Environmental Impact Assessment Report

Volume 3 of 3 – Appendices

For

FURTHER DEVELOPMENT OF UMMERA GRAVEL PIT MACROOM, COUNTY CORK



Prepared for:
Drimoleague Concrete Works Limited
Bredagh Cross
Drimoleague
County Cork

Prepared by:
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

August 2026

Environmental Impact Assessment Report

Volume 3 of 3 – Appendices

For

FURTHER DEVELOPMENT OF UMMERA GRAVEL PIT MACROOM, COUNTY CORK

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CORK COUNTY COUNCIL & ABP DECISIONS

Our Case Number: ABP-308194-20

Your Reference: Drimoleague Concrete Works Limi

An Coimisiún Pleanála

Keohane Geological and Environmental Consultanc
C/o Dan Keohane
Ivy House
Clash
Carrigrohane
Co. Cork

Date: 01 October 2025

Re: Further development of a quarry
Ummera Gravel Pit, Ummera, County Cork

Dear Sir / Madam,

I have been asked by An Coimisiún Pleanála to refer to the above-mentioned appeal.

The Commission has examined the appeal and is of the opinion that certain information is necessary for the purpose of enabling it to determine the appeal.

In accordance with section 132 of the Planning and Development Act, 2000, (as amended), you are required to submit, on or before **01 April 2026**, the following documents:

Item 1- Appropriate Assessment: In accordance with the requirements of Article 6(3) as related to screening the need for appropriate assessment of a project under part XAB, section 177U and 177V of the Planning and Development Act 2000 (as amended), you are requested to submit an Appropriate Assessment Screening Report, and if deemed necessary, a Natura Impact Assessment, so as to enable An Coimisiún Pleanála, as competent authority, to determine that the proposed further development alone or in combination with other plans and projects will not result in likely significant effects on any designated site(s). you may wish to have regard to the OPR Practice Note PN01 Appropriate Assessment Screening for Development Management in this regard.

Item 2- Water Framework Directive: In order to determine that the subject development will not result in a risk of deterioration on any water body (rivers, lakes, groundwaters, transitional and coastal) either qualitatively or quantitatively or on a temporary or permanent basis or otherwise jeopardise any water body in reaching its WFD objectives, you are requested to submit a Water Status Impact Assessment which adequately addresses this matter.

Item 3- Clarity regarding extent of proposal: you are requested to submit updated information including information contained in the submitted EIAR, which clearly differentiates between the works included in the Substitute Consent application (ABP-308036-20) and those proposed in this current s37L application.

Teil	**Tel**	(01) 858 8100		
Glao Áitiúil	**LoCall**	1800 275 175		
Facs	**Fax**	(01) 872 2684	64 Sráid Maoilbhríde	64 Marlborough Street
Láithreán Gréasáin	**Website**	www.pleanala.ie	Baile Átha Cliath 1	Dublin 1
Ríomhphost	**Email**	communications@pleanala.ie	D01 V902	D01 V902

Item 4- Report of DAU relating to freshwater pearl mussel: you are requested to address the following comments of the DAU and submit revised proposals, if deemed necessary. 'the River Laney contains a very small population of the freshwater pearl mussel, a species listed in the Second Schedule of the Wildlife Acts 1976-2018 and protected under Section 23 of that Act. There are recent records of mussels in the stretch between the confluence of the Clashavoon stream and the Laney River. As a consequence, all necessary measures should be taken to avoid release of sediment and hydrocarbons from the operating quarry (including allowance of sufficient land area for settlement ponds to operate at an effective scale) and the stream monitored regularly'.

Item 5- EIAR (General): In addressing the following items set out below, you should have regard to the information contained within the Guidelines on the Information to be contained in Environmental Impact Statements' EPA (2022) with regards to the general approach/structure, preparation of EIAR and presenting of information. The environmental impact assessment should identify, describe and assess in an appropriate manner, in the light of each individual topic, the direct and indirect significant effects of the project. The applicant should have regard to the criteria for assessment of effects, as set out in these aforementioned Guidelines, including the language/terminology required. You are also requested to provide a summary table after the impact assessment in each chapter which sets out each potential impacts assessed, the significance of the effect and the post mitigation residual impact of each to ensure each has been correctly taken through the process and assessed in the EIAR chapter. The structure and information to be contained in the Non-Technical Summary should also follow the guidance contained in the aforementioned Guidelines.

Item 6- EIAR- Surveys and Assessments: You are requested to a. update all surveys, assessments and data included in the submitted EIAR including all ecological surveys, traffic surveys, CSO data. b. outline the quality, significance and duration of identified effects, together with an assessment of the cumulative effects, including the effects of other projects as relevant, which would include the existing quarry operations should be undertaken c. an assessment on Major Accidents and Natural Disasters as required by the Act

Item 7- Population and Human Health (EIAR): You are requested to submit an assessment of the impacts on population and human health for the entire operational phase.

Item 8- Material Assets (EIAR): a. the Material Assets chapter should also include the impacts on other material assets where applicable, including, inter alia, built services and waste management. b. You are requested to submit updated traffic counts noting that the opening of the Macroom by-pass has occurred since previous counts were carried out. An updated Traffic and Transport Assessment should be completed using this new data which should assess the traffic impact from what will be a revised commencement year post 2025 and an assessment of a future year forecast that takes account changes in road use patterns. This should also consider growth factors as provided by TII. This Traffic and Transport Assessment should be a stand-alone document. c. You should explore of all available options to provide the visibility splays of 160m in both directions of entrance, together with outlining any constraints to provision of same. If the required sight line visibility splay of 160m cannot be achieved, justification for proposing a shorter visibility splay should be provided which may include consideration of the actual operational speed on the road network.

Item 9- Biodiversity (EIAR): You are requested to submit an Ecological Impact Assessment. This should be presented as a stand-alone document.

Item 10- Air and Climate (EIAR): You are requested to submit a more considered assessment of the impacts that the further development of the quarry will have on climate in light of current legislation. This should consider the various emissions associated with the development particularly with regard to greenhouse gas emissions.

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Item 11- Landscape and Visual (EIAR): a. In relation to Chapter 11, Section 11.3, You are requested to provide clarity in relation to the rating for visual intrusion (Little/None, Low, Moderate and High), in particular the term Slight has been included in Table 11-1 but in this context has not been qualified. You are requested to provide clarity on this and ensure the methodology for assessing visual impacts is clearly outlined. b. You are requested to update the landscape and visual impact assessment with the benefit of more accurate visual aids of the restored quarry, which may be provided by way of a photomontage or an appropriate visual aid. c. You are requested to submit a detailed Site Restoration Plan for the quarry, which should include the timing and phases of restoration. The timing is key to demonstrating that the necessary protection of the underlying aquifer has been restored and thus reduce vulnerability post works. The details of the materials, plant and equipment that will be utilised during these restoration works should be also be provided. The plan should provide proposals intended to restore habitats on site and to improve its biodiversity value.

Item 12- Hydrology: a. You are requested to submit details of proposed water supply to the site welfare facilities b. The proposal includes for the decommissioning of an on-site septic tank and percolation area and replacing it with a sealed 2.2m3 underground tank. You are requested to submit details in relation to this underground tank in terms of its location and function. Furthermore, You are requested to submit details regarding the operation of this underground tank and its intended function, namely shall it be used as a holding tank which will be emptied regularly or if it is intended to operate in connection with the existing percolation area.

Note: It is requested that all changes/updates are clearly identified for the purpose of third-party involvement. In this regard, please submit two hard copies and one electronic copy of the above information. The further information referred to above should be received by the Commission within 6 months from the date of this notice, unless agreed otherwise with An Coimisiún Pleanála .

If the document required are not received before the end of the specified period, the Commission will dismiss or otherwise determine the appeal without further notice to you in accordance with section 133 of the 2000 Act, (as amended). Your submission in response to this notice must be received by the Commission not later than **5.30 p.m. on the date specified above**.

Please quote the above appeal reference number in any further correspondence.

If you have any queries in the meantime, please contact the undersigned officer of the Commission at appeals@pleanala.ie.

Yours faithfully,

Dáire Littleton Caden
Executive Officer
Direct Line: 01-8737

BP71 Registered Post

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Our Case Number: ABP-308194-20

Your Reference: Drimoleague Concrete Works Limi

An Coimisiún Pleanála

Keohane Geological and Environmental Consultancy
C/o Dan Keohane
Ivy House
Clash
Carrigrohane
Co. Cork

Date: 12 February 2026

Re: Further development of a quarry
Ummera Gravel Pit, Ummera, County Cork

Dear Sir / Madam,

I have been asked by An Coimisiún Pleanála to refer to the above-mentioned appeal.

The Commission has examined the appeal and is of the opinion that certain information is necessary for the purpose of enabling it to determine the appeal.

In accordance with section 132 of the Planning and Development Act, 2000, (as amended), you are required to submit, on or before **31 August 2026,** the following information:

Item 1 - Appropriate Assessment:

In accordance with the requirements of Article 6(3) as related to screening the need for appropriate assessment of a project under part XAB, section 177U and 177V of the Planning and Development Act 2000 (as amended), you are required to submit an Appropriate Assessment Screening Report, and if deemed necessary, a Natura Impact Assessment, so as to enable An Coimisiún Pleanála, as competent authority, to determine that the proposed further development alone or in combination with other plans and projects will not result in likely significant effects on any designated site(s). You may wish to have regard to the OPR Practice Note PN01 Appropriate Assessment Screening for Development Management in this regard.

Item 2 - Water Framework Directive:

In order to determine that the subject development will not result in a risk of deterioration on any water body (rivers, lakes, groundwaters, transitional and coastal) either qualitatively or quantitatively or on a temporary or permanent basis or otherwise jeopardise any water body in reaching its WFD objectives, you are required to submit a Water Status Impact Assessment which adequately addresses this matter.

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Item 3 - Clarity regarding extent of proposal:

You are required to submit updated information including information contained in the submitted EIAR, which clearly differentiates between the works included in the Substitute Consent application (ABP-308036-20) and those proposed in this current s37L application.

