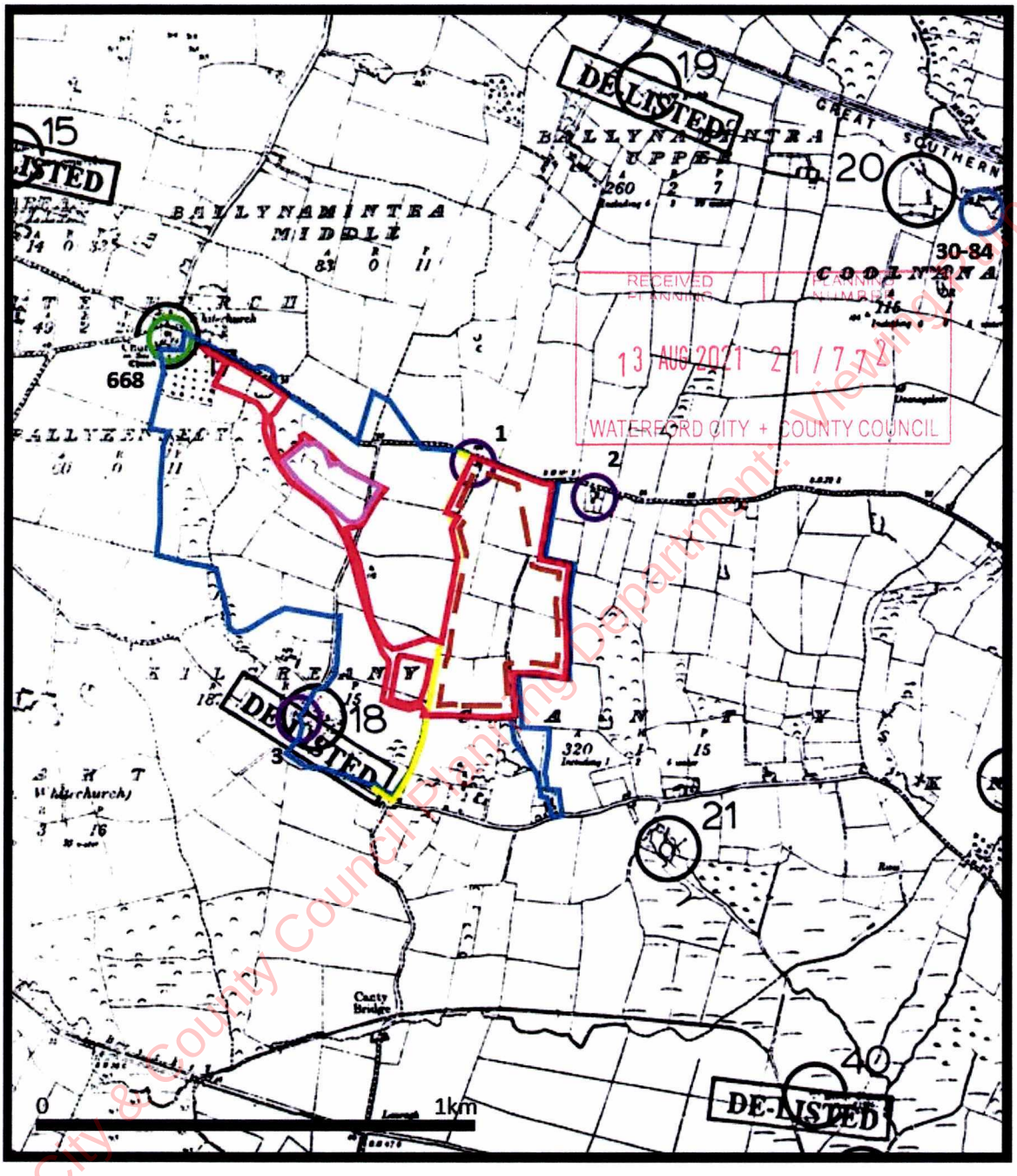

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Figure 12-1
Application Site indicated on the Statutory RMP Map for Co. Waterford.

The application site is indicated with a red line, the ownership interest with the blue line, the proposed extraction area with the brown dashed line, the proposed concrete plant and stockpile with the purple line and the existing passageway with the yellow line.

RMP sites are indicated with black circles, the SMR site with a blue circle, the Protected Structure with a green circle and additional structures with purple circles.

APPENDICES

Appendix 12-A
Sites in the Record of Monuments and Places (RMP)

Appendix 12-B
Sites in the Sites and Monuments Record (SMR)

Appendix 12-C
DAU Consultation Feedback

Appendix 12-D
Earthsound Geophysical Survey Report

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APPENDIX 12-A
SITES IN THE RECORD OF MONUMENTS AND PLACES (RMP)

WA030-15 Ballynamintra Middle Cave

Delisted from RMP. Limestone cave investigated by J. Ussher in 1881 who uncovered early medieval material associated with remains of pig, cattle, deer and fowl.

WA030-15001 Ballynamintra Middle Enclosure

Situated on top of rock outcrop known as Carrigmurrish that slopes down steeply to the S and W (H c. 15m). An enclosure (diam. c. 20m) defined by a stone-clad earthen bank (Wth c. 1.5m; H 1.5m) has been built around the opening to Ballynamintra cave (WA030-015003-) to prevent animals from falling into it. Although it has been described as a rath (Usher 1885, 362) the enclosure is not an antiquity.

WA030-17001 Ballykennedy Church

Located on a slight rise in undulating landscape. The parish church of Whitechurch was within a rectangular, neglected graveyard (dims. c. 50m E-W; c. 40m N -S) defined by stone-clad earthen banks. There is a derelict C of I church on the site, but there is no evidence of an earlier structure, not even the architectural fragments or the graveslab of Catherine Hyde, inscribed in roman capitals and probably 17th century in date, described by Power (1898a, 88-9).

WA030-17002- Ballykennedy Graveyard

Located on a slight rise in undulating landscape. The parish church of Whitechurch (WA030-017001-) was within a rectangular, neglected graveyard (dims. c. 50m E-W; c. 40m N -S) defined by stone-clad earthen banks. (Power 1898a, 88-9).

WA030-17003 Ballykennedy Architectural fragment

Located on a slight rise in undulating landscape. The parish church of Whitechurch (WA030-017001-) was within a rectangular, neglected graveyard (WA030-017002-) defined by stone-clad earthen banks. There is no evidence of the architectural fragments.

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WA030-17004 Ballykennedy Graveslab

Located on a slight rise in an undulating landscape. The parish church of Whitechurch (WA030-017001-) was within a rectangular, neglected graveyard (WA030-017002-) defined by stone-clad earthen banks. There is no evidence of graveslab of Catherine Hyde described by Power (1898a, 88-9).

WA030-18 Kilgreany Cave

Delisted. This is a limestone cave on a SW-facing escarpment (H c. 10-15m) which was investigated in 1928 by Tratman (Tratman et al. 1928). He recovered the bones of domestic animals as well as elk, reindeer and bear, together with the remains of at least two humans. The crouched male burial called Kilgreany B was thought to be Palaeolithic in date by Tratman (ibid. 120) because of its association with upper Pleistocene fauna.

Further investigation at the cave by Movius (1935, 282) concluded that Kilgreany B was more likely to be Neolithic in date. Kilgreany B has now been dated by C14 analysis to 4820 ± 60 BP, which is closely contemporary with the C14 date of 4580 +- 150 from the burial Kilgreany A, a crouched female (Molleson 1985-6), and possibly another five burials from similar contexts. The burials appear to have been laid on the cave-floor and partially protected by cairns, rather than inserted into the floor.

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The strata at the cave had been disturbed by fluctuating water-levels, but an interpretation of human activity there consisting of three phases - Neolithic burial, the deposition of a possible Late Bronze Age hoard, and early medieval occupation represented by hearths - can be made (Dowd 2002). The outer (dims. c. 6m x c. 6m; H c. 4m) and inner (dims. c. 4m x c. 4m; H c. 4m) chambers are still accessible.

WA030-19 Ballynamintra Upper Fulacht Fiadh.

Delisted from RMP. Marked as a fulacht fia only on the 1927 ed. of the OS 6-inch map and located in pasture on a level landscape on the floor of the Cappagh valley. A broad, slightly curved rise (L c. 50m; Wth c. 15m; H 0.5m) may be a natural feature.

WA030-20 Coolnanav Watermill-horizontal

Situated on the NW-SE Douglas river that disappears into a sink-hole c. 500m to the SE. A horizontal water mill was discovered in 1959 and investigated by R.M. Fahy who removed most of the material to the Cork Public Museum, although a beam presently remains in situ. Moore, 1999, 155, No. 1282.

WA030-21 Canty Enclosure possible

Marked as an enclosure on the 1840 and 1927 ed. of the OS 6-inch man and situated in an undulating landscape. Circular platform (diam. 28m) with slight traces of a fosse at N. It is planted with coniferous trees.

WA030-025 Knockaun Ringfort

Marked as a circular embanked enclosure (ext. diam. c. 30-35m) on the 1840 ed. of the OS 6-inch map. Situated in an undulating landscape, it is not visible at ground level in pasture.

WA030-40 Knockmaon Bronze Hoard

Delisted. No surface evidence.

About 1898 a bronze hoard was found on the eastern verge of Knockmaon bog during turf-cutting. The hoard consisted of a sword, a Socketed spearhead, two Socketed axeheads, 2 tanged chisels, a Socketed gauge, a Socketed knife and a Socketed knife with curved double-edge blade.

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APPENDIX 12-B
SITES IN THE SITES AND MONUMENTS RECORD (SMR)

WA030-84- Coolnanav Cave

Two caves are marked close together on the 1840 ed. of the OS 6-inch map, situated c. 50m from the SW bank of the NW-SE River Douglas, and adjacent to a parallel mill-race. Smith (1746, 329-30) describes finding a human skull in one of these caves called Uaimh na mort - the cave of the dead.

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APPENDIX 12-C
DAU CONSULTATION FEEDBACK

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An Roinn Turasóireachta, Cultúir, Ealaíon, Gaeltachta, Spóirt agus Meán
Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media

Your Ref: Cappagh Quarry
Our Ref: G Pre00069/2021 (Please quote in all related correspondence)

9th April 2021

SLR Consulting Ireland
7 Dundrum Business Park
Windy Arbour
Dublin 14

Via email: dluby@slrconsulting.com

Re: planning permission for an eastern extension to its existing quarry in the townlands of Ballykennedy, Kilgreany and Canty, approximately 8km west of Dungarvan (known locally as Cappagh Quarry).

A chara

I refer to your pre-planning correspondence received on 3rd March in connection with the above proposed development.

Outlined below are heritage-related observations/recommendations co-ordinated by the Development Applications Unit under the stated headings.

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Archaeology

The pre-planning consultation briefing report makes reference to the archaeological heritage and notes that *"the cultural heritage and archaeological component of the environmental impact assessment of the proposed quarry extension and new concrete plant comprised paper/literature reviews, site visits and fieldwork studies over an extended period between 2016 and 2021."* However, very little detail is provided in the briefing document relating to the nature of the archaeological assessment completed to date, the potential archaeological impact identified and suggested mitigation measures to ensure the protection of the archaeological heritage.

The proposed quarry extension site covers a site area measuring 20.8 hectares and is located in the vicinity of Kilgreany cave, which has been placed on the Register of Historic Monuments (WA 030:018 *cave dwelling*). Kilgreany cave is thus subject to statutory protection under section 5 of the National Monuments (Amendment) Act 1987. This

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limestone cave was investigated in 1928 by Tratman and Movius in 1934. The bones of domestic animals as well as elk, reindeer and bear were recovered with the remains of two humans. Originally thought to have been Palaeolithic, the human remains have been dated to 4820 ± 6 BP (Molleson 1985-6). Artefacts recovered from the upper levels are Early Christian in date. There is potential for related and similar archaeological sites to survive within the footprint of the proposed quarry extension.

The proposed development site/extraction area is also located in the vicinity of monuments WA030:013 *cave dwelling* and WA030:015 *cave dwelling* which are located north-west of the proposed extraction area.

A geophysical survey was carried out by Target Geophysics in association with an earlier proposed development at the quarry (07R0016 Nicholls). However, the survey carried out to date was limited to an area located within the southern extent of the existing quarry. A geophysical survey will be required within the area of the proposed quarry extension to determine the presence/absence of any possible archaeological features/anomalies within this area and to develop an informed archaeological strategy to ensure the protection of the archaeological heritage.

It is recommended that a specialist in archaeological geophysical survey be engaged by the developer to carry out a geophysical survey within the area of the proposed quarry extension. On completion of the survey, targeted archaeological testing of any identified anomalies of possible archaeological significance should be carried out (licensed under the National Monuments Acts 1930-1994). A detailed and comprehensive archaeological impact assessment report based on documentary research, fieldwork, geophysical survey, archaeological testing and an examination of all available plans/engineering drawings should be prepared and submitted as part of the EIAR submitted with any future planning application.

The suggested archaeological mitigation measures outlined in the briefing document are not considered adequate and a more detailed and comprehensive assessment of any potential impact on the archaeological heritage of the area will have to be completed to develop an informed archaeological mitigation strategy, preferably in advance of any planning decision.

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Current Waterford County Development Plan - Archaeological Policy & Objectives

The developer should be aware of the archaeological policy and objectives contained in the current Waterford County Development Plan which include the following:

Policy AH 14 – It is the policy of the Council to protect, conserve and preserve the integrity of archaeological monuments and their settings and archaeological objects within the County, and those buildings and sites which have been identified on the RMP.

Policy AH 15 – It will be an objective of the planning authority to secure the preservation (i.e. preservation in-situ or, as a minimum, preservation by record) of all archaeological monuments included in the Record of Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act 1994, and of site features and objects of archaeological interest generally.

In securing such preservation the planning authority will have regard to the advice and recommendations of the National Monuments Service, both in respect of whether or not to grant planning permission and in respect of the conditions to which permission, if granted, should be granted.

Objective AH 3 – It is an objective of the Plan to ensure that development in the vicinity of a site of archaeological interest shall not be detrimental to the character of the archaeological site or its setting by reason of its location, scale, bulk or detailing. When considering development in the vicinity of all archaeological sites including town defences, the planning authority will require the preparation of an archaeological assessment detailing the potential impact of any development on upstanding structures, buried structures and deposits. The report will also include a visual impact assessment to ensure adequate consideration of any potential visual impact the proposed development may have on upstanding remains.

The above observations and recommendations are based on the documentation submitted to this Department on a pre-planning basis and are made without prejudice to any observations the Minister may make in the context of any consultation arising on foot of any development application referred to the Minister, by the planning authority, in his role as statutory consultee under the Planning and Development Act 2000, as amended.

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You are requested to send further communications to the Development Applications Unit (DAU) at **manager.dau@chg.gov.ie**, or to the following address:

The Manager
Development Applications Unit (DAU)
Government Offices
Newtown Road
Wexford
Y35 AP90

Is mise, le meas

Diarmuid Buttimer
Development Applications Unit

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APPENDIX 12-D
EARTHSOUND GEOPHYSICAL SURVEY REPORT

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Investigation for the Proposed Roadstone Cappagh Quarry Extension, Canty townland, Co. Waterford

Archaeological Geophysical Survey

Detection Licence No. 21R0158

Survey undertaken on behalf of

Roadstone Ltd.

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EAG 433

28 July 2021

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Summary of Results

Between the 12th and 16th July 2021, a geophysical survey commissioned by Roadstone Ltd. was conducted over 13.5 hectares in advance to a proposed Cappagh Quarry extension at Canty townland, Co. Waterford. A magnetometer survey was undertaken at a sample resolution of 0.5m x 0.25m.

The survey was conducted upon a bedrock geology consisting of Waulsortian Limestones, beneath acid brown earths and brown podzolics. The survey area was covered in short grass and newly harvested silage, with the exception of one field which was heavily overgrown and could not be surveyed.

The geophysical survey undertaken for this report has revealed the presence of numerous features relating to agricultural activity including relict field boundaries (both recorded in historic OS mapping and previously unknown), field sub-divisions and cultivation furrows. A series of arcing ditches and cut features were also detected which could relate to archaeological or agricultural activity.

Of the anomalies, the most significance archaeologically is a large circular enclosure ditch measuring 80m in diameter. This feature contains a smaller central oval enclosure, an oval division near its southeast edge and evidence of other sub-divisions. The remains of a roughly D-shaped stone cut enclosure was also detected, containing three possible pits.

Within the northwest corner of the survey area an oval possible enclosure ditch was also detected as well as a series of possible pits or post-holes located within the vicinity. Further potential archaeological activity includes arcing and oval ditches as well as single and double ditches, often with associated possible pits or post-holes.

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Statement of Indemnity

A geophysical survey is a scientific procedure that produces observations of results which are influenced by specific variables. The results and subsequent interpretation of the geophysical survey presented here should not be treated as an absolute representation of the underlying archaeological features, but as a hypothesis that must be proved or disproved. ***Direct investigations are recommended to confirm the findings of this report.*** *Verification can only be provided via intrusive means, such as Test Trench excavations.*

1 Introduction

Earthsound Geophysics Ltd. was commissioned by Roadstone Ltd. to execute a geophysical survey over lands to the east of the existing Cappagh Quarry prior to a proposed quarry extension at Canty townland, Co. Waterford.

The geophysical survey was requested to determine the presence/absence of unknown archaeological features at the site, which comprised a total of 13.5 hectares across seven pasture fields. No specification document was issued. Roadstone Ltd. and Earthsound Geophysics Ltd. agreed to assess the site using a magnetometer (MG).

The method was approved by the Archaeological Licensing Section of the National Monuments Service. A Consent to use a Detection Device under Section 2 (2) of the National Monuments (Amendment) Act, 1987, was issued by the Minister for Culture, Heritage and the Gaeltacht: Consent No. 21R0158, issued to Heather Gimson.

1.1 Geography, Geology, Topography & Climate

Townland	Canty
County	Waterford
Central ITM Co-ordinates of the site	617980/594776
No. of Fields Surveyed	7
Ground Cover per Field	Short grass and newly cut silage. One field was heavily overgrown and therefore could not be surveyed.
Geology	Waulsortian Limestones – massive unbedded lime-mudstone (GSI 2021)
Drift / Quaternary Geology	Sandstone till (GSI 2021)
Soils	Acid brown earths and brown podzolics (GSI 2021)
Drainage	Good (GSI 2021)
Expected effect of Soils/Geology	A traverse spacing of 0.5m is recommended for magnetometer surveys over limestone geology.
Topography	The site is generally situated on a S-facing slope. Within this the landscape is very undulating with topographic high points noted in the NE corner of the southern field and the NE corner of the NE field both of which afforded views in all directions.
Climate	The sunny conditions are unlikely to have affected the survey to a large degree.

1.2 Archaeological Background

There are no recorded monuments within the survey area.

Kilgreany cave (WA030-018----) and burial (WA030-018001-) are located approximately 270m to the southwest of the survey area. Previous geophysical investigations (License 07/016) of lands around the cave have identified an oval stone lined enclosure with potential annexes and other anomalies.

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1.3 Aims & Objectives

The aim of the geophysical survey was to determine the nature of the archaeological resource in advance of the proposed development scheme. Specific were to:

- Determine the presence or absence of archaeological features
- Assess the spatial extent of the archaeological features

A detailed magnetometer survey was carried out within the survey area. The technique has been used in commercial and research archaeological projects for many years and are considered the most appropriate techniques for a detailed investigation of the underlying archaeology (Aspinall *et al.* 2008, Clark 1996, Scollar *et al.* 1990, Gaffney & Gater 2003).

2 Methodology

Fieldwork Dates	12/07/2021 – 16/07/2021
Method / Area	Magnetometer: 13.5 Ha

2.1 Magnetometer Survey

Instrument	Eastern Atlas LEA MAX[1505] System
Components	LEA D2, 10-channel digitiser
Data Acquisition Resolution	0.5m x 0.1m
Sensors	8 x Förster FEREX® 4.032 CON650 fluxgate gradiometers
Platform	LEA MAX[1505] System cart
Data Acquisition Method	Gridless, using a Trimble RTK GPS VRS Now system to an accuracy of 5cm
Sensitivity	<0.2 nT
Data Logger	Panasonic Toughbook CF-H2 Field computer
Calibration	According to manufacturers guidelines (Pilz & Goossens 2015)
Data Processing	Ealdec: Profile decoding Ealmat.m: Normalisation, drift correction Process-it: Surfer 8: Data Gridding (0.5m x 0.25m), using the Kriging Gridding Method
Graphical Display / Dynamic Range	Greyscale -3nT (white) to 3nT (black)

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2.2 Reporting, Mapping & Archiving

The geophysical survey and report follow the recommendations outlined by relevant best practice guidance documents as a minimum standard (David *et al.* 2008; Gaffney *et al.* 2002, Schmidt *et al.* 2015).

Ordnance Survey of Ireland mapping was supplied by Roadstone Ltd..

Geophysical data, the figures presented here and the text have been archived following the recommendations of the Archaeology Data Service (Schmidt & Ernenwein 2011).

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3 Results & Discussion

The interpretation figures should not be looked at in isolation but in conjunction with the information below and classification terms contained in the Appendices.

***Significant Anomalies** are highlighted in Figure 4 and are described within the text.*

3.1 Magnetometer Survey

Figure 3 – Magnetometer Data

Figure 4 – Magnetometer Interpretation

In magnetic data, a dipolar anomaly or 'iron spike' is a response to buried ferrous objects, often in the topsoil. Iron spikes generally are not removed in geophysical data, although often modern in origin, they can be indicative of archaeological material.

The land surveyed for this report contained a general overprint of geological activity. This manifests itself in diffuse weak magnetic signatures which are difficult to distinguish from archaeological anomalies. In addition the land contains a substantial amount of strong magnetic anomalies and dipoles. These could originate from geological activity or have been caused by the spreading of green manure over the site. The presence of the geological interference and potential green manure has caused a confusing magnetic picture in which archaeological remains are difficult to distinguish from geological signatures and in which weak archaeological features could have been masked or remain undetected.

Anomaly **M1** comprises a circular anomaly located in the northeast of the survey area. It measures 34m by 27m and may constitute a circular archaeological ditch.

Anomaly **M2** is a curvilinear ditch which corresponds to a historic feature recorded on OS mapping.

Anomaly **M3** consists of a semi-circular ditch, 36m in length and with a potential diameter of 21m. This ditch may constitute an enclosure and appears to surround four possible pits or post-holes. These features are likely to be archaeological in origin.

Anomaly **M4** consists of a curvilinear ditch measuring 162m in length. This relict field boundary is associated with a series of ditches which form perpendicular divisions on its southern edge.

Anomaly **M5** is a curvilinear ditch, 29m in length. Given the slight arc within its form, this feature could represent archaeological activity or represent a further agricultural division associated with M4.

Anomaly **M6** consists of a semi-circular ditch, 23m in length and with a potential diameter of 13m. This anomaly could represent an archaeological enclosure ditch. It appears to have been dissected by a linear ditch on its western edge. This linear ditch 46m in length, may be contemporary and archaeological in origin or may represent a later agricultural division.

Anomaly **M7** comprises a series of isolated circular magnetically-positive anomalies located in the northeastern portion of the survey area. They range in diameter between 2m and 5m and could represent archaeological or agricultural pits or post-holes.

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Anomaly **M8** consists of two parallel linear anomalies located in the west of the survey area. The southernmost of these anomalies represents a historic field boundary which is recorded on OS mapping and measures 42m in length. The northernmost anomaly extends to a total length of 39m and is probably also associated with historic field systems.

Anomaly **M9** consists of a right-angled ditch which once probably joined to a bend in the extant field boundary. It is likely to relate to a relict field system.

Anomaly **M10** comprises two curvilinear ditches which run across the southern half of the northeast field. Measuring 71m and 49m in length, these features could relate to archaeological or agricultural processes.

Anomaly **M11** represents three arcing ditches which appear to form a large oval ditched enclosure. They are truncated by M10 and an extant field boundary and appear to enclose an area 78m N-S and 60m E-W. Contained within this archaeological enclosure are a number of apparent sub-divisions.

Anomaly **M12** comprises two sub-circular ditches which are located near the centre of M11. Measuring 19m and 39m in length these appear to represent internal features and divisions within the archaeological enclosure M11. The larger of the two anomalies is likely to represent a central enclosure, 16m in diameter.

Anomaly **M13** is a sub-circular ditch which appears to abut the southeastern portion of enclosure M11. Measuring 35m in length and c.14m in diameter this feature represents a sub-division within enclosure M11.

Anomaly **M14** comprises a series of ditches which form a rectangular feature, measuring 47m by 21m. It is likely that this feature overcuts M11 and probably relates to an agricultural division or boundary.

Anomaly **M15** is a curvilinear possible ditch, 44m in length which could relate to agricultural, archaeological or geological processes.

Anomaly **M16** is an isolated possible pit or post-hole which could be of archaeological or agricultural origin.

Anomaly **M17** comprises two interconnecting ditches; the larger of these crosses the length of the modern field and appears to possibly respect M11. This relict field boundary is joined to a right-angled ditch which probably represents a field sub-division.

Anomaly **M18** consists of two parallel ditches, 17m and 27m in length. These ditches could be archaeological in origin or associated with agricultural processes and could represent the northern return of the sub-division within M17.

Anomaly **M19** is an arcing ditch, 26m in length which could be archaeological, agricultural or geological in origin.

Anomaly **M20** consists of two interconnecting ditches, 60m and 27m in length. While an archaeological origin cannot be completely ruled out these features are more likely to be agricultural in origin.

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Anomaly **M21** is a linear ditch, 71m in length. This feature is likely to represent a relict agricultural boundary.

Anomaly **M22** is a linear ditch, 125m in length which is likely to represent a relict agricultural boundary, most likely associated with M21 and M25.

Anomaly **M23** represents a right-angled ditch, 30m in length which probably represents an agricultural boundary.

Anomaly **M24** consists of an arcing ditch, 35m in length which could be archaeological, agricultural or geological in origin.

Anomaly **M25** comprises of two linear ditches which correspond to historic features recorded on OS mapping.

Anomaly **M26** is a linear ditch, 106m in length. This feature is possibly associated with M27 and is cut by M25. It could represent an archaeological or agricultural boundary.

Anomaly **M27** consists of two concentric arcing ditches, 31m and 50m in length. These could be archaeological, agricultural or geological in origin.

Anomaly **M28** comprises a curvilinear ditch, 23m in length which is cut by two possible pits. A third possible pit is located very close to this ditch which could be of agricultural or archaeological origin.

Anomaly **M29** is a curvilinear ditch, 63m in length. This boundary ditch could be archaeological or agricultural in origin and may be associated with either M30 or M31.

Anomaly **M30** consists of a right-angled cut feature which is cut by a possible pit. This feature could be archaeological or agricultural in origin.

Anomaly **M31** is an arcing ditch, 45m in length. This potential archaeological enclosure appears to bound three possible pits and may be cut by M29.

Anomaly **M32** is a curvilinear ditch, 38m in length which could be of archaeological or agricultural origin.

Anomaly **M33** is a linear ditch, 70m in length which could relate to an archaeological or agricultural boundary.

Anomaly **M34** is a linear ditch which corresponds to historic features recorded on OS mapping.

Anomaly **M35** consists of a series of interconnecting linear ditches which span between M34 and the extant field boundary. These interconnecting ditches are likely to represent field subdivisions.

Anomaly **M36** comprises two parallel curvilinear ditches, 50m in length which appear to be connected to M37 and could be of archaeological or agricultural origin.

Anomaly **M37** represents a semi-circular negative magnetic anomaly, measuring 28m in length. This feature could represent a stone feature or stone cut ditch and appears to be archaeological in origin, interlinking with M36 and enclosing three possible pits or post-holes. This enclosure would be approximately D-shaped and measure 29m in diameter.

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Anomaly **M38** is a linear ditch, 102m in length which could be of archaeological or agricultural origin.

Anomaly **M39** is a linear ditch, 120m in length which could be of archaeological or agricultural origin and could be related to M38 and M45.

Anomaly **M40** is a linear ditch which corresponds to historic features recorded on OS mapping.

Anomaly **M41** consists of two isolated magnetic responses which are likely to be associated with pits or post-holes of archaeological or agricultural origin.

Anomaly **M42** curvilinear ditch, 17m in length which could be of archaeological or agricultural origin.

Anomaly **M43** is a short linear feature, 10m in length which could relate to a ditch or may represent a highly magnetic cultivation furrow.

Anomaly **M44** is a linear ditch, 48m in length which could be of archaeological or agricultural origin.

Anomaly **M45** represents a curvilinear ditch, 95m in length which probably represents an agricultural boundary which interlinks with M39.

Anomaly **M46** is an arcing ditch, 26m in length which could be of archaeological or agricultural origin.

Anomaly **M47** is a linear ditch, 17m in length which is likely to represent an agricultural sub-division leading from M40.

A series of weakly magnetic trends were detected across the survey area. These could relate to archaeological, agricultural or geological processes.

A series of cultivation furrows were detected across the survey area. These run in multiple directions and indicate that the land has been substantially ploughed.

Limited modern magnetic disturbance was also detected within the survey. This relates to metallic debris within the fields and metal within the field boundaries.

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4 Conclusion

4.1 Summary of Results

The geophysical survey undertaken for this report has revealed the presence of numerous features relating to agricultural activity including relict field boundaries (both recorded in historic OS mapping and previously unknown), field sub-divisions and cultivation furrows. A series of arcing ditches and cut features were also detected which could relate to archaeological or agricultural activity.

Of the anomalies, the most significance archaeologically is a large circular enclosure ditch measuring 80m in diameter. This feature contains a smaller central oval enclosure, an oval division near its southeast edge and evidence of other sub-divisions. The remains of a roughly D-shaped stone cut enclosure was also detected, containing three possible pits.

Within the northwest corner of the survey area an oval possible enclosure ditch was also detected as well as a series of possible pits or post-holes located within the vicinity. Further potential archaeological activity includes arcing and oval ditches as well as single and double ditches, often with associated possible pits or post-holes.

4.2 Dissemination

The results of this survey were submitted to Roadstone Ltd.. Additional copies will be distributed in accordance with the Consent to use a Detection Device.

5 Acknowledgements

Report: Heather Gimson BA (Hons) MSc MIAI
Ursula Garner BSc (Hons) MSc

Fieldwork: Ursula Garner BSc (Hons) MSc
Darren Regan BSc (Hons) MA

Graphics: Heather Gimson BA (Hons) MSc MIAI

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7 Figures

Figure 1: Location map
Figure 2: Detailed location map
Figure 3: Magnetometer data
Figure 4: Magnetometer interpretation

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Technical Appendix

Appendix 1: Anomaly Classifications

Magnetometer

Magnetometer surveys are undertaken using magnetic gradiometers which measure the magnetic content of the underlying soils. Measurements are gained using sensors which calculate the difference between the geological / pedological background and anthropogenic remains associated with archaeological activity.

Positive Magnetic Anomalies
Burnt features, particularly kilns, but also hearths, furnaces and burnt (specifically 'burnt', not 'heated') mounds of stone will create a strongly magnetic anomaly due to thermoremanence. Cut features, such as pits, ditches or wooden postholes will create anomalies that will vary in shape and magnetic intensity depending on which material they were backfilled by (Fassbinder 2015). For cut features backfilled (or 'refilled') by

- magnetically enhanced topsoil – the refill will generate a positive magnetic anomaly
- homogeneous topsoil – the refill will generate an anomaly proportional to the size and volume of the archaeological feature.

The magnetic anomaly shape and intensity will also be determined by concentrations of pottery, ash or burned material, solid rocks or other material.

Negative Magnetic Anomalies
Negative magnetic anomalies have a number of causes (Fassbinder 2015):

- The material remains of the archaeological feature may have a lower magnetic susceptibility (MS) than the adjacent topsoil. In some cases the MS of a ditch may appear as both a positive and negative anomaly, reflecting the variable MS of the refill material. Some stone foundations can also appear as weakly magnetic or negative magnetic anomalies.
- If a cut feature is immediately refilled by the same material e.g. a grave cut excavated before a funeral is (almost) immediately refilled by the human body and the same (unaltered) sediment that was excavated before.
- Geochemical processes (see Fassbinder 2015) can alter the magnetic response, e.g. an archaeological feature identified by a positive anomaly can convert to a negative anomaly due to the combination of stagnant moisture and a changing groundwater table.

Dipolar Anomalies
A dipolar anomaly is a response to buried ferrous objects, often in the topsoil. Iron spikes generally are not removed in geophysical data; although often modern in origin (iron agricultural implements, rubbish), they can be indicative of archaeological material.

Absence of Anomalies
It is also possible that archaeological features exist that exhibit no magnetic contrast and hence cannot be identified by magnetometer survey.

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Anomaly classification used to interpret Magnetometer data

After Gaffney & Gater (2003) and Gaffney *et al.* (2000).

A known archaeological feature type e.g. Ditch / Wall / Structure etc: An anomaly with a magnetic gradient that contrasts strongly with the surrounding sub-soil, where the presence of a type of archaeological feature is known from supporting evidence.

Archaeology: A linear, curvilinear or isolated anomaly with a magnetic gradient that contrasts strongly with the surrounding sub-soil, without any supporting evidence from another source.

- **Ditch / Wall:** A linear, curvilinear, annular or penannular anomaly with a magnetic gradient that contrasts strongly with the surrounding sub-soil. A positive polarity suggests a ditch; a negative polarity suggests a stone-filled ditch or wall.
- **Burnt Mound / Spread:** A horseshoe or ovoid shaped anomaly with a positive magnetic gradient that contrasts strongly with the surrounding sub-soil. An associated trough may be observed as a positive/negative anomaly, a hearth may also be expected nearby. Isolated responses in the vicinity could represent spreads of (or ploughed out) heat shattered stones.
- **Hearth:** A small isolated area (<2m diameter) of higher magnetic gradient than the surrounding sub-soil (typically >6nT).
- **Pit:** A small isolated area (>1-2m diameter) of moderate to high magnetic gradient, judged to be caused by a pit-type feature with a fill more magnetic than the surrounding soil.

Industrial: An isolated anomaly with a strong positive gradient (>30nT), judged not to be surface iron. This type of anomaly is typically caused by the remains of kilns or furnaces.

Magnetic Enhancement: A broad area of moderate positive magnetic gradient that contrasts with the surrounding sub-soil. May represent cultural noise associated with occupation or soil disturbance, judged to be of archaeological origin.

Ferrous: Dipolar anomalies indicating ferrous responses, judged to be in the near-surface.

Cultivation: Parallel linear responses of positive or negative polarity. Strong responses may indicate added magnetic material (e.g. burnt deposits) as fertiliser. Lower magnetic gradient anomalies 'beneath' the furrow overprint may be obscured. Higher magnetic gradient anomalies may be visualised *in situ* or ploughed out 'beneath' the furrow overprint.

?Archaeology: A linear, curvilinear or isolated anomaly with a magnetic gradient that contrasts weakly with the surrounding sub-soil, without any supporting evidence from another source. Such categories may represent possible archaeological or geological sources.

Modern Disturbance: Area where the ground has been disturbed in the recent past. Characterised by a high level of noise and very large magnetic gradients, this disturbance is often accompanied by concentrations of dipolar, near-surface ferrous responses. This category also represents anomalies whose source may lie beyond the survey area, such as fencelines, vehicles or modern buildings.

Modern Pipe: Straight, linear anomaly with very large magnetic gradients alternating regularly between positive and negative polarity.

Previous Excavation?: Area of uniform magnetic signal contained within a well-defined boundary in regions otherwise densely covered with archaeological anomalies.

Geology: Anomalies of possible geomorphological origin.

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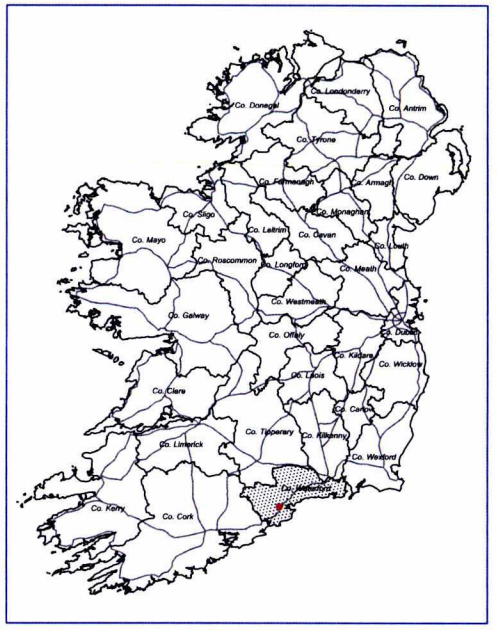

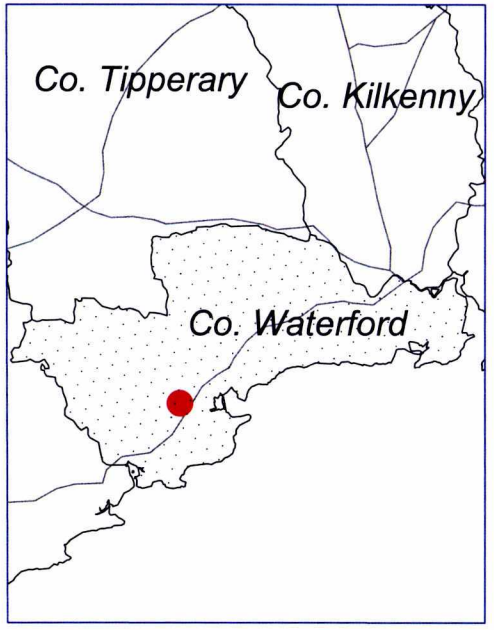

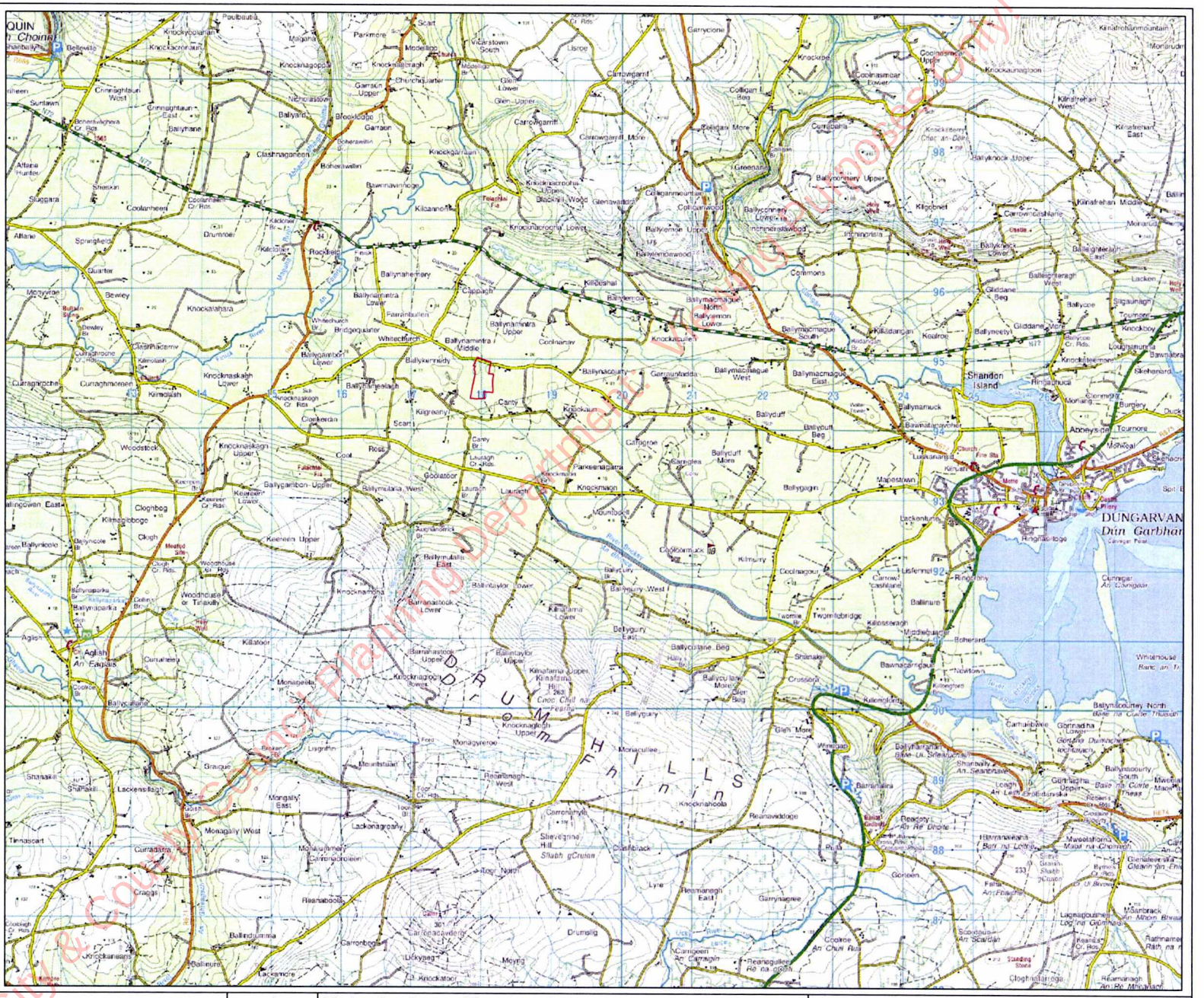

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Legend

Geophysical Survey Area

Site Location: Proposed Extension to Roadstone Quarry, Canty, Co. Waterford

Client: Roadstone Ltd.

Drawing Courtesy of: OSI	Date: 01/06/21	Drawing No.: 20-080/01

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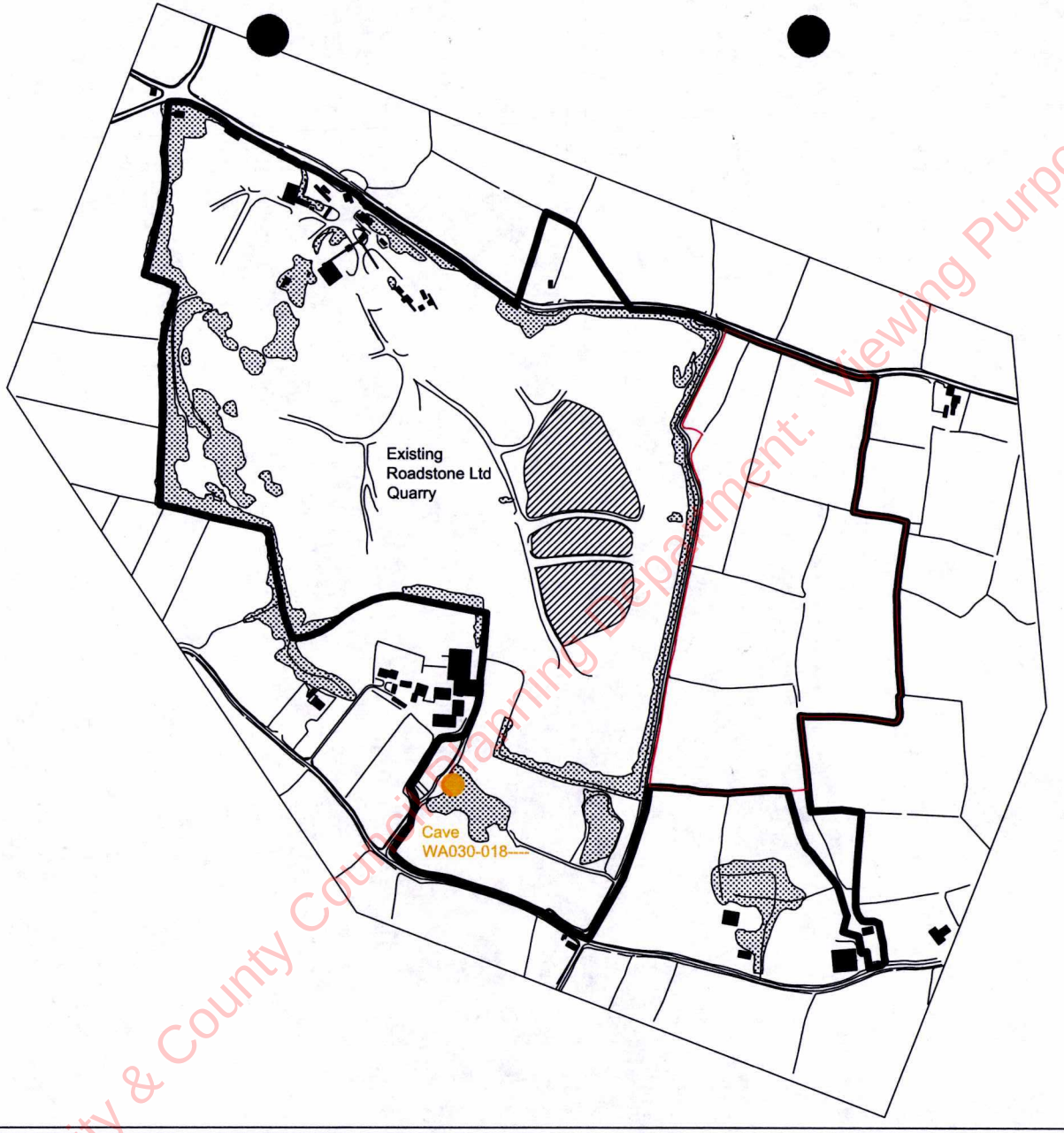
0m 2km 4km

Figure No. 1: Location Map

EARTHSOUND geophysics



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Legend

- Basemap
- Recorded Monument
- Proposed Development Area / Geophysical Survey Area

Site Location: Proposed Extension to Roadstone Quarry, Canty, Co. Waterford

Client: Roadstone Ltd.

Drawing Courtesy of: OSI	Date: 01/06/21	Drawing No.: 20-080/02

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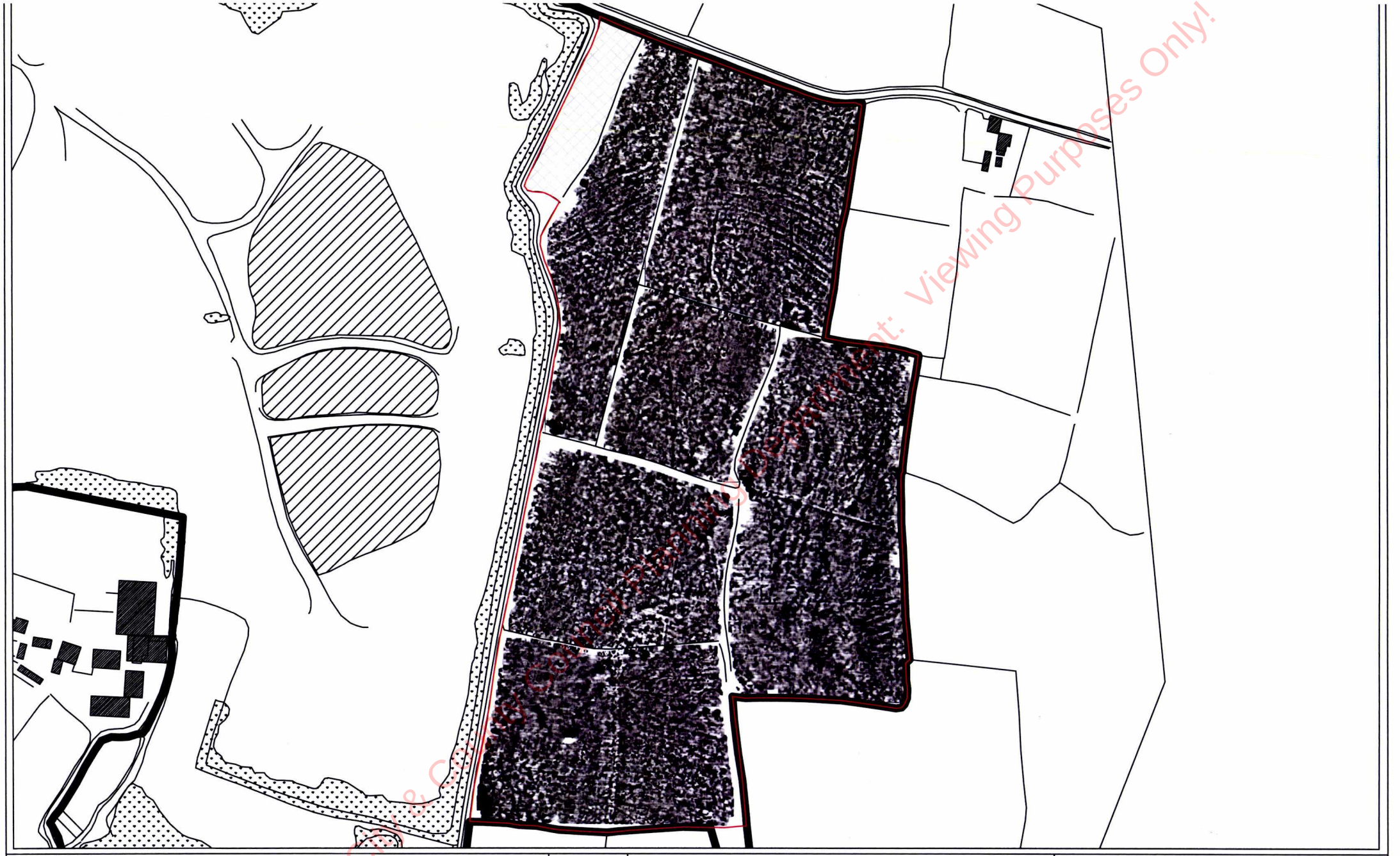
0m 200m 400m

Figure No. 2: Detailed Location Map

EARTHSOUND geophysics



Legend

- Basemap
- Geophysical Survey Area
- Unsurveyable Area

nT

Site Location: Proposed Extension to Roadstone Quarry, Canty, Co. Waterford

Client: Roadstone Ltd.

Drawing Courtesy of: OSI	Date: 22/07/21	Drawing No.: 20-080/03

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0m 50m 100m

Figure No. 3: Magnetometer Data

EARTHSOUND geophysics

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Legend

- Basemap
- Geophysical Survey Area
- Unsurveyable Area
- Possible Archaeology
- Feature on Historic OS
- Cultivation Furrows
- Trend
- Modern Disturbance

Site Location: Proposed Extension to Roadstone Quarry, Canty, Co. Waterford

Client: Roadstone Ltd.

Drawing Courtesy of: OSI | Date: 26/07/21 | Drawing No.: 20-080/04

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0m 50m 100m

Figure No. 4: Magnetometer Interpretation

EARTHSOUND geophysics

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APPENDIX

Appendix 13-A Methods used in Assessing Landscape and Visual Impact Effects

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INTRODUCTION

Background

13.1 This Chapter of the Environmental impact Assessment Report (EIAR) assesses the landscape and visual impacts arising from the proposed development of a satellite quarry to the east of Cappagh Quarry, Co. Waterford and the construction and operation of a new concrete batching plant in front of the northern face of the existing quarry.

13.2 Cappagh Quarry is located in the townlands of Ballykennedy and Kilgreany, approximately 8km west of the town of Dungarvan. The proposed satellite quarry is almost entirely located in the adjoining townland of Canty to the east, with only a relatively small area (in the north-western corner) located within Kilgreany townland. The satellite quarry will be separated from the existing quarry by a local access passageway, which will be retained.

13.3 The application site comprises part of the existing quarry footprint in which a number of quarry facilities, such as the site offices, staff welfare facilities, weighbridge, wheelwash etc. and the proposed new concrete batching plant are located, together with seven agricultural fields to the east which make up the proposed satellite quarry area.

13.4 Full details of the proposed development are presented in Chapter 2 of this EIA Report.

Scope of Work / EIA Scoping

13.5 The draft EPA guidelines in relation to the preparation of an EIAR[1] suggest the following typical headings that may be included in respect of the prescribed environmental factor 'The Landscape':

- Landscape Appearance and Character;
- Landscape Context;
- Views and Prospects; and
- Historical Landscapes.

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13.6 These headings are incorporated in the below assessment, as appropriate. However, in the absence of more detailed Irish guidance, the overall scope of work of this 'Landscape' assessment is based on the Third Edition of the *Guidelines for Landscape and Visual Impact Assessment* issued by the Landscape Institute and Institute of Environmental Management and Assessment[2] (hereinafter referred to as GLVIA3).

13.7 GLVIA3 emphasises that landscape and visual effects are related but independent issues; landscape effects are changes in the landscape, its character and quality, while visual effects relate to the appearance of these changes and the resulting effect on visual amenity. The scope of work covered by this assessment can be summarised as follows:

- a description of the planning context relevant to this Landscape and Visual Impact Assessment (LVIA) (i.e. the Regulatory Background);
- a description of the landscape and the visual baseline, including the identification of relevant landscape and visual receptors (i.e. the Receiving Environment);

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[1] Environmental Protection Agency (2017). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports. Draft dated August 2017. Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford

[2] Landscape Institute and Institute of Environmental Management & Assessment (2013) *Guidelines for Landscape and Visual Impact Assessment*. Third Edition, Routledge.

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- a description of the aspects of the development which are likely to cause landscape effects and those likely to cause visual effects, an assessment of landscape and visual receptor sensitivity and the magnitude of the landscape and visual effects, as well as their combined level of significance (i.e. the Impact Assessment);
- a description of additional measures required to reduce / avoid any significant landscape and visual effects identified (i.e. the Mitigation Measures); and
- a summary of the degree of the landscape and visual effects, following the implementation of the mitigation measures (i.e. the Residual Impact Assessment).

13.8 Wherever possible, identified effects are quantified, however the nature of landscape and visual impact assessment requires interpretation by professional judgement; refer to Appendix 13-A at the end of this Chapter, for further information on the detailed methodology applied in making this impact assessment. This assessment is informed by reference to the following figures, presented at the end of this EIA Chapter :

- Figure 13-1: Landscape Baseline and Viewpoint Locations;
- Figure 13-2: Viewpoints A & B;
- Figure 13-3: Viewpoints C & D; and
- Figure 13-4: Viewpoints E & F.

Consultations / Consultees

13.9 In the course of preparing this Environmental Impact Assessment Report, a pre-planning consultation meeting was held outdoors at the application site on 19th May 2021 between the local area planner for Waterford City and County Council and representatives of SLR Consulting Ireland and Roadstone Limited (Meeting Ref. No. PQ202191). At the meeting, details of the proposed development were outlined in the course of a site walkover and issues of interest or concern to the Planning Authority were identified and discussed. Details of this consultation are presented in Chapter 1 of this EIAR.

13.10 Following a review of published development plans and the subsequent site inspection and field survey, it was considered that there was no requirement for any further formal external consultations to be carried out for the purposes of this assessment of potential landscape and visual effects. There was however significant consultation with other specialist contributors.

Contributors / Author(s)

13.11 The assessment including site work and completion of figures was carried out by Anne Merkle, an Associate Landscape Architect with SLR Consulting Ireland. Anne graduated from the University of Applied Sciences in Nürtingen (Germany) in Landscape Architecture (Dipl.-Ing. (FH)), in 2002. She has 19 years' post-graduate experience working for landscape consultancies in Ireland, specialising in Landscape and Visual Impact Assessments for a wide range of projects, including quarries, waste recovery facilities, wind farms, powerlines and mixed developments. In 2017, Anne completed an MSc in Biodiversity and Land Use Planning (at NUIG). She is a full member of the Irish Landscape Institute (MILI) since 2005.

Limitations / Difficulties Encountered

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

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REGULATORY BACKGROUND

13.13 The following paragraphs set out the regulatory background with regard to LVIA in Ireland in general and the site-specific planning background relevant to the proposed development, in particular.

Legislation

13.14 There is no specific legislation relevant to this Chapter of the EIA Report. However, the information provided within this Chapter is informed by the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018[3].

13.15 Ireland has ratified the European Landscape Convention[4], which promotes the protection, management and planning of landscapes. The National Landscape Strategy for Ireland 2015-2025[5] was published *"to ensure compliance with the European Landscape Convention and establish principles for protecting and enhancing the landscape while positively managing its change"*.

13.16 Article 1a of the European Landscape Convention defines landscape as *"an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"*. This definition has been included in the Planning and Development (Amendment) Act 2010, along with the requirement that objectives relating to landscape shall be included in development plans.

Planning Policy and Development Control

13.17 The Waterford County Development Plan (WCDP) 2011 – 2017[6] (extended) is the current statutory plan detailing the development objectives / policies of the Local Authority. Those policies, with relevance to this assessment, are identified below. In addition, the National Parks and Wildlife Service (NPWS) website[7] was reviewed to identify protected nature conservation sites in proximity to the application site. Refer to Figure 13-1 – Landscape Baseline and Viewpoint Locations for details on the location and extent of relevant designated sites.

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Extractive Industry

13.18 Section 6.21 (Extractive Industry) of the current WCDP states the following *"The Council recognises the importance of the aggregate and mineral extractive industry to the economic life of the County and will assist in facilitating its operation in suitable locations where it will not give rise to detrimental environmental impacts. There shall be an onus on the developer to demonstrate that the proposed quarrying activities would not have a significant negative effect on adjoining and neighbouring land-uses, designated sites, protected views, etc."*

13.19 **Policy ECD 30** of the WCDP undertakes "to *support and facilitate the mineral and aggregate extractive industry where such operations do not have a detrimental environmental effect on other majority land-uses, or designated or proposed conservation sites in the area of the extraction and do not adversely affect European Conservation Sites."*

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[3] European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018: http://www.irishstatutebook.ie/eli/2018/si/296/made/en/pdf

[4] European Landscape Convention: https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680080621

[5] National Landscape Strategy for Ireland 2015-2025: https://www.chg.gov.ie/app/uploads/2015/07/N-Landscape-Strategy-english-Web.pdf

[6] Waterford County Development Plan 2011 - 2017: https://www.waterfordcouncil.ie/media/plans-strategies/development-plan/county/index.htm

[7] National Parks and Wildlife Service: https://www.npws.ie/

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Landscape

13.20 Section 8.1 (Landscape) of the current WCDP states the following. *"Waterford has a variety of landscapes and is characterised by the Comeragh and Knockmealdown mountains, several south-flowing river systems and a rugged coastline with many coves and beaches. The diversity of landscapes and natural heritage within the County enables views and prospects of areas of natural beauty from many public roads. Accordingly a number of scenic landscapes and routes, and sensitive and visually vulnerable areas are designated throughout the County and listed in Appendix A9 : Scenic Landscape Evaluation. Scenic routes indicate public roads from which views and prospects of areas of natural beauty and interest can be enjoyed. There is an onus on developers / applicants for planning permission to demonstrate that any proposed development shall not negatively impact on the character of a scenic route and that there shall be no obstruction or degradation of views towards visually vulnerable features or sensitive areas."*

13.21 The policies and descriptions with regard to scenic routes and sensitive / visually vulnerable / normal areas, which are of relevance to this assessment are discussed under separate headings below.

Scenic Routes

13.22 The Policy with Regard to Scenic Routes, contained in Appendix A9 of the WCDP, states that *"Scenic routes indicate public roads from which views and prospects of areas of natural beauty and interest can be enjoyed. Sightseeing visitors are more likely to be concentrated along these routes. The onus should be on the Applicant for permission to develop in the environs of a scenic route, to demonstrate that there will be no obstruction or degradation of the views towards visually vulnerable features nor significant alterations to the appearance or character of sensitive areas."*

13.23 None of the scenic routes listed in Appendix A9 are located in the vicinity of the application site. The closest such route is located 3.5km to the north east of the application site, where it follows the R672 Regional Road and is described as follows:

- **SR8**: North-west from Dungarvan to Tooraneena on the R672. Third class North to Ballymacarbry. Join R671 to Clonmel taking the R678 and turning south for third class route through the Comeraghs.

Visually Vulnerable Areas

13.24 The Policy with Regard to Areas Designated as Vulnerable states that *"These areas or features designated as vulnerable represent the principal features which create and sustain the character and distinctiveness of the surrounding landscape. To be considered for permission, development in the environs of these vulnerable areas must be shown not to impinge in any significant way upon its character, integrity or uniformity when viewed from the surroundings. Particular attention should be given to the preservation of the character and distinctiveness of these areas as viewed from scenic routes and the environs of archaeological and historic sites."*

13.25 Visually Vulnerable Areas are further defined as *"Very distinct features with a very low capacity to absorb new development without significant alterations of existing character over an extended area"*.

13.26 The ridgelines in the townlands of Ballygambon Upper and Barranastook Lower (part of the Drum Hills), approximately 3km to the south / south-west of the application site, as well as the ridgeline in the townlands of Ballylemon Upper and Knocknacroona Upper, approximately 3km to the north east are designated at visually vulnerable features.

13.27 Further to that, three lakes, just north of the N72 National Secondary Road in the townlands of Cappagh and Ballynamintra Upper, approximately 1.5km to the north of the application site are designated as visually vulnerable.

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Sensitive Areas

13.28 The Policy with Regard to Areas Designated as Sensitive states that *"These areas have a distinctive, homogenous character, dominated by natural processes. Development in these areas has the potential to create impacts on the appearance and character of an extensive part of the landscape. Applications for development in these areas must demonstrate an awareness of these inherent limitations by having a very high standard of site selection, siting layout, selection of materials and finishes. Applications in these areas may also be required to consider ecological, archaeological, water quality and noise factors insofar as it affects the preservation of the amenities of the area."*

13.29 Sensitive Areas are further defined as having *"Distinctive character with some capacity to absorb a limited range of new developments while sustaining its existing character"*.

13.30 Some sections of the upland area beyond 2.5km to the south and south-west of the application site are designated as sensitive areas, as indicated on Figure 13-1.

Normal Areas

13.31 The Policy with Regard to Areas Designated as Normal states that *"The majority of County Waterford is designated as a normal landscape. These areas have potential to absorb a wide range of new developments subject to normal planning and development control procedures. In these areas the Planning Authority will have regard to general restrictions to development such as scenic routes, siting, road set-backs, road widening plans, parking numbers, road and sewage disposal criteria."*

13.32 The application site and vast majority of the land surrounding it are designated as 'Normal Areas'.

Protected Nature Conservation Sites

13.33 Only one Special Area of Conservation (SAC) relevant to this landscape assessment was identified, refer to Table 13-1 below.

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Table 13-1
Nature Conservation Sites

Type	Site Code	Site Name	Distance and Direction from Application site
SAC	002170	Blackwater River (Cork/Waterford) SAC	1.3km to the north west

Guidelines

13.34 This landscape and visual impact assessment was undertaken based on the Landscape Institute and Institute of Environmental Management and Assessment Guidelines for Landscape and Visual Impact Assessment (Third Edition, 2013, published by Routledge; hereafter referred to as GLVIA3).

13.35 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 August 2017.

Technical Standards

13.36 Photography and visual representations are based on the Landscape Institute – Technical Guidance Note 06/19 – 'Visual Representation of Development Proposals'. In the absence of a bespoke Irish standard / guidance and in light of our past experience, it is considered sufficient to provide annotated viewpoint photography only (i.e. Type 1 in said guidance), notwithstanding this LVIA forming part of an EIA Report. It is further considered sufficient to illustrate two viewpoints on one A3 sized sheet.

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13.37 No other specific technical standards were referred to as part of this landscape and visual impact assessment.

Significant Risks

13.38 This landscape and visual impact assessment has not identified any significant risks to the natural, social or cultural environment as a result of the proposed development.

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Study Area

13.39 A study area of approximately 3km surrounding the application site was identified following the desktop study, taking account of the gently undulating topography surrounding the application site and limiting ridgelines approximately 3km to the north-east and south-west. Further to that, in our (SLR's) experience of mineral extraction development, landscape and visual effects beyond 3km are typically negligible or less. It should be noted that the visual envelope, i.e. the area from where the application site is actually visible, is much smaller than the study area, due to intervening vegetation and topography.

Baseline Study Methodology

13.40 Refer to Appendix 13-A at the end of this chapter for information on the methodology applied to the selection of landscape and visual receptors.

Viewpoints

13.41 Refer to Figures 13-2, 13-3 and 13-4 for the six selected representative and illustrative viewpoints (VP A to F). All photographs were taken in December 2020, using a Nikon D610 digital SLR camera, with a fixed 50mm lens. The nature of some of the views was of relatively wide panoramas and it was, therefore, considered beneficial to present the photographs in this way. The panoramic views consist of two to five photographic frames merged together using 'Adobe Photoshop' software. It should be noted that photography is a tool to assist in the visualisation process and cannot be expected to replicate the actual view that would be attained on the ground.

Sources of Information

13.42 The desktop study and field work were supported by, *inter alia*:

- Waterford County Development Plan (WCDP) 2011 –2017;
- digital as well as paper Ordnance Survey Ireland (OSi) mapping at different scales; and
- information sourced from websites (such as information on recreational facilities and nature conservation sites).

Field Survey

13.43 A detailed field survey was carried out on 4th December 2020 in initially sunny and bright conditions, becoming cloudy later in the day. Visibility was good. The assessment concentrated on the publicly accessible areas such as the road and public footpath networks, residential and outdoor recreational areas.

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Landscape Baseline

Existing Relevant Landscape Character Assessments

13.44 A detailed Landscape Character Assessment has not yet been prepared for County Waterford. The Scenic Landscape Evaluation contained in Appendix A9 of the current WCDP classifies the landscape and features of Waterford into sensitivity zones made up of 5 categories, i.e. Vulnerable, Sensitive, Normal, Robust and degraded, as described under the Planning Policy and Development Control heading earlier in this Chapter.

13.45 In summary, the application site is located within and surrounded by 'Normal Areas' which have "*a potential to absorb a wide range of new developments*". A number of sensitive and visually vulnerable areas are located over 1.5km to the north east and 2km to the south.

Outdoor Recreational Facilities within the Study Area

13.46 Route 3 of the Waterford Cycling Trails – The Heritage Route passes along the local road to the immediate north of the application site on its way from Dungarvan to the east to the village of Villierstown to the west.

13.47 The are no known other outdoor recreational facilities, such as walking trails within the study area.

Landscape Character of the Site and Study Area

13.48 The application site consists of parts of the existing Cappagh Quarry, i.e. part of the quarry void and some of existing site facilities, as well as the proposed satellite quarry area to the east, comprising seven agricultural fields. The boundaries of the existing quarry and the fields within the satellite quarry area are marked by a mixture of scrub covered screening berms and tree-lined hedgerows.

13.49 The existing quarry floor level lies at around 10m to 11m above Ordnance Datum (mOD) and above the groundwater table. Existing quarry faces range in height from approximately 20m at the north eastern corner to approximately 8m in the south western corner.

13.50 The topography of the area immediately surrounding the existing quarry and the proposed satellite quarry area is locally flat to gently undulating, at levels between 7mOD to 35mOD. Ground levels are locally elevated above 30mOD at the northern end of the proposed satellite quarry area, and from there the land slopes away gently in all directions. The ground levels around the southern end of the proposed satellite quarry area are approximately 20mOD to 21mOD.

13.51 Cappagh Quarry is located on the limestone floor of a wide valley which runs broadly west to east, between two parallel sandstone ridges which rise to elevations in excess of 200mOD. Ground levels start to rise from the valley floor up to the Drum Hills approximately 2m to the south and to the foothills of the Comeragh Mountains approximately 2km to the north.

13.52 There are few streams or watercourses in the immediate vicinity of the quarry. The River Finisk flows from north to south approximately 2km to the west, while the River Brickey flows west to east approximately 0.5km to the south.

13.53 The lands surrounding the quarry and application site are characterised as rural and predominantly agricultural in nature. Local fields comprise a mix of grassland and tillage, ranging from small to large in size and are typically bound by tree-lined hedgerows. There is no forestry on the valley floor and only a number of small blocks of deciduous woodland are present, typically associated with farm properties or old estates. A mix of deciduous and coniferous woodlands / forestry is present on the slopes and along the ridgelines associated with the Drum Hills to the south and the foothills of the Comeragh Mountains to the north.

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13.54 The main transport routes through the study area are the N72 National Secondary Road (linking Dungarvan to Cappoquin), which runs approximately 1.5km to the north of the application site and the R671 Regional Road, which runs approximately 2km to the west. There are many farm based enterprises of varying size and scale throughout the area, together with many farm homesteads and dispersed residential housing, much of which is located along the local road network. There are no villages or other larger settlements within the study area.

13.55 In addition to residential property and the existing quarry development, there are a number of other man-made elements noticeable within the local landscape. These include two high voltage electricity transmission lines running broadly NE to SW a short distance beyond the south eastern corner of the Roadstone property boundary. A 220kV line, supported by metal lattice towers, runs approximately 100m south of the proposed satellite quarry area at its closest point. A 100kV line, supported by double wooden poles, runs approximately 1.3km to the south east. Woodhouse windfarm, consisting of 8 turbines, is another prominent feature, located on higher ground 3km south west of Cappagh Quarry.

13.56 The undulating agricultural landscape immediately surrounding the application site is in a good condition and attractive, due to its rural nature, but without unique / highly scenic features and influenced by the aforementioned man-made elements. The focus, when moving through this landscape is on the steeper slopes and ridgelines to the north and south. While there is some movement evident along the local roads, the rural landscape appears motionless and tranquil in many locations.

13.57 As the valley floor is quite wide, the general scale of the landscape is large. This is however locally reduced by topography and roadside hedgerows. These local topography changes and hedgerows also have the potential to screen low rise development, such as mineral extraction works.

13.58 The key characteristics of the landscape within the study area can be summarised as follows:

- gently undulating lowland agricultural land, with fields of varying sizes bound by tree-lined hedgerows;
- enclosing woodland and grassland covered mountain slopes with distinctive ridgelines; and
- frequent signs of human presence (e.g. roads, buildings, high voltage powerlines, telegraph poles, a wind farm and a quarry).

Visual Baseline

General Visibility

13.59 The visibility of the application site was initially assessed by a desktop study of OSI Discovery Maps (1:50,000) and available aerial photography in order to identify the areas of potential visibility and select draft viewpoint locations. This preliminary assessment was verified during the field survey.

13.60 The existing quarry development and proposed satellite quarry area immediately to the east of it are screened by topography and/or vegetation at the majority of locations throughout the study area. This includes most locations in close proximity to the application site, where the boundary hedgerows or vegetated screening berms, but not the application site itself, are visible (refer to Viewpoints A, B, C & F on Figures 13-2, 13-3 and 13-4).

13.61 Some glimpsed views into the application site are available through gaps in the roadside hedgerow along the local road along the northern boundary of the proposed satellite quarry area. There are also a small number of locations along the roads within approximately 0.5km-1.2km to the west of the application site, where parts of the upper existing quarry face and/or parts of the existing tall structures / plant within the quarry site are visible (refer to Viewpoint E on Figure 13-4).

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13.62 The most open views of the existing quarry development and proposed satellite quarry area are from the elevated ground between 1.5km and 3km to the south-west and south of the application site (refer to Viewpoint D on Figure 13-3). It should be noted that the vast majority of this elevated ground comprises agricultural land which is not publicly accessible. Further to that, roadside vegetation restricts views in many locations along the local roads across this area.

13.63 No public viewpoints, with views towards the application site, were identified on the elevated ground between 2km and 3km to the north-east, due to extensive existing woodland vegetation and a limited number of public roads across this area.

Sensitive Receptors

Landscape Receptors

13.64 The components of the landscape that are likely to be affected by the proposed development, i.e. the landscape receptors, are the:

- The undulating agricultural landscape character type surrounding the application site;
- The individual landscape elements, i.e. the agricultural fields forming part of the satellite quarry area and associated internal hedgerows.

13.65 Note that the enclosing mountain slopes landscape character type is not considered to be a sensitive landscape receptor, due to the physical separation from the application site and as the low rise type of the proposed development is not considered to have an effect on the setting of this landscape character type.

Visual Receptors

13.66 The receptors with potential views of the proposed development comprise road users and local residents, as well as users of the Waterford Cycling Trails – Heritage Route. Those experiencing similar views of the application site are placed into Visual Receptor Groups (VRGs). The location and extent of each of the VRGs is indicated on Figure 13-1 and described in Table 13-2 below. The table further lists the types of receptors present in each VRG, describes the nature of views / visual amenity of views by each VRG and lists the representative viewpoints provided (refer to Figures 13-2, 13-3 and 13-4).

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Table 13-2
Visual Receptor Groups (VRG)

VRG	Location / Extent	Types of Receptors	Nature of Views / Visual Amenity
1	Intermittently along approximately 350m of the local road to the north of the satellite quarry lands.	4 residential properties, cyclists and vehicular road users within the area.	Close distance (0-0.3km) views towards the boundary hedgerows and of the satellite quarry area. In all but the closest distance views, sloping fields under pasture are visible in the foreground. Ridgeline of Drum Hills partially visible in the distance from the back of properties. In views from the road along the northern boundary, hedgerow is visible in the foreground, blocking views into the wider area, apart from glimpsed views into the application site through gaps in the hedgerow. Medium visual amenity, due to views being restricted by roadside and intervening vegetation and presence of man-made features (e.g. road, properties and telegraph / electricity poles).

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VRG	Location / Extent	Types of Receptors	Nature of Views / Visual Amenity
			Viewpoint A represents a view from the front of the properties forming part of this VRG (note: boundary hedgerows along the application site are not visible from Viewpoint A).
2	Intermittently along approximately 2.2km of the local roads on elevated ground between 2km and 3km to the south west of the application site.	Approx. 4 residential properties and road users within the area.	Long distance panoramic views over the undulating agricultural lowland landscape towards the woodland covered slopes of the foothills of the Comeragh Mountains and associated local ridgelines. Higher parts of the Comeragh Mountains visible in the far distance. Existing quarry and satellite quarry lands visible as a narrow band in the middle ground of views. Medium to high visual amenity, due to panoramic and scenic nature of views, reduced somewhat by presence of man-made features (e.g. high voltage powerlines, quarry, roads and properties). **Viewpoint D** represents a typical view.
3	Intermittently along approximately 1.2km of the local roads between 0.5km and 1.2km to the west of the application site.	Approx. 2 residential properties, cyclists and vehicular road users within the area.	Short, medium distance (0.5km to 1.2km) views over undulating agricultural land. Parts of existing upper quarry face and/or tall structures within the existing quarry site visible below skyline. Foothills of Comeragh Mountains partially visible in most views in the background, to the side of the quarry development. Medium visual amenity, due to views being partially restricted by vegetation / topography and presence of man-made features (e.g. road and existing quarry and walls) **Viewpoint E** represents a typical view.

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Evaluation Methodology

13.67 Refer to Appendix 13-A at the end of this chapter for information on the methodology used in the assessment of landscape and visual sensitivity, the assessment of the magnitude of change in the landscape and on views, as well as the assessment of landscape and visual effects and their significance.

Operational Stage Landscape Effects

13.68 The operational stage of the proposed development, for the purpose of this assessment, is taken to include the extraction and restoration period, i.e. the 20 years proposed life of the development.

13.69 Works resulting in potential landscape effects will include:

- phased stripping of the satellite quarry area, including hedgerow removal;
- phased rock extraction within the satellite quarry area, resulting in changes to the landform;
- construction / operation of the proposed concrete plant on the existing quarry floor; and
- phased restoration of the quarry floor to a grassland habitat.

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Landscape Sensitivity

13.70 Table 13-3 below describes the value attached to each of the identified landscape receptors, as well as their susceptibility to the changes caused by the proposed development.

Table 13-3
Sensitivity of Landscape Receptors

Landscape Receptor	Value	Susceptibility	Overall Sensitivity
Undulating Agricultural Landscape Character Type	Application site and surrounding area not covered by a landscape designation. One nature conservation area and a visually vulnerable area in the wider area of this landscape character type. Landscape generally in a good condition, no striking landform / patterns, common landscape type, some recreational value (e.g. cycling – however focus of views on surrounding mountain slopes landscape type), no distinctive perceptual aspects. **COMMUNITY**	Application site located within and surrounded by 'Normal Areas', as described in the Scenic Landscape Evaluation of Co. Waterford. These areas are deemed to have "a potential to absorb a wide range of new developments" Considering the presence of many tree-lined hedgerows and gently undulating topography, as well as the low-rise type of the proposed development, the susceptibility of the landscape receptor is considered to be: **LOW**	**LOW**
Agricultural Fields and associated Hedgerows	No specific designations placed on the affected landscape elements, all of which are abundant in the surrounding landscape and not forming distinct local features within the application site. **COMMUNITY**	Due to the abundance of the affected landscape elements in the surrounding landscape, the landscape is considered able to accommodate the temporary loss of some of these elements (note: the quarry floor will be restored to agricultural grassland on a phased basis, with associated hedgerows to be planted). **LOW**	**LOW**

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Magnitude of Landscape Change

13.71 Table 13-4 below describes the size and scale, geographical extent and duration / reversibility of the landscape change, all of which contribute to the assessment of the magnitude of this change.

Table 13-4
Factors of Magnitude of Landscape Change

Factor	Description	Level of effect
Size & Scale	An additional area of approximately 13.6ha, made up from seven agricultural fields and associated tree-lined hedgerows, will be removed, resulting in an increase in the footprint of existing extractive development of approximately one third. The overall development will be of a similar scale as the largest fields in the surrounding landscape. The phased restoration of the quarry floor to agricultural grassland, will result in a reduction of the area of disturbed ground, in the course of the operational stage. Considering its association with the existing quarry, the proposed development will not introduce new elements into the local landscape.	**SMALL**

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Factor	Description	Level of effect
	Due to this association, as well as existing screening topography and vegetation, the changes to the perceptual and aesthetic aspects will be small. Due to its location on the quarry floor, the proposed concrete plant will not be conspicuous as a new element in the local landscape, despite its overall height. Overall, the changes to the key characteristics of the landscape would be minimal, as the composition / balance of the landscape will not be affected.	
Geographical Extent	The changes will influence the landscape at the site level and a restricted area within 300m to the north-east and 1.2km to the west. Considering the vast expanse of the surrounding undulating agricultural landscape and abundance of the affected landscape elements, the changes will affect a limited extent of the landscape receptor (i.e. both landscape character type and landscape elements).	**NEGLIGIBLE**
Duration / Reversibility	The operational stage (phased extraction / restoration and final restoration) will last for a total of 20 years and is theoretically reversible. While the changes to the landform will remain, the land-use of most of the site will be restored to agricultural grassland, with associated new hedgerows.	**LONG-TERM REVERSIBLE**

13.72 The magnitude of landscape change, due to the proposed development, is assessed as SLIGHT, as the small scale / negligible geographical extent are deemed to offset the long-term duration of the effect.

Assessment of Landscape Effects and Significance

13.73 The sensitivity of both the Undulating Agricultural Landscape Character Type and the agricultural field and associated hedgerow landscape elements was assessed as LOW. The magnitude of landscape change was assessed as SLIGHT. In combination, the landscape effect is judged to be **MINOR-NEGLIGIBLE**. This is not considered to be a significant landscape effect.

Post – Operational Stage Landscape Effects

13.74 The post-operational stage of the proposed development, for the purpose of this assessment, is considered to be the period following the cessation of the extraction and concrete production activities and the completion of all restoration works. The landform within the rock quarry will remain permanently changed. However, the restoration to an agricultural land use of most of the application site, with associated new hedgerows, will result in a reduction of the landscape effects to **NEGLIGIBLE** at the post-operational stage, as the site will more and more integrate into the surrounding landscape.

Construction Stage Visual Effects

13.75 During the construction stage, the transfer of excess soil and crushed aggregates from the site development works at the satellite quarry to the existing quarry will generate HGV / truck movements across the local existing passageway (between new access gates installed at the southern end of each quarry) and will be noticeable / visible to the limited number of people within the local community who use the passageway on occasion.

13.76 To facilitate the opening of a temporary excavation across the local access passageway and the proposed installation and backfilling of a tunnel underpass linking the quarries on either side, it will be necessary to temporarily close the passageway to traffic for the duration of these works and to divert any occasional light vehicular or agricultural traffic which may use it away from the works area and along a temporary track (fenced on both sides) which follows established field boundaries. This will open up the fields along the diversion route to the full / partial view of passageway users for the

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duration of the tunnel underpass installation works. These effects are temporary and will only arise for the limited duration of the tunnel underpass installation works.

13.77 Both the HGV / truck movements across the local passageway and views of the temporary tunnel underpass installation works will be substantially screened in views from the wider area by the existing external boundary hedgerows, which will be retained.

13.78 Following completion of the tunnel underpass and subsequent backfilling to ground level, the access passageway will be re-instated to the same alignment and standard as at the present time. Perimeter screening bunds and chainlink fencing will also be re-established either side of the passageway and the bunds will be planted with a mix of native plants and hedging to re-establish the visual screening provided by vegetation.

13.79 When re-instated, there will be a temporary visual impact for occasional passageway users due to the ground disturbance / reinstatement works and the newly established planting. The visual impact will reduce over time as vegetation grows, merges with other planting along the passageway and provides enhanced visual screening to the extractive operations on either side.

13.80 In view of the low sensitivity of the affected visual receptors (i.e. passageway users in the course of work and as views are not designated) and the slight magnitude of visual change (i.e. medium scale of change to the affected views, due to the construction works), negligible extent of change, due to the very limited number of visual receptors and short-term duration of the visual impacts, as well as the reversal of any impacts over time (as vegetation cover is re-established), the visual effect of construction stage works on the local users of the passageway is judged to be MINOR/NEGLIGIBLE and not significant.

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Operational Stage Visual Effects

13.81 For the duration of the operational stage (i.e. the phased extraction, concrete production and restoration stage), the proposed development will be screened in views from the vast majority of locations within the study area, including all publicly accessible locations beyond the site boundary to the north-west, north, east, south-east and south, as well as beyond 0.3km to the north-east. Also, there will be no views from large areas to the south west and west, except for those described as part of the VRGs identified earlier in this section (refer to Table 13-2 and Figure 13-1).

13.82 For clarification, there are likely to be views of the proposed development from some locally elevated locations within the undulating agricultural farmland surrounding the application site, as well as from the elevated land beyond 2km to the north east and south. However, the majority of these viewpoints are located within agricultural land, which is not publicly accessible. There are no known publicly accessible locations, within the study area, with views of the proposed development, except for those described, as part of the VRGs.

13.83 **VRG 1 :** In views from the section of the local road along the northern boundary of the satellite quarry area and from the back of some nearby properties, some of the activities associated with the construction of screening berms may become visible through gaps in the boundary hedgerows. Also, any currently visible hedgerows/trees within the proposed satellite quarry area, will be removed from the available views. Once screening berm and planting is in place, these will be the only visible elements associated with the proposed development (partially, above the boundary hedgerows). Any further activities within the satellite quarry area, such as soil stripping and the extraction works, as well as the concrete plant, will be screened by topography and vegetation. Refer to Viewpoint A, on Figure 13-2.

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13.84 **VRG 2 :** The stripping of overburden and associated removal of internal hedgerows / trees, as well as some of the extraction works, will be visible from a number of locations along the local roads and associated properties on the elevated land between 2km and 3km to the south-west of the application site. A small section of the eastern quarry face and associated hedgerows along the top will have been removed at the construction stage. The reinstated screening berms and planting along the disturbed section of the quarry face will be visible. The vast majority of the eastern quarry face will be retained as is and the hedgerows/ vegetation along its top will partially screen works in the satellite quarry area from view. The top of the silos and storage bins associated with the proposed concrete plant will become visible in front of the northern quarry face, in place of an existing concrete structure, which will be part-removed. The majority of the concrete plant and activities taking place on the quarry floor will be screened by topography. Refer to Viewpoint D, on Figure 13-3.

13.85 **VRG 3 :** In views from a small number of locations between 0.5km and 1.2km west of the application site, the changes to a small section of the eastern quarry face and/or the silos and storage bins associated with the proposed concrete plant will become partially visible. Intervening topography and vegetation change the elements visible from viewpoint to viewpoint. However, at most the upper half of the affected area of the eastern quarry face and only the top of the concrete plant will be visible. The majority of the concrete plant and all activities taking place on the quarry floor will be screened by topography. Refer to Viewpoint E, on Figure 13-4.

13.86 It should be noted that apart from some downfacing lights on the proposed concrete plant, no additional static lighting will be installed within the application site, in addition to any fixed lighting that is already present. Other than that, some mobile lights will be present on the machinery used as part of the extraction works. Considering the majority of the works will take place at a low elevation within the quarry void and that lights will only be in use for the few hours of darkness during working hours in the winter months, the night-time light pollution due to the proposed development is considered negligible.

Visual Receptor Sensitivity

13.87 Table 13-5 below lists the value placed on views from within each of the VRGs identified earlier (refer to Table 13-2 above). It further describes the susceptibility of each of the identified Visual Receptor Groups (VRGs) to change and provides a judgement of the overall sensitivity of each VRG.

Table 13-5
Sensitivity of Visual Receptors

VRG	Value	Susceptibility	Sensitivity
1	No protected or locally promoted views towards the application site. **LOW**	Residents / Cyclists: **HIGH** Vehicular road users, where views are incidental to the journey: **LOW**	**MEDIUM** **LOW**
2	No protected or locally promoted views towards the application site. **LOW**	Residents: **HIGH** Vehicular road users, where views are incidental to the journey: **LOW**	**MEDIUM** **LOW**
3	No protected or locally promoted views towards the application site. **LOW**	Residents / Cyclists: **HIGH** Vehicular road users, where views are incidental to the journey: **LOW**	**MEDIUM** **LOW**

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Magnitude of Visual Change

13.88 Table 13-6 below describes the magnitude of change to views from each of the VRGs, in terms of the size and scale, geographical extent and duration / reversibility.

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Table 13-6
Factors of Magnitude of Visual Change

VRG	Description of Factors of Visual Change	Level of Effect	Magnitude
1	**Size and Scale:** The visual changes in views from this VRG (i.e. screening berm construction, removal of some hedgerows / trees; visibility of new screening berm and associated planting) will take place at a **close distance behind the boundary hedgerows, which provide partial screening.** The **berm construction works will not be too dissimilar to tillage related works** within the local fields. The **screening berm will be partially visible above / through the boundary hedgerows**, but **will also merge with the existing hedgerows**, once the proposed planting on it establishes, similar to the berm along the northern boundary of the existing quarry development. The **changes in the available views from this VRG will be perceptible**, due to the close distance and as they will become visible above / through the existing boundary hedgerows, **partially altering the composition of the views**. However, considering these changes will consist of additional planting along the site boundary, the **changes to the visual amenity will be minimal**.	**SMALL**	**SLIGHT** (owing to the low number of viewers and small scale of change, consisting of additional vegetation)
	Geographical Extent: Views are available from a **very short linear route**, i.e. 350m along the local road to the north of the satellite quarry area, as indicated on **Figure 13-1.** There will be a **small number of viewers,** consisting of vehicular road users, cyclists and residents of 4 properties within this VRG. Road users are likely to focus their views along the narrow road.	**NEGLIGIBLE**	
	Duration/Reversibility: The changes along the application site boundary will be visible **for the duration of the operational stage, i.e. a 20 year period**. While the visibility of the screening berm and associated planting will remain, they will, in time, blend with the existing hedgerows**, which could be regarded as a reversal of the visual effects**.	**LONG-TERM REVERSIBLE**	
2	**Size and Scale:** The visual changes in views from this VRG (i.e. removal of hedgerows / trees, stripping and rock extraction) will take place at a minimum **distance of 1.8km**, within **a very small area in the middle ground** of the available views. The **changes to a small section of the eastern quarry face will be partially visible.** However, the **works on the quarry floor, including the proposed concrete plant, will be largely screened by topography. None of the proposed development will break the skyline.** The visible footprint of the extraction area will be increased slightly, but the **colours and textures** will be the **same as the existing quarry development,** which is long established in the existing views.	**NEGLIGIBLE**	**SLIGHT** (owing to the very low number of viewers and negligible scale of change)

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VRG	Description of Factors of Visual Change	Level of Effect	Magnitude
	Due to the association with the existing rock quarry and small increase in visibility, as well as the large panoramic nature of views, the **composition of the views and visual amenity will be barely altered**.		
	Geographical Extent: The views are available from **limited sections of three linear routes, i.e. 2.2km in total** between 2-3km south west of the application site, as indicated on **Figure 13-1.** There will be a **very small number of viewers** as these are slightly remote roads, only used by locals. Also, only approximately four properties with views are located within this VRG.	**NEGLIGIBLE**	
	Duration/Reversibility: The changes within the application site will be visible **for the duration of the operational stage, i.e. a 20 year period**. While the changes to the landform will remain, the **restoration of the quarry floor to an agricultural afteruse**, including tree planting in front of the quarry faces **will partially reverse the visual effects**.	**LONG-TERM REVERSIBLE**	
3	**Size and Scale:** The visual changes in views from this VRG (i.e. changes to a small section of the eastern rock face and/or visibility of the top of the concrete plant) will take place within **small sections in the middle or background** of the available views. In some views, some of the **vegetation currently visible along the skyline**, above the quarry face, **will be removed**. This will be **replaced by the new hedge planting**, when the passageway is reinstated above the tunnel access. The **skyline may be slightly altered locally**; however the **colours and textures** of the changing quarry face and new planting **will be the same** as those in the existing views. The **top of** the silos and storage bins associated with the **concrete plant may be visible** in some views. It will however be **painted in a suitable grey / green colour to merge in with the surrounding vegetation**. Overall, **the composition of the views and visual amenity will be barely altered.**	**NEGLIGIBLE**	**SLIGHT** (owing to the very low number of viewers and negligible scale of change)
	Geographical Extent: The views are available from **limited sections of two short linear routes, i.e. 1.2km in total**, along the local roads to the west of the application site, as indicated on **Figure 13-1.** There will be a **small number of viewers,** consisting of vehicular road users, cyclists and residents of 2 properties within this VRG. Road users are likely to focus their views along the narrow road.	**NEGLIGIBLE**	
	Duration/Reversibility: The changes within the application site will be visible **for the duration of the operational stage, i.e. a 20 year period**. While the eastern quarry face will continue to be visible, the re-establishment of vegetation along the skyline will result in a reversal to the current state of views, within the operational period.	**LONG-TERM REVERSIBLE**	

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Significance of Visual Impact

13.89 The sensitivity of the residents and cyclist within VRG 1 was assessed as MEDIUM and that of vehicular road users as LOW. The magnitude of visual change on views for VRG 1 was assessed as SLIGHT. In combination, the visual effect on residents is judged to be MINOR and that on road users as **MINOR -NEGLIGIBLE**. Both are not considered to be significant visual effects.

13.90 The sensitivity of the residents within VRG 2 was assessed as MEDIUM and that of the road users as LOW. The magnitude of visual change on views for VRG 2 was assessed as SLIGHT. In combination, the visual effect on residents is judged to be **MINOR** and that on road users as **MINOR -NEGLIGIBLE**. Both are not considered to be significant visual effects.

13.91 The sensitivity of the residents and cyclists within VRG 3 was assessed as MEDIUM and that of vehicular road users as LOW. The magnitude of visual change on views for VRG 3 was assessed as SLIGHT. In combination the visual effect on residents and cyclists is judged to be **MINOR** and that on road users as **MINOR -NEGLIGIBLE**. Both are not considered to be significant visual effects.

Post – Operational Stage Visual Effects

13.92 On completion of all extraction and restoration works (i.e. the operational stage), the quarry floor will have a similar appearance to the surrounding agricultural land. While the northern and eastern quarry faces will continue to be visible in views from some locations to the west and south west, the rock will weather, and crevices will be colonised by locally occurring grass and scrub species. In time, the appearance of the rock face will be softened and more and more integrate into the surrounding landscape. Further to that, the proposed localised tree planting along parts of the base of the faces will provide some screening.

13.93 As a result, the visual effects will in time reduce to **NEGLIGIBLE** for all visual receptors during the post-operational stage.

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Direct/Indirect Effects

13.94 All landscape and visual effects described above are direct effects. The proposed development is not considered to have indirect effects in landscape and visual terms, i.e. the proposed development is unlikely to cause consequential changes to the surrounding landscape character areas or to existing views of the landscape surrounding the application site.

Compliance with Planning Policies / Impact on Landscape Designations

Extractive Industry

13.95 The proposed development will not have a detrimental environmental effect on any designated sites, including protected views. It is therefore considered to be in compliance with Policy ECD 30 in landscape and visual terms.

Scenic Routes

13.96 There are no views of the proposed development from any of the scenic routes identified in the WCDP. The development is therefore considered to be in compliance with the Policy with Regard to Scenic routes.

Visually Vulnerable Areas

13.97 The proposed development will not impinge on any views of the nearby visually vulnerable areas. It will not be visible in any views of the lakes classed as visually vulnerable, 1.5km to the north of the application site or in views of the ridgelines 2km to 3km to the south.

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13.98 The existing quarry and adjoining satellite quarry area are visible in the foreground of views of the visually vulnerable ridgelines 3km to the north-east of the application site, when viewed from the elevated ground to the south (refer to Viewpoint D on Figure 13-3). However, the existing quarry development and proposed satellite quarry, do not / will not affect the character or uniformity of these ridgelines, due to the much lower elevation and containment within the undulating agricultural landscape.

13.99 The proposed development is therefore regarded to be in compliance with the Policy with Regard to Areas Designated as Vulnerable, contained in the WCDP.

Sensitive Areas

13.100 The proposed development will not take place within or in the vicinity of any sensitive aeras and is therefore considered to be in compliance with the Policy with Regard to Areas Designated as Sensitive contained in the WCDP.

Normal Areas

13.101 The proposed development does not have any impact on scenic routes (see above) and is therefore considered to be in compliance with the Policy with Regard to Areas Designated as normal contained in the WCDP, in landscape and visual terms.

Outdoor Recreational Facilities

13.102 Parts of the proposed development will be visible from very short sections of the Heritage Route Cycling trail, as described as part of VRGs 1 & 3 and illustrated by Viewpoints A & E on Figures 13-2 and 13-4. The above assessment has shown that there will be no significant impact on views from these sections of the cycle route as a result of the proposed satellite quarry development. It should also be noted the views of cyclists will be mainly focused on the roads in this area, as these are fairly narrow. Where views of the surrounding landscape are observed, they would be focused on the scenic ridgelines to the north and south.

Unplanned Events (i.e. Accidents)

13.103 It is highly unlikely that any unplanned events within the application site would result in noticeable landscape or visual impact.

Cumulative / Synergistic Impacts

13.104 There are no known existing developments or developments currently in the planning process that would result in cumulative landscape or visual impacts in combination with the proposed satellite quarry development and installation / operation of the proposed new concrete batching plant.

Transboundary Impacts

13.105 The proposed development is not located in the vicinity of a national boundary. Therefore, transboundary landscape or visual impacts will not arise.

Interaction with Other Impacts

13.106 There are no known interactions with other impacts.

'Do-nothing Scenario'

13.107 If no further works within the application site were to be carried out, the existing quarry development would continue to be restored to grassland, while the fields / lands to the east would continue to be used for agricultural purposes.

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13.108 Some sections of the existing quarry floor have recently been restored to grassland and this type of restoration will continue across the quarry footprint in line with the previous permission granted (Planning Ref. 06 / 1599), irrespective of whether the proposed development proceeds or not.

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MITIGATION MEASURES

Construction and Operational Stages

13.109 The gently undulating topography surrounding the site, as well as the many tree-lined hedgerows and existing boundary screening berms are mitigating factors, reducing the landscape and visual effects of the proposed development. The existing quarry and proposed satellite quarry development are screened in the vast majority of views from the surrounding land.

13.110 A landscape and restoration plan forms part of the subject development assessed by this EIA Report. The plan presents proposals which are integrated into the design of the proposed development in order to limit landscape and visual effects. The following landscape / restoration measures are proposed (refer to Chapter 2 of the EIA Report for further details):

- replacement of hedgerows removed due to the tunnel access works:
- a planted screening berm surrounding the entire satellite quarry area;
- tree copse planting in the north eastern corner of the application site and at the base of the northern and eastern quarry faces (to provide screening and create a wildlife habitat);
- the tallest elements of the proposed concrete plant will be painted in a suitable grey / green colour, to be agreed with the Local Authority, so that these elements merge with the surrounding vegetation, rather than provide a conspicuous contrast;
- removal of all production plant (fixed and mobile), equipment and stockpiles from the application site on completion of extraction works, and breaking up of hard standing areas;
- phased restoration of the quarry floor to grassland (using overburden stored on site and to be stripped from the satellite quarry area); and
- hedgerows to be planted in a number of locations on the restored quarry floor to break up the large area.

13.111 The assessment presented herein has concluded that there will be no significant landscape or visual impacts arising from the proposed development, in part due to the landscape and restoration measures integrated into the development design. Therefore, no additional mitigation measures are considered necessary during the operational stage of the proposed development.

Post – Operational Stage

13.112 The bulk of the proposed landscape / restoration works will be completed during the operational stage of this development. It is anticipated that the application site will substantially integrate with the surrounding landscape at the post-operational stage of the development and that no further mitigation measures are therefore necessary at this stage.

RESIDUAL IMPACT ASSESSMENT

Construction and Operational Stages

13.113 As no additional mitigation measures are proposed during the construction and operational stages other than the landscape and restoration measures integrated into the development design, the residual levels of landscape and visual effects will be as per the assessment above.

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13.114 In summary, this assessment has concluded that the proposed development will have minor-negligible or less landscape effects during the operational stage (i.e. levels of impact not considered to be significant).

13.115 The visual impact on views ranges from none for the majority of locations within the study area to minor or less (i.e. impacts not regarded as significant) for a limited number of viewpoints to the north east, west and south west of the applications area.

Post – Operational Stage

13.116 As no additional mitigation measures are proposed during the post-operational stage, the residual landscape and visual effects will be as per the assessment above. In summary, on completion of all extraction, landscape and restoration works the predicted landscape and visual impacts will reduce to negligible.

MONITORING

13.117 There are no monitoring requirements, arising from this landscape and visual assessment.

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REFERENCES

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

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 (2019) Technical Guidance Note 06/19: Visual Representation of Development Proposals, Landscape Institute

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FIGURES

Figure 13-1
Landscape Baseline and Viewpoint Locations

Figure 13-2
Viewpoints A & B

Figure 13-3
Viewpoints C & D

Figure 13-4
Viewpoints E & F

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N

TO CAPPOQUIN

TO DUNGARVAN

R671

R672

N72

VRG 1

VRG 2

VRG 3

A

B

C

D

E

F

1 km

2 km

3 km

4 km

0 800m 2000

Metres 1:25,000

NOTES

Extract from Ordnance Survey Map No. 82

ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY IRELAND/GOVERNMENT OF IRELAND

LEGEND

LANDHOLDING BOUNDARY

APPLICATION AREA

VIEWPOINT LOCATIONS

DISTANCE FROM THE APPLICATION AREA

VISUAL RECEPTOR GROUPS (I.E. RECEPTORS WITH SIMILAR VIEWS OF THE APPLICATION AREA)

LANDSCAPE DESIGNATIONS:

SCENIC ROUTE (WATERFORD COUNTY DEVELOPMENT PLAN 2011-2017)

VISUALLY VULNERABLE (WATERFORD COUNTY DEVELOPMENT PLAN 2011-2017)

SENSITIVE AREA (WATERFORD COUNTY DEVELOPMENT PLAN 2011-2017)

OUTDOOR RECREATIONAL FACILITIES:

WATERFORD CYCLING TRAILS-ROUTE 3: HERITAGE ROUTE

PROTECTED SITES:
(REFER TO http://webgis.npws.ie/npwsviewer/)

SPECIAL AREA OF CONSERVATION (SAC)

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ENVIRONMENTAL IMPACT ASSESSMENT REPORT

EASTERN SATELLITE QUARRY AND NEW CONCRETE PLANT CAPPAGH QUARRY, CO. WATERFORD

LANDSCAPE BASELINE AND VIEWPOINT LOCATIONS

FIGURE 13-1

Scale 1:25,000 @ A3

Date JULY 2021

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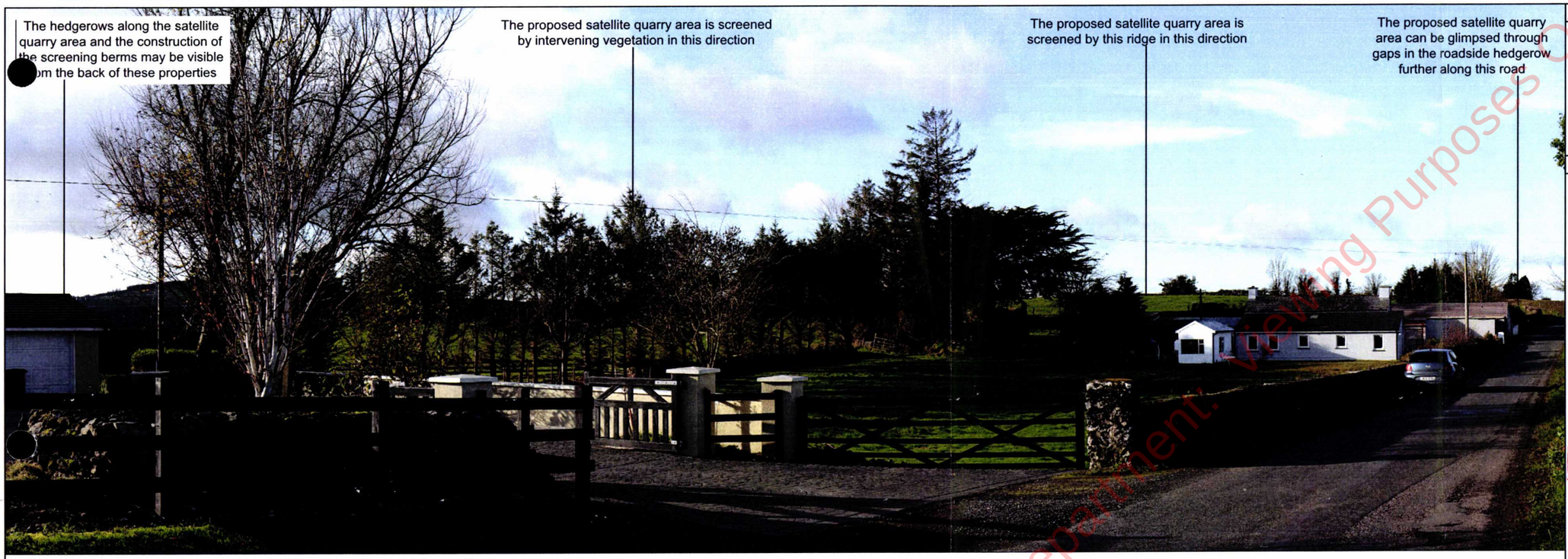

VIEWPOINT A: Local Road in the townland of Canty, north east of the application area.