Item 4 - Report of DAU relating to freshwater pearl mussel:

You are required to address the following comments of the DAU and submit revised proposals, if deemed necessary. 'The River Laney contains a very small population of the freshwater pearl mussel, a species listed in the Second Schedule of the Wildlife Acts 1976-2018 and protected under Section 23 of that Act. There are recent records of mussels in the stretch between the confluence of the Clashavoon stream and the Laney River. As a consequence, all necessary measures should be taken to avoid release of sediment and hydrocarbons from the operating quarry (including allowance of sufficient land area for settlement ponds to operate at an effective scale) and the stream monitored regularly'.

Item 5 - EIAR (General):

In addressing the following items set out below, you should have regard to the information contained within the Guidelines on the Information to be contained in Environmental Impact Statements' EPA (2022) with regards to the general approach/structure, preparation of EIAR and presenting of information. The environmental impact assessment should identify, describe and assess in an appropriate manner, in the light of each individual topic, the direct and indirect significant effects of the project. You should have regard to the criteria for assessment of effects, as set out in these aforementioned Guidelines, including the language/terminology required. You are also required to provide a summary table after the impact assessment in each chapter which sets out each potential impacts assessed, the significance of the effect and the post mitigation residual impact of each to ensure each has been correctly taken through the process and assessed in the EIAR chapter. The structure and information to be contained in the Non-Technical Summary should also follow the guidance contained in the aforementioned Guidelines.

Item 6 - EIAR- Surveys and Assessments:

You are required to:

1. **Update all surveys, assessments and data included in the submitted EIAR including all ecological surveys, traffic surveys, CSO data.**
2. **Outline the quality, significance and duration of identified effects, together with an assessment of the cumulative effects, including the effects of other projects as relevant, which would include the existing quarry operations should be undertaken**
3. **An assessment on Major Accidents and Natural Disasters as required by the Act**

Item 7- Population and Human Health (EIAR):

You are required to submit an assessment of the impacts on population and human health for the entire operational phase.

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Item 8 - Material Assets (EIAR):

1. **The Material Assets chapter should also include the impacts on other material assets where applicable, including, inter alia, built services and waste management.**
2. **You are required to submit updated traffic counts noting that the opening of the Macroom by-pass has occurred since previous counts were carried out. An updated Traffic and Transport Assessment should be completed using this new data which should assess the traffic impact from what will be a revised commencement year post 2025 and an assessment of a future year forecast that takes account changes in road use patterns. This should also consider growth factors as provided by TII. This Traffic and Transport Assessment should be a stand-alone document.**
3. **You should explore of all available options to provide the visibility splays of 160m in both directions of entrance, together with outlining any constraints to provision of same. If the required sight line visibility splay of 160m cannot be achieved, justification for proposing a shorter visibility splay should be provided which may include consideration of the actual operational speed on the road network.**

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1. **In relation to Chapter 11, Section 11.3, You are required to provide clarity in relation to the rating for visual intrusion (Little/None, Low, Moderate and High), in particular the term Slight has been included in Table 11-1 but in this context has not been qualified. You are required to provide clarity on this and ensure the methodology for assessing visual impacts is clearly outlined.**
2. **You are required to update the landscape and visual impact assessment with the benefit of more accurate visual aids of the restored quarry, which may be provided by way of a photomontage or an appropriate visual aid.**
3. **You are required to submit a detailed Site Restoration Plan for the quarry, which should include the timing and phases of restoration. The timing is key to demonstrating that the necessary protection of the underlying aquifer has been restored and thus reduce vulnerability post works. The details of the materials, plant and equipment that will be utilised during these restoration works should also be provided. The plan should provide proposals intended to restore habitats on site and to improve its biodiversity value.**

Item 12- Hydrology:

1. **You are required to submit details of proposed water supply to the site welfare facilities**
2. **The proposal includes for the decommissioning of an on-site septic tank and percolation area and replacing it with a sealed 2.2m3 underground tank. You are required to submit details in relation to this underground tank in terms of its location and function. Furthermore, you are required to submit details regarding the operation of this underground tank and its**

intended function, namely shall it be used as a holding tank which will be emptied regularly or if it is intended to operate in connection with the existing percolation area.

Note: It is required that all changes/updates are clearly identified for the purpose of third-party involvement. In this regard, please submit two hard copies and one electronic copy of the above information.

If information required is not received before the end of the specified period, the Commission will dismiss or otherwise determine the appeal without further notice to you in accordance with section 133 of the 2000 Act, (as amended). Your submission in response to this notice must be received by the Commission **on or before the date specified above**.

Please quote the above appeal reference number in any further correspondence.

If you have any queries in the meantime, please contact the undersigned officer of the Commission at appeals@pleanala.ie.

Yours faithfully,

Cathy Carleton
Executive Officer
Direct Line:

BP71 Registered Post

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An Bord Pleanála

PLANNING AND DEVELOPMENT ACTS 2000 TO 2013

Cork County

Planning Authority Register Reference Number: CKQY003

An Bord Pleanála Reference Number: 04.QV.0116

LOCATION OF QUARRY: Ummera, Macroom, County Cork.

REVIEW REQUESTED by Drimoleague Concrete Works Limited of Lahadane, Bantry, County Cork in respect of;

(i) **the determination** by Cork County Council, on the 22nd day of August, 2012, under subsection (2)(a)(i) of section 261A of the Planning and Development Act, 2000, as amended by the insertion of section 75 of the Planning and Development (Amendment) Act 2010 and as further amended by the European Union (Environmental Impact Assessment and Habitats) Regulations 2011 and European Union (Environmental Impact Assessment and Habitats) Regulations 2012, which determination was that;

development was carried out after the 1st day of February, 1990, which development would have required, having regard to the Environmental Impact Assessment Directive, an environmental impact assessment, but that such an assessment was not carried out or made, and

(ii) **the decision** by Cork County Council, also on the 22nd day of August, 2012, under subsection (3)(a) that;

permission was granted in respect of the quarry under Part IV of the Local Government (Planning and Development) Act, 1963, and

the requirements in relation to registration under section 261 of the 2000 Act, as amended were fulfilled.

BOARD DECISION

The Board in exercise of its powers, conferred on it under section 261A of the Planning and Development Act, 2000, as amended, and based on the Reasons and Considerations marked (1) set out below, decided to **confirm** the determination of the planning authority in respect of this development made under section 261A(2)(a)(i) of the Planning and Development Act 2000, as amended, and

based on the Reasons and Considerations marked (2) set out below, decided to **confirm** the decision of the planning authority in respect of this development made under section 261A(3)(a) of the Planning and Development Act 2000, as amended

MATTERS CONSIDERED

In making its decision, the Board had regard to those matters to which, by virtue of the Planning and Development Acts and Regulations made thereunder, it was required to have regard. Such matters included any submissions and observations received by it in accordance with statutory provisions.

REASONS AND CONSIDERATIONS (1)

Having regard to:

(a) the provisions of the Planning and Development Acts, 2000 to 2013, and in particular Part XA and section 261A,

(b) the European Communities (Environmental Impact Assessment) Regulations 1989 – 1999, and the Planning and Development Regulations 2001 (as amended), which, in Schedule 5, restate the prescribed classes of development requiring environmental impact assessment, and which in Schedule 7, set out the criteria for determining whether a development would or would not be likely to have significant effects on the environment,

(c) the documentation on the review file (planning authority register reference number CKQY0003) including available aerial photography,

(d) the planning history of the site in particular permissions granted by the planning authority under planning register reference numbers 375/76 and 1365/78,

(e) details of site registration by Cork County Council under section 261 of the Planning and Development Act 2000, as amended, for a quarry of 17 hectares (planning authority register reference QR01, An Bord Pleanála reference number 04.QC2002), and the conditions attached to same,

(f) the overall scale of the quarry and the rate and extent of expansion post 1st day of February, 1990 beyond the permitted boundary,

(g) the absence of any documentation on file to verify the claim that the quarry has the benefit of established pre - 1964 use,

(h) the report of the Inspector,

it is considered that development was carried out after 1st day of February, 1990 which development would have required having regard to the Environmental Impact Assessment Directive, an environmental impact assessment, but that such an assessment was not carried out.

REASONS AND CONSIDERATIONS (2)

The Board considered that

(a) planning permission was granted for this quarry under Part IV of the Local Government (Planning and Development) Act ,1963,

(b) quarrying at this site has extended beyond the boundaries indicated under planning register reference numbers 375/76 and 1365/78,

(c) the requirements in relation to registration under section 261 of the 2000 Act, as amended, were fulfilled in relation to this quarry site.

Member of An Bord Pleanála
duly authorised to authenticate
the seal of the Board.

Dated this day of 2014.

CORK COUNTY COUNCIL

PLANNING AND DEVELOPMENT ACTS 2000-2010, AS AMENDED

NOTICE PURSUANT TO SECTION 261 A (3) OF THE PLANNING & DEVELOPMENT ACT 2000 AS INSERTED BY SECTION 75 OF THE PLANNING AND DEVELOPMENT (AMENDMENT) ACT 2010, AS AMENDED

Our Ref: CKQY0003

Drimoleague Concrete Works Limited,
Glengarriff River,
Bantry,
Co. Cork.

RE: Quarry Development operated by Drimoleague Concrete Works Limited, at Ummera, Macroom. Reference CKQY0003

THE PLANNING AUTHORITY HAS DETERMINED PURSUANT TO SECTION 261A (2) OF THE PLANNING & DEVELOPMENT ACT 2000 AS INSERTED BY SECTION 75 OF THE PLANNING AND DEVELOPMENT (AMENDMENT) ACT 2010, AS AMENDED THAT:

Quarry development was undertaken post 1st February 1990 that would, having regard to the Environmental Impact Assessment Directive, have required an environmental impact assessment but that such an assessment was not carried out or made.

REASONS FOR DETERMINATION:

The quarry development expanded by 3.84 ha approx. post 1995. This expansion is evident on examination of the 1995, 2000 and 2005 aerial photography issued by the ordnance survey and from a site inspection.

This expansion results in the quarry being greater than 5ha in surface area and therefore results in the quarry being of a Class listed in Part 2 of Schedule 5. The extension has resulted in an increase in size greater than 25% of the quarry area and greater than 50% of the appropriate 5ha threshold. Accordingly EIA is required under Class 13 of Part 2, Schedule 5 of the Planning & Development Regulations 2001, as amended.

THE PLANNING AUTHORITY HAS DECIDED PURSUANT TO SECTION 261A SUBSECTION (3) OF THE PLANNING & DEVELOPMENT ACT 2000, AS INSERTED BY SECTION 75 OF THE PLANNING AND DEVELOPMENT (AMENDMENT) ACT 2010, AS AMENDED THAT:

- Planning permission was granted for the quarry.
- The quarry was registered under Section 261 of the Planning Acts.

REASONS FOR DECISION

Permission was granted for the quarry under Pl Reg. 76/375. The quarry has been subject to unauthorised extension that has given rise to the requirement for EIA.

THEREFORE YOU ARE DIRECTED TO APPLY TO AN BORD PLEANALA, 64 MARLBOROUGH STREET, DUBLIN 1, FOR SUBSTITUTE CONSENT IN RESPECT OF THE QUARRY, NOT LATER THAN 12 WEEKS AFTER THE DATE OF THIS NOTICE OR SUCH FURTHER PERIOD AS THE BORD MAY ALLOW. THE APPLICATION FOR SUBSTITUTE CONSENT SHALL BE MADE IN ACCORDANCE WITH SECTION 177E OF THE PLANNING & DEVELOPMENT ACT 2000, AS INSERTED BY SECTION 57 OF THE PLANNING & DEVELOPMENT ACT 2010, AS AMENDED AND THE PLANNING & DEVELOPMENT REGULATIONS 2001-2012

THE APPLICATION FOR SUBSTITUTE CONSENT SHALL BE ACCOMPANIED BY A REMEDIAL ENVIRONMENTAL IMPACT STATEMENT AND UNDERTAKEN IN ACCORDANCE WITH SECTION 177 F OF THE PLANNING & DEVELOPMENT ACT 2000, AS INSERTED BY SECTION 57 OF THE PLANNING & DEVELOPMENT ACT 2010, AS AMENDED.

NOTE: YOU MAY APPLY TO AN BORD PLEANALA, NOT LATER THAN 21 DAYS AFTER THE DATE OF THIS NOTICE, FOR A REVIEW OF THE SUBJECT DETERMINATION OF THE PLANNING AUTHORITY UNDER SECTION 261A SUBSECTION 2.A OR THE SUBJECT DECISION OF THE PLANNING AUTHORITY UNDER SECTION 261A SUBSECTION 3.A AND THAT NO FEE IN RELATION TO EITHER APPLICATION FOR A REVIEW SHALL BE PAYABLE.

Please find attached a copy of Section's 177E and 177G of the Planning & Development Act 2000 as inserted by Section 57 of the Planning & Development Act 2010, as amended.

Mise, le meas,

Noel Cooke
Staff Officer,
Planning.

Date: 23rd August 2012

Planning & Development Act 2000-2010, as amended Section 177 E, and Section 177F:

177 E – Application for Substitute Consent

(1) An application for substitute consent shall be made to the Board

(2) An application to the Board for substitute consent shall –

a) Be made pursuant to a notice given under section 177B or 261A or a decision to grant leave to apply for substitute consent under section 177D
b) State the name of the person making the application.
c) In accordance with the direction of the planning authority under section 177B(2), section 261A(3)(*c*), section 261A(10) or section 261A(12) shall be accompanied by a remedial environmental impact statement or remedial Natura impact statement or both of those statements as the case may be.
d) In accordance with a direction of the Board under section 177D(7), shall be accompanied by a remedial environmental impact statement or remedial Natura impact statement or both of those statements as the case may be.
e) Be accompanied by the fee payable in accordance with section 177M,
f) Comply with any requirements prescribed under section 177N, and
g) Be received by the Board within the period specified in section 177B, 177D or 261A, as appropriate.

(3) An application for substitute consent which does not comply with the requirements of subsection (2) shall be invalid.

(4) The Board may at its own discretion, on request extend the period specified in section 177B, 177D or 261A, for the making of an application for substitute consent, by such further period as it considers appropriate.

(5) As soon as may be after receipt of an application for substitute consent under this section, which is not invalid, the Board shall send a copy of the application and all associated documents, including the remedial environmental impact statement, or the remedial Natura impact statement, or both of those statements, as the case may be to the planning authority for the area in which the development the subject of the application is situated and such documentation shall be placed on the register.

177F – Remedial Environmental Impact Statement

(1) A remedial environmental impact statement shall contain the following:

a) A statement of the significant effects, if any, on the environment, which have occurred or which are occurring or which can reasonably be expected to occur because the development the subject of the application for substitute consent was carried out;

b) Details of –
(i) Any appropriate remedial measures undertaken or proposed to be undertaken by the applicant for substitute consent to remedy any significant adverse effects on the environment;
(ii) The period of time within which any proposed remedial measures shall be carried out by or on behalf of the applicant;

c) Such information as may be prescribed under section 177N

(2) (a) Before an applicant makes an application for substitute consent, he or she may request the Board to give to him or her an opinion in writing prepared by the Board on the information required to be contained in the remedial environmental impact statement or in relation to the development the subject of the application and the Board shall, as soon as may be, comply with that request.

(b) An applicant shall, in connection with a request under paragraph *(a),* forward to the Board sufficient information in relation to the development the subject of the application for substitute consent to enable the Board to comply with that request, and shall forward any additional information requested by the Board.

(c) The provision of an opinion under this subsection shall not prejudice the performance by the Board of any of its functions under this Act or regulations under this Act and cannot be relied upon in the application for substitute consent or in any legal proceedings.

APPENDIX 1-2

CONSULTATION RESPONSES

Dear Sir / Madam

I refer to the previous consultation (September 2019) in relation to the operational gravel pit in Ummera Macroom. The S37L application for further development was lodged in August 2020, as was the substitute consent application. An Coimisiún Pleanála has requested that the EIAR for the further development application be updated taking into account the assessment methodology per the 2022 EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.*

A decision on the substitute consent application is still pending.

As part of the EIA, we wish to receive the views and comments from the Geological Survey of Ireland on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely

Dan Keohane

Keohane Geological & Environmental Consultancy

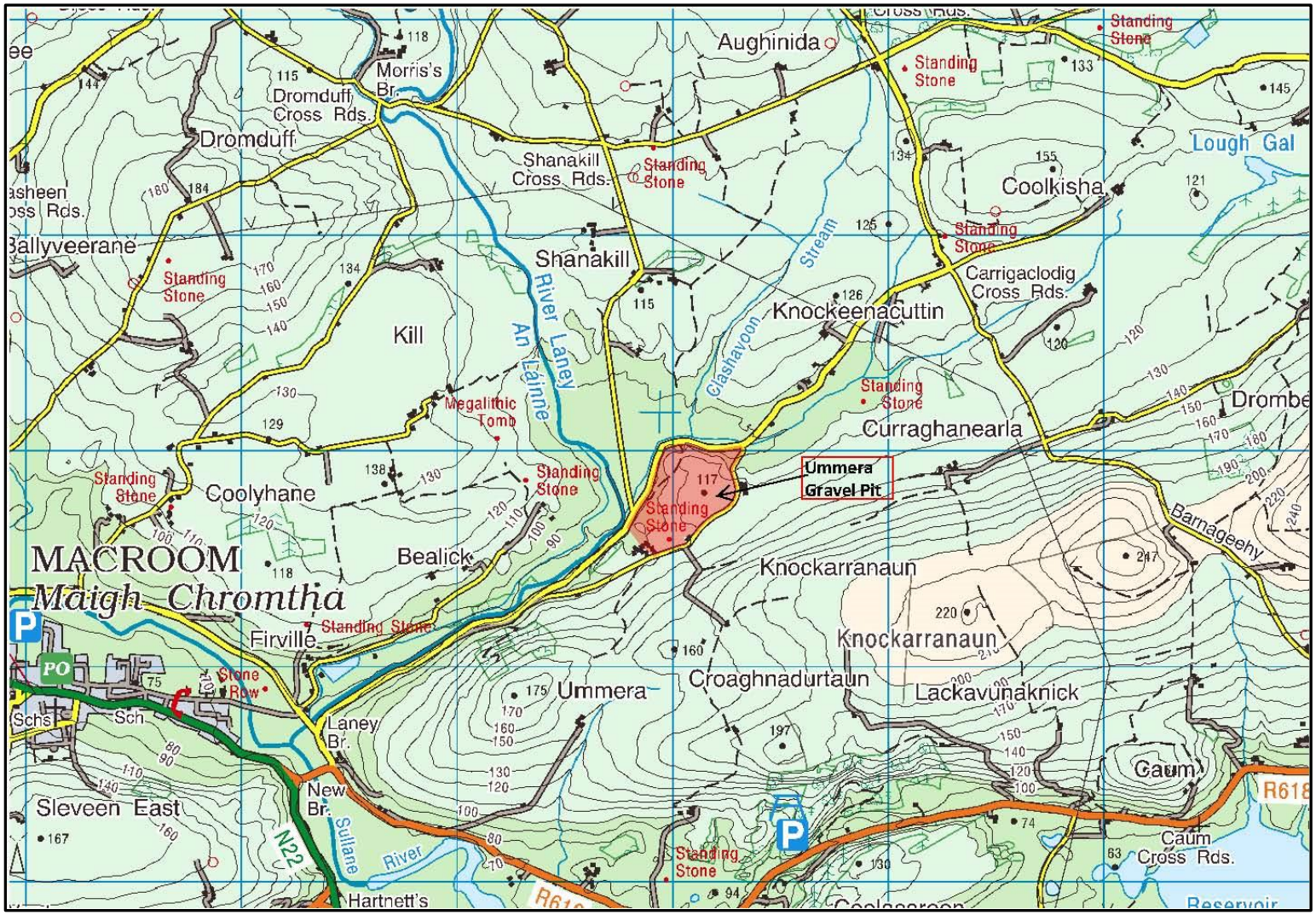
Ivy House

Clash

Carrigrohane

County Cork

086-8289167



Site Location Map – Ummera Gravel Pit

dankeohaneivyclash@hotmail.com

From: MacroomRoadsOperations <MacroomRoadsOperations@CorkCoCo.ie>
Sent: Friday 15 May 2026 12:10
To: Dan Keohane
Subject: Automatic reply: Ummera Gravel Pit, Macroom

Thank you for your email. We will respond to your email shortly.