Grid Reference (ITM): **618315:594940** Elevation: **24m AOD** Distance from application area boundary: **250m** Direction of View: **South west**

Description: The proposed extraction works and concrete plant will be screened by topography and intervening vegetation from the local road to the north east of the application area and associated residential properties. The construction of the screening berm along the eastern boundary of the application area may be glimpsed through gaps in the boundary hedgerows, from locations at the back of the properties and along the section of the road to the north of the proposed satellite quarry area, but the berm will blend with the intervening vegetation, once completed and planted.

VIEWPOINT B: Local Road in the townland of Knockaun, east of the application area.

Grid Reference (ITM): **619030:594850** Elevation: **19m AOD** Distance from application area boundary: **1,000m** Direction of View: **West**

Description: The proposed development will be fully screened by topography and vegetation in all views beyond 300m to the north east and east of the application area, as is illustrated by the above viewpoint.

NOTES

Extract from Ordnance Survey Map No. 82

ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY IRELAND/GOVERNMENT OF IRELAND

LEGEND

- LANDHOLDING BOUNDARY
- APPLICATION AREA
- VIEWPOINT LOCATIONS
- DISTANCE FROM THE APPLICATION AREA BOUNDARY

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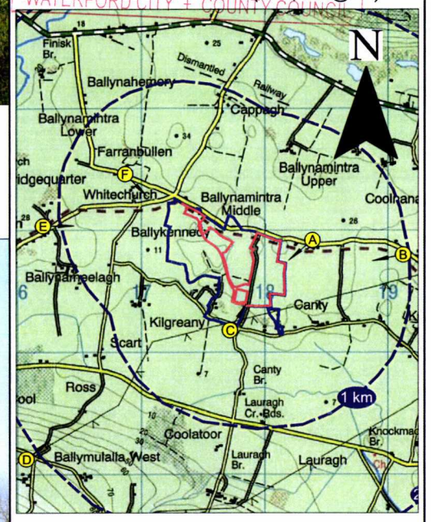
VIEWPOINT LOCATION MAP (1:50,000 @ A3)



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VIEWPOINTS A & B

FIGURE 13-2

Scale	Date
N/A	JULY 2021

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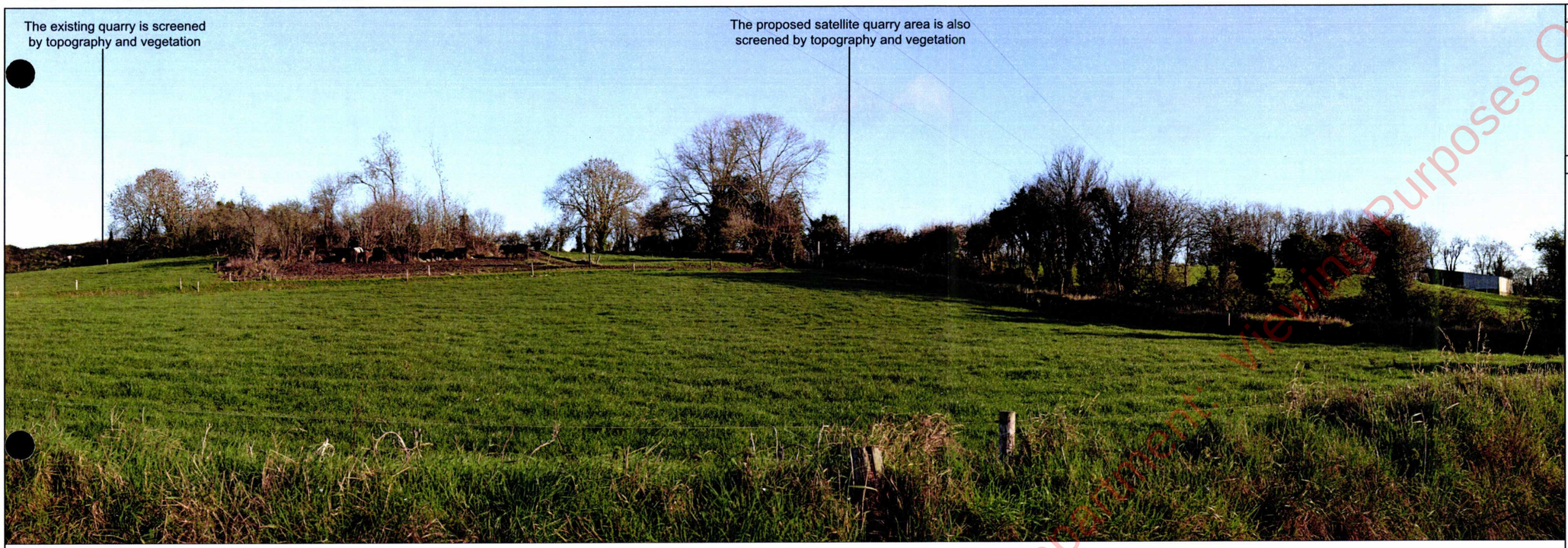
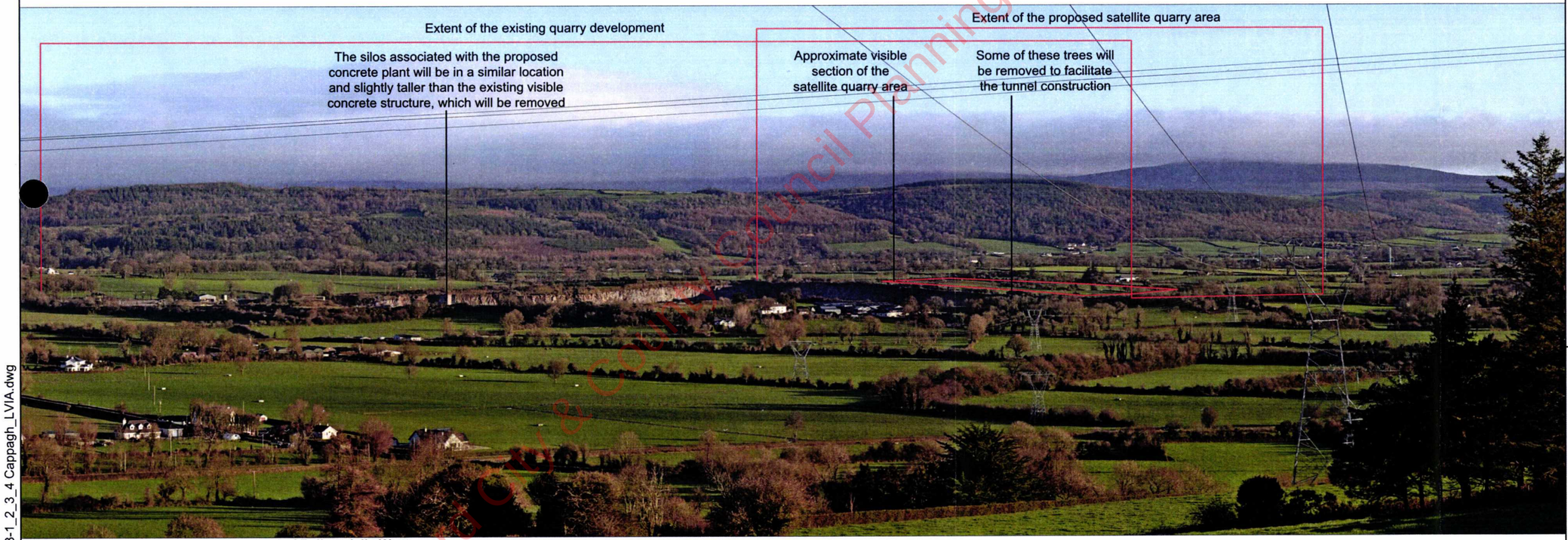


VIEWPOINT C: At the southern entrance to the existing passageway along the eastern boundary of Cappagh Quarry
Grid Reference (ITM): **617711:594272** Elevation: **14m AOD** Distance from application area boundary: **150m** Direction of View: **North east**

Description: The existing quarry, as well as the proposed satellite quarry area are screened by topography and vegetation from the roads and residential properties at low elevations within 1.5km to the south, south west and south east of the application area. None of the proposed works will be visible in these views. The proposed tunnel installation works, will be temporarily visible by users of the passageway. The passageway will be temporarily diverted within the satellite quarry area to facilitate the tunnel installation.



VIEWPOINT D: Local road in the townland of Ballymulalla West.
Grid Reference (ITM): **66077:593204** Elevation: **88m AOD** Distance from application area boundary: **2,070m** Direction of View: **North east**

Description: The existing quarry and proposed satellite quarry area are visible from parts of the elevated lands beyond 1.5km to the south, south west and south east of the application area (approximately from locations above the 70m contour). It should however be noted that there are few residential properties in this area, that the majority of this area consists of not publicly accessible agricultural land and that roadside and local vegetation restrict views in many locations. The proposed satellite quarry will result in a slight increase of the scale of the overall development, which is visible as a narrow band in the middle ground of available views. The proposed satellite quarry will however be substantially screened by the vegetation to be retained along its boundaries, in particular along the passageway to be retained. Also, the proposed screening berms and planting will provide additional screening, once constructed and planted. There will be a small change to the existing quarry face and some trees along the passageway will be removed in order to facilitate the construction of the tunnel access into the satellite quarry. The top of the silos and storage bins associated with the proposed concrete plant will become visible as small elements, in front of the northern quarry face and existing boundary vegetation. The majority of the concrete plant, as well as the HGVs accessing it, will be screened by topography, due to its location on the quarry floor.

NOTES

Extract from Ordnance Survey Map No. 82

ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY IRELAND/GOVERNMENT OF IRELAND

LEGEND

- LANDHOLDING BOUNDARY
- APPLICATION AREA
- VIEWPOINT LOCATIONS (A)
- DISTANCE FROM THE APPLICATION AREA BOUNDARY (2 km)

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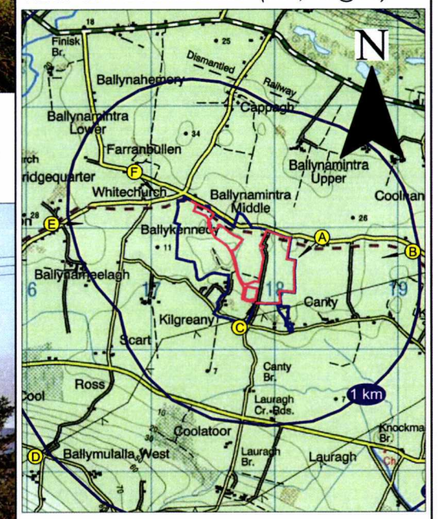
VIEWPOINT LOCATION MAP (1:50,000 @ A3)



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VIEWPOINTS C & D

FIGURE 13-3

Scale: N/A Date: JULY 2021

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APPENDIX 13-A

Methods used in Assessing Landscape and Visual Impact Effects

Methods used in Assessing Landscape and Visual Impact Effects

Introduction

Landscape and Visual Impact Assessment (LVIA) is a tool used to identify the effects of development on *"landscape as an environmental resource in its own right and on people's views and visual amenity"* (GLVIA3, paragraph 1.1). GLVIA3[8] (paragraph 2.22) states that these two elements, although inter-related, should be assessed separately. GLVIA3 is the main source of guidance on LVIA.

Landscape is a definable set of characteristics resulting from the interaction of natural, physical and human factors: it is a resource in its own right. Its assessment is distinct from visual assessment, which deals specifically with effects on the views and visual amenity of different groups of people at particular locations. Clear separation of these two topics is recommended in GLVIA3.

As GLVIA3 (paragraph 2.23) states, professional judgement is an important part of the LVIA process: whilst there may be some scope for objective measurement of landscape and visual changes, much of the assessment must rely on qualitative judgements. It is critical that these judgements are based upon a clear and transparent method so that the reasoning can be followed and examined by others.

Impacts can be defined as the action being taken, whereas effects are the changes result from that action. This method of assessment assesses landscape and visual effects.

Landscape and visual effects can be positive, negative or neutral in nature. Positive effects are those which enhance and/or reinforce the characteristics which are valued. Negative effects are those which remove and/or undermine the characteristics which are valued. Neutral effects are changes which are consistent with the characteristics of the landscape or view

In LVIAs which form part of an EIA, it is necessary for identify significant and non-significant effects. In non-EIA LVIAs, also known as appraisals, the same principles and process as LVIA may be applied but, in so doing, it is not required to establish whether the effects arising are or are not significant given that the exercise is not being undertaken for EIA purposes (see GLVIA3 statement of clarification 1/13 10-06-13, Landscape Institute).

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[8] Landscape Institute and Institute of Environmental Management and Assessment 'Guidelines for Landscape and Visual Impact Assessment' (Third Edition, April 2013)

Landscape Effects

Landscape, as defined in the European Landscape Convention, is *"an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"*, (Council of Europe, 2000). Landscape does not apply only to special or designated places, nor is it limited to countryside.

GLVIA3 (paragraph 5.34) recommends that the effect of the development on landscape receptors is assessed. Landscape receptors are the components of the landscape that are likely to be affected by the proposed development, and can include individual elements (such as hedges or buildings), aesthetic and perceptual aspects (for example sense of naturalness, tranquillity or openness), or, at a larger scale, the character of a defined character area or landscape type. Designated landscapes, such as National Parks or Areas of Outstanding Natural Beauty (AONBs), may also be treated as landscape receptors, in which case attention is also given to effects on their special qualities.

This assessment is being undertaken because the proposed development has the potential to remove or add elements to the landscape, to alter aesthetic or perceptual aspects, and to add, remove or alter characteristics and thus potentially change overall character.

Judging landscape effects requires a methodical assessment of the sensitivity of the landscape receptors to the proposed development and the magnitude of effect which would be experienced by each receptor. The criteria and definitions used in making these judgements are set out below.

Landscape Sensitivity

The sensitivity of landscape receptors is assessed by combining assessments of the value attached to each receptor and the susceptibility of each receptor to the type of change which is proposed. (GLVIA3, paragraph 5.39).

Value Attached to Landscape Receptors

Landscape receptors may be valued at community, local, national or international level. Existing landscape designations provide the starting point for this assessment, as set out in **Table 13A-1** below.

The table sets out the interpretation of landscape designations in terms of the value attached to different landscape receptors. As GLVIA3 (paragraph 5.24) notes, at the local scale of an LVIA study area it may be found that the landscape value of a specific area may sometimes be different to that suggested by the presence or absence of a formal designation.

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Table 13A-1: Interpretation of Landscape Designations

Designation	Description	Value
World Heritage Sites, candidate World Heritage Site	Unique sites, features or areas identified as being of international importance according to UNESCO criteria. Consideration should be given to their settings especially where these contribute to the attributes of outstanding universal value for which such an area of landscape is valued.	International
National Parks	Areas of landscape identified as being of national importance. Consideration should be given to their settings especially where these contribute to the special qualities for which the landscape is valued.	National
Local Landscape Designations (such as Areas of Outstanding Natural Beauty or Areas of High Amenity) included in local planning documents; or other landscapes of identified value.	Areas of landscape identified as having value, which are either recognised at the local authority level by a local designation or other equivalent recognition of value OR are landscapes considered to have elevated value, having regard to the criteria in Table 13A-2 below and/or by virtue of demonstrable physical attributes.	Local Authority
Undesignated landscapes of community value	Landscapes which do not have any formal designation but which may possess some/several indicators of value.	Local Authority/Community
Landscapes of low value	Landscapes in poor condition or fundamentally altered by presence of intrusive man-made structures. Landscapes which possess few or no indicators of value.	Low

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Where landscapes are not designated and where no other local authority guidance on value is available, an assessment is made by reference to criteria in the **Table 13A-2** below. This is based on Table 1 of Landscape Institute Technical Guidance Note 2/21. These factors are not fixed and should be reviewed on a case-by-case basis. When assessing landscape value of a site it is important to consider not only the site itself but also its context.

Landscapes may be judged to be of local authority or community value on the basis of one or more of these factors. There may also be occasional circumstances where an undesignated landscape may be judged to be of national value, for example where it has a clear connection with a nationally designated landscape or is otherwise considered to be of equivalent value to a national designation. Similarly, on occasions there may be areas within designated landscapes that do not meet the designation criteria or demonstrate the key characteristics/special qualities in a way that is consistent with the rest of the designated area.

An overall assessment is made for each landscape receptor, based on an overview of the above criteria, to determine its value - whether for example it is comparable to a local authority landscape designation or similar, or whether it is of value to local people and communities. For example, an intact landscape in good condition, where scenic quality, tranquillity, and/or conservation interests make a particular contribution to the landscape, or where there are important cultural or historical associations, might be of equivalent value

to a local landscape designation. Conversely, a degraded landscape in poor condition, with no particular scenic qualities or natural or cultural heritage interest is likely to be considered of limited landscape value.

Table 13A-2: Factors Considered in Assessing the Value of Non-Designated Landscapes

Factor	Criteria
Natural Heritage	Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest. Presence of wildlife and habitats that contribute to the sense of place. Landscape which contains valued natural capital assets that contribute to ecosystem services.
Cultural Heritage	Landscape with clear evidence of archaeological, historical or cultural interest. Landscape which contributes to the significance of heritage assets. Landscape which offers a dimension of time depth.
Landscape Condition	Landscape which is in a good physical state both with regard to individual elements and overall landscape structure. Absence of detracting/incongruous features.
Associations	Landscape which is connected with notable people, events and the arts.
Distinctiveness	Landscape that has a strong sense of identity or place. Presence of distinctive features that are characteristic of a place, or presence of rare/unusual features that confer a strong sense of place. Includes landscape that makes an important contribution to the character or identity of a settlement.
Recreational	Landscape offering recreational opportunities where experience of landscape is important. Includes open access areas, common land and rights of way where appreciation of the landscape is an important element of the experience. Landscape that forms part of a view that that is important to the enjoyment of a recreational activity.
Perceptual (Scenic)	Landscape that appeals to the senses, primarily the visual sense. Distinctive features, or distinctive combinations of features. Strong aesthetic qualities. Visual diversity or contrasts. Memorable/distinctive views or landmarks, or landscape that contributes to these.
Perceptual (Wildness and Tranquillity)	Landscape with a strong perceptual value notably remoteness, wildness, tranquillity and/or dark skies.
Functional	Landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape. Natural hydrological systems, important parts of the green infrastructure network, pollinator rich habitats. Landscapes that have strong physical or functional links with an adjacent national landscape designation or are important to the appreciation of the designated landscape and its special qualities.

Susceptibility of Landscape Receptors to Change

As set out in GLVIA3, susceptibility refers to the ability of the landscape receptor to *"accommodate the proposed development without undue adverse consequences for the baseline situation and/or the achievement of landscape planning policies and strategies"*. Judgement of susceptibility is particular to the specific characteristics of the proposed development and the ability of a particular landscape or feature to accommodate the type of change proposed, and makes reference to the criteria set out in **Table 13A-3** below. Aspects of the character of the landscape that may be affected by a particular type of development include

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landform, skylines, land cover, enclosure, human influences including settlement pattern and aesthetic and perceptual aspects such as the scale of the landscape, its form, line, texture, pattern and grain, complexity, and its sense of movement, remoteness, wildness or tranquillity. They will vary with the type of development in question.

For example, an urban landscape which contains a number of industrial buildings may have a low susceptibility to buildings of a similar scale and character. Conversely a rural landscape containing only remote farmsteads is likely to have a high susceptibility to large scale built development.

Table 13A-3: Landscape Receptor Susceptibility to Change

Susceptibility	Criteria
High	The landscape receptor is highly susceptible to the proposed development because the key characteristics of the landscape have no or very limited ability to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.
Medium	The landscape receptor is moderately susceptible to the proposed development because the relevant characteristics of the landscape have some ability to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.
Low	The landscape receptor has low susceptibility to the proposed development because the relevant characteristics of the landscape are generally able to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.

Defining Sensitivity

As noted above, the sensitivity of landscape receptors is defined in terms of the relationship between value and susceptibility to the proposed change, as indicated in **Figure 13A-1** and **Table 13A-4**. These summarise the general nature of the relationship but the combination of the two factors is not formulaic. **Table 13A-4** provides examples of common combinations but is not comprehensive and other combinations may be judged appropriate. Professional judgement is applied on a case by case basis in determining the sensitivity of individual receptors with the diagram and table only serving as a guide.

Where, taking into account the component judgements about the value and susceptibility of the landscape receptor, sensitivity is judged to lie between levels, an intermediate assessment of high/medium or medium/low may be adopted. In a few limited cases a category of less than low (very low) may be used where the landscape is of low value and susceptibility is particularly low.

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Figure 13A-1 : Example Levels of Sensitivity defined by Value and Susceptibility of Landscape Receptors

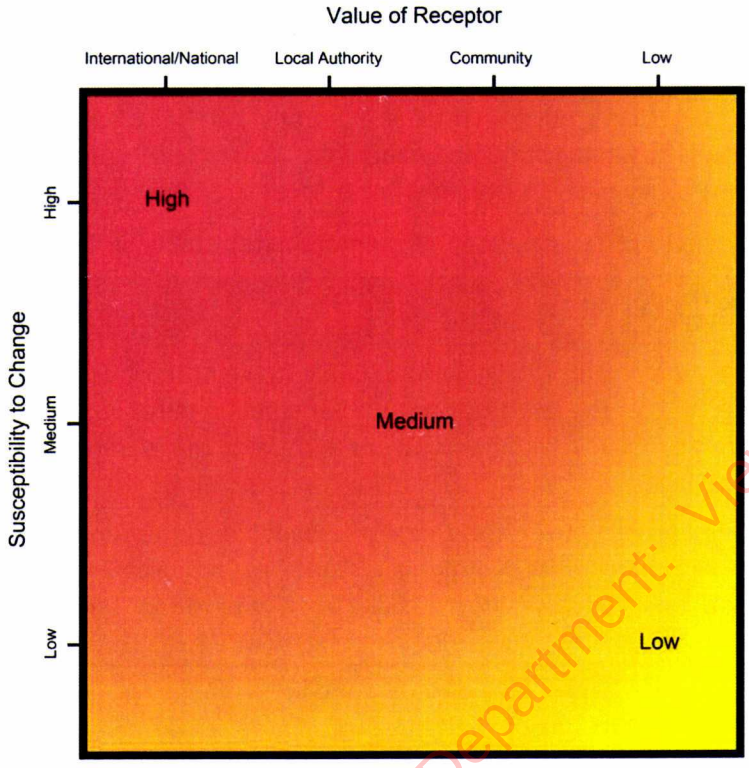

Table 13A-4: Example Levels of Sensitivity defined by Value and Susceptibility of Landscape Receptors

Sensitivity	Criteria
High	The landscape receptor is of international or national value and is considered to have high susceptibility to the effects of the proposed development OR The landscape receptor is of national value and is considered to have medium susceptibility to the effects of the proposed development OR The landscape receptor is of local authority value and is considered to have high susceptibility to the effects of the proposed development
Medium	The landscape receptor is of international or national value and is considered to have low susceptibility to the effects of the proposed development OR The landscape receptor is of local authority value and is considered to have medium susceptibility to the effects of the proposed development OR The landscape receptor is of community value and is considered to have high susceptibility to the effects of the proposed development

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Sensitivity	Criteria
Low	The landscape receptor is of local authority value and is considered to have low susceptibility to the effects of the proposed development OR The landscape receptor is of community value and is considered to have medium susceptibility to the effects of the proposed development OR The landscape receptor is of community value and is considered to have low susceptibility to the effects of the proposed development

Magnitude of Landscape Change

The magnitude of landscape change is established by assessing the size or scale of change, the geographical extent of the area influenced and the duration and potential reversibility of the change.

Size and Scale of Change

The size and/or scale of change in the landscape takes into consideration the following factors:

- *the loss or addition of landscape elements; and/or*
- *the degree to which aesthetic/perceptual aspects are altered; and*
- *whether this is likely to change the key characteristics of the landscape.*

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The criteria used to assess the size and scale of landscape change are based upon the amount of change that will occur as a result of the proposed development, as described in **Table 13A-5** below.

Table 13A-5: Size/Scale of Change

Category	Description
Large level of landscape change	There would be a large level of change in landscape character, and especially to the key characteristics if, for example, the proposed development: • *becomes a dominant feature in the landscape, changing the balance of landscape characteristics; and/or* • *would dominate important visual connections with other landscape types, where this is a key characteristic of the area.*
Medium level of landscape change	There would be a medium level of change in landscape character, and especially to the key characteristics if, for example: • *the proposed development would be more prominent but would not change the overall balance or composition of the landscape; and/or* • *key visual connections to other landscape types may be interrupted intermittently by the proposed development, but these connections would not be dominated by them.*
Small level of landscape change	There would be a small level of change in landscape character, and especially to the key characteristics if, for example: • *there would be no introduction of new elements into the landscape and the proposed development would not significantly change the composition/balance of the landscape.*

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Category	Description
Negligible level of landscape change/ No change	There would be a negligible level of change in landscape character, and especially to the key characteristics if, for example, the proposed development would be a small element and/or would be a considerable distance from the landscape receptor/ the proposed development will cause no change to the landscape.

Geographical Extent of Change

The geographical extent of landscape change is assessed by determining the area over which the changes will influence the landscape, as set out in **Table 13A-6**. For example, this could be at the site level, in the immediate setting of the site, or over some or all of the landscape character types or areas affected.

Table 13A-6: Geographical Extent

Category	Description
Large extent of landscape change	The change will affect all or the majority of the landscape receptor under consideration.
Medium extent of landscape change	The change will affect approximately half of the landscape receptor under consideration.
Small extent of landscape change	The change will affect a small extent of the landscape receptor under consideration.
Negligible extent of landscape change	The change will affect only a limited or negligible extent of the landscape receptor under consideration.

Duration and Reversibility of Change

The duration of the landscape change is categorised in **Table 13A-7** below, which considers whether the change will be permanent and irreversible or temporary and reversible. The levels of duration are based on the EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (2017).

Table 13A-7: Duration and Reversibility

Category	Description
Permanent/ Irreversible	Change that will last for over 60 years and is deemed permanent or irreversible.
Long-term reversible	Change that will last between 15 and 60 years and is potentially, or theoretically reversible.
Medium-term reversible	Change that will last between 7 and 15 years and is wholly or partially reversible.
Temporary/ Short-term reversible	Change that will last from 0 to 7 years and is reversible - includes construction effects.

Deciding on Overall Magnitude of Landscape Change

The relationships between the three factors that contribute to assessment of the magnitude of landscape effects are illustrated graphically, as a guide, in **Figure 13A-2** below. Various combinations are possible and

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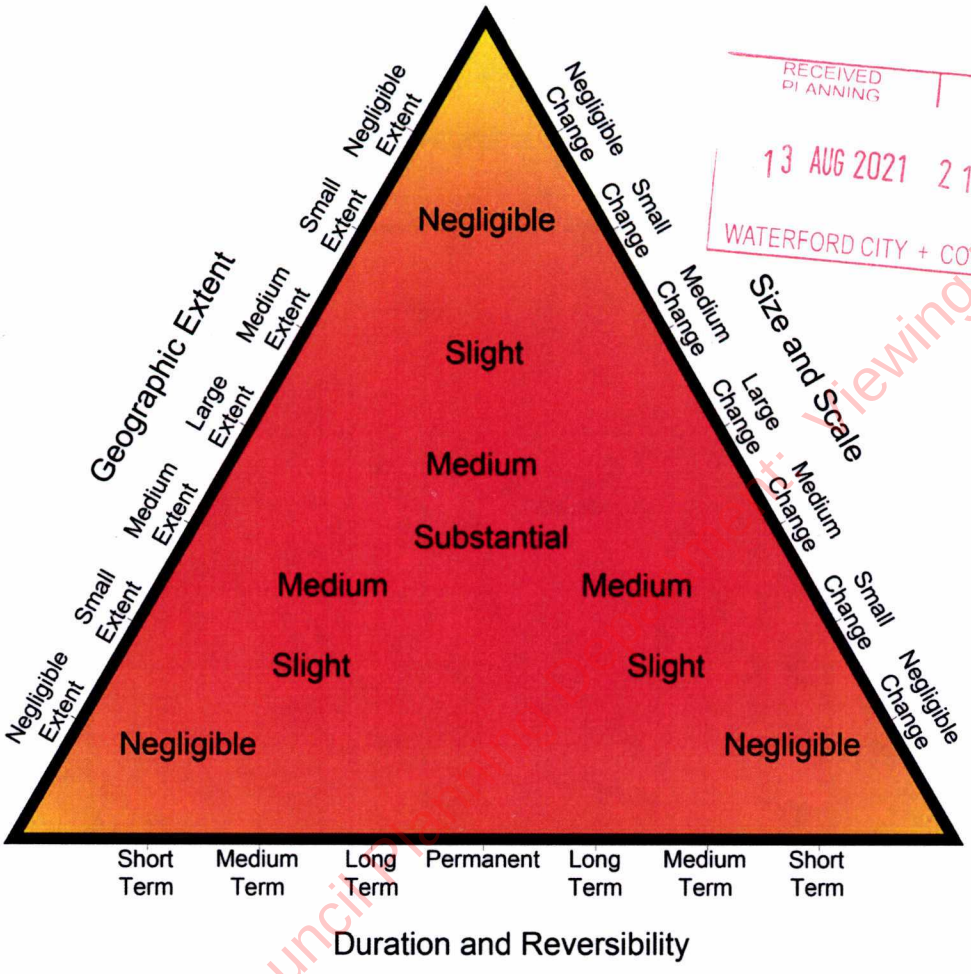
the overall magnitude of each effect is determined using professional judgement rather than by formulaic application of the relationships in the diagram.

Figure 13A-2: Determining the Magnitude of Landscape Change



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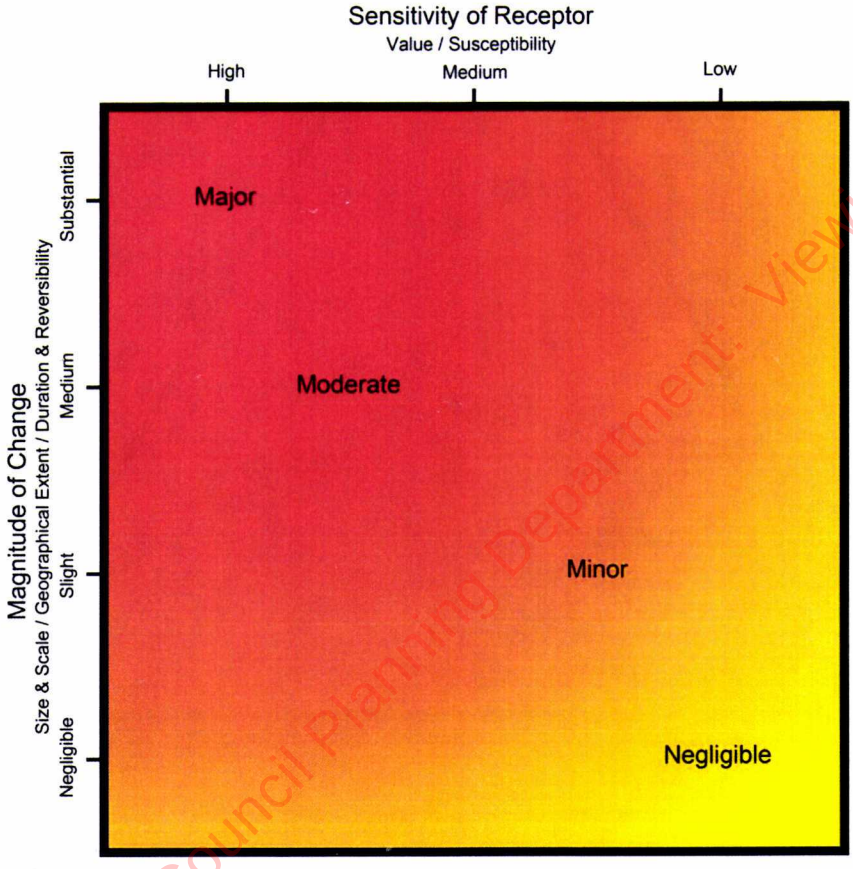
Assessment of Landscape Effects and Significance

The assessment of landscape effects, and whether these are significant or not significant, is defined in terms of the relationship between the sensitivity of the landscape receptors and the magnitude of the change. The diagram below (**Figure 13A-3**) summarises the nature of the relationship but it is not formulaic. Judgements are made about each landscape effect using this diagram as a guide.

Figure 13A-3: Assessment of Landscape Effects and Overall Significance



Effects that fall in the red (darker) section of the diagram, that is those which are considered to be major and major/moderate effects by virtue of the more sensitive receptors and the greater magnitude of effects, are generally considered to be the **significant landscape effects**. Those effects falling outside the major or major/ moderate categories are generally considered to be not significant. However, it should be noted that GLVIA3 states 'there are no hard and fast rules about what effects should be deemed significant' and in some cases professional judgement may determine that a moderate effect is significant. Moderate effects are considered individually on a case by case basis, to determine whether each effect is considered to be significant or not significant. In determining whether moderate effects are or are not significant, particular attention is given to the constituent judgements leading to the assessment of a moderate effect and particularly to value, susceptibility and size/scale of effect, and in addition whether the effect is found across a number of receptors or in a pattern that intensifies the overall impact.

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Visual Effects

Visual effects are the effects of change and development on the views available to people and their visual amenity. Visual receptors are the people whose views may be affected by the proposed development. They may include:

- *Communities within settlements (i.e. towns and villages);*
- *Residents of individual properties and clusters of properties outside settlements;*
- *People using nationally designated or regionally promoted footpaths and cycle routes;*
- *Visitors at publicly accessible sites including, for example, gardens and designed landscapes, historic sites, and other visitor attractions or outdoor recreational facilities where the landscape or seascape is an important part of the experience;*
- *Users of outdoor sport and recreation facilities;*
- *Visitors staying at caravan parks or camp sites;*
- *Road users on recognised scenic or promoted tourist routes;*
- *Travellers using other roads who may pass through the study area because they are visiting, living or working there;*
- *Rail passengers;*
- *People at their place of work.*

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Judging visual effects requires a methodical assessment of the sensitivity of the visual receptors to the proposed development and the magnitude of effect which would be experienced by each receptor.

Viewpoints are chosen for a variety of reasons but most commonly because they represent views experienced by relevant groups of people although they may also include specific promoted or otherwise important viewpoints.

Visual Sensitivity

Sensitivity of visual receptors is assessed by combining an assessment of the susceptibility of visual receptors to the type of change which is proposed with the value attached to the views. (GLVIA3, paragraph 6.30).

Value Attached to Views

Different levels of value are attached to the views experienced by particular groups of people at particular viewpoints. Assessment of value takes account of a number of factors, including:

- *Recognition of the view through some form of planning designation or by its association with particular heritage assets; and*
- *The popularity of the viewpoint, in part denoted by its appearance in guidebooks, literature or art, or on tourist maps, by information from stakeholders and by the evidence of use including facilities provided for its enjoyment (seating, signage, parking places, etc.); and*
- *Other evidence of the value attached to views by people including consultation with local planning authorities, some of whom have carried out assessments of valued views, and professional assessment of the quality of views.*

The assessment of the value of views is summarised in **Table 13A-8** below. These criteria are provided for guidance only.

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Table 13A-8: Examples of Factors Considered in assessing the Value Attached to Views

Value	Criteria
High	Views from nationally (and in some cases internationally) known viewpoints, which: • *have some form of planning designation; or* • *are associated with internationally or nationally designated landscapes or important heritage assets; or* • *are promoted in sources such as maps and tourist literature; or* • *are linked with important and popular visitor attractions where the view forms a recognised part of the visitor experience; or* • *have important cultural associations.* *Also, may include views judged by assessors to be of high value.*
Medium	Views from viewpoints of some importance at regional or local levels, which: • *have some form of local planning designation associated with locally designated landscapes or areas of equivalent landscape quality; or* • *are promoted in local sources; or* • *are linked with locally important and popular visitor attractions where the view forms a recognised part of the visitor experience; or* • *have important local cultural associations.* *Also, may include views judged by the assessors to be of medium value.*
Low	Views from viewpoints which, although they may have value to local people: • *have no formal planning status; or* • *are not associated with designated or otherwise high-quality landscapes; or* • *are not linked with popular visitor attractions; or* • *have no known cultural associations.* *Also, may include views judged by the assessors to be of low value.*

Where judgements are made about the value attached to views experienced by residential receptors, the following considerations also apply:

- *Views in a rural or designed context (e.g. an avenue of trees or designed view from a parkland), especially if associated with landscapes of national or local authority value, where residential receptors are positioned to take advantage of the views, will generally be considered to be of high value;*
- *Views in a semi-rural or general townscape context, and/or where locations of residential receptors are not positioned to take full advantage of views, will generally be considered of medium value; and*
- *Views in an urban/industrial context, and/or where locations of residential receptors are not positioned to take advantage of views, will generally be considered of low value.*

Susceptibility of Visual Receptors to Change

The susceptibility of different types of people to changes in views is mainly a function of:

- *The occupation or activity of the viewer at a given viewpoint; and*
- *The extent to which the viewer's attention or interest be focussed on a particular view and the visual amenity experienced at a given view.*

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The susceptibility of different groups of viewers is assessed with reference to the guidance in **Table 13A-9** below. However, as noted in GLVIA3 "*this division is not black and white and, in reality, there will be a gradation in susceptibility to change*". Therefore, the susceptibility of each group of people affected is considered for each project and assessments are included in the relevant text in the report.

Table 13A-9: Visual Receptor Susceptibility to Change

Susceptibility	Criteria
High	Residents; People engaged in outdoor recreation where their attention is likely to be focused on the landscape and on particular views; Visitors to heritage assets or other attractions where views of the surroundings are an important part of the experience; Communities where views contribute to the landscape setting enjoyed by the residents.
Medium	Travellers on scenic routes where the attention of drivers and passengers is likely to be focused on the landscape and on particular views. People engaged in outdoor sport or recreation, which may involve appreciation of views e.g. users of golf courses.
Low	People engaged in outdoor sport or recreation, which does not involve appreciation of views; People at their place of work whose attention is focused on their work; where the setting is not important to quality of working life; Travellers, where the view is incidental to the journey.

Defining Sensitivity

As noted above, the sensitivity of visual receptors is defined in terms of the relationship between the value of views and susceptibility of the different receptors to the proposed change, as indicated in **Figure 13A-4** and **Table 13A-10**. These summarise the general nature of the relationship but the combination of the two factors is not formulaic. **Table 13A-10** provides examples of common combinations but is not comprehensive and other combinations may be judged appropriate. Professional judgement is applied on a case by case basis in determining the sensitivity of individual receptors with the diagram and table only serving as a guide.

Where, taking into account the component judgements about the value and susceptibility of the visual receptor, sensitivity is judged to lie between levels, an intermediate assessment of high/medium or medium/low may be adopted. In a few limited cases a category of less than low (very low) may be used where the visual receptor is of low value and susceptibility is particularly low.

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Figure 13A-4: Levels of Sensitivity Defined by Value and Susceptibility of Visual Receptor Groups

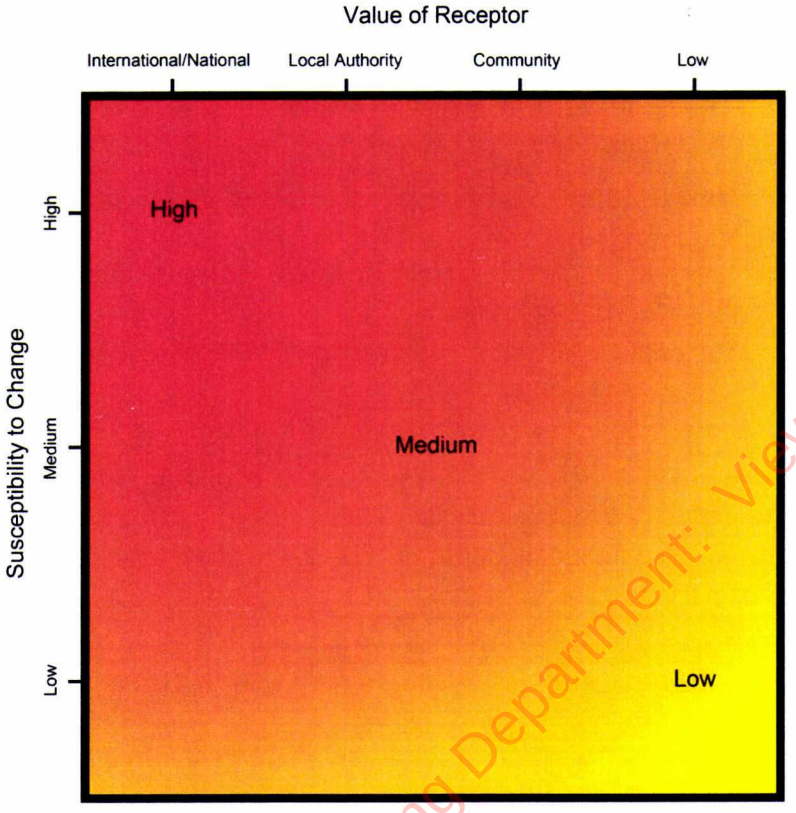

Table 13A-10: Example Levels of Sensitivity defined by Value and Susceptibility of Visual Receptors

Sensitivity	Criteria
High	The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of high value OR The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of high value OR The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of value at the medium level.
Medium	The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of value at the low level OR The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of value at the medium level OR The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the high level.

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Sensitivity	Criteria
Low	The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of value at the low level OR The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the medium level OR The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the low level.

Magnitude of Visual Change

The magnitude of visual change is established by assessing the size or scale of change, the geographical extent of the area influenced and the duration and potential reversibility of the change. Representative viewpoints are used as 'sample' points to assess the typical change experienced by different groups of visual receptors at different distances and directions from the proposed development.

Size and Scale of Change

The criteria used to assess the size/scale of visual change are as follows:

- *the scale of the change in the view with respect to the loss or addition of features in the view, changes in its composition, including the proportion of the view occupied by the proposed development and distance of view;*
- *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 factors such as form, scale and mass, line, height, colour and texture; and*
- *the nature of the view of the proposed development, for example whether views will be full, partial or glimpses or sequential views while passing through the landscape.*

The above criteria are summarised in the **Table 13A-11** overleaf:

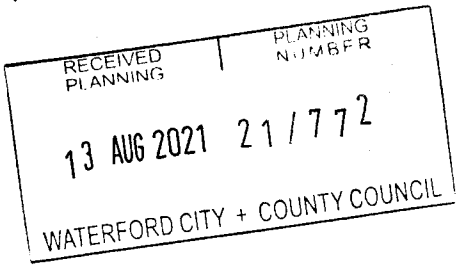

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Table 13A-11: Size/Scale of Change

Category	Criteria
Large visual change	The proposed development will cause a complete or large change in the view, resulting from the loss of important features in or the addition of important new ones, to the extent that this will substantially alter the composition of the view and the visual amenity it offers.
Medium visual change	The proposed development will cause a clearly noticeable change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will alter to a moderate degree the composition of the view and the visual amenity it offers. Views may be partial/intermittent.
Small visual change	The proposed development will cause a perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will partially alter the composition of the view and the visual amenity it offers. Views may be partial only.
Negligible visual change	The proposed development will cause a barely perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will barely alter the composition of the view and the visual amenity it offers. Views may be glimpsed only.
No change	The proposed development will cause no change to the view.

Geographical Extent of Change

The geographical extent of the visual change identified at representative viewpoints is assessed by reference to a combination of the Zone of Theoretical Visibility (ZTV), where this has been prepared, and field work. The way that geographical extent is assessed varies with circumstances.

Most commonly a number of representative viewpoints are used as 'sample' points to assess the typical change experienced by a particular group of visual receptors in locations at different distances and directions from the proposed development. In such cases the geographical extent of the visual change is judged for each group of receptors (for example, people using a particular route or public amenity) drawing on the relevant viewpoint assessments, plus information about the approximate number and distribution of that particular group of people in the Study Area. For example the geographical extent would be small if the change is experienced at only one or two locations and/or by a smaller number of viewers. Community views may, for example, be experienced from a small number of dwellings, or affect numerous properties in the community, or several different communities. Similarly, changes to a view from a public footpath may be visible from a single isolated viewpoint (small geographical extent), or over a prolonged stretch of the route (large geographical extent).

In the case of individual (rather than representative) viewpoints in a specific location, the following factors (as noted in GLVIA3), are considered in judging geographical extent:

- *the angle of view in relation to the main activity of the receptor;*
- *the distance of the viewpoint from the proposed development; and*
- *the extent of the area over which changes would be visible.*

For example, from an elevated area of Open Access Land the proposed development may be widely visible from much or all of the accessible area, be close to it and so occupy a wide angle of the view, suggesting large geographical extent. Alternatively, the proposed development may be visible from only a small proportion of the area, be quite distant from it and so occupy a small proportion of the view, suggesting small geographical extent.

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Table 13A-12 describes the most common categories of geographical extent based on these two approaches.

Table 13A-12: Geographical Extent of Change

Category	Description
Large extent of visual change	Either: The proposed development is seen by the group of receptors in many locations across the Study Area or from the majority, or a large proportion, of a linear route and/or by large numbers of viewers; Or: The proposed development is visible from much or all of a specific site is close to it and so occupies a wide angle of the view.
Medium extent of visual change	Either: The proposed development is seen by the group of receptors in several locations across the Study Area or from a moderate proportion of a linear route and/or by moderate numbers of viewers; Or: The proposed development is visible from a moderate part of a specific site, is at a moderate distance from it and so occupies a moderate angle of the view.
Small extent of visual change	Either: The proposed development is seen by the group of receptors at a small number of locations across the Study Area or from limited sections of a linear route and/or by a small numbers of viewers; Or: The proposed development is visible from a small part of a specific site, is at some distance from it and so occupies a small angle of the view.
Negligible extent of visual change	Either: The proposed development is not visible in the Study Area or is seen by the group of receptors at only one or two locations or from a very short length of a linear route and/or by a very small number of viewers; OR: The proposed development is visible from only a very small part of a site, is at a considerable distance from it and so occupies a very small angle of the view.

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Duration and Reversibility of Change

The duration of the visual change at viewpoints is categorised in **Table 13A-13** below, which considers whether views will be permanent and irreversible or temporary and reversible. The levels of duration are based on the EPA Draft Guidelines on the information to be contained in EIA Reports (2017).

Table 13A-13: Duration and Reversibility

Category	Description
Permanent/ Irreversible	Change that will last for over 60 years and is deemed permanent or irreversible.
Long-term reversible	Change that will last between 15 and 60 years and is potentially, or theoretically reversible.
Medium-term reversible	Change that will last between 7 and 15 years and is wholly or partially reversible.
Temporary/ Short-term reversible	Change that will last from 0 to 7 years and is reversible - includes construction effects.

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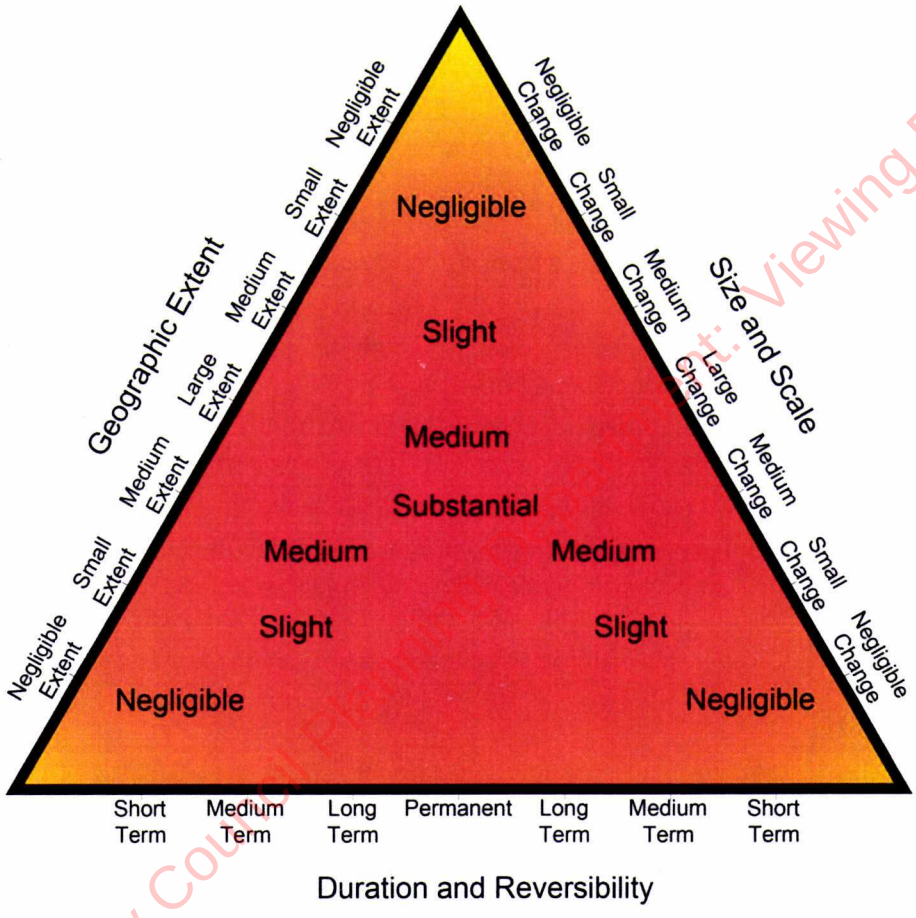
Deciding on Overall Magnitude of Visual Change

The relationships between the three factors that contribute to assessment of the magnitude of visual effects are illustrated graphically, as a guide, in **Figure 13A-5** below. Various combinations are possible and the overall magnitude of each effect is made using professional judgement rather than by formulaic application of the relationships in the diagram.

Figure 13A-5: Determining the Magnitude of Visual Change



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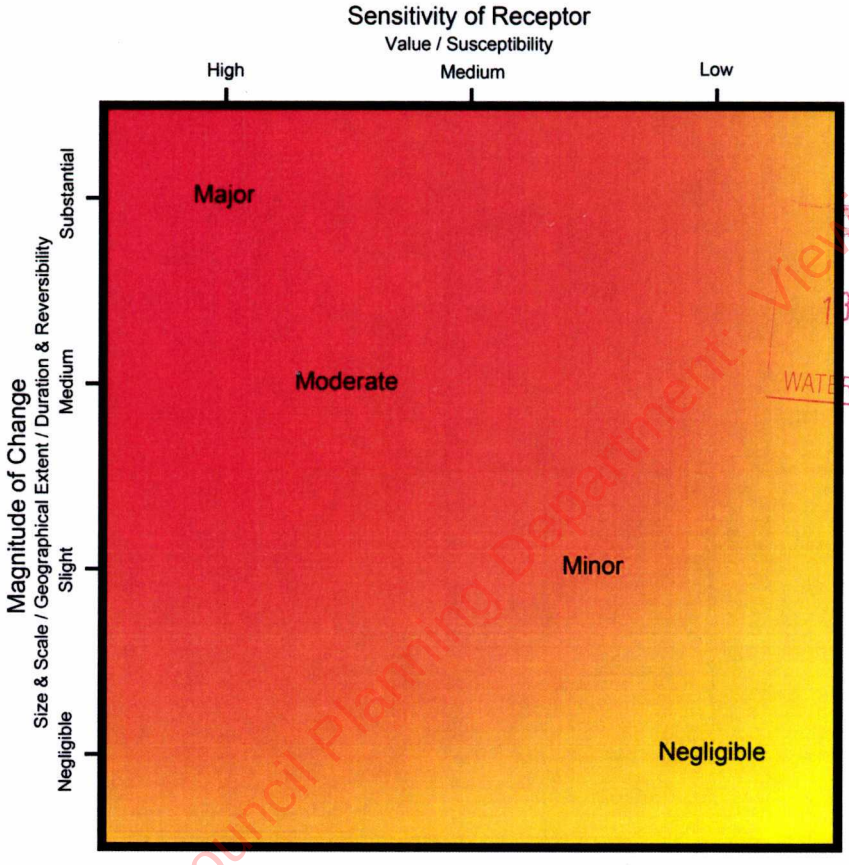
Assessment of Visual Effects and Significance

The assessment of visual effects, and whether these are significant or not significant, is defined in terms of the relationship between the sensitivity of the visual receptors and the magnitude of the change. The diagram below (**Figure 13A-6**) summarises the nature of the relationship but it is not formulaic and only indicates broad levels of effect. Judgements are made about each visual effect using this diagram as a guide.

Figure 13A-6: Assessment of Visual Effects and Overall Significance



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Effects that fall in the red (darker) section of the diagram, that is those which are considered to be major and major/moderate effects by virtue of the more sensitive receptors and the greater magnitude of effects, are generally considered to be the **significant landscape effects**. Those effects falling outside the major or major/ moderate categories are generally considered to be not significant. However, it should be noted that GLVIA3 states 'there are no hard and fast rules about what effects should be deemed significant' and in some cases professional judgement may determine that a moderate effect is significant. Moderate effects are considered individually on a case by case basis, to determine whether each effect is considered to be significant or not significant. In determining whether moderate effects are or are not significant, particular attention is given to the constituent judgements leading to the assessment of a moderate effect and particularly to value, susceptibility and size/scale of effect, and in addition whether the effect is found across a number of receptors or in a pattern that intensifies the overall impact.

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INTRODUCTION

General

14.1 This Chapter of the Environmental Impact Assessment Report (EIAR) is prepared by PMCE on behalf of SLR Consulting Ireland and Roadstone Limited and addresses the potential effects of a satellite quarry development to the east of Cappagh Quarry and the construction and operation of a new concrete batching plant on the existing quarry on traffic and the local road network.

14.2 Cappagh Quarry is located in the townlands of Ballykennedy and Kilgreany, approximately 8km west of the town of Dungarvan. The proposed satellite quarry is almost entirely located in the adjoining townland of Canty to the east, with only a relatively small area (in the north-western corner) located within Kilgreany townland. The satellite quarry will be separated from the existing quarry by a local access passageway, which will be retained. The site location is shown in Figure 14-1.

14.3 The development, within an overall application site area of 18.2 hectares (45.0 acres) comprises:

- development of a satellite quarry immediately to the east of Cappagh Quarry (previously permitted under Planning Permission 06/1599 and An Bord Pleanála PL 24.225443) and the local access passageway which delineates its eastern boundary. The satellite quarry will extend to 13.6 hectares (33.6 acres), of which approximately 9.7 hectares (24.0 acres) will be extracted;
- construction of a 40m long sub-surface reinforced concrete tunnel underpass (with internal cross-section measuring 6m wide by 5.5m high) under the existing local access passageway (previously permitted under Planning Permission 920/97) to connect the existing quarry to the proposed satellite quarry at quarry floor level;
- stripping of overburden soils at the satellite quarry for use in construction of environmental bunds and ongoing site restoration works and subsequent excavation of a single quarry bench in limestone bedrock using mechanical excavation and blasting techniques. The proposed quarry faces will vary in height from approximately 8m to 20m and the quarry floor will not extend below 10mOD or into the underlying groundwater body (consistent with Condition 2 of the existing quarry planning permission);
- processing (crushing and screening) of excavated rock to produce aggregates;
- demolition of an existing derelict house in the north-western corner of the proposed satellite quarry, removal of existing internal hedgerows, construction of new perimeter fence and installation of access gates leading from the local access passageway to a perimeter track running above and around the satellite quarry;
- temporary diversion of a section of the existing local access passageway to facilitate construction and installation of the proposed tunnel underpass and re-instatement of the access passageway above it thereafter;
- provision of a temporary access gate and ramp at the existing quarry to facilitate the temporary haulage of materials to and from the satellite quarry and across the existing passageway until the proposed tunnel underpass is in place;
- demolition of concrete supports for former crushing plant;
- construction and operation of a new concrete batching facility (which comprises 4 No. cement silos, batching / mixing unit, aggregate storage bins, an aggregate loading hopper and connecting conveyor systems), all on a concrete paved area on the existing quarry floor, in front of the northern quarry face;
- provision of a batching control office and admixture storage shed;

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- construction of a closed loop concrete recycling facility, comprising a concrete truck wash out area, settlement lagoons and 70,000 litre water storage / recycling tank immediately behind (north of) the concrete batching plant;
- construction of an aggregate storage hardstanding area (covering approximately 1 hectare) immediately to the east of the proposed concrete batching plant;
- continued use of established site infrastructure in service of the proposed satellite quarry and new concrete batching plant;
- removal and replanting of the existing boundary hedge, re-alignment of the boundary wall and demolition / removal of an existing structure to the east of the existing quarry access junction in order to provide enhanced sightlines for traffic egressing the quarry;
- implementation of a progressive restoration scheme (in phases) in tandem with extraction activities across the satellite quarry area.

14.4 Further information on the proposed development, site activities, environmental management systems and controls at the application sites are provided in the Chapter 2 of this EIA Report.

14.5 The proposed development will have a maximum annual output of c. 400,000 of tonnes per year, from all combined existing and future extraction, processing and added value activities. This is consistent with the maximum output levels permitted by the current quarry planning permission.

14.6 Notwithstanding periodic variations in demand, it is anticipated that the combined output from pre-existing and proposed future development at Cappagh Quarry will generate a ***maximum*** of 200 HGV movements per day (equivalent to 100 HGV movements inward and 100 HGV movements outward per day). Quarry activities will also generate some light vehicular traffic, principally by employees and visitors travelling to and from the quarry.

Information Reviewed

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14.7 In preparing this traffic assessment, reference has been made to the following documents:

- "Traffic and Transport Assessment Guidelines" (May 2014) published by the Transport Infrastructure Ireland (formerly the National Roads Authority)
- Unit 5.3 (Travel Demand Projections) of the "Project Appraisal Guidelines" published by Transport Infrastructure Ireland (May 2019)
- Unit 16.1 (Expansion Factors for Short Period Traffic Counts) of the "Project Appraisal Guidelines" (2016) published by Transport Infrastructure Ireland
- Traffic Count Survey Data, collected by Abacus Transportation Surveys Ltd
- Topographical Survey Data/Mapping provided by SLR Consulting Ireland
- Environmental Impact Statement Briefing Report provided by SLR Consulting Ireland

Scope

14.8 The objective of this traffic appraisal to examine the traffic implications associated with the proposed development in terms of its integration with existing traffic in the area. The appraisal determines and quantifies the extent of trips generated by the development, and the impact on operational performance of such trips on the local road network.

14.9 The methodology adopted for this appraisal and report involved, in brief:-

- A site visit;

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- Seven-day, 12-hour classified traffic counts undertaken between Wednesday 18th October 2017 and Tuesday 24th October 2017, inclusive, at six locations in the vicinity of the existing Roadstone Quarry at Cappagh, Co. Waterford;
- Application of growth factors to the 2017 traffic count data to reflect current year (2021).
- Existing Traffic Assessment – The traffic count data was used to develop a Junctions 9 model for each of the selected junctions identified in Figure 14-1 and
- Future Year Assessments – The estimated future year volumes on the study area network, as a result of the increase in background traffic and any additional development related traffic, was used to assess the future operational performance of the junctions at the year of opening (assumed 2022) of the development and at two future assessment years of 2027 (opening year +5) and 2037 (opening year +15). It is noted that the year of opening for the proposed satellite quarry is dependent on the planning process.

Consultations / Consultees

14.10 In the course of preparing this Environmental Impact Assessment Report, a pre-planning consultation meeting was held outdoors at the application site on 19th May 2021 between the local area planner for Waterford City and County Council and representatives of SLR Consulting Ireland and Roadstone Limited (Meeting Ref. No. PQ202191). At the meeting, details of the proposed development were outlined in the course of a site walkover and issues of interest or concern to the Planning Authority were identified and discussed.

14.11 In its feedback, the Local Authority advised that any application in respect of the proposed development should clearly indicate proposed haul routes, existing / proposed traffic levels and any proposed changes to accesses and should also address any implications for local road network capacity. These aspects are addressed by this Chapter of the EIA Report.

14.12 Formal consultation was also undertaken with Transport Infrastructure Ireland (TII) in March 2021 who advised by return email of a range of issues and potential impacts on national roads which could be relevance and interest to it. A copy of the TII consultation response is provided in Chapter 1 of this EIAR. Following a review of published development plans and a site survey, it was considered that there was no requirement for any further formal external consultations to be carried out in respect of traffic and transportation for the purposes of this assessment.

Contributors / Author(s)

14.13 PMCE Consulting Engineers was commissioned by SLR Consulting on behalf of Roadstone Ltd. to prepare a Traffic Impact Assessment (TIA) as part of the EIAR in respect of the proposed development at Cappagh Quarry. The Chapter has been prepared by David O'Brien and Aly Gleeson of PMCE Ltd.

EXISTING TRAFFIC BASELINE

The Application Site

14.14 Cappagh Quarry is located on the L2018 Local Road which extends in a west-east direction from its junction with the L2019 Local Road at Whitechurch and continues east to the town of Dungarvan, Co. Waterford. The quarry is located approximately 1.7km south from the N72 National Secondary Road, travelling via the L2019.

14.15 It is proposed to develop a satellite quarry to the east of the existing limestone quarry and provide a new concrete batching plant on the existing quarry floor. Pre-existing site-related traffic volumes are not forecast to increase as a result of the proposed development, which will largely facilitate continued operations at the existing quarry.

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Existing Road Network

L2018 Local Road

14.16 The existing quarry entrance is located along the L2018 Local Road which extends in a west-east direction from the N72 to the town of Dungarvan. It is generally a narrow local road with no centre line road markings. At the quarry entrance, there are no cycle or pedestrian facilities and the entrance itself is located along a relatively straight section of road.

L2019 Local Road (North)

14.17 The L2019 (North) links the L2018 at Whitechurch to the N72 at Cappagh. The L2019 extends in a north-south direction from the N72 to two closely located T-junctions at Whitechurch. The L2019 meets the N72 at a T-junction with a wide junction opening and the L2018 at a T-junction to the south.

N72 National Secondary Road

14.18 The N72 National Secondary Road runs west to east from Co. Kerry to Co. Waterford. In the vicinity of its junction with the L2018 and the L2019 Local Roads, the N72 is a two-way single carriageway road approximately 6.5m in width, with no hard shoulders.

L2019 Local Road (South)

14.19 The L2019 (South) links the L2018 and the R671 at Knocknaskagh crossroads. The L2019 extends in a north-south direction from the R671 to the closely located T-junctions at Whitechurch, west of the quarry entrance. The L2019 varies in width along its length, and meets the R671 at a T-junction on a high demand bend with built out kerbs. The L2019 meets the L2018 at the Whitechurch T-junctions.

14.20 Results of the baseline traffic survey are provided in Appendix 14-A. Photographs showing the existing road layout in the vicinity of Cappagh Quarry are reproduced in Plates 14-1 to 14-5.

Traffic Volumes

General

14.21 Seven-day, twelve-hour classified turning counts were carried out between Wednesday 18th October 2017 and Tuesday 24th October 2017 at the locations shown in Figure 14-1. The counts were carried out between 7.00am and 7.00pm on each of the seven days, which encompasses the main operating hours of the existing quarry and the peak hours on the adjacent roads. Surveyed vehicles were broken down into five categories as follows: -

- Cars;
- LGV's (Light Goods Vehicles);
- OGV1 (Two and three axle goods vehicles);
- OGV2 (Four and five axle goods vehicles); and
- Buses.

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14.22 For the purposes of the junction analysis and the calculation of the AADT, the day with the highest recorded volumes of traffic in the AM and PM peak hour was taken from the seven-day traffic counts, representing the most conservative scenario for the junction capacity and link capacity assessments

14.23 In addition, traffic growth factors were applied to the 2017 traffic counts to update them to 2021. The updated traffic figures for 2021 were used in the link and junction capacity analysis to reflect current day traffic volumes. This approach is considered to offer a conservative assessment of potential traffic impacts.

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Junction 1: Priority T-Junction of N72 and the L2019

14.24 The results of the traffic survey at the priority T-Junction of the N72 and the L2019 are summarised in Table 14-1 below. The count data has been converted to Annual Average Daily Traffic (AADT) values using the methods described in "*Expansion Factors for Short Period Traffic Counts*" (Unit 16.1 TII Project Appraisal Guidelines, October 2016), Annexes A to C. The AADT values given in Table 14-1 are derived from the highest daily traffic counts recorded.

14.25 From the survey data, the AM and PM peak hours at Junction 1 have been established as follows: -

- Tuesday 08:00 to 09:00hrs – Weekday AM Peak Hour

  A combined factor of 0.851 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow. This was subsequently converted to a Weekly Average Daily Traffic using an index of 0.98 for the Tuesday traffic count. Finally, this was converted to AADT using an index of 0.98 for the month of October.

- Monday 17:00hrs to 18:00hrs – Weekday PM Peak Hour

  A combined factor of 0.851 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow. This was subsequently converted to a Weekly Average Daily Traffic using an index of 1.01 for the Monday traffic count. Finally, this was converted to AADT using an index of 0.98 for the month of October.

Table 14-1
Two-Way Traffic Flows at Priority T-Junction of N72 and the L2019 (Monday 23rd)

Hour Ending	N72 (East)	L2019	N72 (West)
08:00	319	26	295
09:00	496	56	474
10:00	361	44	331
11:00	287	24	273
12:00	337	33	316
13:00	335	28	315
14:00	293	23	278
15:00	371	40	353
16:00	406	51	281
17:00	473	33	454
18:00	549	53	520
19:00	335	31	326
Period Total	4,562	442	4,316
Period Total HGVs	*369*	*92*	*327*
% HGVs	*8.1*	*20.8*	*7.6*
Total AADT	**5,306**	**514**	**5,020**

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Junction 2: Local Road T-Junction between L2018 (N)/L2018 (E)/L2019 (W)

14.26 The results of the traffic survey at Junction 2 are summarised in Table 14-2. The count data has been converted to Annual Average Daily Traffic (AADT) values using the methods described in "*Expansion Factors for Short Period Traffic Counts*" (Unit 16.1 TII Project Appraisal Guidelines, October 2016), Annexes A to C. The AADT shown in Table 14-2 is the AADT derived from the traffic counts for Wednesday the 18th October.

14.27 A combined factor of 0.851 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow. This was subsequently converted to a Weekly Average Daily Traffic using an index of 0.96 for the Wednesday traffic count. Finally, this was converted to AADT using an index of 0.98 for the month of October.

14.28 From the survey data the AM and PM peak hours at Junction 2 have been established as follows: -

- Wednesday 07:45hrs to 08:45hrs – Weekday AM Peak Hour; and
- Wednesday 14:30hrs to 15:30hrs – Weekday PM Peak Hour.

Table 14-2
Two-Way Traffic Flows at Local Road T-Junction (L2018 towards(N) / L2018 towards Quarry (E) / L2019 Towards R671 (W)) (Wednesday 18th)

Hour Ending	L2019 (W)	L2018 (N)	L2018 (E)
08:00	27	30	9
09:00	47	60	29
10:00	47	42	27
11:00	39	43	32
12:00	46	37	15
13:00	55	39	24
14:00	42	39	19
15:00	52	48	30
16:00	39	28	19
17:00	53	50	21
18:00	53	49	20
19:00	48	40	10
Period Total	548	505	255
Period Total HGVs	*221*	*251*	*118*
% HGVs	*36.5*	*50.0*	*41.8*
Total AADT	**606**	**558**	**282**

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Junction 2a: Local Road T-Junction between L2019 (N)/L2018 (E)/L2019 (W)

14.29 The results of the traffic survey at Junction 2a are summarised in Table 14-3. The count data has been converted to Annual Average Daily Traffic (AADT) values using the methods described in "*Expansion Factors for Short Period Traffic Counts*" (Unit 16.1 TII Project Appraisal Guidelines, October 2016), Annexes A to C. The AADT shown in Table 14-3 is derived from the traffic counts on Monday 23rd October and Wednesday the 18th October.

14.30 From the survey data the AM and PM peak hours at Junction 2a have been established as follows: -

- Monday 08:30hrs to 09:30hrs – Weekday AM Peak Hour

  A combined factor of 0.851 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow. This was subsequently converted to a Weekly Average Daily Traffic using an index of 1.01 for the Monday traffic count. Finally, this was converted to AADT using an index of 0.98 for the month of October.

- Wednesday 16:30hrs to 17:30hrs – Weekday PM Peak Hour.

  A combined factor of 0.851 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow. This was subsequently converted to a Weekly Average Daily Traffic using an index of 0.96 for the Wednesday traffic count. Finally, this was converted to AADT using an index of 0.98 for the month of October.

Table 14-3
Two-Way Traffic Flows at Local Road T-Junction (L2019 towards(N) / L2018 towards Quarry (E) / L2019 Towards R671 (W)) (Wednesday 18th)

Hour Ending	L2019 (W)	L2019 (N)	L2018 (E)
08:00	17	6	19
09:00	35	12	37
10:00	34	12	36
11:00	28	8	26
12:00	32	7	27
13:00	40	11	43
14:00	33	10	29
15:00	30	6	30
16:00	31	11	30
17:00	38	16	36
18:00	34	14	38
19:00	32	17	29
Period Total	384	130	382
Period Total HGVs	*137*	*46*	*146*
% HGVs	*32.2*	*31.9*	*34.6*
Total AADT	**425**	**144**	**422**

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Junction 3: Quarry Access on the L2018

14.31 The results of the traffic survey at the Quarry Access are summarised in Table 14-4. The count data has been converted to Annual Average Daily Traffic (AADT) values using the methods described in "*Expansion Factors for Short Period Traffic Counts*" (Unit 16.1 TII Project Appraisal Guidelines, October 2016), Annexes A to C. The AADT given in Table 14-4 is derived from the traffic counts for Wednesday 18th October.

14.32 A combined factor of 0.851 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow. This was subsequently converted to a Weekly Average Daily Traffic using an index of 0.96 for the Wednesday traffic count. Finally, this was converted to AADT using an index of 0.98 for the month of October.

14.33 From the survey data the AM and PM peak hours at Location 4 have been established as follows: -

- Wednesday 07:45hrs to 08:45hrs – Weekday AM Peak Hour; and
- Wednesday 14:30hrs to 15:30hrs – Weekday PM Peak Hour.

Table 14-4
Two-Way Traffic Flows at Quarry Access on the L2018 (Wednesday 18th)

Hour Ending	L2018 (East)	Quarry Entrance	L2018 (West)
08:00	2	10	12
09:00	11	23	34
10:00	16	14	30
11:00	14	7	32
12:00	12	22	15
13:00	17	11	28
14:00	7	12	20
15:00	11	21	30
16:00	14	7	21
17:00	15	10	23
18:00	15	8	22
19:00	11	2	13
Period Total	145	148	281
Period Total HGVs	*27*	*112*	*131*
% HGVs	*16.9*	*68.3*	*42.1*
Total AADT	**160**	**164**	**311**

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Junction 4: Junction between L2019 (E) / Un-named Local Road / L2019 (W)

14.34 The results of the traffic survey at Junction 4 are summarised in Table 14-5. The count data has been converted to Annual Average Daily Traffic (AADT) values using the methods described in "*Expansion Factors for Short Period Traffic Counts*" (Unit 16.1 TII Project Appraisal Guidelines, October 2016), Annexes A to C. The AADT given in Table 14-5 is derived from the traffic counts for Wednesday 18th October.

14.35 A combined factor of 0.851 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow. This was subsequently converted to a Weekly Average Daily Traffic using an index of 0.96 for the Wednesday traffic count. Finally, this was converted to AADT using an index of 0.98 for the month of October.

14.36 From the survey data the AM and PM peak hours at Junction 4 have been established as follows: -

- Wednesday 11:45hrs to 12:45hrs – Weekday AM Peak Hour; and
- Wednesday 16:15hrs to 17:15hrs – Weekday PM Peak Hour.

Table 14-5
Two-Way Traffic Flows at Fork in Road (L2019 towards Quarry (E) / Un-named Local Road (S) / L2019 towards R671 (W)) (Wednesday 18th)

Hour Ending	L2019 (E)	Local Road (S)	L2019 (W)
08:00	26	2	24
09:00	49	14	39
10:00	45	12	43
11:00	41	20	43
12:00	51	12	45
13:00	57	3	56
14:00	47	7	46
15:00	50	13	45
16:00	41	5	36
17:00	58	10	52
18:00	53	10	49
19:00	54	11	45
Period Total	572	119	525
Period Total HGVs	*223*	*4*	*225*
% HGVs	*35.3*	*3.0*	*38.8*
Total AADT	**632**	**132**	**580**

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Junction 5: Priority T-junction of R671 and L2019 (E)

14.37 The results of the traffic survey at Junction 5, between the R671 and an un-named Local Road are summarised in Table 14-6. The count data has been converted to Annual Average Daily Traffic (AADT) values using the methods described in "*Expansion Factors for Short Period Traffic Counts*" (Unit 16.1 TII Project Appraisal Guidelines, October 2016), Annexes A to C. The AADT given in Table 14-6 is derived from the traffic counts for Thursday 19th October.

14.38 A combined factor of 0.851 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow. This was subsequently converted to a Weekly Average Daily Traffic using an index of 0.95 for the Thursday traffic count. Finally, this was converted to AADT using an index of 0.98 for the month of October.

14.39 From the survey data the AM and PM peak hours at Junction 5 have been established as follows: -

- Thursday 08:30hrs to 09:30hrs – Weekday AM Peak Hour; and
- Thursday 14:45hrs to 15:45hrs – Weekday PM Peak Hour.

Table 14-6
Two-Way Traffic Flows at Priority T-junction of R671 and L2019 (E) (Thursday 19th)

Hour Ending	R671 (N)	L2019 (E)	R671 (S)
08:00	67	32	93
09:00	106	35	121
10:00	100	81	131
11:00	59	28	77
12:00	65	20	85
13:00	64	9	69
14:00	97	21	108
15:00	88	42	104
16:00	114	58	124
17:00	89	47	120
18:00	86	35	111
19:00	62	32	84
Period Total	997	440	1,227
Period Total HGVs	*134*	*68*	*182*
% HGVs	*12.3*	*14.1*	*13.6*
Total AADT	**1,091**	**481**	**1,342**

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PROPOSED DEVELOPMENT TRAFFIC

14.40 The proposed development at Cappagh Quarry comprises the proposed satellite quarry on lands to the east of the existing quarry, together with the installation and operation of a new concrete batching plant on the existing quarry floor. It is envisaged that the proposed development will generate a maximum of 60,000 vehicle movements per annum.

Trip Generation

14.41 Vehicle movements of 60,000 per annum equates to approximately 200 vehicle movements per day (see Table 14-7)) based on the following assumptions: -

- The facility will operate for 50 weeks per year
- The facility will operate for six days per week (Monday to Saturday) inclusive
- The facility opening times will be between 07:00 hours and 20:00 hours, Monday to Friday inclusive and between 07:00 hours and 14:00 hours on Saturdays

Table 14-7
Exported Quarried Material by Vehicle Movements

Exported Quantities of Quarried Material (based upon vehicle movements per annum)	
HGV movements per annum (existing quarry and proposed satellite quarry combined)	60,000
HGV movements per week (50 operational weeks / year)	1,200
HGV Movements per day (6 working days / week)	200

14.42 The upper limit of 200 HGV movements per day will comprise of 100 inbound and 100 outbound daily trips. This is considered to be conservative as the seven-day traffic count showed that the maximum inbound vehicle movements were 70 inbound and 72 outbound, on Wednesday 18th October 2017.

Staff Trips

14.43 The proposed development will continue to employ up to 10 staff members and it is not anticipated that these employment numbers will increase. Staff movements will generate a maximum of 20 peak hour trips, 10 trips inbound in the morning and 10 trips outbound in the evening peak. There are 18 parking spaces within the existing quarry.

Miscellaneous Trips

14.44 A total of 10 additional two-way trips have been assumed to occur daily to cater for possible miscellaneous activity. These miscellaneous trips also allow for operations meetings, site inspections, maintenance operations for plant and machinery, etc.

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Derived Trip Rate

14.45 Table 14-8 contains a summary of the predicted trips associated with the development. A total of 200 HGV vehicle movements per day was used to calculate the total predicted daily trips at the quarry. The total number of trips resulting from the application site when fully operational is expected to be in the order of 240 based on the figures used in Table 14-8.

Table 14-8
Summary of Predicted Daily Trips

	Daily Trips 2022		
	Arrivals	Departures	Total
Exported Quarried Material	100	100	**200**
Staff	10	10	**20**
Miscellaneous	10	10	**20**
Total	**120**	**120**	**240**

Trip Distribution and Assignment

Trip Distribution

14.46 A review of the turning counts at the quarry entrance has identified that 19.4% of quarry traffic was recorded as arriving or departing during the AM Peak. For this assessment, 20% of forecast traffic to and from the quarry is assumed to arrive / depart during the AM and PM peak hours. This compares reasonably well to the trip generation patterns indicated for similar development by the TRICS database, refer to Appendix 14-B.

14.47 Details of forecast traffic levels arising when the proposed development is fully operational are provided in Table 14-9 below.

Table 14-9
Summary of Forecast Peak Hour Site Traffic

	AM Peak		PM Peak	
	Arrivals	Departures	Arrivals	Departures
HGV Movements	20 (100 x 0.2)	20 (100 x 0.2)	20 (100 x 0.2)	20 (100 x 0.2)
Staff	10	-	-	10
Miscellaneous	10	10	10	10
Total	**40**	**30**	**30**	**40**

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Trip Assignment

14.48 The trip assignment is derived from the existing traffic movements at the quarry entrance recorded during the seven-day counts. Approximately 95% of incoming vehicles are forecast to arrive at the quarry from the west while approximately 5% are expected to arrive from the east. Of the 95% of vehicles arriving from the west, 25% will come from the R671, while the remaining 70% will travel from the N72 National Secondary Road. The forecast trip assignment in Diagram 14-1.

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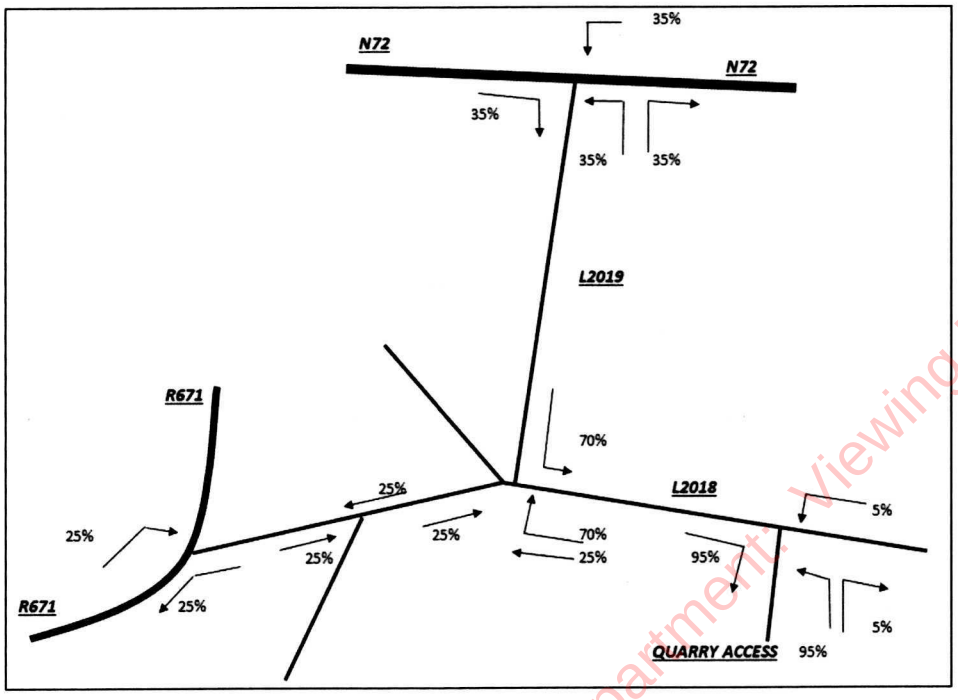
Diagram 14-1
Traffic Distribution from Quarry Access



TRAFFIC IMPACT ASSESSMENT : CONSTRUCTION STAGE

14.49 The existing access passageway which runs between the eastern boundary of the existing quarry and proposed satellite quarry provides a link for local landowners and residents between the Whitechurch Road (L2018 Local Road) and the Canty Road which runs broadly parallel, but 800m to the south.

14.50 During the construction works period, both prior to, and during, the tunnel underpass installation, soil, rock and aggregate will be transferred between the satellite quarry and existing quarry at ground level. This will require HGV / haulage trucks to cross the existing local access passageway, between the access gates installed on each side (at the southern end of each quarry).

14.51 Given the limited duration of the construction works, the relatively low traffic levels along the passageway, its relatively straight north-south alignment and the enhanced visibility afforded to HGV / truck drivers from the elevated seat position in driver cabins, traffic safety risks associated with crossing traffic movements will be relatively low.

14.52 Notwithstanding this, it will be necessary to implement a number of mitigation measures to further enhance traffic safety and reduce risks associated with crossing movements to an acceptable level. These measures include

- cutting back vegetation around the proposed access gates and crossing point to enhance traffic visibility, particularly if works progress over spring and/or summer months; and
- provision of traffic signage along the passageway and the temporary haulage route between the two quarries to warn of crossing traffic ahead.

14.53 To facilitate opening of a temporary excavation across the local access passageway and the proposed installation and backfilling of a tunnel underpass linking the quarries on either side, it will be necessary to temporarily close the passageway to traffic for the duration of these works and to divert

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any occasional light vehicular or agricultural traffic which may use it away from the works area and along a temporary track which follows established field boundaries.

14.54 Following completion of the tunnel underpass and subsequent backfilling to ground level, the access passageway will be re-instated to the same alignment and standard as at the present time. Perimeter bunds and chainlink fencing will also be re-established either side of the passageway and bunds will be planted with a mix of native plants and hedging to re-establish the visual screening provided by vegetation. Further details in respect of the temporary passageway diversion are presented in Chapter 2 of this EIA Report.

14.55 Recent traffic surveys indicate that there are between 10 and 20 traffic movements along the access passageway daily, comprising a mix of light vehicles and heavier agricultural machinery. Although the temporary passageway diversion will ensure that there is no disruption to traffic movements flows between the two local roads, it will give rise to some minor inconvenience to those in the local community who currently use it and will require them to travel a slightly greater distance over a newly placed track, with more turning movements than would usually be the case.

14.56 The configuration and routing of the temporary passageway diversion will provide for a complete separation of any construction or quarry traffic from the established passageway traffic and will avoid crossing movements between them for the duration of the tunnel installation works.

14.57 The initial site preparation works will generate a lower volume of traffic across the local road network than activities at the operational stage and will not therefore adversely impact local road or junction capacity.

14.58 In light of the above, the impact of the proposed passageway closure and diversion is assessed as a minor, temporary adverse impact, principally as a result of the temporary inconvenience it will cause for occasional users of the passageway.

TRAFFIC IMPACT ASSESSMENT : OPERATIONAL STAGE

Assessment Years

14.59 The "*Traffic and Transport Assessment Guidelines*" published by the National Roads Authority recommend the assessment of traffic in the Opening Year, for the Opening Year +5 years and the Opening Year +15 years. The year of opening is assumed to be 2022. The assessment years for the impact assessment are therefore 2022, 2027 and 2037. (It is noted that the year of opening is dependent on the planning process.)

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Traffic Growth

Project Appraisal Guidelines - Unit 5.3

14.60 The "*Project Appraisal Guidelines - Unit 5.3*" published by Transport Infrastructure Ireland has been used to determine future year traffic flows on the network from the existing 2017 traffic count data. Table 14-10 contains a summary of the annual traffic growth factors published in Table 6.2 "*Link-Based Growth Rates: County Annual Growth Rates (excluding Metropolitan Area)*". For this assessment, the Central Growth scenario has been adopted as per the guidance in the Project Appraisal Guidelines.

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Table 14-10
Link-Based Growth Rates: County Annual Growth Rates (excluding Metropolitan Area)

Year	Central Growth	
	LV	HV
2016-2030	**1.0171**	**1.0358**
2030-2040	**1.0079**	**1.0179**

TII Traffic Counter

14.61 The Annual Average Daily Traffic (AADT) between 2017 and 2019 was assessed from the TII Traffic Data website to determine traffic growth in the vicinity of the quarry. A TII traffic counter (Ref: NRA - 000000001723 - TMU N72 160.0 W) is located on the N72 approximately 4km north-west of the quarry between Dungarvan and Cappoquin.

Table 14-11
TII Traffic Counter Growth 2017-2019

	AADT	*No. LV	*No. HV
2017	4,763	4,539	**224**
2019	5,000	4,730	**270**
Traffic Growth (%)		4.2%	**20.6%**
Traffic Growth Factor		1.042	1.206

14.62 As shown in Table 14-11, the actual growth over a two-year period in the vicinity of the quarry between 2017 and 2019 is 4.2% for Light Vehicles and 20.6% for Heavy Vehicles. This approach was not adopted for determining traffic growth between 2019 and 2021, as TII traffic counters will likely have been influenced by travel restrictions as a result of the Government's Covid-19 mitigation measures.

14.63 Building on the above assessment, the annual traffic growth factors as set out in the "*Project Appraisal Guidelines - Unit 5.3*" were used to determine traffic volumes up to 2021. The combination of the above two approaches has developed a conservative understanding of traffic volumes in 2021, which will be used in link and junction capacity analysis.

Link Capacity Assessment

14.64 A link capacity assessment was undertaken for each road within the scope of study. The calculated AADT for each road assessed was given previously (in Tables 14-1 to 14-6) and is used in the link capacity assessment.

14.65 The TII Publications document reference DN-GEO-03031 provides guidance on recommended rural road layouts in Table 6/1. It advises that the capacity of a Type 3 Single Carriageway road with 6.0m cross-section is 5,000 AADT for a Level of Service D (LOS D) and a Type 1 Single Carriageway road with 7.3m cross-section is 11,600 AADT for a Level of Service D (LOS D).

14.66 A robust approach was taken by assuming the existing traffic volumes did not include traffic to/from the existing quarry development. Additionally, each link was assessed for capacity using the total site traffic with no reduction for distribution on adjacent links.

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L2018 (E) Local Road

14.67 The L2018, adjacent to the quarry, has an average cross-section width of approximately 6.2m at the quarry entrance with no hard shoulders present. Therefore, the L2018 is most similar to the Type 3 Single Carriageway.

14.68 The combined background and Total Site Traffic volumes are summarised in Table 14-12 for each of the assessment years. It is considered that the L2018 will continue to operate within capacity for each of the assessment years. The traffic associated with the proposed development represents between 26.61% and 32.33% of the total traffic on the L2018 during the assessment years 2022 to 2037.

Table 14-12
Combined AADT for each Assessment Year (L2018 (E))

	Assessment Year				
	2017	2021	2022	2027	2037
Background Traffic	422	490	502	569	662
Additional Development Traffic	-	-	240	240	240
Combined Traffic (Background + Additional Dev. Traffic)	422	490	742	809	902
Additional Traffic as % of Combined Traffic	-	-	32.33%	29.66%	26.61%

N72 National Secondary Road

14.69 The N72 National Secondary Road, north of the quarry, has an average cross-section width of approximately 7.9m with hard strips. Therefore, the N72 is most similar to the Type 1 Single Carriageway cross-section.

14.70 The combined background and Total Site Traffic volumes are summarised in Table 14-13 for each of the assessment years. It is considered that the N72 will continue to operate within capacity for each of the assessment years. The traffic associated with the proposed development represents between 3.37% and 4.10% of the total traffic on the N72 during the assessment years 2022 to 2037.

Table 14-13
Combined AADT for each Assessment Year (N72)

	Assessment Year				
	2017	2021	2022	2027	2037
Background Traffic	5,034	5,511	5,615	6,166	6,877
Additional Development Traffic	-	-	240	240	240
Combined Traffic (Background + Additional Dev. Traffic)	5,034	5,511	5,855	6,406	7,117
Additional Traffic as % of Combined Traffic	-	-	4.10%	3.75%	3.37%

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R671 Regional Road

14.71 The R671 Regional Road, west of the quarry, has an average cross-section width of approximately 8m with no hard shoulders. Therefore, the R671 is most similar to the Type 1 Single Carriageway cross-section.

14.72 The combined background and Total Site Traffic volumes are outlined in Table 14-14 for each of the assessment years. It is considered that the R671 will continue to operate within capacity for each of the assessment years. The traffic associated with the proposed development represents between 11.23% and 13.63% of the total traffic on the R671 during the assessment years 2022 to 2037.

Table 14-14
Combined AADT for each Assessment Year (R671)

	Assessment Year				
	2017	2021	2022	2027	2037
Background Traffic	1,342	1,490	1,520	1,682	1,896
Additional Development Traffic	-	-	240	240	240
Combined Traffic (Background + Additional Dev. Traffic)	1,342	1,490	1,760	1,922	2,136
Additional Traffic as % of Combined Traffic	-	-	13.63%	12.48%	11.23%

L2019(N) Local Road

14.73 The L2019 local road, north of the quarry, has an average cross-section width of approximately 6.0m with no hard shoulders. Therefore, the L2019 is most similar to the Type 3 Single Carriageway cross-section.

14.74 The combined background and Total Site Traffic volumes are summarised in Table 14-15 for each of the assessment years. It is considered that the L2019 will continue to operate within capacity for each of the assessment years. The traffic associated with the proposed development represents between 24.33% and 28.93% of the total traffic on the L2019 during the assessment years 2022 to 2037.

Table 14-15
Combined AADT for each Assessment Year (L2019 (N))

	Assessment Year				
	2017	2021	2022	2027	2037
Background Traffic	514	577	590	657	747
Additional Development Traffic	-	-	240	240	240
Combined Traffic (Background + Additional Dev. Traffic)	514	577	830	897	987
Additional Traffic as % of Combined Traffic	-	-	28.93%	26.76%	24.33%

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L2019 (W) Local Road

14.75 The L2019 local road, west of the quarry, has an average cross-section width of approximately 6.0m with no hard shoulders. Therefore, the L2019 is most similar to the Type 3 Single Carriageway cross-section with a capacity of 5,000 AADT for Level of Service D.

14.76 The combined background and Total Site Traffic volumes are outlined in Table 14-16 for each of the assessment years. It is considered that the L2019 will operate within capacity for each of the assessment years. Table 14-16 indicates that the traffic associated with the proposed development represents between 19.45% and 24.16% of the total traffic on the L2019 during the assessment years 2022 to 2037.

Table 14-16
Combined AADT for each Assessment Year (L2019 (W))

	Assessment Year				
	2017	2021	2022	2027	2037
Background Traffic	632	735	753	854	994
Additional Development Traffic	-	-	240	240	240
Combined Traffic (Background + Additional Dev. Traffic)	632	735	993	1,094	1,234
Additional Traffic as % of Combined Traffic	-	-	24.16%	21.93%	19.45%

Junction Capacity Analysis

14.77 The capacity of the junctions in this study have been assessed using the Transport Research Laboratory's (TRL) computer programme Junctions 9.

14.78 Junction performance is measured as a ratio between the flow and capacity (RFC). The capacity analysis has been carried out for both the AM and PM Peaks for each of the assessment years (2022, 2027 and 2037). A rural junction with an RFC below 0.85 is considered to be operating within capacity, and an RFC of 0.85 indicating a junction operating at capacity.

14.79 The detailed junction capacity analysis outputs for the junction for the final future forecast assessment year (2037), under the "with the proposed development" scenario, are contained within Appendix 14-C of this assessment. Outputs for all other future forecast assessment years may be provided as required, including results for the "without the proposed development" scenario.

14.80 A summary of the junction capacity analysis results are shown in Table 14-17 to Table 14-22. The results indicate that all the junctions will continue to operate within capacity for each of the assessment years 2022, 2027 and 2037 for both AM and PM peak periods.

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Table 14-17
Junction 1 Priority T-Junction of N72 and the L2019

Year	Peak	Local Road (Arm B) to N72 West (Arm C)			Local Road (Arm B) to N72 East (Arm A)			N72 West (Arm C)		
		Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2017	AM Peak	0.1	8.92	0.05	0.1	12.18	0.12	0.0	9.48	0.03
	PM Peak	0.0	6.29	0.03	0.1	10.78	0.06	0.0	9.31	0.02
2021	AM Peak	0.1	9.45	0.07	0.2	13.17	0.14	0.1	9.58	0.04
	PM Peak	0.0	6.43	0.03	0.1	11.43	0.07	0.0	9.59	0.03
2022	AM Peak	0.1	9.52	0.07	0.2	13.33	0.15	0.1	9.57	0.04
	PM Peak	0.0	6.46	0.03	0.1	11.54	0.07	0.0	9.62	0.03
2027	AM Peak	0.1	9.88	0.09	0.2	14.25	0.17	0.1	9.56	0.05
	PM Peak	0.0	6.64	0.03	0.1	12.13	0.08	0.0	9.76	0.03
2037	AM Peak	0.1	10.40	0.11	0.3	15.71	0.21	0.1	9.50	0.06
	PM Peak	0.0	6.88	0.04	0.1	12.99	0.10	0.1	9.90	0.04
2022+Quarry Traffic	AM Peak	0.1	9.80	0.10	0.2	15.20	0.19	0.1	9.18	0.08
	PM Peak	0.1	9.84	0.07	0.1	13.59	0.12	0.1	9.86	0.06
2027+Quarry Traffic	AM Peak	0.1	10.08	0.11	0.3	16.21	0.22	0.1	9.18	0.09
	PM Peak	0.1	10.04	0.07	0.1	14.17	0.13	0.1	9.94	0.07
2037+Quarry Traffic	AM Peak	0.2	11.19	0.14	0.4	17.80	0.26	0.1	9.15	0.10
	PM Peak	0.1	10.32	0.08	0.2	15.05	0.15	0.1	10.05	0.07

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Table 14-18
Junction 2 Local Road T-Junction (L2018 towards(N) / L2018 towards Quarry (E) / L2019 Towards R671 (W))

Year	Peak	Local Road towards N72 (Arm B) to Local Road towards Quarry Access (Arm C)			Local Road towards N72 (Arm B) to Local Road towards R671 (Arm A)			Local Road towards Quarry Access (Arm C)		
		Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2017	AM Peak	0.1	10.30	0.06	0.1	11.39	0.05	0.1	12.21	0.11
	PM Peak	0.0	11.21	0.02	0.1	11.05	0.12	0.0	12.01	0.03
2021	AM Peak	0.1	10.51	0.08	0.1	11.90	0.07	0.2	12.42	0.14
	PM Peak	0.0	11.33	0.03	0.2	11.78	0.15	0.0	12.09	0.03
2022	AM Peak	0.1	10.53	0.09	0.1	11.97	0.07	0.2	12.52	0.15
	PM Peak	0.0	11.35	0.03	0.2	11.89	0.15	0.0	12.10	0.04
2027	AM Peak	0.1	10.67	0.10	0.1	12.32	0.08	0.2	13.06	0.17
	PM Peak	0.0	11.47	0.03	0.2	12.46	0.18	0.1	12.17	0.04
2037	AM Peak	0.1	10.87	0.12	0.1	12.83	0.10	**0.3**	13.89	0.21
	PM Peak	0.0	11.65	0.04	0.3	13.31	0.21	0.1	12.26	0.05
2022+Quarry Traffic	AM Peak	0.1	10.58	0.09	0.1	12.09	0.07	0.2	12.46	0.15
	PM Peak	0.0	11.42	0.03	0.2	12.02	0.16	0.0	12.11	0.04
2027+Quarry Traffic	AM Peak	0.1	10.72	0.10	0.1	12.45	0.08	0.2	12.99	0.17
	PM Peak	0.0	11.54	0.03	0.2	12.62	0.18	0.1	12.17	0.04
2037+Quarry Traffic	AM Peak	0.1	10.92	0.13	0.1	12.98	0.10	0.3	13.79	0.21
	PM Peak	0.0	11.72	0.04	0.3	13.52	0.22	0.1	12.26	0.05

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Table 14-19
Junction 2a Local Road T-Junction (L2019 (W) towards R671) / L2019 (N) towards N72 / L2018 Towards Quarry (E))

Year	Peak	Local Road towards N72 (Arm B) to Local Road towards Quarry (Arm C)			Local Road towards N72 (Arm B) to Local Road towards R671 (Arm A)			Local Road towards Quarry (Arm C)		
		Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2017	AM Peak	0.0	5.30	0.01	0.0	7.24	0.02	0.0	12.02	0.02
	PM Peak	0.0	11.32	0.01	0.0	7.52	0.01	0.0	8.08	0.03
2021	AM Peak	0.0	5.31	0.01	0.0	7.27	0.03	0.0	12.07	0.02
	PM Peak	0.0	11.40	0.02	0.0	7.55	0.01	0.0	8.39	0.03
2022	AM Peak	0.0	5.31	0.01	0.0	7.27	0.03	0.0	12.08	0.02
	PM Peak	0.0	11.41	0.02	0.0	7.56	0.01	0.0	8.42	0.03
2027	AM Peak	0.0	5.32	0.01	0.0	7.30	0.03	0.0	12.13	0.02
	PM Peak	0.0	11.50	0.02	0.0	7.60	0.01	0.0	8.61	0.04
2037	AM Peak	0.0	5.33	0.01	0.0	7.40	0.03	0.0	12.20	0.03
	PM Peak	0.0	11.62	0.02	0.0	7.65	0.01	**0.1**	8.86	0.04
2022+Quarry Traffic	AM Peak	0.1	8.98	0.07	0.0	7.90	0.03	**0.1**	11.25	0.08
	PM Peak	0.1	10.70	0.07	0.0	7.85	0.01	**0.1**	9.58	0.10
2027+Quarry Traffic	AM Peak	0.1	9.00	0.07	0.0	7.97	0.03	**0.1**	11.35	0.08
	PM Peak	0.1	10.83	0.07	0.0	7.89	0.01	**0.1**	9.58	0.11
2037+Quarry Traffic	AM Peak	0.1	9.03	0.07	0.0	8.07	0.03	**0.1**	11.49	0.08
	PM Peak	0.1	11.01	0.08	0.0	7.95	0.01	**0.1**	9.83	0.11

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Table 14-20
Junction 3 Quarry Access on the L2018

Year	Peak	Quarry Access (Arm B) to Quarry Access Road East (Arm C)			Quarry Access (Arm B) to Quarry Access Road West (Arm A)			Quarry Access Road East (Arm C)		
		Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2017	AM Peak	0.1	9.62	0.09	0.0	0.00	0.00	0.1	10.31	0.07
	PM Peak	0.1	8.91	0.05	0.0	0.00	0.00	0.0	9.18	0.04
2021	AM Peak	0.1	9.68	0.11	0.0	0.00	0.00	0.1	10.46	0.08
	PM Peak	0.1	9.16	0.06	0.0	0.00	0.00	0.0	9.43	0.04
2022	AM Peak	0.1	9.69	0.12	0.0	0.00	0.00	0.1	10.48	0.09
	PM Peak	0.0	7.94	0.03	0.0	0.00	0.00	0.0	9.45	0.03
2027	AM Peak	0.2	9.83	0.14	0.0	0.00	0.00	0.1	10.56	0.10
	PM Peak	0.1	9.37	0.07	0.0	0.0	0.00	0.1	9.58	0.05
2037	AM Peak	0.2	10.28	0.17	0.0	0.00	0.00	0.1	10.73	0.13
	PM Peak	0.1	9.61	0.09	0.0	0.00	0.00	0.1	9.75	0.06
2022+Quarry Traffic	AM Peak	0.2	9.37	0.17	0.0	13.40	0.01	0.2	10.22	0.17
	PM Peak	0.2	8.93	0.14	0.0	13.05	0.01	0.1	9.21	0.11
2027+Quarry Traffic	AM Peak	0.2	9.72	0.19	0.0	13.52	0.01	0.2	10.49	0.19
	PM Peak	0.1	9.15	0.15	0.0	13.12	0.01	0.1	9.35	0.12
2037+Quarry Traffic	AM Peak	0.3	10.22	0.22	0.0	13.70	0.01	0.3	10.88	0.21
	PM Peak	0.2	9.46	0.16	0.0	13.23	0.01	0.1	9.55	0.13

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Table 14-21
Junction 4 Fork in Road (L2019 towards Quarry (E) / Un-named Local Road (S) / L2019 towards R671 (W))

Year	Peak	Local Road South (Arm B) to Local Road towards Quarry (Arm C)			Local Road South (Arm B) to Local Road towards Quarry (Arm A)			Local Road towards Quarry (Arm C)		
		Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2017	AM Peak	0.0	5.44	0.01	0.0	7.13	0.01	0.0	0.00	0.00
	PM Peak	0.0	5.54	0.01	0.0	7.38	0.02	0.0	5.40	0.01
2021	AM Peak	0.0	5.46	0.01	0.0	7.17	0.01	0.0	0.00	0.00
	PM Peak	0.0	5.56	0.01	0.0	7.43	0.02	0.0	5.40	0.01
2022	AM Peak	0.0	5.46	0.01	0.0	7.17	0.01	0.0	0.00	0.00
	PM Peak	0.0	5.56	0.01	0.0	7.44	0.02	0.0	5.40	0.01
2027	AM Peak	0.0	5.48	0.01	0.0	7.21	0.01	0.0	0.00	0.00
	PM Peak	0.0	5.58	0.01	0.0	7.50	0.02	0.0	5.41	0.01
2037	AM Peak	0.0	5.50	0.01	0.0	7.27	0.01	0.0	0.00	0.00
	PM Peak	0.0	5.62	0.01	0.0	7.58	0.02	0.0	5.41	0.01
2022+Quarry Traffic	AM Peak	0.0	5.49	0.01	0.0	7.25	0.01	0.0	0.00	0.00
	PM Peak	0.0	5.60	0.01	0.0	7.53	0.02	0.0	5.41	0.01
2027+Quarry Traffic	AM Peak	0.0	5.51	0.01	0.0	7.29	0.01	0.0	0.00	0.00
	PM Peak	0.0	5.62	0.01	0.0	7.58	0.02	0.0	5.41	0.01
2037+Quarry Traffic	AM Peak	0.0	5.53	0.01	0.0	7.35	0.01	0.0	0.00	0.00
	PM Peak	0.0	5.65	0.01	0.0	7.66	0.02	0.0	5.41	0.01

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Table 14-22
Junction 5 Priority T-Junction of R671 and L2019 (E)

Year	Peak	Local Road (Arm B) to R671 South (Arm C)			Local Road (Arm B) to R671 North (Arm A)			R671 South (Arm C)		
		Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2017	AM Peak	0.1	6.35	0.06	0.0	8.23	0.04	0.1	7.48	0.12
	PM Peak	0.1	7.17	0.09	0.1	8.01	0.10	0.0	7.52	0.04
2021	AM Peak	0.1	6.49	0.07	0.0	8.38	0.05	0.2	7.83	0.14
	PM Peak	0.1	7.45	0.10	0.0	8.11	0.10	0.0	7.83	0.05
2022	AM Peak	0.1	6.51	0.08	0.1	8.41	0.05	0.2	7.89	0.15
	PM Peak	0.1	7.50	0.10	0.1	8.13	0.11	0.1	7.86	0.05
2027	AM Peak	0.1	6.61	0.08	0.1	8.57	0.05	0.2	8.19	0.16
	PM Peak	0.1	7.73	0.12	0.1	8.20	0.12	0.1	8.06	0.06
2037	AM Peak	0.1	6.76	0.09	0.1	8.80	0.06	0.2	8.63	0.19
	PM Peak	0.2	8.06	0.13	0.2	8.30	0.14	0.1	8.33	0.07
2022+Quarry Traffic	AM Peak	0.1	7.12	0.09	0.1	8.64	0.05	0.2	8.44	0.17
	PM Peak	0.1	7.75	0.12	0.1	8.30	0.11	0.1	10.44	0.07
2027+Quarry Traffic	AM Peak	0.1	7.18	0.10	0.1	8.80	0.06	0.2	8.73	0.19
	PM Peak	0.2	7.96	0.13	0.1	8.38	0.13	0.1	10.59	0.08
2037+Quarry Traffic	AM Peak	0.1	7.29	0.11	0.1	9.01	0.06	0.3	9.15	0.21
	PM Peak	0.2	8.29	0.15	0.2	8.56	0.14	0.1	10.80	0.09

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ROAD SAFETY

Sightlines

14.81 The application site (comprising the proposed satellite quarry and new concrete plant) will use the existing site entrance which is permitted under Planning Ref. No. PD 06/1599 and An Bord Pleanála Ref. No. PL24.225443. The quarry entrance is located within the 80km/h speed limit. Visibility splays of 4.5m x 90m exist in both directions at this junction, which is in accordance with the previous Waterford County Development Plan 2005.