If your query/comment is in relation to matters relating to the Housing or Roads Departments, please log these on Cork County Council's website: www.yourcouncil.ie

For Planning queries please contact Planninginfo@corkcoco.ie

dankeohaneivyclash@hotmail.com

From: DCEE Customer Service <Customer.Service@dcee.gov.ie>
Sent: Friday 15 May 2026 11:56
To: Dan Keohane
Subject: Automatic reply: Ummera Gravel Pit, Macroom

Thank you for contacting the Department of Climate, Energy and the Environment, we acknowledge receipt of your correspondence, which has been referred to officials for advice.
If the issue raised is under the remit of this Department, you should receive this response within 20 working days as stated in our Customer Service Charter. If you do not receive a response within this time, or if you have any further queries, please do not hesitate to contact us.
If the issue raised is more appropriate to another Government Department, this office will arrange to transfer your correspondence to that Department for their attention and direct reply to you.

Go raibh maith agat as teagmháil a dhéanamh leis an Roinn Aeráide, Fuinnimh agus Comhshaoil. Admhaímid go bhfuarthas do chomhfhreagras, atá curtha faoi bhráid na n-oifigeach chun comhairle a fháil.
Má tá an cheist a ardaíodh faoi shainchúram na Roinne sin, ba cheart duit an freagra sin a fháil laistigh de 20 lá oibre mar a luaitear inár gCairt um Sheirbhís do Chustaiméirí. Mura bhfaigheann tú freagra laistigh den tréimhse sin, nó má tá aon cheist eile agat, ná bíodh leisce ort teagmháil a dhéanamh linn.
Má tá an cheist a ardaíodh níos oiriúnaí do Roinn Rialtais eile, déanfaidh an oifig seo socrú chun do chomhfhreagras a aistriú chuig an Roinn sin lena n-aird a tharraingt air agus chun freagra díreach a thabhairt chugat.

dankeohaneivyclash@hotmail.com

From: Transport Department of Transport <info@transport.gov.ie>
Sent: Friday 15 May 2026 11:51
To: Dan Keohane
Subject: Automatic reply: Ummera Gravel Pit, Macroom

THIS IS AN AUTOMATIC ACKNOWLEDGEMENT OF RECEIPT OF YOUR EMAIL. PLEASE *DO NOT REPLY TO THIS EMAIL AS REPLIES TO AUTO ACKNOWLEDGEMENTS WILL* REMAIN UNANSWERED.

Dear Customer,

Thank you for contacting The Department of Transport Customer Services Unit.

We have received your message and the division or staff member that is dealing with your query will provide a full reply within 20 working days in the majority of cases.

In the meantime if you need an answer sooner, you can find answers to most queries on our website, www.gov.ie/transport

Regards,

Customer Services

Department of Transport

Is seo uath-admháil go bhfuarthas do ríomhphoist. Ná freagraíonn leis an roimhphoist seo más é do thoil é mar fanfaidh freagraí leis na uath-admhálacha gan freagairt.

Chustaiméir, a chara,

Go raibh maith agat as teagmháil a dhéanamh leis an t-aonad um Sheirbhísí do Chustaiméirí sa Roinn Iompair.

Tá do theachtaireacht faighte againn agus beidh an rannán nó don bhall foirne a bheidh ag déileáil le do cheist ag cur freagra iomlán ar fáil laistigh de 20 lá oibre i bhformhór na gcásanna.

Idir an dá linn más gá duit freagra a fháil níos túisce, is féidir leat freagraí den chuid is mó de na ceisteanna a fháil ar ár suíomh gréasáin, www.gov.ie/transport

Le meas,

Seirbhísí Custaiméirí

An Roinn Iompair

****

Tá eolas sa teachtaireacht leictreonach seo a d'fhéadfadh bheith príobháideach nó faoi rún agus b'fhéidir go mbeadh ábhar rúnda nó pribhléideach ann. Is le h-aghaidh an duine/na ndaoine nó le h-aghaidh an aonáin atá ainmnithe thuas agus le haghaidh an duine/na ndaoine sin amháin atá an t-eolas. Tá cosc ar rochtain don teachtaireacht leictreonach seo do aon duine eile. Murab ionann tusa agus an té a bhfuil an teachtaireacht ceaptha dó bíodh a fhios agat nach gceadaítear nochtadh, cóipeáil, scaipeadh nó úsáid an eolais agus/nó an chomhaid seo agus b'fhéidir d'fhéadfadh bheith mídhleathach.
Tá ár Ráiteas Príobháideachta le fáil ar www.gov.ie/transport
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Our Privacy Statement is available on www.gov.ie/transport

****

dankeohaneivyclash@hotmail.com

From: Wexford Receptionist <REC_WEX@epa.ie>
Sent: Friday 15 May 2026 12:26
To: Dan Keohane
Subject: Re: Ummera Gravel Pit, Macroom

A Chara,

Your correspondence on 15/05/2026 has been forwarded for attention.

Tá do chomhfhreagras 15/05/2026 seolta ar aghaidh le haghaidh aird.

Le gach dea-ghuí

Grace Marshall

Duty Receptionist I Facililty Mangement & Sustainability
Office of Communications and Corporate Services, Wexford
Fáilteoir ar Dualgas I Foireann Seirbhísí Eagraíochtúla
An Oifig Cumarsáide agus Seirbhísí Corparáideacha,Loch Garman

053-9160600 (Direct dial)
info@epa.ie
www.epa.ie

From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: Friday, May 15, 2026 12:03
To: Wexford Receptionist <REC_WEX@epa.ie>
Subject: FW: Ummera Gravel Pit, Macroom

Dear Sir / Madam
I refer to the previous consultation (September 2019) in relation to the operational gravel pit in Ummera Macroom. The S37L application for further development was lodged in August 2020, as was the substitute consent application. An Coimisiún Pleanála has requested that the EIAR for the further development application be updated taking into account the assessment methodology per the 2022 EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.*
A decision on the substitute consent application is still pending.

As part of the EIA, we wish to receive the views and comments from the EPA on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House

Clash
Carrigrohane
Cork

086-8289167

From: Dan Keohane
Sent: Monday 16 March 2020 10:22
To: info@epa.ie
Subject: Ummera Gravel Pit, Macroom

Dear Sir / Madam
Drimoleague Concrete Works Ltd (DCWL) has appointed Keohane Geological & Environmental Consultancy to prepare the remedial Environment Impact Assessment Report (rEIAR) for the Ummera Gravel Pit near Macroom County Cork, as well as the EIAR for the continuation of gravel extraction at the site.

The lands at Ummera have been used for gravel extraction since the 1940's. DCWL (through its sister company, Murnane & O'Shea Ltd) became involved in the gravel pit in the mid 1970's and has continuously operated a relatively small-scale gravel extraction and washing operations since then. The gravel pit is in a rural setting in the catchment of the Sullane River. The Clashavoon Stream flows past the gravel pit, separated by the public road. A determination was made by Cork County Council that extraction was undertaken after 01 February 1990 that would have required EIA, but such assessment was not carried out. DCWL has been instructed to apply for substitute consent which should include a rEIAR.

As part of the rEIA, we wish to receive the views and comments from the EPA on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane

Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

086-8289167

dankeohaneivyclash@hotmail.com

From: Failte Ireland Customer Support <customersupport@failteireland.ie>
Sent: Friday 29 May 2026 14:08
To: dankeohaneivyclash@hotmail.com
Subject: Fáilte Ireland:: Request for Fáilte Ireland review Email No :0100169022805

Good afternoon Dan,

Thank you for your mail, and for taking the time to write to Fáilte Ireland.

A Case has been opened on this matter under Reference **CSE-0000022365**.

We have forwarded your mail to the Environment & Planning Team for your convenience.

For your information, Fáilte Ireland has a dedicated mailbox for planning notifications/applications, appeals, information, queries, Environmental Impact Assessment (EIAs), consultations, and documentation.

For any future correspondence please feel free to send the information directly to;

planning.applications@failteireland.ie

This is our preferred method in receiving planning information/notifications *etc*. By using the email address it will ensure the information/notifications will get to the Manager of Environment & Planning (*Mr Shane Dineen*) and Team, and will be reviewed in a timely manner by the Manager and the Environment & Planning Team.

Please quote your Case Reference CSE-0000022365 in all future correspondence with Fáilte Ireland in relation to this matter.

Kind regards,

Michael Keenan
Customer Support Team | Fáilte Ireland
T 0818 888 800 | www.failteireland.ie

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---------- Original Message ----------
From: Customer Support <customersupport@failteireland.ie>;
Received: Thu May 28 2026 12:43:34 GMT+0100 (Irish Standard Time)
To: Planning Applications <planning.applications@failteireland.ie>;
[...]
---------- Original Message ----------
From: noreply@formstack.com <noreply@formstack.com>;

Received: Thu May 28 2026 10:23:44 GMT+0100 (Irish Standard Time)
To: Customer Support <customersupport@failteireland.ie>;
Subject: Customer Support Contact Notification

[AIRE] Tháinig an teachtaireacht seo ó lasmuigh de Fáilte Ireland. Bí cúramach le hipearnasc, le ceangaltáin agus le treoracha sa ríomhphost seo.
[ATTENTION] This message originated from outside of Fáilte Ireland. Please treat hyperlinks, attachments and instructions in this email with caution.





dankeohaneivyclash@hotmail.com

From: planning applications <planning.applications@failteireland.ie>
Sent: Thursday 11 June 2026 15:56
To: Dan Keohane
Subject: Fw: Ummera-Gravel Pt
Attachments: Fáilte Ireland EIAR Guidelines 2023.pdf

Hello Dan,

Thank you for your email regarding the Substitute Consent Ummera Gravel Pit, County Cork.

Please see attached a copy of Fáilte Ireland's Guidelines for the Treatment of Tourism in an EIA, which you may find informative for the preparation of the Environmental Impact Assessment for the proposed project. The purpose of this report is to provide guidance for those conducting Environmental Impact Assessment and compiling an Environmental Impact Assessment Reports (EIAR), or those assessing EIARs, where the project involves tourism or may have an impact upon tourism. These guidelines are non-statutory and act as supplementary advice to the EPA EIAR Guidelines outlined in section 2.

Regards,

Yvonne

Yvonne Jackson

Product Development-Environment & Planning Support | Fáilte Ireland

88-95 Amiens Street, Dublin 1, D01 WR86

M +353 (0)86 0357590

LinkedIn | Twitter | YouTube | Facebook

---------- Original Message ----------
From: noreply@formstack.com <noreply@formstack.com>;
Received: Thu May 28 2026 10:23:44 GMT+0100 (Irish Standard Time)
To: Customer Support <customersupport@failteireland.ie>;
Subject: Customer Support Contact Notification

[AIRE] Tháinig an teachtaireacht seo ó lasmuigh de Fáilte Ireland. Bí cúramach le hipearnasc, le ceangaltáin agus le treoracha sa ríomhphost seo.
[ATTENTION] This message originated from outside of Fáilte Ireland. Please treat hyperlinks, attachments and instructions in this email with caution.

Formstack Submission For: Contact Us
Submitted at 05/28/26 10:23 AM

Name:	Dan Keohane
County:	CORK
Contact Number:	+353868289167
Email Address:	dankeohaneivyclash@hotmail.com
Category:	General Query
Message:	Dear Sir / Madam I refer to the previous consultation (September 2019) in relation to the operational gravel pit in Ummera Macroom. The S37L application for further development was lodged in August 2020, as was the substitute consent application. An Coimisiún Pleanála has requested that the EIAR for the further development application be updated taking into account the assessment methodology per the 2022 EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports. A decision on the substitute consent application is still pending. As part of the EIA, we wish to receive the views and comments from the Failte Ireland on the Ummera Gravel pit. I attach the site location map for the gravel pit.

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This is a customer service email.
Intellistack, 50 South Steele Street, Suite 500, Denver, CO 80209

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dankeohaneivyclash@hotmail.com

From: no-reply@failteireland.ie <noreply+3df62508a459fcf9@formstack.com>
Sent: Thursday 28 May 2026 10:24
To: dankeohaneivyclash@hotmail.com
Subject: Fáilte Ireland - Thank you for contacting us

This is an automatic response to let you know that we've received your message and one of our customer service team will respond to you shortly.

Fáilte Ireland Customer Service Team

An Roinn Aeráide, Fuinnimh agus Comhshaoil
Department of Climate, Energy and the Environment

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co Cork

21 May 2026

Re: Planned Update of EIAR for Ummera Gravel Pit, Macroom, Co Cork
Your Ref: n/a
Our Ref: 26/131 [c.f. 19/240]

Dear Dan,

Geological Survey Ireland is the national earth science agency and is part of the Department of Climate, Energy and the Environment. We provide independent geological information and interpretation and gather various data for that purpose. Please see our website for data availability.

With reference to your email received on the 15 May 2026, concerning the Planned Update of EIAR for Ummera Gravel Pit, Macroom, Co Cork, we recommend using our various data sets when conducting the EIAR, SEA, planning and scoping processes for developments, plans and policies. For more detailed information on how to access this data please access 'Data and Maps' Data & Maps (gsi.ie) on our 'Geoscience for planning' webpage. Use of our data or maps should be attributed correctly (please refer to each individual dataset's metadata for correct attribution).

For specific data available for Environmental Assessment and Planning topics please follow this link [Data by Environmental Assessment and Planning Topic (gsi.ie)], where you will find our data arranged by environmental assessment topic as illustrated below:

Land and soils	Water	Climate Change
Soil • Subsoils (Quaternary Geology) • Tellus Geochemistry • Geotechnical *Geology* • Bedrock • Geophysics • Bedrock & Quaternary 3D	*Groundwater* • Aquifers GW vulnerability, GWPSs (GWPPs) • Karst *Surface water* • Tellus Geochemistry *Estuarine & marine waters* • Marine and coastal *Flooding* • GWClimate	*Carbon accounting / Carbon balance* • Geothermal • Carbon capture and storage *Climate change trends* • National coastal change assessment

Cultural Heritage	Material Assets	The Landscape
Archaeology • Cherish *Underwater Archaeology* • Shipwrecks	*Built Services* • Natural resources (Minerals & Aggregates) • Active quarries	*Landscape Appearance & Character* • Physiographic units *Historical landscapes* • Historic mines

Other Relevant Data		
Natural (Geo) hazards • Landslide Susceptibility Mapping • Groundwater flooding • Coastal vulnerability • Subsidence • Radon	*Natural heritage* • Geoheritage (County Geological Sites) • Dimension Stone/Stone Built Ireland	

Other Comments

The Geological Survey would request that the operator might assist our geological heritage goals with the following (and ideally this would be written into the restoration / closure plan) and be included as a condition of planning as deemed appropriate by the planning authority:

1. Allowing access to quarry faces by appropriate scientists (upon request and with due regards to Health and Safety requirements) during quarrying to check for scientifically significant new stratigraphies / relationships as they might become exposed and to establish if the quarry site is worthy of recognition post extraction and through aftercare/restoration planning.

2. If deemed appropriate in (1) above, leaving a representative section of the quarry face at the end of the quarry life or inclusion of information panels to promote the geology to the public or develop tourism or educational resources if appropriate depending on the future use of the site. Natural exposures are few, or deeply weathered, this measure would permit on-going improvement of geological knowledge of the subsurface.

We also encourage discussion on end-of-life plans for the quarry and would be happy to recommend ways to promote the geology to the public or develop tourism or educational resources if appropriate. Geological Survey Ireland would like to offer help with interpretative signs where interesting geological features have been exposed, if appropriate.

The Geoheritage Programme tries to promote a partnership between geological heritage and active quarrying, with such measures as those outlined in the '**Geological Heritage Guidelines for the Extractive Industry**', which can be downloaded here. This document, written in association with Irish Concrete Federation, acts as a comprehensive guide in the sustainable extraction of natural resources while preserving the geological heritage of Ireland.

Should development go ahead, all other factors considered, Geological Survey Ireland would much appreciate a copy of reports detailing any site investigations carried out. The data would be redacted for confidentiality and added to Geological Survey Ireland's national database of site investigation boreholes, implemented to provide a better service to the civil engineering sector. Data can be sent to the Geological Mapping Unit, at mailto:GeologicalMappingInfo@gsi.ie.

If we can be of any further help, please do not hesitate to contact me Clare Glanville, or my colleague Trish Smullen at GSIPlanning@gsi.ie.

Yours sincerely,

Dr. Clare Glanville
Senior Geologist
Geoheritage and Planning Programme
Geological Survey Ireland

Trish Smullen
Geologist
Geoheritage and Planning Programme
Geological Survey Ireland

The publicly available data referenced/presented here, should in no way be construed as Geological Survey Ireland support for or objection to the proposed development or plan. The data are made freely available to all and can be used as independent scientific data in assessments, plans or policies. It should be noted that in many cases these data are a baseline or starting point for further site-specific assessments.

dankeohaneivyclash@hotmail.com

From: DCEE Planning Notifications <PlanningNotifications@dcee.gov.ie>
Sent: Monday 15 June 2026 16:32
To: dankeohaneivyclash@hotmail.com
Subject: EIS 26/131 - Planned Updating of EIAR for Ummera Gravel Pit, Macroom, Co Cork
Attachments: 26_131 Ummera Gravel Pit Macroom Co Cork.pdf

To whom it may concern,

Please see attached response on behalf of Geological Survey Ireland (a section of the Department of Climate, Energy and the Environment) with regard to the subject entity.

Please send an acknowledgement of receipt to PlanningNotifications@dcee.gov.ie at your earliest convenience.

Regards,

Planning Advisory Section

dankeohaneivyclash@hotmail.com

From: Michael McPartland <Michael.McPartland@fisheriesireland.ie>
Sent: Friday 15 May 2026 12:03
To: Dan Keohane
Subject: Automatic reply: Ummera Gravel Pit, Macroom

I am on leave at present, I will respond to your emails on my return on 18/5/26. For any immediate queries, please contact the office on 026.41221

Táim ar saoire agus freagroidh mé do riomhphost nuair fhillfidh mé ar 18/5/26. Déan teagmháil le hoifig Mhaigh Chromtha ar 026 41221 chun cuidiú a fháil.

Michael McPartland
Senior Fisheries Environmental Officer

Michael.McPartland@fisheriesireland.ie • +353 (0)26 41222 • www.fisheriesireland.ie • P12 X602



Help us protect Ireland's rivers, lakes and coastlines by reporting illegal fishing, water pollution or invasive specie
Our confidential phone number is 0818 34 74 24, which is open 24 hours a day / 7 days a week.

To read our Privacy Policy and Email Disclaimer Notice, Please visit www.fisheriesireland.ie

dankeohaneivyclash@hotmail.com

From: Michael McPartland <Michael.McPartland@fisheriesireland.ie>
Sent: Wednesday 20 May 2026 12:03
To: Dan Keohane
Subject: RE: Ummera Gravel Pit, Macroom
Attachments: ABP-308036.20 Umera.pdf

Dan

Thanks for your email.
Please find attached IFI's comments on the application.
If there is any more recent update from the applicant side, please revert.

Michael Mc Partland
Senior Fisheries Environmental Officer.