14.82 The current Waterford County Development Plan 2011-2017 however requires exiting drivers to have an unobstructed view along the road for 160m in both directions from a position 4.5m back along the access from the edge of the road (Chapter 10). Therefore, the existing access arrangement at the quarry requires improvement to meet current Development Plan requirements.

14.83 To achieve this the existing boundary wall and hedge to the east of the access will be set back, and an existing structure will be removed. The sightlines at the quarry entrance following these amendments are shown on drawing P19-031-DG-001, a copy of which is provided in Appendix 14-D.

14.84 The junction between the existing passageway and the L2018 Local Road is permitted under planning permission 97/510 and has been in place for a period in excess of 20 years. The proposed development does not require, nor does it make any provision for, any modification of the existing passageway and as such, the existing junction configuration and sightlines will remain unchanged for the duration of the proposed development.

Parking

14.85 The current permitted quarry under planning permission PD 06/1599 and An Bord Pleanála Reference Number: PL 24.225443 has car parking space for 18 vehicles. The current permitted spaces are included within the application site are and will continue to be used by all site based operatives and visitors for the duration of the proposed development. This level of parking is considered sufficient for the demand associated with the proposed development.

Pedestrians and Cyclists

14.86 There are no pedestrian footways or cyclist provisions in place along the L2018 in the vicinity of the application site.

Public Transport

14.87 There are no public transport provisions in place in the vicinity of the application site.

RESIDUAL IMPACT ASSESSMENT / CONCLUSIONS

14.88 The objective of this report is to examine the traffic implications associated with the proposed development in terms of its integration with existing traffic in the area. The report makes the following conclusions:

- Link capacity analysis was carried out on the L2018, the L2019 (north and west of the Whitchurch Crossroads), the R671 and the N72. In all cases, it was determined that the roads will continue to operate within capacity for the assessment years 2022, 2027 and 2037.
- Junction capacity analysis at the junction of the established quarry access and the L2018, the junction of the L2018 and the L2019 and the N72 and R671 junction indicate that they will continue to operate within capacity for each of the assessment years 2022, 2027 and 2037.

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- The Application Site will use the same site entrance as the site entrance permitted under planning permission PD 06/1599 and An Bord Pleanála Reference Number: PL 24.225443. In order to improve the sightlines at the quarry access, as per the current Waterford City and County Development Plan, the boundary wall and hedge line will be set back and an existing structure to the east will be removed.

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GLOSSARY OF TERMS

AADT :	Annual Average Daily Traffic – The mean daily traffic volume over the course of a year on a particular route.
Capacity Calculations :	Standardised methods of estimating traffic capacity on links and at junctions.
Generated Trips :	Additional trips made as a result of the presence of a development.
Level of Service :	Level of Service (LOS) is a measure of the capacity of a road related to the average vehicular speed and level of congestion on the road. It is ranges from LOS A to LOS F, with A representing free flow and F representing stop/start traffic. LOS C represents stable flow conditions
Peak Time :	Time of day at which the transport demands from a development are greatest.
Road Network :	The existing and proposed public and private roads within the study area.
Thresholds :	Minimum intervention levels at which Transport and Traffic Assessments are to be conducted.
Traffic Growth :	The normal expected growth in traffic over time.
TRICS :	An online database containing empirically obtained trip generation data for a wide range of different types of developments.
Trip :	One movement, in or out of the study area by foot, cycle or vehicle.
Trip Assignment :	The final estimated flows of traffic for each direction of travel at each junction and along each link within the study area.
Trip Distribution :	The estimated directional distribution of the estimated traffic at each junction in the study area.

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REFERENCES

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

Traffic Infrastructure Ireland *Rural Road Link Design - DN-GEO-03031*, April 2017

Traffic Infrastructure Ireland *Project Appraisal Guidelines for National Roads – Unit 5.3 – Travel Demand Projections (PE-PAG-02017)*, May 2019

Traffic Infrastructure Ireland / National Roads Authority *Traffic and Transportation Guidelines*, 2014

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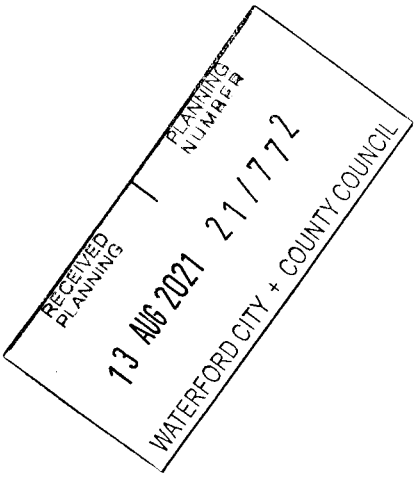

PLATES

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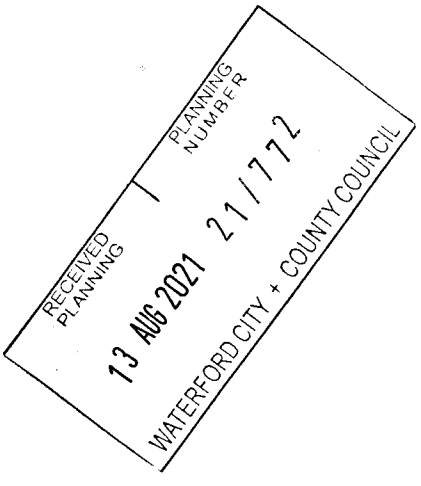

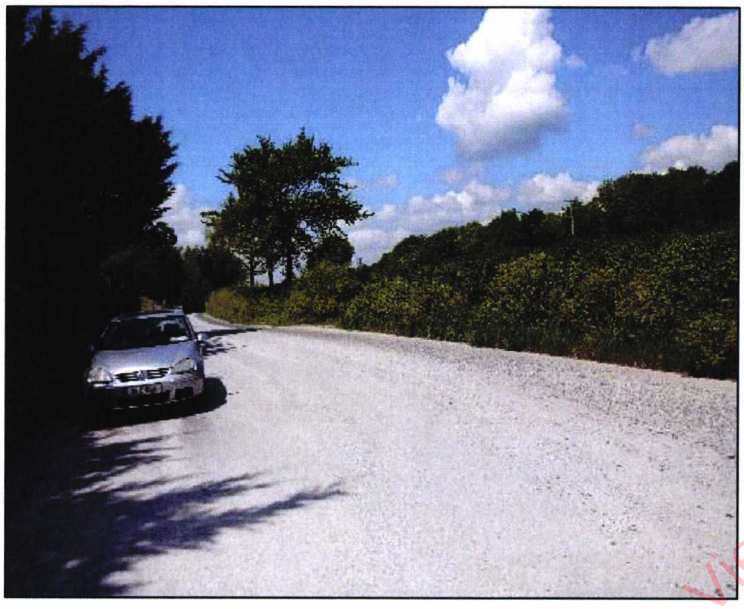

Plate 14-1
View to the West from Quarry Access on the L2018

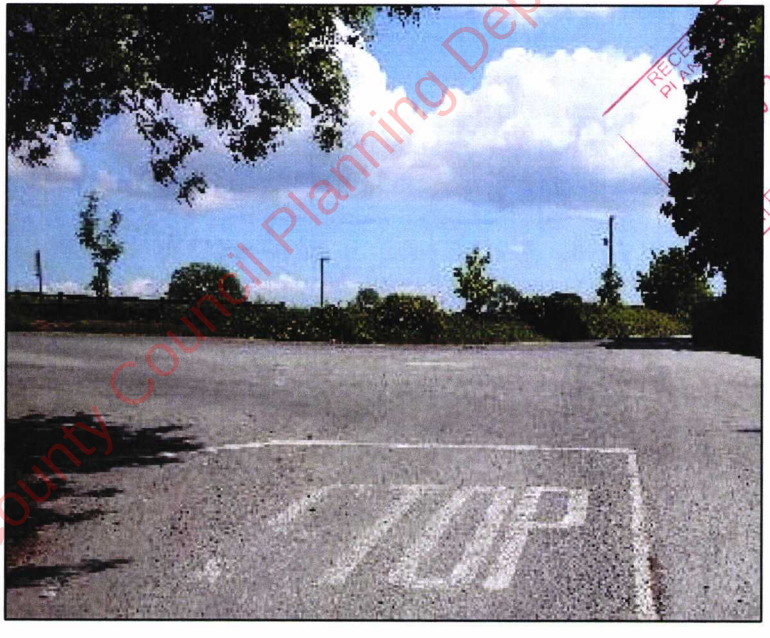

Plate 14-2
View to the East of L2019 and L2018 junction

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Plate 14-3
View to the West of N72 at the L2019 Junction

Plate14-4
View to the East of L2019 at the R671 junction

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Plate 14-5
Existing Site Access

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FIGURES

Figure 14-1
Site Location

Figure 14-2
Proposed Site Layout

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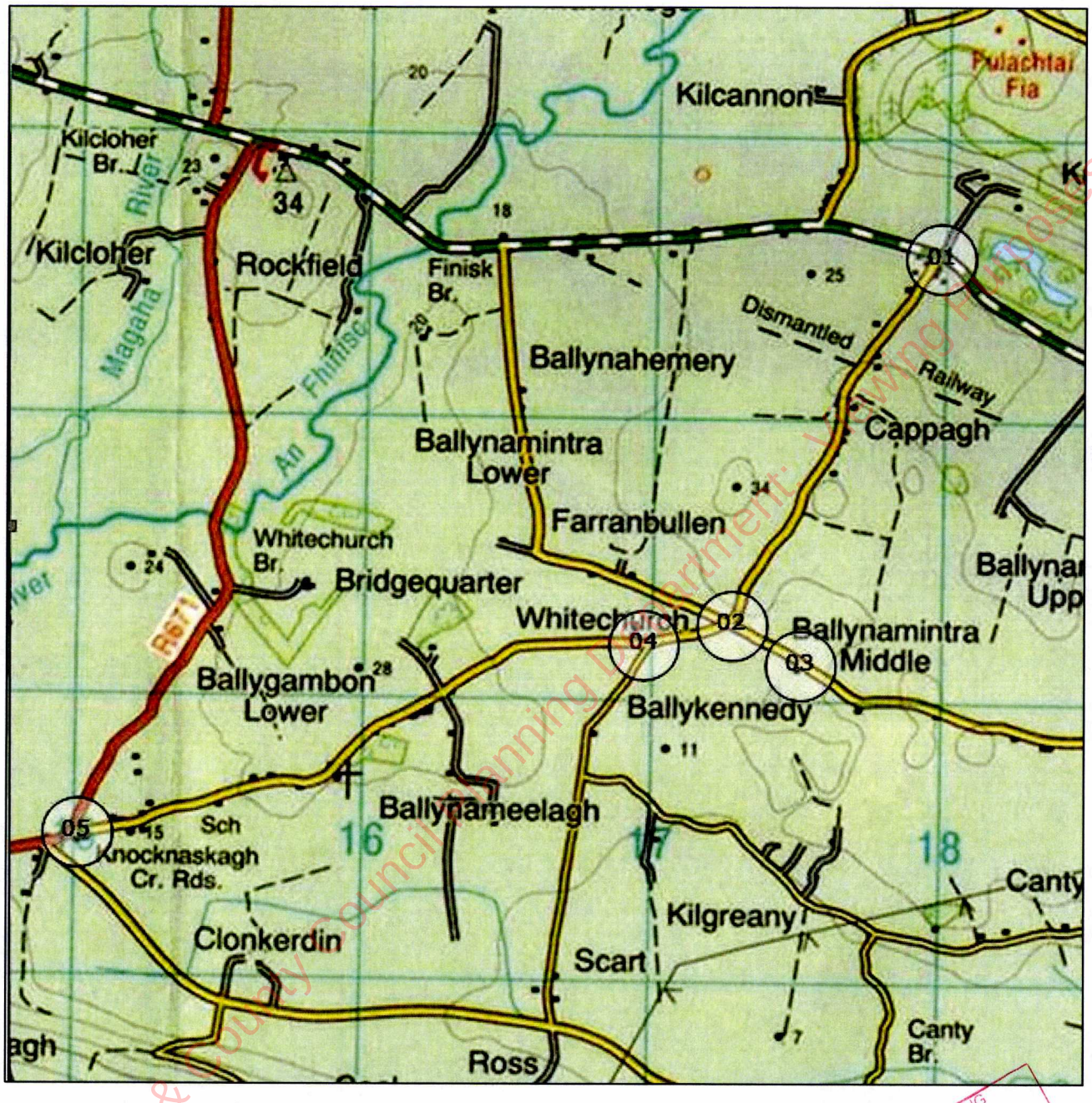

Figure 14-1
Site and Junction Locations (Provided by Abacus Transportation Surveys Ltd)

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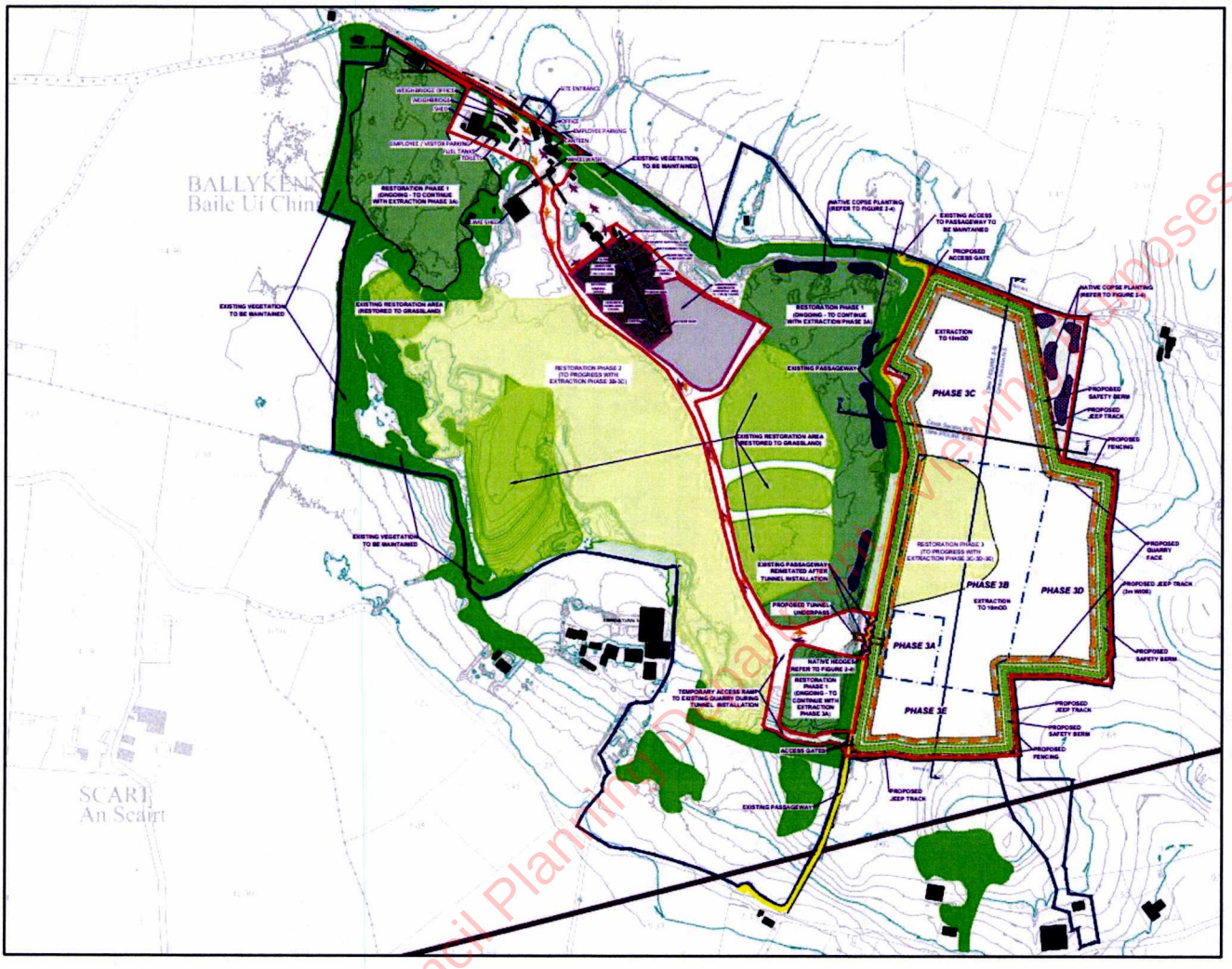

Figure 14-2
Proposed Site Layout

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APPENDIX 14-A

Traffic Survey Data

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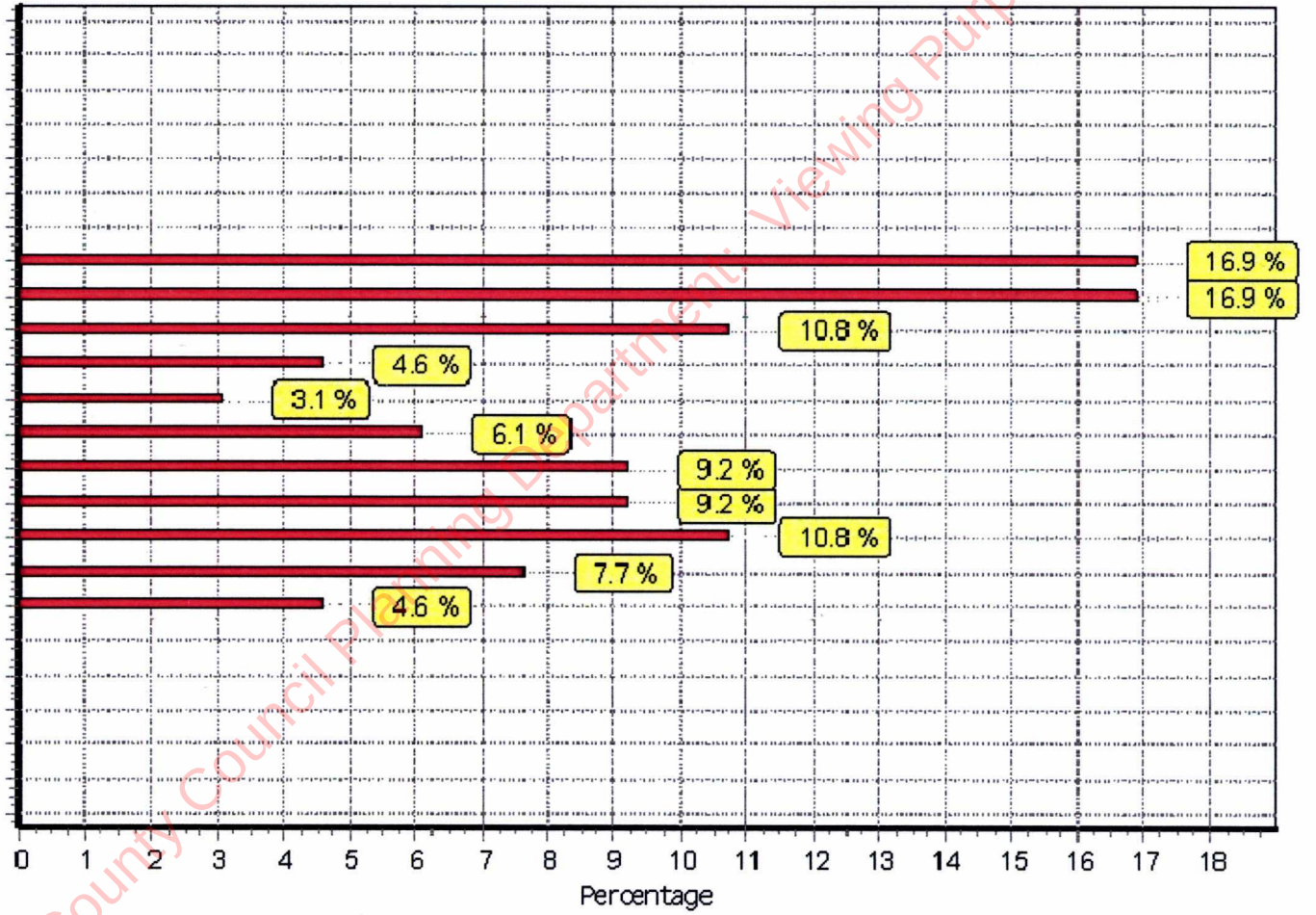
TIME	DAYS	RATE	%
00:00-01:00			
01:00-02:00			
02:00-03:00			
03:00-04:00			
04:00-05:00			
05:00-06:00			
06:00-07:00			
07:00-08:00	1	0.482	16.9
08:00-09:00	1	0.482	16.9
09:00-10:00	1	0.307	10.8
10:00-11:00	1	0.132	4.6
11:00-12:00	1	0.088	3.1
12:00-13:00	1	0.175	6.1
13:00-14:00	1	0.263	9.2
14:00-15:00	1	0.263	9.2
15:00-16:00	1	0.307	10.8
16:00-17:00	1	0.219	7.7
17:00-18:00	1	0.132	4.6
18:00-19:00			
19:00-20:00			
20:00-21:00			
21:00-22:00			
22:00-23:00			
23:00-24:00			

TRIP RATE GRAPH - ARRIVALS FOR SITE: DH-02-H-02 VEHICLES



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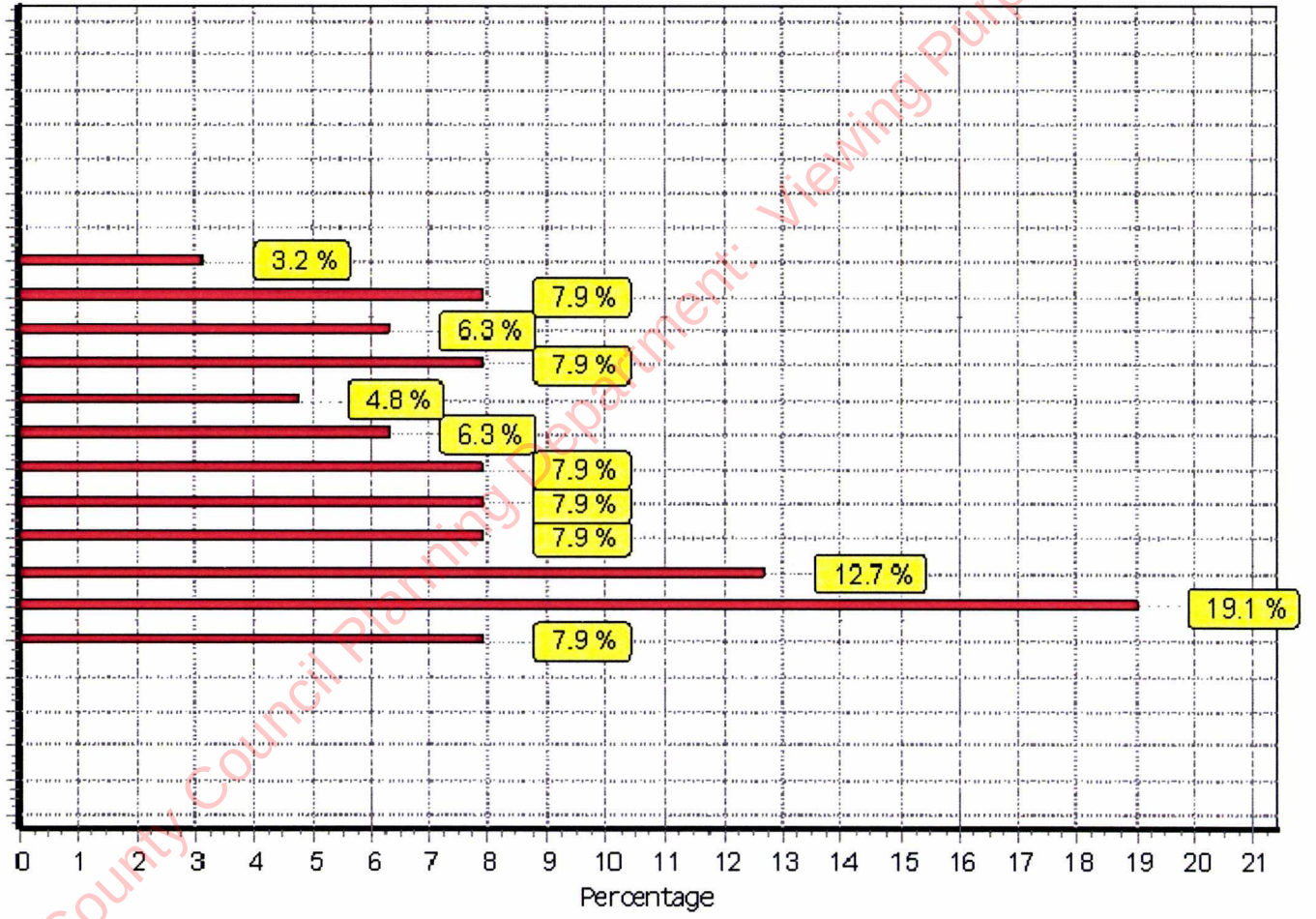
PMCE Ltd Lower Commons Road Dublin 22 Licence No: 261601

TRIP RATE GRAPH - DEPARTURES FOR SITE: DH-02-H-02 VEHICLES

TIME	DAYS	RATE	%
00:00-01:00			
01:00-02:00			
02:00-03:00			
03:00-04:00			
04:00-05:00			
05:00-06:00			
06:00-07:00			
07:00-08:00	1	0.088	3.2
08:00-09:00	1	0.219	7.9
09:00-10:00	1	0.175	6.3
10:00-11:00	1	0.219	7.9
11:00-12:00	1	0.132	4.8
12:00-13:00	1	0.175	6.3
13:00-14:00	1	0.219	7.9
14:00-15:00	1	0.219	7.9
15:00-16:00	1	0.219	7.9
16:00-17:00	1	0.351	12.7
17:00-18:00	1	0.526	19.1
18:00-19:00	1	0.219	7.9
19:00-20:00			
20:00-21:00			
21:00-22:00			
22:00-23:00			
23:00-24:00			



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APPENDIX 14-B

TRICS Output

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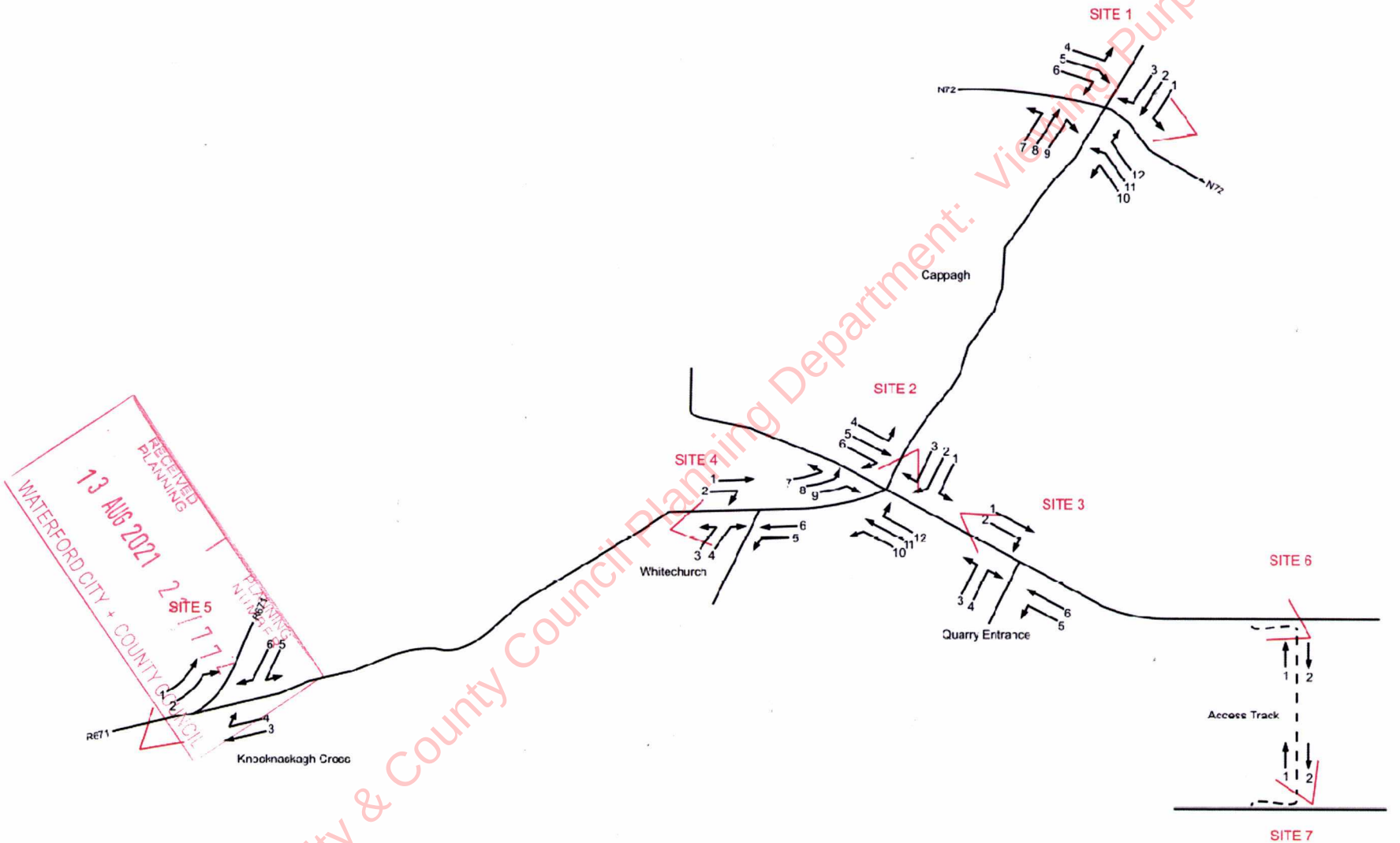
Site Locations/Movement Numbering



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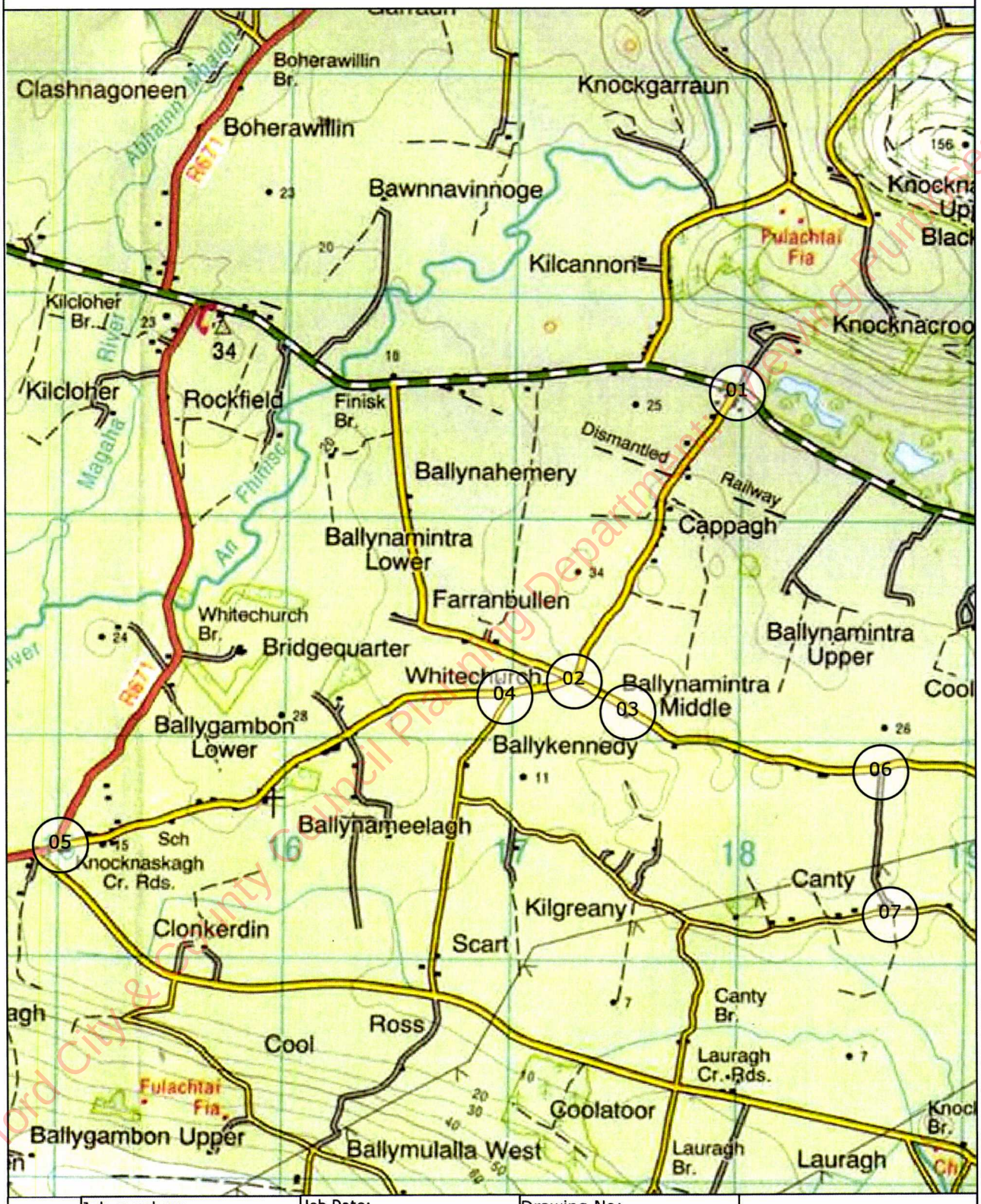
Job number: Ath/17/147	Job Date: Week Commencing Wednesday 18th October 2017	Drawing No: ATH/17/147-02	abacus Transportation Surveys
Client: PMCE Consulting Engineers		Author: SPW	

Site Locations



	Job number: ATH/17/147	Job Date: Week Commencing Wednesday 18th October 2017	Drawing No: ATH/17/147-01	abacus Transportation Surveys
	Client: PMCE		Author: SPW	

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Cappagh Quarry Traffic Counts
Automatic Traffic Count

Summary

Week Comm: Wednesday 18 October 2017
Ath/17/147

ATC 01

Location Local Road in Ballynamintra Middle, immediately East of Roadstone Quarry Access (Google Maps Ref: 52.108630, -7.745723)

Speed Survey Summary

Eastbound	85% Speed = 69.88 km/h, 95% Speed = 75.62 km/h, Median = 57.33 km/h	Maximum = 93.1 km/h, Minimum = 7.6 km/h, Mean = 56.0 km/h
Westbound	85% Speed = 71.17 km/h, 95% Speed = 77.20 km/h, Median = 59.67 km/h	Maximum = 97.8 km/h, Minimum = 2.7 km/h, Mean = 58.0 km/h

Volumetric Vehicle Counts:

Direction	Time	Wednesday 18 October 2017	Thursday 19 October 2017	Friday 20 October 2017	Saturday 21 October 2017	Sunday 22 October 2017	Monday 23 October 2017	Tuesday 24 October 2017	No. Vehicles	7 day Mean
Eastbound	**07-19**	63	54	58	39	46	50	41	351	50
Westbound	**07-19**	81	60	65	39	42	46	55	388	55
Eastbound	**00-00**	76	66	67	47	51	66	45	418	60
Westbound	**00-00**	85	68	75	48	47	53	59	435	62

Peak Flows Summary

Peak	AM	IP	PM
Most Frequent Peak Hour	0800	1300	1700
Average Vehicles per Peak Hour	6	6	6

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ABACUS TRANSPORTATION SURVEYS

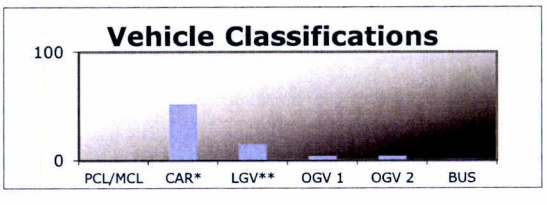
Cappagh Quarry Traffic Counts
Automatic Traffic Count

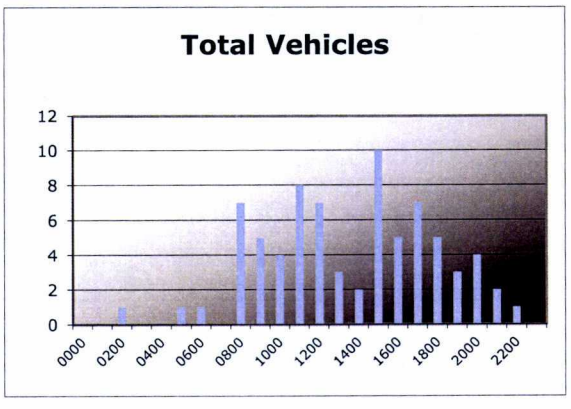
Wednesday 18 October 2017
Ath/17/147

ATC 01
Eastbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0
0200	0	1	0	0	0	0	1	1
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	1	0	1	2
0600	0	1	0	0	0	0	1	1
0700	0	0	0	0	0	0	0	0
0800	0	3	1	2	1	0	7	9
0900	0	5	0	0	0	0	5	5
1000	0	3	1	0	0	0	4	4
1100	0	3	3	1	1	0	8	10
1200	0	5	2	0	0	0	7	7
1300	0	3	0	0	0	0	3	3
1400	0	2	0	0	0	0	2	2
1500	0	6	2	0	1	1	10	12
1600	0	3	1	1	0	0	5	6
1700	0	5	2	0	0	0	7	7
1800	0	5	0	0	0	0	5	5
1900	0	2	1	0	0	0	3	3
2000	0	3	1	0	0	0	4	4
2100	0	2	0	0	0	0	2	2
2200	0	0	1	0	0	0	1	1
2300	0	0	0	0	0	0	0	0
07-19	0	43	12	4	3	1	63	70
06-22	0	51	14	4	3	1	73	80
06-00	0	51	15	4	3	1	74	81
00-00	0	52	15	4	4	1	76	84

Peaks	Time	Vehicles	PCU's
AM	0800	7	9.3
IP	1200	7	7
PM	1700	7	7





Waterford City & County Council Planning Department. Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

Cappagh Quarry Traffic Counts
Automatic Traffic Counts

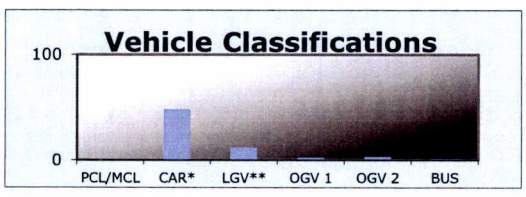
Thursday 19 October 2017
Ath/17/147

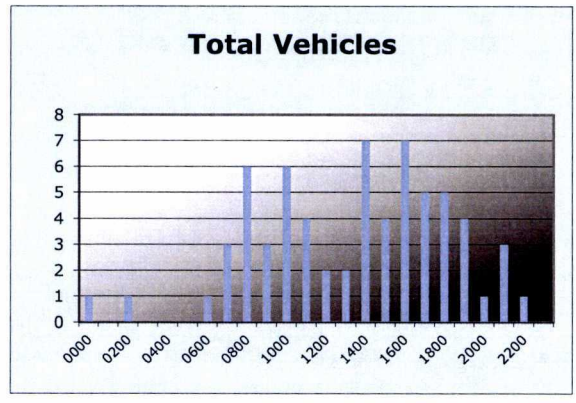
RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY + COUNTY COUNCIL

ATC 01
Eastbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	1	0	0	0	0	1	1
0100	0	0	0	0	0	0	0	0
0200	0	1	0	0	0	0	1	1
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0
0600	0	1	0	0	0	0	1	1
0700	0	1	2	0	0	0	3	3
0800	0	5	1	0	0	0	6	6
0900	0	2	1	0	0	0	3	3
1000	0	1	2	1	2	0	6	9
1100	0	4	0	0	0	0	4	4
1200	0	2	0	0	0	0	2	2
1300	0	1	1	0	0	0	2	2
1400	0	5	1	0	1	0	7	8
1500	0	2	0	1	0	1	4	6
1600	0	5	2	0	0	0	7	7
1700	0	4	1	0	0	0	5	5
1800	0	5	0	0	0	0	5	5
1900	0	3	1	0	0	0	4	4
2000	0	1	0	0	0	0	1	1
2100	0	3	0	0	0	0	3	3
2200	0	1	0	0	0	0	1	1
2300	0	0	0	0	0	0	0	0
07-19	0	37	11	2	3	1	54	60
06-22	0	45	12	2	3	1	63	69
06-00	0	46	12	2	3	1	64	70
00-00	0	48	12	2	3	1	66	72

Peaks	Time	Vehicles	PCU's
AM	0800	6	6
IP	1400	7	8.3
PM	1600	7	7





Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

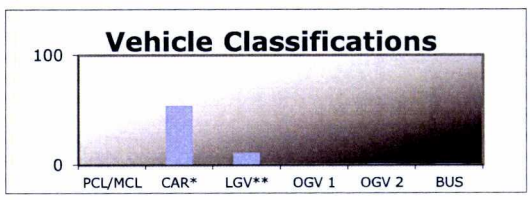
Cappagh Quarry Traffic Counts
Automatic Traffic Counts

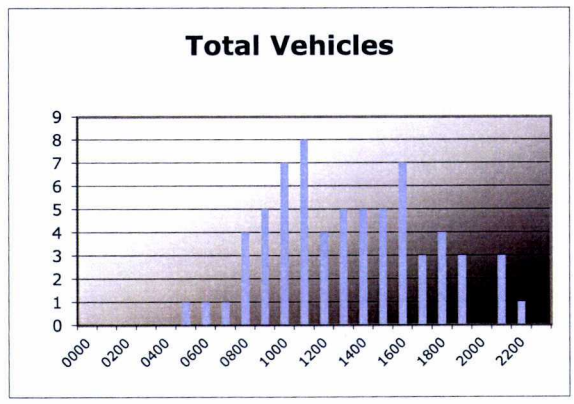
Friday 20 October 2017
Ath/17/147

ATC 01
Eastbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	1	0	1	2
0600	0	1	0	0	0	0	1	1
0700	0	1	0	0	0	0	1	1
0800	0	3	1	0	0	0	4	4
0900	0	4	1	0	0	0	5	5
1000	0	4	3	0	0	0	7	7
1100	0	7	1	0	0	0	8	8
1200	0	3	1	0	0	0	4	4
1300	0	4	1	0	0	0	5	5
1400	0	3	2	0	0	0	5	5
1500	0	4	0	0	0	1	5	6
1600	0	7	0	0	0	0	7	7
1700	0	2	1	0	0	0	3	3
1800	0	4	0	0	0	0	4	4
1900	0	3	0	0	0	0	3	3
2000	0	0	0	0	0	0	0	0
2100	0	3	0	0	0	0	3	3
2200	0	1	0	0	0	0	1	1
2300	0	0	0	0	0	0	0	0
07-19	0	46	11	0	0	1	58	59
06-22	0	53	11	0	0	1	65	66
06-00	0	54	11	0	0	1	66	67
00-00	0	54	11	0	1	1	67	69

Peaks	Time	Vehicles	PCU's
AM	0900	5	5
IP	1300	5	5
PM	1600	7	7





Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

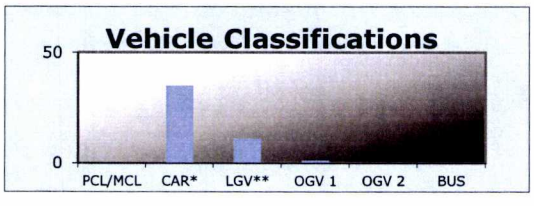
Cappagh Quarry Traffic Counts **Saturday 21 October 2017**
Automatic Traffic Counts **Ath/17/147**

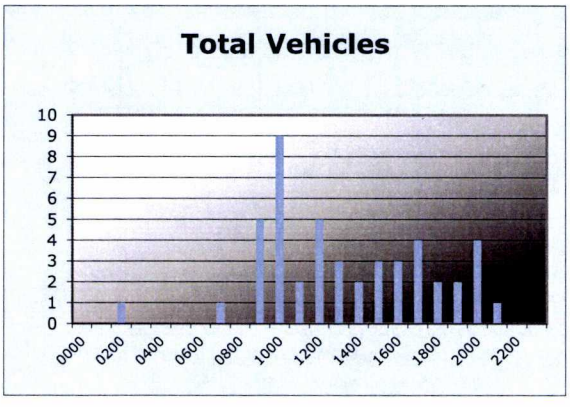
RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

ATC 01
Eastbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0
0200	0	0	1	0	0	0	1	1
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0
0700	0	1	0	0	0	0	1	1
0800	0	0	0	0	0	0	0	0
0900	0	3	1	1	0	0	5	6
1000	0	7	2	0	0	0	9	9
1100	0	2	0	0	0	0	2	2
1200	0	4	1	0	0	0	5	5
1300	0	2	1	0	0	0	3	3
1400	0	2	0	0	0	0	2	2
1500	0	2	1	0	0	0	3	3
1600	0	2	1	0	0	0	3	3
1700	0	3	1	0	0	0	4	4
1800	0	1	1	0	0	0	2	2
1900	0	1	1	0	0	0	2	2
2000	0	4	0	0	0	0	4	4
2100	0	1	0	0	0	0	1	1
2200	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0
07-19	0	29	9	1	0	0	39	40
06-22	0	35	10	1	0	0	46	47
06-00	0	35	10	1	0	0	46	47
00-00	0	35	11	1	0	0	47	48

Peaks	Time	Vehicles	PCU's
AM	0900	5	5.5
IP	1200	5	5
PM	1700	4	4





Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

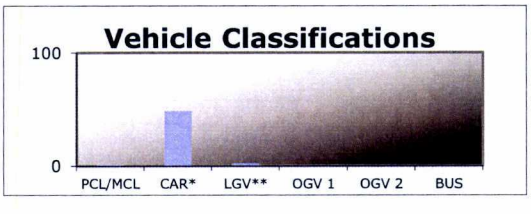
Cappagh Quarry Traffic Counts
Automatic Traffic Counts

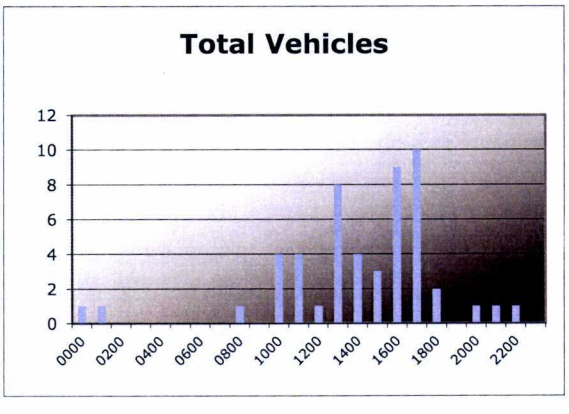
Sunday 22 October 2017
Ath/17/147

ATC 01
Eastbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	1	0	0	0	0	1	1
0100	0	1	0	0	0	0	1	1
0200	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0
0800	0	1	0	0	0	0	1	1
0900	0	0	0	0	0	0	0	0
1000	0	4	0	0	0	0	4	4
1100	0	4	0	0	0	0	4	4
1200	0	1	0	0	0	0	1	1
1300	0	8	0	0	0	0	8	8
1400	0	4	0	0	0	0	4	4
1500	1	2	0	0	0	0	3	2
1600	0	8	1	0	0	0	9	9
1700	0	10	0	0	0	0	10	10
1800	0	2	0	0	0	0	2	2
1900	0	0	0	0	0	0	0	0
2000	0	0	1	0	0	0	1	1
2100	0	1	0	0	0	0	1	1
2200	0	1	0	0	0	0	1	1
2300	0	0	0	0	0	0	0	0
07-19	1	44	1	0	0	0	46	45
06-22	1	45	2	0	0	0	48	47
06-00	1	46	2	0	0	0	49	48
00-00	1	48	2	0	0	0	51	50

Peaks	Time	Vehicles	PCU's
AM	0800	1	1
IP	1300	8	8
PM	1700	10	10





Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

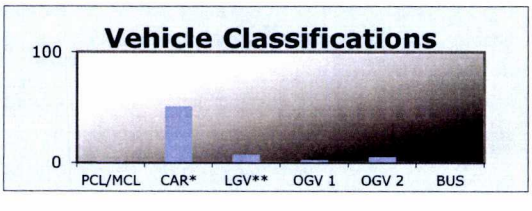
Cappagh Quarry Traffic Counts **Monday 23 October 2017**
Automatic Traffic Counts **Ath/17/147**

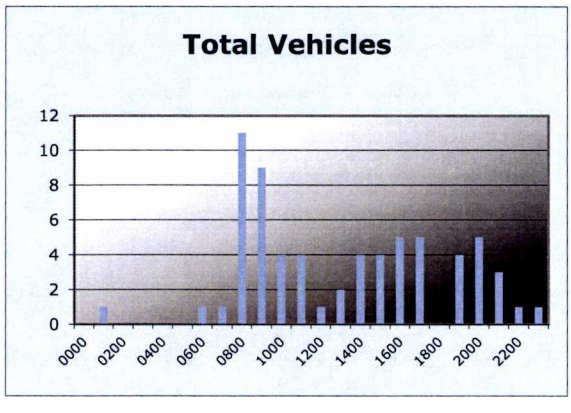
ATC 01
Eastbound

RECEIVED PLANNING
13 AUG 2021
WATERFORD CITY + COUNTY COUNCIL

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	0	0	0	0	0	0	0
0100	0	1	0	0	0	0	1	1
0200	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0
0600	0	1	0	0	0	0	1	1
0700	0	1	0	0	0	0	1	1
0800	0	4	3	0	4	0	11	16
0900	0	6	2	0	1	0	9	10
1000	0	4	0	0	0	0	4	4
1100	1	3	0	0	0	0	4	3
1200	0	1	0	0	0	0	1	1
1300	0	2	0	0	0	0	2	2
1400	0	4	0	0	0	0	4	4
1500	0	3	0	1	0	0	4	5
1600	0	2	2	1	0	0	5	6
1700	0	5	0	0	0	0	5	5
1800	0	0	0	0	0	0	0	0
1900	0	4	0	0	0	0	4	4
2000	0	5	0	0	0	0	5	5
2100	0	3	0	0	0	0	3	3
2200	0	1	0	0	0	0	1	1
2300	0	1	0	0	0	0	1	1
07-19	1	35	7	2	5	0	50	57
06-22	1	48	7	2	5	0	63	70
06-00	1	50	7	2	5	0	65	72
00-00	1	51	7	2	5	0	66	73

Peaks	Time	Vehicles	PCU's
AM	0800	11	16.2
IP	1400	4	4
PM	1600	5	5.5





Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

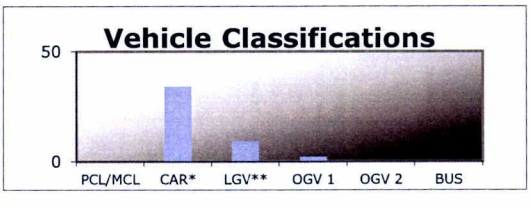
Cappagh Quarry Traffic Counts
Automatic Traffic Counts

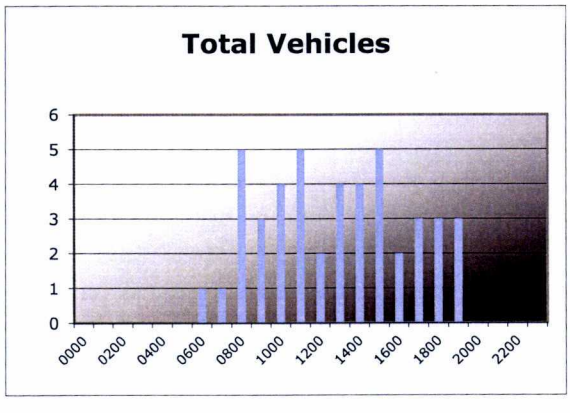
Tuesday 24 October 2017
Ath/17/147

ATC 01
Eastbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0
0600	0	1	0	0	0	0	1	1
0700	0	1	0	0	0	0	1	1
0800	0	2	3	0	0	0	5	5
0900	0	3	0	0	0	0	3	3
1000	0	2	2	0	0	0	4	4
1100	0	4	1	0	0	0	5	5
1200	0	1	0	1	0	0	2	3
1300	0	3	1	0	0	0	4	4
1400	0	4	0	0	0	0	4	4
1500	0	3	1	1	0	0	5	6
1600	0	2	0	0	0	0	2	2
1700	0	3	0	0	0	0	3	3
1800	0	2	1	0	0	0	3	3
1900	0	3	0	0	0	0	3	3
2000	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0
07-19	0	30	9	2	0	0	41	42
06-22	0	34	9	2	0	0	45	46
06-00	0	34	9	2	0	0	45	46
00-00	0	34	9	2	0	0	45	46

Peaks	Time	Vehicles	PCU's
AM	0800	5	5
IP	1300	4	4
PM	1700	3	3





Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

Cappagh Quarry Traffic Counts
Automatic Traffic Count

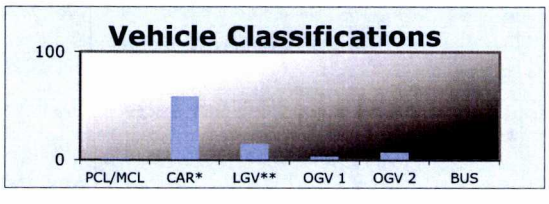
Wednesday 18 October 2017
Ath/17/147

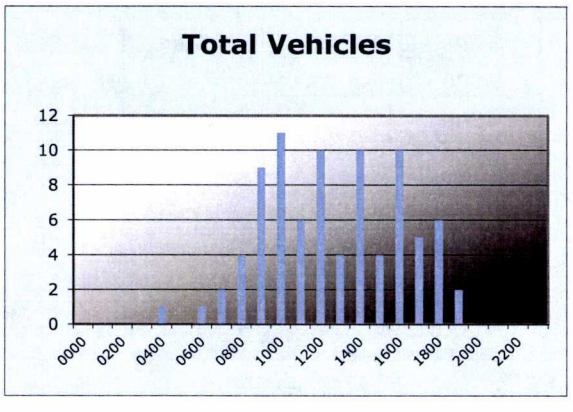
RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY + COUNTY COUNCIL

ATC 01 - Westbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	1	0	1	2
0500	0	0	0	0	0	0	0	0
0600	0	1	0	0	0	0	1	1
0700	0	1	0	1	0	0	2	3
0800	0	4	0	0	0	0	4	4
0900	0	7	1	0	1	0	9	10
1000	1	4	5	0	1	0	11	12
1100	0	4	2	0	0	0	6	6
1200	0	8	1	0	1	0	10	11
1300	0	2	0	0	2	0	4	7
1400	0	9	1	0	0	0	10	10
1500	0	1	1	1	1	0	4	6
1600	0	8	2	0	0	0	10	10
1700	0	3	1	1	0	0	5	6
1800	0	5	1	0	0	0	6	6
1900	0	2	0	0	0	0	2	2
2000	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0
07-19	1	56	15	3	6	0	81	90
06-22	1	59	15	3	6	0	84	93
06-00	1	59	15	3	6	0	84	93
00-00	1	59	15	3	7	0	85	95

Peaks	Time	Vehicles	PCU's
AM	0900	9	10.3
IP	1200	10	11.3
PM	1600	10	10





Waterford City & County Council Planning Department. Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

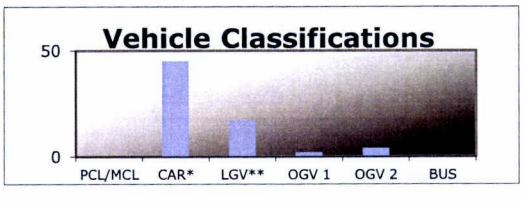
Cappagh Quarry Traffic Counts
Automatic Traffic Counts

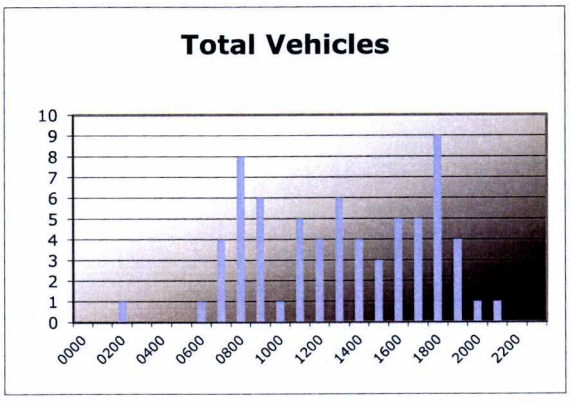
Thursday 19 October 2017
Ath/17/147

ATC 01
Westbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0
0200	0	1	0	0	0	0	1	1
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0
0600	0	1	0	0	0	0	1	1
0700	0	2	2	0	0	0	4	4
0800	0	6	2	0	0	0	8	8
0900	0	5	1	0	0	0	6	6
1000	0	0	1	0	0	0	1	1
1100	0	3	2	0	0	0	5	5
1200	0	1	1	0	2	0	4	7
1300	0	3	3	0	0	0	6	6
1400	0	2	1	0	1	0	4	5
1500	0	3	0	0	0	0	3	3
1600	0	3	1	0	1	0	5	6
1700	0	3	1	1	0	0	5	6
1800	0	8	1	0	0	0	9	9
1900	0	2	1	1	0	0	4	5
2000	0	1	0	0	0	0	1	1
2100	0	1	0	0	0	0	1	1
2200	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0
07-19	0	39	16	1	4	0	60	66
06-22	0	44	17	2	4	0	67	73
06-00	0	44	17	2	4	0	67	73
00-00	0	45	17	2	4	0	68	74

Peaks	Time	Vehicles	PCU's
AM	0800	8	8
IP	1300	6	6.6
PM	1800	9	9





Waterford City & County Council Planning Department. Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

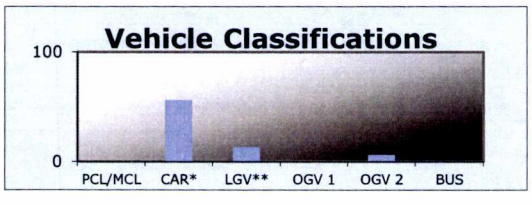
Cappagh Quarry Traffic Counts **Friday 20 October 2017**
Automatic Traffic Counts **Ath/17/147**

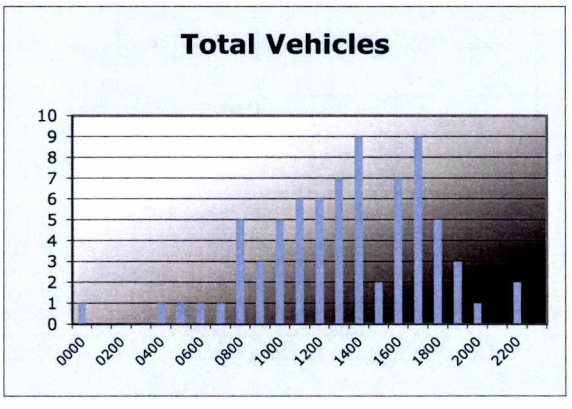
RECEIVED PLANNING 13 AUG 2024 PLANNING NUMBER 21/772 WATERFORD CITY + COUNTY COUNCIL

ATC 01
Westbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	1	0	0	0	0	1	1
0100	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	1	0	1	2
0500	0	0	0	0	1	0	1	2
0600	0	1	0	0	0	0	1	1
0700	0	1	0	0	0	0	1	1
0800	0	4	0	0	1	0	5	6
0900	0	2	1	0	0	0	3	3
1000	0	3	1	0	1	0	5	6
1100	0	4	1	0	1	0	6	7
1200	0	3	3	0	0	0	6	6
1300	0	7	0	0	0	0	7	7
1400	0	8	1	0	0	0	9	9
1500	0	2	0	0	0	0	2	2
1600	0	4	2	0	1	0	7	8
1700	0	8	1	0	0	0	9	9
1800	0	3	2	0	0	0	5	5
1900	0	3	0	0	0	0	3	3
2000	0	0	1	0	0	0	1	1
2100	0	0	0	0	0	0	0	0
2200	0	2	0	0	0	0	2	2
2300	0	0	0	0	0	0	0	0
07-19	0	49	12	0	4	0	65	70
06-22	0	53	13	0	4	0	70	75
06-00	0	55	13	0	4	0	72	77
00-00	0	56	13	0	6	0	75	83

Peaks	Time	Vehicles	PCU's
AM	0800	5	6.3
IP	1400	9	9
PM	1700	9	9





Waterford City & County Council Planning Department. Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

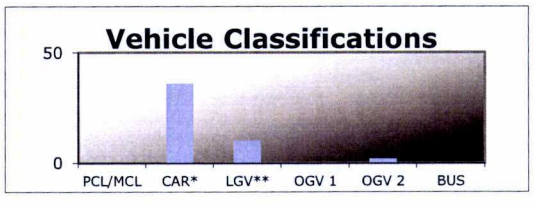
Cappagh Quarry Traffic Counts
Automatic Traffic Counts

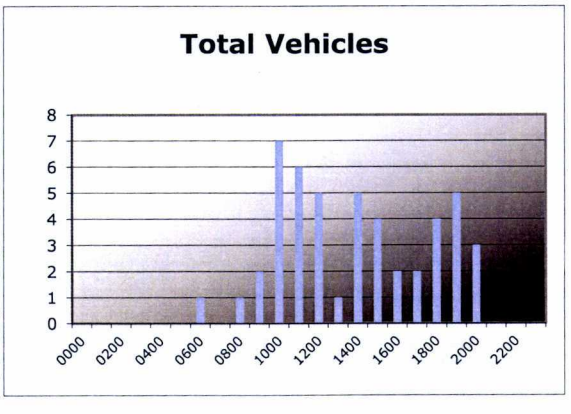
Saturday 21 October 2017
Ath/17/147

ATC 01
Westbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0
0600	0	1	0	0	0	0	1	1
0700	0	0	0	0	0	0	0	0
0800	0	1	0	0	0	0	1	1
0900	0	2	0	0	0	0	2	2
1000	0	5	2	0	0	0	7	7
1100	0	4	1	0	1	0	6	7
1200	0	3	1	0	1	0	5	6
1300	0	1	0	0	0	0	1	1
1400	0	3	2	0	0	0	5	5
1500	0	3	1	0	0	0	4	4
1600	0	1	1	0	0	0	2	2
1700	0	2	0	0	0	0	2	2
1800	0	3	1	0	0	0	4	4
1900	0	4	1	0	0	0	5	5
2000	0	3	0	0	0	0	3	3
2100	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0
07-19	0	28	9	0	2	0	39	42
06-22	0	36	10	0	2	0	48	51
06-00	0	36	10	0	2	0	48	51
00-00	0	36	10	0	2	0	48	51

Peaks	Time	Vehicles	PCU's
AM	0900	2	2
IP	1200	5	6.3
PM	1800	4	4





Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

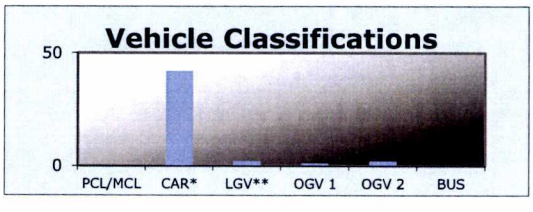
Cappagh Quarry Traffic Counts **Sunday 22 October 2017**
Automatic Traffic Counts **Ath/17/147**

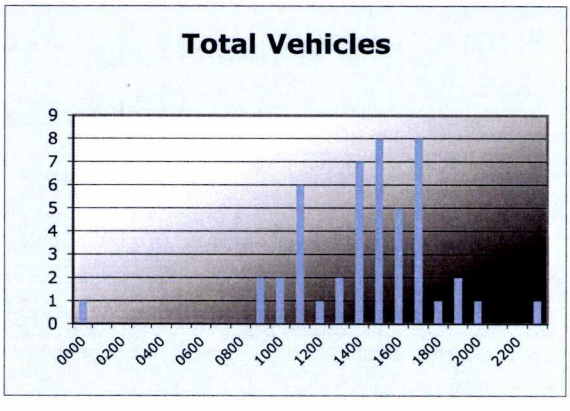
RECEIVED PLANNING
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

ATC 01
Westbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	1	0	0	0	0	1	1
0100	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0
0900	0	1	0	0	1	0	2	3
1000	0	2	0	0	0	0	2	2
1100	0	6	0	0	0	0	6	6
1200	0	1	0	0	0	0	1	1
1300	0	2	0	0	0	0	2	2
1400	0	5	1	1	0	0	7	8
1500	0	8	0	0	0	0	8	8
1600	0	5	0	0	0	0	5	5
1700	0	6	1	0	1	0	8	9
1800	0	1	0	0	0	0	1	1
1900	0	2	0	0	0	0	2	2
2000	0	1	0	0	0	0	1	1
2100	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0
2300	0	1	0	0	0	0	1	1
07-19	0	37	2	1	2	0	42	45
06-22	0	40	2	1	2	0	45	48
06-00	0	41	2	1	2	0	46	49
00-00	0	42	2	1	2	0	47	50

Peaks	Time	Vehicles	PCU's
AM	0900	2	3.3
IP	1400	7	7.5
PM	1700	8	9.3





Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

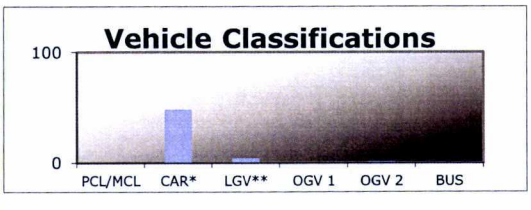
Cappagh Quarry Traffic Counts
Automatic Traffic Counts

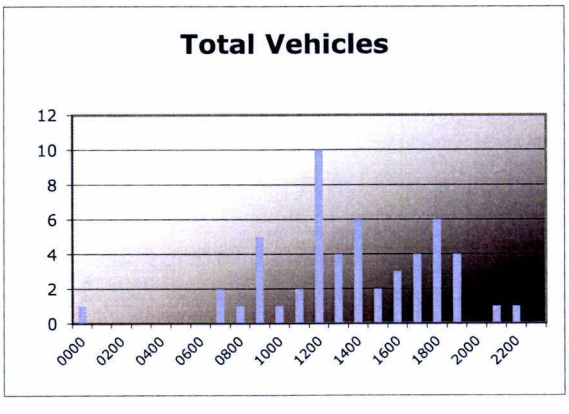
Monday 23 October 2017
Ath/17/147

ATC 01
Westbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	1	0	0	0	0	1	1
0100	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0
0700	0	2	0	0	0	0	2	2
0800	0	1	0	0	0	0	1	1
0900	0	4	1	0	0	0	5	5
1000	0	1	0	0	0	0	1	1
1100	0	1	1	0	0	0	2	2
1200	0	9	1	0	0	0	10	10
1300	0	3	0	0	1	0	4	5
1400	0	5	1	0	0	0	6	6
1500	0	2	0	0	0	0	2	2
1600	0	3	0	0	0	0	3	3
1700	0	4	0	0	0	0	4	4
1800	0	6	0	0	0	0	6	6
1900	0	4	0	0	0	0	4	4
2000	0	0	0	0	0	0	0	0
2100	0	1	0	0	0	0	1	1
2200	0	1	0	0	0	0	1	1
2300	0	0	0	0	0	0	0	0
07-19	0	41	4	0	1	0	46	47
06-22	0	46	4	0	1	0	51	52
06-00	0	47	4	0	1	0	52	53
00-00	0	48	4	0	1	0	53	54

Peaks	Time	Vehicles	PCU's
AM	0900	5	5
IP	1200	10	10
PM	1800	6	6





Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

Cappagh Quarry Traffic Counts
Automatic Traffic Counts

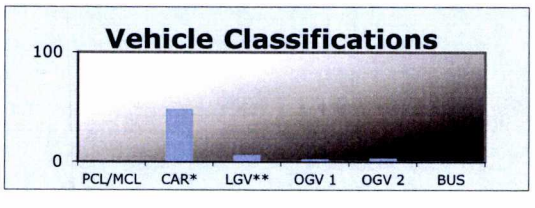
Tuesday 24 October 2017
Ath/17/147

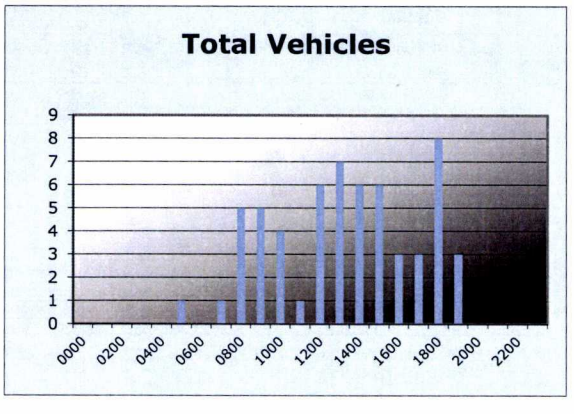
RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY & COUNTY COUNCIL

ATC 01
Westbound

TIME	PCL/MCL	CAR*	LGV**	OGV 1	OGV 2	BUS	TOTAL	PCU
0000	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	0	1	0	0	0	0	1	1
0600	0	0	0	0	0	0	0	0
0700	0	1	0	0	0	0	1	1
0800	0	4	0	1	0	0	5	6
0900	0	3	1	1	0	0	5	6
1000	0	3	1	0	0	0	4	4
1100	0	0	1	0	0	0	1	1
1200	0	5	1	0	0	0	6	6
1300	0	6	0	0	1	0	7	8
1400	0	6	0	0	0	0	6	6
1500	0	3	1	0	2	0	6	9
1600	0	3	0	0	0	0	3	3
1700	0	2	1	0	0	0	3	3
1800	0	8	0	0	0	0	8	8
1900	0	3	0	0	0	0	3	3
2000	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0
07-19	0	44	6	2	3	0	55	60
06-22	0	47	6	2	3	0	58	63
06-00	0	47	6	2	3	0	58	63
00-00	0	48	6	2	3	0	59	64

Peaks	Time	Vehicles	PCU's
AM	0800	5	5.5
IP	1300	7	8.3
PM	1800	8	8





Waterford City & County Council Planning Department. Viewing Purposes Only!

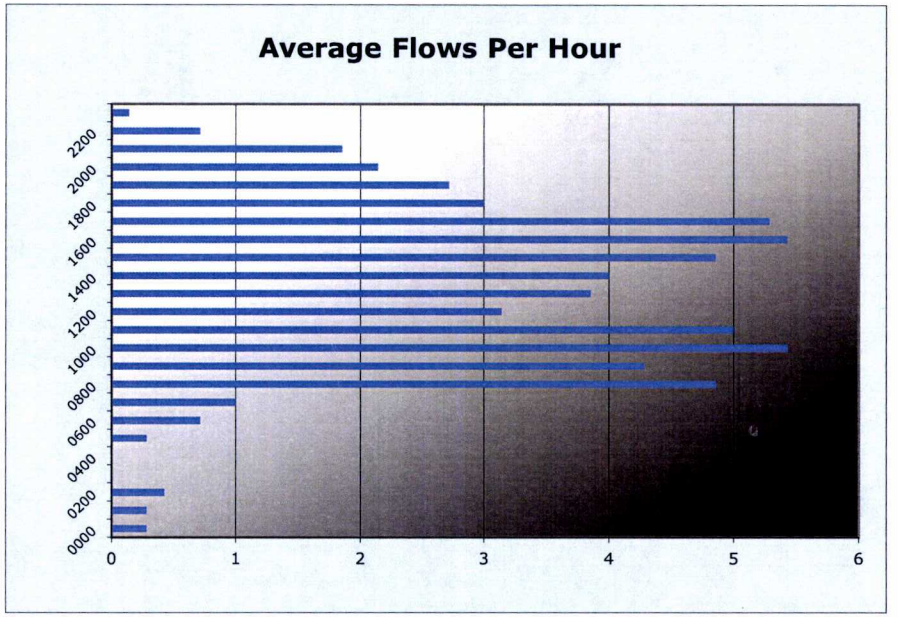
ABACUS TRANSPORTATION SURVEYS

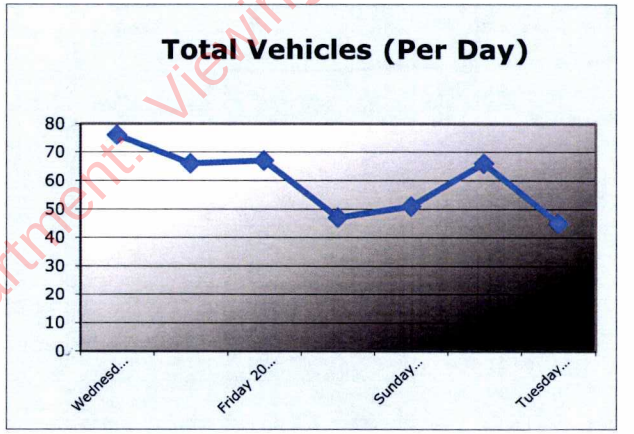
Cappagh Quarry Traffic Counts | **ATC 01** | **Week Comm.: Wednesday 18 October 2017**
Automatic Traffic Count | **Eastbound** | **Ath/17/147**

TIME PERIOD	Wednesday 18 October 2017	Thursday 19 October 2017	Friday 20 October 2017	Saturday 21 October 2017	Sunday 22 October 2017	Monday 23 October 2017	Tuesday 24 October 2017	Average
0000	0	1	0	0	1	0	0	0
0100	0	0	0	0	1	1	0	0
0200	1	1	0	1	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0
0500	1	0	1	0	0	0	0	0
0600	1	1	1	0	0	1	1	1
0700	0	3	1	1	0	1	1	1
0800	7	6	4	0	1	11	5	5
0900	5	3	5	5	0	9	3	4
1000	4	6	7	9	4	4	4	5
1100	8	4	8	2	4	4	5	5
1200	7	2	4	5	1	1	2	3
1300	3	2	5	3	8	2	4	4
1400	2	7	5	2	4	4	4	4
1500	10	4	5	3	3	4	5	5
1600	5	7	7	3	9	5	2	5
1700	7	5	3	4	10	5	3	5
1800	5	5	4	2	2	0	3	3
1900	3	4	3	2	0	4	3	3
2000	4	1	0	4	1	5	0	2
2100	2	3	3	1	1	3	0	2
2200	1	1	1	0	1	1	0	1
2300	0	0	0	0	0	1	0	0
07-19	63	54	58	39	46	50	41	50
06-22	73	63	65	46	48	63	45	58
06-00	74	64	66	46	49	65	45	58
00-00	76	66	67	47	51	66	45	60

Waterford City & County Council Planning Department: Viewing Purposes Only!

Cappagh Quarry Traffic Counts | **ATC 01** | **Week Comm.: Wednesday 18 October 2017**
Automatic Traffic Count | **Eastbound** | **Ath/17/147**





Peak Time & Volumetric Count Data

	Wednesday 18 October 2017	Thursday 19 October 2017	Friday 20 October 2017	Saturday 21 October 2017	Sunday 22 October 2017	Monday 23 October 2017	Tuesday 24 October 2017	Mode/ Average
AM								
Time	0800	0800	0900	0900	0800	0800	0800	0800
Vehicles	7	6	5	5	1	11	5	6
IP								
Time	1200	1400	1300	1200	1300	1400	1300	1300
Vehicles	7	7	5	5	8	4	4	6
PM								
Time	1700	1600	1600	1700	1700	1600	1700	1700
Vehicles	7	7	7	4	10	5	3	6

Waterford City & County Council Planning Department. Viewing Purposes Only!

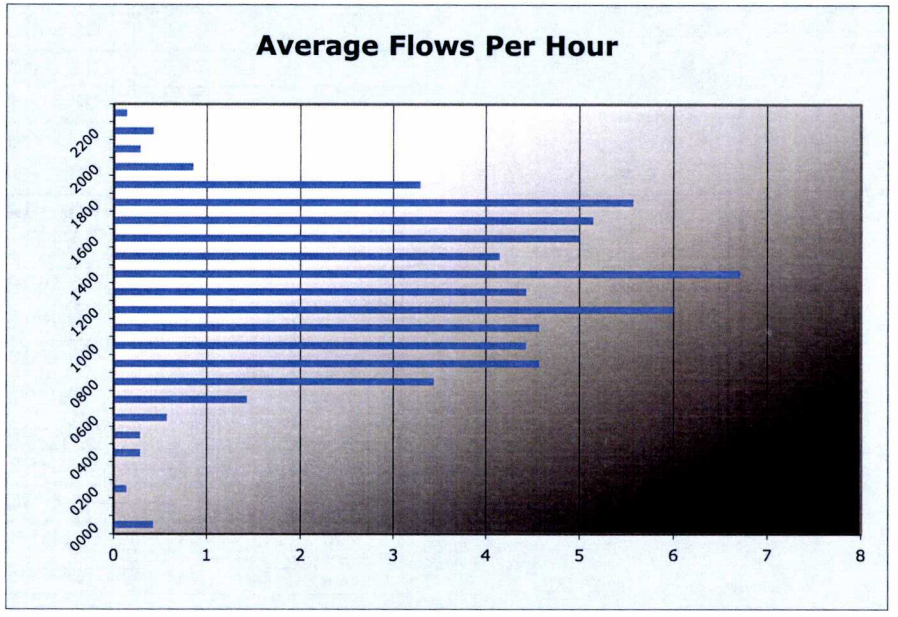
Cappagh Quarry Traffic Counts
Automatic Traffic Count

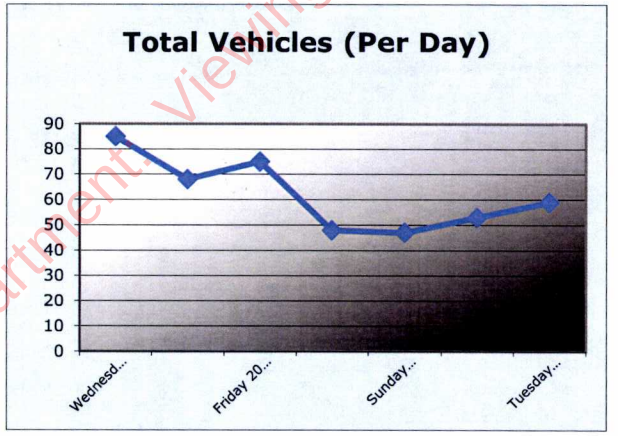
ATC 01
Westbound

Week Comm.: Wednesday 18 October 2017
Ath/17/147

TIME PERIOD	Wednesday 18 October 2017	Thursday 19 October 2017	Friday 20 October 2017	Saturday 21 October 2017	Sunday 22 October 2017	Monday 23 October 2017	Tuesday 24 October 2017	Average
0000	0	0	1	0	1	1	0	0
0100	0	0	0	0	0	0	0	0
0200	0	1	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0
0400	1	0	1	0	0	0	0	0
0500	0	0	1	0	0	0	1	0
0600	1	1	1	1	0	0	0	1
0700	2	4	1	0	0	2	1	1
0800	4	8	5	1	0	1	5	3
0900	9	6	3	2	2	5	5	5
1000	11	1	5	7	2	1	4	4
1100	6	5	6	6	6	2	1	5
1200	10	4	6	5	1	10	6	6
1300	4	6	7	1	2	4	7	4
1400	10	4	9	5	7	6	6	7
1500	4	3	2	4	8	2	6	4
1600	10	5	7	2	5	3	3	5
1700	5	5	9	2	8	4	3	5
1800	6	9	5	4	1	6	8	6
1900	2	4	3	5	2	4	3	3
2000	0	1	1	3	1	0	0	1
2100	0	1	0	0	0	1	0	0
2200	0	0	2	0	0	1	0	0
2300	0	0	0	0	1	0	0	0
07-19	81	60	65	39	42	46	55	55
06-22	84	67	70	48	45	51	58	60
06-00	84	67	72	48	46	52	58	61
00-00	85	68	75	48	47	53	59	62

Waterford City & County Council Planning Department: Viewing Purposes Only!





Peak Time & Volumetric Count Data

	Wednesday 18 October 2017	Thursday 19 October 2017	Friday 20 October 2017	Saturday 21 October 2017	Sunday 22 October 2017	Monday 23 October 2017	Tuesday 24 October 2017	Mode/ Average
AM								
Time	0900	0800	0800	0900	0900	0900	0800	0900
Vehicles	9	8	9	2	2	5	5	6
IP								
Time	1200	1300	1400	1200	1400	1200	1300	1200
Vehicles	10	6	9	5	7	10	7	8
PM								
Time	1600	1800	1700	1800	1700	1800	1800	1800
Vehicles	10	9	9	4	8	6	8	8

RECEIVED PLANNING
13 AUG 2021
WATERFORD CITY + COUNTY COUNCIL
PLANNING NUMBER
21/772

Waterford City & County Council Planning Department - Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

Cappagh Quarry Traffic Counts
Automatic Traffic Counts

Week Comm: Wednesday 18 October 2017
Ath/17/147

ATC 01
Eastbound

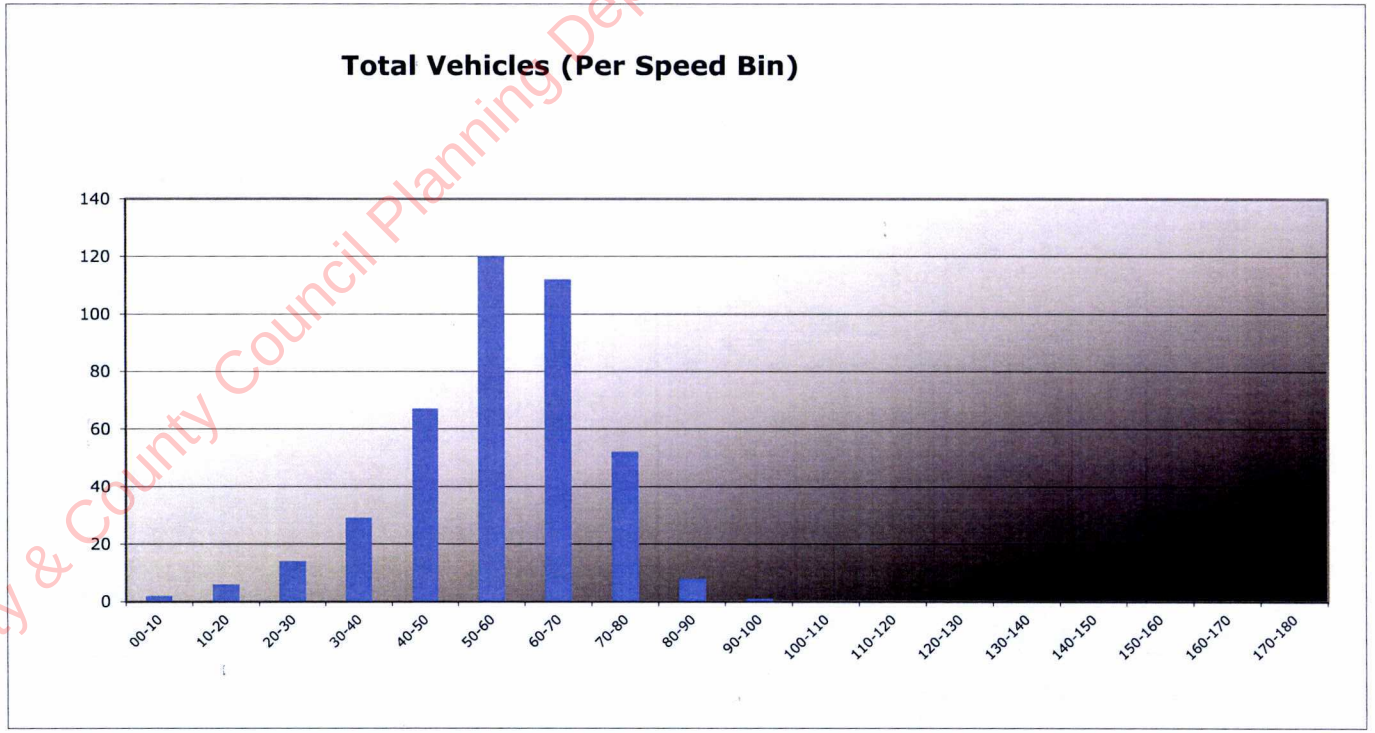
Profile:

Filter time: 00:00 18th October 2017 => 23:59 24th October 2017
Speed range 0 - 200 km/h.
Separation: Greater than 4.00 seconds. - (Headway)
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)

Vehicles = 411
Maximum = 93.1 km/h, Minimum = 7.6 km/h, Mean = 56.0 km/h
85% Speed = 69.88 km/h, 95% Speed = 75.62 km/h, Median = 57.33 km/h
20 km/h Pace = 47 - 67, Number in Pace = 243 (59.12%)
Variance = 195.25, Standard Deviation = 13.97 km/h

Speed Bins:

Speed	Bin	
KPH	No.	%
00-10	2	0.5
10-20	6	1.5
20-30	14	3.4
30-40	29	7.1
40-50	67	16.3
50-60	120	29.2
60-70	112	27.3
70-80	52	12.7
80-90	8	1.9
90-100	1	0.2
100-110	0	0.0
110-120	0	0.0
120-130	0	0.0
130-140	0	0.0
140-150	0	0.0
150-160	0	0.0
160-170	0	0.0
170-180	0	0.0



Waterford City & County Council Planning Department. Viewing Purposes Only!

Cappagh Quarry Traffic Counts
Automatic Traffic Counts

Week Comm: Wednesday 18 October 2017
Ath/17/147

ATC 01
Westbound

Profile:

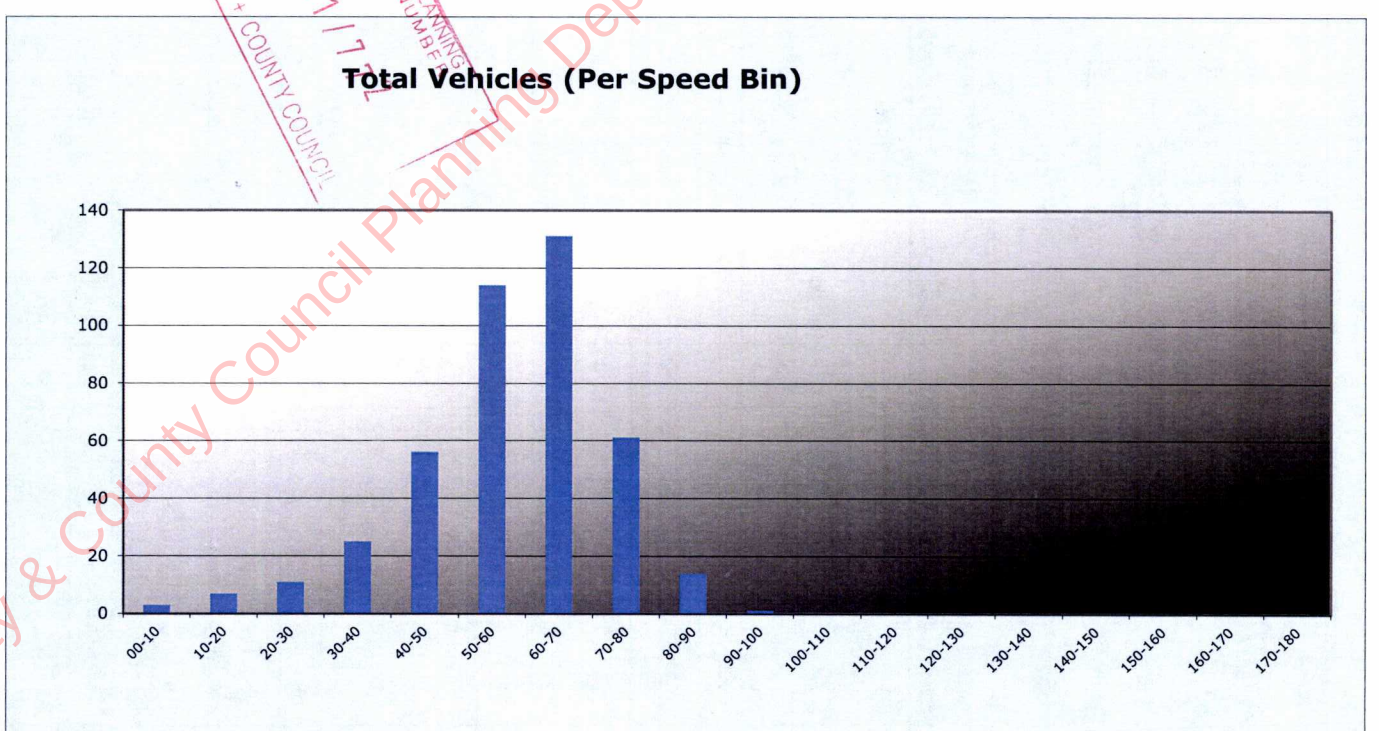
Filter time: 00:00 18th October 2017 => 23:59 24th October 2017
Speed range 0 - 200 km/h.
Separation: Greater than 4.00 seconds. - (Headway)
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)

Vehicles = 423
Maximum = 97.8 km/h, Minimum = 2.7 km/h, Mean = 58.0 km/h
85% Speed = 71.17 km/h, 95% Speed = 77.20 km/h, Median = 59.67 km/h
20 km/h Pace = 51 - 71, Number in Pace = 253 (59.81%)
Variance = 205.96, Standard Deviation = 14.35 km/h

RECEIVED PLANNING
13 AUG 2021
WATERFORD CITY + COUNTY COUNCIL
PLANNING NUMBER
21/72

Speed Bins:

Speed	Bin	
KPH	No.	%
00-10	3	0.7
10-20	7	1.7
20-30	11	2.6
30-40	25	5.9
40-50	56	13.2
50-60	114	27.0
60-70	131	31.0
70-80	61	14.4
80-90	14	3.3
90-100	1	0.2
100-110	0	0.0
110-120	0	0.0
120-130	0	0.0
130-140	0	0.0
140-150	0	0.0
150-160	0	0.0
160-170	0	0.0
170-180	0	0.0



Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 18th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Wednesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	3	2	0	0	0	5	5	5	1	1	0	0	7	8	0	0	0	0	0	0	0
07:15	11	1	0	0	0	12	12	5	0	1	0	0	6	7	1	0	2	0	0	3	4
07:30	7	0	0	0	0	7	7	1	1	0	1	1	4	6	3	0	1	0	1	5	7
07:45	10	2	1	0	0	13	14	2	1	4	0	1	8	11	4	0	0	0	1	5	6
H/TOT	31	5	1	0	0	37	38	13	3	6	1	2	25	31	8	0	3	0	2	13	17
08:00	11	0	1	0	0	12	13	6	0	1	0	0	7	8	2	0	2	0	0	4	5
08:15	10	2	1	0	0	13	14	2	0	4	0	0	6	8	0	0	0	0	0	0	0
08:30	11	0	0	1	0	12	13	5	1	1	0	0	7	8	0	1	2	0	0	3	4
08:45	13	1	0	0	0	14	14	4	0	0	0	0	4	4	3	0	1	0	0	4	5
H/TOT	45	3	2	1	0	51	53	17	1	6	0	0	24	27	5	1	5	0	0	11	14
09:00	4	1	1	0	1	7	9	14	1	1	0	1	17	19	7	0	0	0	1	8	9
09:15	9	2	2	0	0	13	14	3	0	2	0	1	6	8	4	1	1	0	0	6	7
09:30	7	0	1	0	1	9	11	3	1	1	0	0	5	6	3	0	1	0	0	4	5
09:45	4	0	2	0	0	6	7	3	1	2	0	0	6	7	2	1	0	0	0	3	3
H/TOT	24	3	6	0	2	35	40	23	3	6	0	2	34	39	16	2	2	0	1	21	23
10:00	4	0	0	0	0	4	4	4	2	2	0	0	8	9	4	2	3	0	0	9	11
10:15	4	1	0	0	0	5	5	2	0	2	0	0	4	5	1	0	2	1	0	4	6
10:30	10	0	1	0	0	11	12	2	0	1	0	0	3	4	0	2	2	0	0	4	5
10:45	5	0	3	1	0	9	12	0	0	1	0	0	1	2	1	1	1	1	0	4	6
H/TOT	23	1	4	1	0	29	32	8	2	6	0	0	16	19	6	5	8	2	0	21	28
11:00	5	1	1	0	0	7	8	2	2	2	1	0	7	9	2	1	2	0	0	5	6
11:15	2	3	0	0	0	5	5	3	1	3	0	0	7	9	2	0	1	0	0	3	4
11:30	7	1	0	1	0	9	10	1	0	3	1	0	5	8	3	1	4	0	0	8	10
11:45	5	0	0	3	0	8	12	5	1	2	1	0	9	11	4	1	3	0	0	8	10
H/TOT	19	5	1	4	0	29	35	11	4	10	3	0	28	37	11	3	10	0	0	24	29
12:00	7	2	1	0	0	10	11	1	1	3	0	0	5	7	1	0	2	0	0	3	4
12:15	7	0	2	0	0	9	10	3	2	3	0	0	8	10	3	1	3	1	0	8	11
12:30	7	0	1	0	0	8	9	5	1	1	1	0	8	10	5	0	4	0	0	9	11
12:45	6	0	1	0	0	7	8	2	1	3	0	0	6	8	4	2	1	0	0	7	8
H/TOT	27	2	5	0	0	34	37	11	5	10	1	0	27	33	13	3	10	1	0	27	33

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 18th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Wednesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	5	2	1	0	0	8	9	5	2	2	0	0	9	10	3	0	4	0	0	7	9
13:15	4	3	1	0	0	8	9	2	0	3	1	0	6	9	2	1	1	0	0	4	5
13:30	4	1	1	1	1	8	11	1	2	2	0	0	5	6	3	0	2	1	1	7	10
13:45	6	3	1	0	0	10	11	7	1	2	0	0	10	11	1	0	2	0	0	3	4
H/TOT	19	9	4	1	1	34	38	15	5	9	1	0	30	36	9	1	9	1	1	21	28
14:00	3	1	0	0	2	6	8	1	0	3	0	0	4	6	5	0	0	0	0	5	5
14:15	4	3	0	0	0	7	7	2	0	0	0	0	2	2	1	1	4	0	0	6	8
14:30	6	2	1	1	0	10	12	0	1	3	2	1	7	12	4	0	0	0	0	4	4
14:45	5	1	1	0	0	7	8	6	0	1	0	0	7	8	0	0	2	1	1	4	7
H/TOT	18	7	2	1	2	30	34	9	1	7	2	1	20	27	10	1	6	1	1	19	24
15:00	9	0	1	0	0	10	11	6	0	3	2	0	11	15	9	1	3	0	1	14	17
15:15	7	1	0	0	0	8	8	4	1	1	0	1	7	9	4	0	2	0	1	7	9
15:30	4	3	4	0	0	11	13	2	0	0	2	0	4	7	0	1	0	0	0	1	1
15:45	1	1	4	3	0	9	15	2	0	2	0	0	4	5	1	0	0	3	0	4	8
H/TOT	21	5	9	3	0	38	46	14	1	6	4	1	26	35	14	2	5	3	2	26	34
16:00	9	2	1	0	0	12	13	2	0	3	1	0	6	9	4	1	3	0	0	8	10
16:15	8	2	0	0	0	10	10	4	0	2	1	0	7	9	4	0	4	0	0	8	10
16:30	8	0	0	1	0	9	10	5	0	4	0	0	9	11	1	0	2	0	0	3	4
16:45	5	4	3	2	0	14	18	0	0	4	2	1	7	13	4	0	3	0	0	7	9
H/TOT	30	8	4	3	0	45	51	11	0	13	4	1	29	42	13	1	12	0	0	26	32
17:00	10	1	1	0	0	12	13	3	0	2	1	0	6	8	7	1	2	0	0	10	11
17:15	8	2	0	1	0	11	12	2	0	1	1	0	4	6	0	1	3	1	0	5	8
17:30	7	1	1	0	0	9	10	3	2	2	0	0	7	8	2	1	2	0	0	5	6
17:45	7	1	1	0	0	9	10	1	0	2	1	0	4	6	3	1	1	1	0	6	8
H/TOT	32	5	3	1	0	41	44	9	2	7	3	0	21	28	12	4	8	2	0	26	33
18:00	11	3	0	0	0	14	14	3	0	1	1	0	5	7	5	0	3	0	0	8	10
18:15	7	0	0	0	0	7	7	2	1	2	0	0	5	6	4	1	1	0	0	6	7
18:30	8	1	1	0	0	10	11	0	1	5	0	0	6	9	3	1	3	0	0	7	9
18:45	7	1	0	0	0	8	8	10	0	3	0	0	13	15	3	1	1	0	0	5	6
H/TOT	33	5	1	0	0	39	40	15	2	11	1	0	29	36	15	3	8	0	0	26	30
P/TOT	322	58	42	15	5	442	488	156	29	97	20	7	309	391	132	26	86	10	7	261	324

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 18th October 2017

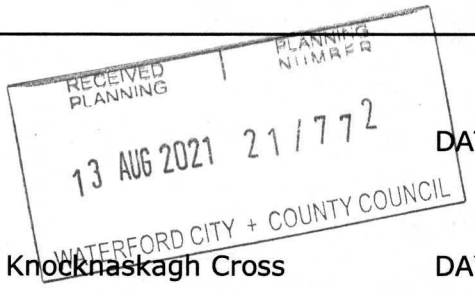
LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Wednesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
07:15	1	0	0	0	0	1	1	1	0	0	0	1	2	3	3	0	0	0	0	3	3
07:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	2	0	0	0	7	7
07:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	5	2	0	0	0	7	7
H/TOT	2	0	0	0	0	2	2	3	0	0	0	1	4	5	16	4	0	0	0	20	20
08:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	3	1	0	1	7	9
08:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
08:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	6	2	1	0	1	10	12
08:45	3	0	0	0	0	3	3	3	0	0	0	0	3	3	10	2	2	0	0	14	15
H/TOT	5	0	0	0	0	5	5	6	0	0	0	0	6	6	21	7	4	0	2	34	38
09:00	3	1	0	0	0	4	4	9	2	0	0	0	11	11	7	3	3	0	1	14	17
09:15	6	0	0	0	0	6	6	4	0	0	0	0	4	4	4	1	0	1	0	6	7
09:30	1	0	0	0	0	1	1	0	1	0	0	0	1	1	4	1	0	0	0	5	5
09:45	1	1	0	0	0	2	2	1	0	0	0	0	1	1	6	1	0	0	0	7	7
H/TOT	11	2	0	0	0	13	13	14	3	0	0	0	17	17	21	6	3	1	1	32	36
10:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0	3	0	0	7	9
10:15	0	0	0	0	0	0	0	0	0	1	0	0	1	2	3	0	1	0	0	4	5
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	3	0	0	10	12
10:45	0	2	0	0	0	2	2	0	0	0	0	0	0	0	6	1	1	0	0	8	9
H/TOT	1	2	0	0	0	3	3	0	0	1	0	0	1	2	20	1	8	0	0	29	33
11:00	0	1	1	0	0	2	3	0	0	0	0	0	0	0	3	0	1	0	0	4	5
11:15	0	0	0	0	0	0	0	0	2	0	0	0	2	2	7	0	0	0	0	7	7
11:30	0	0	0	1	0	1	2	0	0	0	0	0	0	0	7	1	0	2	0	10	13
11:45	0	0	0	1	0	1	2	0	0	0	0	0	0	0	4	2	0	1	0	7	8
H/TOT	0	1	1	2	0	4	7	0	2	0	0	0	2	2	21	3	1	3	0	28	32
12:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	7	2	0	1	0	10	11
12:15	0	0	0	0	0	0	0	1	0	1	0	0	2	3	5	1	2	1	0	9	11
12:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	6	0	0	0	0	6	6
12:45	0	0	0	0	0	0	0	0	1	0	0	0	1	1	4	0	1	1	0	6	8
H/TOT	4	0	0	0	0	4	4	1	1	1	0	0	3	4	22	3	3	3	0	31	36

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**



SITE: 05 DATE: 18th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Wednesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	3	2	0	0	10	11
13:15	2	0	0	0	0	2	2	3	0	0	0	0	3	3	6	4	1	0	0	11	12
13:30	0	0	0	0	0	0	0	1	0	0	0	1	2	3	9	1	2	0	0	12	13
13:45	0	0	0	0	0	0	0	3	0	0	0	0	3	3	6	1	0	0	0	7	7
H/TOT	3	0	0	0	0	3	3	7	0	0	0	1	8	9	26	9	5	0	0	40	43
14:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	6	0	2	0	0	8	9
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	0	6	8
14:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	9	3	0	0	0	12	12
14:45	0	1	0	0	0	1	1	4	0	0	0	0	4	4	6	1	0	3	0	10	14
H/TOT	3	1	0	0	0	4	4	6	0	0	0	0	6	6	23	6	3	4	0	36	43
15:00	14	0	0	0	0	14	14	4	0	0	0	0	4	4	8	0	1	0	0	9	10
15:15	0	0	0	0	0	0	0	2	1	0	0	0	3	3	6	1	1	0	0	8	9
15:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	3	1	2	3	0	9	14
15:45	1	0	0	0	0	1	1	2	0	0	0	0	2	2	11	1	2	0	0	14	15
H/TOT	17	0	0	0	0	17	17	8	1	0	0	0	9	9	28	3	6	3	0	40	47
16:00	0	0	0	0	0	0	0	0	0	1	0	0	1	2	6	1	0	1	0	8	9
16:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	10	0	3	0	0	13	15
16:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	8	2	1	4	0	15	21
16:45	2	0	1	0	1	4	6	0	0	0	0	0	0	0	6	1	1	0	0	8	9
H/TOT	3	0	1	0	1	5	7	3	0	1	0	0	4	5	30	4	5	5	0	44	53
17:00	3	0	0	0	0	3	3	0	0	1	0	0	1	2	6	1	0	4	1	12	18
17:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	9	1	1	0	0	11	12
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	2	1	3	0	17	21
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	2	0	0	0	16	16
H/TOT	4	0	0	0	0	4	4	1	0	1	0	0	2	3	40	6	2	7	1	56	67
18:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	9	2	2	0	0	13	14
18:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	12	0	1	1	0	14	16
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	1	0	0	14	15
18:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	9	0	0	0	0	9	9
H/TOT	1	0	0	0	0	1	1	1	1	0	0	0	2	2	43	2	4	1	0	50	53
P/TOT	54	6	2	2	1	65	70	50	8	4	0	2	64	68	311	54	44	27	4	440	501

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06 DATE: 18th October 2017

LOCATION: Access Track (North) DAY: Wednesday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	1	0	0	1	2
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	0	0	1	0	0	1	2
12:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	1	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06 DATE: 18th October 2017

LOCATION: Access Track (North) DAY: Wednesday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0
P/TOT	0	3	0	0	0	3	3	0	2	1	0	0	3	4

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 07 DATE: 18th October 2017

LOCATION: Access Track (South) DAY: Wednesday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0
08:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0
H/TOT	0	1	1	0	0	2	3	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	1	0	0	1	2
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	0	0	1	2
10:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:15	0	2	0	0	0	2	2	1	2	0	0	0	3	3
10:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	3	0	0	0	4	4	1	2	0	0	0	3	3
11:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	1	0	0	1	2	0	0	1	0	0	1	2
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	2	0	0	2	3	0	0	1	0	0	1	2
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	1	0	0	1	2
12:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	1	0	0	2	3

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 07 DATE: 18th October 2017

LOCATION: Access Track (South) DAY: Wednesday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	1	0	0	1	2	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	1	2	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	1	0	0	1	2
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	1	0	1	0	0	2	3
16:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:45	0	0	0	0	0	0	0	0	0	1	0	0	1	2
H/TOT	1	0	0	0	0	1	1	0	1	1	0	0	2	3
17:00	0	0	0	0	0	0	0	1	1	0	0	0	2	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	1	0	0	0	2	2
18:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0
P/TOT	3	4	4	0	0	11	13	4	4	5	0	0	13	16

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 18th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Wednesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 18th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Wednesday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY & COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 18th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Wednesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	22	0	3	1	0	26	29	1	0	0	0	0	1	1
07:15	0	0	0	0	0	0	0	40	1	0	0	0	41	41	0	1	0	0	0	1	1
07:30	0	0	0	0	0	0	0	38	2	0	0	0	40	40	3	0	0	0	0	3	3
07:45	0	0	0	0	0	0	0	54	10	2	1	0	67	69	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	154	13	5	2	0	174	179	5	1	0	0	0	6	6
08:00	0	0	0	0	0	0	0	56	16	1	1	1	75	78	0	1	0	4	0	5	10
08:15	0	0	0	0	0	0	0	85	4	2	0	2	93	96	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	72	9	3	1	1	86	90	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	53	3	1	2	0	59	62	1	0	0	1	0	2	3
H/TOT	0	0	0	0	0	0	0	266	32	7	4	4	313	326	1	1	0	5	0	7	14
09:00	0	0	0	0	0	0	0	60	7	2	4	0	73	79	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	37	7	1	2	1	48	52	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	37	5	2	2	1	47	52	0	0	0	0	0	0	0
09:45	1	0	0	0	0	1	1	41	4	0	2	0	47	50	1	0	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	175	23	5	10	2	215	233	1	0	0	0	0	1	1
10:00	0	0	0	0	0	0	0	32	5	7	4	0	48	57	0	1	0	1	0	2	3
10:15	0	0	0	0	0	0	0	25	5	4	1	0	35	38	0	0	0	3	0	3	7
10:30	0	0	0	0	0	0	0	20	1	2	1	0	24	26	0	1	0	1	0	2	3
10:45	0	0	0	0	0	0	0	32	3	4	2	1	42	48	0	0	1	0	0	1	2
H/TOT	0	0	0	0	0	0	0	109	14	17	8	1	149	169	0	2	1	5	0	8	15
11:00	0	0	0	0	0	0	0	23	6	1	1	1	32	35	0	0	0	1	0	1	2
11:15	0	0	0	0	0	0	0	28	4	2	0	0	34	35	2	0	0	0	0	2	2
11:30	0	0	0	0	0	0	0	24	3	3	0	1	31	34	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	35	8	1	4	0	48	54	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	110	21	7	5	2	145	157	2	0	0	1	0	3	4
12:00	0	0	0	0	0	0	0	18	3	0	1	0	22	23	1	0	1	0	0	2	3
12:15	0	0	0	0	0	0	0	30	10	0	1	0	41	42	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	27	5	4	1	2	39	44	0	0	0	1	0	1	2
12:45	0	0	0	0	0	0	0	33	3	4	2	0	42	47	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	108	21	8	5	2	144	157	1	0	1	1	0	3	5

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 18th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Wednesday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	26	5	1	1	0	33	35	0	0	0	1	0	1	2
13:15	0	0	0	0	0	0	0	31	3	0	0	0	34	34	0	0	0	2	0	2	5
13:30	0	0	0	0	0	0	0	31	3	4	0	1	39	42	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	33	7	2	0	1	43	45	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	121	18	7	1	2	149	156	0	0	0	3	0	3	7
14:00	0	0	0	0	0	0	0	25	9	2	0	3	39	43	0	2	0	0	0	2	2
14:15	0	0	0	0	0	0	0	28	6	3	0	0	37	39	1	1	1	0	0	3	4
14:30	0	0	0	0	0	0	0	31	6	2	5	2	46	56	1	1	0	0	0	2	2
14:45	0	0	0	0	0	0	0	25	8	2	1	0	36	38	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	109	29	9	6	5	158	175	3	4	1	0	0	8	9
15:00	0	0	0	0	0	0	0	29	5	1	1	0	36	38	1	1	0	0	0	2	2
15:15	0	0	0	0	0	0	0	31	2	2	0	1	36	38	1	0	1	0	1	3	5
15:30	0	0	0	0	0	0	0	43	9	5	1	0	58	62	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	33	4	3	3	0	43	48	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	136	20	11	5	1	173	186	4	1	1	0	1	7	9
16:00	0	0	0	0	0	0	0	20	9	1	1	0	31	33	1	0	0	1	0	2	3
16:15	0	0	0	0	0	0	0	18	8	2	1	0	29	31	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	31	7	0	0	0	38	38	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	34	10	3	1	0	48	51	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	103	34	6	3	0	146	153	1	0	0	1	0	2	3
17:00	0	0	0	0	0	0	0	32	17	4	2	2	57	64	2	1	0	0	0	3	3
17:15	0	0	0	0	0	0	0	34	12	2	0	1	49	51	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	30	6	0	0	0	36	36	0	0	0	1	0	1	2
17:45	0	0	0	0	0	0	0	30	10	3	0	0	43	45	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	126	45	9	2	3	185	195	2	1	0	1	0	4	5
18:00	0	0	0	0	0	0	0	35	6	0	0	0	41	41	0	1	0	0	0	1	1
18:15	0	0	0	0	0	0	0	19	9	0	0	0	28	28	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	32	7	0	0	0	39	39	0	1	0	0	0	1	1
18:45	0	0	0	0	0	0	0	24	3	1	0	0	28	29	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	110	25	1	0	0	136	137	0	2	0	0	0	2	2
P/TOT	1	0	0	0	0	1	1	1627	295	92	51	22	2087	2221	20	12	4	17	1	54	79

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 18th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Wednesday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	6
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
07:45	1	0	1	0	0	2	3	0	0	0	0	0	0	0	2	2	1	2	0	7	10
H/TOT	1	0	1	0	0	2	3	0	0	0	0	0	0	0	13	2	1	2	0	18	21
08:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	6	0	0	3	1	10	15
08:15	2	2	0	5	0	9	16	0	0	0	0	0	0	0	4	0	0	1	0	5	6
08:30	0	3	0	0	0	3	3	0	0	0	0	0	0	0	4	1	0	3	0	8	12
08:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	5	5	0	5	0	15	22	0	0	0	0	0	0	0	17	1	0	7	1	26	36
09:00	2	1	0	0	0	3	3	0	0	0	0	0	0	0	2	1	0	0	1	4	5
09:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	5	0	0	2	0	7	10
09:30	2	1	0	0	0	3	3	0	0	0	0	0	0	0	3	0	0	0	0	3	3
09:45	1	0	0	1	0	2	3	0	0	0	0	0	0	0	2	0	0	1	0	3	4
H/TOT	6	3	0	1	0	10	11	0	0	0	0	0	0	0	12	1	0	3	1	17	22
10:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	2	0	0	0	3	3
10:15	2	1	0	0	0	3	3	0	0	0	0	0	0	0	1	1	0	1	0	3	4
10:30	1	0	0	1	0	2	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:45	0	0	0	1	0	1	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	4	1	0	2	0	7	10	0	0	0	0	0	0	0	4	3	0	1	0	8	9
11:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	4	0	0	1	0	5	6
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0	6	0	0	1	0	7	8
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
12:30	0	0	1	0	0	1	2	0	0	0	0	0	0	0	1	0	1	0	0	2	3
12:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	5	0	0	0	0	5	5
H/TOT	1	1	1	0	0	3	4	0	0	0	0	0	0	0	9	0	1	0	0	10	11

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 18th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Wednesday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	1	0	5	6
13:15	0	0	0	1	0	1	2	0	0	0	0	0	0	0	1	0	1	0	0	2	3
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	4	5
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	3	4
H/TOT	0	0	0	1	0	1	2	0	0	0	0	0	0	0	8	2	1	3	0	14	18
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	3	3
14:15	0	0	0	2	0	2	5	0	0	0	0	0	0	0	4	1	0	0	0	5	5
14:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	2	3
14:45	0	1	0	1	0	2	3	0	0	0	0	0	0	0	5	0	0	0	0	5	5
H/TOT	0	2	0	3	0	5	9	0	0	0	0	0	0	0	10	4	1	0	0	15	16
15:00	1	0	0	1	0	2	3	0	0	0	0	0	0	0	2	0	0	1	0	3	4
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
15:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	1	1	0	1	0	3	4	0	0	0	0	0	0	0	9	0	0	1	0	10	11
16:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	1	1	0	2	4	0	0	0	0	0	0	0	1	0	0	1	0	2	3
16:30	0	0	0	1	0	1	2	0	0	0	0	0	0	0	1	2	0	0	0	3	3
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	2	0	0	7	8
H/TOT	1	0	1	2	0	4	7	0	0	0	0	0	0	0	7	2	2	1	0	12	14
17:00	1	2	0	0	0	3	3	0	0	0	0	0	0	0	6	1	0	0	0	7	7
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	4	5
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
17:45	1	0	1	0	0	2	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	2	2	1	0	0	5	6	0	0	0	0	0	0	0	15	1	0	1	0	17	18
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	4
18:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	2	0	0	0	4	4
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	6	4	0	0	0	10	10
P/TOT	23	16	4	15	0	58	80	0	0	0	0	0	0	0	116	20	6	20	2	164	195

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 18th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Wednesday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	3	0	0	0	0	3	3	7	0	0	0	0	7	7	0	0	0	0	0	0	0
07:15	1	0	0	0	0	1	1	13	5	1	1	0	20	22	0	0	0	0	0	0	0
07:30	1	0	0	0	0	1	1	13	5	2	3	1	24	30	0	0	0	0	0	0	0
07:45	2	2	0	2	1	7	11	11	5	2	3	0	21	26	0	0	0	0	0	0	0
H/TOT	7	2	0	2	1	12	16	44	15	5	7	1	72	85	0	0	0	0	0	0	0
08:00	1	0	0	2	0	3	6	18	10	2	1	1	32	35	0	0	0	0	0	0	0
08:15	1	1	0	0	0	2	2	29	13	2	0	0	44	45	0	0	0	0	0	0	0
08:30	1	3	0	1	0	5	6	32	6	2	2	0	42	46	0	0	0	0	0	0	0
08:45	1	0	0	0	0	1	1	33	12	2	1	0	48	50	0	0	0	0	0	0	0
H/TOT	4	4	0	3	0	11	15	112	41	8	4	1	166	176	0	0	0	0	0	0	0
09:00	3	2	0	0	0	5	5	22	7	2	1	0	32	34	0	0	0	0	0	0	0
09:15	1	0	0	1	0	2	3	20	6	2	1	2	31	35	0	0	0	0	0	0	0
09:30	1	0	0	1	0	2	3	19	2	1	0	2	24	27	0	0	0	0	0	0	0
09:45	2	1	0	2	0	5	8	9	5	3	2	0	19	23	0	0	0	0	0	0	0
H/TOT	7	3	0	4	0	14	19	70	20	8	4	4	106	119	0	0	0	0	0	0	0
10:00	0	0	0	1	0	1	2	19	9	2	2	2	34	40	0	0	0	0	0	0	0
10:15	0	1	0	1	0	2	3	13	5	3	0	0	21	23	0	0	0	0	0	0	0
10:30	3	0	0	0	0	3	3	17	8	2	1	0	28	30	0	0	0	0	0	0	0
10:45	0	0	0	2	0	2	5	19	3	0	0	0	22	22	0	0	0	0	0	0	0
H/TOT	3	1	0	4	0	8	13	68	25	7	3	2	105	114	0	0	0	0	0	0	0
11:00	1	0	0	1	0	2	3	19	5	1	1	1	27	30	0	0	0	0	0	0	0
11:15	0	1	0	0	0	1	1	19	4	3	3	1	30	36	0	0	0	0	0	0	0
11:30	1	0	1	0	0	2	3	23	6	2	1	1	33	36	0	0	0	0	0	0	0
11:45	4	0	0	0	0	4	4	21	1	1	1	1	25	28	0	0	0	0	0	0	0
H/TOT	6	1	1	1	0	9	11	82	16	7	6	4	115	130	0	0	0	0	0	0	0
12:00	2	0	0	0	0	2	2	19	7	1	1	0	28	30	0	0	0	0	0	0	0
12:15	4	0	0	0	0	4	4	24	7	5	0	2	38	43	0	0	0	0	0	0	0
12:30	2	0	0	0	0	2	2	25	8	2	0	2	37	40	0	0	0	0	0	0	0
12:45	0	1	0	1	0	2	3	23	5	3	2	0	33	37	0	0	0	0	0	0	0
H/TOT	8	1	0	1	0	10	11	91	27	11	3	4	136	149	0	0	0	0	0	0	0

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS — OCTOBER 2017
MANUAL CLASSIFIED JUNCTION TURNING COUNTS — ATH/17/147

SITE: 01 DATE: 18th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Wednesday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

TIME	MOVEMENT 10 CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	MOVEMENT 11 CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	MOVEMENT 12 CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	0	1	0	0	3	4	24	8	5	4	0	41	49	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	32	16	2	1	1	52	55	0	0	0	0	0	0	0
13:30	3	0	0	0	0	3	3	27	7	2	3	0	39	44	0	0	0	0	0	0	0
13:45	0	2	0	0	0	2	2	15	6	4	1	0	26	29	0	0	0	0	0	0	0
H/TOT	5	2	1	0	0	8	9	98	37	13	9	1	158	177	0	0	0	0	0	0	0
14:00	3	0	0	0	0	3	3	31	7	2	1	0	41	43	0	0	0	0	0	0	0
14:15	1	2	1	0	0	4	5	34	8	1	2	0	45	48	0	0	0	0	0	0	0
14:30	2	2	0	0	1	5	6	28	10	2	1	1	42	45	0	0	0	0	0	0	0
14:45	2	0	0	1	0	3	4	40	10	0	2	0	52	55	0	0	0	0	0	0	0
H/TOT	8	4	1	1	1	15	18	133	35	5	6	1	180	191	0	0	0	0	0	0	0
15:00	3	0	0	0	0	3	3	23	6	2	0	0	31	32	0	0	0	0	0	0	0
15:15	1	0	0	1	0	2	3	32	12	6	2	1	53	60	0	0	0	0	0	0	0
15:30	1	1	0	0	0	2	2	30	5	4	1	0	40	43	0	0	0	0	0	0	0
15:45	1	1	0	0	0	2	2	28	6	3	0	0	37	39	0	0	0	0	0	0	0
H/TOT	6	2	0	1	0	9	10	113	29	15	3	1	161	173	0	0	0	0	0	0	0
16:00	2	1	0	0	0	3	3	44	10	5	0	1	60	64	0	0	0	0	0	0	0
16:15	4	0	0	1	0	5	6	46	7	3	1	2	59	64	0	0	0	0	0	0	0
16:30	4	0	0	1	0	5	6	61	24	2	3	1	91	97	0	0	0	0	0	0	0
16:45	3	0	1	0	0	4	5	41	12	2	3	0	58	63	0	0	0	0	0	0	0
H/TOT	13	1	1	2	0	17	20	192	53	12	7	4	268	287	0	0	0	0	0	0	0
17:00	2	0	0	0	0	2	2	45	11	2	0	0	58	59	0	0	0	0	0	0	0
17:15	3	0	0	1	0	4	5	71	8	6	0	1	86	90	0	0	0	0	0	0	0
17:30	6	1	0	0	0	7	7	49	12	0	3	0	64	68	0	0	0	0	0	0	0
17:45	4	1	0	0	0	5	5	65	13	1	0	0	79	80	0	0	0	0	0	0	0
H/TOT	15	2	0	1	0	18	19	230	44	9	3	1	287	296	0	0	0	0	0	0	0
18:00	2	1	1	0	0	4	5	50	8	0	2	1	61	65	0	0	0	0	0	0	0
18:15	2	0	0	0	0	2	2	56	7	0	1	1	65	67	0	0	0	0	0	0	0
18:30	3	1	0	0	0	4	4	37	10	1	0	0	48	49	0	0	0	0	0	0	0
18:45	1	1	0	0	0	2	2	26	1	0	0	0	27	27	0	0	0	0	0	0	0
H/TOT	8	3	1	0	0	12	13	169	26	1	3	2	201	207	0	0	0	0	0	0	0
P/TOT	90	26	5	20	2	143	174	1402	368	101	58	26	1955	2107	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 18th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Wednesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	2	0	0	2	3	0	0	0	0	0	0	0
07:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	2	1	1	0	0	4	5	0	0	0	0	0	0	0
07:45	0	2	0	1	0	3	4	3	0	0	0	0	3	3	0	0	0	0	0	0	0
H/TOT	0	3	0	1	0	4	5	5	1	3	0	0	9	11	0	0	0	0	0	0	0
08:00	0	1	0	5	0	6	13	0	1	2	0	0	3	4	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	2	0	2	0	0	4	5	0	0	0	0	0	0	0
08:30	0	0	0	1	0	1	2	1	0	3	0	0	4	6	0	0	0	0	0	0	0
08:45	0	0	0	1	0	1	2	3	0	0	0	0	3	3	0	0	0	0	0	0	0
H/TOT	0	1	0	7	0	8	17	6	1	7	0	0	14	18	0	0	0	0	0	0	0
09:00	0	1	0	0	0	1	1	4	1	0	0	0	5	5	0	0	0	0	0	0	0
09:15	0	0	0	1	0	1	2	1	0	1	0	0	2	3	0	0	0	0	0	0	0
09:30	0	1	0	1	0	2	3	0	0	1	0	0	1	2	0	0	0	0	0	0	0
09:45	0	0	0	2	0	2	5	1	1	1	0	0	3	4	0	0	0	0	0	0	0
H/TOT	0	2	0	4	0	6	11	6	2	3	0	0	11	13	0	0	0	0	0	0	0
10:00	0	0	0	1	0	1	2	0	0	3	1	0	4	7	1	0	0	0	0	1	1
10:15	0	1	0	1	0	2	3	0	0	1	1	0	2	4	0	0	0	0	0	0	0
10:30	0	0	0	4	0	4	9	2	2	2	0	0	6	7	0	0	0	0	0	0	0
10:45	0	0	1	1	0	2	4	0	1	1	0	0	2	3	0	0	0	0	0	0	0
H/TOT	0	1	1	7	0	9	19	2	3	7	2	0	14	20	1	0	0	0	0	1	1
11:00	0	0	0	1	0	1	2	0	0	2	1	0	3	5	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	2	2	1	0	0	5	6	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	1	0	4	0	0	5	7	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	4	0	2	0	0	6	7	0	0	0	0	0	0	0
H/TOT	0	0	0	1	0	1	2	7	2	9	1	0	19	25	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	2	0	2	0	0	4	5	0	0	0	0	0	0	0
12:15	0	0	1	0	0	1	2	3	0	4	0	0	7	9	0	0	0	0	0	0	0
12:30	0	0	0	1	0	1	2	1	0	3	0	0	4	6	0	0	0	0	0	0	0
12:45	0	0	0	1	0	1	2	0	1	1	0	0	2	3	1	0	0	0	0	1	1
H/TOT	0	0	1	2	0	3	6	6	1	10	0	0	17	22	1	0	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 18th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Wednesday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY & COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	1	0	1	0	2	3	2	0	4	0	0	6	8	0	0	0	0	0	0	0
13:15	0	0	0	1	0	1	2	0	0	1	0	0	1	2	0	0	0	0	0	0	0
13:30	0	0	0	1	0	1	2	1	0	2	0	0	3	4	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	3	0	1	0	0	4	5	0	0	0	0	0	0	0
H/TOT	0	1	0	3	0	4	8	6	0	8	0	0	14	18	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	1	1	0	0	2	3	1	2	2	0	0	5	6	0	0	0	0	0	0	0
14:30	0	2	1	0	0	3	4	0	1	2	0	0	3	4	0	0	0	0	0	0	0
14:45	0	0	0	1	0	1	2	7	0	4	0	1	12	15	0	0	0	0	0	0	0
H/TOT	0	3	2	1	0	6	8	8	3	8	0	1	20	25	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0
15:15	0	0	1	0	0	1	2	0	0	3	1	0	4	7	0	0	0	0	0	0	0
15:30	0	1	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	0	1	1	0	0	2	3	5	1	3	1	0	10	13	0	0	0	0	0	0	0
16:00	0	0	0	1	0	1	2	4	0	2	0	0	6	7	0	0	0	0	0	0	0
16:15	0	0	0	1	0	1	2	3	0	3	0	0	6	8	0	0	0	0	0	0	0
16:30	1	0	0	1	0	2	3	2	0	3	0	0	5	7	1	0	0	0	0	1	1
16:45	0	0	1	0	0	1	2	0	1	2	0	0	3	4	0	0	0	0	0	0	0
H/TOT	1	0	1	3	0	5	9	9	1	10	0	0	20	25	1	0	0	0	0	1	1
17:00	0	0	0	0	0	0	0	2	0	3	0	0	5	7	1	0	0	0	0	1	1
17:15	0	0	0	1	0	1	2	2	0	2	0	0	4	5	0	0	0	0	0	0	0
17:30	0	0	0	1	0	1	2	5	0	0	0	0	5	5	0	0	0	0	0	0	0
17:45	0	1	0	1	0	2	3	3	1	1	0	0	5	6	0	0	0	0	0	0	0
H/TOT	0	1	0	3	0	4	8	12	1	6	0	0	19	22	1	0	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	3	3	0	0	6	8	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	3	0	2	0	0	5	6	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	3	2	1	0	0	6	7	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	2	1	2	0	0	5	6	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	8	6	8	0	0	22	26	0	1	0	0	0	1	1
P/TOT	1	13	6	32	0	52	97	80	22	82	4	1	189	236	4	1	0	0	0	5	5

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 18th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Wednesday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 18th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Wednesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	4
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	1	2	3	0	1	0	0	4	5
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	1	0	0	0	2	2
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	1	0	0	1	2
H/TOT	0	1	0	0	0	1	1	1	0	0	1	0	2	3	1	0	1	0	0	2	3
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	1	0	0	1	0	2	3	2	1	0	0	0	3	3
17:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	2	0	0	1	0	3	4	2	0	0	0	0	2	2
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:30	1	0	0	0	0	1	1	2	0	0	0	0	2	2	1	0	0	0	0	1	1
18:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	1	0	0	0	0	1	1	3	0	0	0	0	3	3	5	0	0	0	0	5	5
P/TOT	5	2	0	1	0	8	9	13	0	2	11	0	26	41	22	4	4	0	0	30	32

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 18th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Wednesday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	6	0	0	0	0	6	6	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	1	0	0	0	1	1
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
07:45	1	0	0	0	0	1	1	0	1	3	1	0	5	8	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	8	1	3	1	0	13	16	0	1	0	1	0	2	3
08:00	1	0	0	0	0	1	1	5	0	1	1	0	7	9	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	5	1	3	0	0	9	11	0	0	0	0	0	0	0
08:30	0	1	0	0	0	1	1	3	1	1	0	0	5	6	0	1	2	0	0	3	4
08:45	1	0	0	0	0	1	1	3	0	0	0	0	3	3	1	0	0	1	0	2	3
H/TOT	2	1	0	0	0	3	3	16	2	5	1	0	24	28	1	1	2	1	0	5	7
09:00	1	0	0	0	0	1	1	3	0	0	0	1	4	5	2	1	0	0	0	3	3
09:15	1	0	0	0	0	1	1	6	0	2	0	0	8	9	1	0	0	0	0	1	1
09:30	0	0	0	0	0	0	0	2	1	1	0	0	4	5	2	0	0	0	0	2	2
09:45	0	0	0	0	0	0	0	1	0	2	0	0	3	4	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	12	1	5	0	1	19	23	5	1	0	0	0	6	6
10:00	0	0	0	0	0	0	0	1	0	3	0	0	4	6	1	1	0	0	0	2	2
10:15	0	0	0	0	0	0	0	1	0	1	0	0	2	3	2	0	0	0	0	2	2
10:30	0	0	1	0	0	1	2	1	0	2	0	0	3	4	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	1	0	1	0	0	2	3	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	1	2	4	0	7	0	0	11	15	3	1	0	0	0	4	4
11:00	1	0	0	0	0	1	1	3	1	1	0	0	5	6	0	0	0	0	0	0	0
11:15	0	0	0	1	0	1	2	0	0	3	0	0	3	5	1	1	0	0	0	2	2
11:30	0	0	0	0	0	0	0	1	0	2	0	0	3	4	0	1	1	0	0	2	3
11:45	1	0	0	0	0	1	1	1	1	2	0	0	4	5	1	1	0	0	0	2	2
H/TOT	2	0	0	1	0	3	4	5	2	8	0	0	15	19	2	3	1	0	0	6	7
12:00	0	0	0	1	0	1	2	0	0	2	0	0	2	3	0	1	0	1	0	2	3
12:15	0	0	0	0	0	0	0	2	0	4	0	0	6	8	1	0	0	0	0	1	1
12:30	1	0	0	1	0	2	3	2	0	3	0	0	5	7	2	1	0	0	0	3	3
12:45	0	0	1	0	0	1	2	4	0	1	0	0	5	6	0	1	0	0	0	1	1
H/TOT	1	0	1	2	0	4	7	8	0	10	0	0	18	23	3	3	0	1	0	7	8

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 02 DATE: 18th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Wednesday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	1	0	0	2	3	2	1	3	0	0	6	8	2	0	0	0	0	2	2
13:15	1	0	0	0	0	1	1	3	0	3	0	0	6	8	0	0	0	1	0	1	2
13:30	0	0	0	0	0	0	0	1	1	2	0	0	4	5	2	0	0	0	0	2	2
13:45	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0
H/TOT	2	0	1	0	0	3	4	6	2	9	0	0	17	22	4	0	0	1	0	5	6
14:00	0	0	0	0	0	0	0	2	1	4	0	0	7	9	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	1	2
14:30	0	0	0	1	0	1	2	0	1	0	0	0	1	1	0	0	1	1	0	2	4
14:45	0	0	0	0	0	0	0	2	0	2	0	0	4	5	0	0	0	0	0	0	0
H/TOT	0	0	0	1	0	1	2	5	2	6	0	0	13	16	1	0	2	1	0	4	6
15:00	0	0	0	1	0	1	2	4	0	1	0	0	5	6	2	0	0	0	1	3	4
15:15	1	0	0	0	0	1	1	2	0	2	0	0	4	5	2	1	1	1	0	5	7
15:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0	1	2
15:45	1	0	0	1	0	2	3	1	0	2	0	0	3	4	1	0	0	0	0	1	1
H/TOT	2	0	0	2	0	4	7	8	0	5	0	0	13	16	5	1	1	2	1	10	14
16:00	0	0	1	0	0	1	2	2	0	3	0	0	5	7	0	0	0	0	0	0	0
16:15	0	1	0	1	0	2	3	2	0	2	1	0	5	7	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	2	0	2	0	0	4	5	0	0	0	0	0	0	0
16:45	1	0	0	2	0	3	6	3	0	4	0	0	7	9	0	0	0	0	0	0	0
H/TOT	1	1	1	3	0	6	10	9	0	11	1	0	21	28	1	0	0	0	0	1	1
17:00	0	0	0	0	0	0	0	8	0	2	0	0	10	11	2	0	0	0	0	2	2
17:15	1	0	0	2	0	3	6	3	0	2	0	0	5	6	1	0	0	0	0	1	1
17:30	0	0	0	0	0	0	0	3	0	2	0	0	5	6	0	1	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	2	0	0	2	3	0	0	0	0	0	0	0
H/TOT	1	0	0	2	0	3	6	14	0	8	0	0	22	26	3	1	0	0	0	4	4
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
18:15	1	0	0	0	0	1	1	0	1	2	0	0	3	4	0	0	0	0	0	0	0
18:30	0	1	0	0	0	1	1	4	1	2	0	0	7	8	0	0	0	0	0	0	0
18:45	3	0	0	0	0	3	3	1	0	4	0	0	5	7	1	0	0	0	0	1	1
H/TOT	4	1	0	0	0	5	5	6	2	8	0	0	16	20	2	0	0	0	0	2	2
P/TOT	18	3	4	11	0	36	52	101	12	85	3	1	202	249	30	12	6	7	1	56	69

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 18th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Wednesday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	2	0	2	5
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	2	0	2	5
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	5
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	7	0	10	19
08:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0	1	2
08:45	0	1	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	2	0	0	0	0	2	2	0	3	0	10	0	13	26
09:00	3	0	0	0	1	4	5	0	0	0	1	0	1	2	0	0	0	1	0	1	2
09:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	1	1
09:30	1	0	0	0	0	1	1	0	0	1	0	0	1	2	0	0	0	1	0	1	2
09:45	0	0	0	0	0	0	0	0	0	0	2	0	2	5	1	0	0	1	0	2	3
H/TOT	4	0	0	0	1	5	6	1	0	1	3	0	5	9	1	1	0	3	0	5	9
10:00	1	1	0	0	0	2	2	0	0	0	1	0	1	2	0	1	0	1	0	2	3
10:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	2	1	0	0	0	3	3
10:30	0	2	0	1	0	3	4	0	0	1	0	0	1	2	0	1	0	2	0	3	6
10:45	0	0	1	1	0	2	4	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	1	4	1	2	0	8	11	0	0	1	1	0	2	4	2	3	0	4	0	9	14
11:00	1	1	0	0	0	2	2	0	0	0	1	0	1	2	0	1	0	1	0	2	3
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	1	2	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	3	0	0	0	5	5	0	0	0	1	0	1	2	0	1	0	1	0	2	3
12:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	1	1	0	1	0	3	4	1	0	0	0	0	1	1	0	0	1	0	0	1	2
12:30	2	1	0	0	0	3	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0
12:45	1	1	1	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	6	3	1	1	0	11	13	2	0	0	0	0	2	2	0	0	1	0	0	1	2

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 02 DATE: 18th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Wednesday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	0	2	5
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	1	0	0	1	0	2	3	0	0	0	1	0	1	2	0	0	0	1	0	1	2
13:45	1	0	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	2	0	1	1	0	4	6	0	0	0	2	0	2	5	0	0	0	4	0	4	9
14:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	0	0	1	1
14:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	2	5
14:30	1	1	0	1	0	3	4	0	0	1	0	0	1	2	0	0	1	1	0	2	4
14:45	4	1	1	0	0	6	7	1	0	0	0	0	1	1	1	1	0	0	0	2	2
H/TOT	5	3	1	1	0	10	12	1	0	1	1	0	3	5	1	2	1	3	0	7	11
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	5
15:15	0	0	0	0	0	0	0	1	0	1	0	0	2	3	0	0	0	0	0	0	0
15:30	0	0	0	1	0	1	2	0	1	0	0	0	1	1	0	0	0	0	0	0	0
15:45	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	2	0	2	5	1	1	1	0	0	3	4	0	0	0	2	0	2	5
16:00	2	1	1	0	0	4	5	0	0	1	0	0	1	2	0	0	0	1	0	1	2
16:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	1	0	2	4
16:30	1	0	0	0	0	1	1	1	0	0	1	0	2	3	0	0	0	0	0	0	0
16:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	5	1	1	0	0	7	8	2	0	1	1	0	4	6	0	1	1	2	0	4	7
17:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
17:15	0	1	0	1	0	2	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	2	0	3	6
17:45	0	0	0	1	0	1	2	1	1	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	0	1	0	2	0	3	6	4	1	0	0	0	5	5	1	1	0	2	0	4	7
18:00	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0
18:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	1	0	0	0	1	1
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	0	0	0	0	4	4	2	0	0	1	0	3	4	0	1	0	0	0	1	1
P/TOT	29	16	5	9	1	60	75	16	2	5	10	0	33	49	5	13	3	33	0	54	98

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 18th October 2017

LOCATION: Quarry Access DAY: Wednesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	2	0	1	0	3	4	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	2	0	2	5	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	2	0	2	0	4	7	0	0	0	1	0	1	2
H/TOT	0	0	0	0	0	0	0	0	4	0	5	0	9	16	0	0	0	1	0	1	2
08:00	2	0	1	0	0	3	4	0	1	0	5	0	6	13	0	0	0	2	0	2	5
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	7	0	10	19
08:30	1	1	2	0	0	4	5	0	0	0	2	0	2	5	0	0	0	1	0	1	2
08:45	1	0	0	0	0	1	1	0	0	0	2	0	2	5	0	0	0	0	0	0	0
H/TOT	4	1	3	0	0	8	10	0	1	0	9	0	10	22	0	3	0	10	0	13	26
09:00	2	1	0	0	0	3	3	0	1	1	0	0	2	3	0	0	0	2	0	2	5
09:15	1	0	0	0	0	1	1	0	0	0	2	0	2	5	0	0	0	0	0	0	0
09:30	2	0	0	1	0	3	4	0	1	0	1	0	2	3	0	0	1	1	0	2	4
09:45	0	0	0	0	0	0	0	0	0	0	2	0	2	5	0	0	0	2	0	2	5
H/TOT	5	1	0	1	0	7	8	0	2	1	5	0	8	15	0	0	1	5	0	6	13
10:00	1	0	0	0	0	1	1	0	1	0	1	0	2	3	0	2	0	2	0	4	7
10:15	2	0	0	0	0	2	2	0	1	0	1	0	2	3	0	1	0	0	0	1	1
10:30	0	0	0	0	0	0	0	0	0	0	4	0	4	9	0	1	0	2	0	3	6
10:45	0	0	1	0	0	1	2	0	0	0	1	0	1	2	0	0	1	2	0	3	6
H/TOT	3	0	1	0	0	4	5	0	2	0	7	0	9	18	0	4	1	6	0	11	19
11:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	0	2	5
11:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	1	0	0	0	1	1	0	0	1	0	0	1	2	0	1	0	0	0	1	1
11:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	3	0	0	0	5	5	0	0	1	1	0	2	4	0	1	0	2	0	3	6
12:00	0	0	0	0	0	0	0	0	1	0	1	0	2	3	0	0	0	0	0	0	0
12:15	1	0	0	0	0	1	1	0	0	1	0	0	1	2	0	1	1	1	0	3	5
12:30	5	0	0	0	0	5	5	0	1	0	1	0	2	3	0	1	0	0	0	1	1
12:45	0	1	0	0	0	1	1	0	0	0	2	0	2	5	0	0	0	0	0	0	0
H/TOT	6	1	0	0	0	7	7	0	2	1	4	0	7	13	0	2	1	1	0	4	6

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 18th October 2017

LOCATION: Quarry Access DAY: Wednesday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	0	0	0	0	2	2	0	1	0	1	0	2	3	0	0	0	3	0	3	7
13:15	0	0	0	0	0	0	0	0	0	0	3	0	3	7	0	0	0	0	0	0	0
13:30	2	0	0	0	0	2	2	0	0	0	1	0	1	2	0	0	0	3	0	3	7
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	4	0	0	0	0	4	4	0	1	0	5	0	6	13	0	0	0	7	0	7	16
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	0	2	3
14:15	0	0	0	0	0	0	0	0	1	2	0	0	3	4	0	0	0	2	0	2	5
14:30	0	0	1	0	0	1	2	0	2	1	1	0	4	6	0	1	2	2	0	5	9
14:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	2	1	0	0	3	4
H/TOT	1	0	1	0	0	2	3	0	3	3	2	0	8	12	0	4	3	5	0	12	20
15:00	2	0	0	0	1	3	4	0	0	0	0	0	0	0	0	0	0	2	0	2	5
15:15	3	0	1	1	0	5	7	0	1	1	0	0	2	3	0	0	0	0	0	0	0
15:30	0	1	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0
15:45	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	1	0	1	2
H/TOT	6	1	1	1	1	10	13	0	1	1	2	0	4	7	0	0	0	3	0	3	7
16:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	1	0	1	2
16:15	2	0	0	0	0	2	2	0	0	0	1	0	1	2	1	0	1	1	0	3	5
16:30	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	1	0	1	2
16:45	0	0	1	0	0	1	2	0	0	0	1	0	1	2	0	0	0	0	0	0	0
H/TOT	3	0	1	0	0	4	5	0	0	0	4	0	4	9	1	0	1	3	0	5	9
17:00	2	0	0	1	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	3	0	0	0	0	3	3	0	0	0	1	0	1	2	0	1	0	0	0	1	1
17:30	0	1	0	0	0	1	1	0	0	0	1	0	1	2	0	1	0	2	0	3	6
17:45	0	1	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	1	0	1	2
H/TOT	5	2	0	1	0	8	9	0	0	0	3	0	3	7	0	2	0	3	0	5	9
18:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	1	0	1	0	2	3
P/TOT	44	9	7	3	1	64	72	0	16	7	47	0	70	135	1	17	7	47	0	72	137

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 18th October 2017

LOCATION: Quarry Access DAY: Wednesday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03

DATE: 18th October 2017

LOCATION: Quarry Access

DAY: Wednesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	0	0	0	0	1	1
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2	0	1	0	0	3	4
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	6
H/TOT	0	0	0	0	0	0	0	0	1	0	0	0	1	1	7	1	0	0	0	8	8
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	4	6
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	0	0	5	6
16:15	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
H/TOT	0	0	1	0	0	1	2	0	0	0	0	0	0	0	6	2	2	0	0	10	11
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	1	0	7	8
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	6
P/TOT	0	0	2	1	0	3	5	0	2	1	1	0	4	6	49	14	6	5	1	75	86

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 19th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Thursday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01

DATE: 19th October 2017

LOCATION: N72 Junction @ Cappagh

DAY: Thursday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
P/TOT	0	1	0	0	0	1	1	0	1	0	0	0	1	1	1	0	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 19th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Thursday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	22	1	0	0	0	23	23	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	27	1	1	1	0	30	32	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	46	7	1	1	0	55	57	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	62	13	1	2	0	78	81	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	157	22	3	4	0	186	193	1	0	0	0	0	1	1
08:00	0	0	0	0	0	0	0	52	8	0	0	0	60	60	0	0	0	2	0	2	5
08:15	0	0	0	0	0	0	0	74	5	1	1	0	81	83	0	0	0	1	0	1	2
08:30	0	0	0	0	0	0	0	85	4	1	0	2	92	95	0	1	0	0	0	1	1
08:45	0	0	0	0	0	0	0	59	7	0	2	0	68	71	1	1	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	270	24	2	3	2	301	308	1	2	0	3	0	6	10
09:00	0	0	0	0	0	0	0	63	4	2	0	1	70	72	0	1	0	0	0	1	1
09:15	0	0	0	0	0	0	0	41	8	1	0	1	51	53	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	38	4	1	1	2	46	50	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	28	4	1	0	0	33	34	2	0	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	170	20	5	1	4	200	208	2	1	0	0	0	3	3
10:00	0	0	0	0	0	0	0	23	7	3	0	0	33	35	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	30	9	2	0	0	41	42	1	1	0	0	0	2	2
10:30	0	0	0	0	0	0	0	35	8	3	0	0	46	48	1	1	0	3	0	5	9
10:45	0	0	0	0	0	0	0	22	5	4	0	0	31	33	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	110	29	12	0	0	151	157	3	2	0	3	0	8	12
11:00	0	0	0	0	0	0	0	41	11	5	2	1	60	66	0	1	0	0	0	1	1
11:15	0	0	0	0	0	0	0	27	5	0	2	0	34	37	1	0	0	0	0	1	1
11:30	0	0	0	0	0	0	0	36	6	2	0	1	45	47	1	0	0	0	0	1	1
11:45	0	0	0	0	0	0	0	29	8	0	2	1	40	44	1	1	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	133	30	7	6	3	179	193	3	2	0	0	0	5	5
12:00	0	0	0	0	0	0	0	20	5	3	1	1	30	34	0	1	0	0	0	1	1
12:15	0	0	0	0	0	0	0	19	8	1	0	1	29	31	1	1	1	0	0	3	4
12:30	0	0	0	0	0	0	0	31	6	1	0	0	38	39	1	0	0	0	0	1	1
12:45	0	0	0	0	0	0	0	30	5	0	1	0	36	37	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	100	24	5	2	2	133	140	2	2	1	0	0	5	6

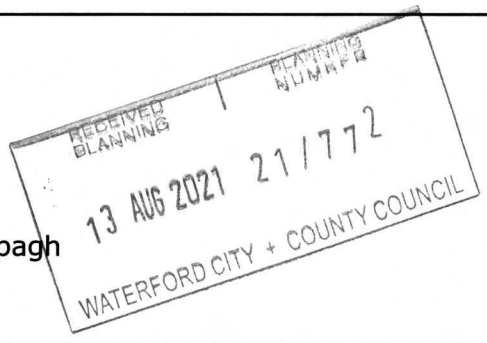
Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS

OCTOBER 2017
ATH/17/147

SITE: 01



DATE: 19th October 2017

LOCATION: N72 Junction @ Cappagh

DAY: Thursday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	25	4	0	2	0	31	34	0	0	0	1	0	1	2
13:15	0	0	0	0	0	0	0	20	8	2	1	0	31	33	1	0	1	2	0	4	7
13:30	0	0	0	0	0	0	0	29	5	2	1	0	37	39	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	27	4	2	1	1	35	38	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	101	21	6	5	1	134	145	2	0	1	3	0	6	10
14:00	0	0	0	0	0	0	0	27	4	3	1	1	36	40	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	34	4	1	1	0	40	42	1	1	0	0	0	2	2
14:30	0	0	0	0	0	0	0	27	8	4	1	1	41	45	0	0	0	1	0	1	2
14:45	0	0	0	0	0	0	0	38	8	1	2	0	49	52	1	0	0	1	0	2	3
H/TOT	0	0	0	0	0	0	0	126	24	9	5	2	166	179	3	1	0	2	0	6	9
15:00	0	0	0	0	0	0	0	44	6	0	0	0	50	50	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	32	5	3	1	0	41	44	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	44	1	2	0	2	49	52	1	0	0	0	0	1	1
15:45	0	1	0	0	0	1	1	33	3	1	2	2	41	46	1	0	0	0	0	1	1
H/TOT	0	1	0	0	0	1	1	153	15	6	3	4	181	192	2	0	0	0	0	2	2
16:00	0	0	0	0	0	0	0	26	7	1	2	0	36	39	1	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	36	5	2	1	1	45	48	2	0	0	0	0	2	2
16:30	0	0	0	0	0	0	0	34	8	0	5	0	47	54	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	23	5	1	0	1	30	32	1	0	0	2	0	3	6
H/TOT	0	0	0	0	0	0	0	119	25	4	8	2	158	172	4	0	0	2	0	6	9
17:00	0	0	0	0	0	0	0	21	9	4	0	0	34	36	1	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	25	3	0	1	0	29	30	1	0	0	0	0	1	1
17:30	0	0	0	0	0	0	0	16	2	3	2	0	23	27	2	0	0	0	0	2	2
17:45	0	0	0	0	0	0	0	31	5	2	1	3	42	47	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	93	19	9	4	3	128	141	5	0	0	0	0	5	5
18:00	0	0	0	0	0	0	0	25	5	1	0	0	31	32	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	21	3	2	0	0	26	27	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	19	0	0	0	0	19	19	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	19	1	0	1	0	21	22	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	84	9	3	1	0	97	100	0	0	0	0	0	0	0
P/TOT	0	1	0	0	0	1	1	1616	262	71	42	23	2014	2127	28	10	2	13	0	53	71

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 19th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Thursday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	7	8
07:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	1	1	0	0	5	6
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	13	2	2	0	0	17	18
08:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	4	1	0	1	1	7	9
08:15	0	1	0	2	0	3	6	0	0	0	0	0	0	0	2	0	0	0	0	2	2
08:30	0	1	0	1	0	2	3	0	0	0	0	0	0	0	1	1	0	0	0	2	2
08:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	1	3	5
H/TOT	2	3	0	3	0	8	12	0	0	0	0	0	0	0	8	2	1	1	2	14	18
09:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	4	0	0	1	1	6	8
09:15	3	0	0	0	0	3	3	0	0	0	0	0	0	0	5	0	0	0	0	5	5
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	5	6
H/TOT	5	0	0	0	0	5	5	0	0	0	0	0	0	0	14	0	0	2	1	17	21
10:00	0	2	0	0	0	2	2	0	0	0	0	0	0	0	1	1	0	0	0	2	2
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
10:30	0	0	1	1	0	2	4	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:45	1	0	1	2	0	4	7	0	0	0	0	0	0	0	1	0	0	1	0	2	3
H/TOT	1	2	2	3	0	8	13	0	0	0	0	0	0	0	5	1	0	1	0	7	8
11:00	0	1	1	0	0	2	3	0	0	0	0	0	0	0	2	2	0	0	0	4	4
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	4	5
11:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	1	3	0	6	10
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5
H/TOT	2	1	1	0	0	4	5	0	0	0	0	0	0	0	11	3	1	4	0	19	25
12:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0	1	1	0	1	0	3	4
12:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	3	4
12:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	1	0	0	3	4	0	0	0	0	0	0	0	3	1	0	3	0	7	11

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 19th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Thursday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	1	0	3	4
13:15	0	0	0	1	0	1	2	0	0	0	0	0	0	0	1	1	0	0	0	2	2
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:45	0	0	0	2	0	2	5	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	0	1	0	3	0	4	8	0	0	0	0	0	0	0	4	1	0	2	0	7	10
14:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	4	0	1	1	0	6	8
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	8	8
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
14:45	0	0	0	2	0	2	5	0	0	0	0	0	0	0	1	1	1	2	0	5	8
H/TOT	1	1	0	2	0	4	7	0	0	0	0	0	0	0	14	2	2	3	0	21	26
15:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	7	1	0	0	0	8	8
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	7	8
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	14	1	1	1	0	17	19
16:00	2	0	1	0	0	3	4	0	0	0	0	0	0	0	1	0	0	1	0	2	3
16:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
16:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	2	0	1	0	0	3	4
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	4	1	1	0	0	6	7	0	0	0	0	0	0	0	7	0	1	1	0	9	11
17:00	0	0	0	1	0	1	2	0	0	0	0	0	0	0	6	1	0	1	0	8	9
17:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	1	1	0	1	0	3	4	0	0	0	0	0	0	0	11	1	0	1	0	13	14
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
18:15	0	0	1	0	0	1	2	0	0	0	0	0	0	0	3	3	0	0	0	6	6
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
18:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	0	1	1	0	0	2	3	0	0	0	0	0	0	0	12	3	0	0	0	15	15
P/TOT	20	11	6	12	0	49	68	0	0	0	0	0	0	0	116	17	8	19	3	163	195

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 19th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Thursday

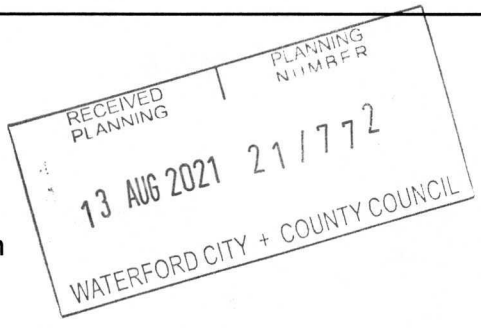
	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	1	0	0	0	0	1	1	12	1	0	1	1	15	17	0	0	0	0	0	0	0
07:15	1	0	1	0	0	2	3	14	0	1	1	1	17	20	0	0	0	0	0	0	0
07:30	1	0	0	1	0	2	3	16	0	0	1	0	17	18	0	0	0	0	0	0	0
07:45	2	0	0	1	0	3	4	18	8	0	1	0	27	28	0	0	0	0	0	0	0
H/TOT	5	0	1	2	0	8	11	60	9	1	4	2	76	84	0	0	0	0	0	0	0
08:00	0	0	0	0	1	1	2	28	4	0	1	1	34	36	0	0	0	0	0	0	0
08:15	1	0	0	0	0	1	1	28	14	0	4	2	48	55	0	1	0	0	0	1	1
08:30	2	0	1	0	0	3	4	37	4	2	2	0	45	49	0	0	0	0	0	0	0
08:45	1	0	0	1	0	2	3	28	5	0	1	0	34	35	0	0	0	0	0	0	0
H/TOT	4	0	1	1	1	7	10	121	27	2	8	3	161	175	0	1	0	0	0	1	1
09:00	2	0	0	0	0	2	2	19	12	0	1	0	32	33	0	0	0	0	0	0	0
09:15	2	1	0	0	0	3	3	25	3	2	6	2	38	49	0	0	0	0	0	0	0
09:30	0	0	0	1	0	1	2	18	6	2	2	2	30	36	0	0	0	0	0	0	0
09:45	1	0	0	0	0	1	1	21	8	1	1	1	32	35	0	0	0	0	0	0	0
H/TOT	5	1	0	1	0	7	8	83	29	5	10	5	132	153	0	0	0	0	0	0	0
10:00	2	0	0	0	0	2	2	21	4	2	3	0	30	35	0	0	0	0	0	0	0
10:15	2	0	0	1	0	3	4	20	4	1	3	1	29	34	0	0	0	0	0	0	0
10:30	2	2	0	0	0	4	4	25	6	6	3	0	40	47	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	23	5	6	1	0	35	39	0	0	0	0	0	0	0
H/TOT	6	2	0	1	0	9	10	89	19	15	10	1	134	156	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	14	7	0	2	0	23	26	0	0	0	0	0	0	0
11:15	2	1	0	2	0	5	8	29	8	3	0	2	42	46	0	0	0	0	0	0	0
11:30	1	1	0	0	0	2	2	36	7	3	0	0	46	48	0	0	0	0	0	0	0
11:45	0	2	0	1	0	3	4	17	8	3	0	0	28	30	0	0	0	0	0	0	0
H/TOT	3	4	0	3	0	10	14	96	30	9	2	2	139	148	0	0	0	0	0	0	0
12:00	3	0	0	1	0	4	5	35	4	1	0	1	41	43	0	0	0	0	0	0	0
12:15	1	1	0	1	0	3	4	28	6	2	1	1	38	41	0	0	0	0	0	0	0
12:30	0	1	0	1	0	2	3	37	9	3	2	1	52	57	0	0	0	0	0	0	0
12:45	0	1	1	0	0	2	3	34	9	0	0	0	43	43	0	0	0	0	0	0	0
H/TOT	4	3	1	3	0	11	15	134	28	6	3	3	174	184	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01



DATE: 19th October 2017

LOCATION: N72 Junction @ Cappagh

DAY: Thursday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	32	4	0	2	0	38	41	0	0	0	0	0	0	0
13:15	1	0	0	0	0	1	1	27	4	1	3	2	37	43	0	0	0	0	0	0	0
13:30	3	1	0	1	0	5	6	31	6	1	0	1	39	41	0	0	0	0	0	0	0
13:45	1	1	0	1	0	3	4	34	5	1	4	3	47	56	0	0	0	0	0	0	0
H/TOT	5	2	0	2	0	9	12	124	19	3	9	6	161	180	0	0	0	0	0	0	0
14:00	1	1	0	1	0	3	4	30	6	1	1	0	38	40	0	0	0	0	0	0	0
14:15	3	0	1	0	0	4	5	35	2	1	0	0	38	39	0	0	0	0	0	0	0
14:30	2	1	0	2	2	7	12	36	6	3	2	0	47	51	0	0	0	0	0	0	0
14:45	5	0	0	0	0	5	5	43	5	3	1	0	52	55	0	0	0	0	0	0	0
H/TOT	11	2	1	3	2	19	25	144	19	8	4	0	175	184	0	0	0	0	0	0	0
15:00	2	0	0	0	0	2	2	27	4	0	1	0	32	33	0	0	0	0	0	0	0
15:15	3	2	1	1	0	7	9	36	8	1	2	2	49	54	0	0	0	0	0	0	0
15:30	4	2	0	0	0	6	6	44	4	5	0	0	53	56	0	0	0	0	0	0	0
15:45	6	0	0	1	0	7	8	35	11	1	1	0	48	50	0	0	0	0	0	0	0
H/TOT	15	4	1	2	0	22	25	142	27	7	4	2	182	193	0	0	0	0	0	0	0
16:00	4	0	0	0	1	5	6	33	10	1	1	0	45	47	0	0	0	0	0	0	0
16:15	11	1	1	0	0	13	14	57	7	4	0	0	68	70	0	0	0	0	0	0	0
16:30	3	0	0	0	0	3	3	53	12	3	1	0	69	72	0	0	0	0	0	0	0
16:45	1	0	0	0	0	1	1	41	7	3	0	0	51	53	0	0	0	0	0	0	0
H/TOT	19	1	1	0	1	22	24	184	36	11	2	0	233	241	0	0	0	0	0	0	0
17:00	5	0	0	0	0	5	5	60	3	2	0	0	65	66	0	0	0	0	0	0	0
17:15	4	1	0	0	0	5	5	54	7	1	0	1	63	65	0	0	0	0	0	0	0
17:30	3	1	0	0	0	4	4	66	11	1	2	0	80	83	0	0	0	0	0	0	0
17:45	8	0	0	0	0	8	8	51	6	0	1	1	59	61	0	0	0	0	0	0	0
H/TOT	20	2	0	0	0	22	22	231	27	4	3	2	267	275	0	0	0	0	0	0	0
18:00	1	0	0	0	0	1	1	52	4	0	1	0	57	58	0	0	0	0	0	0	0
18:15	4	0	0	0	0	4	4	47	4	0	1	1	53	55	1	0	0	0	0	1	1
18:30	5	1	0	0	0	6	6	32	5	0	1	0	38	39	0	0	0	0	0	0	0
18:45	2	1	0	0	0	3	3	26	2	1	0	0	29	30	0	0	0	0	0	0	0
H/TOT	12	2	0	0	0	14	14	157	15	1	3	1	177	182	1	0	0	0	0	1	1
P/TOT	109	23	6	18	4	160	190	1565	285	72	62	27	2011	2155	1	1	0	0	0	2	2

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 19th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Thursday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 19th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Thursday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	1	0	0	1	2	1	1	0	0	0	2	2	0	0	0	0	0	0	0
:15	0	0	0	2	0	2	5	1	0	0	0	0	1	1	0	0	0	0	0	0	0
13:30	0	0	0	2	0	2	5	1	0	0	0	0	1	1	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	0	0	1	4	0	5	11	4	2	0	0	0	6	6	0	0	0	0	0	0	0
14:00	1	0	0	2	0	3	6	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	2	2	1	0	0	5	6	0	0	0	0	0	0	0
14:30	0	0	0	3	0	3	7	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	6	1	0	1	2	10	13	0	0	0	0	0	0	0
H/TOT	1	0	0	5	0	6	13	10	3	1	1	2	17	21	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
15:15	0	2	0	1	0	3	4	2	0	1	0	0	3	4	0	0	0	0	0	0	0
15:30	1	0	1	0	0	2	3	3	1	0	0	0	4	4	0	1	0	0	0	1	1
15:45	0	0	0	1	0	1	2	5	1	0	0	0	6	6	0	0	0	0	0	0	0
H/TOT	1	2	1	2	0	6	9	12	2	1	0	0	15	16	0	1	0	0	0	1	1
16:00	0	0	0	0	1	1	2	3	0	0	0	0	3	3	1	0	0	0	0	1	1
:15	1	0	0	0	0	1	1	9	1	0	0	0	10	10	0	0	0	0	0	0	0
16:30	1	0	1	0	0	2	3	3	0	0	0	0	3	3	0	0	0	0	0	0	0
16:45	0	0	0	1	0	1	2	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	2	0	1	1	1	5	8	17	1	0	0	0	18	18	1	0	0	0	0	1	1
17:00	0	0	0	1	0	1	2	5	0	0	0	0	5	5	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	3	1	0	0	0	4	4	0	0	0	0	0	0	0
17:30	1	0	0	0	0	1	1	3	1	0	0	0	4	4	0	0	0	0	0	0	0
17:45	1	0	0	0	0	1	1	4	0	0	0	0	4	4	0	0	0	0	0	0	0
H/TOT	3	0	0	1	0	4	5	15	2	0	0	0	17	17	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
18:15	1	0	0	0	0	1	1	2	0	0	0	0	2	2	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
18:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	8	0	0	0	0	8	8	1	0	0	0	0	1	1
P/TOT	14	6	8	31	1	60	105	99	20	2	1	2	124	128	3	1	0	0	0	4	4

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 19th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Thursday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 02 DATE: 19th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Thursday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	0	0	0	0	1	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	1	1	0	1	0	3	4	2	0	0	0	0	2	2
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0
P/TOT	3	1	0	0	0	4	4	9	6	1	7	0	23	33	13	5	1	0	0	19	20

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 19th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Thursday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY & COUNTY COUNCIL

DATE: 19th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh

DAY: Thursday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
13:15	0	1	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	1	1	0	0	0	2	2	2	1	0	0	0	3	3	1	0	0	0	0	1	1
14:00	0	0	0	0	0	0	0	3	2	0	0	0	5	5	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	1	0	0	0	1	1
14:30	0	0	0	0	0	0	0	2	0	1	0	0	3	4	0	0	1	0	0	1	2
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
H/TOT	0	0	0	0	0	0	0	8	2	1	0	0	11	12	1	1	2	0	0	4	5
15:00	0	0	0	0	0	0	0	7	0	0	0	0	7	7	2	0	0	0	1	3	4
15:15	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	1	0	0	1	2
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	12	0	0	0	0	12	12	2	0	1	0	1	4	6
16:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1
16:30	0	1	0	0	0	1	1	3	1	1	0	0	5	6	1	1	0	0	0	2	2
16:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	8	1	1	0	0	10	11	2	1	0	0	0	3	3
17:00	0	0	0	0	0	0	0	5	1	0	0	0	6	6	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	2	0	0	0	0	2	2	0	0	1	0	0	1	2
17:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	9	1	0	0	0	10	10	0	0	1	0	0	1	2
18:00	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	1	0	0	0	1	1
18:15	0	0	0	0	0	0	0	2	1	0	0	0	3	3	1	0	0	0	0	1	1
18:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	5	2	0	0	0	7	7	1	1	0	0	0	2	2
P/TOT	6	3	1	6	0	16	24	99	16	5	1	2	123	129	13	8	7	5	1	34	45

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 19th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Thursday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 02 DATE: 19th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Thursday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	2	0	0	0	2	2	0	1	0	0	0	1	1	0	1	0	1	0	2	3
13:30	0	1	0	2	0	3	6	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:45	1	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	3	0	3	0	7	11	0	1	0	0	0	1	1	1	1	0	1	0	3	4
14:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	1	0	1	2
14:15	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2	0	0	0	0	2	2
14:30	0	1	0	1	0	2	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	4	0	5	10
H/TOT	0	1	0	1	0	2	3	0	1	0	2	0	3	6	3	1	0	5	0	9	16
15:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	1	0	0	2	3
15:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
15:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	1	0	0	0	2	2	1	0	0	0	0	1	1	0	1	1	1	0	3	5
16:00	0	1	0	0	0	1	1	0	0	0	1	0	1	2	1	0	1	1	0	3	5
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	0	1	1	0	0	2	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	2	2	0	0	4	5	1	0	0	1	0	2	3	2	0	1	1	0	4	6
17:00	0	1	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	2	0	3	6
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	1	0	0	0	3	3	1	0	0	0	0	1	1	1	0	0	2	0	3	6
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
18:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	2	2
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	2	1	0	0	0	3	3	1	0	0	0	0	1	1	5	1	0	0	0	6	6
P/TOT	13	13	8	8	1	43	58	9	3	1	8	0	21	32	15	5	5	28	0	53	92

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 19th October 2017

LOCATION: Quarry Access DAY: Thursday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 19th October 2017

LOCATION: Quarry Access DAY: Thursday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	1	0	0	0	1	1	0	0	1	0	0	1	2	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	2	0	2	5	0	0	0	1	0	1	2
13:30	0	0	0	0	0	0	0	0	0	0	2	0	2	5	1	0	0	2	0	3	6
13:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	1	1	0	0	0	2	2	0	0	1	4	0	5	11	1	0	0	4	0	5	10
14:00	2	0	0	0	0	2	2	0	0	0	2	0	2	5	0	0	0	2	0	2	5
14:15	1	2	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	1	2
14:30	0	0	0	0	0	0	0	0	0	1	4	0	5	11	0	1	0	1	0	2	3
14:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	1	0	4	0	5	10
H/TOT	3	2	1	0	0	6	7	0	0	1	6	0	7	15	0	2	0	8	0	10	20
15:00	2	0	0	0	1	3	4	0	0	0	0	0	0	0	1	0	1	0	0	2	3
15:15	0	0	1	0	0	1	2	0	2	0	1	0	3	4	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	1	0	1	0	0	2	3	0	0	0	1	0	1	2
15:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0
H/TOT	2	0	1	0	1	4	6	1	2	1	2	0	6	9	1	0	1	1	0	3	5
16:00	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	1	0	1	0	2	3
16:15	3	0	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	2	1	0	0	0	3	3	0	0	1	0	0	1	2	0	0	1	0	0	1	2
16:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	1	0	0	1	2
H/TOT	5	1	0	0	1	7	8	0	0	1	1	0	2	4	1	1	2	1	0	5	7
17:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	0	2	5
17:15	1	0	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	0	1	0	0	5	6	0	0	0	1	0	1	2	0	0	0	2	0	2	5
18:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	3	2	0	0	0	5	5	0	0	0	0	0	0	0	0	1	0	0	0	1	1
P/TOT	28	14	8	0	2	52	58	8	6	8	43	0	65	125	5	6	10	43	0	64	125

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 19th October 2017

LOCATION: Quarry Access DAY: Thursday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 19th October 2017

LOCATION: Quarry Access DAY: Thursday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	6	6
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	1	0	0	1	2	0	0	0	0	0	0	0	3	1	0	0	0	4	4
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:30	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	1	0	0	1	2	0	0	0	0	0	0	0	1	2	0	0	0	3	3
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3	5
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
16:45	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	0	0	1	2	2	1	1	1	0	5	7
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5
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	1	0	0	0	0	1	1
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	9
P/TOT	0	0	2	0	0	2	3	0	0	4	0	0	4	6	32	15	4	1	1	53	57

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 19th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Thursday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	4	1	0	3	0	8	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	3	0	1	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	13	1	1	3	0	18	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	2	1	0	1	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:30	0	1	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	2	0	0	0	1	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	5	3	0	2	1	11	15	0	0	0	0	0	0	0	0	1	0	0	0	1	1
09:00	6	0	0	2	1	9	13	1	0	0	0	0	1	1	1	0	0	0	0	1	1
09:15	6	0	0	0	0	6	6	0	0	0	0	1	1	2	0	1	0	0	0	1	1
09:30	2	1	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:45	2	0	0	1	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	16	1	0	3	1	21	26	1	0	0	0	1	2	3	2	1	0	0	0	3	3
10:00	1	2	0	1	0	4	5	1	0	0	0	0	1	1	1	0	0	0	0	1	1
10:15	1	2	3	0	0	6	8	0	0	0	0	1	1	2	0	0	0	0	0	0	0
10:30	0	1	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	4	5	4	1	0	14	17	2	0	0	0	1	3	4	1	0	0	0	0	1	1
11:00	0	0	0	1	0	1	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
11:15	3	0	0	1	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	6	1	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	12	1	0	2	0	15	18	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:00	2	1	0	0	0	3	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	1	0	0	0	5	5	1	0	0	0	0	1	1	0	0	0	0	0	0	0

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
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SITE: 04 DATE: 19th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Thursday

RECEIVED PLANNING | PLANNING NUMBER
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	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2
13:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	3	1	0	0	0	4	4	0	0	0	0	0	0	0	1	0	0	0	1	2	3
14:00	2	0	0	0	0	2	2	2	0	0	0	0	2	2	1	0	0	0	0	1	1
14:15	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	5	1	1	0	0	7	8	2	0	0	0	0	2	2	1	0	0	0	0	1	1
15:00	7	0	0	0	1	8	9	1	0	0	0	0	1	1	1	0	0	0	0	1	1
15:15	2	0	1	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	10	0	1	0	1	12	14	2	0	0	0	0	2	2	1	0	0	0	0	1	1
16:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	3	2	1	0	0	6	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	8	2	1	0	0	11	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	5	1	0	0	0	6	6	0	0	0	0	0	0	0	1	1	0	0	0	2	2
17:15	2	0	1	0	0	3	4	0	1	0	0	0	1	1	0	0	0	0	0	0	0
17:30	2	0	0	0	0	2	2	0	0	1	0	0	1	2	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	9	1	1	0	0	11	12	0	1	1	0	0	2	3	1	1	0	0	0	2	2
18:00	1	2	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	5	3	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	94	20	9	11	3	137	159	8	1	1	0	2	12	15	8	3	0	0	1	12	13

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 19th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Thursday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 19th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Thursday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	1	1
13:15	1	1	0	0	0	2	2	0	1	0	0	0	1	1	1	1	0	0	0	2	2
13:30	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	2	0	2	5
13:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	1	0	3	4
H/TOT	1	1	0	0	0	2	2	3	2	0	0	0	5	5	2	3	0	3	0	8	12
14:00	2	2	0	0	0	4	4	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	0	2	0	0	0	2	2	2	0	1	0	0	3	4
14:30	2	0	1	0	0	3	4	1	0	0	0	0	1	1	1	1	0	1	0	3	4
14:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0	7	1	0	1	2	11	14
H/TOT	4	2	2	0	0	8	9	1	2	0	0	0	3	3	11	2	1	2	2	18	23
15:00	2	0	0	0	0	2	2	0	1	0	0	0	1	1	2	0	0	0	0	2	2
15:15	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	1	1	0	0	3	4
15:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	1	0	0	0	3	3
15:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	1	0	0	0	6	6
H/TOT	4	0	0	0	0	4	4	3	1	0	0	0	4	4	10	3	1	0	0	14	15
16:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	1	0	0	0	4	4
16:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	9	1	0	0	0	10	10
16:30	1	1	0	0	0	2	2	3	0	0	0	0	3	3	1	1	1	0	0	3	4
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	4
H/TOT	2	1	0	0	0	3	3	4	0	0	0	0	4	4	15	3	2	0	0	20	21
17:00	0	0	0	0	0	0	0	2	1	0	0	0	3	3	3	1	0	0	0	4	4
17:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	1	0	0	0	3	3
17:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	1	0	0	0	4	4
17:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	0	0	0	0	4	4
H/TOT	1	0	0	0	0	1	1	5	1	0	0	0	6	6	12	3	0	0	0	15	15
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	1	0	0	0	3	3
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	10	1	0	0	0	11	11
P/TOT	24	7	4	1	0	36	39	32	10	3	0	0	45	47	93	28	8	9	3	141	160

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 19th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Thursday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	7	1	0	0	0	8	8	3	0	1	0	0	4	5	0	0	0	0	0	0	0
07:15	7	0	2	1	0	10	12	5	0	1	2	0	8	11	3	0	0	0	0	3	3
07:30	15	0	0	0	0	15	15	3	0	0	0	0	3	3	1	0	0	0	1	2	3
07:45	14	0	0	0	0	14	14	6	0	1	0	1	8	10	0	0	0	0	1	1	2
H/TOT	43	1	2	1	0	47	49	17	0	3	2	1	23	28	4	0	0	0	2	6	8
08:00	6	4	0	0	0	10	10	1	1	0	1	0	3	4	0	0	1	0	0	1	2
08:15	7	2	0	1	0	10	11	1	1	0	0	0	2	2	2	1	0	1	0	4	5
08:30	15	2	0	1	0	18	19	1	2	0	1	0	4	5	2	0	0	0	0	2	2
08:45	10	2	0	1	0	13	14	5	0	0	0	1	6	7	1	1	0	1	0	3	4
H/TOT	38	10	0	3	0	51	55	8	4	0	2	1	15	19	5	2	1	2	0	10	13
09:00	10	0	0	1	0	11	12	14	0	0	2	1	17	21	10	0	0	0	1	11	12
09:15	9	1	0	1	0	11	12	2	1	0	0	1	4	5	4	1	0	1	0	6	7
09:30	4	2	0	0	0	6	6	6	1	0	1	0	8	9	3	1	0	0	0	4	4
09:45	8	2	1	1	0	12	14	2	3	0	1	0	6	7	0	0	0	0	0	0	0
H/TOT	31	5	1	3	0	40	44	24	5	0	4	2	35	42	17	2	0	1	1	21	23
10:00	4	2	1	1	0	8	10	2	1	0	1	0	4	5	1	0	0	0	0	1	1
10:15	6	1	2	0	0	9	10	0	1	3	0	1	5	8	3	0	0	1	0	4	5
10:30	7	0	0	0	0	7	7	1	0	0	0	0	1	1	2	2	0	1	0	5	6
10:45	4	1	1	0	0	6	7	1	0	0	0	0	1	1	1	1	0	0	0	2	2
H/TOT	21	4	4	1	0	30	33	4	2	3	1	1	11	15	7	3	0	2	0	12	15
11:00	5	1	0	0	0	6	6	0	0	0	2	0	2	5	0	2	1	0	0	3	4
11:15	2	1	1	1	0	5	7	1	0	0	0	0	1	1	1	1	0	0	0	2	2
11:30	11	0	2	0	0	13	14	0	1	0	0	0	1	1	3	0	0	0	0	3	3
11:45	7	0	0	2	0	9	12	5	0	0	0	0	5	5	2	1	0	0	0	3	3
H/TOT	25	2	3	3	0	33	38	6	1	0	2	0	9	12	6	4	1	0	0	11	12
12:00	7	1	3	0	0	11	13	2	1	0	0	0	3	3	0	0	0	0	0	0	0
12:15	6	0	1	0	0	7	8	1	0	0	0	0	1	1	0	0	0	0	0	0	0
12:30	6	4	0	2	0	12	15	2	0	0	0	0	2	2	0	0	0	0	0	0	0
12:45	5	1	1	1	0	8	10	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	24	6	5	3	0	38	44	6	1	0	0	0	7	7	0	0	0	0	0	0	0

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 19th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Thursday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	10	3	1	1	0	15	17	1	1	0	0	0	2	2	1	1	0	0	0	2	2
13:15	4	1	0	0	0	5	5	0	0	0	0	0	0	0	0	2	0	0	0	2	2
13:30	17	1	1	2	0	21	24	1	0	0	0	0	1	1	1	0	0	0	1	2	3
13:45	5	2	0	1	0	8	9	6	0	0	0	0	6	6	0	1	0	0	0	1	1
H/TOT	36	7	2	4	0	49	55	8	1	0	0	0	9	9	2	4	0	0	1	7	8
14:00	6	1	1	1	0	9	11	2	0	0	1	0	3	4	5	0	0	0	0	5	5
14:15	6	4	2	1	1	14	17	2	2	0	0	0	4	4	0	0	1	0	0	1	2
14:30	5	0	0	0	0	5	5	2	0	1	0	0	3	4	2	0	0	0	0	2	2
14:45	6	0	2	1	0	9	11	4	1	0	0	1	6	7	2	1	0	1	1	5	7
H/TOT	23	5	5	3	1	37	44	10	3	1	1	1	16	19	9	1	1	1	1	13	16
15:00	11	1	1	0	0	13	14	6	0	0	0	0	6	6	10	1	0	1	1	13	15
15:15	7	4	2	0	0	13	14	0	0	1	1	1	3	6	2	0	0	0	1	3	4
15:30	6	1	0	0	0	7	7	0	0	0	0	0	0	0	2	1	1	0	0	4	5
15:45	4	1	2	0	0	7	8	0	0	0	0	0	0	0	4	1	0	0	0	5	5
H/TOT	28	7	5	0	0	40	43	6	0	1	1	1	9	12	18	3	1	1	2	25	29
16:00	8	1	2	2	0	13	17	2	0	0	0	0	2	2	2	0	0	0	0	2	2
16:15	11	2	1	0	0	14	15	4	2	1	0	1	8	10	8	2	0	0	0	10	10
16:30	6	0	1	0	0	7	8	4	0	0	0	1	5	6	4	0	2	0	0	6	7
16:45	7	0	1	0	1	9	11	1	0	0	0	0	1	1	1	2	1	1	0	5	7
H/TOT	32	3	5	2	1	43	49	11	2	1	0	2	16	19	15	4	3	1	0	23	26
17:00	4	1	0	0	0	5	5	0	1	1	0	0	2	3	6	1	0	0	0	7	7
17:15	7	0	1	0	0	8	9	2	1	0	0	0	3	3	3	2	0	0	0	5	5
17:30	2	2	1	0	0	5	6	3	0	1	0	0	4	5	4	1	0	0	0	5	5
17:45	8	1	0	0	0	9	9	1	0	0	0	0	1	1	3	0	0	0	0	3	3
H/TOT	21	4	2	0	0	27	28	6	2	2	0	0	10	11	16	4	0	0	0	20	20
18:00	10	1	0	0	0	11	11	4	1	0	0	0	5	5	4	0	0	0	0	4	4
18:15	4	0	1	0	0	5	6	0	1	0	0	0	1	1	0	1	0	0	0	1	1
18:30	5	0	0	0	0	5	5	3	0	0	1	0	4	5	5	1	0	0	0	6	6
18:45	6	0	0	0	0	6	6	0	0	0	1	0	1	2	3	1	1	0	0	5	6
H/TOT	25	1	1	0	0	27	28	7	2	0	2	0	11	14	12	3	1	0	0	16	17
P/TOT	347	55	35	23	2	462	511	113	23	11	15	9	171	205	111	30	8	8	7	164	185

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
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SITE: 05 DATE: 19th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Thursday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
07:15	1	0	0	0	0	1	1	0	0	0	0	1	1	2	4	0	0	0	0	4	4
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	4	5
07:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	7	0	0	0	0	7	7
H/TOT	1	0	0	0	0	1	1	2	0	0	0	1	3	4	15	0	1	0	1	17	19
08:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	2	0	0	1	6	7
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	2	0	11	14
08:30	2	1	0	0	0	3	3	1	0	0	0	0	1	1	8	1	0	0	1	10	11
08:45	2	1	0	0	0	3	3	2	0	0	0	0	2	2	12	2	0	4	0	18	23
H/TOT	4	2	0	0	0	6	6	4	0	0	0	0	4	4	31	6	0	6	2	45	55
09:00	3	2	0	0	0	5	5	10	1	0	0	0	11	11	11	2	1	0	0	14	15
09:15	4	0	0	0	0	4	4	4	0	0	0	0	4	4	2	0	0	0	0	2	2
09:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	7	0	0	4	0	11	16
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	2	1	8	12
H/TOT	7	3	0	0	0	10	10	14	1	0	0	0	15	15	22	5	1	6	1	35	44
10:00	0	0	0	0	0	0	0	3	0	0	0	0	3	3	3	0	0	1	0	4	5
10:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	2	1	1	0	6	8
10:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	1	1	0	0	4	5
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	2	0	0	10	11
H/TOT	1	0	0	0	0	1	1	4	0	0	0	0	4	4	14	4	4	2	0	24	29
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	1	0	8	9
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	1	1	0	8	10
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	1	2	0	9	12
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	2	0	7	10
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	4	2	6	0	32	41
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	7	8
12:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	1	1	0	0	5	6
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	1	0	0	7	8
12:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	0	1	0	0	5	6
H/TOT	0	0	0	0	0	0	0	2	0	0	0	0	2	2	17	3	4	0	0	24	26

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 05 DATE: 19th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Thursday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	1	0	0	1	2	0	1	0	0	0	1	1	3	3	0	0	0	6	6
13:15	0	0	1	0	0	1	2	0	0	1	0	0	1	2	11	2	0	1	0	14	15
13:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	10	0	2	0	0	12	13
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	1	1	0	11	13
H/TOT	0	0	2	0	0	2	3	1	1	1	0	0	3	4	32	6	3	2	0	43	47
14:00	3	0	0	0	0	3	3	1	0	0	0	0	1	1	4	0	1	1	0	6	8
14:15	1	0	0	1	0	2	3	0	0	0	0	0	0	0	6	3	0	0	0	9	9
14:30	0	0	0	0	0	0	0	0	0	1	0	0	1	2	7	1	0	1	0	9	10
14:45	0	0	0	0	0	0	0	6	0	0	0	0	6	6	13	1	0	0	0	14	14
H/TOT	4	0	0	1	0	5	6	7	0	1	0	0	8	9	30	5	1	2	0	38	41
15:00	12	1	0	0	0	13	13	4	1	0	0	0	5	5	4	0	2	1	0	7	9
15:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	10	3	0	0	0	13	13
15:30	1	0	0	0	0	1	1	0	0	1	0	0	1	2	15	1	4	0	0	20	22
15:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	7	1	2	0	0	10	11
H/TOT	16	1	0	0	0	17	17	5	1	1	0	0	7	8	36	5	8	1	0	50	55
16:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0	4	0	1	0	0	5	6
16:15	0	0	0	0	1	1	2	0	0	1	0	0	1	2	12	1	2	0	0	15	16
16:30	1	0	0	0	1	2	3	1	0	0	0	0	1	1	8	1	0	1	0	10	11
16:45	0	0	0	0	0	0	0	1	1	0	0	0	2	2	8	0	0	0	0	8	8
H/TOT	1	0	1	0	2	4	7	2	1	1	0	0	4	5	32	2	3	1	0	38	41
17:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	16	2	1	0	0	19	20
17:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	7	0	0	0	0	7	7
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	9
17:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	13	3	2	1	0	19	21
H/TOT	4	0	0	0	0	4	4	1	0	0	0	0	1	1	44	6	3	1	0	54	57
18:00	1	0	0	0	0	1	1	0	1	0	0	0	1	1	8	0	0	0	0	8	8
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
18:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	7	0	1	1	0	9	11
18:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	7	0	1	0	0	8	9
H/TOT	3	0	0	0	0	3	3	1	1	0	0	0	2	2	27	0	2	1	0	30	32
P/TOT	41	6	3	1	2	53	58	43	5	4	0	1	53	56	320	46	32	28	4	430	486

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06 DATE: 19th October 2017

LOCATION: Access Track (North) DAY: Thursday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 19th October 2017

LOCATION: Access Track (North)

DAY: Thursday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1
14:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:45	0	0	2	0	0	2	3	0	0	0	0	0	0	0
H/TOT	1	0	2	0	0	3	4	0	1	0	0	0	1	1
15:00	0	0	0	0	0	0	0	0	0	2	0	0	2	3
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	2	0	0	2	3
16:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0
16:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	1	0	0	2	3	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	3	0	3	0	0	6	8	0	1	2	0	0	3	4

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 20th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Friday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 20th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Friday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 20th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Friday

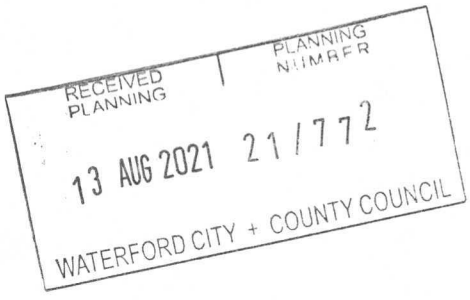
	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	22	1	1	0	0	24	25	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	33	2	1	1	0	37	39	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	42	9	1	0	0	52	53	0	0	0	1	0	1	2
07:45	0	0	0	0	0	0	0	59	4	2	0	0	65	66	4	1	0	0	0	5	5
H/TOT	0	0	0	0	0	0	0	156	16	5	1	0	178	182	4	1	0	1	0	6	7
08:00	0	0	0	0	0	0	0	48	8	0	1	0	57	58	0	0	0	1	0	1	2
08:15	0	0	0	0	0	0	0	57	4	1	1	1	64	67	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	70	7	1	2	4	84	91	1	0	1	0	0	2	3
08:45	0	0	0	0	0	0	0	52	3	1	2	0	58	61	1	1	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	227	22	3	6	5	263	277	2	1	1	1	0	5	7
09:00	0	0	0	0	0	0	0	52	11	0	2	1	66	70	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	48	5	1	1	1	56	59	0	1	0	0	0	1	1
09:30	0	0	0	0	0	0	0	32	6	2	1	1	42	45	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	37	7	1	0	0	45	46	2	0	0	1	0	3	4
H/TOT	0	0	0	0	0	0	0	169	29	4	4	3	209	219	2	1	0	1	0	4	5
10:00	0	0	0	0	0	0	0	33	8	0	1	0	42	43	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	29	5	2	0	0	36	37	0	0	0	1	0	1	2
10:30	0	0	0	0	0	0	0	37	5	0	1	0	43	44	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	31	2	2	0	1	36	38	1	0	1	0	0	2	3
H/TOT	0	0	0	0	0	0	0	130	20	4	2	1	157	163	1	0	1	1	0	3	5
11:00	0	0	0	0	0	0	0	36	4	1	0	0	41	42	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	33	9	1	1	0	44	46	0	0	0	1	0	1	2
11:30	0	0	0	0	0	0	0	40	5	1	2	1	49	53	2	0	0	0	0	2	2
11:45	0	0	0	0	0	0	0	42	10	4	2	0	58	63	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	151	28	7	5	1	192	203	3	0	0	1	0	4	5
12:00	0	0	0	0	0	0	0	24	6	1	1	0	32	34	0	0	1	0	1	2	4
12:15	0	0	0	0	0	0	0	46	7	1	0	1	55	57	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	32	4	4	0	0	40	42	0	0	1	0	0	1	2
12:45	0	0	0	0	0	0	0	34	8	0	3	0	45	49	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	136	25	6	4	1	172	181	0	0	2	0	1	3	5

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01



DATE: 20th October 2017

LOCATION: N72 Junction @ Cappagh

DAY: Friday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	37	11	1	0	1	50	52	2	0	0	1	0	3	4
13:15	0	0	0	0	0	0	0	24	6	0	0	0	30	30	1	0	0	0	0	1	1
13:30	0	0	0	0	0	0	0	32	5	1	2	0	40	43	0	1	0	1	0	2	3
13:45	0	0	0	0	0	0	0	38	1	2	0	1	42	44	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	131	23	4	2	2	162	169	3	1	0	2	0	6	9
14:00	0	0	0	0	0	0	0	51	3	4	0	3	61	66	1	1	0	0	0	2	2
14:15	0	0	0	0	0	0	0	39	4	2	1	0	46	48	0	1	0	0	0	1	1
14:30	0	0	0	0	0	0	0	34	6	2	1	1	44	47	1	1	0	0	0	2	2
14:45	0	0	0	0	0	0	0	31	12	4	1	0	48	51	1	0	0	1	0	2	3
H/TOT	0	0	0	0	0	0	0	155	25	12	3	4	199	213	3	3	0	1	0	7	8
15:00	0	0	0	0	0	0	0	54	5	3	1	1	64	68	1	1	1	0	0	3	4
15:15	0	0	0	0	0	0	0	47	7	3	2	0	59	63	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	47	9	4	0	1	61	64	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	39	4	4	0	0	47	49	4	0	0	0	0	4	4
H/TOT	0	0	0	0	0	0	0	187	25	14	3	2	231	244	6	1	1	0	0	8	9
16:00	0	0	0	0	0	0	0	41	11	3	2	1	58	63	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	47	9	1	0	0	57	58	3	1	0	0	0	4	4
16:30	0	0	0	0	0	0	0	23	5	2	1	1	32	35	2	0	0	1	0	3	4
16:45	0	0	0	0	0	0	0	32	1	0	1	0	34	35	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	143	26	6	4	2	181	191	5	1	0	1	0	7	8
17:00	0	0	0	0	0	0	0	41	3	0	1	1	46	48	0	0	1	0	0	1	2
17:15	0	0	0	0	0	0	0	45	7	0	2	0	54	57	3	0	0	0	0	3	3
17:30	1	0	0	0	0	1	1	35	5	1	0	1	42	44	1	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	33	4	2	1	0	40	42	3	1	1	0	0	5	6
H/TOT	1	0	0	0	0	1	1	154	19	3	4	2	182	191	7	1	2	0	0	10	11
18:00	0	0	0	0	0	0	0	20	6	2	2	0	30	34	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	33	5	1	0	0	39	40	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	18	3	0	0	0	21	21	1	0	0	0	0	1	1
18:45	0	0	0	0	0	0	0	26	0	1	1	0	28	30	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	97	14	4	3	0	118	124	3	0	0	0	0	3	3
P/TOT	1	0	0	0	0	1	1	1836	272	72	41	23	2244	2356	39	10	7	9	1	66	82

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 20th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Friday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
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	2	0	0	1	0	3	4	0	0	0	0	0	0	0	4	0	0	0	0	4	4
07:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	3	0	0	1	0	4	5	0	0	0	0	0	0	0	9	1	0	0	0	10	10
08:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	2	1	0	1	1	5	7
08:15	2	0	0	1	0	3	4	0	0	0	0	0	0	0	4	0	0	0	0	4	4
08:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	6	1	0	0	0	7	7
08:45	3	1	0	0	0	4	4	0	0	0	0	0	0	0	3	0	0	0	1	4	5
H/TOT	7	2	0	1	0	10	11	0	0	0	0	0	0	0	15	2	0	1	2	20	23
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	4	5
09:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	6	1	0	0	0	7	7
09:30	0	0	0	1	0	1	2	0	0	0	0	0	0	0	3	0	0	1	0	4	5
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	5	5
H/TOT	0	1	0	1	0	2	3	0	0	0	0	0	0	0	14	4	0	1	1	20	22
10:00	0	0	0	1	0	1	2	0	0	0	0	0	0	0	4	1	0	0	0	5	5
10:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
10:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	1	0	0	3	4
10:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	2	0	1	0	4	5
H/TOT	2	1	0	1	0	4	5	0	0	0	0	0	0	0	9	3	1	1	0	14	16
11:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
11:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
11:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	1	0	1	0	5	6
11:45	1	0	0	1	0	2	3	0	0	0	0	0	0	0	5	0	0	0	0	5	5
H/TOT	5	0	0	1	0	6	7	0	0	0	0	0	0	0	10	2	0	1	0	13	14
12:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	1	0	2	0	4	7
12:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	4	0	0	0	0	4	4	0	0	0	0	0	0	0	2	1	0	3	0	6	10

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 20th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Friday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	1	0	1	2	0	0	0	0	0	0	0	3	0	0	0	0	3	3
13:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	1	1	0	1	0	3	4	0	0	0	0	0	0	0	3	0	0	1	0	4	5
14:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0	4	0	0	0	0	4	4
14:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	4	7
14:45	2	0	0	1	0	3	4	0	0	0	0	0	0	0	4	1	0	0	0	5	5
H/TOT	4	0	1	1	0	6	8	0	0	0	0	0	0	0	9	3	0	2	0	14	17
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
15:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
15:30	3	0	0	0	0	3	3	0	0	0	0	0	0	0	4	0	0	0	0	4	4
15:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	6	1	0	0	0	7	7	0	0	0	0	0	0	0	12	0	0	0	0	12	12
16:00	1	1	0	1	0	3	4	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	3	0	0	0	0	3	3
16:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	1	0	4	5
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	5	1	0	1	0	7	8	0	0	0	0	0	0	0	11	0	0	1	0	12	13
17:00	2	1	1	0	0	4	5	0	0	0	0	0	0	0	4	1	0	1	0	6	7
17:15	0	2	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:30	2	1	0	0	0	3	3	0	0	0	0	0	0	0	2	1	0	0	0	3	3
17:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	1	0	0	0	3	3
H/TOT	6	4	1	0	0	11	12	0	0	0	0	0	0	0	10	3	0	1	0	14	15
18:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	2	1	0	0	0	3	3
18:15	2	0	0	1	0	3	4	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	4	1	0	1	0	6	7	0	0	0	0	0	0	0	7	1	0	0	0	8	8
P/TOT	47	12	2	9	0	70	83	0	0	0	0	0	0	0	111	20	1	12	3	147	166

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 20th October 2017

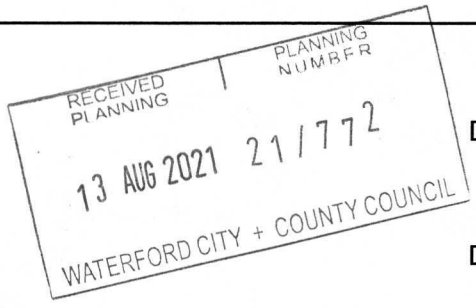
LOCATION: N72 Junction @ Cappagh DAY: Friday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	9	0	1	0	0	10	11	0	0	0	0	0	0	0
07:15	3	0	0	0	0	3	3	11	0	0	1	1	13	15	0	0	0	0	0	0	0
07:30	1	2	0	0	0	3	3	14	5	0	1	0	20	21	0	0	0	0	0	0	0
07:45	3	0	0	0	0	3	3	20	4	2	2	0	28	32	0	0	0	0	0	0	0
H/TOT	7	2	0	0	0	9	9	54	9	3	4	1	71	79	0	0	0	0	0	0	0
08:00	0	1	0	1	1	3	5	23	8	1	2	1	35	39	0	0	0	0	0	0	0
08:15	1	0	1	0	0	2	3	24	5	1	0	1	31	33	0	0	0	0	0	0	0
08:30	0	1	1	1	0	3	5	29	3	2	0	0	34	35	0	0	0	0	0	0	0
08:45	2	0	0	1	0	3	4	35	13	5	1	0	54	58	0	0	0	0	0	0	0
H/TOT	3	2	2	3	1	11	17	111	29	9	3	2	154	164	0	0	0	0	0	0	0
09:00	3	1	0	0	0	4	4	23	6	1	2	1	33	37	0	0	0	0	0	0	0
09:15	2	0	0	0	0	2	2	25	10	0	4	3	42	50	0	0	0	0	0	0	0
09:30	1	0	0	0	0	1	1	16	5	0	0	1	22	23	0	0	0	0	0	0	0
09:45	1	1	0	0	0	2	2	23	4	2	1	0	30	32	0	0	0	0	0	0	0
H/TOT	7	2	0	0	0	9	9	87	25	3	7	5	127	143	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	16	7	1	1	0	25	27	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	20	7	0	1	1	29	31	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	22	5	3	0	0	30	32	0	0	0	0	0	0	0
10:45	2	1	0	0	0	3	3	25	4	3	4	0	36	43	0	0	0	0	0	0	0
H/TOT	2	1	0	0	0	3	3	83	23	7	6	1	120	132	0	0	0	0	0	0	0
11:00	1	0	0	0	0	1	1	33	6	1	2	0	42	45	0	0	0	0	0	0	0
11:15	3	1	0	1	0	5	6	32	5	2	1	1	41	44	0	0	0	0	0	0	0
11:30	6	0	0	0	0	6	6	43	6	2	4	0	55	61	0	1	0	0	0	1	1
11:45	1	0	1	0	0	2	3	34	1	0	2	0	37	40	0	0	0	0	0	0	0
H/TOT	11	1	1	1	0	14	16	142	18	5	9	1	175	190	0	1	0	0	0	1	1
12:00	5	0	0	0	0	5	5	30	6	5	2	0	43	48	0	0	0	0	0	0	0
12:15	1	0	0	0	0	1	1	39	7	0	4	1	51	57	0	0	0	0	0	0	0
12:30	1	0	0	2	0	3	6	32	11	2	0	0	45	46	0	0	0	0	0	0	0
12:45	4	1	0	0	0	5	5	31	2	1	4	0	38	44	0	0	0	0	0	0	0
H/TOT	11	1	0	2	0	14	17	132	26	8	10	1	177	195	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**



SITE: 01 DATE: 20th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Friday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	0	0	1	0	3	4	41	5	1	1	1	49	52	0	0	0	0	0	0	0
13:15	1	2	0	0	0	3	3	50	3	0	1	1	55	57	0	0	0	0	0	0	0
13:30	2	0	0	0	1	3	4	45	3	1	3	0	52	56	0	0	0	0	0	0	0
13:45	1	0	0	0	0	1	1	44	8	0	1	1	54	56	0	0	0	0	0	0	0
H/TOT	6	2	0	1	1	10	12	180	19	2	6	3	210	222	0	0	0	0	0	0	0
14:00	2	2	0	0	0	4	4	46	3	1	0	1	51	53	0	0	0	0	0	0	0
14:15	2	0	0	1	0	3	4	45	10	1	0	1	57	59	0	0	0	0	0	0	0
14:30	2	0	0	0	2	4	6	43	10	0	0	0	53	53	0	0	0	0	0	0	0
14:45	4	1	0	1	1	7	9	44	4	3	0	0	51	53	0	0	0	0	0	0	0
H/TOT	10	3	0	2	3	18	24	178	27	5	0	2	212	217	0	0	0	0	0	0	0
15:00	1	2	0	1	0	4	5	47	10	2	3	0	62	67	0	0	0	0	0	0	0
15:15	0	2	0	0	0	2	2	48	8	3	2	2	63	69	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	54	12	3	1	2	72	77	0	0	0	0	0	0	0
15:45	3	2	0	0	0	5	5	47	1	3	2	2	55	61	0	0	0	0	0	0	0
H/TOT	4	6	0	1	0	11	12	196	31	11	8	6	252	274	0	0	0	0	0	0	0
16:00	3	1	1	0	0	5	6	60	7	2	1	0	70	72	0	0	0	0	0	0	0
16:15	0	2	1	0	0	3	4	52	5	1	2	0	60	63	0	0	0	0	0	0	0
16:30	5	1	0	0	0	6	6	74	6	1	1	0	82	84	0	0	0	0	0	0	0
16:45	3	1	0	0	0	4	4	66	10	1	1	1	79	82	0	0	0	0	0	0	0
H/TOT	11	5	2	0	0	18	19	252	28	5	5	1	291	301	0	0	0	0	0	0	0
17:00	7	0	0	0	0	7	7	56	9	1	0	0	66	67	0	0	0	0	0	0	0
17:15	2	0	0	2	0	4	7	78	7	0	1	1	87	89	0	0	0	0	0	0	0
17:30	4	2	0	0	0	6	6	66	10	1	1	0	78	80	0	0	0	0	0	0	0
17:45	3	0	0	0	0	3	3	69	5	0	2	0	76	79	0	0	0	0	0	0	0
H/TOT	16	2	0	2	0	20	23	269	31	2	4	1	307	314	0	0	0	0	0	0	0
18:00	5	1	0	0	0	6	6	57	3	1	1	0	62	64	0	0	0	0	0	0	0
18:15	2	0	0	0	0	2	2	41	6	0	1	1	49	51	0	0	0	0	0	0	0
18:30	2	1	0	0	0	3	3	41	2	0	0	0	43	43	0	0	0	0	0	0	0
18:45	1	0	0	0	0	1	1	31	2	0	0	0	33	33	0	0	0	0	0	0	0
H/TOT	10	2	0	0	0	12	12	170	13	1	2	1	187	191	0	0	0	0	0	0	0
P/TOT	98	29	5	12	5	149	172	1854	279	61	64	25	2283	2422	0	1	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 20th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Friday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
07:30	0	1	0	1	0	2	3	1	1	0	0	0	2	2	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	4	0	0	0	0	4	4	1	0	0	0	0	1	1
H/TOT	0	1	0	1	0	2	3	7	1	0	0	0	8	8	1	0	0	0	0	1	1
08:00	0	0	0	2	0	2	5	0	1	0	0	0	1	1	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	1	0	1	2	1	0	3	0	0	4	6	0	0	0	0	0	0	0
08:45	0	1	0	1	0	2	3	4	0	0	0	0	4	4	0	0	0	0	0	0	0
H/TOT	0	1	0	4	0	5	10	5	1	3	0	0	9	11	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1
09:45	0	0	0	1	0	1	2	0	1	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	0	0	1	0	1	2	8	1	0	0	0	9	9	1	0	0	0	0	1	1
10:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:15	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:45	1	0	0	0	0	1	1	2	1	1	0	0	4	5	0	0	0	0	0	0	0
H/TOT	1	0	0	1	0	2	3	4	1	1	0	0	6	7	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:15	0	1	0	2	0	3	6	2	0	0	0	0	2	2	0	0	0	0	0	0	0
11:30	0	2	0	0	0	2	2	5	0	0	0	0	5	5	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	1	2
H/TOT	0	3	0	2	0	5	8	9	0	0	0	0	9	9	0	0	1	0	0	1	2
12:00	1	0	0	0	0	1	1	4	0	1	0	1	6	8	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
12:30	0	0	0	2	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	3	0	1	0	0	4	5	0	0	0	0	0	0	0
H/TOT	1	0	0	2	0	3	6	9	0	2	0	1	12	14	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 20th October 2017