Iascach Intíre Éireann
Inland Fisheries Ireland

Tel + 353 (0)26 412 21/2
Fax + 353 (0)26 412 23
Email michael.mcpartland@fisheriesireland.ie
Web www.fisheriesireland.ie

Sunnyside House, Macroom, Co. Cork, Ireland. P12 X602

Help Protect Ireland's Inland Fisheries

Michael McPartland
Senior Fisheries Environmental Officer

Michael.McPartland@fisheriesireland.ie • +353 (0)26 41222 • www.fisheriesireland.ie • P12 X602



Help us protect Ireland's rivers, lakes and coastlines by reporting illegal fishing, water pollution or invasive specie
Our confidential phone number is 0818 34 74 24, which is open 24 hours a day / 7 days a week.

To read our Privacy Policy and Email Disclaimer Notice, Please visit www.fisheriesireland.ie

From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: Friday 15 May 2026 12:03
To: Michael McPartland <Michael.McPartland@fisheriesireland.ie>
Subject: FW: Ummera Gravel Pit, Macroom

Dear Michael
I refer to the previous consultation (September 2019) in relation to the operational gravel pit in Ummera Macroom. The S37L application for further development was lodged in August 2020, as was the substitute consent application. An Coimisiún Pleanála has requested that the EIAR for the further development application be updated taking into account the assessment methodology per the 2022 EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.*
A decision on the substitute consent application is still pending.

As part of the EIA, we wish to receive the views and comments from the IFI on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Cork

086-8289167

From: Dan Keohane
Sent: Monday 16 March 2020 09:17
To: macroom@fisheriesireland.ie
Subject: Ummera Gravel Pit, Macroom

Dear Sir / Madam
Drimoleague Concrete Works Ltd (DCWL) has appointed Keohane Geological & Environmental Consultancy to prepare the remedial Environment Impact Assessment Report (rEIAR) for the Ummera Gravel Pit near Macroom County Cork, as well as the EIAR for the continuation of gravel extraction at the site.

The lands at Ummera have been used for gravel extraction since the 1940's. DCWL (through its sister company, Murnane & O'Shea Ltd) became involved in the gravel pit in the mid 1970's and has continuously operated a relatively small-scale gravel extraction and washing operations since then. The gravel pit is in a rural setting in the catchment of the Sullane River. The Clashavoon Stream flows past the gravel pit, separated by the public road. A determination was made by Cork County Council that extraction was undertaken after 01 February 1990 that would have required EIA, but such assessment was not carried out. DCWL has been instructed to apply for substitute consent which should include a rEIAR.

As part of the rEIA, we wish to receive the views and comments from Inland Fisheries Ireland on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane

Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

086-8289167

Iascach Intíre Éireann
Inland Fisheries Ireland

An Bord Pleanala
64 Marlborough Street
Dublin 1
D01 V902

30 July 2024

RE: Ummera Gravel Pit, Ummera, Macroom, Co.Cork
ABP-308036/20

A chara

Further to previous correspondence and the IFI submission of 19th November 2020, thank you for forwarding subsequent information dated 8th January 2021 which we received on 22nd July 2024.

IFI's concerns in relation to the application were categorised under the headings of Water Quantity, Fish Passage and Water Quality. We have accessed the further information submitted in the context of each category and include below our original comments (in black) and comment on the information submitted to ABP on 8/1/21(in blue).

Water Quantity:
Wash waters for the development are abstracted from the Clashavoon Stream. The EIS has calculated the 95%ile flow in the stream to be in the range 33-38 l/s and dry weather flow to be of the order of 17 l/s. An abstraction of 40m³/day from the Clashavoon Stream is proposed.

This 95%ile flow statistic is the percentage of time that flow is exceeded at a monitoring gauges i.e. the flow that historically been reached fewer than 5% of the time. Such low flows typically occur during sustained periods of warm weather and minimal if any rainfall. Under such conditions fish and other aquatic inhabitants are particularly vulnerable to environmental stresses and predation. IFI considers that abstractions when river flows are at or below the 95% level should be avoided. In the case of the current application IFI would ask that a planning condition a) prevents any abstraction when river flows are at or below the 95% level and b) requires that the 95th% flow level be established at the abstraction point and permanently marked on an accessible gauge. Provision could be made for any water demand by the quarry during such periods by increasing on site water storage.

Furthermore, IFI would ask that planning conditions limit the future vertical development of the quarry to such an extent that there can be no extraction below the water table.

The issue of water abstraction is addressed in Point 8 of the further information submitted. Further information submitted states that the impact of abstraction from the stream would be "*localised, imperceptible, brief and neutral"* at times of low flow. However, such descriptive terms are not supported by any facts or assessment. In this context, IFI have no reason to alter our comments of November 2020

Fish Passage:
During a recent site inspection IFI identified that a stone weir constructed to facilitate the quarry abstraction from the Clashavoon Stream constitutes an obstacle to fish passage. This has been confirmed by the applicant in the EIS- "*A small weir has been created with boulders at the abstraction point to maintain water depth for the pump intake. This creates a small backwater upstream of the weir and creates an obstruction to the clear passage of fish".* This obstruction is contrary to the provisions of the Fisheries Acts. IFI would ask that plans are submitted for consideration outlining an alternative abstraction mechanism design which does not obstructed fish passage.

The issue of the weir is addressed in Point 9 of the further information submitted. It is stated that " *DCWL will liaise with IFI regards the weir*". This has not occurred, so IFI have no reason to alter our comments of November 2020.

Water Quality:
The EIS identifies that surplus site surface waters discharge to a roadside watercourse. IFI would suggest that this discharge should be licenced under the Water Pollution Acts due to its potential for on-site contamination by solids prior to discharge.

Furthermore there appears to be ambiguity in the application in relation to the use of the "original" settlement pond. Page 19 of the EIAR states "*The proposed development is summarised as follows:….– Inclusion of the original settlement pond (between the public road and Clashavoon Stream)*" while Page 65 of the same document states " *the original settlement pond located between the L-3423 and Clashavoon Stream is no longer used".* The historical problems associated with the use of a settlement pond between the L-3423 and the Clashavoon Stream is acknowledged by the applicant in the application document. In this context IFI would ask that planning conditions would ensure there is no reactivation of a settlement pond or any other development works associated with the quarry in the narrow strip of land between the L-3423 and the Clashavoon Stream.

The issue of water quality and discharges is addressed in Points 10, 13,14 and 15 of the further information submitted. IFI would ask that any discharge of contaminated liquid from the site to any surface water channel requires a licence under the Water Pollution Acts.

IFI would ask to be informed when further information is submitted and when a decision is reached on this application. Should you require any clarification please contact the undersigned.

IFI Macroom, Sunnyside House, Macroom, Co. Cork
026-41221 macroom@fisheries.ie www.fisheriesireland.ie

Yours sincerely,

mmp

Michael Mc Partland.
Environmental Officer.

IFI Macroom, Sunnyside House, Macroom, Co. Cork
026-41221 macroom@fisheries.ie www.fisheriesireland.ie

dankeohaneivyclash@hotmail.com

From: Datarequests <Datarequests@water.ie>
Sent: Thursday 28 May 2026 12:31
To: Dan Keohane
Subject: RE: Ummera Macroom County Cork

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Kind regards,

Liam

Asset Data Coordinator - Provision

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From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: Thursday 28 May 2026 12:02
To: Datarequests <Datarequests@water.ie>; Planning <Planning@water.ie>
Subject: Ummera Macroom County Cork

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Can you advise

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2. The location of any drinking water abstractions from the rivers in the area (Laney, Sullane, Lee). Would it be possible to get a map showing the water abstraction locations.

Thank you
Dan Keohane
086-8289167

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aon ghníomh a bhraithfeadh ar an bhfaisnéis seo a dhéanamh agus d'fhéadfaí an dlí a shárú dá ndéanfaí sin. Séanann Uisce Éireann dliteanas as aon ghníomh agus as aon iarmhairt bunaithe ar úsáid neamhúdaraithe na faisnéise seo. Séanann Uisce Éireann dliteanas maidir le seachadadh iomlán agus ceart na faisnéise sa chumarsáid seo agus séanann Uisce Éireann dliteanas maidir le haon mhoill a bhaineann leis an bhfaisnéis a fháil. Má tá an ríomh-phost seo faighte agat trí dhearmad, déan teagmháil leis an seoltóir más é do thoil é agus scrios an t-ábhar ó gach aon ríomhaire. D'fhéadfadh ríomhphost a bheith so-ghabhálach i leith truaillithe, idircheaptha agus i leith leasuithe neamhúdaraithe. Séanann Uisce Éireann aon fhreagracht as athruithe nó as idircheapadh a rinneadh ar an ríomhphost seo nó as aon dochar do chórais na bhfaighteoirí déanta ag an teachtaireacht seo nó ag a ceangaltáin tar éis a sheolta. Tabhair faoi deara go bhféadfadh monatóireacht a bheith á dhéanamh ar theachtaireachtaí chuig Uisce Éireann agus ó Uisce Éireann d'fhonn ár ngnó a chosaint agus chun a chinntiú go bhfuiltear ag teacht le beartais agus le caighdeáin Uisce Éireann. Is cuideachta gníomhaíochta ainmnithe é Uisce Éireann atá faoi theorainn scaireanna, a bunaíodh de bhun fhorálacha na n-Achtanna um Sheirbhísí Uisce 2007-2022, a bhfuil a bpríomh-ionad gnó ag Teach Colvill, 24-26 Sráid na Talbóide, BÁC 1.

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Thank you for your attention.

dankeohaneivyclash@hotmail.com

From: Datarequests <Datarequests@water.ie>
Sent: Friday 5 June 2026 11:37
To: Dan Keohane
Subject: RE: Ummera Macroom County Cork - ING XY 137000, 074000

Hi Dan,

I hope you're well. I'm just sending you a very quick email to reassure you that I am still working on your request.

I'm engaging with other people to confirm the stance on abstraction point information.

I'll reach back out when I have more.

Kind regards,

Liam

Asset Data Coordinator - Provision

Uisce Éireann
Teach Colvill, 24-26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86, Éire

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From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: Thursday 28 May 2026 14:18
To: Datarequests <Datarequests@water.ie>
Subject: RE: Ummera Macroom County Cork - ING XY 137000, 074000

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Thanks Liam
Am I right is saying that the nearest SW abstraction point downstream from the Ummera gravel pit is at the Inniscarra Dam?