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Friday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	2	0	3	6	2	0	0	0	0	2	2	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0
13:30	0	0	0	1	1	2	4	1	2	0	0	0	3	3	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	1	0	0	3	1	5	10	4	4	0	0	0	8	8	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0
14:15	1	0	0	1	0	2	3	2	0	0	0	0	2	2	0	0	0	0	0	0	0
14:30	1	0	0	0	0	1	1	1	0	0	0	2	3	5	1	0	0	0	0	1	1
14:45	0	1	0	0	0	1	1	5	0	0	1	1	7	9	0	0	0	0	0	0	0
H/TOT	2	1	0	1	0	4	5	10	1	0	1	3	15	19	1	0	0	0	0	1	1
15:00	0	1	0	1	0	2	3	1	0	1	0	0	2	3	0	0	0	0	0	0	0
15:15	0	0	0	1	0	1	2	2	2	0	0	0	4	4	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	5	1	0	0	0	6	6	0	0	0	0	0	0	0
H/TOT	0	1	0	2	0	3	6	8	3	1	0	0	12	13	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	2	2	0	0	0	4	4	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	1	1	1	0	0	3	4	0	0	0	0	0	0	0
16:30	0	0	0	1	0	1	2	5	1	0	0	0	6	6	1	0	0	0	0	1	1
16:45	0	1	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	1	0	1	0	2	3	9	4	1	0	0	14	15	1	0	0	0	0	1	1
17:00	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	5	0	0	1	0	6	7	0	0	0	0	0	0	0
17:30	0	0	0	1	0	1	2	4	0	0	0	0	4	4	0	0	0	0	0	0	0
17:45	1	0	0	0	0	1	1	5	0	0	0	0	5	5	0	0	0	0	0	0	0
H/TOT	1	0	0	1	0	2	3	18	0	0	1	0	19	20	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
18:30	1	0	0	0	0	1	1	1	1	0	0	0	2	2	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	6	2	0	0	0	8	8	0	0	0	0	0	0	0
P/TOT	7	8	0	19	1	35	61	97	18	8	2	4	129	140	4	0	1	0	0	5	6

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
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SITE: 02 DATE: 20th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Friday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	1	0	0	1	0	2	3	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	2	0	3	6	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
08:30	1	0	0	0	0	1	1	2	0	0	0	0	2	2	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	2	1	0	1	0	4	5	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	0	0	1	1
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	0	0	1	1
10:00	1	0	0	0	0	1	1	0	1	1	0	0	2	3	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	0	1	1	0	0	2	3	2	0	0	0	0	2	2
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
11:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	1	0	0	0	1	1	2	0	0	0	0	2	2
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
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SITE: 02

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY & COUNTY COUNCIL

DATE: 20th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh

DAY: Friday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	3	0	1	0	4	5	0	0	0	0	0	0	0
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
14:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	2	0	3	6
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
15:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	1	2
16:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	4	0	0	0	0	4	4	0	0	0	0	0	0	0
17:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	1	1
H/TOT	0	1	0	0	0	1	1	2	0	0	0	0	2	2	0	1	0	0	0	1	1
P/TOT	7	1	0	0	0	8	8	10	6	1	5	0	22	29	5	2	2	2	0	11	15

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 20th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Friday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 20th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Friday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:45	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	2	1	0	0	0	3	3	2	0	0	0	0	2	2
14:00	2	0	0	0	0	2	2	2	0	0	0	0	2	2	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	1
14:45	1	0	1	0	0	2	3	5	0	0	0	0	5	5	1	1	0	0	0	2	2
H/TOT	3	0	1	0	0	4	5	9	1	0	0	0	10	10	1	2	0	0	0	3	3
15:00	1	0	0	0	0	1	1	3	0	0	0	0	3	3	1	0	0	0	1	2	3
15:15	0	0	0	0	0	0	0	4	0	0	0	0	4	4	1	0	0	0	0	1	1
15:30	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	1	0	0	1	2
15:45	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	12	1	0	0	0	13	13	2	0	1	0	1	4	6
16:00	0	0	0	0	0	0	0	3	1	0	1	0	5	6	1	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1
16:30	1	0	0	0	0	1	1	4	0	1	0	0	5	6	0	0	0	0	0	0	0
16:45	1	0	0	0	0	1	1	6	0	0	0	0	6	6	1	0	0	0	0	1	1
H/TOT	2	0	0	0	0	2	2	15	1	1	1	0	18	20	3	0	0	0	0	3	3
17:00	0	0	0	0	0	0	0	2	1	1	0	0	4	5	0	0	1	0	0	1	2
17:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	3	1	0	0	0	4	4	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	9	2	1	0	0	12	13	1	0	1	0	0	2	3
18:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	4	0	0	0	0	4	4	1	0	0	0	0	1	1
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	5	0	0	0	0	5	5	1	0	0	0	0	1	1
P/TOT	15	0	1	0	0	16	17	112	13	2	1	2	130	134	24	8	3	1	1	37	41

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 20th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Friday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 20th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Friday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0	2	3
13:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	6	1	0	0	0	7	7	0	0	0	0	0	0	0	1	0	0	2	0	3	6
14:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	1	2
14:30	2	1	0	0	0	3	3	0	0	0	2	0	2	5	0	2	0	1	0	3	4
14:45	2	0	0	0	0	2	2	2	0	0	0	0	2	2	0	0	0	1	0	1	2
H/TOT	4	1	0	0	0	5	5	3	1	0	2	0	6	9	0	2	0	3	0	5	9
15:00	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
15:15	0	1	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0
15:30	0	1	0	0	0	1	1	0	0	0	1	0	1	2	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	2	0	0	0	2	2	1	1	0	2	0	4	7	1	0	0	0	0	1	1
16:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
16:30	1	0	1	0	0	2	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:45	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	4	0	1	0	0	5	6	4	0	0	0	0	4	4	0	0	0	0	0	0	0
17:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	1	0	3	4
17:15	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	1	0	0	0	1	1
17:30	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	1	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	5	0	0	0	0	5	5	2	0	0	0	0	2	2	1	3	0	1	0	5	6
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	1	0	0	0	0	1	1	0	0	1	0	0	1	2	0	0	0	1	0	1	2
18:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	1	1	0	0	0	2	2	0	0	1	0	0	1	2	2	0	0	1	0	3	4
P/TOT	33	7	1	1	1	43	46	14	4	1	6	0	25	33	6	9	0	19	0	34	59

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 20th October 2017

LOCATION: Quarry Access DAY: Friday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03

DATE: 20th October 2017

LOCATION: Quarry Access

DAY: Friday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	1	0	0	0	3	3	0	0	0	2	0	2	5	1	0	0	1	0	2	3
13:15	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0
13:30	1	0	0	0	1	2	3	0	0	0	2	0	2	5	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	3	1	0	0	1	5	6	0	2	0	4	0	6	11	1	0	0	2	0	3	6
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	1	0	1	2
14:30	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	2	0	3	0	5	9
14:45	1	1	0	0	0	2	2	0	1	0	0	0	1	1	0	0	0	1	0	1	2
H/TOT	3	2	0	0	0	5	5	0	1	0	1	0	2	3	0	2	0	5	0	7	14
15:00	1	0	0	0	1	2	3	0	1	0	1	0	2	3	0	1	0	0	0	1	1
15:15	2	0	0	0	0	2	2	0	0	0	1	0	1	2	0	1	0	1	0	2	3
15:30	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	1	0	1	0	2	3
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	3	0	1	0	1	5	7	0	1	0	2	0	3	6	0	3	0	2	0	5	8
16:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	1	0	0	0	0	1	1	0	0	0	1	0	1	2	1	0	0	0	0	1	1
16:45	4	1	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	7	1	0	0	0	8	8	0	0	0	1	0	1	2	2	0	0	0	0	2	2
17:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	1	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	1	0	0	0	1	1
17:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	1	0	0	3	4	0	0	0	1	0	1	2	0	1	0	1	0	2	3
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	1	2
18:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	1	0	1	2
P/TOT	38	15	4	0	2	59	63	3	7	0	25	0	35	68	3	8	0	25	0	36	69

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 20th October 2017

LOCATION: Quarry Access DAY: Friday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 20th October 2017

LOCATION: Quarry Access DAY: Friday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	4
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0	9	9
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	7	8
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	4
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2	0	0	0	10	10
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:45	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	0	3	1	1	0	0	5	6
P/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	12	2	1	1	66	69

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 20th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Friday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 20th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Friday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	1	0	1	2
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	4	0	0	0	0	4	4	1	0	0	0	0	1	1	3	0	0	1	0	4	5
14:00	3	0	0	0	0	3	3	2	1	0	0	0	3	3	0	0	0	0	0	0	0
14:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:30	0	2	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	7	1	0	0	0	8	8	0	0	0	0	0	0	0	2	0	0	0	1	3	4
H/TOT	12	3	0	0	0	15	15	2	1	0	0	0	3	3	4	0	0	0	1	5	6
15:00	4	0	0	0	1	5	6	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:15	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	4	0	1	0	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	1	1	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	12	1	1	0	1	15	17	2	0	0	0	0	2	2	1	0	0	0	0	1	1
16:00	4	1	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	3	0	0	0	0	3	3	0	0	0	0	1	1	2	0	0	0	0	0	0	0
16:30	3	0	1	0	0	4	5	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:45	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	15	1	1	0	0	17	18	1	0	0	0	1	2	3	0	0	0	0	0	0	0
17:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	6	2	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	2	3
18:15	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	6	0	0	0	0	6	6	0	0	0	0	0	0	0	1	1	0	0	1	3	4
P/TOT	121	15	3	1	3	143	149	11	1	0	0	2	14	16	15	2	1	1	2	21	25

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 20th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Friday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 20th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Friday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	2	0	0	0	0	2	2	1	0	0	0	0	1	1
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	3	3
13:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1	2	1	0	0	0	3	3
13:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	4	1	0	0	0	5	5
H/TOT	2	1	0	0	0	3	3	2	1	0	0	0	3	3	8	4	0	0	0	12	12
14:00	1	0	0	0	0	1	1	0	0	0	1	0	1	2	2	1	0	0	0	3	3
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
14:30	0	0	0	0	0	0	0	0	1	0	1	0	2	3	4	0	0	0	2	6	8
14:45	0	0	1	0	0	1	2	1	0	0	0	0	1	1	6	0	0	1	1	8	10
H/TOT	1	0	1	0	0	2	3	1	1	0	2	0	4	7	14	1	0	1	3	19	23
15:00	1	0	0	0	0	1	1	1	0	2	0	0	3	4	0	0	0	0	0	0	0
15:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	3	0	0	0	5	5
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	1	0	0	0	5	5
H/TOT	3	0	0	0	0	3	3	2	0	2	0	0	4	5	6	5	0	0	0	11	11
16:00	0	0	0	1	0	1	2	1	0	0	0	0	1	1	2	2	0	0	0	4	4
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	3	4
16:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	6	1	1	0	0	8	9
16:45	3	0	0	0	0	3	3	1	0	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	5	0	0	1	0	6	7	2	0	0	0	0	2	2	11	4	2	0	0	17	18
17:00	1	0	2	0	0	3	4	0	0	0	0	0	0	0	5	0	0	0	0	5	5
17:15	1	0	0	0	0	1	1	3	0	0	0	0	3	3	4	0	0	1	0	5	6
17:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	5	0	0	0	0	5	5
17:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	4	0	0	0	0	4	4
H/TOT	4	0	2	0	0	6	7	5	0	0	0	0	5	5	18	0	0	1	0	19	20
18:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	1	1
18:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	3	0	0	0	0	3	3
18:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	0	2	2
18:45	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	2	2	0	0	0	4	4	5	2	0	0	0	7	7
P/TOT	30	6	3	1	0	40	43	23	5	5	2	0	35	40	112	22	6	3	5	148	160

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 20th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Friday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	8	1	0	0	0	9	9	2	0	0	0	0	2	2	0	0	0	1	0	1	2
07:15	9	0	0	0	0	9	9	1	2	0	1	0	4	5	1	0	0	0	0	1	1
07:30	6	3	0	0	0	9	9	4	1	0	0	0	5	5	2	1	0	0	1	4	5
07:45	14	2	1	0	0	17	18	2	0	0	0	1	3	4	2	0	0	0	1	3	4
H/TOT	37	6	1	0	0	44	45	9	3	0	1	1	14	16	5	1	0	1	2	9	12
08:00	7	2	0	1	0	10	11	2	1	0	0	0	3	3	1	0	0	0	0	1	1
08:15	9	3	1	0	0	13	14	4	1	0	0	0	5	5	2	0	0	0	0	2	2
08:30	10	2	1	1	0	14	16	4	0	0	0	0	4	4	0	0	0	0	0	0	0
08:45	3	2	0	0	0	5	5	8	1	0	0	1	10	11	2	1	2	0	0	5	6
H/TOT	29	9	2	2	0	42	46	18	3	0	0	1	22	23	5	1	2	0	0	8	9
09:00	13	1	1	1	0	16	18	7	1	1	0	1	10	12	8	1	1	0	1	11	13
09:15	6	3	2	0	0	11	12	8	1	0	0	1	10	11	3	0	0	0	0	3	3
09:30	5	0	1	1	0	7	9	3	1	0	0	0	4	4	6	1	1	0	0	8	9
09:45	1	0	1	1	0	3	5	3	1	0	0	0	4	4	2	1	0	0	0	3	3
H/TOT	25	4	5	3	0	37	43	21	4	1	0	2	28	31	19	3	2	0	1	25	27
10:00	9	1	1	0	0	11	12	4	0	0	0	0	4	4	0	0	0	0	0	0	0
10:15	4	0	3	1	0	8	11	2	1	0	0	0	3	3	2	1	0	0	0	3	3
10:30	4	0	1	0	1	6	8	2	1	0	0	0	3	3	4	0	0	0	0	4	4
10:45	11	0	1	0	0	12	13	0	0	1	0	0	1	2	1	2	0	0	0	3	3
H/TOT	28	1	6	1	1	37	42	8	2	1	0	0	11	12	7	3	0	0	0	10	10
11:00	7	6	1	1	0	15	17	2	0	1	0	0	3	4	3	0	0	0	0	3	3
11:15	3	2	1	2	0	8	11	3	0	0	0	0	3	3	3	1	1	0	0	5	6
11:30	5	1	1	0	0	7	8	2	1	0	0	0	3	3	2	0	0	0	0	2	2
11:45	4	4	0	0	0	8	8	2	0	0	0	0	2	2	6	0	0	1	0	7	8
H/TOT	19	13	3	3	0	38	43	9	1	1	0	0	11	12	14	1	1	1	0	17	19
12:00	4	0	1	1	0	6	8	1	0	0	0	0	1	1	1	0	0	0	0	1	1
12:15	3	2	1	0	0	6	7	5	1	0	0	0	6	6	3	2	0	0	0	5	5
12:30	9	2	1	3	0	15	19	0	0	0	0	0	0	0	2	0	1	0	1	4	6
12:45	7	1	1	0	0	9	10	1	0	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	23	5	4	4	0	36	43	7	1	0	0	0	8	8	8	2	1	0	1	12	14

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 20th October 2017

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Friday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	7	1	0	1	0	9	10	1	0	0	0	0	1	1	2	0	0	0	0	2	2
13:15	9	0	1	0	0	10	11	1	0	0	0	0	1	1	0	1	0	0	0	1	1
13:30	4	2	0	1	0	7	8	5	0	0	0	0	5	5	2	1	0	1	0	4	5
13:45	7	1	1	0	1	10	12	2	0	0	0	1	3	4	1	0	0	0	0	1	1
H/TOT	27	4	2	2	1	36	41	9	0	0	0	1	10	11	5	2	0	1	0	8	9
14:00	3	0	0	3	0	6	10	2	0	0	0	0	2	2	7	2	0	0	0	9	9
14:15	11	0	1	1	0	13	15	3	0	0	0	0	3	3	3	0	0	0	0	3	3
14:30	7	1	2	0	0	10	11	2	3	0	0	0	5	5	3	0	0	0	0	3	3
14:45	7	2	2	0	0	11	12	9	0	0	0	0	9	9	0	0	0	1	1	2	4
H/TOT	28	3	5	4	0	40	48	16	3	0	0	0	19	19	13	2	0	1	1	17	19
15:00	12	0	3	0	0	15	17	5	0	1	0	0	6	7	13	0	1	0	1	15	17
15:15	4	3	1	0	0	8	9	2	1	0	0	1	4	5	2	1	0	0	1	4	5
15:30	8	1	2	0	0	11	12	4	1	2	1	0	8	10	2	2	0	0	0	4	4
15:45	5	5	0	0	0	10	10	1	0	0	0	0	1	1	2	1	0	1	0	4	5
H/TOT	29	9	6	0	0	44	47	12	2	3	1	1	19	23	19	4	1	1	2	27	31
16:00	5	1	0	0	1	7	8	5	0	0	0	0	5	5	1	1	0	0	0	2	2
16:15	9	3	0	1	0	13	14	3	0	0	0	1	4	5	6	2	0	0	0	8	8
16:30	3	0	1	0	1	5	7	3	0	0	1	0	4	5	4	0	2	0	0	6	7
16:45	9	0	1	0	0	10	11	3	0	0	0	0	3	3	4	0	0	0	0	4	4
H/TOT	26	4	2	1	2	35	39	14	0	0	1	1	16	18	15	3	2	0	0	20	21
17:00	8	0	0	0	0	8	8	0	0	0	0	0	0	0	3	0	0	0	0	3	3
17:15	7	1	0	0	0	8	8	1	0	0	0	0	1	1	4	0	0	0	0	4	4
17:30	6	2	0	0	0	8	8	1	0	0	0	0	1	1	6	0	0	1	0	7	8
17:45	3	1	1	1	0	6	8	2	0	0	0	0	2	2	4	0	0	0	0	4	4
H/TOT	24	4	1	1	0	30	32	4	0	0	0	0	4	4	17	0	0	1	0	18	19
18:00	8	1	0	0	0	9	9	1	0	0	0	0	1	1	3	0	0	0	0	3	3
18:15	7	1	0	0	0	8	8	2	0	0	0	0	2	2	2	0	0	0	1	3	4
18:30	8	1	1	0	0	10	11	2	0	0	0	0	2	2	1	1	0	0	0	2	2
18:45	3	0	0	0	0	3	3	1	0	0	0	0	1	1	1	1	0	0	0	2	2
H/TOT	26	3	1	0	0	30	31	6	0	0	0	0	6	6	7	2	0	0	1	10	11
P/TOT	321	65	38	21	4	449	499	133	19	6	3	7	168	182	134	24	9	6	8	181	201

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 20th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Friday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
07:30	0	0	0	0	0	0	0	1	0	0	0	1	2	3	5	1	0	0	1	7	8
07:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	12	1	0	0	0	13	13
H/TOT	1	0	0	0	0	1	1	2	0	0	0	1	3	4	25	2	0	0	1	28	29
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	3	4
08:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	3	3	0	1	0	7	8
08:30	1	0	0	0	0	1	1	2	0	0	0	0	2	2	3	1	1	0	0	5	6
08:45	3	0	0	0	0	3	3	1	0	0	0	0	1	1	10	2	1	0	1	14	16
H/TOT	5	0	0	0	0	5	5	4	0	0	0	0	4	4	17	7	2	1	2	29	33
09:00	5	0	0	0	0	5	5	7	0	0	0	0	7	7	6	0	3	0	0	9	11
09:15	3	0	0	0	0	3	3	6	0	0	0	0	6	6	9	2	1	0	0	12	13
09:30	1	0	0	0	0	1	1	0	1	0	0	0	1	1	3	1	2	1	0	7	9
09:45	0	1	0	0	0	1	1	0	1	0	0	0	1	1	4	3	1	0	0	8	9
H/TOT	9	1	0	0	0	10	10	13	2	0	0	0	15	15	22	6	7	1	0	36	41
10:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	1	0	0	2	3
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	0	1	8	9
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3	5
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	8	6	2	1	1	18	21
11:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	2	1	0	6	8
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2	0	0	0	10	10
11:30	0	0	0	0	0	0	0	4	0	0	0	0	4	4	4	1	1	0	0	6	7
11:45	1	0	0	0	0	1	1	0	1	0	0	0	1	1	5	2	0	1	0	8	9
H/TOT	2	0	0	0	0	2	2	4	1	0	0	0	5	5	20	5	3	2	0	30	34
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	2	0	0	6	7
12:15	2	0	0	0	0	2	2	1	0	0	0	0	1	1	5	1	0	1	0	7	8
12:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	4	3	0	0	0	7	7
12:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	8	0	3	0	0	11	13
H/TOT	3	0	0	0	0	3	3	3	0	0	0	0	3	3	21	4	5	1	0	31	35

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 20th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Friday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	7	2	0	1	0	10	11
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	4
13:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	8	2	0	0	0	10	10
13:45	1	0	0	0	1	2	3	1	0	0	0	0	1	1	10	0	1	2	0	13	16
H/TOT	2	0	0	0	1	3	4	2	0	0	0	0	2	2	27	6	1	3	0	37	41
14:00	2	0	0	0	0	2	2	1	0	0	0	0	1	1	8	2	1	0	0	11	12
14:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	5	0	1	2	0	8	11
14:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	5	1	0	0	0	6	6
14:45	0	0	0	0	1	1	2	5	0	0	0	0	5	5	8	1	1	0	0	10	11
H/TOT	4	0	0	0	1	5	6	8	0	0	0	0	8	8	26	4	3	2	0	35	39
15:00	13	0	0	0	0	13	13	5	0	0	0	0	5	5	6	2	0	0	0	8	8
15:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	6	3	1	0	0	10	11
15:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1	9	1	0	1	0	11	12
15:45	1	1	1	0	0	3	4	0	0	0	0	0	0	0	6	1	0	1	0	8	9
H/TOT	15	1	1	0	0	17	18	5	1	0	0	0	6	6	27	7	1	2	0	37	40
16:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	6	1	3	0	0	10	12
16:15	2	0	0	0	0	2	2	2	0	0	0	0	2	2	10	3	0	0	0	13	13
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	3	0	0	0	11	11
16:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	9	2	4	0	0	15	17
H/TOT	4	0	0	0	0	4	4	4	0	0	0	0	4	4	33	9	7	0	0	49	53
17:00	2	0	0	0	0	2	2	1	0	0	0	0	1	1	11	2	2	0	0	15	16
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	2	0	0	0	15	15
17:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	9	0	0	0	0	9	9
17:45	2	0	0	0	0	2	2	1	1	0	0	0	2	2	15	0	0	1	0	16	17
H/TOT	4	0	0	0	0	4	4	3	1	0	0	0	4	4	48	4	2	1	0	55	57
18:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	9	1	0	1	0	11	12
18:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	7	0	0	1	1	9	11
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0	9	9
18:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	6	1	0	0	0	7	7
H/TOT	1	1	0	0	0	2	2	3	0	0	0	0	3	3	29	4	0	2	1	36	40
P/TOT	50	3	1	0	2	56	59	52	5	0	0	1	58	59	303	64	33	16	5	421	463

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06 DATE: 20th October 2017

LOCATION: Access Track (North) DAY: Friday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06 DATE: 20th October 2017

LOCATION: Access Track (North) DAY: Friday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	1	1	2
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	1	1	2
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	1	1	0	0	0	2	2	1	0	0	0	1	2	3

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 21st October 2017

LOCATION: N72 Junction @ Cappagh DAY: Saturday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 21st October 2017

LOCATION: N72 Junction @ Cappagh DAY: Saturday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	1	0	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 21st October 2017

LOCATION: N72 Junction @ Cappagh DAY: Saturday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	15	2	0	0	0	17	17	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	16	2	0	1	0	19	20	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	39	5	0	1	0	45	46	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	12	2	1	2	0	17	20	1	0	0	0	0	1	1
08:15	0	0	0	0	0	0	0	14	3	0	0	0	17	17	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	14	0	0	2	1	17	21	1	0	0	0	0	1	1
08:45	0	0	0	0	0	0	0	24	1	0	1	0	26	27	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	64	6	1	5	1	77	85	2	0	0	0	0	2	2
09:00	0	0	0	0	0	0	0	16	5	1	0	0	22	23	0	1	0	0	0	1	1
09:15	0	0	0	0	0	0	0	23	5	1	2	1	32	36	0	1	0	0	0	1	1
09:30	0	0	0	0	0	0	0	24	5	1	0	0	30	31	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	23	3	3	2	0	31	35	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	86	18	6	4	1	115	124	0	2	0	0	0	2	2
10:00	0	0	0	0	0	0	0	26	3	0	0	0	29	29	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	23	1	2	2	0	28	32	2	0	0	0	0	2	2
10:30	0	0	0	0	0	0	0	23	4	2	0	0	29	30	2	0	0	0	0	2	2
10:45	0	0	0	0	0	0	0	30	2	1	0	1	34	36	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	102	10	5	2	1	120	126	4	0	0	0	0	4	4
11:00	0	0	0	0	0	0	0	41	5	1	0	0	47	48	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	31	2	0	0	1	34	35	0	1	0	0	0	1	1
11:30	0	0	0	0	0	0	0	28	0	2	1	0	31	33	1	0	0	0	0	1	1
11:45	0	0	0	0	0	0	0	40	7	0	0	0	47	47	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	140	14	3	1	1	159	163	1	1	0	0	0	2	2
12:00	0	0	0	0	0	0	0	34	6	1	1	0	42	44	1	0	0	0	0	1	1
12:15	0	0	0	0	0	0	0	33	0	2	0	1	36	38	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	33	5	0	1	0	39	40	1	0	0	0	0	1	1
12:45	0	0	0	0	0	0	0	40	6	0	0	0	46	46	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	140	17	3	2	1	163	168	2	0	0	0	0	2	2

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 21st October 2017

LOCATION: N72 Junction @ Cappagh DAY: Saturday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	34	2	1	0	0	37	38	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	32	3	2	0	0	37	38	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	35	1	0	1	0	37	38	2	0	0	0	0	2	2
13:45	0	0	0	0	0	0	0	40	6	1	0	0	47	48	1	1	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	141	12	4	1	0	158	161	3	1	0	0	0	4	4
14:00	0	0	0	0	0	0	0	42	4	0	0	0	46	46	3	1	0	0	0	4	4
14:15	0	0	0	0	0	0	0	35	2	1	1	1	40	43	1	0	0	0	0	1	1
14:30	0	0	1	0	0	1	2	38	2	0	0	0	40	40	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	34	4	0	0	0	38	38	0	1	0	0	0	1	1
H/TOT	0	0	1	0	0	1	2	149	12	1	1	1	164	167	4	2	0	0	0	6	6
15:00	0	0	0	0	0	0	0	25	2	1	0	1	29	31	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	29	3	1	0	0	33	34	1	0	0	0	0	1	1
15:30	0	0	0	0	0	0	0	24	2	0	0	2	28	30	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	30	2	0	0	0	32	32	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	108	9	2	0	3	122	126	2	0	0	0	0	2	2
16:00	0	0	0	0	0	0	0	31	0	0	1	0	32	33	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	27	5	0	1	0	33	34	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	29	5	0	1	0	35	36	1	0	0	0	0	1	1
16:45	0	0	0	0	0	0	0	26	3	2	0	0	31	32	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	113	13	2	3	0	131	136	2	0	0	0	0	2	2
17:00	0	0	0	0	0	0	0	26	5	0	1	0	32	33	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	26	2	2	1	1	32	35	1	0	0	0	0	1	1
17:30	0	0	0	0	0	0	0	29	3	1	0	0	33	34	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	32	2	1	0	0	35	36	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	113	12	4	2	1	132	138	2	0	0	0	0	2	2
18:00	0	0	0	0	0	0	0	13	1	0	0	0	14	14	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	26	4	0	0	0	30	30	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	24	5	1	0	0	30	31	1	0	0	0	0	1	1
18:45	0	0	0	0	0	0	0	15	0	0	0	0	15	15	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	78	10	1	0	0	89	90	1	1	0	0	0	2	2
P/TOT	0	0	1	0	0	1	2	1273	138	32	22	10	1475	1530	23	7	0	0	0	30	30

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 21st October 2017

LOCATION: N72 Junction @ Cappagh DAY: Saturday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 21st October 2017

LOCATION: N72 Junction @ Cappagh DAY: Saturday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	2	0	0	0	3	3
13:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	6	2	0	0	0	8	8
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
14:15	4	0	1	0	0	5	6	0	0	0	0	0	0	0	4	1	0	0	0	5	5
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
14:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	1	0	0	0	5	5
H/TOT	6	0	1	0	0	7	8	0	0	0	0	0	0	0	14	2	0	0	0	16	16
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
15:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0	0	0	0	4	4
H/TOT	3	0	0	0	0	3	3	0	0	0	0	0	0	0	9	0	0	0	0	9	9
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
16:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	2	1	0	0	0	3	3
H/TOT	2	1	0	0	0	3	3	0	0	0	0	0	0	0	8	1	0	0	0	9	9
17:00	3	1	0	0	0	4	4	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	3	1	0	0	0	4	4	0	0	0	0	0	0	0	6	0	0	0	0	6	6
18:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
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	4	0	0	0	0	4	4	0	0	0	0	0	0	0	1	1	0	0	0	2	2
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	6	0	0	0	0	6	6	0	0	0	0	0	0	0	4	3	0	0	0	7	7
P/TOT	32	5	1	0	0	38	39	1	0	0	0	0	1	1	80	10	1	0	1	92	94

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 21st October 2017

LOCATION: N72 Junction @ Cappagh DAY: Saturday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	1	0	0	0	0	1	1	4	0	0	1	0	5	6	0	0	0	0	0	0	0
07:15	2	0	0	0	0	2	2	6	0	0	0	0	6	6	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	9	0	0	3	0	12	16	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	2	4	0	0	0	6	6	0	0	0	0	0	0	0
H/TOT	3	0	0	0	0	3	3	21	4	0	4	0	29	34	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	5	2	0	1	0	8	9	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	7	1	0	0	0	8	8	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	11	2	1	1	0	15	17	0	0	0	0	0	0	0
08:45	1	1	0	0	0	2	2	6	3	0	0	0	9	9	0	0	0	0	0	0	0
H/TOT	1	1	0	0	0	2	2	29	8	1	2	0	40	43	0	0	0	0	0	0	0
09:00	0	0	1	0	0	1	2	9	1	1	0	0	11	12	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	9	2	0	1	0	12	13	0	0	0	0	0	0	0
09:30	1	0	0	0	0	1	1	7	1	0	0	0	8	8	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	19	5	0	1	0	25	26	0	0	0	0	0	0	0
H/TOT	1	0	1	0	0	2	3	44	9	1	2	0	56	59	0	0	0	0	0	0	0
10:00	3	0	0	0	0	3	3	15	2	1	0	0	18	19	0	0	0	0	0	0	0
10:15	3	0	0	0	0	3	3	10	4	1	0	2	17	20	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	22	11	2	0	0	35	36	0	0	0	0	0	0	0
10:45	2	1	0	0	0	3	3	21	4	2	1	0	28	30	0	0	0	0	0	0	0
H/TOT	8	1	0	0	0	9	9	68	21	6	1	2	98	104	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	27	5	1	3	0	36	40	0	0	0	0	0	0	0
11:15	1	0	0	0	0	1	1	20	4	0	0	1	25	26	0	0	0	0	0	0	0
11:30	1	0	0	0	0	1	1	17	7	0	1	1	26	28	0	0	0	0	0	0	0
11:45	2	0	0	0	0	2	2	16	4	2	1	0	23	25	0	0	0	0	0	0	0
H/TOT	4	0	0	0	0	4	4	80	20	3	5	2	110	120	0	0	0	0	0	0	0
12:00	2	0	0	0	0	2	2	22	2	3	0	0	27	29	0	0	0	0	0	0	0
12:15	1	0	0	0	0	1	1	31	5	1	1	1	39	42	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	27	4	2	1	0	34	36	0	0	0	0	0	0	0
12:45	2	0	0	0	0	2	2	30	2	2	0	0	34	35	0	0	0	0	0	0	0
H/TOT	5	0	0	0	0	5	5	110	13	8	2	1	134	142	0	0	0	0	0	0	0

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
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SITE: 01 DATE: 21st October 2017

LOCATION: N72 Junction @ Cappagh DAY: Saturday

RECEIVED PLANNING | PLANNING NUMBER
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WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	46	1	0	2	1	50	54	0	0	0	0	0	0	0
13:15	4	0	0	0	0	4	4	35	4	0	0	0	39	39	0	0	0	0	0	0	0
13:30	4	0	0	0	0	4	4	38	4	3	0	0	45	47	0	0	0	0	0	0	0
13:45	1	0	0	0	0	1	1	41	1	0	0	0	42	42	0	0	0	0	0	0	0
H/TOT	10	0	0	0	0	10	10	160	10	3	2	1	176	181	0	0	0	0	0	0	0
14:00	3	0	1	0	0	4	5	34	7	0	0	0	41	41	0	0	0	0	0	0	0
14:15	1	2	1	0	0	4	5	29	2	0	1	0	32	33	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	35	0	1	1	0	37	39	0	0	0	0	0	0	0
14:45	2	0	0	0	0	2	2	23	3	0	0	0	26	26	0	0	0	0	0	0	0
H/TOT	6	2	2	0	0	10	11	121	12	1	2	0	136	139	0	0	0	0	0	0	0
15:00	3	0	0	0	0	3	3	41	7	2	0	0	50	51	0	0	0	0	0	0	0
15:15	1	0	0	0	0	1	1	45	4	1	0	3	53	57	0	0	0	0	0	0	0
15:30	1	0	0	0	0	1	1	30	2	1	2	0	35	38	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	27	4	0	0	0	31	31	0	0	0	0	0	0	0
H/TOT	5	0	0	0	0	5	5	143	17	4	2	3	169	177	0	0	0	0	0	0	0
16:00	4	1	0	0	0	5	5	37	5	0	0	0	42	42	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	28	1	1	0	1	31	33	0	0	0	0	0	0	0
16:30	4	0	0	0	0	4	4	28	3	0	0	0	31	31	0	0	0	0	0	0	0
16:45	0	0	1	0	0	1	2	48	2	1	0	0	51	52	0	0	0	0	0	0	0
H/TOT	8	1	1	0	0	10	11	141	11	2	0	1	155	157	0	0	0	0	0	0	0
17:00	2	0	0	0	0	2	2	41	6	0	0	0	47	47	0	0	0	0	0	0	0
17:15	0	1	0	0	0	1	1	34	3	0	0	1	38	39	0	0	0	0	0	0	0
17:30	2	1	0	0	0	3	3	38	6	1	1	0	46	48	0	0	0	0	0	0	0
17:45	6	0	0	0	0	6	6	34	2	1	0	0	37	38	0	0	0	0	0	0	0
H/TOT	10	2	0	0	0	12	12	147	17	2	1	1	168	171	0	0	0	0	0	0	0
18:00	1	1	0	0	0	2	2	30	5	1	1	0	37	39	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	35	2	0	1	1	39	41	0	0	0	0	0	0	0
18:30	3	0	0	0	0	3	3	25	2	0	0	0	27	27	0	0	0	0	0	0	0
18:45	2	0	0	0	0	2	2	24	3	0	1	0	28	29	0	0	0	0	0	0	0
H/TOT	6	1	0	0	0	7	7	114	12	1	3	1	131	136	0	0	0	0	0	0	0
P/TOT	67	8	4	0	0	79	81	1178	154	32	26	12	1402	1464	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 21st October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Saturday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 02 DATE: 21st October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Saturday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	7	1	0	0	0	8	8	0	0	0	0	0	0	0
14:00	1	0	0	0	0	1	1	4	0	0	0	0	4	4	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	7	2	0	0	0	9	9	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	3	1	0	0	0	4	4	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	5	1	0	0	0	6	6	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	3	1	0	0	0	4	4	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	1	0	1	0	0	2	3	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	6	1	1	0	0	8	9	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	9	0	0	0	0	9	9	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0
P/TOT	4	1	0	0	0	5	5	57	8	3	0	0	68	70	2	0	0	0	0	2	2

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 21st October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Saturday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
11:45	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	0	3	0	1	0	0	4	5
12:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	1	0	0	2	3

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 02 DATE: 21st October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Saturday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	1
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	1
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	2	0	0	0	2	2
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	3	4
17:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	1	1
17:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	1	1	0	0	0	2	2	3	0	0	0	0	3	3
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
18:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
18:30	1	0	0	0	0	1	1	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	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	1	0	0	0	1	1	2	0	1	0	0	3	4
P/TOT	4	0	0	0	0	4	4	6	4	0	0	0	10	10	13	4	3	0	1	21	24

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 21st October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Saturday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 02 DATE: 21st October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Saturday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	1	2	0	0	0	3	3	1	0	0	0	0	1	1
13:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1
13:30	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
13:45	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	3	0	0	0	0	3	3	7	2	0	0	0	9	9	2	0	0	0	0	2	2
14:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	7	1	0	0	0	8	8	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	12	2	0	0	0	14	14	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	5	0	0	0	0	5	5	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	12	0	0	0	0	12	12	1	0	0	0	0	1	1
16:00	0	0	0	0	0	0	0	4	0	0	0	0	4	4	1	0	0	0	0	1	1
16:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	1	0	0	0	1	1
H/TOT	1	1	0	0	0	2	2	6	0	0	0	0	6	6	1	2	0	0	0	3	3
17:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
17:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	1	1
17:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	2	0	0	0	0	2	2	4	0	0	0	0	4	4	1	1	0	0	0	2	2
18:00	0	1	1	0	0	2	3	0	1	0	0	0	1	1	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	3	1	0	0	0	4	4	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1
H/TOT	0	1	1	0	0	2	3	5	3	0	0	0	8	8	1	0	0	0	0	1	1
P/TOT	12	4	4	0	0	20	22	71	9	0	0	1	81	82	17	6	1	0	0	24	25

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 21st October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Saturday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	1	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0
08:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	1	0	0	0	2	2	0	1	0	0	0	1	1	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
10:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	1	0	0	0	3	3
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	3	2	0	0	0	5	5
11:00	0	1	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1
11:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	2	0	0	0	3	3	1	1	0	0	0	2	2	1	0	0	0	0	1	1
12:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0	0	2	2
12:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	1	0	0	0	2	2

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 21st October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh

DAY: Saturday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	2	0	0	0	0	2	2	0	1	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	3	1	0	0	0	4	4	0	1	0	0	0	1	1	0	0	0	0	0	0	0
15:00	0	1	0	0	0	1	1	1	1	0	0	0	2	2	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	1	0	0	0	2	2	1	1	0	0	0	2	2	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
P/TOT	13	5	0	0	0	18	18	5	5	0	0	0	10	10	8	3	0	0	0	11	11

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 21st October 2017

LOCATION: Quarry Access DAY: Saturday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 21st October 2017

LOCATION: Quarry Access DAY: Saturday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	2	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	2	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	25	10	1	0	0	36	37	2	1	0	0	0	3	3	2	1	0	0	0	3	3

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SITE: 03 DATE: 21st October 2017

LOCATION: Quarry Access DAY: Saturday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
09:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	5	5
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	6	6
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5

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	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	5	5
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	3	3
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	4
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
P/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	24	12	0	0	0	36	36

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SITE: 04 DATE: 21st October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Saturday

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

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13:00	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	8	1	0	0	0	9	9	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	6	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	10	1	0	0	0	11	11	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:30	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	6	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	11	0	0	0	0	11	11	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:00	5	0	0	0	0	5	5	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	6	2	0	0	0	8	8	1	0	0	0	0	1	1	1	0	0	0	0	1	1
17:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	0	0	0	0	2	2
17:30	1	1	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	6	1	0	0	0	7	7	1	0	0	0	0	1	1	3	0	0	0	0	3	3
18:00	0	1	1	0	0	2	3	0	1	0	0	0	1	1	0	0	0	0	0	0	0
18:15	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	3	1	0	0	8	9	0	1	0	0	0	1	1	0	0	0	0	0	0	0
P/TOT	73	13	5	0	1	92	96	4	1	0	1	0	6	7	10	1	0	1	0	12	13

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 21st October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Saturday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 21st October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Saturday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	1	0	0	0	0	1	1	0	1	0	0	0	1	1	1	0	0	0	0	1	1
13:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1
13:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	3	1	0	0	0	4	4
H/TOT	4	1	0	0	0	5	5	2	1	0	0	0	3	3	5	1	0	0	0	6	6
14:00	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	0	0	0	0	1	1
14:15	1	1	0	0	0	2	2	0	1	0	0	0	1	1	2	1	0	0	0	3	3
14:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:45	1	0	0	0	0	1	1	0	1	0	0	0	1	1	3	0	0	0	0	3	3
H/TOT	2	1	0	0	0	3	3	4	2	0	0	0	6	6	6	1	0	0	0	7	7
15:00	1	0	0	0	0	1	1	0	1	0	0	0	1	1	3	2	0	0	0	5	5
15:15	1	0	0	0	0	1	1	0	1	0	0	0	1	1	1	0	0	0	0	1	1
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	0	2	0	0	0	2	2	6	2	0	0	0	8	8
16:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	1	0	0	1	4	5
16:15	1	1	0	0	0	2	2	2	0	0	0	0	2	2	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	1	0	0	2	3
H/TOT	2	1	0	0	0	3	3	4	0	0	0	0	4	4	5	1	1	0	1	8	10
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	3	0	0	0	0	3	3
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	12	0	0	0	0	12	12
18:00	0	1	0	0	0	1	1	1	0	0	0	0	1	1	1	0	1	0	0	2	3
18:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	2	2
18:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	2	1	0	0	0	3	3	2	0	0	0	0	2	2	6	1	1	0	0	8	9
P/TOT	27	6	0	0	0	33	33	24	6	0	0	0	30	30	59	11	6	0	1	77	81

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 21st October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Saturday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	1	0	0	0	0	1	1	2	0	0	0	0	2	2	1	0	0	0	0	1	1
07:15	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
07:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	0	0	0	0	2	2
07:45	5	3	0	0	0	8	8	3	0	0	0	0	3	3	0	0	0	0	0	0	0
H/TOT	9	3	0	0	0	12	12	7	0	0	0	0	7	7	3	0	0	0	0	3	3
08:00	1	2	0	2	0	5	8	0	1	0	0	0	1	1	1	0	0	0	0	1	1
08:15	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	4	1	1	2	0	8	11	2	0	0	0	0	2	2	0	1	0	0	0	1	1
08:45	5	0	0	0	0	5	5	1	0	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	13	3	1	4	0	21	27	3	1	0	0	0	4	4	2	1	0	0	0	3	3
09:00	6	1	0	2	0	9	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	1	2	1	0	0	4	5	0	1	0	0	0	1	1	0	0	1	0	0	1	2
09:30	3	0	0	2	0	5	8	4	1	0	0	0	5	5	0	0	0	0	0	0	0
09:45	3	1	0	1	0	5	6	1	0	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	13	4	1	5	0	23	30	5	2	0	0	0	7	7	1	0	1	0	0	2	3
10:00	4	1	0	0	0	5	5	0	0	0	0	0	0	0	4	0	0	0	0	4	4
10:15	4	0	0	0	0	4	4	2	0	0	0	0	2	2	2	1	0	0	0	3	3
10:30	3	1	1	0	0	5	6	0	0	0	0	1	1	2	1	0	0	0	0	1	1
10:45	5	2	0	0	0	7	7	1	1	0	0	0	2	2	3	0	0	0	0	3	3
H/TOT	16	4	1	0	0	21	22	3	1	0	0	1	5	6	10	1	0	0	0	11	11
11:00	3	1	0	0	0	4	4	1	0	0	0	0	1	1	1	2	0	0	0	3	3
11:15	8	2	1	0	0	11	12	3	0	0	0	0	3	3	0	2	0	0	0	2	2
11:30	4	0	0	0	0	4	4	1	0	0	0	0	1	1	2	0	0	0	0	2	2
11:45	8	0	1	0	0	9	10	1	0	0	0	0	1	1	3	0	0	0	0	3	3
H/TOT	23	3	2	0	0	28	29	6	0	0	0	0	6	6	6	4	0	0	0	10	10
12:00	4	2	2	1	0	9	11	0	0	0	0	0	0	0	2	0	0	0	0	2	2
12:15	4	0	0	0	0	4	4	0	1	0	0	0	1	1	1	0	0	0	0	1	1
12:30	11	1	0	0	0	12	12	3	0	0	0	0	3	3	2	0	0	0	0	2	2
12:45	5	1	0	1	0	7	8	1	1	0	0	0	2	2	1	0	0	0	0	1	1
H/TOT	24	4	2	2	0	32	36	4	2	0	0	0	6	6	6	0	0	0	0	6	6

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 05 DATE: 21st October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Saturday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	7	2	0	0	0	9	9	2	0	0	0	0	2	2	0	0	0	0	0	0	0
13:15	7	1	1	0	0	9	10	2	1	0	0	0	3	3	2	0	0	0	0	2	2
13:30	8	2	0	1	0	11	12	2	1	0	0	0	3	3	1	0	0	0	0	1	1
13:45	7	4	0	0	0	11	11	1	0	0	0	0	1	1	3	0	0	0	0	3	3
H/TOT	29	9	1	1	0	40	42	7	2	0	0	0	9	9	6	0	0	0	0	6	6
14:00	7	1	1	0	0	9	10	2	0	0	0	0	2	2	3	0	0	0	0	3	3
14:15	2	0	1	0	0	3	4	1	0	0	0	0	1	1	0	2	0	0	0	2	2
14:30	4	1	0	0	0	5	5	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:45	2	3	0	1	0	6	7	3	0	0	0	0	3	3	1	0	0	0	0	1	1
H/TOT	15	5	2	1	0	23	25	7	0	0	0	0	7	7	4	2	0	0	0	6	6
15:00	3	2	0	0	0	5	5	1	0	0	0	0	1	1	4	0	0	0	0	4	4
15:15	4	0	0	0	0	4	4	2	1	0	0	0	3	3	2	0	0	0	0	2	2
15:30	9	2	0	0	0	11	11	2	0	0	0	0	2	2	1	0	0	0	0	1	1
15:45	6	1	3	0	0	10	12	4	0	0	0	0	4	4	2	0	0	0	0	2	2
H/TOT	22	5	3	0	0	30	32	9	1	0	0	0	10	10	9	0	0	0	0	9	9
16:00	7	2	0	0	0	9	9	4	0	0	0	0	4	4	0	0	0	0	0	0	0
16:15	5	2	0	0	0	7	7	0	1	0	0	0	1	1	2	1	0	0	0	3	3
16:30	12	1	0	0	0	13	13	2	0	0	0	0	2	2	4	0	0	0	0	4	4
16:45	3	4	1	0	0	8	9	1	0	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	27	9	1	0	0	37	38	7	1	0	0	0	8	8	7	1	0	0	0	8	8
17:00	7	2	0	0	0	9	9	3	0	0	0	0	3	3	1	0	0	0	0	1	1
17:15	4	1	1	0	0	6	7	1	0	1	0	0	2	3	3	0	0	0	0	3	3
17:30	6	0	0	0	0	6	6	1	1	0	0	0	2	2	2	0	0	0	0	2	2
17:45	3	0	0	0	0	3	3	2	0	0	0	0	2	2	3	0	0	0	0	3	3
H/TOT	20	3	1	0	0	24	25	7	1	1	0	0	9	10	9	0	0	0	0	9	9
18:00	6	1	0	0	0	7	7	0	1	0	0	0	1	1	1	0	0	0	0	1	1
18:15	5	3	3	0	0	11	13	3	0	0	0	0	3	3	2	0	0	0	0	2	2
18:30	3	0	0	0	0	3	3	1	0	0	0	0	1	1	1	0	0	0	0	1	1
18:45	7	0	0	0	0	7	7	4	0	0	0	0	4	4	2	0	0	0	0	2	2
H/TOT	21	4	3	0	0	28	30	8	1	0	0	0	9	9	6	0	0	0	0	6	6
P/TOT	232	56	18	13	0	319	345	73	12	1	0	1	87	89	69	9	1	0	0	79	80

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 21st October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Saturday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
07:15	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1	0	0	6	7
07:45	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	1	0	1	2	10	0	1	0	0	11	12
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	3	6
08:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1	2	0	0	0	0	2	2
08:45	0	0	0	0	0	0	0	0	1	0	0	0	1	1	5	0	0	2	0	7	10
H/TOT	0	0	0	0	0	0	0	0	2	0	0	0	2	2	9	0	0	4	0	13	18
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	4	7
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	3	4
09:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	2	0	3	6
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	3	0	5	0	13	20
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	2	0	8	11
10:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	8	3	0	0	0	11	11
10:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	2	0	0	0	7	7
10:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	8	1	0	0	0	9	9
H/TOT	1	0	0	0	0	1	1	2	0	0	0	0	2	2	27	6	0	2	0	35	38
11:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	4	2	1	0	0	7	8
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
11:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	4	2	1	1	0	8	10
11:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	1	0	1	0	0	2	3
H/TOT	4	1	0	0	0	5	5	1	0	0	0	0	1	1	14	4	3	1	0	22	25
12:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	3	0	0	0	5	5
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	1	0	0	6	7
12:30	0	0	0	0	0	0	0	1	1	0	0	0	2	2	1	0	0	0	0	1	1
12:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	11	1	1	0	0	13	14
H/TOT	0	0	0	0	0	0	0	3	1	0	0	0	4	4	18	5	2	0	0	25	26

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 05 DATE: 21st October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Saturday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	1	1	0	11	13
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	8	8
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	3	3
13:45	0	0	0	0	0	0	0	4	0	0	0	0	4	4	10	0	0	0	0	10	10
H/TOT	0	0	0	0	0	0	0	4	0	0	0	0	4	4	24	6	1	1	0	32	34
14:00	3	0	0	0	0	3	3	9	0	0	0	0	9	9	6	2	3	0	0	11	13
14:15	4	0	0	0	0	4	4	1	0	0	0	0	1	1	5	1	0	0	0	6	6
14:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	4	0	0	0	0	4	4
14:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	5	1	2	0	0	8	9
H/TOT	12	0	0	0	0	12	12	10	0	0	0	0	10	10	20	4	5	0	0	29	32
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
15:30	1	0	0	0	0	1	1	3	0	0	0	0	3	3	2	0	0	1	0	3	4
15:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	3	1	0	0	0	4	4
H/TOT	2	0	0	0	0	2	2	4	0	0	0	0	4	4	16	1	0	1	0	18	19
16:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	7	0	0	0	0	7	7
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	3	1	1	0	15	17
16:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	1	0	0	0	5	5
16:45	1	0	0	0	0	1	1	4	0	0	0	0	4	4	1	0	2	0	0	3	4
H/TOT	2	0	0	0	0	2	2	6	0	0	0	0	6	6	22	4	3	1	0	30	33
17:00	4	0	0	0	0	4	4	3	1	0	0	0	4	4	7	2	0	0	0	9	9
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
17:30	6	0	0	0	0	6	6	0	0	0	0	0	0	0	5	1	0	0	0	6	6
17:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	9	0	0	0	0	9	9
H/TOT	13	0	0	0	0	13	13	3	1	0	0	0	4	4	22	4	0	0	0	26	26
18:00	0	0	0	0	0	0	0	1	1	0	0	0	2	2	10	0	0	0	0	10	10
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	8	8
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
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	0	0	0	0	0	0	0	1	1	0	0	0	2	2	28	2	0	0	0	30	30
P/TOT	35	1	0	0	0	36	36	34	5	0	1	0	40	41	215	39	15	15	0	284	311

Waterford City & County Council Planning Department. Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06 DATE: 21st October 2017

LOCATION: Access Track (North) DAY: Saturday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	1	0	0	1	2	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	1	2	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	1	0	0	1	2
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	0	0	1	2
11:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 21st October 2017

LOCATION: Access Track (North)

DAY: Saturday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	1	0	0	1	2	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	1	2	0	0	0	0	0	0	0
15:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	1	0	0	0	1	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	1	2	2	0	0	5	6	0	1	1	0	0	2	3

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 22nd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Sunday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 22nd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Sunday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	1	3	1	0	0	5	6	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	3	1	0	0	5	6	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
P/TOT	1	3	1	0	0	5	6	7	0	0	0	0	7	7	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 22nd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Sunday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	7	0	0	0	0	7	7	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	6	0	0	0	0	6	6	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	12	1	0	0	0	13	13	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	8	0	1	0	0	9	10	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	33	1	1	0	0	35	36	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	6	3	1	0	0	10	11	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	7	3	1	3	0	14	18	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	14	2	0	1	0	17	18	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	17	2	0	0	0	19	19	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	44	10	2	4	0	60	66	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	12	2	0	0	0	14	14	1	0	0	0	0	1	1
09:15	0	0	0	0	0	0	0	11	2	0	0	1	14	15	0	0	0	0	0	0	0
09:30	1	0	0	0	0	1	1	21	3	0	0	0	24	24	2	0	0	0	0	2	2
09:45	0	0	0	0	0	0	0	14	0	0	0	0	14	14	1	0	1	0	0	2	3
H/TOT	1	0	0	0	0	1	1	58	7	0	0	1	66	67	4	0	1	0	0	5	6
10:00	1	0	0	0	0	1	1	16	1	0	0	0	17	17	0	1	0	0	0	1	1
10:15	0	0	0	0	0	0	0	20	4	0	0	0	24	24	1	0	0	0	0	1	1
10:30	0	0	0	0	0	0	0	27	1	0	0	0	28	28	2	0	0	0	0	2	2
10:45	0	0	0	0	0	0	0	29	5	0	0	0	34	34	1	0	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	92	11	0	0	0	103	103	4	1	0	0	0	5	5
11:00	0	0	0	0	0	0	0	15	1	0	0	0	16	16	1	0	0	0	0	1	1
11:15	0	0	0	0	0	0	0	31	4	0	0	0	35	35	0	1	0	0	0	1	1
11:30	0	0	0	0	0	0	0	46	2	0	0	1	49	50	3	0	0	0	0	3	3
11:45	0	0	0	0	0	0	0	45	1	0	1	0	47	48	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	137	8	0	1	1	147	149	4	1	0	0	0	5	5
12:00	0	0	0	0	0	0	0	44	2	0	0	0	46	46	1	1	0	0	0	2	2
12:15	0	0	0	0	0	0	0	31	3	0	1	0	35	36	1	0	0	0	0	1	1
12:30	0	0	0	0	0	0	0	38	5	1	0	0	44	45	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	48	5	0	0	0	53	53	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	161	15	1	1	0	178	180	2	1	0	0	0	3	3

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 22nd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Sunday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/774
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	41	3	2	0	0	46	47	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	43	4	1	0	0	48	49	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	50	2	0	1	0	53	54	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	43	0	1	0	0	44	45	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	177	9	4	1	0	191	194	1	0	0	0	0	1	1
14:00	0	0	0	0	0	0	0	38	5	0	0	0	43	43	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	41	2	0	0	0	43	43	1	0	0	0	0	1	1
14:30	0	0	0	0	0	0	0	31	1	0	0	0	32	32	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	48	3	0	0	0	51	51	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	158	11	0	0	0	169	169	1	0	0	0	0	1	1
15:00	0	0	0	0	0	0	0	28	0	1	1	0	30	32	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	34	3	1	0	0	38	39	0	1	0	0	0	1	1
15:30	0	0	0	0	0	0	0	28	3	0	0	0	31	31	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	31	3	0	0	0	34	34	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	121	9	2	1	0	133	135	1	1	0	0	0	2	2
16:00	0	0	0	0	0	0	0	34	3	1	0	0	38	39	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	23	0	0	0	1	24	25	2	0	0	0	0	2	2
16:30	1	0	0	0	0	1	1	40	2	0	0	0	42	42	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	35	5	0	0	0	40	40	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	132	10	1	0	1	144	146	2	0	0	0	0	2	2
17:00	0	0	0	0	0	0	0	32	2	0	0	0	34	34	1	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	25	0	1	0	0	26	27	2	0	0	0	0	2	2
17:30	0	0	0	0	0	0	0	35	4	0	0	1	40	41	2	0	0	0	0	2	2
17:45	1	0	0	0	0	1	1	35	4	1	0	0	40	41	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	127	10	2	0	1	140	142	5	0	0	0	0	5	5
18:00	0	0	0	0	0	0	0	40	1	0	0	0	41	41	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	33	4	0	0	0	37	37	1	0	0	0	0	1	1
18:30	0	0	0	0	0	0	0	31	0	2	0	0	33	34	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	31	1	1	0	0	33	34	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	135	6	3	0	0	144	146	3	0	0	0	0	3	3
P/TOT	4	0	0	0	0	4	4	1375	107	16	8	4	1510	1532	27	4	1	0	0	32	33

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 22nd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Sunday

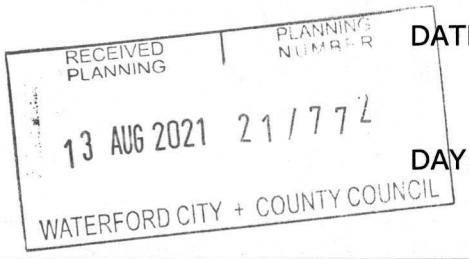
	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 22nd October 2017



LOCATION: N72 Junction @ Cappagh DAY: Sunday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
13:30	2	1	0	0	0	3	3	0	0	0	0	0	0	0	1	1	0	0	0	2	2
13:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0	0	0	0	4	4
H/TOT	4	1	0	0	0	5	5	0	0	0	0	0	0	0	9	1	0	0	0	10	10
14:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
14:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	7	0	0	0	0	7	7
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
H/TOT	3	1	0	0	0	4	4	0	0	0	0	0	0	0	10	0	2	0	0	12	13
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
15:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	1	0	0	0	1	1	1	0	0	0	0	1	1	6	0	0	0	0	6	6
16:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	2	1	0	0	0	3	3
H/TOT	5	1	0	0	0	6	6	0	0	0	0	0	0	0	5	1	0	0	0	6	6
17:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0	0	0	0	4	4
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:30	1	1	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	5	1	0	0	0	6	6	0	0	0	0	0	0	0	11	0	0	0	0	11	11
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	0	0	0	0	3	3
18:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	2	2
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	5	6
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
H/TOT	0	1	0	0	0	1	1	1	0	0	0	0	1	1	9	1	2	0	0	12	13
P/TOT	29	6	1	1	0	37	39	5	0	0	0	0	5	5	81	4	6	0	0	91	94

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 22nd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Sunday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	1	0	0	0	0	1	1	4	1	0	2	0	7	10	0	0	0	0	0	0	0
07:15	1	0	0	0	0	1	1	5	0	0	0	0	5	5	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0
07:45	1	0	0	0	0	1	1	4	0	0	0	0	4	4	0	0	0	0	0	0	0
H/TOT	3	0	0	0	0	3	3	17	2	0	2	0	21	24	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	4	1	1	1	0	7	9	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	5	1	0	0	0	6	6	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	15	4	0	0	0	19	19	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	10	1	0	0	0	11	11	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	34	7	1	1	0	43	45	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	6	2	1	0	0	9	10	0	0	0	0	0	0	0
09:15	1	0	0	0	0	1	1	10	3	1	1	0	15	17	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	12	7	0	0	0	19	19	0	0	0	0	0	0	0
09:45	2	0	0	0	0	2	2	17	3	0	0	0	20	20	0	0	0	0	0	0	0
H/TOT	3	0	0	0	0	3	3	45	15	2	1	0	63	65	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	8	5	0	1	0	14	15	0	0	0	0	0	0	0
10:15	2	0	0	0	0	2	2	11	1	0	0	1	13	14	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	10	2	0	0	0	12	12	0	0	0	0	0	0	0
10:45	1	0	1	0	0	2	3	16	2	0	0	0	18	18	0	0	0	0	0	0	0
H/TOT	3	0	1	0	0	4	5	45	10	0	1	1	57	59	0	0	0	0	0	0	0
11:00	2	0	1	0	0	3	4	21	1	1	2	0	25	28	0	0	0	0	0	0	0
11:15	3	1	0	0	0	4	4	31	2	0	0	0	33	33	0	0	0	0	0	0	0
11:30	2	0	0	0	0	2	2	19	4	0	0	0	23	23	0	0	0	0	0	0	0
11:45	3	2	0	0	0	5	5	21	2	0	0	0	23	23	0	0	0	0	0	0	0
H/TOT	10	3	1	0	0	14	15	92	9	1	2	0	104	107	0	0	0	0	0	0	0
12:00	1	0	0	0	0	1	1	25	4	0	0	0	29	29	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	33	3	2	0	0	38	39	0	0	0	0	0	0	0
12:30	1	0	0	0	0	1	1	33	1	0	0	0	34	34	0	0	0	0	0	0	0
12:45	1	0	0	0	0	1	1	30	1	0	1	0	32	33	0	0	0	0	0	0	0
H/TOT	3	0	0	0	0	3	3	121	9	2	1	0	133	135	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 22nd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Sunday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	0	0	0	0	2	2	35	1	0	0	0	36	36	0	0	0	0	0	0	0
13:15	2	0	0	0	0	2	2	35	2	0	0	1	38	39	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	24	5	0	0	0	29	29	0	0	0	0	0	0	0
13:45	2	0	0	0	0	2	2	33	1	0	0	0	34	34	0	0	0	0	0	0	0
H/TOT	6	0	0	0	0	6	6	127	9	0	0	1	137	138	0	0	0	0	0	0	0
14:00	4	0	0	0	0	4	4	38	3	0	0	0	41	41	0	0	0	0	0	0	0
14:15	2	0	0	0	0	2	2	33	4	0	1	0	38	39	0	0	0	0	0	0	0
14:30	3	0	0	0	0	3	3	40	2	0	0	0	42	42	0	0	0	0	0	0	0
14:45	2	0	0	0	0	2	2	43	1	1	0	0	45	46	0	0	0	0	0	0	0
H/TOT	11	0	0	0	0	11	11	154	10	1	1	0	166	168	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	45	1	1	0	0	47	48	1	2	1	0	0	4	5
15:15	2	0	0	0	0	2	2	48	1	0	1	0	50	51	0	0	0	0	0	0	0
15:30	4	0	0	0	0	4	4	28	1	0	0	0	29	29	0	1	0	0	0	1	1
15:45	1	0	0	0	0	1	1	40	3	0	0	1	44	45	0	0	0	0	0	0	0
H/TOT	7	0	0	0	0	7	7	161	6	1	1	1	170	173	1	3	1	0	0	5	6
16:00	2	0	0	0	0	2	2	40	3	1	0	0	44	45	0	0	0	0	0	0	0
16:15	3	0	0	0	0	3	3	42	1	0	0	0	43	43	0	0	0	0	0	0	0
16:30	3	0	0	0	0	3	3	40	0	0	0	0	40	40	0	0	0	0	0	0	0
16:45	2	0	0	0	0	2	2	46	4	1	0	1	52	54	0	0	0	0	0	0	0
H/TOT	10	0	0	0	0	10	10	168	8	2	0	1	179	181	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	49	8	0	0	1	58	59	0	0	0	0	0	0	0
17:15	4	1	1	0	0	6	7	48	4	0	0	0	52	52	0	0	0	0	0	0	0
17:30	2	0	0	0	0	2	2	44	3	0	1	0	48	49	0	0	0	0	0	0	0
17:45	5	0	0	0	0	5	5	44	3	1	1	0	49	51	0	0	0	0	0	0	0
H/TOT	11	1	1	0	0	13	14	185	18	1	2	1	207	211	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	36	2	1	0	0	39	40	0	0	0	0	0	0	0
18:15	3	1	1	0	0	5	6	35	3	1	0	1	40	42	0	0	0	0	0	0	0
18:30	1	0	0	0	0	1	1	23	5	1	1	0	30	32	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	44	1	1	1	0	47	49	0	0	0	0	0	0	0
H/TOT	4	1	1	0	0	6	7	138	11	4	2	1	156	162	0	0	0	0	0	0	0
P/TOT	71	5	4	0	0	80	82	1287	114	15	14	6	1436	1468	1	3	1	0	0	5	6

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 22nd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Sunday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 22nd October 2017

RECEIVED PLANNING 13 AUG 2021 | PLANNING NUMBER 21/772 WATERFORD CITY + COUNTY COUNCIL

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Sunday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	3	0	0	0	0	3	3	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
14:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	10	0	0	0	0	10	10	1	0	0	0	0	1	1
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
15:45	1	0	0	0	0	1	1	2	0	0	0	0	2	2	2	0	0	0	0	2	2
H/TOT	1	0	0	0	0	1	1	5	1	0	0	0	6	6	2	0	0	0	0	2	2
16:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
16:15	1	0	0	0	0	1	1	3	0	0	0	0	3	3	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	11	0	0	0	0	11	11	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	3	0	0	0	0	3	3	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
17:45	1	0	0	0	0	1	1	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	7	0	0	0	0	7	7	1	0	0	0	0	1	1
18:00	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	5	0	0	0	0	5	5	0	0	0	0	0	0	0
P/TOT	7	1	0	0	0	8	8	68	3	1	0	0	72	73	8	0	0	0	0	8	8

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 22nd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Sunday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
09:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	1	0	0	0	5	5
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
12:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 22nd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Sunday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
14:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	0	0	0	0	4	4
16:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	2	0	0	0	0	2	2	2	0	0	0	0	2	2
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
P/TOT	6	0	0	0	0	6	6	7	0	0	0	0	7	7	18	1	0	0	0	19	19

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 22nd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Sunday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 22nd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Sunday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/77
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	7	0	0	0	0	7	7	1	1	0	0	0	2	2
13:30	1	0	0	0	0	1	1	2	1	0	0	0	3	3	4	0	0	0	0	4	4
13:45	1	0	0	0	0	1	1	2	0	0	0	0	2	2	1	0	0	0	0	1	1
H/TOT	2	0	0	0	0	2	2	13	1	0	0	0	14	14	6	1	0	0	0	7	7
14:00	0	0	0	0	0	0	0	3	1	0	0	0	4	4	2	0	0	0	0	2	2
14:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1
14:30	0	0	0	0	0	0	0	6	0	2	0	0	8	9	0	0	0	0	0	0	0
14:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	11	1	2	0	0	14	15	3	0	0	0	0	3	3
15:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
15:15	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
15:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
15:45	1	0	0	0	0	1	1	2	0	0	0	0	2	2	1	0	0	0	0	1	1
H/TOT	3	0	0	0	0	3	3	7	0	0	0	0	7	7	2	0	0	0	0	2	2
16:00	0	0	0	0	0	0	0	5	0	0	0	0	5	5	1	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	1	0	0	2	3
16:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:45	1	0	0	0	0	1	1	4	0	0	0	0	4	4	3	0	0	0	0	3	3
H/TOT	2	0	0	0	0	2	2	11	0	0	0	0	11	11	5	0	1	0	0	6	7
17:00	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:30	1	0	0	0	0	1	1	3	0	0	0	0	3	3	2	0	0	0	0	2	2
17:45	1	0	0	0	0	1	1	3	0	0	0	0	3	3	4	0	0	0	0	4	4
H/TOT	2	0	0	0	0	2	2	10	0	0	0	0	10	10	7	0	0	0	0	7	7
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	1	0	0	0	0	1	1	3	0	0	0	0	3	3	1	0	0	0	0	1	1
18:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	4	0	0	0	0	4	4	1	0	0	0	0	1	1
P/TOT	16	1	0	0	0	17	17	81	5	2	0	0	88	89	31	2	1	0	0	34	35

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 22nd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Sunday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0	1	2
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0	1	2
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	4	0	0	0	0	4	4	2	0	0	0	0	2	2	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 22nd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Sunday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:30	1	1	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	1	0	0	0	5	5	2	0	0	0	0	2	2	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:30	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	7	0	0	0	0	7	7	1	0	0	0	0	1	1	1	1	0	0	0	2	2
16:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	1	0	0	0	2	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	4	0	1	0	0	5	6	0	0	0	0	0	0	0	4	0	0	0	0	4	4
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
P/TOT	27	1	1	0	0	29	30	8	0	0	0	0	8	8	7	2	0	1	0	10	11

Waterford City & County Council Planning Department. Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 22nd October 2017

LOCATION: Quarry Access DAY: Sunday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	2	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 22nd October 2017

LOCATION: Quarry Access DAY: Sunday

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13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	7	1	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	3	0	1	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	8	0	1	0	0	9	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	11	0	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	45	3	1	0	0	49	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 22nd October 2017

LOCATION: Quarry Access DAY: Sunday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
11:45	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	0	6	0	0	0	0	6	6
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 22nd October 2017

LOCATION: Quarry Access DAY: Sunday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/774
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	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	0	2	0	0	0	0	2	2
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	4
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10	10
16:00	0	0	0	0	0	0	0	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	2	0	0	0	0	2	2
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	4
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	1	0	0	9	10
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
P/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	3	1	1	0	47	49

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 22nd October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Sunday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 22nd October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Sunday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	8	1	0	0	0	9	9	2	1	0	0	0	3	3	0	0	0	0	0	0	0
13:30	5	1	0	0	0	6	6	1	0	0	0	0	1	1	0	0	0	0	0	0	0
13:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	18	2	0	0	0	20	20	3	1	0	0	0	4	4	1	0	0	0	0	1	1
14:00	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	5	0	2	0	0	7	8	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	12	0	2	0	0	14	15	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	6	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	2	0	1	0	0	3	4	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	6	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	11	0	1	0	0	12	13	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:00	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	4	0	0	0	0	4	4	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	7	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	16	0	0	0	0	16	16	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:30	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	6	0	0	0	0	6	6	2	0	0	0	0	2	2	1	0	0	0	0	1	1
P/TOT	96	7	3	0	0	106	108	6	1	0	0	0	7	7	10	2	0	0	0	12	12

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 22nd October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Sunday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
07:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
09:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1
09:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
H/TOT	2	0	0	0	0	2	2	2	0	0	0	0	2	2	6	1	0	0	0	7	7
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1
10:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
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	2	0	0	0	0	2	2	1	0	0	0	0	1	1	5	0	0	0	0	5	5
11:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	1	0	0	3	4
11:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	4	0	0	0	0	4	4
11:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2
11:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	4	0	0	0	0	4	4
H/TOT	1	0	0	0	0	1	1	3	1	0	0	0	4	4	12	0	1	0	0	13	14
12:00	2	0	0	0	0	2	2	1	1	0	0	0	2	2	1	0	0	0	0	1	1
12:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	0	0	0	0	3	3
12:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
12:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	0	0	0	0	4	4	4	1	0	0	0	5	5	4	0	0	0	0	4	4

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 22nd October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Sunday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
13:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	5	0	0	0	0	5	5
H/TOT	3	0	0	0	0	3	3	2	0	0	0	0	2	2	5	0	0	0	0	5	5
14:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	4	0	0	0	0	4	4
14:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	4	0	0	0	0	4	4
14:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	1	0	0	0	3	3
14:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	0	0	0	0	3	3
H/TOT	3	1	0	0	0	4	4	3	0	0	0	0	3	3	13	1	0	0	0	14	14
15:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	1	0	0	0	0	1	1	0	1	0	0	0	1	1	3	0	0	0	0	3	3
15:30	1	0	0	0	0	1	1	2	0	0	0	0	2	2	6	0	0	0	0	6	6
15:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	5	0	0	0	0	5	5
H/TOT	6	0	0	0	0	6	6	2	1	0	0	0	3	3	14	0	0	0	0	14	14
16:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	4	0	0	0	0	4	4
16:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2
16:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	3	0	0	0	0	3	3
16:45	2	0	0	0	0	2	2	1	0	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	7	0	0	0	0	7	7	2	0	0	0	0	2	2	11	0	0	0	0	11	11
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	3	0	0	0	0	3	3
17:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	3	0	0	0	0	3	3
17:45	1	0	0	0	0	1	1	2	0	0	0	0	2	2	1	0	1	0	0	2	3
H/TOT	3	0	0	0	0	3	3	4	0	0	0	0	4	4	9	0	1	0	0	10	11
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	0	0	0	0	3	3
18:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	2	0	0	0	0	2	2	6	0	0	0	0	6	6
P/TOT	32	1	0	0	0	33	33	26	3	0	0	0	29	29	87	2	2	0	0	91	92

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
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SITE: 05 DATE: 22nd October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Sunday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	2	0	0	0	0	2	2	1	1	0	0	0	2	2	1	0	0	0	0	1	1
07:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	3	0	0	0	0	3	3	3	1	0	0	0	4	4	1	0	0	0	0	1	1
08:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	4	0	0	0	0	4	4	1	0	0	0	0	1	1	0	0	0	0	0	0	0
08:30	5	1	0	0	0	6	6	0	0	0	0	0	0	0	1	0	0	0	0	1	1
08:45	1	0	0	0	0	1	1	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	13	1	0	0	0	14	14	3	0	0	0	0	3	3	1	0	0	0	0	1	1
09:00	4	0	0	0	0	4	4	1	0	0	0	0	1	1	1	0	0	0	0	1	1
09:15	1	1	0	0	0	2	2	2	0	0	0	0	2	2	3	0	0	0	0	3	3
09:30	1	1	0	0	0	2	2	2	0	0	0	0	2	2	4	0	0	0	0	4	4
09:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	8	2	0	0	0	10	10	5	0	0	0	0	5	5	9	0	0	0	0	9	9
10:00	5	1	0	0	0	6	6	0	1	0	0	0	1	1	1	0	0	0	0	1	1
10:15	2	2	0	0	0	4	4	1	0	0	0	0	1	1	1	1	0	0	0	2	2
10:30	5	0	0	0	0	5	5	4	0	0	0	0	4	4	1	0	0	0	0	1	1
10:45	3	0	0	0	0	3	3	4	0	0	0	0	4	4	2	0	0	0	0	2	2
H/TOT	15	3	0	0	0	18	18	9	1	0	0	0	10	10	5	1	0	0	0	6	6
11:00	5	0	0	0	0	5	5	4	0	0	0	0	4	4	2	0	0	0	0	2	2
11:15	9	2	0	0	0	11	11	2	0	0	0	0	2	2	4	0	1	0	0	5	6
11:30	9	0	0	0	0	9	9	4	0	0	0	0	4	4	3	0	0	0	0	3	3
11:45	7	0	0	0	0	7	7	3	0	0	0	0	3	3	2	0	0	0	0	2	2
H/TOT	30	2	0	0	0	32	32	13	0	0	0	0	13	13	11	0	1	0	0	12	13
12:00	4	0	0	0	0	4	4	3	0	0	0	0	3	3	2	0	0	0	0	2	2
12:15	3	0	0	0	0	3	3	1	0	0	0	0	1	1	2	2	0	0	0	4	4
12:30	4	0	1	0	0	5	6	1	0	0	0	0	1	1	1	0	0	0	0	1	1
12:45	5	0	0	0	0	5	5	0	1	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	16	0	1	0	0	17	18	5	1	0	0	0	6	6	5	2	0	0	0	7	7

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ABACUS TRANSPORTATION SURVEYS

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SITE: 05 DATE: 22nd October 2017

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LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Sunday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	10	0	0	0	0	10	10	1	0	0	0	0	1	1	3	0	0	0	0	3	3
13:15	5	0	0	0	0	5	5	5	0	0	0	0	5	5	4	0	0	0	0	4	4
13:30	10	1	0	0	0	11	11	2	0	0	0	0	2	2	0	0	0	0	0	0	0
13:45	4	1	0	0	0	5	5	2	0	0	0	0	2	2	3	0	0	0	0	3	3
H/TOT	29	2	0	0	0	31	31	10	0	0	0	0	10	10	10	0	0	0	0	10	10
14:00	12	1	0	0	0	13	13	3	0	0	0	0	3	3	2	0	0	0	0	2	2
14:15	4	2	0	0	0	6	6	5	2	0	0	0	7	7	2	0	0	0	0	2	2
14:30	10	1	0	0	0	11	11	2	0	2	0	0	4	5	2	1	0	0	0	3	3
14:45	2	1	0	0	0	3	3	3	0	0	0	0	3	3	2	1	0	0	0	3	3
H/TOT	28	5	0	0	0	33	33	13	2	2	0	0	17	18	8	2	0	0	0	10	10
15:00	10	2	0	0	0	12	12	2	0	0	0	0	2	2	2	0	0	0	0	2	2
15:15	6	1	0	0	0	7	7	3	0	0	0	0	3	3	5	0	0	0	0	5	5
15:30	3	1	0	0	0	4	4	2	0	0	0	0	2	2	3	0	0	0	0	3	3
15:45	6	0	0	0	0	6	6	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	25	4	0	0	0	29	29	7	0	0	0	0	7	7	13	0	0	0	0	13	13
16:00	3	0	0	0	0	3	3	5	0	0	0	0	5	5	5	0	0	0	0	5	5
16:15	4	1	2	0	0	7	8	2	1	0	0	0	3	3	2	0	0	0	0	2	2
16:30	12	1	0	0	0	13	13	2	0	0	0	0	2	2	2	0	0	0	0	2	2
16:45	7	0	0	0	0	7	7	6	0	0	0	0	6	6	3	0	0	0	0	3	3
H/TOT	26	2	2	0	0	30	31	15	1	0	0	0	16	16	12	0	0	0	0	12	12
17:00	11	0	0	0	0	11	11	5	0	0	0	0	5	5	3	0	0	0	0	3	3
17:15	4	0	0	0	0	4	4	2	0	0	0	0	2	2	1	1	0	0	0	2	2
17:30	5	2	0	0	0	7	7	5	0	0	0	0	5	5	3	0	0	0	0	3	3
17:45	4	2	0	0	0	6	6	3	0	0	0	0	3	3	2	0	1	0	0	3	4
H/TOT	24	4	0	0	0	28	28	15	0	0	0	0	15	15	9	1	1	0	0	11	12
18:00	9	0	0	0	0	9	9	2	0	0	0	0	2	2	1	1	0	0	0	2	2
18:15	10	3	0	0	0	13	13	2	1	0	0	0	3	3	2	0	0	0	0	2	2
18:30	3	2	1	0	0	6	7	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:45	10	1	0	0	0	11	11	3	0	0	0	0	3	3	0	0	0	0	0	0	0
H/TOT	32	6	1	0	0	39	40	7	1	0	0	0	8	8	5	1	0	0	0	6	6
P/TOT	249	31	4	0	0	284	286	105	7	2	0	0	114	115	89	7	2	0	0	98	99

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ABACUS TRANSPORTATION SURVEYS

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TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	4
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	1	0	0	9	10
09:00	2	1	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:15	3	2	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
09:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	7	3	0	0	0	10	10	1	0	0	0	0	1	1	2	0	0	0	0	2	2
10:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	0	0	0	0	3	3
10:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2
10:30	0	0	0	0	0	0	0	3	0	0	0	0	3	3	2	0	0	0	0	2	2
10:45	1	0	0	0	0	1	1	7	0	0	0	0	7	7	4	1	0	0	0	5	5
H/TOT	1	0	0	0	0	1	1	12	0	0	0	0	12	12	11	1	0	0	0	12	12
11:00	0	0	0	0	0	0	0	3	1	0	0	0	4	4	4	0	0	0	0	4	4
11:15	0	0	0	0	0	0	0	3	0	0	0	0	3	3	7	0	1	0	0	8	9
11:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	5	1	0	0	0	6	6
11:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	1	0	0	2	3
H/TOT	0	0	0	0	0	0	0	9	1	0	0	0	10	10	17	1	2	0	0	20	21
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	3	0	0	0	13	13
12:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	2	0	0	0	7	7
12:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	0	0	0	0	5	5
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	9
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	28	6	0	0	0	34	34

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 22nd October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Sunday

RECEIVED PLANNING 13 AUG 2021 PLANNING NUMBER 21/772 WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	6	0	0	0	0	6	6
13:15	8	3	0	0	0	11	11	0	0	0	0	0	0	0	6	1	0	0	0	7	7
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	0	0	0	11	11
13:45	1	0	0	0	0	1	1	3	0	0	0	0	3	3	5	0	0	0	0	5	5
H/TOT	12	3	0	0	0	15	15	3	0	0	0	0	3	3	27	2	0	0	0	29	29
14:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	13	1	0	0	0	14	14
14:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	9	1	0	0	0	10	10
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	6	6
14:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	1	0	0	0	4	4
H/TOT	4	0	0	0	0	4	4	0	0	0	0	0	0	0	30	4	0	0	0	34	34
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	2	1	0	0	14	15
15:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	0	0	0	0	4	4
15:45	1	0	0	0	0	1	1	2	0	0	0	0	2	2	6	1	0	0	0	7	7
H/TOT	1	0	0	0	0	1	1	3	0	0	0	0	3	3	28	3	1	0	0	32	33
16:00	6	0	0	0	0	6	6	2	0	0	0	0	2	2	12	2	1	0	0	15	16
16:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	9	1	0	0	0	10	10
16:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	1	0	0	0	6	6
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	8	1	0	0	0	9	9
H/TOT	9	0	0	0	0	9	9	2	0	0	0	0	2	2	34	5	1	0	0	40	41
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2	0	0	0	10	10
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	6	6
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	7	7
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	7	0	0	0	28	28
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	0	1	0	0	6	7
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	3	0	1	0	0	4	5
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	19	1	2	0	0	22	23
P/TOT	35	6	0	0	0	41	41	32	1	0	0	0	33	33	231	31	7	0	0	269	273

Waterford City & County Council Planning Department. Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06 DATE: 22nd October 2017

LOCATION: Access Track (North) DAY: Sunday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 22nd October 2017

LOCATION: Access Track (North)

DAY: Sunday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	1	0	0	0	0	1	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	0	1	0	0	0	1	1	2	0	0	0	0	2	2

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 23rd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Monday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 23rd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Monday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
P/TOT	2	1	0	0	0	3	3	0	1	0	0	0	1	1	1	1	0	0	0	2	2

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 23rd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Monday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	32	1	0	0	0	33	33	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	33	0	0	1	0	34	35	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	61	12	2	2	0	77	81	1	0	0	0	0	1	1
07:45	0	0	0	0	0	0	0	51	12	0	1	0	64	65	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	177	25	2	4	0	208	214	1	0	0	0	0	1	1
08:00	0	0	0	0	0	0	0	44	6	0	1	1	52	54	2	0	2	0	0	4	5
08:15	0	0	0	0	0	0	0	72	12	0	3	1	88	93	0	1	0	0	0	1	1
08:30	0	0	0	0	0	0	0	82	6	0	2	2	92	97	1	0	0	0	0	1	1
08:45	0	0	0	0	0	0	0	61	7	1	3	0	72	76	0	0	1	0	0	1	2
H/TOT	0	0	0	0	0	0	0	259	31	1	9	4	304	320	3	1	3	0	0	7	9
09:00	0	0	0	0	0	0	0	44	8	2	1	0	55	57	1	0	0	0	0	1	1
09:15	0	0	0	0	0	0	0	58	8	3	2	1	72	77	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	44	5	1	0	0	50	51	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	37	6	1	0	1	45	47	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	183	27	7	3	2	222	231	2	0	0	0	0	2	2
10:00	0	0	0	0	0	0	0	22	2	1	2	0	27	30	0	1	0	0	0	1	1
10:15	0	0	0	0	0	0	0	37	2	2	0	0	41	42	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	32	3	2	2	0	39	43	3	0	0	0	0	3	3
10:45	0	0	0	0	0	0	0	29	8	2	1	1	41	44	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	120	15	7	5	1	148	159	3	1	0	0	0	4	4
11:00	0	0	0	0	0	0	0	42	5	0	2	0	49	52	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	30	0	3	0	0	33	35	1	0	0	0	0	1	1
11:30	0	0	0	0	0	0	0	35	2	3	0	1	41	44	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	33	5	1	1	0	40	42	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	140	12	7	3	1	163	171	2	0	0	0	0	2	2
12:00	0	0	0	0	0	0	0	37	4	4	1	0	46	49	0	1	0	0	0	1	1
12:15	0	0	0	0	0	0	0	37	5	2	0	1	45	47	0	0	0	1	0	1	2
12:30	0	0	0	0	0	0	0	33	9	1	0	0	43	44	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	26	3	3	1	1	34	38	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	133	21	10	2	2	168	178	0	1	0	1	0	2	3

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 23rd October 2017

LOCATION: N72 Junction @ Cappagh

DAY: Monday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	27	4	1	0	0	32	33	0	0	0	1	0	1	2
13:15	0	0	0	0	0	0	0	25	6	1	0	0	32	33	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	35	3	0	0	0	38	38	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	23	3	2	0	0	28	29	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	110	16	4	0	0	130	132	0	0	0	1	0	1	2
14:00	0	0	0	0	0	0	0	37	6	1	1	3	48	53	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	37	2	1	2	1	43	47	1	0	0	1	0	2	3
14:30	0	0	0	0	0	0	0	32	2	0	2	1	37	41	0	1	1	1	0	3	5
14:45	0	0	0	0	0	0	0	28	5	1	1	0	35	37	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	134	15	3	6	5	163	177	3	1	1	2	0	7	10
15:00	0	0	0	0	0	0	0	31	6	1	1	0	39	41	0	1	1	0	0	2	3
15:15	0	0	0	0	0	0	0	44	9	4	0	1	58	61	2	0	0	0	0	2	2
15:30	0	0	0	0	0	0	0	32	6	1	1	1	41	44	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	33	3	1	1	0	38	40	0	0	0	1	0	1	2
H/TOT	0	0	0	0	0	0	0	140	24	7	3	2	176	185	3	1	1	1	0	6	8
16:00	0	0	0	0	0	0	0	26	9	5	0	1	41	45	2	0	0	0	0	2	2
16:15	0	0	0	0	0	0	0	28	6	0	2	1	37	41	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	26	9	0	3	1	39	44	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	31	16	1	1	0	49	51	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	111	40	6	6	3	166	180	3	0	0	0	0	3	3
17:00	0	0	0	0	0	0	0	42	9	4	3	1	59	66	1	0	1	0	0	2	3
17:15	0	0	0	0	0	0	0	38	6	1	2	1	48	52	0	1	0	0	0	1	1
17:30	0	0	0	0	0	0	0	37	7	2	3	0	49	54	0	2	0	0	0	2	2
17:45	0	0	0	0	0	0	0	39	2	1	0	0	42	43	1	0	0	1	0	2	3
H/TOT	0	0	0	0	0	0	0	156	24	8	8	2	198	214	2	3	1	1	0	7	9
18:00	0	0	0	0	0	0	0	23	5	0	0	0	28	28	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	34	1	0	0	0	35	35	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	28	1	3	2	0	34	38	4	0	0	0	0	4	4
18:45	0	0	0	0	0	0	0	20	1	1	1	0	23	25	3	0	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	105	8	4	3	0	120	126	7	0	0	0	0	7	7
P/TOT	0	0	0	0	0	0	0	1768	258	66	52	22	2166	2289	29	8	6	6	0	49	60

Waterford City & County Council Planning Department. Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 23rd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Monday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	1	1	0	0	17	18
08:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	6	0	1	0	1	8	10
08:15	2	0	1	0	0	3	4	0	0	0	0	0	0	0	5	0	0	1	0	6	7
08:30	0	2	0	0	0	2	2	0	0	0	0	0	0	0	5	0	0	0	0	5	5
08:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	5	1	0	1	0	7	8
H/TOT	7	2	1	0	0	10	11	0	0	0	0	0	0	0	21	1	1	2	1	26	30
09:00	1	0	2	0	0	3	4	0	0	0	0	0	0	0	5	0	0	0	2	7	9
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	10	12
09:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	4	0	0	0	0	4	4
H/TOT	2	1	2	0	0	5	6	0	0	0	0	0	0	0	19	1	1	1	2	24	28
10:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0	2	3
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	4	5
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	3	4
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0	8	0	2	2	0	12	16
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	3	4
11:15	0	0	0	2	0	2	5	0	0	0	0	0	0	0	2	1	1	0	0	4	5
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
11:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	1	0	1	1	0	3	5
H/TOT	1	1	0	2	0	4	7	0	0	0	0	0	0	0	4	2	3	2	0	11	15
12:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	5	6
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
12:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	1	0	4	5
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	9	2	1	1	0	13	15

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 23rd October 2017

LOCATION: N72 Junction @ Cappagh

DAY: Monday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
13:15	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	1	2
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	2	3
H/TOT	2	0	0	1	0	3	4	0	0	0	0	0	0	0	4	0	1	1	0	6	8
14:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0	5	1	0	0	0	6	6
14:15	0	0	1	1	0	2	4	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	4
H/TOT	1	0	2	1	0	4	6	0	0	0	0	0	0	0	9	2	0	0	0	11	11
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	2	1	0	10	12
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	5	6
15:30	2	1	1	1	0	5	7	0	0	0	0	0	0	0	1	3	1	1	0	6	8
15:45	1	0	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	3	1	2	1	0	7	9	0	0	0	0	0	0	0	7	8	3	3	0	21	26
16:00	1	0	0	1	0	2	3	0	0	0	0	0	0	0	2	0	0	1	0	3	4
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
16:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	1	0	3	4
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	3	0	0	1	0	4	5	0	0	0	0	0	0	0	7	0	0	3	0	10	14
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5
17:30	1	3	0	0	0	4	4	0	0	0	0	0	0	0	2	2	0	1	0	5	6
17:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	1	0	3	4
H/TOT	2	3	0	0	0	5	5	0	0	0	0	0	0	0	12	4	0	2	0	18	21
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
18:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	1	0	3	4
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
18:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	4	0	0	0	0	4	4	0	0	0	0	0	0	0	5	2	0	2	0	9	12
P/TOT	27	9	7	6	0	49	60	0	0	0	0	0	0	0	120	23	13	19	3	178	212

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 23rd October 2017

LOCATION: N72 Junction @ Cappagh DAY: Monday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	1	0	0	0	0	1	1	9	0	0	2	0	11	14	0	0	0	0	0	0	0
07:15	2	0	0	0	0	2	2	16	0	0	0	0	16	16	0	0	0	0	0	0	0
07:30	0	2	0	0	0	2	2	23	1	1	3	1	29	34	1	0	0	0	0	1	1
07:45	2	0	0	1	0	3	4	22	7	1	0	0	30	31	0	0	0	0	0	0	0
H/TOT	5	2	0	1	0	8	9	70	8	2	5	1	86	95	1	0	0	0	0	1	1
08:00	1	1	1	0	1	4	6	25	9	1	0	1	36	38	0	0	0	0	0	0	0
08:15	1	0	1	0	0	2	3	33	6	0	2	1	42	46	0	1	0	0	0	1	1
08:30	1	0	0	0	0	1	1	32	4	0	1	0	37	38	0	0	0	0	0	0	0
08:45	5	1	0	0	0	6	6	33	3	1	1	0	38	40	0	0	0	0	0	0	0
H/TOT	8	2	2	0	1	13	15	123	22	2	4	2	153	161	0	1	0	0	0	1	1
09:00	3	0	0	0	0	3	3	24	6	1	1	0	32	34	0	0	0	0	0	0	0
09:15	2	0	0	0	0	2	2	14	10	0	1	2	27	30	0	0	0	0	0	0	0
09:30	3	1	0	2	0	6	9	9	1	0	2	0	12	15	0	0	0	0	0	0	0
09:45	1	1	0	0	0	2	2	23	3	0	4	1	31	37	0	0	0	0	0	0	0
H/TOT	9	2	0	2	0	13	16	70	20	1	8	3	102	116	0	0	0	0	0	0	0
10:00	1	1	0	0	0	2	2	10	8	1	4	0	23	29	0	0	0	0	0	0	0
10:15	2	0	1	0	0	3	4	26	5	1	2	2	36	41	0	0	0	0	0	0	0
10:30	1	0	0	0	0	1	1	22	6	2	1	1	32	35	0	0	0	0	0	0	0
10:45	0	0	1	0	0	1	2	21	2	5	1	0	29	33	0	0	0	0	0	0	0
H/TOT	4	1	2	0	0	7	8	79	21	9	8	3	120	138	0	0	0	0	0	0	0
11:00	2	0	2	0	0	4	5	18	1	1	1	0	21	23	0	0	0	0	0	0	0
11:15	3	1	0	2	0	6	9	26	13	3	2	1	45	50	0	0	0	0	0	0	0
11:30	2	0	1	0	0	3	4	27	5	3	3	0	38	43	0	0	0	0	0	0	0
11:45	3	0	0	0	0	3	3	35	6	1	1	0	43	45	0	0	0	0	0	0	0
H/TOT	10	1	3	2	0	16	20	106	25	8	7	1	147	161	0	0	0	0	0	0	0
12:00	2	0	1	0	0	3	4	20	5	3	0	0	28	30	0	0	0	0	0	0	0
12:15	2	0	1	0	0	3	4	18	5	1	1	1	26	29	0	0	0	0	0	0	0
12:30	2	0	0	1	0	3	4	37	7	2	1	0	47	49	0	0	0	0	0	0	0
12:45	2	0	0	0	0	2	2	31	7	2	1	1	42	45	0	0	0	0	0	0	0
H/TOT	8	0	2	1	0	11	13	106	24	8	3	2	143	153	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 23rd October 2017

LOCATION: N72 Junction @ Cappagh

DAY: Monday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	6	0	0	0	0	6	6	27	2	1	2	1	33	37	0	0	0	0	0	0	0
13:15	1	0	0	0	0	1	1	29	2	0	1	1	33	35	0	0	0	0	0	0	0
13:30	3	0	0	1	0	4	5	26	5	2	0	0	33	34	0	0	0	0	0	0	0
13:45	2	0	0	0	0	2	2	34	8	1	2	0	45	48	0	0	0	0	0	0	0
H/TOT	12	0	0	1	0	13	14	116	17	4	5	2	144	155	0	0	0	0	0	0	0
14:00	1	0	1	0	0	2	3	33	5	4	1	2	45	50	0	0	0	0	0	0	0
14:15	3	0	0	2	0	5	8	47	3	1	2	0	53	56	0	0	0	0	0	0	0
14:30	2	1	0	0	1	4	5	26	1	0	0	1	28	29	0	0	0	0	0	0	0
14:45	4	1	1	0	1	7	9	41	7	5	0	0	53	56	0	0	0	0	0	0	0
H/TOT	10	2	2	2	2	18	24	147	16	10	3	3	179	191	0	0	0	0	0	0	0
15:00	2	1	0	0	0	3	3	45	3	1	1	0	50	52	0	1	0	0	0	1	1
15:15	2	0	0	0	0	2	2	37	7	4	1	3	52	58	0	0	0	0	0	0	0
15:30	6	0	1	1	0	8	10	30	4	3	0	0	37	39	0	1	0	0	0	1	1
15:45	3	0	0	1	0	4	5	42	5	3	3	0	53	58	0	0	0	0	0	0	0
H/TOT	13	1	1	2	0	17	20	154	19	11	5	3	192	207	0	2	0	0	0	2	2
16:00	2	1	1	0	0	4	5	52	6	3	2	2	65	71	0	0	0	0	0	0	0
16:15	5	1	0	0	1	7	8	56	6	4	0	2	68	72	0	0	0	0	0	0	0
16:30	1	1	0	0	0	2	2	68	11	3	1	0	83	86	0	0	0	0	0	0	0
16:45	2	0	0	1	0	3	4	56	7	0	2	0	65	68	0	0	0	0	0	0	0
H/TOT	10	3	1	1	1	16	19	232	30	10	5	4	281	297	0	0	0	0	0	0	0
17:00	6	0	0	0	0	6	6	53	9	3	3	0	68	73	0	0	0	0	0	0	0
17:15	3	1	0	1	0	5	6	71	8	1	0	1	81	83	0	0	0	0	0	0	0
17:30	5	2	0	0	0	7	7	75	9	3	0	1	88	91	1	0	0	0	0	1	1
17:45	3	0	1	1	0	5	7	63	6	2	1	1	73	76	0	0	0	0	0	0	0
H/TOT	17	3	1	2	0	23	26	262	32	9	4	3	310	323	1	0	0	0	0	1	1
18:00	2	0	0	0	0	2	2	45	8	1	0	0	54	55	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	46	7	0	2	1	56	60	0	0	0	0	0	0	0
18:30	6	0	0	0	0	6	6	39	4	0	0	0	43	43	0	0	0	0	0	0	0
18:45	3	0	0	0	0	3	3	40	2	0	0	0	42	42	0	0	0	0	0	0	0
H/TOT	11	0	0	0	0	11	11	170	21	1	2	1	195	199	0	0	0	0	0	0	0
P/TOT	117	17	14	14	4	166	195	1635	255	75	59	28	2052	2194	2	3	0	0	0	5	5

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 23rd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Monday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 23rd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Monday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	1	0	1	2	3	0	0	0	0	3	3	1	0	0	0	0	1	1
13:15	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	0	0	0	1	0	1	2	9	0	0	0	0	9	9	2	0	0	0	0	2	2
14:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
14:15	0	0	1	3	0	4	8	2	0	0	0	0	2	2	0	0	0	0	0	0	0
14:30	1	0	0	1	0	2	3	1	1	1	0	0	3	4	0	0	0	0	0	0	0
14:45	0	1	0	0	0	1	1	4	0	1	0	2	7	10	0	0	0	0	0	0	0
H/TOT	1	1	1	4	0	7	13	9	1	2	0	2	14	17	0	0	0	0	0	0	0
15:00	1	1	0	0	0	2	2	0	1	0	0	0	1	1	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	5	0	0	1	0	6	7	0	0	0	0	0	0	0
15:45	0	0	0	2	0	2	5	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	1	1	0	2	0	4	7	10	1	0	1	0	12	13	0	0	0	0	0	0	0
16:00	0	1	0	0	0	1	1	2	0	0	0	0	2	2	0	0	0	0	0	0	0
16:15	0	0	0	0	1	1	2	1	1	0	0	0	2	2	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	3	1	0	0	0	4	4	0	0	0	0	0	0	0
16:45	0	0	0	1	0	1	2	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	0	1	0	1	1	3	5	8	2	0	0	0	10	10	0	0	0	0	0	0	0
17:00	0	0	0	1	0	1	2	4	0	0	1	0	5	6	0	0	0	0	0	0	0
17:15	0	0	0	1	0	1	2	2	2	0	0	0	4	4	1	0	0	0	0	1	1
17:30	0	0	1	0	0	1	2	4	3	0	0	0	7	7	0	0	0	0	0	0	0
17:45	0	0	0	1	0	1	2	4	0	1	0	0	5	6	0	0	0	0	0	0	0
H/TOT	0	0	1	3	0	4	8	14	5	1	1	0	21	23	1	0	0	0	0	1	1
18:00	0	0	0	1	0	1	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	6	0	0	0	0	6	6	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	7	0	0	0	0	7	7	0	0	0	0	0	0	0
H/TOT	0	0	0	1	0	1	2	14	0	0	0	0	14	14	0	0	0	0	0	0	0
P/TOT	6	11	5	21	1	44	75	101	12	5	2	2	122	129	5	0	0	0	0	5	5

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 23rd October 2017

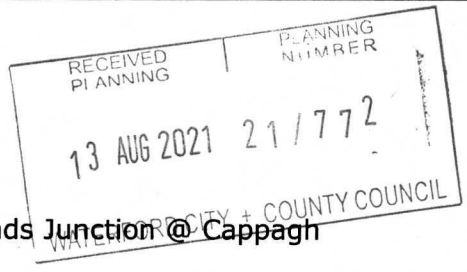
LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Monday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	1	0	0	2	0	3	6	1	0	0	0	0	1	1
07:45	0	0	0	0	0	0	0	0	1	0	1	0	2	3	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	1	1	0	4	0	6	11	1	0	0	0	0	1	1
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
08:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	1	1	0	0	0	2	2	2	0	0	0	0	2	2
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
09:30	0	0	0	0	0	0	0	0	0	1	0	0	1	2	1	0	0	0	0	1	1
09:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	1	1	0	2	4	4	1	0	0	0	5	5
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	1	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**



SITE: 02 DATE: 23rd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Monday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
14:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	1	2
15:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	1	0	1	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	1	0	1	2	0	0	0	1	0	1	2	1	0	0	0	0	1	1
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	2	1	0	1	0	4	5	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
P/TOT	4	1	0	1	0	6	7	7	3	1	9	0	20	32	12	1	1	1	0	15	17

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 23rd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Monday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY & COUNTY COUNCIL

SITE: 02 DATE: 23rd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Monday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	2	0	0	0	0	2	2	1	0	0	0	0	1	1
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
13:45	0	0	0	0	0	0	0	0	1	1	0	0	2	3	0	0	0	1	0	1	2
H/TOT	1	0	0	0	0	1	1	2	1	1	0	0	4	5	2	0	0	2	0	4	7
14:00	0	0	0	0	0	0	0	4	0	0	0	0	4	4	2	1	1	0	0	4	5
14:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	9	0	0	0	0	9	9	2	1	1	0	0	4	5
15:00	0	0	0	0	0	0	0	4	5	2	0	0	11	12	2	0	0	1	1	4	6
15:15	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	1	0	1	2
15:30	0	0	0	0	0	0	0	1	2	0	0	0	3	3	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	9	7	2	0	0	18	19	2	0	0	2	1	5	9
16:00	1	0	0	0	0	1	1	2	0	0	0	0	2	2	1	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	1	0	2	3
16:45	0	0	1	0	0	1	2	1	0	1	1	0	3	5	0	0	0	0	0	0	0
H/TOT	1	0	1	0	0	2	3	5	0	1	1	0	7	9	2	0	0	1	0	3	4
17:00	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	2	2	0	0	0	4	4	2	0	0	0	0	2	2
17:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	11	2	0	0	0	13	13	2	0	0	0	0	2	2
18:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
18:15	2	0	0	0	0	2	2	3	0	0	0	0	3	3	0	0	0	0	0	0	0
18:30	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	1	0	0	0	0	1	1	8	0	0	0	0	8	8	0	0	0	0	0	0	0
H/TOT	3	0	1	0	0	4	5	11	1	0	0	0	12	12	0	0	0	0	0	0	0
P/TOT	7	2	2	0	0	11	12	105	18	7	4	2	136	147	25	7	9	7	1	49	64

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 23rd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Monday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY & COUNTY COUNCIL

DATE: 23rd October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh

DAY: Monday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	1	2
13:15	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	1	2
13:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	0	0	0	0	1	1
H/TOT	1	0	0	2	0	3	6	1	0	0	1	0	2	3	1	0	0	2	0	3	6
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	1	1	0	2	4	0	0	0	0	0	0	0	0	0	1	0	0	1	2
14:30	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	1	0	1	0	2	3
H/TOT	3	1	1	1	0	6	8	2	1	0	0	0	3	3	0	1	1	1	0	3	5
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
15:15	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	0	2	5
15:30	2	0	0	1	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	2	0	0	1	0	3	4	0	1	0	1	0	2	3	0	0	0	3	0	3	7
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
16:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	2	5
16:30	2	1	0	0	0	3	3	1	0	0	0	0	1	1	1	1	0	0	0	2	2
16:45	0	0	0	1	0	1	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	3	1	0	1	0	5	6	2	0	0	0	0	2	2	2	1	0	3	0	6	10
17:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0	2	3
17:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	3	0	0	0	0	3	3	0	0	0	0	0	0	0	1	1	0	3	0	5	9
18:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0	1	2
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
18:45	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	5	0	0	0	0	5	5	1	0	0	0	0	1	1	0	1	0	2	0	3	6
P/TOT	28	6	2	9	1	46	60	10	4	1	6	0	21	29	6	10	5	22	0	43	74

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 23rd October 2017

LOCATION: Quarry Access DAY: Monday

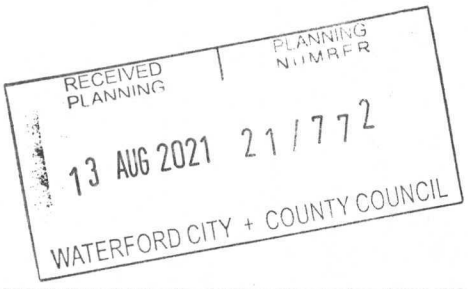
	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	1	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0
07:30	1	0	0	0	0	1	1	1	1	0	2	0	4	7	0	0	0	0	0	0	0
07:45	0	0	0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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03



DATE: 23rd October 2017

LOCATION: Quarry Access

DAY: Monday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	2	0	2	5
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
13:30	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	1	0	1	2
H/TOT	2	0	0	0	0	2	2	0	0	0	3	0	3	7	0	0	0	4	0	4	9
14:00	3	0	0	0	0	3	3	0	1	1	0	0	2	3	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	1	3	0	4	8	0	0	2	1	0	3	5
14:30	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	2	0	1	0	3	4
H/TOT	4	0	0	0	0	4	4	0	2	2	4	0	8	14	0	2	2	2	0	6	10
15:00	3	0	0	0	1	4	5	0	1	0	2	0	3	6	0	0	0	1	0	1	2
15:15	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	3	0	3	7
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
15:45	0	0	0	0	0	0	0	0	0	0	2	0	2	5	0	1	0	0	0	1	1
H/TOT	3	0	0	0	1	4	5	0	1	0	5	0	6	13	0	1	0	5	0	6	13
16:00	0	0	0	0	0	0	0	1	1	0	0	0	2	2	1	0	0	1	0	2	3
16:15	1	0	0	0	1	2	3	1	1	0	0	0	2	2	0	0	0	2	0	2	5
16:30	1	0	0	1	0	2	3	0	0	0	1	0	1	2	2	2	0	0	0	4	4
16:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	1	0	1	2
H/TOT	2	0	0	1	1	4	6	2	2	0	2	0	6	9	3	2	0	4	0	9	14
17:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	1	0	1	2
17:15	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	1	0	0	0	1	1
17:30	3	0	1	0	0	4	5	0	0	0	0	0	0	0	0	0	0	1	0	1	2
17:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	1	0	1	2
H/TOT	4	0	1	0	0	5	6	0	0	0	3	0	3	7	0	1	0	3	0	4	8
18:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	2	0	3	6
P/TOT	33	6	7	1	2	49	56	5	15	8	36	0	64	115	4	15	8	36	0	63	114

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 23rd October 2017

LOCATION: Quarry Access DAY: Monday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 23rd October 2017

LOCATION: Quarry Access DAY: Monday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	4	5
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
14:45	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	0	5	1	0	0	0	6	6
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	6
P/TOT	0	0	0	0	0	0	0	0	1	0	0	0	1	1	40	5	0	1	1	47	49

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 23rd October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Monday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	4	0	0	1	0	5	6	0	0	0	0	0	0	0	0	0	1	0	0	1	2
07:45	1	0	1	0	0	2	3	2	0	0	0	0	2	2	1	0	0	0	0	1	1
H/TOT	12	1	1	1	0	15	17	2	0	0	0	0	2	2	1	0	1	0	0	2	3
08:00	5	0	1	0	0	6	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	5	4	0	0	0	9	9	0	0	0	0	0	0	0	1	0	0	0	0	1	1
08:45	3	1	6	0	1	11	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	15	5	7	0	1	28	33	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:00	5	1	1	0	1	8	10	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:15	5	0	1	0	0	6	7	1	1	0	0	0	2	2	1	0	0	0	0	1	1
09:30	7	0	0	1	0	8	9	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:45	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	21	1	2	1	1	26	29	1	1	0	0	0	2	2	3	0	0	0	0	3	3
10:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	6	0	0	0	0	6	6	1	0	0	0	0	1	1	3	0	0	0	0	3	3
11:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0	2	3
11:30	0	1	0	1	0	2	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
11:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	2	0	1	0	5	6	1	0	0	0	0	1	1	2	0	0	1	0	3	4
12:00	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	2	0	1	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	2	0	0	1	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	7	2	0	2	0	11	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 23rd October 2017

LOCATION: Local Road Junction @ Whitechurch

DAY: Monday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:30	1	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	1	0	1	2	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	5	0	0	2	0	7	10	0	0	0	0	0	0	0	4	0	0	0	0	4	4
14:00	6	0	1	0	0	7	8	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	8	0	1	0	0	9	10	2	0	0	0	0	2	2	0	0	0	0	0	0	0
15:00	6	0	2	1	1	10	13	1	0	0	0	0	1	1	2	0	0	0	1	3	4
15:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	1	2	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	10	2	2	1	1	16	19	1	0	0	0	0	1	1	4	0	0	0	1	5	6
16:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	1	0	0	1	2
16:15	1	0	0	0	0	1	1	0	0	0	0	1	1	2	0	0	0	0	0	0	0
16:30	1	0	0	0	0	1	1	0	0	1	0	0	1	2	0	0	0	0	0	0	0
16:45	1	0	1	1	0	3	5	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	5	0	1	1	0	7	9	0	0	1	0	1	2	4	1	0	1	0	0	2	3
17:00	4	0	0	0	0	4	4	1	1	0	0	0	2	2	0	0	0	0	0	0	0
17:15	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	11	1	0	0	0	12	12	1	1	0	0	0	2	2	1	0	0	0	0	1	1
18:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	4	0	0	0	0	4	4	2	0	0	0	0	2	2	1	0	0	0	0	1	1
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	6	0	0	0	0	6	6	1	0	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	10	1	0	0	0	11	11	3	0	0	0	0	3	3	3	0	0	0	0	3	3
P/TOT	112	15	14	9	3	153	175	12	2	1	0	1	16	18	23	0	2	1	1	27	30

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 23rd October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Monday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 23rd October 2017

LOCATION: Local Road Junction @ Whitechurch

DAY: Monday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	3	0	0	1	0	4	5
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	4	5
13:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2
13:45	0	1	1	0	0	2	3	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	0	1	1	0	0	2	3	1	0	0	1	0	2	3	10	0	0	2	0	12	15
14:00	0	1	0	0	0	1	1	1	0	0	0	0	1	1	2	0	0	0	0	2	2
14:15	1	0	0	0	0	1	1	0	0	1	0	0	1	2	2	0	1	1	0	4	6
14:30	0	0	0	0	0	0	0	1	2	0	0	0	3	3	2	0	1	0	0	3	4
14:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	4	0	1	0	2	7	10
H/TOT	3	1	0	0	0	4	4	2	2	1	0	0	5	6	10	0	3	1	2	16	21
15:00	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:15	1	0	0	1	0	2	3	0	0	0	0	0	0	0	3	0	0	0	0	3	3
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	2	0	9	12
15:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	1	5	0	1	0	7	8	1	0	0	0	0	1	1	12	1	0	2	0	15	18
16:00	2	0	0	0	0	2	2	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	2	1	0	0	0	3	3
16:30	1	0	0	1	0	2	3	2	0	0	0	0	2	2	3	2	0	0	0	5	5
16:45	0	0	1	0	0	1	2	1	0	0	0	0	1	1	1	0	0	1	0	2	3
H/TOT	3	0	1	1	0	5	7	3	0	0	0	0	3	3	8	3	0	1	0	12	13
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	1	0	7	8
17:15	0	0	0	0	0	0	0	1	1	0	0	0	2	2	2	1	0	0	0	3	3
17:30	1	1	0	0	0	2	2	1	0	0	0	0	1	1	4	3	0	0	0	7	7
17:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	3	0	1	0	0	4	5
H/TOT	2	1	0	0	0	3	3	3	1	0	0	0	4	4	15	4	1	1	0	21	23
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
18:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:30	0	0	1	0	0	1	2	2	0	0	0	0	2	2	4	0	0	0	0	4	4
18:45	3	0	0	0	0	3	3	2	0	0	0	0	2	2	9	0	0	0	0	9	9
H/TOT	4	0	1	0	0	5	6	6	0	0	0	0	6	6	14	0	0	0	0	14	14
P/TOT	25	12	4	2	0	43	48	28	7	1	2	0	38	41	113	12	7	10	3	145	165

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 23rd October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Monday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	11	0	3	0	0	14	16	5	0	1	0	0	6	7	0	0	0	0	0	0	0
07:15	5	0	0	0	0	5	5	4	0	1	0	0	5	6	1	0	0	0	0	1	1
07:30	12	2	0	0	0	14	14	3	0	0	1	0	4	5	4	0	0	0	1	5	6
07:45	18	1	0	1	0	20	21	5	0	2	0	1	8	10	3	0	0	1	1	5	7
H/TOT	46	3	3	1	0	53	56	17	0	4	1	1	23	27	8	0	0	1	2	11	14
08:00	10	1	0	0	0	11	11	5	0	0	1	0	6	7	0	1	0	0	0	1	1
08:15	8	1	0	0	0	9	9	2	2	0	0	0	4	4	2	0	0	0	0	2	2
08:30	8	0	0	0	0	8	8	4	2	2	1	0	9	11	2	2	0	1	0	5	6
08:45	12	1	0	0	0	13	13	5	1	4	0	2	12	16	2	0	0	0	0	2	2
H/TOT	38	3	0	0	0	41	41	16	5	6	2	2	31	39	6	3	0	1	0	10	11
09:00	7	2	1	0	0	10	11	10	2	0	0	0	12	12	10	1	0	0	1	12	13
09:15	10	4	1	0	0	15	16	5	1	1	0	1	8	10	4	0	0	0	0	4	4
09:30	5	1	0	0	0	6	6	3	1	0	0	0	4	4	3	2	0	0	0	5	5
09:45	7	0	2	0	0	9	10	4	0	0	0	0	4	4	1	0	0	0	0	1	1
H/TOT	29	7	4	0	0	40	42	22	4	1	0	1	28	30	18	3	0	0	1	22	23
10:00	6	1	0	0	0	7	7	2	0	0	0	0	2	2	0	0	0	0	0	0	0
10:15	5	2	1	0	0	8	9	2	1	0	0	0	3	3	2	1	0	0	0	3	3
10:30	1	0	1	1	0	3	5	2	1	0	0	0	3	3	0	1	0	0	0	1	1
10:45	4	1	0	0	0	5	5	1	0	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	16	4	2	1	0	23	25	7	2	0	0	0	9	9	3	2	0	0	0	5	5
11:00	8	1	1	1	0	11	13	1	1	0	0	0	2	2	3	0	0	0	0	3	3
11:15	3	1	0	0	0	4	4	0	1	0	0	0	1	1	2	1	1	1	0	5	7
11:30	6	2	1	0	0	9	10	2	0	0	0	0	2	2	5	0	0	0	0	5	5
11:45	3	0	0	0	0	3	3	2	0	0	0	0	2	2	3	0	0	1	0	4	5
H/TOT	20	4	2	1	0	27	29	5	2	0	0	0	7	7	13	1	1	2	0	17	20
12:00	4	0	1	0	0	5	6	1	1	0	0	0	2	2	0	0	0	0	0	0	0
12:15	2	2	1	0	0	5	6	0	0	0	1	0	1	2	2	0	0	0	0	2	2
12:30	2	2	2	0	0	6	7	2	0	0	1	0	3	4	2	0	0	0	0	2	2
12:45	5	0	2	0	1	8	10	3	0	0	0	0	3	3	2	0	0	1	0	3	4
H/TOT	13	4	6	0	1	24	28	6	1	0	2	0	9	12	6	0	0	1	0	7	8

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 23rd October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Monday

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY & COUNTY COUNCIL

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	3	1	0	0	0	4	4	4	0	0	0	0	4	4	4	0	0	1	0	5	6
13:15	4	1	0	0	0	5	5	0	0	0	0	0	0	0	3	0	0	0	0	3	3
13:30	4	1	1	0	0	6	7	1	0	0	1	0	2	3	2	0	0	1	0	3	4
13:45	5	2	0	0	0	7	7	4	0	0	1	0	5	6	1	1	1	0	0	3	4
H/TOT	16	5	1	0	0	22	23	9	0	0	2	0	11	14	10	1	1	2	0	14	17
14:00	2	0	0	1	0	3	4	6	1	0	0	0	7	7	6	0	0	0	0	6	6
14:15	5	1	0	0	1	7	8	1	0	0	0	0	1	1	2	0	0	0	0	2	2
14:30	1	1	1	0	0	3	4	4	0	0	0	0	4	4	2	1	0	0	0	3	3
14:45	4	1	1	0	0	6	7	4	1	0	0	0	5	5	1	1	0	0	1	3	4
H/TOT	12	3	2	1	1	19	22	15	2	0	0	0	17	17	11	2	0	0	1	14	15
15:00	4	0	0	0	0	4	4	4	2	1	1	0	8	10	14	1	1	0	1	17	19
15:15	8	0	1	0	0	9	10	4	0	0	0	1	5	6	6	0	1	0	1	8	10
15:30	6	1	0	2	0	9	12	2	1	1	0	0	4	5	7	0	0	1	0	8	9
15:45	3	1	0	0	0	4	4	1	0	0	0	0	1	1	2	1	0	0	0	3	3
H/TOT	21	2	1	2	0	26	29	11	3	2	1	1	18	21	29	2	2	1	2	36	40
16:00	4	0	1	0	0	5	6	1	0	0	0	0	1	1	1	0	0	1	0	2	3
16:15	6	2	1	2	0	11	14	0	0	0	0	0	0	0	3	0	0	0	0	3	3
16:30	6	0	0	0	1	7	8	2	0	0	0	2	4	6	3	1	0	0	0	4	4
16:45	9	1	0	2	0	12	15	1	0	0	1	0	2	3	2	1	0	0	0	3	3
H/TOT	25	3	2	4	1	35	42	4	0	0	1	2	7	10	9	2	0	1	0	12	13
17:00	9	1	0	0	0	10	10	4	0	0	0	0	4	4	6	1	0	2	0	9	12
17:15	4	1	0	0	0	5	5	3	0	0	1	0	4	5	3	1	0	0	0	4	4
17:30	4	4	0	0	0	8	8	4	0	0	0	0	4	4	5	3	0	0	0	8	8
17:45	2	0	0	0	0	2	2	1	0	0	0	0	1	1	3	0	0	0	0	3	3
H/TOT	19	6	0	0	0	25	25	12	0	0	1	0	13	14	17	5	0	2	0	24	27
18:00	4	4	0	0	0	8	8	5	1	0	0	0	6	6	4	0	1	0	0	5	6
18:15	5	1	1	0	0	7	8	3	0	0	0	0	3	3	2	0	0	0	0	2	2
18:30	4	0	0	0	0	4	4	1	0	0	0	0	1	1	2	0	0	0	0	2	2
18:45	4	0	0	1	0	5	6	25	0	0	0	0	25	25	5	0	0	0	0	5	5
H/TOT	17	5	1	1	0	24	26	34	1	0	0	0	35	35	13	0	1	0	0	14	15
P/TOT	272	49	24	11	3	359	388	158	20	13	10	7	208	235	143	21	5	11	6	186	209

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 23rd October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Monday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	4	5
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
07:30	0	0	0	0	0	0	0	1	0	0	0	1	2	3	3	0	0	0	1	4	5
07:45	1	0	0	0	0	1	1	2	0	0	0	0	2	2	10	2	0	0	0	12	12
H/TOT	1	0	0	0	0	1	1	3	0	0	0	1	4	5	18	2	0	0	2	22	24
08:00	0	0	0	1	0	1	2	0	0	0	1	0	1	2	2	1	1	0	1	5	7
08:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	6	3	0	0	0	9	9
08:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	8	2	0	0	1	11	12
08:45	1	0	0	1	0	2	3	2	0	0	0	0	2	2	7	2	0	0	1	10	11
H/TOT	1	0	0	2	0	3	6	4	1	0	1	0	6	7	23	8	1	0	3	35	39
09:00	7	0	0	0	0	7	7	8	2	0	0	0	10	10	6	1	1	0	0	8	9
09:15	3	0	0	0	0	3	3	4	0	0	0	0	4	4	2	3	0	0	0	5	5
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	6	6
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	0	0	6	7
H/TOT	10	0	0	0	0	10	10	12	2	0	0	0	14	14	16	6	3	0	0	25	27
10:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	4	0	1	0	0	5	6
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	0	1	0	1	4	6
10:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	2	0	0	0	4	4
H/TOT	3	1	0	0	0	4	4	1	0	0	0	0	1	1	9	2	2	0	1	14	16
11:00	1	1	0	0	0	2	2	0	1	0	0	0	1	1	5	1	0	0	0	6	6
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
11:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	1	0	0	0	6	6
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	4
H/TOT	1	1	0	0	0	2	2	1	1	0	0	0	2	2	15	2	1	0	0	18	19
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
12:15	1	0	0	0	0	1	1	2	0	0	0	0	2	2	3	1	0	1	0	5	6
12:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	3	0	0	0	0	3	3
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
H/TOT	2	0	0	0	0	2	2	3	0	0	0	0	3	3	14	1	0	1	0	16	17

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 05 DATE: 23rd October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Monday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	1	0	1	0	5	6
13:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	0	0	0	0	5	5
13:30	1	0	0	0	0	1	1	2	0	0	0	0	2	2	3	0	1	0	0	4	5
13:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	4	2	0	0	0	6	6
H/TOT	2	0	0	0	0	2	2	5	0	0	0	0	5	5	15	3	1	1	0	20	22
14:00	5	0	0	0	0	5	5	0	0	0	0	0	0	0	4	2	2	0	0	8	9
14:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	0	2	0	0	6	7
14:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	7	1	0	0	0	8	8
14:45	2	0	0	0	0	2	2	6	0	0	0	0	6	6	6	0	0	0	0	6	6
H/TOT	7	0	0	0	0	7	7	8	0	0	0	0	8	8	21	3	4	0	0	28	30
15:00	7	0	0	0	0	7	7	4	0	0	0	0	4	4	2	0	0	0	0	2	2
15:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	2	3
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	3	0	0	10	12
15:45	0	0	1	0	0	1	2	1	0	0	0	0	1	1	9	2	1	1	0	13	15
H/TOT	8	0	1	0	0	9	10	5	0	0	0	0	5	5	19	2	5	1	0	27	31
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	1	0	0	0	0	1	1	0	0	0	1	0	1	2	11	3	1	0	0	15	16
16:30	1	0	0	1	1	3	5	0	0	0	0	0	0	0	9	1	0	2	0	12	15
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	3	1	0	13	16
H/TOT	3	0	0	1	1	5	7	0	0	0	1	0	1	2	29	6	4	3	0	42	48
17:00	2	0	0	0	1	3	4	2	0	0	0	0	2	2	10	4	0	2	0	16	19
17:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	8	1	1	0	0	10	11
17:30	1	1	0	0	0	2	2	2	0	0	0	0	2	2	10	3	0	1	0	14	15
17:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	11	1	0	0	1	13	14
H/TOT	6	1	0	0	1	8	9	4	0	0	0	0	4	4	39	9	1	3	1	53	58
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	6	2	0	0	0	8	8
18:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	4	1	0	0	0	5	5
18:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	7	0	0	0	0	7	7
18:45	1	1	0	0	0	2	2	6	1	0	0	0	7	7	9	0	0	0	0	9	9
H/TOT	1	1	0	0	0	2	2	10	1	0	0	0	11	11	26	3	0	0	0	29	29
P/TOT	45	4	1	3	2	55	61	56	5	0	2	1	64	68	244	47	22	9	7	329	359

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06 DATE: 23rd October 2017

LOCATION: Access Track (North) DAY: Monday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	1	2	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	1	0	0	1	2
12:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	1	0	0	1	2

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 06 DATE: 23rd October 2017

LOCATION: Access Track (North) DAY: Monday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	1	0	0	1	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	0	0	1	2
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	1	0	1	0	0	2	3	0	0	2	0	0	2	3

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 24th October 2017

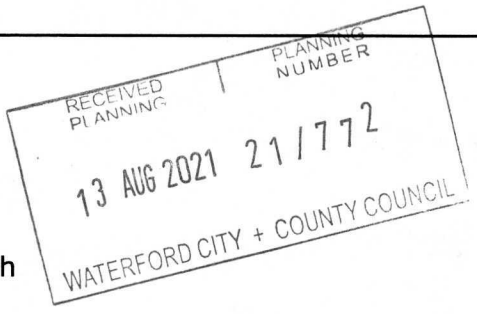
LOCATION: N72 Junction @ Cappagh DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**



SITE: 01 DATE: 24th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	4	0	0	0	0	4	4	0	1	0	0	0	1	1	1	0	0	0	0	1	1

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 24th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	23	0	0	0	0	23	23	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	31	1	0	0	0	32	32	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	60	2	1	0	0	63	64	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	54	10	2	1	0	67	69	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	168	13	3	1	0	185	188	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	60	4	2	0	1	67	69	0	1	0	2	0	3	6
08:15	0	0	0	0	0	0	0	73	5	1	0	0	79	80	1	1	0	1	0	3	4
08:30	0	0	0	0	0	0	0	94	6	3	2	2	107	113	1	0	0	1	0	2	3
08:45	0	0	0	0	0	0	0	60	5	2	1	0	68	70	2	0	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	287	20	8	3	3	321	332	4	2	0	4	0	10	15
09:00	0	0	0	0	0	0	0	45	4	1	1	0	51	53	1	0	0	0	0	1	1
09:15	0	0	0	0	0	0	0	38	6	3	0	0	47	49	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	30	4	1	0	2	37	40	1	0	0	0	0	1	1
09:45	0	0	0	0	0	0	0	22	4	2	1	0	29	31	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	135	18	7	2	2	164	172	2	1	0	0	0	3	3
10:00	0	0	0	0	0	0	0	37	5	3	0	0	45	47	0	0	0	1	0	1	2
10:15	0	0	0	0	0	0	0	36	8	1	0	0	45	46	0	0	0	1	0	1	2
10:30	1	0	0	0	0	1	1	31	13	1	1	1	47	50	0	0	1	0	0	1	2
10:45	0	0	0	0	0	0	0	30	6	4	1	0	41	44	0	0	1	1	0	2	4
H/TOT	1	0	0	0	0	1	1	134	32	9	2	1	178	186	0	0	2	3	0	5	10
11:00	0	0	0	0	0	0	0	27	9	4	0	1	41	44	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	25	3	3	0	0	31	33	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	28	3	1	0	2	34	37	0	0	0	1	0	1	2
11:45	0	0	0	0	0	0	0	18	5	1	0	2	26	29	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	98	20	9	0	5	132	142	0	0	0	1	0	1	2
12:00	0	0	0	0	0	0	0	27	5	1	0	0	33	34	1	1	0	0	0	2	2
12:15	0	0	0	0	0	0	0	32	1	1	2	1	37	41	1	0	0	0	0	1	1
12:30	0	0	0	0	0	0	0	37	5	1	0	0	43	44	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	27	3	2	1	1	34	37	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	123	14	5	3	2	147	155	3	1	0	0	0	4	4

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 24th October 2017

LOCATION: N72 Junction @ Cappagh

DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	26	9	1	1	0	37	39	3	0	0	2	0	5	8
13:15	0	0	0	0	0	0	0	30	3	2	0	0	35	36	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	32	6	1	2	0	41	44	0	0	1	0	0	1	2
13:45	0	0	0	0	0	0	0	27	1	1	1	0	30	32	0	0	0	2	0	2	5
H/TOT	0	0	0	0	0	0	0	115	19	5	4	0	143	151	3	0	1	4	0	8	14
14:00	0	0	0	0	0	0	0	28	3	1	1	3	36	41	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	26	5	2	0	0	33	34	2	2	0	1	0	5	6
14:30	0	0	0	0	0	0	0	42	5	0	1	3	51	55	0	0	1	0	0	1	2
14:45	0	0	0	0	0	0	0	26	6	1	0	0	33	34	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	122	19	4	2	6	153	164	3	2	1	1	0	7	9
15:00	0	0	0	0	0	0	0	32	8	2	1	0	43	45	1	1	0	1	0	3	4
15:15	0	0	0	0	0	0	0	46	8	2	2	4	62	70	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	32	8	2	1	0	43	45	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	36	7	1	3	0	47	51	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	146	31	7	7	4	195	212	1	1	0	1	0	3	4
16:00	0	0	0	0	0	0	0	39	10	3	0	0	52	54	0	1	0	0	0	1	1
16:15	0	0	0	0	0	0	0	29	6	3	4	1	43	51	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	38	12	3	0	0	53	55	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	36	8	1	0	0	45	46	2	0	0	1	0	3	4
H/TOT	0	0	0	0	0	0	0	142	36	10	4	1	193	204	2	1	0	1	0	4	5
17:00	0	0	0	0	0	0	0	31	7	4	0	0	42	44	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	20	4	1	2	0	27	30	4	0	0	1	0	5	6
17:30	0	0	0	0	0	0	0	32	11	1	1	1	46	49	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	39	7	1	0	0	47	48	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	122	29	7	3	1	162	170	4	0	0	1	0	5	6
18:00	0	0	0	0	0	0	0	27	4	0	0	0	31	31	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	37	3	0	0	0	40	40	2	0	0	0	0	2	2
18:30	0	0	0	0	0	0	0	25	2	0	0	0	27	27	1	0	0	0	0	1	1
18:45	0	0	0	0	0	0	0	20	0	0	1	0	21	22	2	1	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	109	9	0	1	0	119	120	5	1	0	0	0	6	6
P/TOT	1	0	0	0	0	1	1	1701	260	74	32	25	2092	2196	27	9	4	16	0	56	79

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 24th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Tuesday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
07:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	1	0	1	0	7	8
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	1	0	5	6
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	13	2	0	2	0	17	20
08:00	2	0	0	1	0	3	4	0	0	0	0	0	0	0	4	1	0	1	1	7	9
08:15	2	1	0	3	0	6	10	0	0	0	0	0	0	0	6	1	0	0	0	7	7
08:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0	0	2	0	6	9
08:45	1	2	0	1	0	4	5	0	0	0	0	0	0	0	7	0	1	0	2	10	13
H/TOT	6	3	0	5	0	14	21	0	0	0	0	0	0	0	21	2	1	3	3	30	37
09:00	1	0	0	1	0	2	3	0	0	0	0	0	0	0	4	0	0	0	0	4	4
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	1	0	8	10
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	5	6
H/TOT	1	0	0	1	0	2	3	0	0	0	0	0	0	0	17	0	2	1	0	20	22
10:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	0	0	0	0	5	5
10:15	0	1	0	1	0	2	3	0	0	0	0	0	0	0	2	1	0	1	0	4	5
10:30	0	0	0	1	0	1	2	0	0	0	0	0	0	0	4	0	0	1	0	5	6
10:45	0	1	1	0	0	2	3	0	0	0	0	0	0	0	1	0	1	0	0	2	3
H/TOT	1	2	1	2	0	6	9	0	0	0	0	0	0	0	12	1	1	2	0	16	19
11:00	0	0	1	1	0	2	4	1	0	0	0	0	1	1	1	0	0	1	0	2	3
11:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
11:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	3	4
H/TOT	2	0	1	1	0	4	6	1	0	0	0	0	1	1	6	0	0	2	0	8	11
12:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	2	0	5	8
12:15	0	0	1	1	0	2	4	0	0	0	0	0	0	0	0	0	0	1	0	1	2
12:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	1	0	3	4
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	3	0	1	1	0	5	7	0	0	0	0	0	0	0	8	0	0	4	0	12	17

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 24th October 2017

LOCATION: N72 Junction @ Cappagh

DAY: Tuesday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	1	0	2	3	0	0	0	0	0	0	0	4	3	0	0	0	7	7
13:15	0	1	0	2	0	3	6	0	0	0	0	0	0	0	1	0	0	1	0	2	3
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	4
H/TOT	1	1	0	3	0	5	9	0	0	0	0	0	0	0	7	4	1	2	0	14	17
14:00	0	1	0	1	0	2	3	0	0	0	0	0	0	0	4	0	0	1	0	5	6
14:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	0	0	2	3
14:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0	0	1	0	5	6
14:45	5	0	0	1	0	6	7	0	0	0	0	0	0	0	2	1	0	0	0	3	3
H/TOT	6	2	0	2	0	10	13	0	0	0	0	0	0	0	10	1	2	2	0	15	19
15:00	1	0	0	1	0	2	3	0	0	0	0	0	0	0	4	0	0	0	0	4	4
15:15	0	0	0	1	0	1	2	0	0	0	0	0	0	0	5	0	0	2	0	7	10
15:30	1	1	0	0	0	2	2	0	0	0	0	0	0	0	3	0	0	1	0	4	5
15:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	2	2	0	2	0	6	9	0	0	0	0	0	0	0	12	1	0	3	0	16	20
16:00	0	0	0	1	0	1	2	0	0	0	0	0	0	0	2	2	0	0	0	4	4
16:15	0	0	0	0	1	1	2	0	0	0	0	0	0	0	1	2	0	0	0	3	3
16:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	2	3
H/TOT	1	1	0	1	1	4	6	0	0	0	0	0	0	0	5	4	1	0	0	10	11
17:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	7	1	0	0	0	8	8
17:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	2	1	0	0	0	3	3
17:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	2	0	1	0	0	3	4
17:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	1	3	1	0	0	5	6	0	0	0	0	0	0	0	14	2	1	0	0	17	18
18:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	4	0	0	0	0	4	4
H/TOT	2	1	0	0	0	3	3	0	0	0	0	0	0	0	10	1	0	0	0	11	11
P/TOT	27	15	4	18	1	65	91	1	0	0	0	0	1	1	135	18	9	21	3	186	221

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 01 DATE: 24th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Tuesday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	1	0	0	0	0	1	1	10	0	1	1	0	12	14	0	0	0	0	0	0	0
07:15	2	1	0	1	0	4	5	18	1	0	0	0	19	19	0	0	0	0	0	0	0
07:30	1	0	0	0	0	1	1	20	3	1	1	0	25	27	0	0	0	0	0	0	0
07:45	1	0	0	1	0	2	3	21	7	0	0	0	28	28	0	0	0	0	0	0	0
H/TOT	5	1	0	2	0	8	11	69	11	2	2	0	84	88	0	0	0	0	0	0	0
08:00	0	0	0	0	1	1	2	29	7	0	3	1	40	45	1	0	0	0	0	1	1
08:15	1	1	0	0	0	2	2	26	5	2	2	1	36	41	0	1	0	0	0	1	1
08:30	2	0	0	1	0	3	4	35	7	3	0	1	46	49	0	0	0	0	0	0	0
08:45	4	1	0	1	0	6	7	33	10	2	1	0	46	48	0	0	0	0	0	0	0
H/TOT	7	2	0	2	1	12	16	123	29	7	6	3	168	182	1	1	0	0	0	2	2
09:00	4	1	0	0	0	5	5	30	2	2	3	0	37	42	0	0	0	0	0	0	0
09:15	3	0	1	0	0	4	5	21	2	2	1	3	29	34	0	0	0	0	0	0	0
09:30	1	0	0	2	0	3	6	7	9	1	1	1	19	22	0	0	0	0	0	0	0
09:45	1	0	0	0	0	1	1	11	6	0	1	2	20	23	1	0	0	0	0	1	1
H/TOT	9	1	1	2	0	13	16	69	19	5	6	6	105	121	1	0	0	0	0	1	1
10:00	0	0	0	0	0	0	0	25	3	4	2	0	34	39	0	0	0	0	0	0	0
10:15	0	1	0	1	0	2	3	15	4	0	2	2	23	28	0	0	0	0	0	0	0
10:30	0	1	0	1	0	2	3	20	8	4	2	0	34	39	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	26	4	2	0	0	32	33	0	0	0	0	0	0	0
H/TOT	0	2	0	2	0	4	7	86	19	10	6	2	123	138	0	0	0	0	0	0	0
11:00	1	1	0	0	0	2	2	20	5	0	2	1	28	32	0	0	0	0	0	0	0
11:15	1	0	1	0	0	2	3	28	4	2	1	1	36	39	0	0	0	0	0	0	0
11:30	4	0	0	1	0	5	6	21	4	0	1	0	26	27	0	0	0	0	0	0	0
11:45	3	0	0	1	0	4	5	26	5	0	1	0	32	33	0	0	0	0	0	0	0
H/TOT	9	1	1	2	0	13	16	95	18	2	5	2	122	132	0	0	0	0	0	0	0
12:00	6	0	1	0	0	7	8	17	10	0	1	2	30	33	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	21	4	4	1	1	31	35	0	0	0	0	0	0	0
12:30	2	1	0	2	0	5	8	30	5	4	1	2	42	47	0	0	0	0	0	0	0
12:45	4	0	0	0	0	4	4	28	6	1	4	0	39	45	0	0	0	0	0	0	0
H/TOT	12	1	1	2	0	16	19	96	25	9	7	5	142	161	0	0	0	0	0	0	0

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 01 DATE: 24th October 2017

LOCATION: N72 Junction @ Cappagh DAY: Tuesday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	3	0	0	0	0	3	3	29	6	1	4	0	40	46	0	0	0	0	0	0	0
13:15	3	0	0	1	0	4	5	36	3	0	1	2	42	45	0	0	0	0	0	0	0
13:30	1	1	1	0	0	3	4	29	3	2	0	1	35	37	0	0	0	0	0	0	0
13:45	5	1	1	1	0	8	10	32	4	1	1	0	38	40	0	0	0	0	0	0	0
H/TOT	12	2	2	2	0	18	22	126	16	4	6	3	155	168	0	0	0	0	0	0	0
14:00	6	0	0	0	0	6	6	45	5	3	1	1	55	59	0	0	0	0	0	0	0
14:15	2	0	0	0	0	2	2	27	8	0	2	0	37	40	0	0	0	0	0	0	0
14:30	5	0	0	1	1	7	9	37	6	0	2	0	45	48	0	0	0	0	0	0	0
14:45	4	1	0	0	1	6	7	36	5	1	1	0	43	45	0	0	0	0	0	0	0
H/TOT	17	1	0	1	2	21	24	145	24	4	6	1	180	191	0	0	0	0	0	0	0
15:00	1	0	0	1	0	2	3	36	7	0	2	0	45	48	0	0	0	0	0	0	0
15:15	0	1	0	0	0	1	1	38	4	1	1	2	46	50	0	0	0	0	0	0	0
15:30	3	1	0	0	0	4	4	38	4	1	2	0	45	48	0	0	0	0	0	0	0
15:45	4	1	0	0	0	5	5	36	6	1	3	0	46	50	0	0	0	0	0	0	0
H/TOT	8	3	0	1	0	12	13	148	21	3	8	2	182	196	0	0	0	0	0	0	0
16:00	3	1	1	1	1	7	10	54	6	0	2	1	63	67	0	0	0	0	0	0	0
16:15	6	0	0	2	0	8	11	69	5	4	1	2	81	86	0	0	0	0	0	0	0
16:30	1	0	0	0	0	1	1	57	9	4	1	1	72	76	0	0	0	0	0	0	0
16:45	2	0	0	0	0	2	2	49	12	1	1	0	63	65	0	0	0	0	0	0	0
H/TOT	12	1	1	3	1	18	23	229	32	9	5	4	279	294	0	0	0	0	0	0	0
17:00	5	1	0	0	0	6	6	50	8	0	1	0	59	60	0	0	0	0	0	0	0
17:15	4	1	0	0	0	5	5	57	8	1	1	1	68	71	0	0	0	0	0	0	0
17:30	5	2	0	0	0	7	7	61	4	0	0	0	65	65	0	0	0	0	0	0	0
17:45	3	0	0	0	0	3	3	81	9	0	3	1	94	99	0	0	0	0	0	0	0
H/TOT	17	4	0	0	0	21	21	249	29	1	5	2	286	295	0	0	0	0	0	0	0
18:00	6	0	0	0	0	6	6	48	4	0	2	0	54	57	0	0	0	0	0	0	0
18:15	4	0	0	0	0	4	4	46	3	0	0	1	50	51	0	0	0	0	0	0	0
18:30	4	0	0	0	0	4	4	48	3	0	0	0	51	51	1	0	0	0	0	1	1
18:45	3	0	0	0	0	3	3	27	1	1	0	0	29	30	0	0	0	0	0	0	0
H/TOT	17	0	0	0	0	17	17	169	11	1	2	1	184	188	1	0	0	0	0	1	1
P/TOT	125	19	6	19	4	173	205	1604	254	57	64	31	2010	2153	3	1	0	0	0	4	4

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 24th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Tuesday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 02 DATE: 24th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
13:15	0	0	0	1	0	1	2	1	1	0	0	0	2	2	1	0	0	2	0	3	6
13:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
13:45	0	0	0	3	0	3	7	5	2	1	0	0	8	9	0	0	0	0	0	0	0
H/TOT	0	0	0	4	0	4	9	9	3	1	0	0	13	14	2	0	0	2	0	4	7
14:00	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
14:15	1	0	0	1	0	2	3	2	1	0	0	0	3	3	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	4	0	0	1	0	5	6	2	0	0	0	0	2	2
14:45	0	0	0	1	0	1	2	5	1	0	0	2	8	10	0	0	0	0	0	0	0
H/TOT	1	0	0	2	0	3	6	14	2	0	1	2	19	22	2	0	0	0	0	2	2
15:00	0	1	0	2	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0
H/TOT	0	1	0	2	0	3	6	4	2	0	0	0	6	6	0	0	0	0	0	0	0
16:00	2	0	0	0	0	2	2	1	1	1	1	0	4	6	0	0	0	0	0	0	0
16:15	0	0	0	1	0	1	2	3	1	0	1	0	5	6	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
16:45	1	0	0	0	0	1	1	2	0	0	1	0	3	4	0	0	0	0	0	0	0
H/TOT	3	0	0	1	0	4	5	8	2	1	3	0	14	18	1	0	0	0	0	1	1
17:00	2	0	0	0	0	2	2	3	2	0	0	0	5	5	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	5	1	0	0	0	6	6	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	12	4	0	0	0	16	16	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	6	0	0	0	0	6	6	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	3	2	0	0	0	5	5	1	0	0	0	0	1	1
18:30	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	17	3	0	0	0	20	20	1	0	0	0	0	1	1
P/TOT	11	1	2	27	0	41	77	98	26	5	4	2	135	145	12	2	0	2	0	16	19

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 24th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Tuesday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 02 DATE: 24th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	0	0	1	1
14:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
H/TOT	0	0	0	0	0	0	0	1	0	0	1	0	2	3	0	1	1	0	0	2	3
15:00	0	0	0	0	0	0	0	0	2	0	1	0	3	4	0	0	0	0	0	0	0
15:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	2	0	1	0	3	4	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	1	1	2	4
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	2
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
P/TOT	15	1	0	0	0	16	16	11	8	1	14	0	34	53	5	3	2	3	1	14	20

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 24th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Tuesday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 02 DATE: 24th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Tuesday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	0	0	0	0	2	2	2	1	0	0	0	3	3	0	0	0	0	0	0	0
13:15	0	1	0	0	0	1	1	1	1	0	0	0	2	2	0	1	0	0	0	1	1
13:30	0	0	0	1	0	1	2	0	1	0	0	0	1	1	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	2	1	0	1	0	4	5	5	3	0	0	0	8	8	0	1	0	0	0	1	1
14:00	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	1	0	1	0	0	2	3	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	2	1	0	0	0	3	3	1	1	0	1	0	3	4
H/TOT	0	0	0	0	0	0	0	9	2	1	0	0	12	13	1	1	0	1	0	3	4
15:00	0	0	0	0	0	0	0	5	0	0	0	0	5	5	1	0	0	0	1	2	3
15:15	0	0	0	0	0	0	0	4	0	1	0	0	5	6	0	0	0	0	0	0	0
15:30	0	1	0	0	0	1	1	1	1	0	0	0	2	2	1	1	0	0	0	2	2
15:45	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	1	0	1	2
H/TOT	0	1	0	0	0	1	1	10	3	1	0	0	14	15	2	1	0	1	1	5	7
16:00	0	0	1	0	0	1	2	2	0	0	0	0	2	2	0	1	0	0	0	1	1
16:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	3	1	0	0	0	4	4	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	1	2	7	2	0	0	0	9	9	0	1	0	0	0	1	1
17:00	0	0	0	0	0	0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	2	1	1	0	0	4	5	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	1	2	0	0	0	3	3	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	1	0	1	0	0	2	3	1	0	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	8	4	2	0	0	14	15	1	0	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
18:30	2	1	0	0	0	3	3	2	0	0	0	0	2	2	1	1	0	0	0	2	2
18:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	2	1	0	0	0	3	3	8	1	0	0	0	9	9	1	1	0	0	0	2	2
P/TOT	11	4	1	2	0	18	21	104	24	9	2	2	141	150	15	8	2	6	1	32	42

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 02 DATE: 24th October 2017

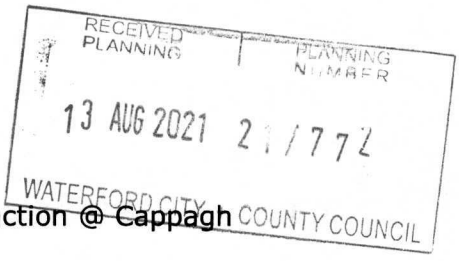
LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Tuesday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**



SITE: 02 DATE: 24th October 2017

LOCATION: Local Road Crossroads Junction @ Cappagh DAY: Tuesday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	2	0	0	0	0	2	2	0	1	0	0	0	1	1	1	0	1	0	0	2	3
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	7
13:30	1	1	0	1	0	3	4	0	0	0	1	0	1	2	0	0	0	1	0	1	2
13:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	4	1	0	1	0	6	7	0	1	0	1	0	2	3	1	0	1	4	0	6	12
14:00	0	0	0	1	0	1	2	0	0	0	1	0	1	2	0	0	0	2	0	2	5
14:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	1	0	2	3
14:45	3	0	0	0	0	3	3	1	0	0	0	0	1	1	0	0	0	1	0	1	2
H/TOT	6	0	0	1	0	7	8	1	0	0	1	0	2	3	1	0	0	4	0	5	10
15:00	0	1	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	2	0	2	5
15:15	0	1	0	1	0	2	3	0	0	0	1	0	1	2	0	1	0	2	0	3	6
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0	2	3
H/TOT	0	3	0	1	0	4	5	1	0	0	1	0	2	3	1	1	0	5	0	7	14
16:00	1	0	0	1	0	2	3	0	1	0	0	0	1	1	0	1	0	0	0	1	1
16:15	0	2	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	1	0	0	1	0	2	3	0	0	0	0	0	0	0
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	2
H/TOT	2	2	0	1	0	5	6	2	1	0	1	0	4	5	0	1	1	0	0	2	3
17:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	0	0	0	0	1	1
17:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	0	0	0	1	0	1	2	1	1	0	0	0	2	2
18:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:45	3	0	0	0	0	3	3	1	0	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	3	0	1	0	0	4	5	2	0	0	0	0	2	2	2	0	0	0	0	2	2
P/TOT	22	8	4	7	1	42	54	11	7	0	11	0	29	43	10	5	3	34	0	52	98

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 24th October 2017

LOCATION: Quarry Access DAY: Tuesday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

DATE: 24th October 2017

LOCATION: Quarry Access

DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	1	1	0	0	0	2	2
13:15	0	1	0	0	0	1	1	0	0	0	1	0	1	2	0	0	0	3	0	3	7
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	7
13:45	0	0	0	0	0	0	0	0	0	0	3	0	3	7	0	0	0	0	0	0	0
H/TOT	1	2	0	0	0	3	3	0	0	0	4	0	4	9	1	1	0	6	0	8	16
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	7
14:15	0	0	0	0	0	0	0	1	0	0	2	0	3	6	0	0	0	0	0	0	0
14:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	1	1	0	0	0	2	2	0	0	0	2	0	2	5	1	0	0	1	0	2	3
H/TOT	2	1	0	0	0	3	3	1	0	0	4	0	5	10	2	0	0	4	0	6	11
15:00	0	2	0	1	1	4	6	1	1	0	2	0	4	7	0	1	0	2	0	3	6
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	7
15:30	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0
H/TOT	1	3	0	1	1	6	8	1	1	0	3	0	5	9	0	1	0	5	0	6	13
16:00	2	0	0	0	0	2	2	1	1	0	0	0	2	2	1	0	0	1	0	2	3
16:15	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	2	0	0	0	3	3
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	3	0	0	0	0	3	3	1	1	0	1	0	3	4	3	2	0	2	0	7	10
17:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	1	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	1	2
18:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	2	1	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
P/TOT	27	11	3	1	1	43	47	10	6	2	46	0	64	125	10	6	3	47	0	66	129

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 24th October 2017

LOCATION: Quarry Access DAY: Tuesday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 03 DATE: 24th October 2017

LOCATION: Quarry Access DAY: Tuesday

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	1	0	0	3	4
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	1	1	0	0	6	7
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	3	4
14:45	0	0	0	0	0	0	0	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	0	6	0	0	2	0	8	11
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	4
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	3	4
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	2	0	7	10
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	4	5
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	4
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	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	0	0	0	0	5	0	0	0	0	5	5
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	7	8
P/TOT	1	0	0	0	0	1	1	2	0	0	0	0	2	2	33	14	4	5	1	57	67

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 04 DATE: 24th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
07:45	2	1	0	0	0	3	3	1	0	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	3	1	0	0	0	4	4	2	0	0	0	0	2	2	1	0	0	0	0	1	1
08:00	4	1	1	2	0	8	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	2	0	2	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	4	1	1	0	2	8	11	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	10	2	4	2	2	20	27	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:00	9	0	0	0	0	9	9	1	0	0	0	0	1	1	1	0	0	0	0	1	1
09:15	3	0	0	0	0	3	3	0	0	0	0	1	1	2	1	0	0	0	0	1	1
09:30	3	0	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:45	2	1	0	1	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	17	1	0	1	0	19	20	1	0	0	0	1	2	3	3	0	0	0	0	3	3
10:00	3	1	0	1	0	5	6	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:15	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	3	0	0	0	0	3	3	0	0	0	0	1	1	2	0	0	0	0	0	0	0
10:45	0	1	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	9	3	1	1	0	14	16	1	0	0	0	1	2	3	0	0	0	0	0	0	0
11:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	10	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	3	1	0	1	0	5	6	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	10	2	0	1	0	13	14	1	0	0	0	0	1	1	0	0	0	0	0	0	0

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 04 DATE: 24th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	1	0	1	0	2	3	0	0	0	0	0	0	0	1	0	0	0	1	2	3
13:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	6	3	0	1	0	10	11	0	0	0	0	0	0	0	3	0	0	0	1	4	5
14:00	4	0	0	0	0	4	4	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:15	1	0	1	0	0	2	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0
14:30	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	3	2	0	1	0	6	7	1	0	0	0	0	1	1	1	0	0	0	1	2	3
H/TOT	10	3	1	1	0	15	17	3	0	0	0	0	3	3	1	0	0	0	1	2	3
15:00	6	0	0	0	1	7	8	1	0	0	0	0	1	1	2	0	0	0	0	2	2
15:15	4	0	1	0	0	5	6	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:30	2	2	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	1	0	1	0	2	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	12	3	1	1	1	18	21	2	0	0	0	0	2	2	3	0	0	0	0	3	3
16:00	1	1	1	0	0	3	4	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	6	2	1	0	0	9	10	0	0	0	0	0	0	0	0	2	0	0	0	2	2
17:00	4	1	0	0	0	5	5	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:15	2	1	1	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	2	0	1	0	0	3	4	1	0	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	8	3	2	0	0	13	14	2	0	0	0	0	2	2	1	0	0	0	0	1	1
18:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	2	2	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	7	3	0	0	0	10	10	0	0	0	0	0	0	0	1	0	0	0	0	1	1
P/TOT	108	26	10	8	3	155	173	12	0	0	0	2	14	16	14	2	0	0	2	18	20

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
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SITE: 04 DATE: 24th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Tuesday

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

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY + COUNTY COUNCIL

SITE: 04 DATE: 24th October 2017

LOCATION: Local Road Junction @ Whitechurch DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	0	0	0	0	2	2
13:15	0	2	0	0	0	2	2	0	0	0	0	0	0	0	1	1	0	0	0	2	2
13:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1	3	0	0	1	0	4	5
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	1	0	0	9	10
H/TOT	1	2	0	0	0	3	3	1	1	0	0	0	2	2	12	3	1	1	0	17	19
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	4	5
14:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	3	1	0	0	0	4	4
14:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	0	0	1	0	6	7
14:45	0	0	0	0	0	0	0	1	1	0	0	0	2	2	7	0	1	0	2	10	13
H/TOT	0	0	0	0	0	0	0	2	2	0	0	0	4	4	18	1	1	2	2	24	29
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	1	0	2	3
15:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
15:45	0	1	0	0	0	1	1	0	1	0	0	0	1	1	2	1	0	0	0	3	3
H/TOT	0	2	0	0	0	2	2	0	2	0	0	0	2	2	4	3	0	1	0	8	9
16:00	1	0	0	0	0	1	1	0	1	0	0	0	1	1	2	0	1	2	0	5	8
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	1	0	7	8
16:30	0	0	0	0	0	0	0	0	0	0	1	1	2	4	2	0	0	0	0	2	2
16:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	1	0	4	5
H/TOT	1	1	0	0	0	2	2	0	1	0	1	1	3	5	10	3	1	4	0	18	24
17:00	0	0	0	0	0	0	0	2	1	0	0	0	3	3	1	1	1	0	0	3	4
17:15	1	0	0	0	0	1	1	3	0	0	0	0	3	3	3	1	0	0	0	4	4
17:30	1	1	0	0	0	2	2	0	0	0	0	0	0	0	4	1	0	0	0	5	5
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	2	1	0	0	0	3	3	5	1	0	0	0	6	6	9	3	1	0	0	13	14
18:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	4	0	1	0	0	5	6
18:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	2	0	0	0	5	5
18:30	3	0	0	0	0	3	3	1	0	0	0	0	1	1	3	0	0	0	0	3	3
18:45	0	0	0	0	0	0	0	3	0	0	0	0	3	3	5	1	0	0	0	6	6
H/TOT	4	0	0	0	0	4	4	6	0	0	0	0	6	6	15	3	1	0	0	19	20
P/TOT	22	10	2	2	0	36	40	31	8	2	2	1	44	49	94	29	9	12	3	147	170

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 24th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	4	0	0	0	0	4	4	1	0	1	0	0	2	3	1	0	0	0	0	1	1
07:15	8	1	0	0	0	9	9	8	0	1	1	0	10	12	1	0	0	0	0	1	1
07:30	11	0	0	0	0	11	11	4	1	1	0	0	6	7	2	0	0	1	0	3	4
07:45	11	1	0	0	0	12	12	3	1	0	0	1	5	6	2	0	0	0	1	3	4
H/TOT	34	2	0	0	0	36	36	16	2	3	1	1	23	27	6	0	0	1	1	8	10
08:00	10	0	2	0	0	12	13	3	1	1	0	0	5	6	0	0	1	0	0	1	2
08:15	9	1	0	0	0	10	10	5	1	0	0	0	6	6	3	0	0	0	0	3	3
08:30	7	3	0	0	0	10	10	0	1	0	0	1	2	3	3	1	0	0	0	4	4
08:45	9	1	0	0	0	10	10	6	1	0	0	0	7	7	3	0	0	0	0	3	3
H/TOT	35	5	2	0	0	42	43	14	4	1	0	1	20	22	9	1	1	0	0	11	12
09:00	7	0	0	0	0	7	7	7	1	0	0	0	8	8	8	3	0	0	1	12	13
09:15	7	2	0	0	0	9	9	6	0	0	0	1	7	8	4	0	0	0	0	4	4
09:30	4	1	1	0	0	6	7	2	0	0	0	0	2	2	1	1	1	0	0	3	4
09:45	7	1	0	0	0	8	8	1	0	1	0	0	2	3	0	0	0	0	0	0	0
H/TOT	25	4	1	0	0	30	31	16	1	1	0	1	19	21	13	4	1	0	1	19	21
10:00	3	2	0	0	0	5	5	0	3	1	0	0	4	5	2	0	0	0	0	2	2
10:15	0	0	0	0	1	1	2	2	0	0	0	0	2	2	1	0	0	0	0	1	1
10:30	8	0	0	0	0	8	8	1	0	0	0	0	1	1	1	1	0	0	0	2	2
10:45	1	1	1	0	0	3	4	2	4	0	0	0	6	6	0	0	1	0	0	1	2
H/TOT	12	3	1	0	1	17	19	5	7	1	0	0	13	14	4	1	1	0	0	6	7
11:00	4	0	1	0	0	5	6	2	0	0	0	0	2	2	2	2	1	0	0	5	6
11:15	2	1	0	0	0	3	3	4	0	0	0	0	4	4	0	0	0	0	0	0	0
11:30	1	1	0	0	0	2	2	1	1	0	0	0	2	2	1	0	0	0	0	1	1
11:45	8	3	0	0	0	11	11	2	1	0	0	0	3	3	1	0	0	0	0	1	1
H/TOT	15	5	1	0	0	21	22	9	2	0	0	0	11	11	4	2	1	0	0	7	8
12:00	6	1	0	0	0	7	7	1	0	0	0	0	1	1	1	0	0	0	0	1	1
12:15	4	1	1	0	0	6	7	0	0	0	0	0	0	0	0	1	0	0	0	1	1
12:30	3	1	2	0	1	7	9	1	0	0	0	0	1	1	0	0	0	0	0	0	0
12:45	5	1	0	0	1	7	8	0	2	1	0	0	3	4	2	1	0	0	0	3	3
H/TOT	18	4	3	0	2	27	31	2	2	1	0	0	5	6	3	2	0	0	0	5	5

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
13 AUG 2021
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WATERFORD CITY & COUNTY COUNCIL

SITE: 05 DATE: 24th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	5	2	1	0	0	8	9	2	4	0	0	0	6	6	2	0	0	0	0	2	2
13:15	5	2	1	0	0	8	9	0	0	0	0	0	0	0	2	0	0	0	0	2	2
13:30	6	1	1	0	0	8	9	0	0	0	0	0	0	0	4	0	1	0	0	5	6
13:45	5	0	2	0	0	7	8	7	0	0	0	0	7	7	1	1	0	0	1	3	4
H/TOT	21	5	5	0	0	31	34	9	4	0	0	0	13	13	9	1	1	0	1	12	14
14:00	7	2	1	0	0	10	11	1	0	0	0	0	1	1	6	0	1	0	0	7	8
14:15	5	0	0	0	1	6	7	2	1	0	0	0	3	3	2	0	0	0	0	2	2
14:30	6	0	1	0	0	7	8	4	1	0	0	0	5	5	1	0	0	0	0	1	1
14:45	2	2	0	0	0	4	4	7	1	1	0	0	9	10	2	0	0	0	0	2	2
H/TOT	20	4	2	0	1	27	29	14	3	1	0	0	18	19	11	0	1	0	0	12	13
15:00	2	1	2	0	0	5	6	3	0	0	0	3	6	9	3	1	0	1	1	6	8
15:15	7	0	0	0	0	7	7	2	0	0	1	0	3	4	1	0	0	0	0	1	1
15:30	6	1	1	0	0	8	9	2	2	0	0	0	4	4	1	0	1	0	0	2	3
15:45	2	0	0	0	0	2	2	1	0	1	0	0	2	3	1	2	0	0	0	3	3
H/TOT	17	2	3	0	0	22	24	8	2	1	1	3	15	20	6	3	1	1	1	12	15
16:00	8	0	0	0	0	8	8	3	1	0	0	1	5	6	3	0	0	0	0	3	3
16:15	4	1	0	0	0	5	5	3	0	0	0	0	3	3	4	2	3	0	0	9	11
16:30	5	3	1	0	0	9	10	1	1	0	0	2	4	6	3	1	0	0	0	4	4
16:45	5	2	1	0	0	8	9	2	0	0	0	0	2	2	2	0	0	0	0	2	2
H/TOT	22	6	2	0	0	30	31	9	2	0	0	3	14	17	12	3	3	0	0	18	20
17:00	4	0	2	0	0	6	7	2	1	0	1	0	4	5	3	2	0	0	0	5	5
17:15	4	2	0	1	0	7	8	3	0	1	0	0	4	5	2	1	0	0	0	3	3
17:30	9	0	0	2	0	11	14	3	0	0	0	0	3	3	5	1	0	0	0	6	6
17:45	5	0	0	0	0	5	5	3	0	0	0	0	3	3	0	0	0	1	0	1	2
H/TOT	22	2	2	3	0	29	34	11	1	1	1	0	14	16	10	4	0	1	0	15	16
18:00	10	2	0	0	0	12	12	0	1	0	0	0	1	1	4	0	0	0	0	4	4
18:15	10	1	1	1	0	13	15	4	0	0	0	0	4	4	3	1	0	0	0	4	4
18:30	8	0	0	0	0	8	8	2	2	0	0	0	4	4	2	0	0	0	0	2	2
18:45	4	0	0	0	0	4	4	11	0	0	0	0	11	11	6	0	0	0	0	6	6
H/TOT	32	3	1	1	0	37	39	17	3	0	0	0	20	20	15	1	0	0	0	16	16
P/TOT	273	45	23	4	4	349	370	130	33	10	3	9	185	203	102	22	10	3	4	141	154

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 05 DATE: 24th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
07:15	0	0	0	0	0	0	0	1	0	0	1	0	2	3	2	0	0	0	0	2	2
07:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	0	0	1	0	5	6
07:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	10	0	0	0	0	10	10
H/TOT	1	0	0	0	0	1	1	3	0	0	1	0	4	5	18	0	0	1	0	19	20
08:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	0	1	4	6
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	1	6	7
08:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	6	0	0	0	1	7	8
08:45	1	0	0	0	0	1	1	4	0	0	0	0	4	4	9	1	1	0	0	11	12
H/TOT	2	0	0	0	0	2	2	6	0	0	0	0	6	6	19	4	2	0	3	28	32
09:00	4	0	0	0	0	4	4	8	0	0	0	0	8	8	6	2	0	0	0	8	8
09:15	3	1	0	0	0	4	4	3	1	0	0	0	4	4	9	0	0	0	1	10	11
09:30	1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	2	0	0	0	2	2
09:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	3	0	0	0	1	4	5
H/TOT	9	2	0	0	0	11	11	11	2	0	0	0	13	13	18	4	0	0	2	24	26
10:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	6	0	0	0	0	6	6
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	4
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	1	0	7	9
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0	14	2	2	1	0	19	21
11:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	2	0	0	0	7	7
11:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	6	2	1	0	0	9	10
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7
11:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0	0	0	0	4	4
H/TOT	2	0	0	0	0	2	2	1	0	0	0	0	1	1	22	4	1	0	0	27	28
12:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	3	1	1	0	0	5	6
12:15	2	0	0	0	0	2	2	1	0	0	0	0	1	1	8	3	2	0	1	14	16
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	1	0	0	7	8
12:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	0	1	0	0	3	4
H/TOT	3	0	0	0	0	3	3	2	1	0	0	0	3	3	18	5	5	0	1	29	33

Waterford City & County Council Planning Department: Viewing Purposes Only!

ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/774
WATERFORD CITY & COUNTY COUNCIL

SITE: 05 DATE: 24th October 2017

LOCATION: R671/Local Road Junction @ Knocknaskagh Cross DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	2	1	0	0	6	7
13:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	6	0	0	0	0	6	6
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	9
13:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	4	0	0	0	0	4	4
H/TOT	1	0	0	0	0	1	1	3	0	0	0	0	3	3	21	3	1	0	0	25	26
14:00	3	0	0	0	0	3	3	1	0	0	0	0	1	1	3	0	0	0	0	3	3
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
14:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	7	1	1	0	0	9	10
14:45	0	0	0	0	1	1	2	5	0	0	0	0	5	5	6	0	0	0	0	6	6
H/TOT	3	0	0	0	1	4	5	7	0	0	0	0	7	7	18	2	1	0	0	21	22
15:00	12	1	0	0	0	13	13	2	0	0	0	0	2	2	6	1	0	0	0	7	7
15:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
15:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	6	2	0	0	0	8	8
15:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	6	0	0	1	0	7	8
H/TOT	15	1	0	0	0	16	16	2	0	0	0	0	2	2	21	3	0	1	0	25	26
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0	9	9
16:15	1	0	0	0	1	2	3	0	0	0	0	0	0	0	8	2	2	0	0	12	13
16:30	0	0	0	0	1	1	2	0	0	0	0	0	0	0	5	1	0	0	0	6	6
16:45	0	0	0	1	1	2	4	0	0	0	0	0	0	0	8	2	0	0	0	10	10
H/TOT	1	0	0	1	3	5	9	0	0	0	0	0	0	0	28	7	2	0	0	37	38
17:00	3	0	0	0	0	3	3	1	0	0	0	0	1	1	14	2	0	1	0	17	18
17:15	1	0	0	0	0	1	1	0	1	0	0	0	1	1	9	0	0	1	0	10	11
17:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	10	1	1	0	0	12	13
17:45	3	0	0	0	0	3	3	0	0	0	0	0	0	0	8	0	0	0	0	8	8
H/TOT	7	0	0	0	0	7	7	2	1	0	0	0	3	3	41	3	1	2	0	47	50
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	1	1	0	0	13	14
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	1	0	0	0	18	18
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	6
18:45	0	0	0	0	0	0	0	7	0	0	0	0	7	7	4	1	0	0	0	5	5
H/TOT	0	0	0	0	0	0	0	7	0	0	0	0	7	7	38	3	1	0	0	42	43
P/TOT	44	4	0	1	4	53	58	44	4	0	1	0	49	50	276	40	16	5	6	343	364

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06 DATE: 24th October 2017

LOCATION: Access Track (North) DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0

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ABACUS TRANSPORTATION SURVEYS

CAPPAGH QUARRY TRAFFIC COUNTS **OCTOBER 2017**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **ATH/17/147**

SITE: 06

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DATE: 24th October 2017

LOCATION: Access Track (North)

DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	1	0	0	0	0	1	1
P/TOT	1	1	0	0	0	2	2	1	0	0	0	0	1	1

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APPENDIX 14-C

Junctions 9 Outputs

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Junction 1 AM.j9
Path: W:\2019\P19-031\P19-031.4.-25.01.21
Report generation date: 29/01/2021 12:01:19

»Junction 1 - 2017, AM
»Junction 1 - 2021, AM
»Junction 1 - 2022, AM
»Junction 1 - 2027, AM
»Junction 1 - 2037, AM
»Junction 1 - 2022+Dev, AM
»Junction 1 - 2027+Dev, AM
»Junction 1 - 2037+Dev, AM

Summary of junction performance

	AM			
	Queue (Veh)	Delay (s)	RFC	LOS
	Junction 1 - 2017			
Stream B-C	0,1	8,92	0,05	A
Stream B-A	0,1	12,18	0,12	B
Stream C-AB	0,0	9,48	0,03	A
	Junction 1 - 2021			
Stream B-C	0,1	9,45	0,07	A
Stream B-A	0,2	13,17	0,14	B
Stream C-AB	0,1	9,58	0,04	A
	Junction 1 - 2022			
Stream B-C	0,1	9,52	0,07	A
Stream B-A	0,2	13,33	0,15	B
Stream C-AB	0,1	9,58	0,04	A
	Junction 1 - 2027			
Stream B-C	0,1	9,88	0,09	A
Stream B-A	0,2	14,25	0,17	B
Stream C-AB	0,1	9,56	0,05	A
	Junction 1 - 2037			
Stream B-C	0,1	10,40	0,11	B
Stream B-A	0,3	15,71	0,21	C
Stream C-AB	0,1	9,50	0,06	A
	Junction 1 - 2022+Dev			
Stream B-C	0,1	9,80	0,10	A
Stream B-A	0,2	15,20	0,19	C
Stream C-AB	0,1	9,18	0,08	A
	Junction 1 - 2027+Dev			
Stream B-C	0,1	10,08	0,11	B
Stream B-A	0,3	16,21	0,22	C
Stream C-AB	0,1	9,18	0,09	A
	Junction 1 - 2037+Dev			
Stream B-C	0,2	11,19	0,14	B
Stream B-A	0,4	17,80	0,26	C
Stream C-AB	0,1	9,15	0,10	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

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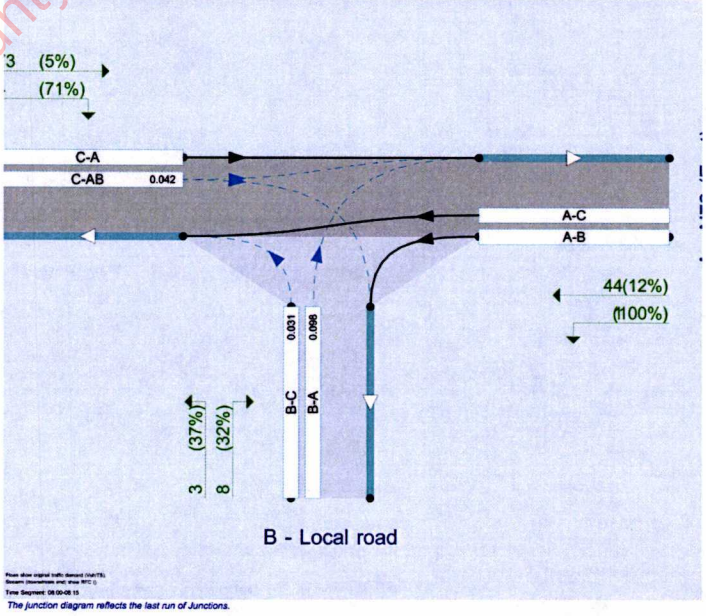
File summary

File Description

Title	Roadstone Quarry and Batching Plant Cappagh
Location	Co. Waterford
Site number	
Date	25/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perTimeSegment	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2017	AM	DIRECT	08:00	09:00	60	15	✓		
D2	2021	AM	DIRECT	08:00	09:00	60	15	✓		
D3	Development Traffic	AM	DIRECT	08:00	09:00	60	15			
D4	2022	AM	DIRECT	08:00	09:00	60	15	✓		
D5	2027	AM	DIRECT	08:00	09:00	60	15	✓		
D6	2037	AM	DIRECT	08:00	09:00	60	15	✓		
D7	2022+Dev	AM	DIRECT	08:00	09:00	60	15	✓	Simple	D3+D4
D8	2027+Dev	AM	DIRECT	08:00	09:00	60	15	✓	Simple	D3+D5
D9	2037+Dev	AM	DIRECT	08:00	09:00	60	15	✓	Simple	D3+D6

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Junction 1	✓	100.000	100.000

Junction 1 - 2017, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		1.26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	N72 (East)		Major
B	Local road		Minor
C	N72 (West)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - N72 (West)	7.90			110.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Local road	One lane plus flare	10.00	5.54	3.23	2.26	2.20		3.00	35	45

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	131.671	0.088	0.222	0.140	0.318
1	B-C	168.818	0.095	0.240	-	-
1	C-B	159.416	0.227	0.227	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

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Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100,000
B - Local road		DIRECT	✓	100,000
C - N72 (West)		DIRECT	✓	100,000

Origin-Destination Data

Demand (Veh/TS) 08:00 - 08:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	1,00	40,00
B - Local road	7,00	0,00	3,00
C - N72 (West)	67,00	3,00	0,00

Demand (Veh/TS) 08:15 - 08:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	2,00	36,00
B - Local road	7,00	0,00	6,00
C - N72 (West)	79,00	3,00	0,00

Demand (Veh/TS) 08:30 - 08:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	3,00	46,00
B - Local road	6,00	0,00	1,00
C - N72 (West)	107,00	2,00	0,00

Demand (Veh/TS) 08:45 - 09:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	6,00	46,00
B - Local road	10,00	0,00	4,00
C - N72 (West)	68,00	2,00	0,00

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Vehicle Mix

Heavy Vehicle Percentages 08:00 - 08:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	100	10
B - Local road	29	0	33
C - N72 (West)	4	67	0

Heavy Vehicle Percentages 08:15 - 08:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	14
B - Local road	0	0	50
C - N72 (West)	1	33	0

Heavy Vehicle Percentages 08:30 - 08:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	33	9
B - Local road	33	0	0
C - N72 (West)	7	50	0

Heavy Vehicle Percentages 08:45 - 09:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	17	7
B - Local road	30	0	25
C - N72 (West)	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,05	8,92	0,1	A	3,50	14,00
B-A	0,12	12,18	0,1	B	7,50	30,01
C-AB	0,03	9,48	0,0	A	2,67	10,68
C-A					80,08	320,31
A-B					3,00	12,00
A-C					42,00	168,00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,00	3,00	116,13	0,026	2,97	0,0	0,0	7,951	A
B-A	7,00	7,00	85,81	0,082	6,91	0,0	0,1	11,395	B
C-AB	3,29	3,29	98,14	0,034	3,26	0,0	0,0	9,483	A
C-A	66,71	66,71			66,71				
A-B	1,00	1,00			1,00				
A-C	40,00	40,00			40,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6,00	6,00	111,30	0,054	5,97	0,0	0,1	8,214	A
B-A	7,00	7,00	113,92	0,061	7,01	0,1	0,1	9,678	A
C-AB	3,23	3,23	119,55	0,027	3,23	0,0	0,0	8,638	A
C-A	78,77	78,77			78,77				
A-B	2,00	2,00			2,00				
A-C	36,00	36,00			36,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,00	1,00	141,96	0,007	1,04	0,1	0,0	8,922	A
B-A	6,00	6,00	79,29	0,076	6,00	0,1	0,1	10,549	B
C-AB	2,12	2,12	104,11	0,020	2,13	0,0	0,0	8,236	A
C-A	106,88	106,88			106,88				
A-B	3,00	3,00			3,00				
A-C	46,00	46,00			46,00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,00	4,00	120,44	0,033	3,98	0,0	0,0	7,413	A
B-A	10,00	10,00	84,55	0,118	9,94	0,1	0,1	12,181	B
C-AB	2,04	2,04	148,24	0,014	2,05	0,0	0,0	7,629	A
C-A	67,96	67,96			67,96				
A-B	6,00	6,00			6,00				
A-C	46,00	46,00			46,00				

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Junction 1 - 2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		1.41	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2021	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100.000
B - Local road		DIRECT	✓	100.000
C - N72 (West)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	1.29	43.98
B - Local road	7.98	0.00	3.45
C - N72 (West)	72.87	3.66	0.00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	2.16	39.88
B - Local road	7.55	0.00	7.11
C - N72 (West)	85.38	3.45	0.00

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	3.45	50.45
B - Local road	6.90	0.00	1.08
C - N72 (West)	116.85	2.37	0.00

08:45 - 09:00

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	6.68	50.23
B - Local road	11.43	0.00	4.53
C - N72 (West)	73.95	2.16	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	100	12
B - Local road	32	0	37
C - N72 (West)	5	71	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	16
B - Local road	0	0	55
C - N72 (West)	2	37	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	37	10
B - Local road	37	0	0
C - N72 (West)	8	55	0

08:45 - 09:00

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	19	8
B - Local road	34	0	29
C - N72 (West)	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.07	9.45	0.1	A	4.04	16.17
B-A	0.14	13.17	0.2	B	8.46	33.86
C-AB	0.04	9.58	0.1	A	3.19	12.74
C-A					86.99	347.95
A-B					3.40	13.58
A-C					46.14	184.55

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.45	3.45	111.29	0.031	3.42	0.0	0.0	8.342	A
B-A	7.98	7.98	81.37	0.098	7.87	0.0	0.1	12.227	B
C-AB	4.15	4.15	97.99	0.042	4.10	0.0	0.0	9.582	A
C-A	72.39	72.39			72.39				
A-B	1.29	1.29			1.29				
A-C	43.98	43.98			43.98				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7.11	7.11	98.63	0.072	7.07	0.0	0.1	9.450	A
B-A	7.55	7.55	110.47	0.068	7.57	0.1	0.1	10.282	B
C-AB	3.81	3.81	117.52	0.032	3.81	0.0	0.0	8.811	A
C-A	85.02	85.02			85.02				
A-B	2.16	2.16			2.16				
A-C	39.88	39.88			39.88				

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08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,08	1,08	138,50	0,008	1,14	0,1	0,0	9,364	A
B-A	6,90	6,90	74,59	0,093	6,90	0,1	0,1	11,282	B
C-AB	2,58	2,58	102,55	0,025	2,59	0,0	0,0	8,411	A
C-A	116,65	116,65			116,65				
A-B	3,45	3,45			3,45				
A-C	50,45	50,45			50,45				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,53	4,53	115,31	0,039	4,50	0,0	0,0	7,764	A
B-A	11,43	11,43	80,41	0,142	11,35	0,1	0,2	13,166	B
C-AB	2,22	2,22	147,20	0,015	2,23	0,0	0,0	7,879	A
C-A	73,89	73,89			73,89				
A-B	6,68	6,68			6,68				
A-C	50,23	50,23			50,23				

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Junction 1 - 2022, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		1,44	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2022	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100,000
B - Local road		DIRECT	✓	100,000
C - N72 (West)		DIRECT	✓	100,000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	1,34	44,83
B - Local road	8,16	0,00	3,53
C - N72 (West)	74,19	3,78	0,00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	2,19	40,69
B - Local road	7,68	0,00	7,31
C - N72 (West)	86,86	3,53	0,00

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	3,53	51,41
B - Local road	7,06	0,00	1,10
C - N72 (West)	119,02	2,44	0,00

08:45 - 09:00

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	6,82	51,17
B - Local road	11,69	0,00	4,63
C - N72 (West)	75,29	2,19	0,00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	100	12
B - Local road	33	0	38
C - N72 (West)	5	71	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	16
B - Local road	0	0	55
C - N72 (West)	2	38	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	38	10
B - Local road	38	0	0
C - N72 (West)	8	55	0

08:45 - 09:00

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	20	8
B - Local road	34	0	29
C - N72 (West)	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,07	9,52	0,1	A	4,14	16,56
B-A	0,15	13,33	0,2	B	8,65	34,60
C-AB	0,04	9,58	0,1	A	3,28	13,12
C-A					88,54	354,17
A-B					3,47	13,89
A-C					47,02	188,09

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,53	3,53	110,68	0,032	3,50	0,0	0,0	8,394	A
B-A	8,16	8,16	80,74	0,101	8,05	0,0	0,1	12,362	B
C-AB	4,30	4,30	98,14	0,044	4,25	0,0	0,1	9,582	A
C-A	73,67	73,67			73,67				
A-B	1,34	1,34			1,34				
A-C	44,83	44,83			44,83				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,31	7,31	98,18	0,074	7,26	0,0	0,1	9,518	A
B-A	7,68	7,68	109,87	0,070	7,70	0,1	0,1	10,380	B
C-AB	3,91	3,91	117,44	0,033	3,92	0,1	0,0	8,822	A
C-A	86,48	86,48			86,48				
A-B	2,19	2,19			2,19				
A-C	40,69	40,69			40,69				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,10	1,10	137,98	0,008	1,16	0,1	0,0	9,425	A
B-A	7,06	7,06	73,89	0,096	7,06	0,1	0,1	11,411	B
C-AB	2,66	2,66	102,50	0,026	2,67	0,0	0,0	8,424	A
C-A	118,80	118,80			118,80				
A-B	3,53	3,53			3,53				
A-C	51,41	51,41			51,41				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,63	4,63	114,63	0,040	4,60	0,0	0,0	7,817	A
B-A	11,69	11,69	79,81	0,146	11,61	0,1	0,2	13,332	B
C-AB	2,26	2,26	147,01	0,015	2,27	0,0	0,0	7,909	A
C-A	75,22	75,22			75,22				
A-B	6,82	6,82			6,82				
A-C	51,17	51,17			51,17				

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Junction 1 - 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		1.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100.000
B - Local road		DIRECT	✓	100.000
C - N72 (West)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

08:00 - 08:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	1.60	49.35
B - Local road	9.16	0.00	3.98
C - N72 (West)	81.17	4.39	0.00

Demand (Veh/TS)

08:15 - 08:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	2.39	44.98
B - Local road	8.35	0.00	8.37
C - N72 (West)	94.69	3.98	0.00

Demand (Veh/TS)

08:30 - 08:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	3.98	56.51
B - Local road	7.97	0.00	1.19
C - N72 (West)	130.53	2.79	0.00

Demand (Veh/TS)

08:45 - 09:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	7.56	56.11
B - Local road	13.15	0.00	5.18
C - N72 (West)	82.37	2.39	0.00

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/7172
WATERFORD CITY + COUNTY COUNCIL

Vehicle Mix

Heavy Vehicle Percentages

08:00 - 08:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	100	13
B - Local road	35	0	40
C - N72 (West)	6	73	0

Heavy Vehicle Percentages

08:15 - 08:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	18
B - Local road	0	0	57
C - N72 (West)	2	40	0

Heavy Vehicle Percentages

08:30 - 08:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	40	11
B - Local road	40	0	0
C - N72 (West)	9	57	0

Heavy Vehicle Percentages

08:45 - 09:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	21	9
B - Local road	36	0	31
C - N72 (West)	6	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.09	9.88	0.1	A	4.68	18.72
B-A	0.17	14.25	0.2	B	9.66	38.64
C-AB	0.05	9.56	0.1	A	3.82	15.27
C-A					96.76	387.02
A-B					3.88	15.53
A-C					51.74	206.96

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.98	3.98	107.56	0.037	3.95	0.0	0.0	8.684	A
B-A	9.16	9.16	77.50	0.118	9.03	0.0	0.1	13.120	B
C-AB	5.15	5.15	99.18	0.052	5.09	0.0	0.1	9.561	A
C-A	80.41	80.41			80.41				
A-B	1.60	1.60			1.60				
A-C	49.35	49.35			49.35				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8.37	8.37	95.89	0.087	8.32	0.0	0.1	9.885	A
B-A	8.35	8.35	106.67	0.078	8.38	0.1	0.1	10.935	B
C-AB	4.53	4.53	117.25	0.039	4.54	0.1	0.1	8.859	A
C-A	94.14	94.14			94.14				
A-B	2.39	2.39			2.39				
A-C	44.98	44.98			44.98				

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08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,19	1,19	135,20	0,008	1,27	0,1	0,0	9,737	A
B-A	7,97	7,97	70,24	0,114	7,96	0,1	0,1	12,158	B
C-AB	3,12	3,12	102,55	0,031	3,14	0,1	0,0	8,469	A
C-A	130,19	130,19			130,19				
A-B	3,98	3,98			3,98				
A-C	56,51	56,51			56,51				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5,18	5,18	111,11	0,047	5,14	0,0	0,0	8,103	A
B-A	13,15	13,15	76,75	0,171	13,05	0,1	0,2	14,252	B
C-AB	2,48	2,48	145,98	0,017	2,49	0,0	0,0	8,063	A
C-A	82,27	82,27			82,27				
A-B	7,56	7,56			7,56				
A-C	56,11	56,11			56,11				

Junction 1 - 2037, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		1,73	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2037	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100,000
B - Local road		DIRECT	✓	100,000
C - N72 (West)		DIRECT	✓	100,000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	1,97	55,23
	B - Local road	10,52	0,00	4,60
	C - N72 (West)	90,07	5,26	0,00

08:15 - 08:30

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	2,63	50,63
	B - Local road	9,20	0,00	9,87
	C - N72 (West)	104,53	4,60	0,00

08:30 - 08:45

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	4,60	63,12
	B - Local road	9,21	0,00	1,31
	C - N72 (West)	145,31	3,29	0,00

08:45 - 09:00

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	8,55	62,46
	B - Local road	15,13	0,00	5,92
	C - N72 (West)	91,39	2,63	0,00

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Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0	100	14
	B - Local road	38	0	43
	C - N72 (West)	7	75	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0	0	20
	B - Local road	0	0	60
	C - N72 (West)	2	43	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0	43	13
	B - Local road	43	0	0
	C - N72 (West)	10	60	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0	23	9
	B - Local road	39	0	33
	C - N72 (West)	6	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,11	10,40	0,1	B	5,43	21,70
B-A	0,21	15,71	0,3	C	11,02	44,08
C-AB	0,06	9,50	0,1	A	4,62	18,48
C-A					107,15	428,61
A-B					4,44	17,76
A-C					57,86	231,45

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,60	4,60	103,54	0,044	4,56	0,0	0,0	9,089	A
B-A	10,52	10,52	73,34	0,143	10,36	0,0	0,2	14,253	B
C-AB	6,46	6,46	101,11	0,064	6,38	0,0	0,1	9,495	A
C-A	88,88	88,88			88,88				
A-B	1,97	1,97			1,97				
A-C	55,23	55,23			55,23				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9,87	9,87	93,01	0,106	9,80	0,0	0,1	10,404	B
B-A	9,20	9,20	102,49	0,089	9,25	0,2	0,1	11,740	B
C-AB	5,43	5,43	117,50	0,046	5,45	0,1	0,1	8,874	A
C-A	103,71	103,71			103,71				
A-B	2,63	2,63			2,63				
A-C	50,63	50,63			50,63				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,31	1,31	131,36	0,010	1,41	0,1	0,0	10,171	B
B-A	9,21	9,21	65,60	0,141	9,20	0,1	0,1	13,295	B
C-AB	3,83	3,83	103,35	0,037	3,85	0,1	0,0	8,478	A
C-A	144,77	144,77			144,77				
A-B	4,60	4,60			4,60				
A-C	63,12	63,12			63,12				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5,92	5,92	106,52	0,056	5,88	0,0	0,1	8,519	A
B-A	15,13	15,13	72,89	0,208	15,00	0,1	0,3	15,708	C
C-AB	2,77	2,77	144,88	0,019	2,79	0,0	0,0	8,254	A
C-A	91,25	91,25			91,25				
A-B	8,55	8,55			8,55				
A-C	62,46	62,46			62,46				

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Junction 1 - 2022+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		2.27	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2022+Dev	AM	DIRECT	08:00	09:00	60	15	✓	Simple	D3+D4

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100.000
B - Local road		DIRECT	✓	100.000
C - N72 (West)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	4.84	44.83
B - Local road	10.91	0.00	6.28
C - N72 (West)	74.19	7.28	0.00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	5.69	40.69
B - Local road	10.43	0.00	10.06
C - N72 (West)	86.86	7.03	0.00

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	7.03	51.41
B - Local road	9.81	0.00	3.85
C - N72 (West)	119.02	5.94	0.00

08:45 - 09:00

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	10.32	51.17
B - Local road	14.44	0.00	7.38
C - N72 (West)	75.29	5.69	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	64	12
B - Local road	41	0	49
C - N72 (West)	5	61	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	31	16
B - Local road	17	0	57
C - N72 (West)	2	44	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	44	10
B - Local road	45	0	45
C - N72 (West)	8	52	0

08:45 - 09:00

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	30	8
B - Local road	40	0	42
C - N72 (West)	5	31	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.10	9.80	0.1	A	6.89	27.56
B-A	0.19	15.20	0.2	C	11.40	45.60
C-AB	0.08	9.18	0.1	A	7.49	29.94
C-A					87.84	351.35
A-B					6.97	27.89
A-C					47.02	188.09

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6.28	6.28	102.64	0.061	6.22	0.0	0.1	9.328	A
B-A	10.91	10.91	74.21	0.147	10.74	0.0	0.2	14.144	B
C-AB	8.51	8.51	106.34	0.080	8.41	0.0	0.1	9.184	A
C-A	72.96	72.96			72.96				
A-B	4.84	4.84			4.84				
A-C	44.83	44.83			44.83				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10.06	10.06	103.39	0.097	10.02	0.1	0.1	9.426	A
B-A	10.43	10.43	93.05	0.112	10.45	0.2	0.1	12.151	B
C-AB	8.17	8.17	117.95	0.069	8.18	0.1	0.1	8.675	A
C-A	85.72	85.72			85.72				
A-B	5.69	5.69			5.69				
A-C	40.69	40.69			40.69				

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08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,85	3,85	101,22	0,038	3,91	0,1	0,0	9,602	A
B-A	9,81	9,81	67,38	0,146	9,81	0,1	0,1	13,866	B
C-AB	7,02	7,02	112,55	0,062	7,04	0,1	0,1	8,295	A
C-A	117,94	117,94			117,94				
A-B	7,03	7,03			7,03				
A-C	51,41	51,41			51,41				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,38	7,38	104,23	0,071	7,35	0,0	0,1	9,373	A
B-A	14,44	14,44	74,54	0,194	14,35	0,1	0,2	15,202	C
C-AB	6,24	6,24	118,92	0,052	6,26	0,1	0,1	8,560	A
C-A	74,74	74,74			74,74				
A-B	10,32	10,32			10,32				
A-C	51,17	51,17			51,17				

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WATERFORD CITY + COUNTY COUNCIL

Junction 1 - 2027+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		2,36	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2027+Dev	AM	DIRECT	08:00	09:00	60	15	✓	Simple	D3+D5

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100,000
B - Local road		DIRECT	✓	100,000
C - N72 (West)		DIRECT	✓	100,000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	5,10	49,35
B - Local road	11,91	0,00	6,73
C - N72 (West)	81,17	7,89	0,00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	5,89	44,98
B - Local road	11,10	0,00	11,12
C - N72 (West)	94,69	7,48	0,00

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	7,48	56,51
B - Local road	10,72	0,00	3,94
C - N72 (West)	130,53	6,29	0,00

08:45 - 09:00

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	11,06	56,11
B - Local road	15,90	0,00	7,93
C - N72 (West)	82,37	5,89	0,00

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Vehicle Mix

Heavy Vehicle Percentages

08:00 - 08:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	66	13
B - Local road	42	0	50
C - N72 (West)	6	63	0

Heavy Vehicle Percentages

08:15 - 08:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	30	18
B - Local road	16	0	59
C - N72 (West)	2	45	0

Heavy Vehicle Percentages

08:30 - 08:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	45	11
B - Local road	46	0	44
C - N72 (West)	9	53	0

Heavy Vehicle Percentages

08:45 - 09:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	30	9
B - Local road	41	0	42
C - N72 (West)	6	30	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.11	10.08	0.1	B	7.43	29.72
B-A	0.22	16.21	0.3	C	12.41	49.64
C-AB	0.09	9.18	0.1	A	8.16	32.62
C-A					95.92	383.67
A-B					7.38	29.53
A-C					51.74	206.96

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6.73	6.73	100.73	0.067	6.66	0.0	0.1	9.561	A
B-A	11.91	11.91	71.86	0.166	11.72	0.0	0.2	14.918	B
C-AB	9.51	9.51	107.35	0.089	9.39	0.0	0.1	9.183	A
C-A	79.55	79.55			79.55				
A-B	5.10	5.10			5.10				
A-C	49.35	49.35			49.35				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11.12	11.12	101.61	0.109	11.07	0.1	0.1	9.698	A
B-A	11.10	11.10	91.15	0.121	11.14	0.2	0.2	12.696	B
C-AB	8.92	8.92	119.12	0.075	8.94	0.1	0.1	8.664	A
C-A	93.25	93.25			93.25				
A-B	5.89	5.89			5.89				
A-C	44.98	44.98			44.98				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.94	3.94	99.94	0.039	4.02	0.1	0.0	10.085	B
B-A	10.72	10.72	64.84	0.166	10.70	0.2	0.2	14.665	B
C-AB	7.66	7.66	113.73	0.067	7.67	0.1	0.1	8.246	A
C-A	129.16	129.16			129.16				
A-B	7.48	7.48			7.48				
A-C	56.51	56.51			56.51				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7.93	7.93	102.01	0.078	7.89	0.0	0.1	9.609	A
B-A	15.90	15.90	72.17	0.220	15.79	0.2	0.3	16.213	C
C-AB	6.54	6.54	119.74	0.055	6.56	0.1	0.1	8.579	A
C-A	81.71	81.71			81.71				
A-B	11.06	11.06			11.06				
A-C	56.11	56.11			56.11				

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Junction 1 - 2037+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		2.54	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2037+Dev	AM	DIRECT	08:00	09:00	60	15	✓	Simple	D3+D6

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100.000
B - Local road		DIRECT	✓	100.000
C - N72 (West)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS) 08:00 - 08:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	5.47	55.23
B - Local road	13.27	0.00	7.35
C - N72 (West)	90.07	8.76	0.00

Demand (Veh/TS) 08:15 - 08:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	6.13	50.63
B - Local road	11.95	0.00	12.62
C - N72 (West)	104.53	8.10	0.00

Demand (Veh/TS) 08:30 - 08:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	8.10	63.12
B - Local road	11.96	0.00	4.06
C - N72 (West)	145.31	6.79	0.00

Demand (Veh/TS) 08:45 - 09:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	12.05	62.46
B - Local road	17.88	0.00	8.67
C - N72 (West)	91.39	6.13	0.00

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Vehicle Mix

Heavy Vehicle Percentages 08:00 - 08:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	68	14
B - Local road	43	0	51
C - N72 (West)	7	65	0

Heavy Vehicle Percentages 08:15 - 08:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	29	20
B - Local road	15	0	61
C - N72 (West)	2	46	0

Heavy Vehicle Percentages 08:30 - 08:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	46	13
B - Local road	48	0	43
C - N72 (West)	10	55	0

Heavy Vehicle Percentages 08:45 - 09:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	31	9
B - Local road	43	0	43
C - N72 (West)	6	29	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.14	11.19	0.2	B	8.18	32.70
B-A	0.26	17.80	0.4	C	13.77	55.08
C-AB	0.10	9.15	0.1	A	9.15	36.62
C-A					106.12	424.47
A-B					7.94	31.76
A-C					57.86	231.45

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7.35	7.35	98.00	0.075	7.27	0.0	0.1	9.913	A
B-A	13.27	13.27	68.66	0.193	13.04	0.0	0.2	16.114	C
C-AB	11.04	11.04	109.14	0.101	10.90	0.0	0.1	9.154	A
C-A	87.80	87.80			87.80				
A-B	5.47	5.47			5.47				
A-C	55.23	55.23			55.23				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12.62	12.62	90.79	0.139	12.54	0.1	0.2	11.188	B
B-A	11.95	11.95	88.43	0.135	12.01	0.2	0.2	13.519	B
C-AB	10.03	10.03	120.84	0.083	10.05	0.1	0.1	8.639	A
C-A	102.61	102.61			102.61				
A-B	6.13	6.13			6.13				
A-C	50.63	50.63			50.63				

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08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,06	4,06	98,01	0,041	4,17	0,2	0,0	10,498	B
B-A	11,96	11,96	60,95	0,197	11,93	0,2	0,2	15,932	C
C-AB	8,62	8,62	115,68	0,075	8,64	0,1	0,1	8,161	A
C-A	143,48	143,48			143,48				
A-B	8,10	8,10			8,10				
A-C	63,12	63,12			63,12				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8,67	8,67	98,80	0,088	8,62	0,0	0,1	9,977	A
B-A	17,88	17,88	69,04	0,259	17,74	0,2	0,3	17,800	C
C-AB	6,94	6,94	120,74	0,057	6,96	0,1	0,1	8,609	A
C-A	90,58	90,58			90,58				
A-B	12,05	12,05			12,05				
A-C	62,46	62,46			62,46				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Junction 1 PM.j9
Path: W:\2019\P19-031\P19-031.4.-25.01.21
Report generation date: 29/01/2021 12:10:10

»Junction 1 - 2017, PM
»Junction 1 - 2021, PM
»Junction 1 - 2022, PM
»Junction 1 - 2027, PM
»Junction 1 - 2037, PM
»Junction 1 - 2022+Dev, PM
»Junction 1 - 2027+Dev, PM
»Junction 1 - 2037+Dev, PM

Summary of junction performance

	PM			
	Queue (Veh)	Delay (s)	RFC	LOS
	Junction 1 - 2017			
Stream B-C	0,0	6,29	0,03	A
Stream B-A	0,1	10,78	0,06	B
Stream C-AB	0,0	9,31	0,02	A
	Junction 1 - 2021			
Stream B-C	0,0	6,43	0,03	A
Stream B-A	0,1	11,43	0,07	B
Stream C-AB	0,0	9,59	0,03	A
	Junction 1 - 2022			
Stream B-C	0,0	6,46	0,03	A
Stream B-A	0,1	11,54	0,07	B
Stream C-AB	0,0	9,62	0,03	A
	Junction 1 - 2027			
Stream B-C	0,0	6,64	0,03	A
Stream B-A	0,1	12,13	0,08	B
Stream C-AB	0,0	9,76	0,03	A
	Junction 1 - 2037			
Stream B-C	0,0	6,88	0,04	A
Stream B-A	0,1	12,99	0,10	B
Stream C-AB	0,1	9,90	0,04	A
	Junction 1 - 2022+Dev			
Stream B-C	0,1	9,84	0,07	A
Stream B-A	0,1	13,59	0,12	B
Stream C-AB	0,1	9,86	0,06	A
	Junction 1 - 2027+Dev			
Stream B-C	0,1	10,04	0,07	B
Stream B-A	0,1	14,17	0,13	B
Stream C-AB	0,1	9,94	0,07	A
	Junction 1 - 2037+Dev			
Stream B-C	0,1	10,32	0,08	B
Stream B-A	0,2	15,05	0,15	C
Stream C-AB	0,1	10,05	0,07	B

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

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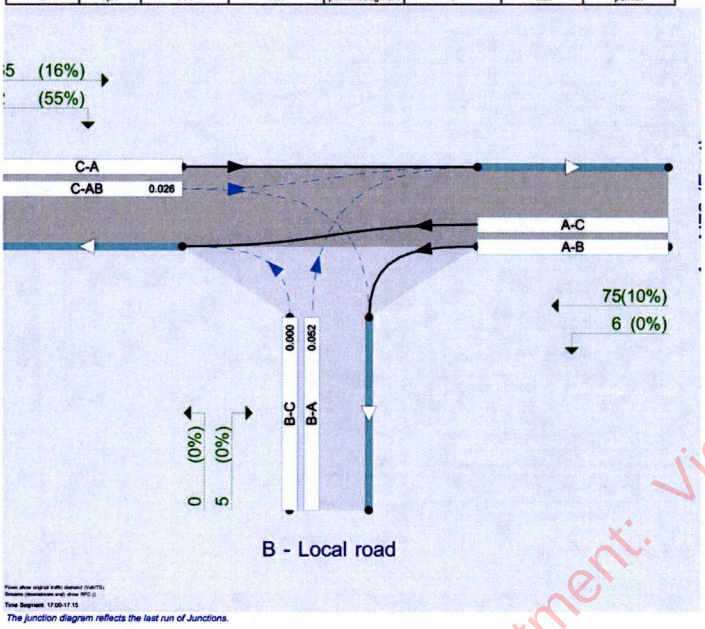
File summary

File Description

Title	Roadstone Quarry and Batching Plant Cappagh
Location	Co. Waterford
Site number	
Date	25/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perTimeSegment	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2017	PM	DIRECT	17:00	18:00	60	15	✓		
D2	2021	PM	DIRECT	17:00	18:00	60	15	✓		
D3	Development Traffic	PM	DIRECT	17:00	18:00	60	15			
D4	2022	PM	DIRECT	17:00	18:00	60	15	✓		
D5	2027	PM	DIRECT	17:00	18:00	60	15	✓		
D6	2037	PM	DIRECT	17:00	18:00	60	15	✓		
D7	2022+Dev	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D3+D4
D8	2027+Dev	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D3+D5
D9	2037+Dev	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D3+D6

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Junction 1	✓	100.000	100.000

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
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Junction 1 - 2017, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		0.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	N72 (East)		Major
B	Local road		Minor
C	N72 (West)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - N72 (West)	7.90			110.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Local road	One lane plus flare	10.00	5.54	3.23	2.26	2.20		3.00	35	45

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	134.651	0.090	0.227	0.143	0.325
1	B-C	159.311	0.090	0.226	-	-
1	C-B	159.416	0.227	0.227	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100.000
B - Local road		DIRECT	✓	100.000
C - N72 (West)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

17:00 - 17:15

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0.00	6.00	68.00
	B - Local road	5.00	0.00	0.00
	C - N72 (West)	59.00	2.00	0.00

Demand (Veh/TS)