Regards
Dan

From: Datarequests <Datarequests@water.ie>
Sent: Thursday 28 May 2026 12:31
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Subject: RE: Ummera Macroom County Cork

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Thank you for your attention.

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Thank you for your attention.

dankeohaneivyclash@hotmail.com

From: Datarequests <Datarequests@water.ie>
Sent: Thursday 11 June 2026 08:54
To: Dan Keohane
Subject: RE: Ummera Macroom County Cork - ING XY 137000, 074000
Attachments: Abstraction points 500m buffer.pdf

Hi Dan,

Apologies for the later reply here. Our team needed to engage with other people within the company as the the Abstraction point information is sensitive for source protection reasons. With that said I do have good news, a new process for how to assist has now been agreed.

Using the coordinates/information provided, please find attached a map that shows the Water Abstraction Points in the vicinity. I have marked a green dot the original point to give you an idea of distance.

I do need to mention as part of the agreed process, there's a 500 m buffer surrounding the original four points. The points shown in the map attached we moved in various directions and distances from those original pointa. – We do fully appreciate that you are genuinely concerned and very much trying to do the right thing as to not cause any issue and for that you have our thanks and we appreciate your understanding with us regarding the source protection measures we needed to implement.

We hope this helps. Do not hesitate to contact us should you have any further query.

Kind regards,

Liam

Asset Data Coordinator - Provision

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monatóireacht a bheith á dhéanamh ar theachtaireachtaí chuig Uisce Éireann agus ó Uisce Éireann d'fhonn ár ngnó a chosaint agus chun a chinntiú go bhfuiltear ag teacht le beartais agus le caighdeáin Uisce Éireann. Is cuideachta gníomhaíochta ainmnithe é Uisce Éireann atá faoi theorainn scaireanna, a bunaíodh de bhun fhorálacha na n-Achtanna um Sheirbhísí Uisce 2007-2022, a bhfuil a bpríomh-ionad gnó ag Teach Colvill, 24-26 Sráid na Talbóide, BÁC 1.

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Thank you for your attention.

From: Datarequests
Sent: Friday 5 June 2026 11:37
To: 'Dan Keohane' <dankeohaneivyclash@hotmail.com>
Subject: RE: Ummera Macroom County Cork - ING XY 137000, 074000

Hi Dan,

I hope you're well. I'm just sending you a very quick email to reassure you that I am still working on your request.

I'm engaging with other people to confirm the stance on abstraction point information.

I'll reach back out when I have more.

Kind regards,

Liam

Asset Data Coordinator - Provision

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Thank you for your attention.

From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: Thursday 28 May 2026 14:18
To: Datarequests <Datarequests@water.ie>
Subject: RE: Ummera Macroom County Cork - ING XY 137000, 074000

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Thanks Liam
Am I right is saying that the nearest SW abstraction point downstream from the Ummera gravel pit is at the Inniscarra Dam?

Regards

Dan

From: Datarequests <Datarequests@water.ie>
Sent: Thursday 28 May 2026 12:31
To: Dan Keohane <dankeohaneivyclash@hotmail.com>
Subject: RE: Ummera Macroom County Cork

Hi Dan,

Thank you for contacting the Data Request Team.

Using the coordinates/information provided, I have investiagted the area but I'm afraid I must share some bad news.

Please note, there is no information about water in the area requested. This does not necessarily mean that there is no water network. We are updating our records daily so it might be of your interest to contact the Local Authority of the study area to retrieve more information, which could be in any other format.

We hope this helps. Do not hesitate to contact us should you have any further query.

Kind regards,

Liam

Asset Data Coordinator - Provision

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Thank you for your attention.

From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: Thursday 28 May 2026 12:02
To: Datarequests <Datarequests@water.ie>; Planning <Planning@water.ie>
Subject: Ummera Macroom County Cork

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Hi
I am preparing an environmental impact assessment report for the further development of Ummera gravel pit, near Macroom County Cork – please refer to attached location map. IG coordinates – 137,000 / 74,000.
Can you advise

1. Whether this area is serviced by main water. Would it be possible to get a map showing the water distribution network in this area.
2. The location of any drinking water abstractions from the rivers in the area (Laney, Sullane, Lee). Would it be possible to get a map showing the water abstraction locations.

Thank you
Dan Keohane
086-8289167

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Thank you for your attention.

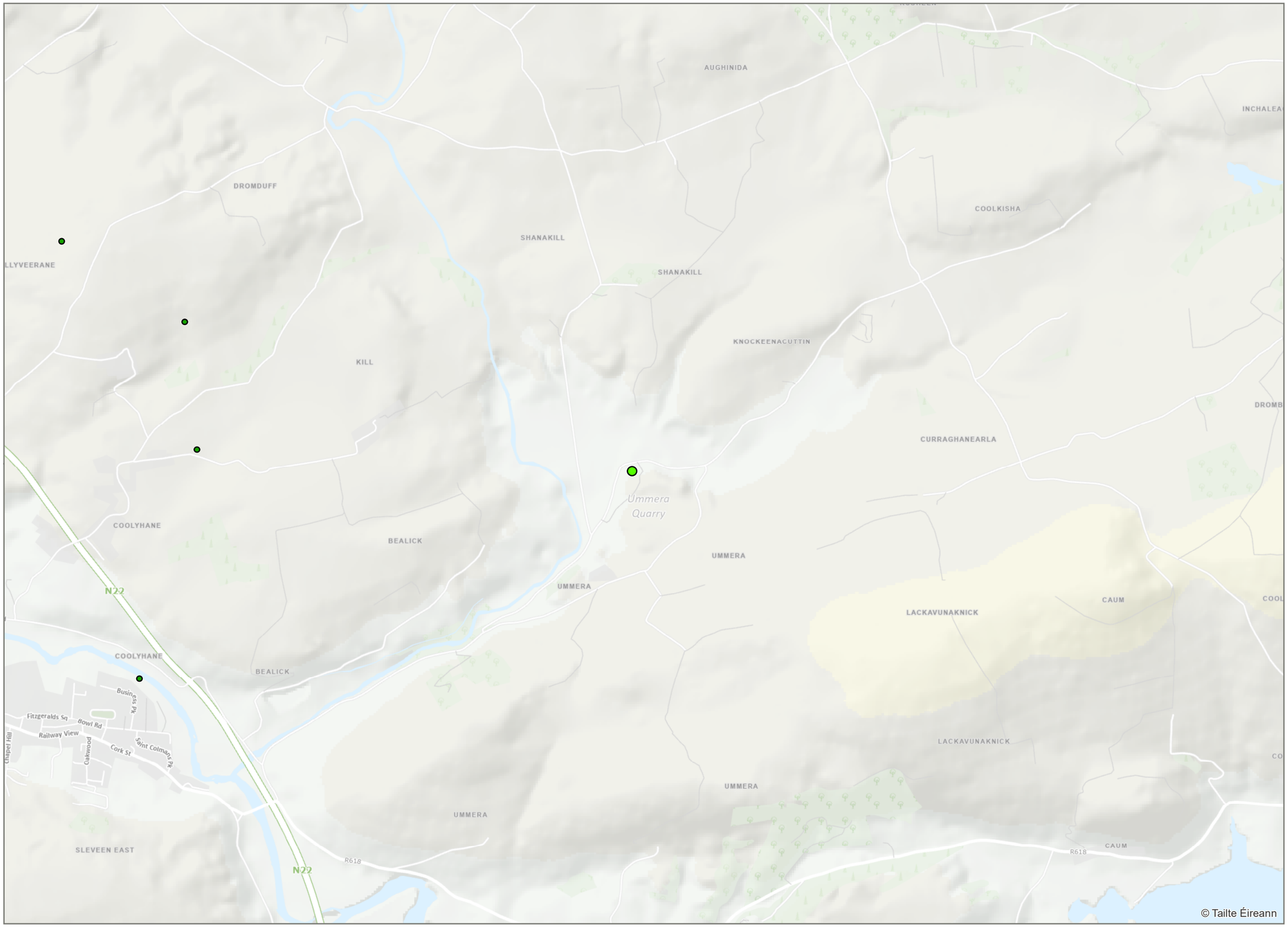
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Uisce Éireann d’fhonn ár ngnó a chosaint agus chun a chinntiú go bhfuiltear ag teacht le beartais agus le caighdeáin Uisce Éireann. Is cuideachta gníomhaíochta ainmnithe é Uisce Éireann atá faoi theorainn scaireanna, a bunaíodh de bhun fhorálacha na n-Achtanna um Sheirbhísí Uisce 2007-2022, a bhfuil a bpríomh-ionad gnó ag Teach Colvill, 24-26 Sráid na Talbóide, BÁC 1.

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Thank you for your attention.



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2. Whilst every care has been taken in its compilation, Uisce Éireann gives this information as to the position of its underground network as a general guide only on the strict understanding that it is based on the best available information provided by each Local Authority in Ireland to Uisce Éireann. Uisce Éireann can assume no responsibility for and give no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided and does not accept any liability whatsoever arising from any errors or omissions.This information should not be relied upon in the event of excavations or any other works being carried out in the vicinity of the Uisce Éireann underground network. The onus is on the parties carrying out excavations or any other works to ensure the exact location of the Uisce Éireann underground network is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

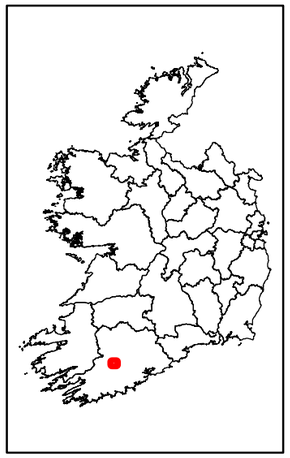
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N

ING XY Map Centre
137,051.55 74,035.15

Uisce Éireann
Irish Water



Legend

- AbstractionPoint

0 137.5 275 550 m

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator

Scale @ A3:	1:16,896
Drawing No.:	IW-AGG-2018-000
Drawn By:	LM
Checked By:	<Add Name>
Approved By:	<Add Name>
Drawn Date	10/06/2026
Checked Date:	<dd/mm/yyyy>
Approved Date:	<dd/mm/yyyy>

DRAFT

dankeohaneivyclash@hotmail.com

From: Planning <Planning@water.ie>
Sent: Wednesday 1 July 2026 15:32
To: Dan Keohane
Subject: RE: Ummera Macroom County Cork
Attachments: UÉ_Response_Ummera_GravelPit_Extension_EIAR_Scoping_2026.pdf

Dear Sir/Madam,

In response to a referral for an (Environmental Impact Assessment (EIA) scoping request) relating to Ummera gravel pit, near Macroom County Cork

Please find attached Uisce Éireann's observations. I would be grateful if you could acknowledge receipt of this submission.