17:15 - 17:30

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0.00	5.00	81.00
	B - Local road	5.00	0.00	0.00
	C - N72 (West)	48.00	1.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0.00	7.00	88.00
	B - Local road	5.00	0.00	4.00
	C - N72 (West)	49.00	2.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0.00	5.00	73.00
	B - Local road	3.00	0.00	1.00
	C - N72 (West)	42.00	2.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0	0	9
	B - Local road	0	0	0
	C - N72 (West)	14	50	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0	20	2
	B - Local road	0	0	0
	C - N72 (West)	8	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0	0	5
	B - Local road	20	0	0
	C - N72 (West)	10	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0	40	5
	B - Local road	33	0	0
	C - N72 (West)	2	50	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,03	6,29	0,0	A	1,25	5,00
B-A	0,06	10,78	0,1	B	4,50	18,01
C-AB	0,02	9,31	0,0	A	1,79	7,15
C-A					49,46	197,85
A-B					5,75	23,00
A-C					77,50	310,00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	140,35	0,000	0,00	0,0	0,0	0,000	A
B-A	5,00	5,00	106,72	0,047	4,95	0,0	0,0	8,840	A
C-AB	2,10	2,10	98,71	0,021	2,07	0,0	0,0	9,310	A
C-A	58,90	58,90			58,90				
A-B	6,00	6,00			6,00				
A-C	68,00	68,00			68,00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	138,33	0,000	0,00	0,0	0,0	0,000	A
B-A	5,00	5,00	107,46	0,047	5,00	0,0	0,0	8,783	A
C-AB	1,01	1,01	138,82	0,007	1,03	0,0	0,0	8,582	A
C-A	47,99	47,99			47,99				
A-B	5,00	5,00			5,00				
A-C	81,00	81,00			81,00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,00	4,00	147,38	0,027	3,97	0,0	0,0	6,276	A
B-A	5,00	5,00	84,64	0,059	4,99	0,0	0,1	10,322	B
C-AB	2,01	2,01	137,72	0,015	2,01	0,0	0,0	6,632	A
C-A	48,99	48,99			48,99				
A-B	7,00	7,00			7,00				
A-C	88,00	88,00			88,00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,00	1,00	144,06	0,007	1,02	0,0	0,0	6,294	A
B-A	3,00	3,00	81,28	0,037	3,02	0,1	0,0	10,778	B
C-AB	2,03	2,03	95,50	0,021	2,03	0,0	0,0	8,039	A
C-A	41,97	41,97			41,97				
A-B	5,00	5,00			5,00				
A-C	73,00	73,00			73,00				

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

Junction 1 - 2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		0,59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2021	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100,000
B - Local road		DIRECT	✓	100,000
C - N72 (West)		DIRECT	✓	100,000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	6,47	74,60
B - Local road	5,39	0,00	0,00
C - N72 (West)	65,32	2,37	0,00

17:15 - 17:30

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	5,61	87,75
B - Local road	5,39	0,00	0,00
C - N72 (West)	52,61	1,08	0,00

17:30 - 17:45

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	7,55	95,73
B - Local road	5,61	0,00	4,31
C - N72 (West)	53,90	2,16	0,00

17:45 - 18:00

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	5,82	79,56
B - Local road	3,45	0,00	1,08
C - N72 (West)	45,49	2,37	0,00

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Vehicle Mix

Heavy Vehicle Percentages — 17:00 - 17:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	10
B - Local road	0	0	0
C - N72 (West)	16	55	0

Heavy Vehicle Percentages — 17:15 - 17:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	23	3
B - Local road	0	0	0
C - N72 (West)	10	0	0

Heavy Vehicle Percentages — 17:30 - 17:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	5
B - Local road	23	0	0
C - N72 (West)	12	0	0

Heavy Vehicle Percentages — 17:45 - 18:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	44	7
B - Local road	37	0	0
C - N72 (West)	3	55	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,03	6,43	0,0	A	1,35	5,39
B-A	0,07	11,43	0,1	B	4,96	19,84
C-AB	0,03	9,59	0,0	A	2,06	8,23
C-A					54,27	217,07
A-B					6,36	25,44
A-C					84,41	337,63

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	138,25	0,000	0,00	0,0	0,0	0,000	A
B-A	5,39	5,39	103,32	0,052	5,34	0,0	0,1	9,181	A
C-AB	2,53	2,53	96,34	0,026	2,51	0,0	0,0	9,590	A
C-A	65,16	65,16			65,16				
A-B	6,47	6,47			6,47				
A-C	74,60	74,60			74,60				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	136,44	0,000	0,00	0,0	0,0	0,000	A
B-A	5,39	5,39	104,85	0,051	5,39	0,1	0,1	9,050	A
C-AB	1,10	1,10	136,84	0,008	1,12	0,0	0,0	8,933	A
C-A	52,58	52,58			52,58				
A-B	5,61	5,61			5,61				
A-C	87,75	87,75			87,75				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,31	4,31	144,19	0,030	4,28	0,0	0,0	6,430	A
B-A	5,61	5,61	80,28	0,070	5,59	0,1	0,1	10,887	B
C-AB	2,17	2,17	135,75	0,016	2,16	0,0	0,0	6,739	A
C-A	53,89	53,89			53,89				
A-B	7,55	7,55			7,55				
A-C	95,73	95,73			95,73				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,08	1,08	141,27	0,008	1,10	0,0	0,0	6,420	A
B-A	3,45	3,45	77,05	0,045	3,47	0,1	0,0	11,431	B
C-AB	2,42	2,42	92,07	0,026	2,42	0,0	0,0	8,372	A
C-A	45,44	45,44			45,44				
A-B	5,82	5,82			5,82				
A-C	79,56	79,56			79,56				

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Junction 1 - 2022, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		0,60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2022	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100,000
B - Local road		DIRECT	✓	100,000
C - N72 (West)		DIRECT	✓	100,000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	6,58	76,02
B - Local road	5,48	0,00	0,00
C - N72 (West)	66,64	2,44	0,00

17:15 - 17:30

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	5,73	89,30
B - Local road	5,48	0,00	0,00
C - N72 (West)	53,60	1,10	0,00

17:30 - 17:45

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	7,68	97,46
B - Local road	5,73	0,00	4,39
C - N72 (West)	54,94	2,19	0,00

17:45 - 18:00

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	5,97	81,01
B - Local road	3,53	0,00	1,10
C - N72 (West)	46,29	2,44	0,00

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Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	11
B - Local road	0	0	0
C - N72 (West)	16	55	0

17:15 - 17:30

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	23	3
B - Local road	0	0	0
C - N72 (West)	10	0	0

17:30 - 17:45

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	5
B - Local road	23	0	0
C - N72 (West)	12	0	0

17:45 - 18:00

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	45	7
B - Local road	38	0	0
C - N72 (West)	3	55	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,03	6,46	0,0	A	1,37	5,48
B-A	0,07	11,54	0,1	B	5,06	20,23
C-AB	0,03	9,62	0,0	A	2,11	8,44
C-A					55,30	221,20
A-B					6,49	25,95
A-C					85,95	343,79

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	137,82	0,000	0,00	0,0	0,0	0,000	A
B-A	5,48	5,48	102,64	0,053	5,43	0,0	0,1	9,253	A
C-AB	2,61	2,61	96,11	0,027	2,58	0,0	0,0	9,621	A
C-A	66,46	66,46			66,46				
A-B	6,58	6,58			6,58				
A-C	76,02	76,02			76,02				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	136,02	0,000	0,00	0,0	0,0	0,000	A
B-A	5,48	5,48	104,29	0,053	5,48	0,1	0,1	9,110	A
C-AB	1,12	1,12	136,44	0,008	1,14	0,0	0,0	8,981	A
C-A	53,58	53,58			53,58				
A-B	5,73	5,73			5,73				
A-C	89,30	89,30			89,30				

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17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,39	4,39	143,58	0,031	4,35	0,0	0,0	6,462	A
B-A	5,73	5,73	79,58	0,072	5,71	0,1	0,1	10,995	B
C-AB	2,21	2,21	135,33	0,016	2,20	0,0	0,0	6,762	A
C-A	54,93	54,93			54,93				
A-B	7,68	7,68			7,68				
A-C	97,46	97,46			97,46				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,10	1,10	140,76	0,008	1,12	0,0	0,0	6,447	A
B-A	3,53	3,53	76,43	0,046	3,56	0,1	0,0	11,538	B
C-AB	2,49	2,49	91,66	0,027	2,49	0,0	0,0	8,418	A
C-A	46,24	46,24			46,24				
A-B	5,97	5,97			5,97				
A-C	81,01	81,01			81,01				

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Junction 1 - 2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		0,63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100,000
B - Local road		DIRECT	✓	100,000
C - N72 (West)		DIRECT	✓	100,000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	7,16	83,58
	B - Local road	5,97	0,00	0,00
	C - N72 (West)	73,64	2,79	0,00

17:15 - 17:30

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	6,37	97,48
	B - Local road	5,97	0,00	0,00
	C - N72 (West)	58,90	1,19	0,00

17:30 - 17:45

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	8,35	106,64
	B - Local road	6,37	0,00	4,77
	C - N72 (West)	60,50	2,39	0,00

17:45 - 18:00

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	6,77	88,74
	B - Local road	3,98	0,00	1,19
	C - N72 (West)	50,53	2,79	0,00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	11
B - Local road	0	0	0
C - N72 (West)	17	57	0

Heavy Vehicle Percentages

17:15 - 17:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	25	3
B - Local road	0	0	0
C - N72 (West)	11	0	0

Heavy Vehicle Percentages

17:30 - 17:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	6
B - Local road	25	0	0
C - N72 (West)	13	0	0

Heavy Vehicle Percentages

17:45 - 18:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	47	7
B - Local road	40	0	0
C - N72 (West)	3	57	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,03	6,64	0,0	A	1,49	5,97
B-A	0,08	12,13	0,1	B	5,58	22,30
C-AB	0,03	9,76	0,0	A	2,39	9,57
C-A					60,79	243,17
A-B					7,17	28,66
A-C					94,11	376,43

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	135,50	0,000	0,00	0,0	0,0	0,000	A
B-A	5,97	5,97	99,02	0,060	5,90	0,0	0,1	9,659	A
C-AB	3,06	3,06	95,19	0,032	3,02	0,0	0,0	9,761	A
C-A	73,38	73,38			73,38				
A-B	7,16	7,16			7,16				
A-C	83,58	83,58			83,58				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	133,77	0,000	0,00	0,0	0,0	0,000	A
B-A	5,97	5,97	101,29	0,059	5,97	0,1	0,1	9,441	A
C-AB	1,23	1,23	134,35	0,009	1,25	0,0	0,0	9,228	A
C-A	58,87	58,87			58,87				
A-B	6,37	6,37			6,37				
A-C	97,48	97,48			97,48				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,77	4,77	140,32	0,034	4,74	0,0	0,0	6,636	A
B-A	6,37	6,37	75,93	0,084	6,35	0,1	0,1	11,600	B
C-AB	2,41	2,41	133,08	0,018	2,40	0,0	0,0	6,890	A
C-A	60,48	60,48			60,48				
A-B	8,35	8,35			8,35				
A-C	106,64	106,64			106,64				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,19	1,19	138,05	0,009	1,22	0,0	0,0	6,580	A
B-A	3,98	3,98	73,22	0,055	4,01	0,1	0,1	12,130	B
C-AB	2,88	2,88	89,67	0,032	2,87	0,0	0,0	8,658	A
C-A	50,44	50,44			50,44				
A-B	6,77	6,77			6,77				
A-C	88,74	88,74			88,74				

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
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Junction 1 - 2037, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		0.68	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2037	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100.000
B - Local road		DIRECT	✓	100.000
C - N72 (West)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	7.89	93.37
B - Local road	6.57	0.00	0.00
C - N72 (West)	82.86	3.29	0.00

17:15 - 17:30

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	7.23	107.82
B - Local road	6.57	0.00	0.00
C - N72 (West)	65.75	1.31	0.00

17:30 - 17:45

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	9.20	118.35
B - Local road	7.23	0.00	5.26
C - N72 (West)	67.73	2.63	0.00

17:45 - 18:00

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0.00	7.89	98.62
B - Local road	4.60	0.00	1.31
C - N72 (West)	55.88	3.29	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	13
B - Local road	0	0	0
C - N72 (West)	19	60	0

17:15 - 17:30

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	27	4
B - Local road	0	0	0
C - N72 (West)	12	0	0

17:30 - 17:45

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	0	7
B - Local road	27	0	0
C - N72 (West)	15	0	0

17:45 - 18:00

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	50	8
B - Local road	43	0	0
C - N72 (West)	4	60	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.04	6.88	0.0	A	1.64	6.57
B-A	0.10	12.99	0.1	B	6.25	25.00
C-AB	0.04	9.90	0.1	A	2.80	11.18
C-A					67.89	271.57
A-B					8.06	32.22
A-C					104.54	418.16

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	132.42	0.000	0.00	0.0	0.0	0.000	A
B-A	6.57	6.57	94.18	0.070	6.50	0.0	0.1	10.256	B
C-AB	3.72	3.72	94.57	0.039	3.68	0.0	0.0	9.898	A
C-A	82.42	82.42			82.42				
A-B	7.89	7.89			7.89				
A-C	93.37	93.37			93.37				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	130.90	0.000	0.00	0.0	0.0	0.000	A
B-A	6.57	6.57	97.41	0.067	6.58	0.1	0.1	9.909	A
C-AB	1.36	1.36	131.66	0.010	1.39	0.0	0.0	9.544	A
C-A	65.71	65.71			65.71				
A-B	7.23	7.23			7.23				
A-C	107.82	107.82			107.82				

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17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5,26	5,26	136,06	0,039	5,22	0,0	0,0	6,877	A
B-A	7,23	7,23	71,29	0,102	7,21	0,1	0,1	12,493	B
C-AB	2,66	2,66	130,22	0,020	2,65	0,0	0,0	7,061	A
C-A	67,70	67,70			67,70				
A-B	9,20	9,20			9,20				
A-C	118,35	118,35			118,35				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,31	1,31	134,49	0,010	1,34	0,0	0,0	6,763	A
B-A	4,60	4,60	69,18	0,067	4,64	0,1	0,1	12,992	B
C-AB	3,43	3,43	87,44	0,039	3,42	0,0	0,0	8,968	A
C-A	55,74	55,74			55,74				
A-B	7,89	7,89			7,89				
A-C	98,62	98,62			98,62				

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
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Junction 1 - 2022+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		1,53	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2022+Dev	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D3+D4

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100,000
B - Local road		DIRECT	✓	100,000
C - N72 (West)		DIRECT	✓	100,000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	9,33	76,02
	B - Local road	8,98	0,00	3,50
	C - N72 (West)	66,64	5,19	0,00

17:15 - 17:30

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	8,48	89,30
	B - Local road	8,98	0,00	3,50
	C - N72 (West)	53,60	3,85	0,00

17:30 - 17:45

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	10,43	97,46
	B - Local road	9,23	0,00	7,89
	C - N72 (West)	54,94	4,94	0,00

17:45 - 18:00

Demand (Veh/TS)

		To		
		A - N72 (East)	B - Local road	C - N72 (West)
From	A - N72 (East)	0,00	8,72	81,01
	B - Local road	7,03	0,00	4,60
	C - N72 (West)	46,29	5,19	0,00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	19	11
B - Local road	19	0	50
C - N72 (West)	16	60	0

17:15 - 17:30

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	36	3
B - Local road	19	0	50
C - N72 (West)	10	45	0

17:30 - 17:45

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	17	5
B - Local road	33	0	22
C - N72 (West)	12	35	0

17:45 - 18:00

Heavy Vehicle Percentages

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	51	7
B - Local road	44	0	38
C - N72 (West)	3	60	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.07	9.84	0.1	A	4.87	19.48
B-A	0.12	13.59	0.1	B	8.56	34.24
C-AB	0.06	9.86	0.1	A	5.22	20.86
C-A					54.94	219.77
A-B					9.24	36.95
A-C					85.95	343.79

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.50	3.50	96.23	0.036	3.46	0.0	0.0	9.694	A
B-A	8.98	8.98	82.29	0.109	8.86	0.0	0.1	12.237	B
C-AB	5.87	5.87	97.82	0.060	5.80	0.0	0.1	9.776	A
C-A	65.95	65.95			65.95				
A-B	9.33	9.33			9.33				
A-C	76.02	76.02			76.02				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.50	3.50	94.95	0.037	3.50	0.0	0.0	9.840	A
B-A	8.98	8.98	83.62	0.107	8.98	0.1	0.1	12.059	B
C-AB	4.15	4.15	99.87	0.041	4.17	0.1	0.0	9.861	A
C-A	53.30	53.30			53.30				
A-B	8.48	8.48			8.48				
A-C	89.30	89.30			89.30				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7.89	7.89	117.33	0.067	7.85	0.0	0.1	8.827	A
B-A	9.23	9.23	78.95	0.118	9.22	0.1	0.1	12.332	B
C-AB	5.29	5.29	104.94	0.050	5.28	0.0	0.1	9.306	A
C-A	54.60	54.60			54.60				
A-B	10.43	10.43			10.43				
A-C	97.46	97.46			97.46				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4.60	4.60	105.99	0.043	4.63	0.1	0.0	8.225	A
B-A	7.03	7.03	70.36	0.100	7.05	0.1	0.1	13.594	B
C-AB	5.55	5.55	92.53	0.060	5.55	0.1	0.1	9.610	A
C-A	45.93	45.93			45.93				
A-B	8.72	8.72			8.72				
A-C	81.01	81.01			81.01				

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Junction 1 - 2027+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		1,51	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2027+Dev	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D3+D5

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100,000
B - Local road		DIRECT	✓	100,000
C - N72 (West)		DIRECT	✓	100,000

Origin-Destination Data

Demand (Veh/TS)

17:00 - 17:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	9,91	83,58
B - Local road	9,47	0,00	3,50
C - N72 (West)	73,64	5,54	0,00

Demand (Veh/TS)

17:15 - 17:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	9,12	97,48
B - Local road	9,47	0,00	3,50
C - N72 (West)	58,90	3,94	0,00

Demand (Veh/TS)

17:30 - 17:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	11,10	106,64
B - Local road	9,87	0,00	8,27
C - N72 (West)	60,50	5,14	0,00

Demand (Veh/TS)

17:45 - 18:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	9,52	88,74
B - Local road	7,48	0,00	4,69
C - N72 (West)	50,53	5,54	0,00

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Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	18	11
B - Local road	18	0	50
C - N72 (West)	17	60	0

Heavy Vehicle Percentages

17:15 - 17:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	37	3
B - Local road	18	0	50
C - N72 (West)	11	44	0

Heavy Vehicle Percentages

17:30 - 17:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	16	8
B - Local road	34	0	21
C - N72 (West)	13	34	0

Heavy Vehicle Percentages

17:45 - 18:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	52	7
B - Local road	45	0	37
C - N72 (West)	3	60	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,07	10,04	0,1	B	4,99	19,97
B-A	0,13	14,17	0,1	B	9,08	36,31
C-AB	0,07	9,94	0,1	A	5,57	22,27
C-A					60,37	241,47
A-B					9,92	39,66
A-C					94,11	376,43

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,50	3,50	94,30	0,037	3,46	0,0	0,0	9,903	A
B-A	9,47	9,47	80,09	0,118	9,34	0,0	0,1	12,698	B
C-AB	6,42	6,42	98,04	0,066	6,34	0,0	0,1	9,810	A
C-A	72,76	72,76			72,76				
A-B	9,91	9,91			9,91				
A-C	83,58	83,58			83,58				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,50	3,50	93,09	0,038	3,50	0,0	0,0	10,044	B
B-A	9,47	9,47	81,94	0,116	9,47	0,1	0,1	12,420	B
C-AB	4,30	4,30	99,89	0,043	4,33	0,1	0,1	9,942	A
C-A	58,54	58,54			58,54				
A-B	9,12	9,12			9,12				
A-C	97,48	97,48			97,48				

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17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8,27	8,27	115,62	0,071	8,23	0,0	0,1	9,008	A
B-A	9,87	9,87	75,28	0,131	9,86	0,1	0,1	12,894	B
C-AB	5,54	5,54	104,84	0,053	5,53	0,1	0,1	9,342	A
C-A	60,10	60,10			60,10				
A-B	11,10	11,10			11,10				
A-C	106,64	106,64			106,64				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,69	4,69	104,38	0,045	4,73	0,1	0,0	8,347	A
B-A	7,48	7,48	68,09	0,110	7,50	0,1	0,1	14,175	B
C-AB	6,00	6,00	91,71	0,066	5,99	0,1	0,1	9,709	A
C-A	50,07	50,07			50,07				
A-B	9,52	9,52			9,52				
A-C	88,74	88,74			88,74				

Junction 1 - 2037+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J1	T-Junction	Two-way		1,51	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2037+Dev	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D3+D6

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - N72 (East)		DIRECT	✓	100,000
B - Local road		DIRECT	✓	100,000
C - N72 (West)		DIRECT	✓	100,000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	10,64	93,37
B - Local road	10,07	0,00	3,50
C - N72 (West)	82,86	6,04	0,00

17:15 - 17:30

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	9,98	107,82
B - Local road	10,07	0,00	3,50
C - N72 (West)	65,75	4,06	0,00

17:30 - 17:45

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	11,95	118,35
B - Local road	10,73	0,00	8,76
C - N72 (West)	67,73	5,38	0,00

17:45 - 18:00

Demand (Veh/TS)

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0,00	10,64	98,62
B - Local road	8,10	0,00	4,81
C - N72 (West)	55,88	6,04	0,00

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Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	16	13
B - Local road	17	0	50
C - N72 (West)	19	62	0

Heavy Vehicle Percentages

17:15 - 17:30

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	37	4
B - Local road	17	0	50
C - N72 (West)	12	43	0

Heavy Vehicle Percentages

17:30 - 17:45

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	15	7
B - Local road	35	0	20
C - N72 (West)	15	33	0

Heavy Vehicle Percentages

17:45 - 18:00

From \ To	A - N72 (East)	B - Local road	C - N72 (West)
A - N72 (East)	0	54	8
B - Local road	46	0	36
C - N72 (West)	4	62	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,08	10,32	0,1	B	5,14	20,58
B-A	0,15	15,05	0,2	C	9,75	39,01
C-AB	0,07	10,05	0,1	B	6,07	24,28
C-A					67,37	269,46
A-B					10,81	43,22
A-C					104,54	418,16

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,50	3,50	91,79	0,038	3,46	0,0	0,0	10,185	B
B-A	10,07	10,07	76,91	0,131	9,93	0,0	0,1	13,406	B
C-AB	7,25	7,25	98,61	0,074	7,16	0,0	0,1	9,835	A
C-A	81,64	81,64			81,64				
A-B	10,64	10,64			10,64				
A-C	93,37	93,37			93,37				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,50	3,50	90,74	0,039	3,50	0,0	0,0	10,315	B
B-A	10,07	10,07	79,59	0,127	10,08	0,1	0,1	12,949	B
C-AB	4,50	4,50	99,91	0,045	4,54	0,1	0,1	10,055	B
C-A	65,31	65,31			65,31				
A-B	9,98	9,98			9,98				
A-C	107,82	107,82			107,82				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8,76	8,76	113,16	0,077	8,71	0,0	0,1	9,271	A
B-A	10,73	10,73	71,54	0,150	10,72	0,1	0,2	13,749	B
C-AB	5,87	5,87	104,59	0,056	5,86	0,1	0,1	9,398	A
C-A	67,24	67,24			67,24				
A-B	11,95	11,95			11,95				
A-C	118,35	118,35			118,35				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,81	4,81	102,16	0,047	4,86	0,1	0,0	8,524	A
B-A	8,10	8,10	65,06	0,125	8,13	0,2	0,1	15,051	C
C-AB	6,66	6,66	90,73	0,073	6,64	0,1	0,1	9,851	A
C-A	55,27	55,27			55,27				
A-B	10,64	10,64			10,64				
A-C	98,62	98,62			98,62				

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Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Junction 2 AM.j9
Path: W:\2019\P19-031\P19-031.4.-25.01.21
Report generation date: 29/01/2021 12:14:27

»Junction 2 - 2017, AM
»Junction 2 - 2021, AM
»Junction 2 - 2022, AM
»Junction 2 - 2027, AM
»Junction 2 - 2037, AM
»Junction 2 - 2022+Dev, AM
»Junction 2 - 2027+Dev, AM
»Junction 2 - 2037+Dev, AM

Summary of junction performance

	AM			
	Queue (Veh)	Delay (s)	RFC	LOS
	Junction 2 - 2017			
Stream B-C	0.1	10.30	0.06	B
Stream B-A	0.1	11.39	0.05	B
Stream C-AB	0.1	12.21	0.11	B
	Junction 2 - 2021			
Stream B-C	0.1	10.51	0.08	B
Stream B-A	0.1	11.90	0.07	B
Stream C-AB	0.2	12.42	0.14	B
	Junction 2 - 2022			
Stream B-C	0.1	10.53	0.09	B
Stream B-A	0.1	11.97	0.07	B
Stream C-AB	0.2	12.52	0.15	B
	Junction 2 - 2027			
Stream B-C	0.1	10.67	0.10	B
Stream B-A	0.1	12.32	0.08	B
Stream C-AB	0.2	13.06	0.17	B
	Junction 2 - 2037			
Stream B-C	0.1	10.87	0.12	B
Stream B-A	0.1	12.83	0.10	B
Stream C-AB	0.3	13.89	0.21	B
	Junction 2 - 2022+Dev			
Stream B-C	0.1	10.58	0.09	B
Stream B-A	0.1	12.09	0.07	B
Stream C-AB	0.2	12.46	0.15	B
	Junction 2 - 2027+Dev			
Stream B-C	0.1	10.72	0.10	B
Stream B-A	0.1	12.45	0.08	B
Stream C-AB	0.2	12.99	0.17	B
	Junction 2 - 2037+Dev			
Stream B-C	0.1	10.92	0.13	B
Stream B-A	0.1	12.98	0.10	B
Stream C-AB	0.3	13.79	0.21	B

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

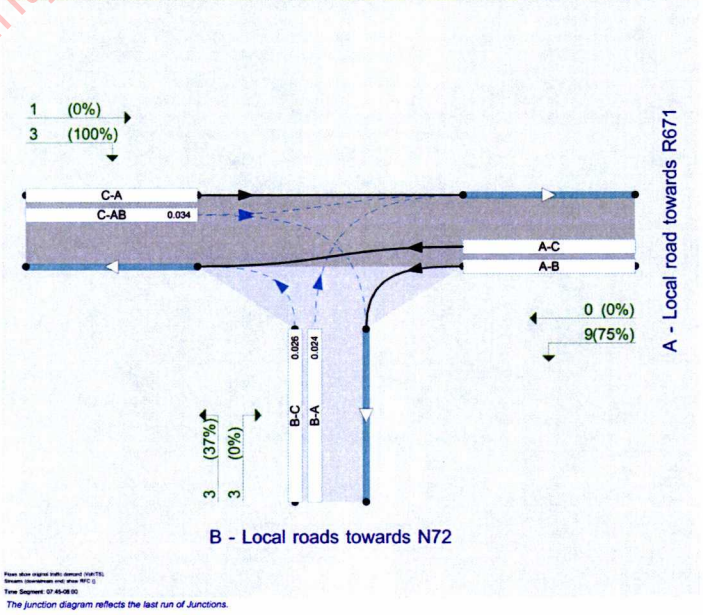
File summary

File Description

Title	Roadstone Quarry and Batching Plant Cappagh
Location	Co. Waterford
Site number	
Date	25/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perTimeSegment	s	-Min	perMin



Flows show original traffic demand (Veh/TS).
Results (development only) show RFC ().
Time Segment: 07:45-08:00

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

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Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2017	AM	DIRECT	07:45	08:45	60	15	✓		
D2	2021	AM	DIRECT	07:45	08:45	60	15	✓		
D3	Development Traffic	AM	DIRECT	07:45	08:45	60	15			
D4	2022	AM	DIRECT	07:45	08:45	60	15	✓		
D5	2027	AM	DIRECT	07:45	08:45	60	15	✓		
D6	2037	AM	DIRECT	07:45	08:45	60	15	✓		
D7	2022+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D4
D8	2027+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D5
D9	2037+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D6

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Junction 2	✓	100.000	100.000

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Junction 2 - 2017, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		8.64	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Local road towards R671		Major
B	Local roads towards N72		Minor
C	Local Road towards Quarry Access		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Local Road towards Quarry Access	8.20			70.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Local roads towards N72	One lane plus flare	10.00	5.14	3.42	2.60	2.20		2.00	45	70

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	139.625	0.092	0.233	0.146	0.332
1	B-C	183.195	0.102	0.257	-	-
1	C-B	153.625	0.215	0.215	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local roads towards N72		DIRECT	✓	100.000
C - Local Road towards Quarry Access		DIRECT	✓	100.000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	7.00	0.00
B - Local roads towards N72	3.00	0.00	3.00
C - Local Road towards Quarry Access	1.00	2.00	0.00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	7.00	0.00
B - Local roads towards N72	3.00	0.00	6.00
C - Local Road towards Quarry Access	0.00	2.00	0.00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	9.00	0.00
B - Local roads towards N72	4.00	0.00	0.00
C - Local Road towards Quarry Access	0.00	10.00	0.00

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	6.00	3.00
B - Local roads towards N72	4.00	0.00	1.00
C - Local Road towards Quarry Access	1.00	1.00	0.00

Vehicle Mix

07:45 - 08:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	71	0
B - Local roads towards N72	0	0	33
C - Local Road towards Quarry Access	0	100	0

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	29	0
B - Local roads towards N72	67	0	83
C - Local Road towards Quarry Access	0	100	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	33	0
B - Local roads towards N72	50	0	0
C - Local Road towards Quarry Access	0	70	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	17	67
B - Local roads towards N72	75	0	100
C - Local Road towards Quarry Access	0	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.06	10.30	0.1	B	2.50	10.00
B-A	0.05	11.39	0.1	B	3.50	14.01
C-AB	0.11	12.21	0.1	B	3.75	15.01
C-A					0.50	1.99
A-B					7.25	29.00
A-C					0.75	3.00

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.00	3.00	135.74	0.022	2.98	0.0	0.0	6.779	A
B-A	3.00	3.00	137.05	0.022	2.98	0.0	0.0	6.713	A
C-AB	2.00	2.00	75.68	0.026	1.98	0.0	0.0	12.207	B
C-A	1.00	1.00			1.00				
A-B	7.00	7.00			7.00				
A-C	0.00	0.00			0.00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6.00	6.00	93.03	0.065	5.96	0.0	0.1	9.345	A
B-A	3.00	3.00	80.38	0.037	2.99	0.0	0.0	9.260	A
C-AB	2.00	2.00	75.80	0.026	2.00	0.0	0.0	12.187	B
C-A	0.00	0.00			0.00				
A-B	7.00	7.00			7.00				
A-C	0.00	0.00			0.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	85.60	0.000	0.06	0.1	0.0	0.000	A
B-A	4.00	4.00	88.85	0.045	3.98	0.0	0.0	11.121	B
C-AB	10.00	10.00	88.81	0.113	9.90	0.0	0.1	11.763	B
C-A	0.00	0.00			0.00				
A-B	9.00	9.00			9.00				
A-C	0.00	0.00			0.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	82.04	0.012	0.99	0.0	0.0	10.300	B
B-A	4.00	4.00	77.23	0.052	4.00	0.0	0.1	11.388	B
C-AB	1.00	1.00	76.95	0.013	1.12	0.1	0.0	10.431	B
C-A	1.00	1.00			1.00				
A-B	6.00	6.00			6.00				
A-C	3.00	3.00			3.00				

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Junction 2 - 2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		6,95	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2021	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local roads towards N72		DIRECT	✓	100,000
C - Local Road towards Quarry Access		DIRECT	✓	100,000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	8,62	0,00
B - Local roads towards N72	3,23	0,00	3,45
C - Local Road towards Quarry Access	1,08	2,59	0,00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	7,98	0,00
B - Local roads towards N72	3,66	0,00	7,54
C - Local Road towards Quarry Access	0,00	2,59	0,00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	10,35	0,00
B - Local roads towards N72	4,74	0,00	0,00
C - Local Road towards Quarry Access	0,00	12,29	0,00

08:30 - 08:45

Demand (Veh/TS)

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13 AUG 2021
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From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	6,58	3,66
B - Local roads towards N72	4,96	0,00	1,29
C - Local Road towards Quarry Access	1,08	1,29	0,00

Vehicle Mix

07:45 - 08:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	75	0
B - Local roads towards N72	0	0	37
C - Local Road towards Quarry Access	0	100	0

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	32	0
B - Local roads towards N72	71	0	86
C - Local Road towards Quarry Access	0	100	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	37	0
B - Local roads towards N72	55	0	0
C - Local Road towards Quarry Access	0	74	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	19	71
B - Local roads towards N72	78	0	100
C - Local Road towards Quarry Access	0	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,08	10,51	0,1	B	3,07	12,29
B-A	0,07	11,90	0,1	B	4,15	16,61
C-AB	0,14	12,42	0,2	B	4,69	18,76
C-A					0,54	2,15
A-B					8,41	33,63
A-C					0,92	3,66

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,45	3,45	132,05	0,026	3,42	0,0	0,0	6,994	A
B-A	3,23	3,23	135,60	0,024	3,21	0,0	0,0	6,798	A
C-AB	2,59	2,59	75,39	0,034	2,56	0,0	0,0	12,353	B
C-A	1,07	1,07			1,07				
A-B	8,62	8,62			8,62				
A-C	0,00	0,00			0,00				

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08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,54	7,54	91,56	0,082	7,49	0,0	0,1	9,765	A
B-A	3,66	3,66	78,12	0,047	3,65	0,0	0,0	9,678	A
C-AB	2,59	2,59	75,63	0,034	2,59	0,0	0,0	12,313	B
C-A	0,00	0,00			0,00				
A-B	7,98	7,98			7,98				
A-C	0,00	0,00			0,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	84,17	0,000	0,08	0,1	0,0	0,000	A
B-A	4,74	4,74	85,17	0,056	4,72	0,0	0,1	11,711	B
C-AB	12,29	12,29	86,65	0,142	12,15	0,0	0,2	12,424	B
C-A	0,00	0,00			0,00				
A-B	10,35	10,35			10,35				
A-C	0,00	0,00			0,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,29	1,29	81,64	0,016	1,28	0,0	0,0	10,505	B
B-A	4,96	4,96	75,44	0,066	4,95	0,1	0,1	11,903	B
C-AB	1,29	1,29	76,57	0,017	1,45	0,2	0,0	10,720	B
C-A	1,08	1,08			1,08				
A-B	6,68	6,68			6,68				
A-C	3,66	3,66			3,66				

Junction 2 - 2022, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		7,00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2022	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local roads towards N72		DIRECT	✓	100,000
C - Local Road towards Quarry Access		DIRECT	✓	100,000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0,00	8,89	0,00
	B - Local roads towards N72	3,29	0,00	3,53
	C - Local Road towards Quarry Access	1,10	2,68	0,00

08:00 - 08:15

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0,00	8,16	0,00
	B - Local roads towards N72	3,78	0,00	7,79
	C - Local Road towards Quarry Access	0,00	2,68	0,00

08:15 - 08:30

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0,00	10,60	0,00
	B - Local roads towards N72	4,87	0,00	0,00
	C - Local Road towards Quarry Access	0,00	12,67	0,00

08:30 - 08:45

Demand (Veh/TS)

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		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0,00	6,82	3,78
	B - Local roads towards N72	5,11	0,00	1,34
	C - Local Road towards Quarry Access	1,10	1,34	0,00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	75	0
	B - Local roads towards N72	0	0	38
	C - Local Road towards Quarry Access	0	100	0

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	33	0
	B - Local roads towards N72	71	0	86
	C - Local Road towards Quarry Access	0	100	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	38	0
	B - Local roads towards N72	55	0	0
	C - Local Road towards Quarry Access	0	74	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	20	71
	B - Local roads towards N72	79	0	100
	C - Local Road towards Quarry Access	0	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,09	10,53	0,1	B	3,17	12,67
B-A	0,07	11,97	0,1	B	4,27	17,06
C-AB	0,15	12,52	0,2	B	4,84	19,37
C-A					0,55	2,18
A-B					8,62	34,47
A-C					0,94	3,78

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,53	3,53	131,66	0,027	3,51	0,0	0,0	7,020	A
B-A	3,29	3,29	135,41	0,024	3,26	0,0	0,0	6,811	A
C-AB	2,69	2,69	75,34	0,036	2,65	0,0	0,0	12,374	B
C-A	1,09	1,09			1,09				
A-B	8,89	8,89			8,89				
A-C	0,00	0,00			0,00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,79	7,79	91,40	0,085	7,74	0,0	0,1	9,822	A
B-A	3,78	3,78	77,88	0,049	3,76	0,0	0,0	9,727	A
C-AB	2,68	2,68	75,60	0,035	2,68	0,0	0,0	12,333	B
C-A	0,00	0,00			0,00				
A-B	8,16	8,16			8,16				
A-C	0,00	0,00			0,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	84,01	0,000	0,08	0,1	0,0	0,000	A
B-A	4,87	4,87	84,75	0,057	4,85	0,0	0,1	11,788	B
C-AB	12,67	12,67	86,43	0,146	12,53	0,0	0,2	12,521	B
C-A	0,00	0,00			0,00				
A-B	10,60	10,60			10,60				
A-C	0,00	0,00			0,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,34	1,34	81,56	0,016	1,32	0,0	0,0	10,532	B
B-A	5,11	5,11	75,25	0,068	5,11	0,1	0,1	11,969	B
C-AB	1,34	1,34	76,52	0,018	1,50	0,2	0,0	10,753	B
C-A	1,09	1,09			1,09				
A-B	6,82	6,82			6,82				
A-C	3,78	3,78			3,78				

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
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Junction 2 - 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		7.28	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local roads towards N72		DIRECT	✓	100.000
C - Local Road towards Quarry Access		DIRECT	✓	100.000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	10.37	0.00
B - Local roads towards N72	3.58	0.00	3.98
C - Local Road towards Quarry Access	1.19	3.19	0.00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	9.16	0.00
B - Local roads towards N72	4.39	0.00	9.18
C - Local Road towards Quarry Access	0.00	3.19	0.00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	11.95	0.00
B - Local roads towards N72	5.58	0.00	0.00
C - Local Road towards Quarry Access	0.00	14.76	0.00

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	7.56	4.39
B - Local roads towards N72	5.98	0.00	1.60
C - Local Road towards Quarry Access	1.19	1.60	0.00

Vehicle Mix

07:45 - 08:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	77	0
B - Local roads towards N72	0	0	40
C - Local Road towards Quarry Access	0	100	0

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	35	0
B - Local roads towards N72	73	0	87
C - Local Road towards Quarry Access	0	100	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	40	0
B - Local roads towards N72	57	0	0
C - Local Road towards Quarry Access	0	76	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	21	73
B - Local roads towards N72	80	0	100
C - Local Road towards Quarry Access	0	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.10	10.67	0.1	B	3.69	14.76
B-A	0.08	12.32	0.1	B	4.89	19.55
C-AB	0.17	13.06	0.2	B	5.69	22.76
C-A					0.59	2.37
A-B					9.76	39.05
A-C					1.10	4.39

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.98	3.98	129.72	0.031	3.95	0.0	0.0	7.154	A
B-A	3.58	3.58	134.40	0.027	3.55	0.0	0.0	6.876	A
C-AB	3.20	3.20	75.08	0.043	3.16	0.0	0.0	12.505	B
C-A	1.18	1.18			1.18				
A-B	10.37	10.37			10.37				
A-C	0.00	0.00			0.00				

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08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9,18	9,18	90,60	0,101	9,11	0,0	0,1	10,113	B
B-A	4,39	4,39	76,72	0,057	4,37	0,0	0,0	9,996	A
C-AB	3,19	3,19	75,42	0,042	3,19	0,0	0,0	12,449	B
C-A	0,00	0,00			0,00				
A-B	9,16	9,16			9,16				
A-C	0,00	0,00			0,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	83,20	0,000	0,10	0,1	0,0	0,000	A
B-A	5,58	5,58	82,58	0,068	5,55	0,0	0,1	12,216	B
C-AB	14,76	14,76	85,33	0,173	14,59	0,0	0,2	13,065	B
C-A	0,00	0,00			0,00				
A-B	11,95	11,95			11,95				
A-C	0,00	0,00			0,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,60	1,60	81,15	0,020	1,58	0,0	0,0	10,670	B
B-A	5,98	5,98	74,30	0,081	5,98	0,1	0,1	12,322	B
C-AB	1,60	1,60	76,26	0,021	1,79	0,2	0,0	10,926	B
C-A	1,19	1,19			1,19				
A-B	7,56	7,56			7,56				
A-C	4,39	4,39			4,39				

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
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Junction 2 - 2037, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		7,70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2037	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local roads towards N72		DIRECT	✓	100,000
C - Local Road towards Quarry Access		DIRECT	✓	100,000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0,00	12,50	0,00
	B - Local roads towards N72	3,94	0,00	4,60
	C - Local Road towards Quarry Access	1,31	3,95	0,00

08:00 - 08:15

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0,00	10,52	0,00
	B - Local roads towards N72	5,26	0,00	11,19
	C - Local Road towards Quarry Access	0,00	3,95	0,00

08:15 - 08:30

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0,00	13,81	0,00
	B - Local roads towards N72	6,58	0,00	0,00
	C - Local Road towards Quarry Access	0,00	17,77	0,00

08:30 - 08:45

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0,00	8,55	5,26
	B - Local roads towards N72	7,24	0,00	1,97
	C - Local Road towards Quarry Access	1,31	1,97	0,00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	79	0
	B - Local roads towards N72	0	0	43
	C - Local Road towards Quarry Access	0	100	0

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	38	0
	B - Local roads towards N72	75	0	88
	C - Local Road towards Quarry Access	0	100	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	43	0
	B - Local roads towards N72	60	0	0
	C - Local Road towards Quarry Access	0	78	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	23	75
	B - Local roads towards N72	82	0	100
	C - Local Road towards Quarry Access	0	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,12	10,87	0,1	B	4,44	17,77
B-A	0,10	12,83	0,1	B	5,76	23,04
C-AB	0,21	13,89	0,3	B	6,92	27,66
C-A					0,65	2,61
A-B					11,35	45,39
A-C					1,32	5,26

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,60	4,60	127,26	0,036	4,57	0,0	0,0	7,333	A
B-A	3,94	3,94	132,99	0,030	3,91	0,0	0,0	6,970	A
C-AB	3,97	3,97	74,71	0,053	3,91	0,0	0,1	12,704	B
C-A	1,30	1,30			1,30				
A-B	12,50	12,50			12,50				
A-C	0,00	0,00			0,00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11,19	11,19	89,60	0,125	11,10	0,0	0,1	10,551	B
B-A	5,26	5,26	75,25	0,070	5,23	0,0	0,1	10,378	B
C-AB	3,95	3,95	75,18	0,053	3,95	0,1	0,1	12,623	B
C-A	0,00	0,00			0,00				
A-B	10,52	10,52			10,52				
A-C	0,00	0,00			0,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	82,18	0,000	0,13	0,1	0,0	0,000	A
B-A	6,58	6,58	79,79	0,082	6,55	0,1	0,1	12,831	B
C-AB	17,77	17,77	83,98	0,211	17,55	0,1	0,3	13,888	B
C-A	0,00	0,00			0,00				
A-B	13,81	13,81			13,81				
A-C	0,00	0,00			0,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,97	1,97	80,52	0,025	1,95	0,0	0,0	10,867	B
B-A	7,24	7,24	73,12	0,099	7,23	0,1	0,1	12,819	B
C-AB	1,98	1,98	75,92	0,026	2,22	0,3	0,0	11,156	B
C-A	1,31	1,31			1,31				
A-B	8,55	8,55			8,55				
A-C	5,26	5,26			5,26				

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Junction 2 - 2022+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		5,88	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2022+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D4

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local roads towards N72		DIRECT	✓	100,000
C - Local Road towards Quarry Access		DIRECT	✓	100,000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	8,89	2,00
B - Local roads towards N72	3,29	0,00	3,53
C - Local Road towards Quarry Access	3,60	2,68	0,00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	8,16	2,00
B - Local roads towards N72	3,78	0,00	7,79
C - Local Road towards Quarry Access	2,50	2,68	0,00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	10,60	2,00
B - Local roads towards N72	4,87	0,00	0,00
C - Local Road towards Quarry Access	2,50	12,67	0,00

08:30 - 08:45

Demand (Veh/TS)

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WATERFORD CITY + COUNTY COUNCIL

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	6,82	5,78
B - Local roads towards N72	5,11	0,00	1,34
C - Local Road towards Quarry Access	3,60	1,34	0,00

Vehicle Mix

07:45 - 08:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	75	63
B - Local roads towards N72	0	0	38
C - Local Road towards Quarry Access	35	100	0

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	33	63
B - Local roads towards N72	71	0	86
C - Local Road towards Quarry Access	50	100	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	38	63
B - Local roads towards N72	55	0	0
C - Local Road towards Quarry Access	50	74	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	20	68
B - Local roads towards N72	79	0	100
C - Local Road towards Quarry Access	35	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,09	10,58	0,1	B	3,17	12,67
B-A	0,07	12,09	0,1	B	4,27	17,06
C-AB	0,15	12,46	0,2	B	4,89	19,54
C-A					3,00	12,02
A-B					8,62	34,47
A-C					2,94	11,78

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,53	3,53	131,05	0,027	3,50	0,0	0,0	7,054	A
B-A	3,29	3,29	134,11	0,025	3,26	0,0	0,0	6,878	A
C-AB	2,70	2,70	75,47	0,036	2,67	0,0	0,0	12,356	B
C-A	3,57	3,57			3,57				
A-B	8,89	8,89			8,89				
A-C	2,00	2,00			2,00				

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08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,79	7,79	90,97	0,086	7,74	0,0	0,1	9,872	A
B-A	3,78	3,78	77,14	0,049	3,76	0,0	0,0	9,824	A
C-AB	2,70	2,70	75,72	0,036	2,70	0,0	0,0	12,318	B
C-A	2,48	2,48			2,48				
A-B	8,16	8,16			8,16				
A-C	2,00	2,00			2,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	83,61	0,000	0,00	0,1	0,0	0,000	A
B-A	4,87	4,87	83,90	0,058	4,85	0,0	0,1	11,914	B
C-AB	12,80	12,80	86,91	0,147	12,66	0,0	0,2	12,461	B
C-A	2,37	2,37			2,37				
A-B	10,60	10,60			10,60				
A-C	2,00	2,00			2,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,34	1,34	81,17	0,017	1,32	0,0	0,0	10,583	B
B-A	5,11	5,11	74,53	0,069	5,11	0,1	0,1	12,093	B
C-AB	1,34	1,34	76,34	0,018	1,51	0,2	0,0	10,775	B
C-A	3,59	3,59			3,59				
A-B	6,82	6,82			6,82				
A-C	5,78	5,78			5,78				

Junction 2 - 2027+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		6,26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2027+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D5

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local roads towards N72		DIRECT	✓	100,000
C - Local Road towards Quarry Access		DIRECT	✓	100,000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	10,37	2,00
B - Local roads towards N72	3,58	0,00	3,98
C - Local Road towards Quarry Access	3,69	3,19	0,00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	9,16	2,00
B - Local roads towards N72	4,39	0,00	9,18
C - Local Road towards Quarry Access	2,50	3,19	0,00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0,00	11,95	2,00
B - Local roads towards N72	5,58	0,00	0,00
C - Local Road towards Quarry Access	2,50	14,76	0,00

08:30 - 08:45

Demand (Veh/TS)

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		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0,00	7,56	6,39
	B - Local roads towards N72	5,98	0,00	1,60
	C - Local Road towards Quarry Access	3,69	1,60	0,00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	77	63
	B - Local roads towards N72	0	0	40
	C - Local Road towards Quarry Access	34	100	0

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	35	63
	B - Local roads towards N72	73	0	87
	C - Local Road towards Quarry Access	50	100	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	40	63
	B - Local roads towards N72	57	0	0
	C - Local Road towards Quarry Access	50	76	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
From	A - Local road towards R671	0	21	70
	B - Local roads towards N72	80	0	100
	C - Local Road towards Quarry Access	34	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,10	10,72	0,1	B	3,69	14,76
B-A	0,08	12,45	0,1	B	4,89	19,55
C-AB	0,17	12,99	0,2	B	5,74	22,98
C-A					3,04	12,15
A-B					9,76	39,05
A-C					3,10	12,39

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Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,98	3,98	129,11	0,031	3,95	0,0	0,0	7,188	A
B-A	3,58	3,58	133,10	0,027	3,55	0,0	0,0	6,944	A
C-AB	3,23	3,23	75,25	0,043	3,18	0,0	0,0	12,480	B
C-A	3,66	3,66			3,66				
A-B	10,37	10,37			10,37				
A-C	2,00	2,00			2,00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9,18	9,18	90,18	0,102	9,11	0,0	0,1	10,173	B
B-A	4,39	4,39	75,98	0,058	4,37	0,0	0,0	10,097	B
C-AB	3,22	3,22	75,59	0,043	3,22	0,0	0,0	12,424	B
C-A	2,48	2,48			2,48				
A-B	9,16	9,16			9,16				
A-C	2,00	2,00			2,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	82,81	0,000	0,10	0,1	0,0	0,000	A
B-A	5,58	5,58	81,75	0,068	5,55	0,0	0,1	12,350	B
C-AB	14,93	14,93	85,90	0,174	14,76	0,0	0,2	12,989	B
C-A	2,33	2,33			2,33				
A-B	11,95	11,95			11,95				
A-C	2,00	2,00			2,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,60	1,60	80,75	0,020	1,58	0,0	0,0	10,723	B
B-A	5,98	5,98	73,59	0,081	5,98	0,1	0,1	12,451	B
C-AB	1,60	1,60	76,11	0,021	1,80	0,2	0,0	10,943	B
C-A	3,69	3,69			3,69				
A-B	7,56	7,56			7,56				
A-C	6,39	6,39			6,39				

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Junction 2 - 2037+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		6.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2037+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D6

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local roads towards N72		DIRECT	✓	100.000
C - Local Road towards Quarry Access		DIRECT	✓	100.000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	12.50	2.00
B - Local roads towards N72	3.94	0.00	4.60
C - Local Road towards Quarry Access	3.81	3.95	0.00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	10.52	2.00
B - Local roads towards N72	5.26	0.00	11.19
C - Local Road towards Quarry Access	2.50	3.95	0.00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	13.81	2.00
B - Local roads towards N72	6.58	0.00	0.00
C - Local Road towards Quarry Access	2.50	17.77	0.00

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0.00	8.55	7.26
B - Local roads towards N72	7.24	0.00	1.97
C - Local Road towards Quarry Access	3.81	1.97	0.00

Vehicle Mix

07:45 - 08:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	79	63
B - Local roads towards N72	0	0	43
C - Local Road towards Quarry Access	33	100	0

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	38	63
B - Local roads towards N72	75	0	88
C - Local Road towards Quarry Access	50	100	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	43	63
B - Local roads towards N72	60	0	0
C - Local Road towards Quarry Access	50	78	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local roads towards N72	C - Local Road towards Quarry Access
A - Local road towards R671	0	23	72
B - Local roads towards N72	82	0	100
C - Local Road towards Quarry Access	33	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.13	10.92	0.1	B	4.44	17.77
B-A	0.10	12.98	0.1	B	5.76	23.04
C-AB	0.21	13.79	0.3	B	6.99	27.97
C-A					3.08	12.31
A-B					11.35	45.39
A-C					3.32	13.26

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4.60	4.60	126.67	0.036	4.57	0.0	0.0	7.369	A
B-A	3.94	3.94	131.70	0.030	3.91	0.0	0.0	7.040	A
C-AB	4.00	4.00	74.93	0.053	3.94	0.0	0.1	12.669	B
C-A	3.77	3.77			3.77				
A-B	12.50	12.50			12.50				
A-C	2.00	2.00			2.00				

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08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11,19	11,19	89,17	0,126	11,10	0,0	0,1	10,609	B
B-A	5,26	5,26	74,53	0,071	5,23	0,0	0,1	10,483	B
C-AB	3,98	3,98	75,40	0,053	3,98	0,1	0,1	12,587	B
C-A	2,47	2,47			2,47				
A-B	10,52	10,52			10,52				
A-C	2,00	2,00			2,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	81,78	0,000	0,13	0,1	0,0	0,000	A
B-A	6,58	6,58	78,97	0,083	6,55	0,1	0,1	12,976	B
C-AB	18,00	18,00	84,68	0,213	17,78	0,1	0,3	13,789	B
C-A	2,27	2,27			2,27				
A-B	13,81	13,81			13,81				
A-C	2,00	2,00			2,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,97	1,97	80,13	0,025	1,95	0,0	0,0	10,922	B
B-A	7,24	7,24	72,41	0,100	7,23	0,1	0,1	12,958	B
C-AB	1,99	1,99	75,79	0,027	2,24	0,3	0,0	11,166	B
C-A	3,80	3,80			3,80				
A-B	8,55	8,55			8,55				
A-C	7,26	7,26			7,26				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Junction 2 PM.j9
Path: W:\2019\P19-031\P19-031.4.-25.01.21
Report generation date: 29/01/2021 12:16:30

»Junction 2 - 2017, PM
»Junction 2 - 2021, PM
»Junction 2 - 2022, PM
»Junction 2 - 2027, PM
»Junction 2 - 2037, PM
»Junction 2 - 2022+Dev, PM
»Junction 2 - 2027+Dev, PM
»Junction 2 - 2037+Dev, PM

Summary of junction performance

	PM			
	Queue (Veh)	Delay (s)	RFC	LOS
	Junction 2 - 2017			
Stream B-C	0,0	11,21	0,02	B
Stream B-A	0,1	11,05	0,12	B
Stream C-AB	0,0	12,01	0,03	B
	Junction 2 - 2021			
Stream B-C	0,0	11,33	0,03	B
Stream B-A	0,2	11,78	0,15	B
Stream C-AB	0,0	12,09	0,03	B
	Junction 2 - 2022			
Stream B-C	0,0	11,35	0,03	B
Stream B-A	0,2	11,89	0,15	B
Stream C-AB	0,0	12,10	0,04	B
	Junction 2 - 2027			
Stream B-C	0,0	11,47	0,03	B
Stream B-A	0,2	12,46	0,18	B
Stream C-AB	0,1	12,17	0,04	B
	Junction 2 - 2037			
Stream B-C	0,0	11,65	0,04	B
Stream B-A	0,3	13,31	0,21	B
Stream C-AB	0,1	12,26	0,05	B
	Junction 2 - 2022+Dev			
Stream B-C	0,0	11,42	0,03	B
Stream B-A	0,2	12,02	0,16	B
Stream C-AB	0,0	12,11	0,04	B
	Junction 2 - 2027+Dev			
Stream B-C	0,0	11,54	0,03	B
Stream B-A	0,2	12,62	0,18	B
Stream C-AB	0,1	12,17	0,04	B
	Junction 2 - 2037+Dev			
Stream B-C	0,0	11,72	0,04	B
Stream B-A	0,3	13,52	0,22	B
Stream C-AB	0,1	12,26	0,05	B

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

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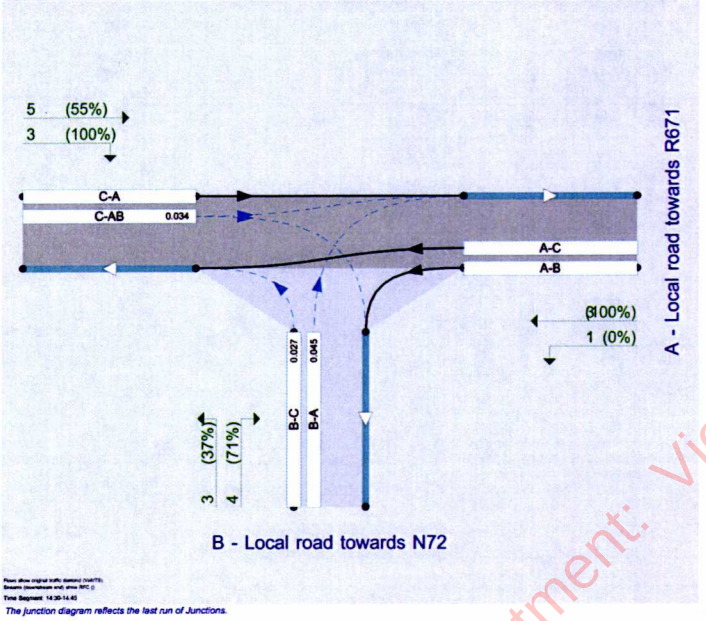
File summary

File Description

Title	Roadstone Quarry and Batching Plant Cappagh
Location	Co. Waterford
Site number	
Data	25/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perTimeSegment	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2017	PM	DIRECT	14:30	15:30	60	15	✓		
D2	2021	PM	DIRECT	14:30	15:30	60	15	✓		
D3	Development Traffic	PM	DIRECT	14:30	15:30	60	15			
D4	2022	PM	DIRECT	14:30	15:30	60	15	✓		
D5	2027	PM	DIRECT	14:30	15:30	60	15	✓		
D6	2037	PM	DIRECT	14:30	15:30	60	15	✓		
D7	2022+Dev	PM	DIRECT	14:30	15:30	60	15	✓	Simple	D3+D4
D8	2027+Dev	PM	DIRECT	14:30	15:30	60	15	✓	Simple	D3+D5
D9	2037+Dev	PM	DIRECT	14:30	15:30	60	15	✓	Simple	D3+D6

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Junction 2	✓	100.000	100.000

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Junction 2 - 2017, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		5,84	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Local road towards R671		Major
B	Local road towards N72		Minor
C	Local road towards Quarry Access		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Local road towards Quarry Access	8,20			70,0	✓	1,00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relavant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Local road towards N72	One lane plus flare	10,00	5,14	3,42	2,60	2,20		2,00	45	70

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	143,928	0,095	0,240	0,151	0,342
1	B-C	177,739	0,099	0,249	-	-
1	C-B	153,625	0,215	0,215	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017	PM	DIRECT	14:30	15:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local road towards N72		DIRECT	✓	100.000
C - Local road towards Quarry Access		DIRECT	✓	100.000

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Origin-Destination Data

14:30 - 14:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	1,00	2,00
B - Local road towards N72	3,00	0,00	3,00
C - Local road towards Quarry Access	4,00	2,00	0,00

14:45 - 15:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	4,00	0,00
B - Local road towards N72	12,00	0,00	1,00
C - Local road towards Quarry Access	7,00	2,00	0,00

15:00 - 15:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	5,00	3,00
B - Local road towards N72	3,00	0,00	0,00
C - Local road towards Quarry Access	0,00	2,00	0,00

15:15 - 15:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	4,00	5,00
B - Local road towards N72	4,00	0,00	1,00
C - Local road towards Quarry Access	2,00	0,00	0,00

Vehicle Mix

14:30 - 14:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	0	100
B - Local road towards N72	67	0	33
C - Local road towards Quarry Access	50	100	0

14:45 - 15:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	50	0
B - Local road towards N72	42	0	100
C - Local road towards Quarry Access	14	0	0

15:00 - 15:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	20	33
B - Local road towards N72	0	0	0
C - Local road towards Quarry Access	0	100	0

15:15 - 15:30

Heavy Vehicle Percentages

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		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	50	40
	B - Local road towards N72	100	0	100
	C - Local road towards Quarry Access	50	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	11.21	0.0	B	1.25	5.00
B-A	0.12	11.05	0.1	B	5.50	22.02
C-AB	0.03	12.01	0.0	B	1.51	6.03
C-A					3.24	12.97
A-B					3.50	14.00
A-C					2.50	10.00

Main Results for each time segment

14:30 - 14:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.00	3.00	131.30	0.023	2.98	0.0	0.0	7.013	A
B-A	3.00	3.00	84.36	0.036	2.96	0.0	0.0	11.052	B
C-AB	2.02	2.02	76.92	0.026	1.99	0.0	0.0	12.007	B
C-A	3.98	3.98			3.98				
A-B	1.00	1.00			1.00				
A-C	2.00	2.00			2.00				

14:45 - 15:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	79.33	0.013	1.01	0.0	0.0	8.558	A
B-A	12.00	12.00	96.45	0.124	11.89	0.0	0.1	11.052	B
C-AB	2.01	2.01	150.91	0.013	2.02	0.0	0.0	8.997	A
C-A	6.99	6.99			6.99				
A-B	4.00	4.00			4.00				
A-C	0.00	0.00			0.00				

15:00 - 15:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	78.73	0.000	0.01	0.0	0.0	0.000	A
B-A	3.00	3.00	134.73	0.022	3.12	0.1	0.0	9.018	A
C-AB	2.00	2.00	76.08	0.026	2.00	0.0	0.0	9.092	A
C-A	0.00	0.00			0.00				
A-B	5.00	5.00			5.00				
A-C	3.00	3.00			3.00				

15:15 - 15:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	81.27	0.012	0.99	0.0	0.0	11.209	B
B-A	4.00	4.00	67.88	0.059	3.98	0.0	0.0	10.961	B
C-AB	0.00	0.00	150.83	0.000	0.02	0.0	0.0	0.000	A
C-A	2.00	2.00			2.00				
A-B	4.00	4.00			4.00				
A-C	5.00	5.00			5.00				

Junction 2 - 2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		5.97	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2021	PM	DIRECT	14:30	15:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local road towards N72		DIRECT	✓	100.000
C - Local road towards Quarry Access		DIRECT	✓	100.000

Origin-Destination Data

14:30 - 14:45

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0.00	1.08	2.59
	B - Local road towards N72	3.66	0.00	3.45
	C - Local road towards Quarry Access	4.74	2.59	0.00

14:45 - 15:00

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0.00	4.74	0.00
	B - Local road towards N72	14.01	0.00	1.29
	C - Local road towards Quarry Access	7.76	2.16	0.00

15:00 - 15:15

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0.00	5.61	3.45
	B - Local road towards N72	3.23	0.00	0.00
	C - Local road towards Quarry Access	0.00	2.59	0.00

15:15 - 15:30

Demand (Veh/TS)

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		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0,00	4,74	5,82
	B - Local road towards N72	5,17	0,00	1,29
	C - Local road towards Quarry Access	2,37	0,00	0,00

Vehicle Mix

Heavy Vehicle Percentages

14:30 - 14:45

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	0	100
	B - Local road towards N72	71	0	37
	C - Local road towards Quarry Access	55	100	0

Heavy Vehicle Percentages

14:45 - 15:00

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	55	0
	B - Local road towards N72	46	0	100
	C - Local road towards Quarry Access	17	0	0

Heavy Vehicle Percentages

15:00 - 15:15

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	23	37
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry Access	0	100	0

Heavy Vehicle Percentages

15:15 - 15:30

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	55	44
	B - Local road towards N72	100	0	100
	C - Local road towards Quarry Access	55	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,03	11,33	0,0	B	1,51	6,04
B-A	0,15	11,78	0,2	B	6,53	26,10
C-AB	0,03	12,09	0,0	B	1,84	7,37
C-A					3,71	14,83
A-B					4,04	16,17
A-C					2,96	11,86

Main Results for each time segment

14:30 - 14:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,45	3,45	126,43	0,027	3,42	0,0	0,0	7,314	A
B-A	3,66	3,66	82,15	0,045	3,62	0,0	0,0	11,455	B
C-AB	2,62	2,62	77,01	0,034	2,58	0,0	0,0	12,087	B
C-A	4,71	4,71			4,71				
A-B	1,08	1,08			1,08				
A-C	2,59	2,59			2,59				

14:45 - 15:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,29	1,29	78,73	0,017	1,31	0,0	0,0	9,010	A
B-A	14,01	14,01	93,21	0,150	13,88	0,0	0,2	11,784	B
C-AB	2,17	2,17	150,38	0,014	2,18	0,0	0,0	9,292	A
C-A	7,75	7,75			7,75				
A-B	4,74	4,74			4,74				
A-C	0,00	0,00			0,00				

15:00 - 15:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	78,56	0,000	0,01	0,0	0,0	0,000	A
B-A	3,23	3,23	133,41	0,024	3,38	0,2	0,0	9,383	A
C-AB	2,59	2,59	75,84	0,034	2,58	0,0	0,0	9,453	A
C-A	0,00	0,00			0,00				
A-B	5,61	5,61			5,61				
A-C	3,45	3,45			3,45				

15:15 - 15:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,29	1,29	80,66	0,016	1,28	0,0	0,0	11,333	B
B-A	5,17	5,17	67,58	0,077	5,14	0,0	0,1	11,492	B
C-AB	0,00	0,00	150,24	0,000	0,03	0,0	0,0	0,000	A
C-A	2,37	2,37			2,37				
A-B	4,74	4,74			4,74				
A-C	5,82	5,82			5,82				

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

Waterford City & County Council Planning Department: Viewing Purposes Only!

Junction 2 - 2022, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		6.02	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2022	PM	DIRECT	14:30	15:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local road towards N72		DIRECT	✓	100.000
C - Local road towards Quarry Access		DIRECT	✓	100.000

Origin-Destination Data

14:30 - 14:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0.00	1.10	2.68
B - Local road towards N72	3.78	0.00	3.53
C - Local road towards Quarry Access	4.87	2.68	0.00

14:45 - 15:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0.00	4.87	0.00
B - Local road towards N72	14.37	0.00	1.34
C - Local road towards Quarry Access	7.92	2.19	0.00

15:00 - 15:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0.00	5.73	3.53
B - Local road towards N72	3.29	0.00	0.00
C - Local road towards Quarry Access	0.00	2.68	0.00

15:15 - 15:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0.00	4.87	5.97
B - Local road towards N72	5.36	0.00	1.34
C - Local road towards Quarry Access	2.44	0.00	0.00

Vehicle Mix

14:30 - 14:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	0	100
B - Local road towards N72	71	0	38
C - Local road towards Quarry Access	55	100	0

14:45 - 15:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	55	0
B - Local road towards N72	47	0	100
C - Local road towards Quarry Access	17	0	0

15:00 - 15:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	23	38
B - Local road towards N72	0	0	0
C - Local road towards Quarry Access	0	100	0

15:15 - 15:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	55	45
B - Local road towards N72	100	0	100
C - Local road towards Quarry Access	55	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.03	11.35	0.0	B	1.55	6.22
B-A	0.15	11.89	0.2	B	6.70	26.82
C-AB	0.04	12.10	0.0	B	1.90	7.60
C-A					3.79	15.18
A-B					4.14	16.57
A-C					3.04	12.18

Main Results for each time segment

14:30 - 14:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.53	3.53	125.91	0.028	3.50	0.0	0.0	7.350	A
B-A	3.78	3.78	81.91	0.046	3.73	0.0	0.0	11.504	B
C-AB	2.71	2.71	77.03	0.035	2.67	0.0	0.0	12.099	B
C-A	4.84	4.84			4.84				
A-B	1.10	1.10			1.10				
A-C	2.68	2.68			2.68				

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14:45 - 15:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,34	1,34	78,63	0,017	1,35	0,0	0,0	9,053	A
B-A	14,37	14,37	92,87	0,155	14,23	0,0	0,2	11,886	B
C-AB	2,21	2,21	150,32	0,014	2,22	0,0	0,0	9,326	A
C-A	7,90	7,90			7,90				
A-B	4,87	4,87			4,87				
A-C	0,00	0,00			0,00				

15:00 - 15:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	78,53	0,000	0,01	0,0	0,0	0,000	A
B-A	3,29	3,29	133,22	0,024	3,44	0,2	0,0	9,428	A
C-AB	2,68	2,68	75,80	0,036	2,67	0,0	0,0	9,494	A
C-A	0,00	0,00			0,00				
A-B	5,73	5,73			5,73				
A-C	3,53	3,53			3,53				

15:15 - 15:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,34	1,34	80,56	0,017	1,32	0,0	0,0	11,354	B
B-A	5,36	5,36	67,53	0,080	5,32	0,0	0,1	11,564	B
C-AB	0,00	0,00	150,14	0,000	0,03	0,0	0,0	0,000	A
C-A	2,44	2,44			2,44				
A-B	4,87	4,87			4,87				
A-C	5,97	5,97			5,97				

Junction 2 - 2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		6,26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027	PM	DIRECT	14:30	15:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry Access		DIRECT	✓	100,000

Origin-Destination Data

14:30 - 14:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	1,19	3,19
B - Local road towards N72	4,39	0,00	3,98
C - Local road towards Quarry Access	5,58	3,19	0,00

14:45 - 15:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	5,58	0,00
B - Local road towards N72	16,34	0,00	1,60
C - Local road towards Quarry Access	8,76	2,39	0,00

15:00 - 15:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	6,37	3,98
B - Local road towards N72	3,58	0,00	0,00
C - Local road towards Quarry Access	0,00	3,19	0,00

15:15 - 15:30

Demand (Veh/TS)

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		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0.00	5.58	6.77
	B - Local road towards N72	6.39	0.00	1.60
	C - Local road towards Quarry Access	2.79	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

14:30 - 14:45

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	0	100
	B - Local road towards N72	73	0	40
	C - Local road towards Quarry Access	57	100	0

Heavy Vehicle Percentages

14:45 - 15:00

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	57	0
	B - Local road towards N72	49	0	100
	C - Local road towards Quarry Access	18	0	0

Heavy Vehicle Percentages

15:00 - 15:15

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	25	40
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry Access	0	100	0

Heavy Vehicle Percentages

15:15 - 15:30

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	57	47
	B - Local road towards N72	100	0	100
	C - Local road towards Quarry Access	57	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.03	11.47	0.0	B	1.80	7.18
B-A	0.18	12.46	0.2	B	7.68	30.72
C-AB	0.04	12.17	0.1	B	2.21	8.84
C-A					4.27	17.06
A-B					4.68	18.73
A-C					3.49	13.95

Main Results for each time segment

14:30 - 14:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.98	3.98	123.33	0.032	3.95	0.0	0.0	7.537	A
B-A	4.39	4.39	80.69	0.054	4.33	0.0	0.1	11.777	B
C-AB	3.24	3.24	77.14	0.042	3.20	0.0	0.0	12.167	B
C-A	5.53	5.53			5.53				
A-B	1.19	1.19			1.19				
A-C	3.19	3.19			3.19				

14:45 - 15:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.60	1.60	78.00	0.021	1.61	0.0	0.0	9.281	A
B-A	16.34	16.34	91.19	0.179	16.17	0.1	0.2	12.460	B
C-AB	2.41	2.41	149.98	0.016	2.43	0.0	0.0	9.485	A
C-A	8.74	8.74			8.74				
A-B	5.58	5.58			5.58				
A-C	0.00	0.00			0.00				

15:00 - 15:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	78.36	0.000	0.02	0.0	0.0	0.000	A
B-A	3.58	3.58	132.18	0.026	3.77	0.2	0.0	9.661	A
C-AB	3.19	3.19	75.59	0.042	3.19	0.0	0.0	9.712	A
C-A	0.00	0.00			0.00				
A-B	6.37	6.37			6.37				
A-C	3.98	3.98			3.98				

15:15 - 15:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.60	1.60	80.01	0.020	1.58	0.0	0.0	11.472	B
B-A	6.39	6.39	67.26	0.095	6.34	0.0	0.1	11.929	B
C-AB	0.00	0.00	149.59	0.000	0.03	0.0	0.0	0.000	A
C-A	2.79	2.79			2.79				
A-B	5.58	5.58			5.58				
A-C	6.77	6.77			6.77				

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Junction 2 - 2037, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		6,62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2037	PM	DIRECT	14:30	15:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry Access		DIRECT	✓	100,000

Origin-Destination Data

14:30 - 14:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	1,31	3,95
B - Local road towards N72	5,26	0,00	4,60
C - Local road towards Quarry Access	6,58	3,95	0,00

14:45 - 15:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	6,58	0,00
B - Local road towards N72	19,08	0,00	1,97
C - Local road towards Quarry Access	9,86	2,63	0,00

15:00 - 15:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	7,23	4,60
B - Local road towards N72	3,94	0,00	0,00
C - Local road towards Quarry Access	0,00	3,95	0,00

15:15 - 15:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	6,58	7,89
B - Local road towards N72	7,90	0,00	1,97
C - Local road towards Quarry Access	3,29	0,00	0,00

Vehicle Mix

14:30 - 14:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	0	100
B - Local road towards N72	75	0	43
C - Local road towards Quarry Access	60	100	0

14:45 - 15:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	60	0
B - Local road towards N72	52	0	100
C - Local road towards Quarry Access	20	0	0

15:00 - 15:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	27	43
B - Local road towards N72	0	0	0
C - Local road towards Quarry Access	0	100	0

15:15 - 15:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	60	50
B - Local road towards N72	100	0	100
C - Local road towards Quarry Access	60	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,04	11,65	0,0	B	2,14	8,56
B-A	0,21	13,31	0,3	B	9,05	36,21
C-AB	0,05	12,26	0,1	B	2,66	10,64
C-A					4,91	19,63
A-B					5,43	21,71
A-C					4,11	16,45

Main Results for each time segment

14:30 - 14:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,60	4,60	120,05	0,038	4,56	0,0	0,0	7,790	A
B-A	5,26	5,26	79,14	0,067	5,19	0,0	0,1	12,160	B
C-AB	4,03	4,03	77,32	0,052	3,97	0,0	0,1	12,261	B
C-A	6,50	6,50			6,50				
A-B	1,31	1,31			1,31				
A-C	3,95	3,95			3,95				

14:45 - 15:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,97	1,97	77,04	0,026	1,99	0,0	0,0	9,602	A
B-A	19,08	19,08	89,12	0,214	18,87	0,1	0,3	13,305	B
C-AB	2,66	2,66	149,50	0,017	2,68	0,1	0,0	9,685	A
C-A	9,83	9,83			9,83				
A-B	6,58	6,58			6,58				
A-C	0,00	0,00			0,00				

15:00 - 15:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	78,12	0,000	0,02	0,0	0,0	0,000	A
B-A	3,94	3,94	130,65	0,029	4,18	0,3	0,0	9,980	A
C-AB	3,95	3,95	75,31	0,053	3,94	0,0	0,0	10,006	B
C-A	0,00	0,00			0,00				
A-B	7,23	7,23			7,23				
A-C	4,60	4,60			4,60				

15:15 - 15:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,97	1,97	79,19	0,025	1,95	0,0	0,0	11,648	B
B-A	7,90	7,90	66,88	0,118	7,84	0,0	0,1	12,457	B
C-AB	0,00	0,00	148,81	0,000	0,04	0,0	0,0	0,000	A
C-A	3,29	3,29			3,29				
A-B	6,58	6,58			6,58				
A-C	7,89	7,89			7,89				

Junction 2 - 2022+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		4,98	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2022+Dev	PM	DIRECT	14:30	15:30	60	15	✓	Simple	D3+D4

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry Access		DIRECT	✓	100,000

Origin-Destination Data

14:30 - 14:45

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0,00	1,10	5,18
	B - Local road towards N72	3,78	0,00	3,53
	C - Local road towards Quarry Access	6,87	2,68	0,00

14:45 - 15:00

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0,00	4,87	2,50
	B - Local road towards N72	14,37	0,00	1,34
	C - Local road towards Quarry Access	9,92	2,19	0,00

15:00 - 15:15

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0,00	5,73	6,03
	B - Local road towards N72	3,29	0,00	0,00
	C - Local road towards Quarry Access	2,00	2,68	0,00

15:15 - 15:30

Demand (Veh/TS)

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		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0,00	4,87	8,47
	B - Local road towards N72	5,36	0,00	1,34
	C - Local road towards Quarry Access	4,44	0,00	0,00

Vehicle Mix

Heavy Vehicle Percentages

14:30 - 14:45

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	0	76
	B - Local road towards N72	71	0	38
	C - Local road towards Quarry Access	57	100	0

Heavy Vehicle Percentages

14:45 - 15:00

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	55	50
	B - Local road towards N72	47	0	100
	C - Local road towards Quarry Access	26	0	0

Heavy Vehicle Percentages

15:00 - 15:15

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	23	43
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry Access	63	100	0

Heavy Vehicle Percentages

15:15 - 15:30

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	55	46
	B - Local road towards N72	100	0	100
	C - Local road towards Quarry Access	58	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,03	11,42	0,0	B	1,55	6,22
B-A	0,16	12,02	0,2	B	6,70	26,82
C-AB	0,04	12,11	0,0	B	1,91	7,62
C-A					5,79	23,16
A-B					4,14	16,57
A-C					5,54	22,18

Main Results for each time segment

14:30 - 14:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,53	3,53	125,23	0,028	3,50	0,0	0,0	7,391	A
B-A	3,78	3,78	81,10	0,047	3,73	0,0	0,0	11,625	B
C-AB	2,72	2,72	77,01	0,035	2,69	0,0	0,0	12,105	B
C-A	6,83	6,83			6,83				
A-B	1,10	1,10			1,10				
A-C	5,18	5,18			5,18				

14:45 - 15:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,34	1,34	78,18	0,017	1,35	0,0	0,0	9,104	A
B-A	14,37	14,37	91,95	0,156	14,23	0,0	0,2	12,025	B
C-AB	2,21	2,21	149,64	0,015	2,23	0,0	0,0	9,358	A
C-A	9,90	9,90			9,90				
A-B	4,87	4,87			4,87				
A-C	2,50	2,50			2,50				

15:00 - 15:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	78,11	0,000	0,01	0,0	0,0	0,000	A
B-A	3,29	3,29	131,86	0,024	3,44	0,2	0,0	9,528	A
C-AB	2,68	2,68	75,58	0,036	2,68	0,0	0,0	9,528	A
C-A	1,99	1,99			1,99				
A-B	5,73	5,73			5,73				
A-C	6,03	6,03			6,03				

15:15 - 15:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,34	1,34	80,12	0,017	1,32	0,0	0,0	11,419	B
B-A	5,36	5,36	66,86	0,080	5,32	0,0	0,1	11,688	B
C-AB	0,00	0,00	149,33	0,000	0,03	0,0	0,0	0,000	A
C-A	4,44	4,44			4,44				
A-B	4,87	4,87			4,87				
A-C	8,47	8,47			8,47				

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Junction 2 - 2027+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		5.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2027+Dev	PM	DIRECT	14:30	15:30	60	15	✓	Simple	D3+D5

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local road towards N72		DIRECT	✓	100.000
C - Local road towards Quarry Access		DIRECT	✓	100.000

Origin-Destination Data

14:30 - 14:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0.00	1.19	5.69
B - Local road towards N72	4.39	0.00	3.98
C - Local road towards Quarry Access	7.58	3.19	0.00

14:45 - 15:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0.00	5.58	2.50
B - Local road towards N72	16.34	0.00	1.60
C - Local road towards Quarry Access	10.76	2.39	0.00

15:00 - 15:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0.00	6.37	6.48
B - Local road towards N72	3.58	0.00	0.00
C - Local road towards Quarry Access	2.00	3.19	0.00

15:15 - 15:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0.00	5.58	9.27
B - Local road towards N72	6.39	0.00	1.60
C - Local road towards Quarry Access	4.79	0.00	0.00

Vehicle Mix

14:30 - 14:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	0	78
B - Local road towards N72	73	0	40
C - Local road towards Quarry Access	59	100	0

14:45 - 15:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	57	50
B - Local road towards N72	49	0	100
C - Local road towards Quarry Access	26	0	0

15:00 - 15:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	25	44
B - Local road towards N72	0	0	0
C - Local road towards Quarry Access	63	100	0

15:15 - 15:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0	57	48
B - Local road towards N72	100	0	100
C - Local road towards Quarry Access	59	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.03	11.54	0.0	B	1.80	7.18
B-A	0.18	12.62	0.2	B	7.68	30.72
C-AB	0.04	12.17	0.1	B	2.22	8.87
C-A					6.26	25.03
A-B					4.68	18.73
A-C					5.99	23.95

Main Results for each time segment

14:30 - 14:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.98	3.98	122.66	0.032	3.95	0.0	0.0	7.579	A
B-A	4.39	4.39	79.89	0.055	4.33	0.0	0.1	11.903	B
C-AB	3.26	3.26	77.15	0.042	3.22	0.0	0.0	12.168	B
C-A	7.52	7.52			7.52				
A-B	1.19	1.19			1.19				
A-C	5.69	5.69			5.69				

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14:45 - 15:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,60	1,60	77,55	0,021	1,61	0,0	0,0	9,335	A
B-A	16,34	16,34	90,29	0,181	16,17	0,1	0,2	12,621	B
C-AB	2,41	2,41	149,31	0,016	2,43	0,0	0,0	9,516	A
C-A	10,73	10,73			10,73				
A-B	5,58	5,58			5,58				
A-C	2,50	2,50			2,50				

15:00 - 15:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	77,93	0,000	0,02	0,0	0,0	0,000	A
B-A	3,58	3,58	130,82	0,027	3,77	0,2	0,0	9,765	A
C-AB	3,20	3,20	75,41	0,043	3,19	0,0	0,0	9,743	A
C-A	1,99	1,99			1,99				
A-B	6,37	6,37			6,37				
A-C	6,48	6,48			6,48				

15:15 - 15:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,60	1,60	79,56	0,020	1,58	0,0	0,0	11,538	B
B-A	6,39	6,39	66,59	0,096	6,34	0,0	0,1	12,060	B
C-AB	0,00	0,00	148,78	0,000	0,03	0,0	0,0	0,000	A
C-A	4,79	4,79			4,79				
A-B	5,58	5,58			5,58				
A-C	9,27	9,27			9,27				

Junction 2 - 2037+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2	T-Junction	Two-way		5,78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2037+Dev	PM	DIRECT	14:30	15:30	60	15	✓	Simple	D3+D6

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry Access		DIRECT	✓	100,000

Origin-Destination Data

14:30 - 14:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	1,31	6,45
B - Local road towards N72	5,26	0,00	4,60
C - Local road towards Quarry Access	8,58	3,95	0,00

14:45 - 15:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	6,58	2,50
B - Local road towards N72	19,08	0,00	1,97
C - Local road towards Quarry Access	11,86	2,63	0,00

15:00 - 15:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
A - Local road towards R671	0,00	7,23	7,10
B - Local road towards N72	3,94	0,00	0,00
C - Local road towards Quarry Access	2,00	3,95	0,00

15:15 - 15:30

Demand (Veh/TS)

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		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0,00	6,58	10,39
	B - Local road towards N72	7,90	0,00	1,97
	C - Local road towards Quarry Access	5,29	0,00	0,00

Vehicle Mix

Heavy Vehicle Percentages

14:30 - 14:45

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	0	61
	B - Local road towards N72	75	0	43
	C - Local road towards Quarry Access	61	100	0

Heavy Vehicle Percentages

14:45 - 15:00

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	60	50
	B - Local road towards N72	52	0	100
	C - Local road towards Quarry Access	27	0	0

Heavy Vehicle Percentages

15:00 - 15:15

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	27	45
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry Access	63	100	0

Heavy Vehicle Percentages

15:15 - 15:30

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry Access
From	A - Local road towards R671	0	60	50
	B - Local road towards N72	100	0	100
	C - Local road towards Quarry Access	61	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,04	11,72	0,0	B	2,14	8,56
B-A	0,22	13,52	0,3	B	9,05	36,21
C-AB	0,05	12,26	0,1	B	2,67	10,68
C-A					6,90	27,58
A-B					5,43	21,71
A-C					6,61	26,45

Main Results for each time segment

14:30 - 14:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4,60	4,60	119,40	0,039	4,56	0,0	0,0	7,835	A
B-A	5,26	5,26	78,34	0,067	5,19	0,0	0,1	12,293	B
C-AB	4,05	4,05	77,38	0,052	4,00	0,0	0,1	12,256	B
C-A	8,48	8,48			8,48				
A-B	1,31	1,31			1,31				
A-C	6,45	6,45			6,45				

14:45 - 15:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,97	1,97	76,57	0,026	1,99	0,0	0,0	9,662	A
B-A	19,08	19,08	88,23	0,216	18,87	0,1	0,3	13,518	B
C-AB	2,67	2,67	148,84	0,018	2,69	0,1	0,0	9,715	A
C-A	11,83	11,83			11,83				
A-B	6,58	6,58			6,58				
A-C	2,50	2,50			2,50				

15:00 - 15:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	77,70	0,000	0,02	0,0	0,0	0,000	A
B-A	3,94	3,94	129,29	0,029	4,18	0,3	0,0	10,087	B
C-AB	3,96	3,96	75,17	0,053	3,95	0,0	0,0	10,032	B
C-A	1,99	1,99			1,99				
A-B	7,23	7,23			7,23				
A-C	7,10	7,10			7,10				

15:15 - 15:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,97	1,97	78,73	0,025	1,95	0,0	0,0	11,717	B
B-A	7,90	7,90	66,21	0,120	7,83	0,0	0,1	12,596	B
C-AB	0,00	0,00	148,00	0,000	0,04	0,0	0,0	0,000	A
C-A	5,29	5,29			5,29				
A-B	6,58	6,58			6,58				
A-C	10,39	10,39			10,39				

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Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Junction 2a AM.j9
Path: W:\2019\P19-031\P19-031.4.-25.01.21
Report generation date: 29/01/2021 12:17:59

»Junction 2a - 2017, AM
»Junction 2a - 2021, AM
»Junction 2a - 2022, AM
»Junction 2a - 2027, AM
»Junction 2a - 2037, AM
»Junction 2a - 2022+Dev, AM
»Junction 2a - 2027+Dev, AM
»Junction 2a - 2037+Dev, AM

Summary of junction performance

	AM			
	Queue (Veh)	Delay (s)	RFC	LOS
	Junction 2a - 2017			
Stream B-C	0,0	5,30	0,01	A
Stream B-A	0,0	7,24	0,02	A
Stream C-AB	0,0	12,02	0,02	B
	Junction 2a - 2021			
Stream B-C	0,0	5,31	0,01	A
Stream B-A	0,0	7,27	0,03	A
Stream C-AB	0,0	12,07	0,02	B
	Junction 2a - 2022			
Stream B-C	0,0	5,31	0,01	A
Stream B-A	0,0	7,27	0,03	A
Stream C-AB	0,0	12,08	0,02	B
	Junction 2a - 2027			
Stream B-C	0,0	5,32	0,01	A
Stream B-A	0,0	7,30	0,03	A
Stream C-AB	0,0	12,13	0,02	B
	Junction 2a - 2037			
Stream B-C	0,0	5,33	0,01	A
Stream B-A	0,0	7,40	0,03	A
Stream C-AB	0,0	12,20	0,03	B
	Junction 2a - 2022+Dev			
Stream B-C	0,1	8,98	0,07	A
Stream B-A	0,0	7,90	0,03	A
Stream C-AB	0,1	11,25	0,08	B
	Junction 2a - 2027+Dev			
Stream B-C	0,1	9,00	0,07	A
Stream B-A	0,0	7,97	0,03	A
Stream C-AB	0,1	11,35	0,08	B
	Junction 2a - 2037+Dev			
Stream B-C	0,1	9,03	0,07	A
Stream B-A	0,0	8,07	0,03	A
Stream C-AB	0,1	11,49	0,08	B

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

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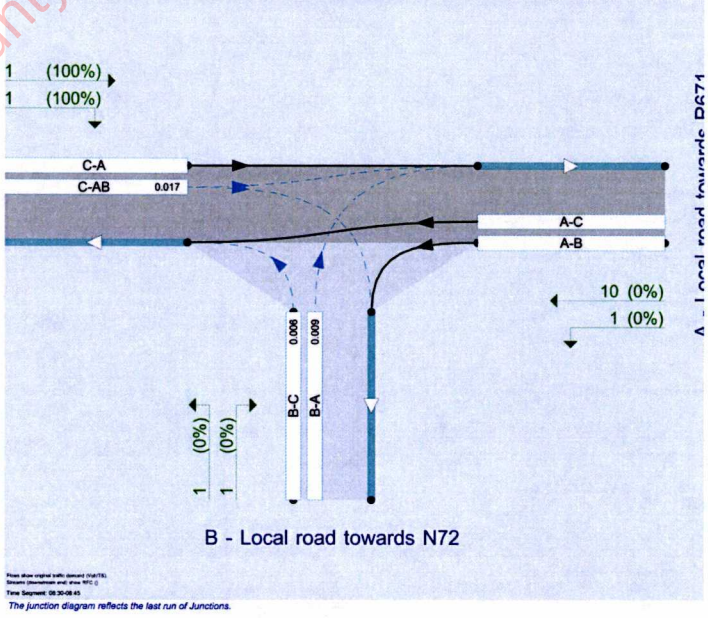
File summary

File Description

Title	Roadstone Quarry and Batching Plant Cappagh
Location	Co. Waterford
Site number	
Date	25/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perTimeSegment	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2017	AM	DIRECT	08:30	09:30	60	15	✓		
D2	2021	AM	DIRECT	08:30	09:30	60	15	✓		
D3	Development Traffic	AM	DIRECT	08:30	09:30	60	15			
D4	2022	AM	DIRECT	08:30	09:30	60	15	✓		
D5	2027	AM	DIRECT	08:30	09:30	60	15	✓		
D6	2037	AM	DIRECT	08:30	09:30	60	15	✓		
D7	2022+Dev	AM	DIRECT	08:30	09:30	60	15	✓	Simple	D3+D4
D8	2027+Dev	AM	DIRECT	08:30	09:30	60	15	✓	Simple	D3+D5
D9	2037+Dev	AM	DIRECT	08:30	09:30	60	15	✓	Simple	D3+D6

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Junction 2a	✓	100.000	100.000

Junction 2a - 2017, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		1.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Local road towards R671		Major
B	Local road towards N72		Minor
C	Local road towards Quarry		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Local road towards Quarry	8.20			70.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Local road towards N72	One lane plus flare	7.80	3.90	2.80	2.50	2.50		1.00	60	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	128.217	0.084	0.214	0.134	0.305
1	B-C	173.470	0.096	0.243	-	-
1	C-B	153.625	0.215	0.215	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017	AM	DIRECT	08:30	09:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

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Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

08:30 - 08:45

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	1,00	9,00
	B - Local road towards N72	1,00	0,00	1,00
	C - Local road towards Quarry	1,00	1,00	0,00

08:45 - 09:00

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	12,00
	B - Local road towards N72	1,00	0,00	0,00
	C - Local road towards Quarry	1,00	0,00	0,00

09:00 - 09:15

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	8,00
	B - Local road towards N72	0,00	0,00	0,00
	C - Local road towards Quarry	2,00	3,00	0,00

09:15 - 09:30

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	6,00
	B - Local road towards N72	3,00	0,00	0,00
	C - Local road towards Quarry	0,00	1,00	0,00

Vehicle Mix

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	0
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	100	100	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	58
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	100	0	0

09:00 - 09:15

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	25
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	0	0	0

09:15 - 09:30

Heavy Vehicle Percentages

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WATERFORD CITY + COUNTY COUNCIL

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	17
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,01	5,30	0,0	A	0,25	1,00
B-A	0,02	7,24	0,0	A	1,25	5,00
C-AB	0,02	12,02	0,0	B	1,25	5,00
C-A					1,00	4,00
A-B					0,25	1,00
A-C					8,75	35,00

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,00	1,00	170,84	0,006	0,99	0,0	0,0	5,298	A
B-A	1,00	1,00	125,33	0,008	0,99	0,0	0,0	7,237	A
C-AB	1,00	1,00	75,85	0,013	0,99	0,0	0,0	12,021	B
C-A	1,00	1,00			1,00				
A-B	1,00	1,00			1,00				
A-C	9,00	9,00			9,00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	151,49	0,000	0,01	0,0	0,0	0,000	A
B-A	1,00	1,00	126,58	0,008	1,00	0,0	0,0	7,168	A
C-AB	0,00	0,00	149,53	0,000	0,01	0,0	0,0	0,000	A
C-A	1,00	1,00			1,00				
A-B	0,00	0,00			0,00				
A-C	12,00	12,00			12,00				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	153,76	0,000	0,00	0,0	0,0	0,000	A
B-A	0,00	0,00	127,62	0,000	0,01	0,0	0,0	0,000	A
C-AB	3,00	3,00	151,62	0,020	2,98	0,0	0,0	7,605	A
C-A	2,00	2,00			2,00				
A-B	0,00	0,00			0,00				
A-C	8,00	8,00			8,00				

09:15 - 09:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	153,52	0,000	0,00	0,0	0,0	0,000	A
B-A	3,00	3,00	129,16	0,023	2,98	0,0	0,0	7,132	A
C-AB	1,00	1,00	152,12	0,007	1,02	0,0	0,0	5,956	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	6,00	6,00			6,00				

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Junction 2a - 2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		1.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2021	AM	DIRECT	08:30	09:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local road towards N72		DIRECT	✓	100.000
C - Local road towards Quarry		DIRECT	✓	100.000

Origin-Destination Data

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	1.08	9.70
B - Local road towards N72	1.08	0.00	1.08
C - Local road towards Quarry	1.29	1.29	0.00

08:45 - 09:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	14.44
B - Local road towards N72	1.08	0.00	0.00
C - Local road towards Quarry	1.29	0.00	0.00

09:00 - 09:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	9.05
B - Local road towards N72	0.00	0.00	0.00
C - Local road towards Quarry	2.16	3.23	0.00

09:15 - 09:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	6.68
B - Local road towards N72	3.23	0.00	0.00
C - Local road towards Quarry	0.00	1.08	0.00

Vehicle Mix

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	0
B - Local road towards N72	0	0	0
C - Local road towards Quarry	100	100	0

08:45 - 09:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	63
B - Local road towards N72	0	0	0
C - Local road towards Quarry	100	0	0

09:00 - 09:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	29
B - Local road towards N72	0	0	0
C - Local road towards Quarry	0	0	0

09:15 - 09:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	19
B - Local road towards N72	0	0	0
C - Local road towards Quarry	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.01	5.31	0.0	A	0.27	1.08
B-A	0.03	7.27	0.0	A	1.35	5.39
C-AB	0.02	12.07	0.0	B	1.40	5.61
C-A					1.18	4.74
A-B					0.27	1.08
A-C					9.97	39.88

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.08	1.08	170.64	0.006	1.07	0.0	0.0	5.307	A
B-A	1.08	1.08	124.92	0.009	1.07	0.0	0.0	7.266	A
C-AB	1.30	1.30	75.82	0.017	1.28	0.0	0.0	12.071	B
C-A	1.29	1.29			1.29				
A-B	1.08	1.08			1.08				
A-C	9.70	9.70			9.70				

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08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	150,48	0,000	0,01	0,0	0,0	0,000	A
B-A	1,08	1,08	125,52	0,009	1,08	0,0	0,0	7,231	A
C-AB	0,00	0,00	148,57	0,000	0,02	0,0	0,0	0,000	A
C-A	1,29	1,29			1,29				
A-B	0,00	0,00			0,00				
A-C	14,44	14,44			14,44				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	153,40	0,000	0,00	0,0	0,0	0,000	A
B-A	0,00	0,00	127,16	0,000	0,01	0,0	0,0	0,000	A
C-AB	3,24	3,24	151,32	0,021	3,21	0,0	0,0	7,861	A
C-A	2,15	2,15			2,15				
A-B	0,00	0,00			0,00				
A-C	9,05	9,05			9,05				

09:15 - 09:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	153,24	0,000	0,00	0,0	0,0	0,000	A
B-A	3,23	3,23	128,92	0,025	3,21	0,0	0,0	7,156	A
C-AB	1,08	1,08	151,91	0,007	1,10	0,0	0,0	5,970	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	6,68	6,68			6,68				

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Junction 2a - 2022, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		1,71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2022	AM	DIRECT	08:30	09:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	1,10	9,87
B - Local road towards N72	1,10	0,00	1,10
C - Local road towards Quarry	1,34	1,34	0,00

08:45 - 09:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	0,00	14,86
B - Local road towards N72	1,10	0,00	0,00
C - Local road towards Quarry	1,34	0,00	0,00

09:00 - 09:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	0,00	9,26
B - Local road towards N72	0,00	0,00	0,00
C - Local road towards Quarry	2,19	3,29	0,00

09:15 - 09:30

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	6,82
	B - Local road towards N72	3,29	0,00	0,00
	C - Local road towards Quarry	0,00	1,10	0,00

Vehicle Mix

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	0
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	100	100	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	63
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	100	0	0

Heavy Vehicle Percentages

09:00 - 09:15

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	29
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	0	0	0

Heavy Vehicle Percentages

09:15 - 09:30

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	20
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,01	5,31	0,0	A	0,27	1,10
B-A	0,03	7,27	0,0	A	1,37	5,48
C-AB	0,02	12,08	0,0	B	1,43	5,73
C-A					1,22	4,86
A-B					0,27	1,10
A-C					10,20	40,81

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,10	1,10	170,59	0,006	1,09	0,0	0,0	5,309	A
B-A	1,10	1,10	124,84	0,009	1,09	0,0	0,0	7,272	A
C-AB	1,34	1,34	75,81	0,018	1,32	0,0	0,0	12,080	B
C-A	1,34	1,34			1,34				
A-B	1,10	1,10			1,10				
A-C	9,87	9,87			9,87				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	150,32	0,000	0,01	0,0	0,0	0,000	A
B-A	1,10	1,10	125,34	0,009	1,10	0,0	0,0	7,242	A
C-AB	0,00	0,00	148,41	0,000	0,02	0,0	0,0	0,000	A
C-A	1,34	1,34			1,34				
A-B	0,00	0,00			0,00				
A-C	14,86	14,86			14,86				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	153,33	0,000	0,00	0,0	0,0	0,000	A
B-A	0,00	0,00	127,08	0,000	0,01	0,0	0,0	0,000	A
C-AB	3,29	3,29	151,26	0,022	3,26	0,0	0,0	7,891	A
C-A	2,19	2,19			2,19				
A-B	0,00	0,00			0,00				
A-C	9,26	9,26			9,26				

09:15 - 09:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	153,18	0,000	0,00	0,0	0,0	0,000	A
B-A	3,29	3,29	128,88	0,026	3,26	0,0	0,0	7,162	A
C-AB	1,10	1,10	151,87	0,007	1,12	0,0	0,0	5,970	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	6,82	6,82			6,82				

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Junction 2a - 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		1,69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027	AM	DIRECT	08:30	09:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	1,19	10,74
B - Local road towards N72	1,19	0,00	1,19
C - Local road towards Quarry	1,60	1,60	0,00

08:45 - 09:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	0,00	17,15
B - Local road towards N72	1,19	0,00	0,00
C - Local road towards Quarry	1,60	0,00	0,00

09:00 - 09:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	0,00	10,35
B - Local road towards N72	0,00	0,00	0,00
C - Local road towards Quarry	2,39	3,58	0,00

09:15 - 09:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	0,00	7,56
B - Local road towards N72	3,58	0,00	0,00
C - Local road towards Quarry	0,00	1,19	0,00

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Vehicle Mix

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	0
B - Local road towards N72	0	0	0
C - Local road towards Quarry	100	100	0

08:45 - 09:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	65
B - Local road towards N72	0	0	0
C - Local road towards Quarry	100	0	0

09:00 - 09:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	31
B - Local road towards N72	0	0	0
C - Local road towards Quarry	0	0	0

09:15 - 09:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	21
B - Local road towards N72	0	0	0
C - Local road towards Quarry	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,01	5,32	0,0	A	0,30	1,19
B-A	0,03	7,30	0,0	A	1,49	5,97
C-AB	0,02	12,13	0,0	B	1,59	6,38
C-A					1,39	5,57
A-B					0,30	1,19
A-C					11,45	45,81

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,19	1,19	170,33	0,007	1,19	0,0	0,0	5,320	A
B-A	1,19	1,19	124,42	0,010	1,18	0,0	0,0	7,302	A
C-AB	1,60	1,60	75,76	0,021	1,58	0,0	0,0	12,130	B
C-A	1,59	1,59			1,59				
A-B	1,19	1,19			1,19				
A-C	10,74	10,74			10,74				

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08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	149,39	0,000	0,01	0,0	0,0	0,000	A
B-A	1,19	1,19	124,38	0,010	1,19	0,0	0,0	7,305	A
C-AB	0,00	0,00	147,53	0,000	0,02	0,0	0,0	0,000	A
C-A	1,60	1,60			1,60				
A-B	0,00	0,00			0,00				
A-C	17,15	17,15			17,15				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	152,98	0,000	0,00	0,0	0,0	0,000	A
B-A	0,00	0,00	126,61	0,000	0,01	0,0	0,0	0,000	A
C-AB	3,59	3,59	150,97	0,024	3,55	0,0	0,0	8,049	A
C-A	2,38	2,38			2,38				
A-B	0,00	0,00			0,00				
A-C	10,35	10,35			10,35				

09:15 - 09:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	152,87	0,000	0,00	0,0	0,0	0,000	A
B-A	3,58	3,58	128,63	0,028	3,55	0,0	0,0	7,193	A
C-AB	1,19	1,19	151,65	0,008	1,22	0,0	0,0	5,985	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	7,56	7,56			7,56				

Junction 2a - 2037, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		1,66	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2037	AM	DIRECT	08:30	09:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

08:30 - 08:45

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	1,31	11,83
	B - Local road towards N72	1,31	0,00	1,31
	C - Local road towards Quarry	1,97	1,97	0,00

08:45 - 09:00

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	20,40
	B - Local road towards N72	1,31	0,00	0,00
	C - Local road towards Quarry	1,97	0,00	0,00

09:00 - 09:15

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	11,84
	B - Local road towards N72	0,00	0,00	0,00
	C - Local road towards Quarry	2,63	3,94	0,00

09:15 - 09:30

Demand (Veh/TS)

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		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	8,55
	B - Local road towards N72	3,94	0,00	0,00
	C - Local road towards Quarry	0,00	1,31	0,00

Vehicle Mix

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	0
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	100	100	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	68
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	100	0	0

Heavy Vehicle Percentages

09:00 - 09:15

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	33
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	0	0	0

Heavy Vehicle Percentages

09:15 - 09:30

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	23
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,01	5,33	0,0	A	0,33	1,31
B-A	0,03	7,40	0,0	A	1,64	6,57
C-AB	0,03	12,20	0,0	B	1,81	7,25
C-A					1,64	6,56
A-B					0,33	1,31
A-C					13,15	52,62

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,31	1,31	170,01	0,008	1,31	0,0	0,0	5,334	A
B-A	1,31	1,31	123,84	0,011	1,30	0,0	0,0	7,344	A
C-AB	1,98	1,98	75,72	0,026	1,96	0,0	0,0	12,198	B
C-A	1,97	1,97			1,97				
A-B	1,31	1,31			1,31				
A-C	11,83	11,83			11,83				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	148,07	0,000	0,01	0,0	0,0	0,000	A
B-A	1,31	1,31	122,98	0,011	1,31	0,0	0,0	7,396	A
C-AB	0,00	0,00	146,26	0,000	0,03	0,0	0,0	0,000	A
C-A	1,97	1,97			1,97				
A-B	0,00	0,00			0,00				
A-C	20,40	20,40			20,40				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	152,49	0,000	0,00	0,0	0,0	0,000	A
B-A	0,00	0,00	125,97	0,000	0,01	0,0	0,0	0,000	A
C-AB	3,95	3,95	150,57	0,026	3,92	0,0	0,0	8,258	A
C-A	2,62	2,62			2,62				
A-B	0,00	0,00			0,00				
A-C	11,84	11,84			11,84				

09:15 - 09:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	152,46	0,000	0,00	0,0	0,0	0,000	A
B-A	3,94	3,94	128,29	0,031	3,91	0,0	0,0	7,234	A
C-AB	1,31	1,31	151,36	0,009	1,34	0,0	0,0	5,999	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	8,55	8,55			8,55				

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Junction 2a - 2022+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		4.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2022+Dev	AM	DIRECT	08:30	09:30	60	15	✓	Simple	D3+D4

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local road towards N72		DIRECT	✓	100.000
C - Local road towards Quarry		DIRECT	✓	100.000

Origin-Destination Data

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	1.10	11.87
B - Local road towards N72	1.10	0.00	8.10
C - Local road towards Quarry	3.84	6.34	0.00

08:45 - 09:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	16.86
B - Local road towards N72	1.10	0.00	7.00
C - Local road towards Quarry	3.84	5.00	0.00

09:00 - 09:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	11.26
B - Local road towards N72	0.00	0.00	7.00
C - Local road towards Quarry	4.69	8.29	0.00

09:15 - 09:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	8.82
B - Local road towards N72	3.29	0.00	7.00
C - Local road towards Quarry	2.50	6.10	0.00

Vehicle Mix

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	11
B - Local road towards N72	0	0	43
C - Local road towards Quarry	67	76	0

08:45 - 09:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	63
B - Local road towards N72	0	0	50
C - Local road towards Quarry	67	70	0

09:00 - 09:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	35
B - Local road towards N72	0	0	50
C - Local road towards Quarry	27	42	0

09:15 - 09:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	29
B - Local road towards N72	0	0	50
C - Local road towards Quarry	50	57	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.07	8.98	0.1	A	7.27	29.10
B-A	0.03	7.90	0.0	A	1.37	5.48
C-AB	0.08	11.25	0.1	B	6.48	25.93
C-A					3.67	14.66
A-B					0.27	1.10
A-C					12.20	48.81

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8.10	8.10	112.44	0.072	8.02	0.0	0.1	8.613	A
B-A	1.10	1.10	117.13	0.009	1.09	0.0	0.0	7.756	A
C-AB	6.40	6.40	86.26	0.074	6.32	0.0	0.1	11.250	B
C-A	3.77	3.77			3.77				
A-B	1.10	1.10			1.10				
A-C	11.87	11.87			11.87				

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08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,00	7,00	105,27	0,067	7,01	0,1	0,1	8,927	A
B-A	1,10	1,10	115,01	0,010	1,10	0,0	0,0	7,900	A
C-AB	5,04	5,04	87,58	0,058	5,06	0,1	0,1	11,140	B
C-A	3,80	3,80			3,80				
A-B	0,00	0,00			0,00				
A-C	16,86	16,86			16,86				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,00	7,00	107,36	0,065	7,00	0,1	0,1	8,968	A
B-A	0,00	0,00	116,65	0,000	0,01	0,0	0,0	0,000	A
C-AB	8,37	8,37	106,59	0,078	8,34	0,1	0,1	9,879	A
C-A	4,61	4,61			4,61				
A-B	0,00	0,00			0,00				
A-C	11,26	11,26			11,26				

09:15 - 09:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,00	7,00	107,18	0,065	7,00	0,1	0,1	8,985	A
B-A	3,29	3,29	118,35	0,028	3,26	0,0	0,0	7,818	A
C-AB	6,12	6,12	96,47	0,064	6,15	0,1	0,1	9,387	A
C-A	2,48	2,48			2,48				
A-B	0,00	0,00			0,00				
A-C	8,82	8,82			8,82				

RECEIVED PLANNING
13 AUG 2021
PLANNING NUMBER
21/772
WATERFORD CITY + COUNTY COUNCIL

Waterford City & County Council Planning Department. Viewing Purposes Only!

Junction 2a - 2027+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		4,80	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2027+Dev	AM	DIRECT	08:30	09:30	60	15	✓	Simple	D3+D5

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

Demand (Veh/TS)

08:30 - 08:45

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	1,19	12,74
	B - Local road towards N72	1,19	0,00	8,19
	C - Local road towards Quarry	4,10	6,80	0,00

Demand (Veh/TS)

08:45 - 09:00

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	19,15
	B - Local road towards N72	1,19	0,00	7,00
	C - Local road towards Quarry	4,10	5,00	0,00

Demand (Veh/TS)

09:00 - 09:15

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	12,35
	B - Local road towards N72	0,00	0,00	7,00
	C - Local road towards Quarry	4,89	8,58	0,00

09:15 - 09:30 **Demand (Veh/TS)**

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	9,56
	B - Local road towards N72	3,58	0,00	7,00
	C - Local road towards Quarry	2,50	6,19	0,00

Vehicle Mix

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	10
	B - Local road towards N72	0	0	43
	C - Local road towards Quarry	69	77	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	65
	B - Local road towards N72	0	0	50
	C - Local road towards Quarry	69	70	0

Heavy Vehicle Percentages

09:00 - 09:15

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	36
	B - Local road towards N72	0	0	50
	C - Local road towards Quarry	26	41	0

Heavy Vehicle Percentages

09:15 - 09:30

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	30
	B - Local road towards N72	0	0	50
	C - Local road towards Quarry	50	57	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,07	9,00	0,1	A	7,30	29,19
B-A	0,03	7,97	0,0	A	1,49	5,97
C-AB	0,08	11,35	0,1	B	6,65	26,60
C-A					3,84	15,35
A-B					0,30	1,19
A-C					13,45	53,81

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8,19	8,19	112,67	0,073	8,12	0,0	0,1	8,602	A
B-A	1,19	1,19	116,72	0,010	1,18	0,0	0,0	7,790	A
C-AB	6,67	6,67	85,79	0,078	6,59	0,0	0,1	11,352	B
C-A	4,02	4,02			4,02				
A-B	1,19	1,19			1,19				
A-C	12,74	12,74			12,74				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,00	7,00	104,62	0,067	7,01	0,1	0,1	8,967	A
B-A	1,19	1,19	114,09	0,010	1,19	0,0	0,0	7,971	A
C-AB	5,05	5,05	87,11	0,058	5,07	0,1	0,1	11,243	B
C-A	4,05	4,05			4,05				
A-B	0,00	0,00			0,00				
A-C	19,15	19,15			19,15				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,00	7,00	107,11	0,065	7,00	0,1	0,1	8,991	A
B-A	0,00	0,00	116,20	0,000	0,01	0,0	0,0	0,000	A
C-AB	8,66	8,66	107,47	0,081	8,63	0,1	0,1	9,851	A
C-A	4,80	4,80			4,80				
A-B	0,00	0,00			0,00				
A-C	12,35	12,35			12,35				

09:15 - 09:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,00	7,00	106,95	0,065	7,00	0,1	0,1	9,003	A
B-A	3,58	3,58	118,12	0,030	3,55	0,0	0,0	7,854	A
C-AB	6,22	6,22	96,88	0,064	6,25	0,1	0,1	9,325	A
C-A	2,48	2,48			2,48				
A-B	0,00	0,00			0,00				
A-C	9,56	9,56			9,56				

Waterford City & County Council Planning Department: Viewing Purposes Only!

Junction 2a - 2037+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		4,61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2037+Dev	AM	DIRECT	08:30	09:30	60	15	✓	Simple	D3+D6

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	1,31	13,80
B - Local road towards N72	1,31	0,00	6,31
C - Local road towards Quarry	4,47	6,97	0,00

08:45 - 09:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	0,00	22,40
B - Local road towards N72	1,31	0,00	7,00
C - Local road towards Quarry	4,47	5,00	0,00

09:00 - 09:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	0,00	13,84
B - Local road towards N72	0,00	0,00	7,00
C - Local road towards Quarry	5,13	8,94	0,00

09:15 - 09:30

Demand (Veh/TS)

RECEIVED PLANNING 13 AUG 2021 PLANNING NUMBER 21/774 WATERFORD CITY + COUNTY COUNCIL

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	0,00	10,55
B - Local road towards N72	3,94	0,00	7,00
C - Local road towards Quarry	2,50	6,31	0,00

Vehicle Mix

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	9
B - Local road towards N72	0	0	42
C - Local road towards Quarry	72	78	0

08:45 - 09:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	67
B - Local road towards N72	0	0	50
C - Local road towards Quarry	72	70	0

09:00 - 09:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	38
B - Local road towards N72	0	0	50
C - Local road towards Quarry	24	39	0

09:15 - 09:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	31
B - Local road towards N72	0	0	50
C - Local road towards Quarry	50	55	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,07	9,03	0,1	A	7,33	29,32
B-A	0,03	8,07	0,0	A	1,64	6,57
C-AB	0,08	11,49	0,1	B	6,87	27,49
C-A					4,08	16,32
A-B					0,33	1,31
A-C					15,15	60,62

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8,31	8,31	112,95	0,074	8,24	0,0	0,1	8,589	A
B-A	1,31	1,31	116,16	0,011	1,30	0,0	0,0	7,834	A
C-AB	7,07	7,07	85,20	0,083	6,98	0,0	0,1	11,493	B
C-A	4,38	4,38			4,38				
A-B	1,31	1,31			1,31				
A-C	13,83	13,83			13,83				

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08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,00	7,00	103,69	0,068	7,01	0,1	0,1	9,031	A
B-A	1,31	1,31	112,77	0,012	1,31	0,0	0,0	8,074	A
C-AB	5,05	5,05	86,44	0,058	5,08	0,1	0,1	11,395	B
C-A	4,42	4,42			4,42				
A-B	0,00	0,00			0,00				
A-C	22,40	22,40			22,40				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,00	7,00	106,77	0,066	7,00	0,1	0,1	9,020	A
B-A	0,00	0,00	115,60	0,000	0,01	0,0	0,0	0,000	A
C-AB	9,04	9,04	108,47	0,083	9,00	0,1	0,1	9,824	A
C-A	5,04	5,04			5,04				
A-B	0,00	0,00			0,00				
A-C	13,84	13,84			13,84				

09:15 - 09:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,00	7,00	106,68	0,066	7,00	0,1	0,1	9,032	A
B-A	3,94	3,94	117,80	0,033	3,91	0,0	0,0	7,900	A
C-AB	6,34	6,34	97,37	0,065	6,37	0,1	0,1	9,254	A
C-A	2,48	2,48			2,48				
A-B	0,00	0,00			0,00				
A-C	10,55	10,55			10,55				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Junction 2a PM.j9
Path: W:\2019\P19-031\P19-031.4.-25.01.21
Report generation date: 29/01/2021 12:19:21

»Junction 2a - 2017, PM
»Junction 2a - 2021, PM
»Junction 2a - 2022, PM
»Junction 2a - 2027, PM
»Junction 2a - 2037, PM
»Junction 2a - 2022+Dev, PM
»Junction 2a - 2027+Dev, PM
»Junction 2a - 2037+Dev, PM

Summary of junction performance

	PM			
	Queue (Veh)	Delay (s)	RFC	LOS
	Junction 2a - 2017			
Stream B-C	0,0	11,32	0,01	B
Stream B-A	0,0	7,52	0,01	A
Stream C-AB	0,0	8,08	0,03	A
	Junction 2a - 2021			
Stream B-C	0,0	11,40	0,02	B
Stream B-A	0,0	7,55	0,01	A
Stream C-AB	0,0	8,39	0,03	A
	Junction 2a - 2022			
Stream B-C	0,0	11,41	0,02	B
Stream B-A	0,0	7,56	0,01	A
Stream C-AB	0,0	8,42	0,03	A
	Junction 2a - 2027			
Stream B-C	0,0	11,50	0,02	B
Stream B-A	0,0	7,60	0,01	A
Stream C-AB	0,0	8,61	0,04	A
	Junction 2a - 2037			
Stream B-C	0,0	11,62	0,02	B
Stream B-A	0,0	7,65	0,01	A
Stream C-AB	0,1	8,86	0,04	A
	Junction 2a - 2022+Dev			
Stream B-C	0,1	10,70	0,07	B
Stream B-A	0,0	7,85	0,01	A
Stream C-AB	0,1	9,58	0,10	A
	Junction 2a - 2027+Dev			
Stream B-C	0,1	10,83	0,07	B
Stream B-A	0,0	7,89	0,01	A
Stream C-AB	0,1	9,68	0,11	A
	Junction 2a - 2037+Dev			
Stream B-C	0,1	11,01	0,08	B
Stream B-A	0,0	7,95	0,01	A
Stream C-AB	0,1	9,83	0,11	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

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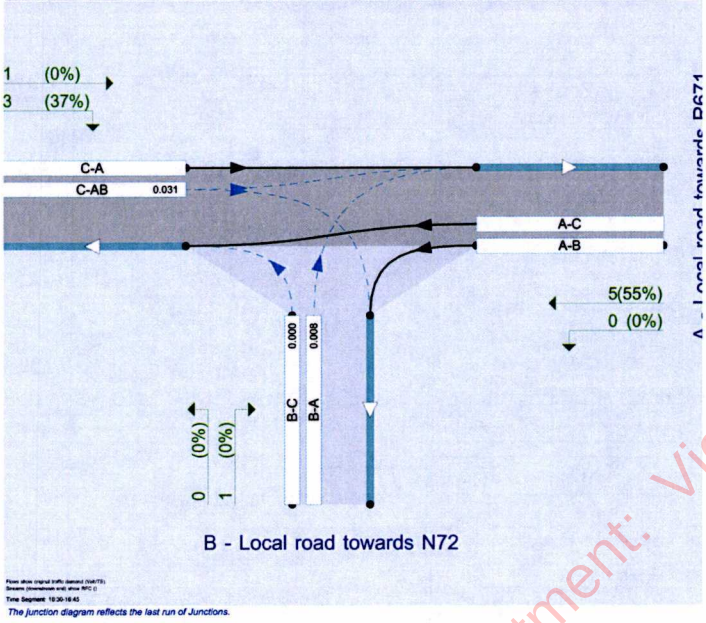
File summary

File Description

Title	Roadstone Quarry and Batching Plant Cappagh
Location	Co. Waterford
Site number	
Date	25/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perTimeSegment	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

RECEIVED PLANNING
PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2017	PM	DIRECT	16:30	17:30	60	15	✓		
D2	2021	PM	DIRECT	16:30	17:30	60	15	✓		
D3	Development Traffic	PM	DIRECT	16:30	17:30	60	15			
D4	2022	PM	DIRECT	16:30	17:30	60	15	✓		
D5	2027	PM	DIRECT	16:30	17:30	60	15	✓		
D6	2037	PM	DIRECT	16:30	17:30	60	15	✓		
D7	2022+Dev	PM	DIRECT	16:30	17:30	60	15	✓	Simple	D3+D4
D8	2027+Dev	PM	DIRECT	16:30	17:30	60	15	✓	Simple	D3+D5
D9	2037+Dev	PM	DIRECT	16:30	17:30	60	15	✓	Simple	D3+D6

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Junction 2a	✓	100.000	100.000

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Junction 2a - 2017, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		2.07	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Local road towards R671		Major
B	Local road towards N72		Minor
C	Local road towards Quarry		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Local road towards Quarry	8.20			70.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Local road towards N72	One lane plus flare	7.80	3.90	2.80	2.50	2.50		1.00	60	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	131.008	0.086	0.218	0.137	0.312
1	B-C	155.945	0.086	0.219	-	-
1	C-B	153.625	0.215	0.215	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017	PM	DIRECT	16:30	17:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local road towards N72		DIRECT	✓	100.000
C - Local road towards Quarry		DIRECT	✓	100.000

Origin-Destination Data

16:30 - 16:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	4.00
B - Local road towards N72	1.00	0.00	0.00
C - Local road towards Quarry	1.00	3.00	0.00

16:45 - 17:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	3.00	7.00
B - Local road towards N72	1.00	0.00	1.00
C - Local road towards Quarry	2.00	0.00	0.00

17:00 - 17:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	12.00
B - Local road towards N72	1.00	0.00	1.00
C - Local road towards Quarry	0.00	2.00	0.00

17:15 - 17:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	3.00	6.00
B - Local road towards N72	0.00	0.00	2.00
C - Local road towards Quarry	2.00	1.00	0.00

Vehicle Mix

16:30 - 16:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	50
B - Local road towards N72	0	0	0
C - Local road towards Quarry	0	33	0

16:45 - 17:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	67	57
B - Local road towards N72	0	0	100
C - Local road towards Quarry	0	0	0

17:00 - 17:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	17
B - Local road towards N72	0	0	100
C - Local road towards Quarry	0	0	0

17:15 - 17:30

Heavy Vehicle Percentages

Waterford City & County Council - Planning Department: Viewing Purposes Only!

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	67	33
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	50	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,01	11,32	0,0	B	1,00	3,99
B-A	0,01	7,52	0,0	A	0,75	3,00
C-AB	0,03	8,08	0,0	A	1,50	6,00
C-A					1,25	5,00
A-B					1,50	6,00
A-C					7,25	29,00

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	154,33	0,000	0,00	0,0	0,0	0,000	A
B-A	1,00	1,00	128,31	0,008	0,99	0,0	0,0	7,068	A
C-AB	3,00	3,00	114,32	0,026	2,97	0,0	0,0	8,081	A
C-A	1,00	1,00			1,00				
A-B	0,00	0,00			0,00				
A-C	4,00	4,00			4,00				

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,00	1,00	80,61	0,012	0,99	0,0	0,0	11,302	B
B-A	1,00	1,00	121,20	0,008	1,00	0,0	0,0	7,486	A
C-AB	0,00	0,00	225,27	0,000	0,03	0,0	0,0	0,000	A
C-A	2,00	2,00			2,00				
A-B	3,00	3,00			3,00				
A-C	7,00	7,00			7,00				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,00	1,00	80,49	0,012	1,00	0,0	0,0	11,321	B
B-A	1,00	1,00	120,67	0,008	1,00	0,0	0,0	7,519	A
C-AB	2,00	2,00	150,80	0,013	1,98	0,0	0,0	7,285	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	12,00	12,00			12,00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2,00	2,00	161,24	0,012	2,00	0,0	0,0	7,518	A
B-A	0,00	0,00	121,40	0,000	0,01	0,0	0,0	0,000	A
C-AB	1,00	1,00	150,84	0,007	1,01	0,0	0,0	6,006	A
C-A	2,00	2,00			2,00				
A-B	3,00	3,00			3,00				
A-C	6,00	6,00			6,00				

RECEIVED PLANNING | PLANNING NUMBER
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WATERFORD CITY + COUNTY COUNCIL

Junction 2a - 2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		2,07	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2021	PM	DIRECT	16:30	17:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

16:30 - 16:45

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	4,74
	B - Local road towards N72	1,08	0,00	0,00
	C - Local road towards Quarry	1,08	3,45	0,00

16:45 - 17:00

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	3,66	8,41
	B - Local road towards N72	1,08	0,00	1,29
	C - Local road towards Quarry	2,16	0,00	0,00

17:00 - 17:15

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	13,37
	B - Local road towards N72	1,08	0,00	1,29
	C - Local road towards Quarry	0,00	2,16	0,00

17:15 - 17:30

Demand (Veh/TS)

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		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	3,66	6,90
	B - Local road towards N72	0,00	0,00	2,16
	C - Local road towards Quarry	2,37	1,08	0,00

Vehicle Mix

Heavy Vehicle Percentages

16:30 - 16:45

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	55
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	0	37	0

Heavy Vehicle Percentages

16:45 - 17:00

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	71	62
	B - Local road towards N72	0	0	100
	C - Local road towards Quarry	0	0	0

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	19
	B - Local road towards N72	0	0	100
	C - Local road towards Quarry	0	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	71	37
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	55	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,02	11,40	0,0	B	1,18	4,74
B-A	0,01	7,55	0,0	A	0,81	3,23
C-AB	0,03	8,39	0,0	A	1,67	6,68
C-A					1,40	5,60
A-B					1,83	7,33
A-C					8,35	33,41

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	154,02	0,000	0,00	0,0	0,0	0,000	A
B-A	1,08	1,08	127,78	0,008	1,07	0,0	0,0	7,102	A
C-AB	3,45	3,45	110,67	0,031	3,42	0,0	0,0	8,388	A
C-A	1,08	1,08			1,08				
A-B	0,00	0,00			0,00				
A-C	4,74	4,74			4,74				

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,29	1,29	80,24	0,016	1,28	0,0	0,0	11,393	B
B-A	1,08	1,08	120,54	0,009	1,08	0,0	0,0	7,532	A
C-AB	0,00	0,00	217,26	0,000	0,03	0,0	0,0	0,000	A
C-A	2,16	2,16			2,16				
A-B	3,66	3,66			3,66				
A-C	8,41	8,41			8,41				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,29	1,29	80,25	0,016	1,29	0,0	0,0	11,397	B
B-A	1,08	1,08	120,22	0,009	1,08	0,0	0,0	7,553	A
C-AB	2,16	2,16	150,18	0,014	2,14	0,0	0,0	7,506	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	13,37	13,37			13,37				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2,16	2,16	160,58	0,013	2,15	0,0	0,0	7,790	A
B-A	0,00	0,00	120,88	0,000	0,01	0,0	0,0	0,000	A
C-AB	1,08	1,08	150,25	0,007	1,09	0,0	0,0	6,033	A
C-A	2,37	2,37			2,37				
A-B	3,66	3,66			3,66				
A-C	6,90	6,90			6,90				

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Junction 2a - 2022, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		2.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2022	PM	DIRECT	16:30	17:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local road towards N72		DIRECT	✓	100.000
C - Local road towards Quarry		DIRECT	✓	100.000

Origin-Destination Data

16:30 - 16:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	4.87
B - Local road towards N72	1.10	0.00	0.00
C - Local road towards Quarry	1.10	3.53	0.00

16:45 - 17:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	3.78	8.65
B - Local road towards N72	1.10	0.00	1.34
C - Local road towards Quarry	2.19	0.00	0.00

17:00 - 17:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	13.64
B - Local road towards N72	1.10	0.00	1.34
C - Local road towards Quarry	0.00	2.19	0.00

17:15 - 17:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	3.78	7.06
B - Local road towards N72	0.00	0.00	2.19
C - Local road towards Quarry	2.44	1.10	0.00

Vehicle Mix

16:30 - 16:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	55
B - Local road towards N72	0	0	0
C - Local road towards Quarry	0	38	0

16:45 - 17:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	71	62
B - Local road towards N72	0	0	100
C - Local road towards Quarry	0	0	0

17:00 - 17:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	20
B - Local road towards N72	0	0	100
C - Local road towards Quarry	0	0	0

17:15 - 17:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	71	38
B - Local road towards N72	0	0	0
C - Local road towards Quarry	55	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	11.41	0.0	B	1.22	4.87
B-A	0.01	7.56	0.0	A	0.82	3.29
C-AB	0.03	8.42	0.0	A	1.71	6.82
C-A					1.43	5.72
A-B					1.89	7.55
A-C					8.56	34.23

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	153.96	0.000	0.00	0.0	0.0	0.000	A
B-A	1.10	1.10	127.69	0.009	1.09	0.0	0.0	7.108	A
C-AB	3.54	3.54	110.30	0.032	3.50	0.0	0.0	8.424	A
C-A	1.09	1.09			1.09				
A-B	0.00	0.00			0.00				
A-C	4.87	4.87			4.87				

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16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,34	1,34	80,18	0.017	1,32	0,0	0,0	11,410	B
B-A	1,10	1,10	120,43	0.009	1,10	0,0	0,0	7,540	A
C-AB	0,00	0,00	216,39	0.000	0,03	0,0	0,0	0,000	A
C-A	2,19	2,19			2,19				
A-B	3,78	3,78			3,78				
A-C	8,65	8,65			8,65				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,34	1,34	80,21	0.017	1,34	0,0	0,0	11,411	B
B-A	1,10	1,10	120,13	0.009	1,10	0,0	0,0	7,559	A
C-AB	2,19	2,19	150,10	0.015	2,17	0,0	0,0	7,533	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	13,64	13,64			13,64				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2,19	2,19	160,48	0.014	2,19	0,0	0,0	7,822	A
B-A	0,00	0,00	120,79	0.000	0,01	0,0	0,0	0,000	A
C-AB	1,10	1,10	150,15	0.007	1,11	0,0	0,0	6,038	A
C-A	2,44	2,44			2,44				
A-B	3,78	3,78			3,78				
A-C	7,06	7,06			7,06				

Junction 2a - 2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		2,09	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027	PM	DIRECT	16:30	17:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

16:30 - 16:45

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	5,58
	B - Local road towards N72	1,19	0,00	0,00
	C - Local road towards Quarry	1,19	3,98	0,00

16:45 - 17:00

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	4,39	9,97
	B - Local road towards N72	1,19	0,00	1,60
	C - Local road towards Quarry	2,39	0,00	0,00

17:00 - 17:15

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	15,13
	B - Local road towards N72	1,19	0,00	1,60
	C - Local road towards Quarry	0,00	2,39	0,00

17:15 - 17:30

Demand (Veh/TS)

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		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	4,39	7,97
	B - Local road towards N72	0,00	0,00	2,39
	C - Local road towards Quarry	2,79	1,19	0,00

Vehicle Mix

16:30 - 16:45

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	57
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	0	40	0

16:45 - 17:00

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	73	64
	B - Local road towards N72	0	0	100
	C - Local road towards Quarry	0	0	0

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	21
	B - Local road towards N72	0	0	100
	C - Local road towards Quarry	0	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	73	40
	B - Local road towards N72	0	0	0
	C - Local road towards Quarry	57	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,02	11,50	0,0	B	1,39	5,57
B-A	0,01	7,60	0,0	A	0,90	3,58
C-AB	0,04	8,61	0,0	A	1,89	7,57
C-A					1,59	6,37
A-B					2,19	8,78
A-C					9,66	38,65

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0,00	0,00	153,67	0,000	0,00	0,0	0,0	0,000	A
B-A	1,19	1,19	127,19	0,009	1,18	0,0	0,0	7,142	A
C-AB	3,99	3,99	108,43	0,037	3,95	0,0	0,0	8,611	A
C-A	1,19	1,19			1,19				
A-B	0,00	0,00			0,00				
A-C	5,58	5,58			5,58				

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16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,60	1,60	79,84	0,020	1,58	0,0	0,0	11,497	B
B-A	1,19	1,19	119,82	0,010	1,19	0,0	0,0	7,585	A
C-AB	0,00	0,00	211,97	0,000	0,04	0,0	0,0	0,000	A
C-A	2,39	2,39			2,39				
A-B	4,39	4,39			4,39				
A-C	9,97	9,97			9,97				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,60	1,60	79,96	0,020	1,60	0,0	0,0	11,484	B
B-A	1,19	1,19	119,66	0,010	1,19	0,0	0,0	7,596	A
C-AB	2,39	2,39	149,66	0,016	2,37	0,0	0,0	7,672	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	15,13	15,13			15,13				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2,39	2,39	159,92	0,015	2,39	0,0	0,0	7,982	A
B-A	0,00	0,00	120,30	0,000	0,01	0,0	0,0	0,000	A
C-AB	1,19	1,19	149,60	0,008	1,21	0,0	0,0	6,064	A
C-A	2,79	2,79			2,79				
A-B	4,39	4,39			4,39				
A-C	7,97	7,97			7,97				

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Junction 2a - 2037, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		2.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2037	PM	DIRECT	16:30	17:30	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100.000
B - Local road towards N72		DIRECT	✓	100.000
C - Local road towards Quarry		DIRECT	✓	100.000

Origin-Destination Data

16:30 - 16:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	6.58
B - Local road towards N72	1.31	0.00	0.00
C - Local road towards Quarry	1.31	4.60	0.00

16:45 - 17:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	5.26	11.84
B - Local road towards N72	1.31	0.00	1.97
C - Local road towards Quarry	2.63	0.00	0.00

17:00 - 17:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	0.00	17.10
B - Local road towards N72	1.31	0.00	1.97
C - Local road towards Quarry	0.00	2.63	0.00

17:15 - 17:30

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0.00	5.26	9.21
B - Local road towards N72	0.00	0.00	2.63
C - Local road towards Quarry	3.29	1.31	0.00

Vehicle Mix

16:30 - 16:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	60
B - Local road towards N72	0	0	0
C - Local road towards Quarry	0	43	0

16:45 - 17:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	75	67
B - Local road towards N72	0	0	100
C - Local road towards Quarry	0	0	0

17:00 - 17:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	23
B - Local road towards N72	0	0	100
C - Local road towards Quarry	0	0	0

17:15 - 17:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	75	43
B - Local road towards N72	0	0	0
C - Local road towards Quarry	60	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	11.62	0.0	B	1.64	6.57
B-A	0.01	7.65	0.0	A	0.99	3.94
C-AB	0.04	8.86	0.1	A	2.14	8.55
C-A					1.81	7.23
A-B					2.63	10.53
A-C					11.18	44.73

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	153.25	0.000	0.00	0.0	0.0	0.000	A
B-A	1.31	1.31	126.48	0.010	1.30	0.0	0.0	7.189	A
C-AB	4.61	4.61	106.07	0.043	4.57	0.0	0.0	8.862	A
C-A	1.31	1.31			1.31				
A-B	0.00	0.00			0.00				
A-C	6.58	6.58			6.58				

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16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,97	1,97	79,35	0,025	1,95	0,0	0,0	11,623	B
B-A	1,31	1,31	118,95	0,011	1,31	0,0	0,0	7,649	A
C-AB	0,00	0,00	206,30	0,000	0,05	0,0	0,0	0,000	A
C-A	2,63	2,63			2,63				
A-B	5,26	5,26			5,26				
A-C	11,84	11,84			11,84				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,97	1,97	79,62	0,025	1,97	0,0	0,0	11,590	B
B-A	1,31	1,31	119,02	0,011	1,31	0,0	0,0	7,645	A
C-AB	2,63	2,63	149,07	0,018	2,61	0,0	0,0	7,856	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	17,10	17,10			17,10				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2,63	2,63	159,14	0,016	2,63	0,0	0,0	8,195	A
B-A	0,00	0,00	119,60	0,000	0,01	0,0	0,0	0,000	A
C-AB	1,32	1,32	148,83	0,009	1,33	0,0	0,0	6,101	A
C-A	3,29	3,29			3,29				
A-B	5,26	5,26			5,26				
A-C	9,21	9,21			9,21				

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PLANNING NUMBER
13 AUG 2021 21/774
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Junction 2a - 2022+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		5,00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2022+Dev	PM	DIRECT	16:30	17:30	60	15	✓	Simple	D3+D4

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

16:30 - 16:45

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	7,37
	B - Local road towards N72	1,10	0,00	5,00
	C - Local road towards Quarry	3,10	10,53	0,00

16:45 - 17:00

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	3,78	11,15
	B - Local road towards N72	1,10	0,00	6,34
	C - Local road towards Quarry	4,19	7,00	0,00

17:00 - 17:15

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	16,14
	B - Local road towards N72	1,10	0,00	6,34
	C - Local road towards Quarry	2,00	9,19	0,00

17:15 - 17:30

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0.00	3.78	9.56
	B - Local road towards N72	0.00	0.00	7.19
	C - Local road towards Quarry	4.44	8.10	0.00

Vehicle Mix

16:30 - 16:45

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	53
	B - Local road towards N72	0	0	70
	C - Local road towards Quarry	40	46	0

16:45 - 17:00

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	71	59
	B - Local road towards N72	0	0	76
	C - Local road towards Quarry	30	50	0

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	24
	B - Local road towards N72	0	0	76
	C - Local road towards Quarry	63	38	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	71	41
	B - Local road towards N72	0	0	49
	C - Local road towards Quarry	58	43	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.07	10.70	0.1	B	6.22	24.86
B-A	0.01	7.85	0.0	A	0.82	3.29
C-AB	0.10	9.58	0.1	A	8.76	35.02
C-A					3.38	13.53
A-B					1.89	7.55
A-C					11.06	44.23

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.00	5.00	95.03	0.053	4.95	0.0	0.1	9.984	A
B-A	1.10	1.10	116.66	0.009	1.09	0.0	0.0	7.787	A
C-AB	10.60	10.60	104.24	0.102	10.49	0.0	0.1	9.585	A
C-A	3.03	3.03			3.03				
A-B	0.00	0.00			0.00				
A-C	7.37	7.37			7.37				

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6.34	6.34	90.47	0.070	6.32	0.1	0.1	10.514	B
B-A	1.10	1.10	115.98	0.009	1.10	0.0	0.0	7.833	A
C-AB	7.05	7.05	99.70	0.071	7.08	0.1	0.1	9.561	A
C-A	4.14	4.14			4.14				
A-B	3.78	3.78			3.78				
A-C	11.15	11.15			11.15				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6.34	6.34	90.47	0.070	6.34	0.1	0.1	10.697	B
B-A	1.10	1.10	115.68	0.009	1.10	0.0	0.0	7.854	A
C-AB	9.23	9.23	108.37	0.085	9.21	0.1	0.1	9.431	A
C-A	1.97	1.97			1.97				
A-B	0.00	0.00			0.00				
A-C	16.14	16.14			16.14				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7.19	7.19	107.99	0.066	7.19	0.1	0.1	9.747	A
B-A	0.00	0.00	116.36	0.000	0.01	0.0	0.0	0.000	A
C-AB	8.15	8.15	105.00	0.078	8.16	0.1	0.1	9.106	A
C-A	4.38	4.38			4.38				
A-B	3.78	3.78			3.78				
A-C	9.56	9.56			9.56				

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Junction 2a - 2027+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		4,87	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2027+Dev	PM	DIRECT	16:30	17:30	60	15	✓	Simple	D3+D5

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

16:30 - 16:45

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	0,00	8,08
B - Local road towards N72	1,19	0,00	5,00
C - Local road towards Quarry	3,19	10,98	0,00

16:45 - 17:00

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	4,39	12,47
B - Local road towards N72	1,19	0,00	6,60
C - Local road towards Quarry	4,39	7,00	0,00

17:00 - 17:15

Demand (Veh/TS)

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	0,00	17,63
B - Local road towards N72	1,19	0,00	6,60
C - Local road towards Quarry	2,00	9,39	0,00

17:15 - 17:30

Demand (Veh/TS)

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From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0,00	4,39	10,47
B - Local road towards N72	0,00	0,00	7,39
C - Local road towards Quarry	4,79	8,19	0,00

Vehicle Mix

16:30 - 16:45

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	55
B - Local road towards N72	0	0	70
C - Local road towards Quarry	39	46	0

16:45 - 17:00

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	73	61
B - Local road towards N72	0	0	77
C - Local road towards Quarry	28	50	0

17:00 - 17:15

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	0	25
B - Local road towards N72	0	0	77
C - Local road towards Quarry	63	37	0

17:15 - 17:30

Heavy Vehicle Percentages

From \ To	A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
A - Local road towards R671	0	73	42
B - Local road towards N72	0	0	47
C - Local road towards Quarry	59	43	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,07	10,83	0,1	B	6,39	25,57
B-A	0,01	7,89	0,0	A	0,90	3,58
C-AB	0,11	9,68	0,1	A	8,95	35,78
C-A					3,54	14,15
A-B					2,19	8,78
A-C					12,16	48,65

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5,00	5,00	94,85	0,053	4,94	0,0	0,1	10,004	B
B-A	1,19	1,19	116,19	0,010	1,18	0,0	0,0	7,826	A
C-AB	11,06	11,06	103,78	0,107	10,94	0,0	0,1	9,683	A
C-A	3,12	3,12			3,12				
A-B	0,00	0,00			0,00				
A-C	8,08	8,08			8,08				

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16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6,60	6,60	89,61	0,074	6,58	0,1	0,1	10,634	B
B-A	1,19	1,19	115,36	0,010	1,19	0,0	0,0	7,883	A
C-AB	7,05	7,05	99,24	0,071	7,09	0,1	0,1	9,627	A
C-A	4,34	4,34			4,34				
A-B	4,39	4,39			4,39				
A-C	12,47	12,47			12,47				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6,60	6,60	89,72	0,074	6,60	0,1	0,1	10,827	B
B-A	1,19	1,19	115,19	0,010	1,19	0,0	0,0	7,894	A
C-AB	9,42	9,42	108,67	0,087	9,40	0,1	0,1	9,443	A
C-A	1,97	1,97			1,97				
A-B	0,00	0,00			0,00				
A-C	17,63	17,63			17,63				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,39	7,39	108,61	0,068	7,39	0,1	0,1	9,786	A
B-A	0,00	0,00	115,86	0,000	0,01	0,0	0,0	0,000	A
C-AB	8,25	8,25	105,04	0,079	8,27	0,1	0,1	9,100	A
C-A	4,73	4,73			4,73				
A-B	4,39	4,39			4,39				
A-C	10,47	10,47			10,47				

Junction 2a - 2037+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J2a	T-Junction	Two-way		4,71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2037+Dev	PM	DIRECT	16:30	17:30	60	15	✓	Simple	D3+D6

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Local road towards R671		DIRECT	✓	100,000
B - Local road towards N72		DIRECT	✓	100,000
C - Local road towards Quarry		DIRECT	✓	100,000

Origin-Destination Data

16:30 - 16:45

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	9,08
	B - Local road towards N72	1,31	0,00	5,00
	C - Local road towards Quarry	3,31	11,60	0,00

16:45 - 17:00

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	5,26	14,34
	B - Local road towards N72	1,31	0,00	6,97
	C - Local road towards Quarry	4,63	7,00	0,00

17:00 - 17:15

Demand (Veh/TS)

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	0,00	19,60
	B - Local road towards N72	1,31	0,00	6,97
	C - Local road towards Quarry	2,00	9,63	0,00

17:15 - 17:30

Demand (Veh/TS)

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		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0,00	5,26	11,71
	B - Local road towards N72	0,00	0,00	7,63
	C - Local road towards Quarry	5,29	8,31	0,00

Vehicle Mix

Heavy Vehicle Percentages

16:30 - 16:45

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	57
	B - Local road towards N72	0	0	70
	C - Local road towards Quarry	38	47	0

Heavy Vehicle Percentages

16:45 - 17:00

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	75	64
	B - Local road towards N72	0	0	78
	C - Local road towards Quarry	27	50	0

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	0	27
	B - Local road towards N72	0	0	78
	C - Local road towards Quarry	63	36	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		A - Local road towards R671	B - Local road towards N72	C - Local road towards Quarry
From	A - Local road towards R671	0	75	44
	B - Local road towards N72	0	0	46
	C - Local road towards Quarry	61	42	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,08	11,01	0,1	B	6,64	26,57
B-A	0,01	7,95	0,0	A	0,99	3,94
C-AB	0,11	9,83	0,1	A	9,20	36,79
C-A					3,75	14,99
A-B					2,63	10,53
A-C					13,68	54,73

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Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5,00	5,00	94,58	0,053	4,94	0,0	0,1	10,034	B
B-A	1,31	1,31	115,51	0,011	1,30	0,0	0,0	7,879	A
C-AB	11,69	11,69	103,05	0,113	11,56	0,0	0,1	9,826	A
C-A	3,23	3,23			3,23				
A-B	0,00	0,00			0,00				
A-C	9,08	9,08			9,08				

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6,97	6,97	88,45	0,079	6,95	0,1	0,1	10,805	B
B-A	1,31	1,31	114,46	0,011	1,31	0,0	0,0	7,953	A
C-AB	7,05	7,05	98,57	0,072	7,10	0,1	0,1	9,728	A
C-A	4,57	4,57			4,57				
A-B	5,26	5,26			5,26				
A-C	14,34	14,34			14,34				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6,97	6,97	88,72	0,079	6,97	0,1	0,1	11,009	B
B-A	1,31	1,31	114,53	0,011	1,31	0,0	0,0	7,949	A
C-AB	9,66	9,66	108,98	0,089	9,64	0,1	0,1	9,462	A
C-A	1,97	1,97			1,97				
A-B	0,00	0,00			0,00				
A-C	19,60	19,60			19,60				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	7,63	7,63	109,28	0,070	7,63	0,1	0,1	9,851	A
B-A	0,00	0,00	115,16	0,000	0,01	0,0	0,0	0,000	A
C-AB	8,38	8,38	105,02	0,080	8,40	0,1	0,1	9,101	A
C-A	5,22	5,22			5,22				
A-B	5,26	5,26			5,26				
A-C	11,71	11,71			11,71				

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Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Junction 3 AM.j9
Path: W:\2019\P19-031\P19-031.4.-25.01.21
Report generation date: 29/01/2021 12:20:32

»Junction 3 - 2017, AM
»Junction 3 - 2021, AM
»Junction 3 - 2022, AM
»Junction 3 - 2027, AM
»Junction 3 - 2037, AM
»Junction 3 - 2022+Dev, AM
»Junction 3 - 2027+Dev, AM
»Junction 3 - 2037+Dev, AM

Summary of junction performance

	AM			
	Queue (Veh)	Delay (s)	RFC	LOS
	Junction 3 - 2017			
Stream B-C	0.1	9.62	0.09	A
Stream B-A	0.0	0.00	0.00	A
Stream C-AB	0.1	10.31	0.07	B
	Junction 3 - 2021			
Stream B-C	0.1	9.68	0.11	A
Stream B-A	0.0	0.00	0.00	A
Stream C-AB	0.1	10.46	0.08	B
	Junction 3 - 2022			
Stream B-C	0.1	9.69	0.12	A
Stream B-A	0.0	0.00	0.00	A
Stream C-AB	0.1	10.48	0.09	B
	Junction 3 - 2027			
Stream B-C	0.2	9.83	0.14	A
Stream B-A	0.0	0.00	0.00	A
Stream C-AB	0.1	10.56	0.10	B
	Junction 3 - 2037			
Stream B-C	0.2	10.28	0.17	B
Stream B-A	0.0	0.00	0.00	A
Stream C-AB	0.1	10.73	0.13	B
	Junction 3 - 2022+Dev			
Stream B-C	0.2	9.37	0.17	A
Stream B-A	0.0	13.40	0.01	B
Stream C-AB	0.2	10.22	0.17	B
	Junction 3 - 2027+Dev			
Stream B-C	0.2	9.72	0.19	A
Stream B-A	0.0	13.52	0.01	B
Stream C-AB	0.2	10.49	0.19	B
	Junction 3 - 2037+Dev			
Stream B-C	0.3	10.22	0.22	B
Stream B-A	0.0	13.70	0.01	B
Stream C-AB	0.3	10.88	0.21	B

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

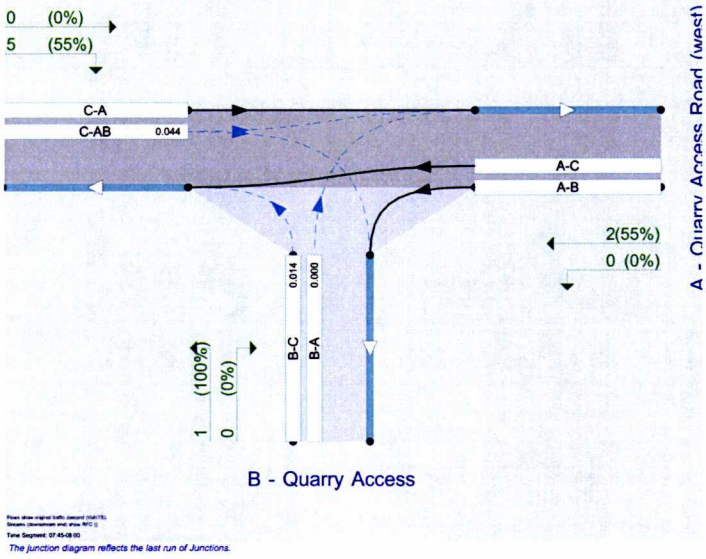
File summary

File Description

Title	Roadstone Quarry and Batching Plant Cappagh
Location	Co. Waterford
Site number	
Date	25/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perTimeSegment	s	-Min	perMin



Flows show original traffic demand (Veh/TB)
Stream (downstream end) show RFC ()
Time Segment: 07:45-08:00

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

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Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2017	AM	DIRECT	07:45	08:45	60	15	✓		
D2	2021	AM	DIRECT	07:45	08:45	60	15	✓		
D3	Development Traffic	AM	DIRECT	07:45	08:45	60	15			
D4	2022	AM	DIRECT	07:45	08:45	60	15	✓		
D5	2027	AM	DIRECT	07:45	08:45	60	15	✓		
D6	2037	AM	DIRECT	07:45	08:45	60	15	✓		
D7	2022+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D4
D8	2027+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D5
D9	2037+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D6

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Junction 3	✓	100.000	100.000

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Junction 3 - 2017, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J3	T-Junction	Two-way		7.63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Quarry Access Road (west)		Major
B	Quarry Access		Minor
C	Quarry Acces (east)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Quarry Acces (east)	6.20			160.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Quarry Access	One lane plus flare	10.00	6.18	6.18	6.18	6.18		1.00	24	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	110.713	0.080	0.202	0.127	0.289
1	B-C	190.995	0.116	0.293	-	-
1	C-B	166.655	0.256	0.256	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Quarry Access Road (west)		DIRECT	✓	100.000
B - Quarry Access		DIRECT	✓	100.000
C - Quarry Acces (east)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0.00	0.00	2.00
	B - Quarry Access	0.00	0.00	1.00
	C - Quarry Acces (east)	0.00	4.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0.00	0.00	0.00
	B - Quarry Access	0.00	0.00	2.00
	C - Quarry Acces (east)	3.00	6.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0.00	0.00	0.00
	B - Quarry Access	0.00	0.00	10.00
	C - Quarry Acces (east)	0.00	0.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0.00	0.00	1.00
	B - Quarry Access	0.00	0.00	1.00
	C - Quarry Acces (east)	4.00	2.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	50
	B - Quarry Access	0	0	100
	C - Quarry Acces (east)	0	50	0

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	0
	B - Quarry Access	0	0	100
	C - Quarry Acces (east)	33	83	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	0
	B - Quarry Access	0	0	70
	C - Quarry Acces (east)	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	0
	B - Quarry Access	0	0	100
	C - Quarry Acces (east)	50	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.09	9.62	0.1	A	3.50	14.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.07	10.31	0.1	B	3.01	12.05
C-A					1.74	6.95
A-B					0.00	0.00
A-C					0.75	3.00

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	95.06	0.011	0.99	0.0	0.0	9.566	A
B-A	0.00	0.00	108.37	0.000	0.00	0.0	0.0	0.000	A
C-AB	4.00	4.00	110.59	0.036	3.96	0.0	0.0	8.438	A
C-A	0.00	0.00			0.00				
A-B	0.00	0.00			0.00				
A-C	2.00	2.00			2.00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	95.50	0.021	1.99	0.0	0.0	9.623	A
B-A	0.00	0.00	107.01	0.000	0.00	0.0	0.0	0.000	A
C-AB	6.04	6.04	91.62	0.066	6.01	0.0	0.1	9.715	A
C-A	2.96	2.96			2.96				
A-B	0.00	0.00			0.00				
A-C	0.00	0.00			0.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10.00	10.00	112.31	0.089	9.92	0.0	0.1	9.057	A
B-A	0.00	0.00	110.68	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	181.81	0.000	0.06	0.1	0.0	0.000	A
C-A	0.00	0.00			0.00				
A-B	0.00	0.00			0.00				
A-C	0.00	0.00			0.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	96.68	0.010	1.09	0.1	0.0	8.239	A
B-A	0.00	0.00	108.59	0.000	0.00	0.0	0.0	0.000	A
C-AB	2.01	2.01	83.69	0.024	1.99	0.0	0.0	10.309	B
C-A	3.99	3.99			3.99				
A-B	0.00	0.00			0.00				
A-C	1.00	1.00			1.00				

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Junction 3 - 2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J3	T-Junction	Two-way		7.80	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2021	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Quarry Access Road (west)		DIRECT	✓	100.000
B - Quarry Access		DIRECT	✓	100.000
C - Quarry Acces (east)		DIRECT	✓	100.000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0.00	0.00	2.37
B - Quarry Access	0.00	0.00	1.29
C - Quarry Acces (east)	0.00	4.74	0.00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0.00	0.00	0.00
B - Quarry Access	0.00	0.00	2.59
C - Quarry Acces (east)	3.45	7.54	0.00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0.00	0.00	0.00
B - Quarry Access	0.00	0.00	12.29
C - Quarry Acces (east)	0.00	0.00	0.00

08:30 - 08:45

Demand (Veh/TS)

RECEIVED PLANNING
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13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0.00	0.00	1.08
B - Quarry Access	0.00	0.00	1.29
C - Quarry Acces (east)	4.74	2.59	0.00

Vehicle Mix

07:45 - 08:00

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	0	55
B - Quarry Access	0	0	100
C - Quarry Acces (east)	0	55	0

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	0	0
B - Quarry Access	0	0	100
C - Quarry Acces (east)	37	86	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	0	0
B - Quarry Access	0	0	74
C - Quarry Acces (east)	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	0	0
B - Quarry Access	0	0	100
C - Quarry Acces (east)	55	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.11	9.68	0.1	A	4.37	17.46
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.08	10.46	0.1	B	3.74	14.96
C-A					2.03	8.11
A-B					0.00	0.00
A-C					0.86	3.45

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.29	1.29	94.96	0.014	1.28	0.0	0.0	9.606	A
B-A	0.00	0.00	107.86	0.000	0.00	0.0	0.0	0.000	A
C-AB	4.74	4.74	107.23	0.044	4.70	0.0	0.0	8.773	A
C-A	0.00	0.00			0.00				
A-B	0.00	0.00			0.00				
A-C	2.37	2.37			2.37				

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08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2,59	2,59	95,50	0,027	2,57	0,0	0,0	9,684	A
B-A	0,00	0,00	106,04	0,000	0,00	0,0	0,0	0,000	A
C-AB	7,61	7,61	90,67	0,084	7,57	0,0	0,1	10,087	B
C-A	3,39	3,39			3,39				
A-B	0,00	0,00			0,00				
A-C	0,00	0,00			0,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12,29	12,29	109,93	0,112	12,19	0,0	0,1	9,468	A
B-A	0,00	0,00	110,67	0,000	0,00	0,0	0,0	0,000	A
C-AB	0,00	0,00	179,48	0,000	0,08	0,1	0,0	0,000	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	0,00	0,00			0,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,29	1,29	96,49	0,014	1,41	0,1	0,0	8,435	A
B-A	0,00	0,00	108,07	0,000	0,00	0,0	0,0	0,000	A
C-AB	2,61	2,61	83,87	0,031	2,58	0,0	0,0	10,459	B
C-A	4,72	4,72			4,72				
A-B	0,00	0,00			0,00				
A-C	1,08	1,08			1,08				

Junction 3 - 2022, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J3	T-Junction	Two-way		7,82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2022	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Quarry Access Road (west)		DIRECT	✓	100,000
B - Quarry Access		DIRECT	✓	100,000
C - Quarry Acces (east)		DIRECT	✓	100,000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,00	2,44
B - Quarry Access	0,00	0,00	1,34
C - Quarry Acces (east)	0,00	4,87	0,00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,00	0,00
B - Quarry Access	0,00	0,00	2,68
C - Quarry Acces (east)	3,53	7,79	0,00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,00	0,00
B - Quarry Access	0,00	0,00	12,67
C - Quarry Acces (east)	0,00	0,00	0,00

08:30 - 08:45

Demand (Veh/TS)

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		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0,00	0,00	1,10
	B - Quarry Access	0,00	0,00	1,34
	C - Quarry Acces (east)	4,87	2,68	0,00

Vehicle Mix

07:45 - 08:00

Heavy Vehicle Percentages

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	55
	B - Quarry Access	0	0	100
	C - Quarry Acces (east)	0	55	0

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	0
	B - Quarry Access	0	0	100
	C - Quarry Acces (east)	38	86	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	0
	B - Quarry Access	0	0	74
	C - Quarry Acces (east)	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	0
	B - Quarry Access	0	0	100
	C - Quarry Acces (east)	55	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,12	9,69	0,1	A	4,51	18,03
B-A	0,00	0,00	0,0	A	0,00	0,00
C-AB	0,09	10,48	0,1	B	3,86	15,44
C-A					2,08	8,31
A-B					0,00	0,00
A-C					0,88	3,53

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,34	1,34	94,94	0,014	1,33	0,0	0,0	9,612	A
B-A	0,00	0,00	107,77	0,000	0,00	0,0	0,0	0,000	A
C-AB	4,87	4,87	106,90	0,046	4,82	0,0	0,0	8,813	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	2,44	2,44			2,44				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2,68	2,68	95,50	0,028	2,66	0,0	0,0	9,693	A
B-A	0,00	0,00	105,89	0,000	0,00	0,0	0,0	0,000	A
C-AB	7,86	7,86	90,61	0,087	7,82	0,0	0,1	10,134	B
C-A	3,46	3,46			3,46				
A-B	0,00	0,00			0,00				
A-C	0,00	0,00			0,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12,67	12,67	109,71	0,115	12,56	0,0	0,1	9,523	A
B-A	0,00	0,00	110,67	0,000	0,00	0,0	0,0	0,000	A
C-AB	0,00	0,00	179,27	0,000	0,09	0,1	0,0	0,000	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	0,00	0,00			0,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,34	1,34	96,48	0,014	1,46	0,1	0,0	8,456	A
B-A	0,00	0,00	107,98	0,000	0,00	0,0	0,0	0,000	A
C-AB	2,70	2,70	83,90	0,032	2,67	0,0	0,0	10,476	B
C-A	4,85	4,85			4,85				
A-B	0,00	0,00			0,00				
A-C	1,10	1,10			1,10				

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

Waterford City & County Council Planning Department: Viewing Purposes Only!

Junction 3 - 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J3	T-Junction	Two-way		7.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Quarry Access Road (west)		DIRECT	✓	100.000
B - Quarry Access		DIRECT	✓	100.000
C - Quarry Acces (east)		DIRECT	✓	100.000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0.00	0.00	2.79
B - Quarry Access	0.00	0.00	1.60
C - Quarry Acces (east)	0.00	5.58	0.00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0.00	0.00	0.00
B - Quarry Access	0.00	0.00	3.19
C - Quarry Acces (east)	3.98	9.18	0.00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0.00	0.00	0.00
B - Quarry Access	0.00	0.00	14.76
C - Quarry Acces (east)	0.00	0.00	0.00

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0.00	0.00	1.19
B - Quarry Access	0.00	0.00	1.60
C - Quarry Acces (east)	5.58	3.19	0.00

Vehicle Mix

07:45 - 08:00

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	0	57
B - Quarry Access	0	0	100
C - Quarry Acces (east)	0	57	0

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	0	0
B - Quarry Access	0	0	100
C - Quarry Acces (east)	40	87	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	0	0
B - Quarry Access	0	0	76
C - Quarry Acces (east)	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	0	0
B - Quarry Access	0	0	100
C - Quarry Acces (east)	57	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.14	9.83	0.2	A	5.29	21.15
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.10	10.56	0.1	B	4.52	18.10
C-A					2.36	9.43
A-B					0.00	0.00
A-C					1.00	3.98

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.60	1.60	94.85	0.017	1.58	0.0	0.0	9.648	A
B-A	0.00	0.00	107.29	0.000	0.00	0.0	0.0	0.000	A
C-AB	5.58	5.58	105.28	0.053	5.53	0.0	0.1	9.018	A
C-A	0.00	0.00			0.00				
A-B	0.00	0.00			0.00				
A-C	2.79	2.79			2.79				

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08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3,19	3,19	95,50	0,033	3,18	0,0	0,0	9,749	A
B-A	0,00	0,00	105,02	0,000	0,00	0,0	0,0	0,000	A
C-AB	9,28	9,28	90,32	0,103	9,23	0,1	0,1	10,382	B
C-A	3,88	3,88			3,88				
A-B	0,00	0,00			0,00				
A-C	0,00	0,00			0,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	14,76	14,76	108,64	0,136	14,63	0,0	0,2	9,830	A
B-A	0,00	0,00	110,66	0,000	0,00	0,0	0,0	0,000	A
C-AB	0,00	0,00	178,24	0,000	0,11	0,1	0,0	0,000	A
C-A	0,00	0,00			0,00				
A-B	0,00	0,00			0,00				
A-C	0,00	0,00			0,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1,60	1,60	96,39	0,017	1,74	0,2	0,0	8,559	A
B-A	0,00	0,00	107,51	0,000	0,00	0,0	0,0	0,000	A
C-AB	3,23	3,23	84,09	0,038	3,19	0,0	0,0	10,561	B
C-A	5,55	5,55			5,55				
A-B	0,00	0,00			0,00				
A-C	1,19	1,19			1,19				

Junction 3 - 2037, AM

Data Errors and Warnings

No errors or warnings

RECEIVED PLANNING | PLANNING NUMBER
13 AUG 2021 21/772
WATERFORD CITY + COUNTY COUNCIL

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J3	T-Junction	Two-way		8,27	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2037	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Quarry Access Road (west)		DIRECT	✓	100,000
B - Quarry Access		DIRECT	✓	100,000
C - Quarry Acces (east)		DIRECT	✓	100,000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0,00	0,00	3,29
	B - Quarry Access	0,00	0,00	1,97
	C - Quarry Acces (east)	0,00	6,58	0,00

08:00 - 08:15

Demand (Veh/TS)

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0,00	0,00	0,00
	B - Quarry Access	0,00	0,00	3,95
	C - Quarry Acces (east)	4,60	11,19	0,00

08:15 - 08:30

Demand (Veh/TS)

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0,00	0,00	0,00
	B - Quarry Access	0,00	0,00	17,77
	C - Quarry Acces (east)	0,00	0,00	0,00

08:30 - 08:45

Demand (Veh/TS)

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		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0,00	0,00	1,31
	B - Quarry Access	0,00	0,00	1,97
	C - Quarry Acces (east)	6,58	3,95	0,00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	60
	B - Quarry Access	0	0	100
	C - Quarry Acces (east)	0	60	0

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	0
	B - Quarry Access	0	0	100
	C - Quarry Acces (east)	43	88	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	0
	B - Quarry Access	0	0	78
	C - Quarry Acces (east)	0	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	0	0
	B - Quarry Access	0	0	100
	C - Quarry Acces (east)	60	100	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.17	10.28	0.2	B	6.42	25.67
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.13	10.73	0.1	B	5.49	21.95
C-A					2.74	10.96
A-B					0.00	0.00
A-C					1.15	4.60

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.97	1.97	94.73	0.021	1.95	0.0	0.0	9.699	A
B-A	0.00	0.00	106.61	0.000	0.00	0.0	0.0	0.000	A
C-AB	6.58	6.58	103.30	0.064	6.51	0.0	0.1	9.292	A
C-A	0.00	0.00			0.00				
A-B	0.00	0.00			0.00				
A-C	3.29	3.29			3.29				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.95	3.95	95.50	0.041	3.93	0.0	0.0	9.826	A
B-A	0.00	0.00	103.76	0.000	0.00	0.0	0.0	0.000	A
C-AB	11.35	11.35	90.08	0.126	11.29	0.1	0.1	10.726	B
C-A	4.44	4.44			4.44				
A-B	0.00	0.00			0.00				
A-C	0.00	0.00			0.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	17.77	17.77	107.39	0.165	17.61	0.0	0.2	10.276	B
B-A	0.00	0.00	110.84	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	177.06	0.000	0.14	0.1	0.0	0.000	A
C-A	0.00	0.00			0.00				
A-B	0.00	0.00			0.00				
A-C	0.00	0.00			0.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.97	1.97	96.30	0.021	2.16	0.2	0.0	8.691	A
B-A	0.00	0.00	106.83	0.000	0.00	0.0	0.0	0.000	A
C-AB	4.01	4.01	84.37	0.048	3.96	0.0	0.0	10.673	B
C-A	6.52	6.52			6.52				
A-B	0.00	0.00			0.00				
A-C	1.31	1.31			1.31				

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Junction 3 - 2022+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J3	T-Junction	Two-way		8,82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2022+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D4

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Quarry Access Road (west)		DIRECT	✓	100,000
B - Quarry Access		DIRECT	✓	100,000
C - Quarry Acces (east)		DIRECT	✓	100,000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	2,44
B - Quarry Access	0,50	0,00	8,59
C - Quarry Acces (east)	0,00	14,37	0,00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	0,00
B - Quarry Access	0,50	0,00	9,93
C - Quarry Acces (east)	3,53	17,29	0,00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	0,00
B - Quarry Access	0,50	0,00	19,92
C - Quarry Acces (east)	0,00	9,50	0,00

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	1,10
B - Quarry Access	0,50	0,00	8,59
C - Quarry Acces (east)	4,87	12,18	0,00

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Vehicle Mix

07:45 - 08:00

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	50	55
B - Quarry Access	50	0	58
C - Quarry Acces (east)	0	52	0

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	50	0
B - Quarry Access	50	0	63
C - Quarry Acces (east)	38	66	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	50	0
B - Quarry Access	50	0	65
C - Quarry Acces (east)	0	50	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	50	0
B - Quarry Access	50	0	58
C - Quarry Acces (east)	55	61	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,17	9,37	0,2	A	11,76	47,02
B-A	0,01	13,40	0,0	B	0,50	2,00
C-AB	0,17	10,22	0,2	B	13,42	53,68
C-A					2,02	8,08
A-B					0,50	2,00
A-C					0,88	3,53

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8,59	8,59	120,06	0,072	8,51	0,0	0,1	8,064	A
B-A	0,50	0,50	69,00	0,007	0,49	0,0	0,0	13,135	B
C-AB	14,37	14,37	109,10	0,132	14,22	0,0	0,1	9,486	A
C-A	0,00	0,00			0,00				
A-B	0,50	0,50			0,50				
A-C	2,44	2,44			2,44				

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08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9,93	9,93	116,58	0,085	9,91	0,1	0,1	8,290	A
B-A	0,50	0,50	67,68	0,007	0,50	0,0	0,0	13,396	B
C-AB	17,48	17,48	101,44	0,172	17,44	0,1	0,2	10,222	B
C-A	3,34	3,34			3,34				
A-B	0,50	0,50			0,50				
A-C	0,00	0,00			0,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	19,92	19,92	115,30	0,173	19,80	0,1	0,2	9,372	A
B-A	0,50	0,50	70,25	0,007	0,50	0,0	0,0	12,905	B
C-AB	9,50	9,50	110,62	0,086	9,60	0,2	0,1	9,568	A
C-A	0,00	0,00			0,00				
A-B	0,50	0,50			0,50				
A-C	0,00	0,00			0,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8,59	8,59	120,42	0,071	8,71	0,2	0,1	8,344	A
B-A	0,50	0,50	69,11	0,007	0,50	0,0	0,0	13,117	B
C-AB	12,32	12,32	104,50	0,118	12,29	0,1	0,1	9,439	A
C-A	4,73	4,73			4,73				
A-B	0,50	0,50			0,50				
A-C	1,10	1,10			1,10				

Junction 3 - 2027+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J3	T-Junction	Two-way		9,03	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2027+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D5

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Quarry Access Road (west)		DIRECT	✓	100,000
B - Quarry Access		DIRECT	✓	100,000
C - Quarry Acces (east)		DIRECT	✓	100,000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	2,79
B - Quarry Access	0,50	0,00	8,85
C - Quarry Acces (east)	0,00	15,08	0,00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	0,00
B - Quarry Access	0,50	0,00	10,44
C - Quarry Acces (east)	3,98	18,68	0,00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	0,00
B - Quarry Access	0,50	0,00	22,01
C - Quarry Acces (east)	0,00	9,50	0,00

08:30 - 08:45

Demand (Veh/TS)

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		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0,00	0,50	1,19
	B - Quarry Access	0,50	0,00	8,85
	C - Quarry Acces (east)	5,58	12,69	0,00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	50	57
	B - Quarry Access	50	0	59
	C - Quarry Acces (east)	0	53	0

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	50	0
	B - Quarry Access	50	0	65
	C - Quarry Acces (east)	40	68	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	50	0
	B - Quarry Access	50	0	67
	C - Quarry Acces (east)	0	50	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
From	A - Quarry Access Road (west)	0	50	0
	B - Quarry Access	50	0	59
	C - Quarry Acces (east)	57	63	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,19	9,72	0,2	A	12,54	50,15
B-A	0,01	13,52	0,0	B	0,50	2,00
C-AB	0,19	10,49	0,2	B	14,10	56,38
C-A					2,29	9,14
A-B					0,50	2,00
A-C					1,00	3,98

RECEIVED PLANNING
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WATERFORD CITY + COUNTY COUNCIL

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8,85	8,85	119,02	0,074	8,77	0,0	0,1	8,157	A
B-A	0,50	0,50	68,68	0,007	0,49	0,0	0,0	13,197	B
C-AB	15,08	15,08	108,29	0,139	14,92	0,0	0,2	9,622	A
C-A	0,00	0,00			0,00				
A-B	0,50	0,50			0,50				
A-C	2,79	2,79			2,79				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10,44	10,44	115,31	0,091	10,43	0,1	0,1	8,419	A
B-A	0,50	0,50	67,08	0,007	0,50	0,0	0,0	13,516	B
C-AB	18,93	18,93	100,50	0,188	18,87	0,2	0,2	10,489	B
C-A	3,73	3,73			3,73				
A-B	0,50	0,50			0,50				
A-C	0,00	0,00			0,00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	22,01	22,01	113,93	0,193	21,87	0,1	0,2	9,716	A
B-A	0,50	0,50	69,98	0,007	0,50	0,0	0,0	12,952	B
C-AB	9,50	9,50	110,54	0,086	9,62	0,2	0,1	9,677	A
C-A	0,00	0,00			0,00				
A-B	0,50	0,50			0,50				
A-C	0,00	0,00			0,00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8,85	8,85	119,44	0,074	9,00	0,2	0,1	8,474	A
B-A	0,50	0,50	68,78	0,007	0,50	0,0	0,0	13,179	B
C-AB	12,87	12,87	103,71	0,124	12,83	0,1	0,1	9,539	A
C-A	5,41	5,41			5,41				
A-B	0,50	0,50			0,50				
A-C	1,19	1,19			1,19				

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Junction 3 - 2037+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	J3	T-Junction	Two-way		9,35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2037+Dev	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D6

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2,00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - Quarry Access Road (west)		DIRECT	✓	100,000
B - Quarry Access		DIRECT	✓	100,000
C - Quarry Acces (east)		DIRECT	✓	100,000

Origin-Destination Data

07:45 - 08:00

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	3,29
B - Quarry Access	0,50	0,00	9,22
C - Quarry Acces (east)	0,00	16,08	0,00

08:00 - 08:15

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	0,00
B - Quarry Access	0,50	0,00	11,20
C - Quarry Acces (east)	4,60	20,69	0,00

08:15 - 08:30

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	0,00
B - Quarry Access	0,50	0,00	25,02
C - Quarry Acces (east)	0,00	9,50	0,00

08:30 - 08:45

Demand (Veh/TS)

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0,00	0,50	1,31
B - Quarry Access	0,50	0,00	9,22
C - Quarry Acces (east)	6,58	13,45	0,00

Vehicle Mix

07:45 - 08:00

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	50	60
B - Quarry Access	50	0	61
C - Quarry Acces (east)	0	54	0

08:00 - 08:15

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	50	0
B - Quarry Access	50	0	68
C - Quarry Acces (east)	43	71	0

08:15 - 08:30

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	50	0
B - Quarry Access	50	0	70
C - Quarry Acces (east)	0	50	0

08:30 - 08:45

Heavy Vehicle Percentages

From \ To	A - Quarry Access Road (west)	B - Quarry Access	C - Quarry Acces (east)
A - Quarry Access Road (west)	0	50	0
B - Quarry Access	50	0	61
C - Quarry Acces (east)	60	65	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0,22	10,22	0,3	B	13,67	54,66
B-A	0,01	13,70	0,0	B	0,50	2,00
C-AB	0,21	10,88	0,3	B	15,08	60,30
C-A					2,65	10,60
A-B					0,50	2,00
A-C					1,15	4,60

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9,22	9,22	117,62	0,078	9,14	0,0	0,1	8,291	A
B-A	0,50	0,50	68,21	0,007	0,49	0,0	0,0	13,289	B
C-AB	16,08	16,08	107,15	0,150	15,90	0,0	0,2	9,845	A
C-A	0,00	0,00			0,00				
A-B	0,50	0,50			0,50				
A-C	3,29	3,29			3,29				

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APPENDIX 14-D

Sightlines

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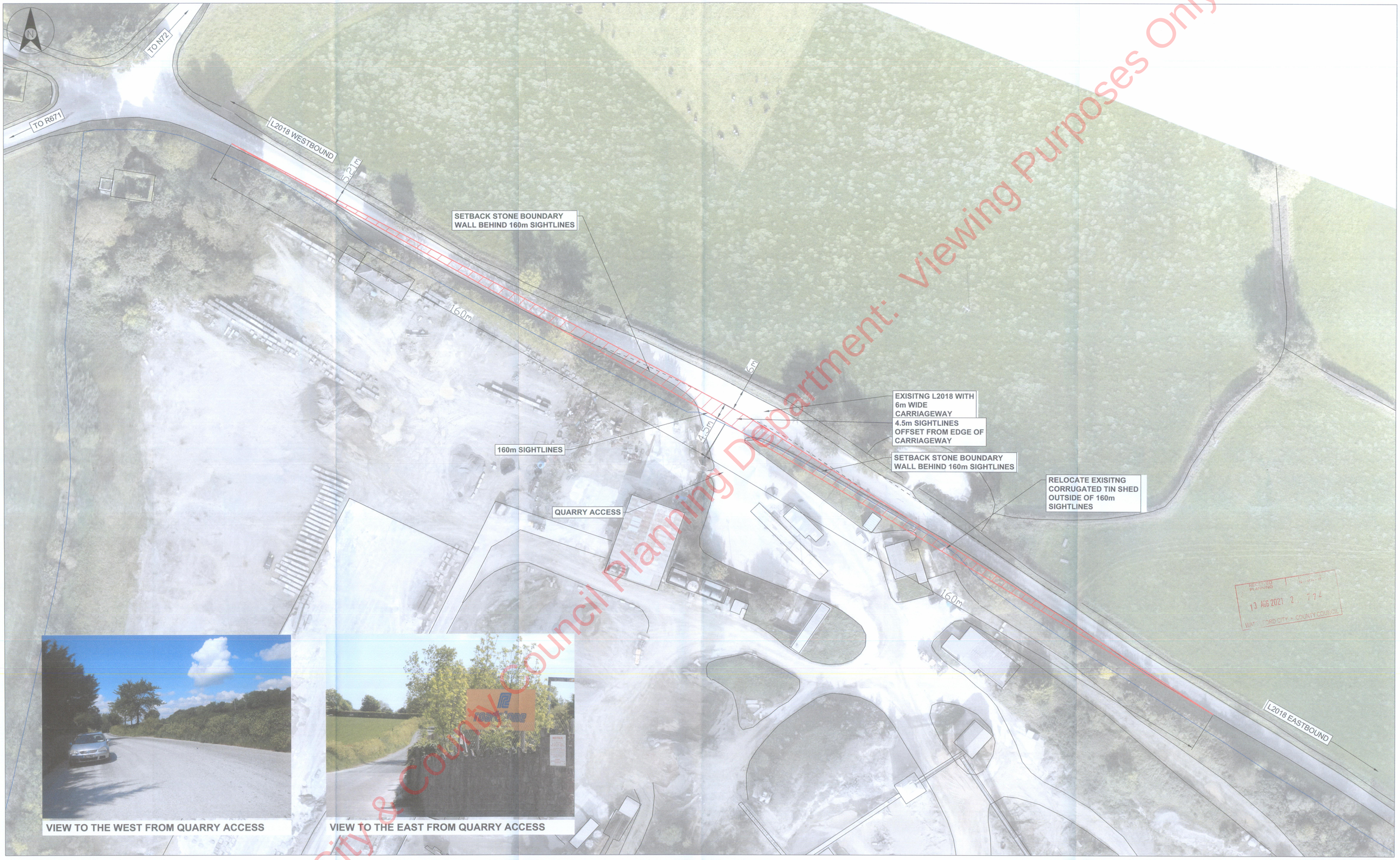

VIEW TO THE WEST FROM QUARRY ACCESS

VIEW TO THE EAST FROM QUARRY ACCESS

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Client: roadstone

Rev.	Comment	Date
01	Draft	04/09/2019

Notes:
1 Do Not Scale - use figured dimensions only.

KEY:
160m SIGHTLINES

Project: Additional Analysis and Revised TTA, Cappagh, Co. Waterford

Drawing Title: Quarry Access Sightlines

Drawn: AP	Date: 04/09/2019
Checked: DOB	Scale: 1:500 @ A1,
Approved: TAG	Status: Draft
Drawing No: P19-031-DG-001	Revision: D1

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TABLE

Table 15-1 Impact Interaction and Interrelationships Matrix

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INTRODUCTION

15.1 All of the reasonably predictable significant impacts of the proposed development at Cappagh Quarry and the measures in place to mitigate them have been outlined in this Environmental Impact Assessment (EIA) Report. However, for any development with the potential for significant environmental impacts 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 is required to be addressed as part of the Environmental Impact Assessment process.

15.2 This EIA Report was prepared by SLR Consulting on behalf of Roadstone Ltd. 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 EIA Report Chapter.

The Interaction of the Foregoing

15.3 The interaction between the various environmental topics has been covered within each of the EIA Report Chapters 4 through to 14, where relevant. For example, the interaction of geology and groundwater has been addressed in EIAR Chapter 7.

15.4 The environmental components which might potentially be impacted by a development of this kind and at this location have been identified through the site assessment as follows:

- Effects on land use and amenity;
- Impacts on local sensitive receptors;
- Impacts on natural heritage and wildlife habitats and disturbance to flora and fauna;
- Impacts on groundwater, surface water bodies, soils and bedrock geology;
- Nuisance potential and/or public health effects of noise or dust emissions or of vibrations;
- Impacts on local archaeology;
- Changes in visual character;
- Impacts on material assets such as infrastructure or local utilities.

15.5 A matrix method has been used, in which the environmental components addressed in the previous Chapters of this EIA Report have been placed on both axes of a matrix. Where interactions arise between two environmental components, the intersection square along a row or column of the matrix in Table 15-1 overleaf is shaded green.

15.6 The purpose of the effects matrix is to readily identify potential interactions. Actual interactions and their significance are dealt with in the relevant topic Chapter of the EIA Report with a brief overview of some of the more pertinent interactions provided in this Chapter below.

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Table 15-1
Impact Interaction and Interrelationships Matrix

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

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POTENTIAL INTERACTIONS

Population and Human Health

15.7 According to the relevant guidelines, human health should be considered in the context of the relevant environmental topics addressed by the EIAR. Also, effects on human health should be considered in relation to relevant pathways (such as noise, vibration, air and water) and should be considered in the context of accepted standards for exposure, dose or risk.

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15.8 Human health is considered in the context of the relevant pathways, such as noise, vibration, air and water and the context of acceptable limits (or doses). This EIA Report indicates that the proposed satellite quarry development and new concrete batching plant at the application site could proceed with acceptable emission limits for noise and dust emissions, while potential effects on groundwater can be adequately addressed through continued, proven environmental management practices and mitigation measures to avoid accidental spillages of fuel, etc.

15.9 The key matters in relation to amenity are noise, dust, vibration, landscape and traffic. This EIA Report has identified a number of mitigation measures to be implemented at the application site to ensure that the proposed development can proceed without adversely impacting local amenity or traffic movements. The visual impact assessment concluded that the effect of quarry development and the new concrete batching plant over its operational life would be largely negligible with only some slight impact from a few receptors when compared against the existing baseline situation.

15.10 Potential interactions associated with development activities are discussed in Chapter 7 (Water), Chapter 8 (Air Quality), Chapter 10 (Noise and Vibration), Landscape (Chapter 13) and Chapter 14 (Traffic).

Biodiversity

15.11 The proposed development could potentially impact local habitats and species by way of changes to existing land-use and ground surfaces, the removal of some vegetation and habitats, as well as the generation of noise, vibration and dust during the operational phase. The habitats within the application site are commonly occurring, widespread and resilient. Mitigation measures will be implemented for important ecological features which may be affected by the development. Over the longer term, any lost habitats will be restored as part of the restoration scheme for the project and there will be an overall net increase in the amount of hedgerow.

15.12 Potential interactions with local habitats and species associated with development activities are discussed in Chapter 5 (Biodiversity), Chapter 6 (Land, Soil and Geology), Chapter 7 (Water), Chapter 8 (Air Quality), Chapter 10 (Noise and Vibration) and Chapter 13 (Landscape).

Land, Soils and Geology

15.13 The initial soil stripping and ongoing rock extraction activities at the eastern satellite quarry area have potential implications for biodiversity (loss or degradation of habitat), water quality (contamination and sediment transport), air quality (through dust emissions), geological features of cultural / heritage value (Kilgreany Cave) and visual amenity (though use of excavated soils for landscaping works and long-term restoration / land-use).

15.14 The potential impact of the proposed activities on land, soil and geology and the potential interactions with other environmental topics are discussed in Chapter 6 (Land Soil and Geology), Chapter 5 (Biodiversity), Chapter 7 (Water), Chapter 8 (Air Quality), Chapter 12 (Cultural Heritage) and Chapter 13 (Landscape).

Water

15.15 The proposed eastern satellite quarry development and concrete production activities will not impact any surface water or ground water flows volumes as all development will be above the water table and there will be no on-site dewatering or off-site water discharges.

15.16 The proposed development could potentially impact water quality within the application site and, by extension, could also impact human health, soil and geology (land quality), biodiversity (habitats and species) and material assets (aquifers / public water supply).

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15.17 The potential impact of the proposed activities on the water environment and the potential interactions with other receiving environments are discussed in Chapter 7 (Water), Chapter 4 (Population and Human Health), Chapter 5 (Biodiversity), Chapter 6 (Land Soil and Geology), Chapter 9 (Climate), Chapter 11 (Material Assets) and Chapter 13 (Landscape).

Air Quality

15.18 The impact of the proposed development on the atmosphere and the potential interactions with other receiving environments are discussed in Chapter 8 (Air Quality), Chapter 4 (Population and Human Health), Chapter 5 (Biodiversity), Chapter 6 (Land, Soils and Geology) and Chapter 9 (Climate).

15.19 The Air Quality Chapter presented in EIAR Chapter 8, indicates that with the implementation of industry standard air quality mitigation measures, residual impacts arising from the proposed development will be insignificant or otherwise acceptable. On this basis therefore, interactions are considered to be also acceptable.

Noise and Vibration

15.20 The interaction between noise / vibration and other receiving environments is discussed in Chapter 10 (Noise), Chapter 4 (Population and Human Health) and Chapter 5 (Biodiversity).

15.21 The Noise and Vibration assessment, presented in EIAR Chapter 10, indicates that with the continued implementation of industry standard noise mitigation measures, the residual impacts from the proposed development are negligible or minor. On this basis therefore, interactions are considered to be also acceptable.

Material Assets

15.22 The impact of the proposed development on material assets and its only key interaction, that on the public water supply at Dungarvan, is addressed in Chapter 12 (Material Assets) and Chapter 7 (Water).

15.23 In the absence of any groundwater dewatering and given the location of the satellite quarry development beyond the defined outer source protection zone (SPZ) and the proven effectiveness of proposed mitigation and environmental management systems at Cappagh Quarry, it is concluded that the proposed development will not impact the existing public water supply.

Cultural Heritage

15.24 The cultural heritage impacts of the proposed development are partly tied to soil stripping activities at the satellite quarry area and the potential for impact on any existing archaeological resource or on Kilgreany Cave, at greater distance to the south-west of the application site.

15.25 The impact of the planned development on cultural heritage and the potential interaction with other receiving environments are discussed in Chapter 12 (Cultural Heritage), Chapter 6 (Land, Soil and Geology) and Chapter 13 (Landscape).

Landscape and Visual

15.26 The proposed satellite quarry development and construction of a new concrete batching plant will impact the existing landscape and visual amenity, with potential implications for human beings, habitats, land quality and archaeology.

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15.27 The impact of the planned development on the landscape and the potential interaction with other receiving environments are discussed in Chapter 13 (Landscape), Chapter 4 (Population and Human Health), Chapter 5 (Biodiversity), Chapter 6 (Land, Soil and Geology) and Chapter 12 (Cultural Heritage). Long-term site restoration proposals, to be implemented on cessation of site-based activities are presented in Figure 2-4 of this EIA Report.

Traffic

15.28 Potential interactions associated with traffic movements from the continued extraction activities at the satellite quarry area and existing / proposed added value activities (ground limestone production and concrete production) are discussed in Chapter 4 (Population and Human Health), Chapter 8 (Air Quality) and Chapter 10 (Noise).

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INTRODUCTION

16.1 This Chapter summarises the undertakings and environmental commitments made in the Environmental Impact Assessment (EIA) Report in respect of the proposed satellite quarry development on lands to the east of Cappagh Quarry, linked to it by a tunnel underpass beneath the local access passageway, and the proposed construction and operation of a new concrete batching plant at the existing quarry.

Population and Human Health

16.2 The following measures are proposed to mitigate potential impacts on population and human health:

- Construction and operational stage activities which have the potential to generate dust and noise, potentially impact human health, cause nuisance or increase traffic related safety risks will be managed and controlled in line with the undertakings provided in respect of the relevant environmental topics below;
- Working hours will be in line with the existing hours worked at Cappagh Quarry (and consistent with the operational hours set by Condition 3 of the current quarry planning permission, Planning Ref. No. PD06/1599 and PL24.225443). These will be between 07.00 hours and 20.00 hours Monday to Friday and 07.00 and 14.00 hours on Saturday, with no operations on Sundays or Public Holidays.
- Extraction and value-added activities at the quarry will continue to provide direct full-time employment for up to 10 site-based personnel (depending on output levels) and will also support indirect employment, principally amongst HGV drivers / hauliers, and to a lesser extent local suppliers.
- Vegetation around the proposed access gates and crossing point will be cut back to improve visibility for haulage trucks crossing the access passageway at ground level over the initial construction period (as they transfer soil, rock and aggregate between the satellite quarry and existing quarry).
- Traffic signage will be provided along the access passageway and the temporary haulage route between the two quarries to warn of crossing traffic ahead.
- The access passageway will be temporarily diverted to facilitate the construction and installation of the proposed tunnel underpass. The diversion will take occasional traffic along the passageway away from the works area and will follow established field boundaries.
- Following completion of the tunnel underpass and subsequent backfilling to ground level, the access passageway will be re-instated to the same alignment and standard as at the present time. Perimeter bunds and chainlink fencing will also be re-established either side of the passageway and bunds will be planted with a mix of native plants and hedging to re-establish the visual screening provided by vegetation.
- Any potential occupational hazards arising from site activities will be managed and mitigated through continued implementation of site safety protocols, health and safety regulations and active management of all on-site works.
- To address community concerns around environmental emissions, nuisance potential and public safety issues, Roadstone will comply with all conditions in respect of environmental and traffic management / control attached to any planning permission granted.
- All site-based activities and associated environmental emissions will be subject to continuous, ongoing monitoring to ensure compliance with emission limit values (ELV's) set by the Planning Authority.

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Biodiversity

16.3 The biodiversity value of the application site at Cappagh Quarry has been significantly impacted by ongoing agricultural activities at the satellite quarry area and by historic extraction activities for that section of the application site within the existing quarry footprint.

16.4 The habitats within the application site are commonly occurring, widespread and resilient. There will be a loss of agricultural grassland, hedgerow and scrub as a result of the proposed development. These habitats will be restored over the medium to long term as part of the proposed restoration plan for this project.

16.5 The following measures are proposed to mitigate potential impacts on biodiversity;

- The demolition of the derelict building and vegetation clearance in the north-western corner of the satellite quarry will be carried out outside of the bird nesting season (between 1st March and 31st August inclusive).
- Additional hedgerow and shrub planting will be undertaken on perimeter screening berms around the proposed satellite quarry at the outset of the site development works. Additional hedgerow will be planted within the existing / satellite quarry footprint after extraction works have finally ceased and the ground has been prepared for return to grassland.
- At the north-eastern section of the proposed satellite quarry area, approximately 0.6ha will be planted with semi-natural woodland species.
- All hedges planted as part of the proposed restoration plan will be comprised of native and typically occurring species present in the local vegetation and/or hedgerows. Hawthorn and blackthorn will be the most common species used. Hazel, holly, crab apple and elder will also be used to a lesser extent.
- Planting will be carried out in the appropriate season by a suitably qualified landscape contractor. All plants will be protected with spiral guards or alternatively with rabbit proof fencing.
- Aftercare will consist of establishment maintenance for 2 years following the planting works (minimum 3 maintenance visits per year). This will include weed control, replacement planting where required and the adjustment/removal of tree ties and spiral guards.

Land, Soil and Geology

16.6 The following measures are proposed to mitigate potential adverse impacts of the proposed development on the receiving soil and subsoil environment;

- A site-specific Soil Management Plan will be developed in advance of the proposed preparatory site works (soil stripping) which will incorporate best practice measures for the handling and management of excavated soils and to preserve the structure and integrity of the existing soil resource, in particular to avoid severe deformation and minimise compaction by excavators and dump trucks.
- During the preparatory site works good practice measures will be implemented to limit the effects of erosion on excavated or stockpiled soils. Stockpiles or perimeter screening mounds of soil will be re-vegetated where they are likely to be in place for a sufficient length of time to justify such a measure. The double handling of soil will also be minimised as much as possible in order to preserve the integrity of topsoil materials for later re-use.
- Extraction and processing activities at the quarry will continue to adhere to the Health and Safety Authority Safe Quarry Guidelines in relation to the Safety Health and Welfare at Work

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(Quarries) Regulations (2008-2019). This will limit the potential for unplanned events such as instability in rock and aggregate stockpiles and at quarry faces.

- The temporary rock face exposed in the excavations for the proposed tunnel underpass will be recorded for geological heritage interest. As the satellite quarry is developed and pushes further in an easterly direction, fresh geological exposures will be developed which can be examined and/or recorded to increase knowledge about the geological formation. Roadstone will continue to liaise with the Geological Survey of Ireland as the quarry is developed and will facilitate appropriate future inspection and recording of temporary face exposures.
- Any geological features of heritage interest on final quarry perimeter faces will be preserved and incorporated into the final restoration scheme, consistent with the geological heritage objectives for the existing quarry site.
- To also protect land quality and the geological environment, all undertakings provided in respect of the groundwater protection (below), particularly around refuelling and routine servicing of plant and machinery and management of chemicals will be implemented.
- Following completion of extraction and all site-based operations, soils stored across the application site will be used to restore the quarry floor to a natural grassland habitat, in line with the long-term site restoration plan.

Water

16.7 The following measures are proposed to mitigate potential development impacts on groundwater at the application site. Many of these measures are in place at the existing quarry and have proven effective in minimising impact on the underlying groundwater and will therefore continue to be implemented over the lifecycle of the proposed satellite quarry development and readymix concrete plant. Many of the measures focus on preventing the introduction of contamination via fuel / oil / chemical leak or spills to the ground and underlying groundwater table.

- The floor of the satellite quarry area will be at 10mOD, at least 1m above the identified winter groundwater level. This will ensure that groundwater levels will not be affected by the proposed development.
- Prior to commencement of soil stripping works, silt fencing will be placed down-gradient of the satellite quarry area. The fencing will be embedded in the soil to ensure any surface water run-off is captured and filtered. Surface water held in ponds or closed depressions will be allowed to infiltrate to ground or evaporate.
- Daily monitoring of the overburden stripping / landscaping works will be undertaken by a competent person. All necessary preventative measures will be implemented to ensure no entrained sediment or deleterious matter will enter any downstream receiving waters.
- All soil and subsoil overburden stockpiles / perimeter mounds will be vegetated as soon as possible to minimise the risk of rain / wind erosion and the generation of suspended solids in any run-off.
- Restoration of the existing / satellite quarry footprint using topsoil and overburden will be carried out on an on-going basis to reduce the vulnerability of the bedrock aquifer to possible contamination by surface activities.
- No plant / machinery maintenance and repairs will take place on the quarry floor to prevent accidental spillages infiltrating to ground or contaminating any ponded surface water. All maintenance and repairs will take place under cover in the existing maintenance shed or on the external paved area beside it.

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- In general, mobile plant, machinery, HGVs and lorries will be refuelled at the existing refuelling area, located beside the existing maintenance shed / workshop. Refuelling at this location takes place over a sealed surface with any surface water run-off directed to a hydrocarbon separator prior to discharge to ground. The interceptor will be regularly maintained on an ongoing basis.
- Any refuelling of mobile crushing plant and excavators on the quarry floor will be undertaken using double skinned bowsers.
- All plant will be regularly maintained and inspected daily for leaks of fuels, lubricating oil or other contaminating liquids.
- All oils and greases will be stored under cover in the maintenance shed.
- Fuel storage will continue at the existing bunded fuel storage facility at the quarry.
- All petroleum-based products (lubricating oils etc.) will be stored on drip trays under cover in the existing maintenance shed to prevent pollution due to accidental leakages.
- Waste oil and grease containers will be stored on drip trays under cover in the maintenance shed. Waste containers will be collected and disposed of by a suitably licenced contractor.
- Concrete additives will be stored in a dedicated storage shed to be constructed beside the concrete batching plant. Within the shed, they will be stored in double skinned tanks and/or over bunded areas to prevent spillages and leaks to ground.
- An emergency spill response kit (with containment booms, absorbent materials and drip tray) will be kept on-site to contain migration of any accidental spillages, should they occur.
- Plant operators will be briefed during 'toolbox' talks and site induction about where the spill kit is kept and how and when it is deployed.
- Site based staff will regularly undertake visual inspection and periodic testing of the integrity of tanks, drums, bunded pallets and double-skinned containers.
- All chemicals and petroleum-based products, mechanical and electrical equipment, plant and machinery will be removed from the quarry and application site on permanent cessation of quarrying activities as part of the final restoration scheme.
- Returning concrete trucks will be washed out at a dedicated washout area to be installed at the side of the concrete batching plant. Wash-water from the trucks will be recycled through a closed system of settlement tanks and pumped to a storage tank for re-use in the manufacture of concrete and/or in truck washout.
- All quarry traffic will be routed over paved or hardstanding surfaces to avoid build up or accumulation of mud. Insofar as possible, trafficking over or through restored surfaces or claybound materials / fines will be avoided to avoid disturbance and minimise potential generation of suspended solids in any run-off.
- Speed limits will also be enforced for all traffic at the quarry to further reduce the likelihood and significance of collisions and the potential risk of fuel or oil spills.
- A traffic management system will be implemented at the quarry to reduce conflicts between vehicles and the potential risk of collisions and associated fuel or oil spills.
- Groundwater level loggers will remain in place at the existing boreholes and will continue to monitor groundwater level data for the life of the development.
- Groundwater quality testing for a range of selected key parameters will be undertaken on samples recovered from the groundwater monitoring boreholes on a biannual basis.

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Air Quality

16.8 The following measures are proposed to mitigate potential development impacts on air quality;

- Excavated soils will be re-used as much as possible in the construction of vegetated perimeter screening berms or in quarry floor restoration works. Grass cover will be established at the earliest opportunity over any restored landforms.
- Water sprays from a tractor drawn bowser will be used to moisten exposed surfaces and haul routes during dry weather periods.
- As and when required, a mist cannon will be used to dampen down fugitive dust emissions around the mobile rock crusher.
- All HGVs exiting the facility will be routed through a wheelwash facility with an overhead spraybar (to also dampen aggregates being exported off-site).
- A road sweeper will be called out (if ever required) to reduce the amount of particulates which can potentially become air-borne along the public road network.
- Drop heights will be minimised to minimise potential dust blows when end-tipping and handling any imported sand and / or aggregates.
- Where possible, soil / materials stockpiles will be placed in areas where there is some protection or shelter from wind (e.g., against quarry faces).
- Haulage routes will be over paved or hardstanding surfaces and away from sensitive receptors. The length of haul routes will be minimised insofar as possible.
- Vehicle speeds will be enforced and communicated by way of signage / staff training;
- Landscape planting will be undertaken around the satellite quarry boundary to reinforce existing hedgerows and reduce the potential impact of dust blows.
- If required to achieve emission limits, a sprinkler system will be installed along haul roads and/or around heavily worked areas.
- Regular dust monitoring will be undertaken as per planning requirements in order to demonstrate compliance with emissions limits and/or standards.

Climate

16.9 The following measures are proposed to mitigate potential impacts on climate :

- Prior to commencement, a review of operations will be undertaken to establish what, if any, additional measures could be implemented to ensure the proposed development is more resilient and less vulnerable to projected future climate change impacts.
- Roadstone will undertake a greenhouse gas (GHG) assessment at Cappagh Quarry and based on initial monitoring results / assessments made, the company will establish short, medium, and long-term objectives for a GHG reduction programme and energy management plan.

Noise

16.10 The following measures are proposed to mitigate potential noise impacts;

- Existing perimeter hedgerows will be retained around the satellite quarry perimeter.
- Screening berms will be constructed along the satellite quarry boundary prior to commencement of extraction activities to act as acoustic barriers to the closest residences.
- Additional vegetation / planting will be provided along the perimeter screening berms.
- Screening berms will be inspected on a regular basis and maintained as necessary.

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- All plant items will be properly and regularly maintained and operated according to the manufacturers' recommendations, in such a manner as to avoid causing excessive noise (i.e. All moving parts are kept well lubricated, all cutting edges are kept sharpened, the integrity of silencers and acoustic hoods are maintained).
- All mobile plant used at the development will have noise emission levels that comply with the limiting levels defined in EC Directive 2000/14/EC and any subsequent amendments.
- All plant will be fitted with effective exhaust silencers which are maintained in good working order to meet manufacturers' noise rating levels. Any defective silencers will be replaced immediately.
- Any deliveries to the quarry will be programmed to arrive during permitted working times only.
- Care will be taken when end-tipping or unloading vehicles to reduce / minimise potential noise disturbance to local residents.
- Access / internal haul roads will be kept clean and maintained in a good state of repair (i.e. Any potholes are filled and large bumps removed) to avoid unwanted rattle and "body-slap" from heavy goods vehicles.
- Vehicles waiting within the quarry will be prohibited from leaving their engines running and there will be no unnecessary revving of engines.
- Regular noise monitoring will be undertaken as per planning requirements in order to demonstrate compliance with emissions limits and/or standards. Additional vibration monitoring will be undertaken to the south of the application site to monitor future blast borne vibration in the vicinity of Kilgreany Cave.
- Rock blasting will be carried out between the hours of 11:00 hrs to 15:00 hrs from Monday to Friday to ensure that there is no possible impact on dairy cows around milking time. Blasting shall not be carried out on Saturdays, Sundays or Public Holidays.
- Notification of each blast shall be given in writing or by other means 48 hours in advance of each blast to all residences and farms within 500m radius of the quarry. Blast notifications shall be provided by pre-blast and post-blast siren warnings.
- All blasting operations shall be carried out by a certified 'shotfirer' in accordance with the relevant health and safety regulations. The optimum blast ratio shall be maintained, and the maximum instantaneous charge shall be optimised.
- The blast design and blasting methodology will provide for ongoing review of monitoring results to optimise and ensure consistent blast designs.
- Blast clearance areas shall be established for nearby farm livestock (depending on the location of the blast) with the support and co-operation of local farmers.
- Blast dates and time are scheduled and agreed between the quarry manager, blast engineer, explosives supervisor and Gardaí.

Material Assets

16.11 In order to safeguard groundwater quality in the underlying karstified bedrock, local domestic supplies and the Dungarvan Public Water Supply boreholes further afield, mitigation measures will focus on continued working above the groundwater table and ensuring the safe storage and management of fuels and other hazardous materials at the quarry.

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16.12 No additional mitigation measures, over and above those previously under other topic headings are required to in respect potential development impacts on infrastructure, utilities or sensitive receptors.

Cultural Heritage

16.13 The following mitigation measures are proposed in respect of potential impacts on cultural heritage;

- Anomalies identified by the geophysical survey will be archaeologically tested under licence to determine their archaeological significance in advance of the proposed satellite quarry development on the lands to the east of Cappagh Quarry. Any anomalies that are confirmed by testing to be of archaeological significance will be preserved by record in advance of development.
- Potential blast related impacts on Kilgreany Cave will be mitigated through the control and monitoring of ground-borne vibrations to ensure they are within prescribed threshold limits. A new blast monitoring location (V5) will be established in the field 170m to the south of the application site to monitor future blast borne vibration and demonstrate compliance with emissions limits and/or standards.

Landscape

16.14 The proposed satellite quarry development and concrete batching plant incorporates a number of proposals into the overall design and layout in order to limit potential landscape and visual effects. The following landscape / restoration measures are proposed :

- Additional hedgerow planting will be undertaken on the perimeter screening berms to be constructed around the satellite quarry.
- A tree copse will be established in the north-eastern corner of the satellite quarry area and at the base and corner of the northern and eastern faces of the existing quarry (to provide screening and create a wildlife habitat).
- The tallest elements of the proposed concrete plant will be painted in a suitable grey / green colour, to be agreed with the local authority, so that these elements merge with the surrounding vegetation, rather than provide a conspicuous contrast.
- The quarry floor will be restored in phases to a grassland / scrub habitat using overburden stored on site and/or to be stripped from the satellite quarry area.
- All production plant (fixed and mobile), equipment and stockpiles will be removed from the application site and any hardstanding areas on site will be broken up on completion of extraction works.
- As part of the final restoration works, native hedgerows will be planted across the restored quarry floor to break up the large quarry footprint and to match surrounding field patterns.

Traffic

16.15 The principal effect of the proposed development will be continuation of permitted HGV traffic movements on and off the public road network at the existing Roadstone access junction. The following measures are proposed to avoid, remediate or mitigate potential traffic impacts;

- The existing access arrangements and sightlines at the quarry access / egress junction will be improved to meet current Development Plan requirements. Specifically, the existing boundary wall and hedge to the east of the existing entrance will be set back, and existing structure(s) removed.

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- The access passageway will be temporarily diverted to facilitate the construction and installation of the proposed tunnel underpass. The diversion will take occasional traffic along the passageway away from the works area and will follow established field boundaries. On completion of these works, the access passageway will be re-instated to the same alignment and standard as at the present time.
- Future quarry output (from all combined existing and future extraction, processing and added value activities) will not exceed a maximum of 400,000 tonnes per annum, consistent with the maximum output levels permitted by the current quarry planning permission (Planning Ref. No. 06/1599 and An Bord Pleanála Reference No. PL24.225443).
- Based on the projected maximum annual output levels, the proposed development at Cappagh Quarry will generate a combined maximum of no more than 100 HGV return trips per day (equivalent to 100 HGV movements inward and 100 HGV movements outward per day).
- Traffic exiting the quarry and heading for the N72 National Secondary Road will travel westwards along the L2018 Local Road to Whitechurch Crossroads, turn right onto the L2019 Local Road and continue in a northerly direction up to the junction with the N72. Alternatively, and only when access is restricted along this route, traffic will continue west, straight through Whitechurch Crossroads and continue along the L2018 Local Road towards the N72 at Ballynahemery;
- Traffic exiting the quarry and heading to the R671 Regional Road (and to the N25 National Primary Road beyond) will turns left onto the L2019 Local Road at Whitechurch Cross-Roads and continue in a south- westerly direction up to its junction with the R671 at Knocknascagh Crossroads;
- All HGV traffic egressing the quarry will pass through the existing wheelwash (fitted with an overhead spraybar) and over a section of paved internal road to minimise any mud and debris being carried onto the public road network;
- Unpaved sections of internal haul road will be regularly inspected and maintained and kept free of potential accumulations of mud, excavated materials, debris and/or rubbish; and
- Vehicles speeds internally within the quarry will be limited and subject to a speed limit.

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