I hope you find this information helpful. If you have any queries, please do not hesitate to contact me

Aine Rowan
Planning Application Specialist

Uisce Éireann
Teach Colvill, 24–26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86, Éire
Uisce Éireann
Colvill House, 24–26 Talbot Street, Dublin 1, D01 NP86, Ireland
www.water.ie
Facebook | Twitter | LinkedIn

From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: Thursday 28 May 2026 12:02
To: Datarequests <Datarequests@water.ie>; Planning <Planning@water.ie>
Subject: Ummera Macroom County Cork

CAUTION: The email originated from outside of your organisation. Do not click links or open attachments unless you recognise the sender and are sure that the content is safe. If you suspect any suspicious activity, please raise an IT Incident ticket to the IT Service Desk.

Hi
I am preparing an environmental impact assessment report for the further development of Ummera gravel pit, near Macroom County Cork – please refer to attached location map. IG coordinates – 137,000 / 74,000.
Can you advise

1. Whether this area is serviced by main water. Would it be possible to get a map showing the water distribution network in this area.
2. The location of any drinking water abstractions from the rivers in the area (Laney, Sullane, Lee). Would it be possible to get a map showing the water abstraction locations.

Thank you
Dan Keohane
086-8289167

Is don duine amháin nó don eintiteas amháin ainmnithe ar an seoladh an fhaisnéis agus d'fhéadfadh ábhar faoi rún, faoi phribhléid nó ábhar atá íogair ó thaobh na tráchtála de a bheith mar chuid den fhaisnéis. Tá toirmeasc ar aon daoine nó aon eititis; nach dóibh siúd an fhaisnéis- aon athbhreithniú a dhéanamh, aon atarchur a dhéanamh nó aon athdháileadh a dhéanamh, nó aon úsáid eile a bhaint as an bhfaisnéis, nó aon ghníomh a bhraithfeadh ar an bhfaisnéis seo a dhéanamh agus d'fhéadfaí an dlí a shárú dá ndéanfaí sin. Séanann Uisce Éireann dliteanas as aon ghníomh agus as aon iarmhairt bunaithe ar úsáid neamhúdaraithe na faisnéise seo. Séanann Uisce Éireann dliteanas maidir le seachadadh iomlán agus ceart na faisnéise sa chumarsáid seo agus séanann Uisce Éireann dliteanas maidir le haon mhoill a bhaineann leis an bhfaisnéis a fháil. Má tá an ríomh-phost seo faighte agat trí dhearmad, déan teagmháil leis an seoltóir más é do thoil é agus scrios an t-ábhar ó gach aon ríomhaire. D'fhéadfadh ríomhphost a bheith so-ghabhálach i leith truaillithe, idircheaptha agus i leith leasuithe neamhúdaraithe. Séanann Uisce Éireann aon fhreagracht as athruithe nó as idircheapadh a rinneadh ar an ríomhphost seo nó as aon dochar do chórais na bhfaighteoirí déanta ag an teachtaireacht seo nó ag a ceangaltáin tar éis a sheolta. Tabhair faoi deara go bhféadfadh monatóireacht a bheith á dhéanamh ar theachtaireachtaí chuig Uisce Éireann agus ó Uisce Éireann d'fhonn ár ngnó a chosaint agus chun a chinntiú go bhfuiltear ag teacht le beartais agus le caighdeáin Uisce Éireann. Is cuideachta gníomhaíochta ainmnithe é Uisce Éireann atá faoi theorainn scaireanna, a bunaíodh de bhun fhorálacha na n-Achtanna um Sheirbhísí Uisce 2007-2022, a bhfuil a bpríomh-ionad gnó ag Teach Colvill, 24-26 Sráid na Talbóide, BÁC 1.

Go raibh maith agat as d'aird a thabhairt.

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Thank you for your attention.

Is don duine amháin nó don eintiteas amháin ainmnithe ar an seoladh an fhaisnéis agus d'fhéadfadh ábhar faoi rún, faoi phribhléid nó ábhar atá íogair ó thaobh na tráchtála de a bheith mar chuid den fhaisnéis. Tá toirmeasc ar aon daoine nó aon eititis; nach dóibh siúd an fhaisnéis- aon athbhreithniú a dhéanamh, aon atarchur a dhéanamh nó aon athdháileadh a dhéanamh, nó aon úsáid eile a bhaint as an bhfaisnéis, nó aon ghníomh a bhraithfeadh ar an bhfaisnéis seo a dhéanamh agus d'fhéadfaí an dlí a shárú dá ndéanfaí

sin. Séanann Uisce Éireann dliteanas as aon ghníomh agus as aon iarmhairt bunaithe ar úsáid neamhúdaraithe na faisnéise seo. Séanann Uisce Éireann dliteanas maidir le seachadadh iomlán agus ceart na faisnéise sa chumarsáid seo agus séanann Uisce Éireann dliteanas maidir le haon mhoill a bhaineann leis an bhfaisnéis a fháil. Má tá an ríomh-phost seo faighte agat trí dhearmad, déan teagmháil leis an seoltóir más é do thoil é agus scrios an t-ábhar ó gach aon ríomhaire. D'fhéadfadh ríomhphost a bheith so-ghabhálach i leith truaillithe, idircheaptha agus i leith leasuithe neamhúdaraithe. Séanann Uisce Éireann aon fhreagracht as athruithe nó as idircheapadh a rinneadh ar an ríomhphost seo nó as aon dochar do chórais na bhfaighteoirí déanta ag an teachtaireacht seo nó ag a ceangaltáin tar éis a sheolta. Tabhair faoi deara go bhféadfadh monatóireacht a bheith á dhéanamh ar theachtaireachtaí chuig Uisce Éireann agus ó Uisce Éireann d'fhonn ár ngnó a chosaint agus chun a chinntiú go bhfuiltear ag teacht le beartais agus le caighdeáin Uisce Éireann. Is cuideachta gníomhaíochta ainmnithe é Uisce Éireann atá faoi theorainn scaireanna, a bunaíodh de bhun fhorálacha na n-Achtanna um Sheirbhísí Uisce 2007-2022, a bhfuil a bpríomh-ionad gnó ag Teach Colvill, 24-26 Sráid na Talbóide, BÁC 1.

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Thank you for your attention.

Uisce Éireann

Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

Uisce Éireanns Ref: PN26000042566

Planning Ref: EIAR Scoping Request for Ummera Gravel Pit Extension

Planning Authority: Cork County Council

Issue Date: 1 July 2026

Development Location:

Ummera Gravel Pit, Macroom, Co. Cork

Development Description:

Environmental impact assessment report scoping for the further development of Ummera gravel pit, near Macroom County Cork.

A Chara,

Thank you for your recent EIAR Scoping Request which we have reviewed.

Uisce Éireann has the following comments for your consideration.

All potential impacts arising from the development proposal on Uisce Éireann's abstraction points must be identified and addressed in the EIAR. This includes the Inniscarra Water Supply with the abstraction located 28 km downstream at Inniscarra Lake / Reservoir; and the Cork City Water Supply, with the abstraction located approximately 40 km downstream on the River Lee.

The EIAR will identify the drinking water abstractions as sensitive receptors and demonstrate how the proposed quarrying activities will not give rise to deterioration in water quality for these abstraction points. Any other surface water or groundwater abstraction points where a potential hydrological and hydrogeological exists must also be identified and the EIAR must include and consider all direct, indirect and cumulative effects on the abstraction points.

Stiúrthóirí / Directors: Jerry Grant (Cathaoirleach / Chairperson), Niall Gleeson (POF / CEO), Gerard Britchfield, Douglas Millican, Michael Nolan, Patricia King, Eileen Maher, Cathy Mannion, Paul Reid, Michael Walsh.
Oifig Chláraithe / Registered Office: Teach Colvill, 24-26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86 / Colvill House, 24-26 Talbot Street, Dublin, Ireland D01NP86
Is cuideachta ghníomhaíochta ainmnithe atá faoi theorainn scaireanna é Uisce Éireann / Uisce Éireann is a designated activity company, limited by shares.
Cláraithe in Éirinn Uimh.: 530363 / Registered in Ireland No.: 530363.

Stormwater, siltation, hydrocarbons and chemical risk: The potential impacts arising from potential contaminants such as suspended solids, increased turbidity, hydrocarbons, chemicals etc associated with quarrying should be assessed in the application documents to include mitigations against contaminants entering groundwater and surface water, via hydrological and hydrogeological pathways.

Mitigations should be proposed for any potential negative impacts on any water source(s) which may be in proximity and included in the EIAR, Environmental Management Plan and Surface Water Management Plan.

Emergency Response and Monitoring Plan shall be developed for the site which includes spill containment, notification procedures, and mitigation measures and the proposed baseline and operational monitoring

In addition to the above, the following aspects of water & wastewater services should be addressed in the scope of an EIAR and planning proposals, ahead of submitting your planning application to avoid unnecessary delays.

a) Protection of drinking water source(s) from potentially adverse impacts is a priority for Uisce Éireann. It is Uisce Éireanns current policy to maintain safe and secure drinking water supplies and ensure that development will not give rise to any deterioration in water quality. Development proposals shall not impact public drinking water sources and/or abstraction point(s). It is also a requirement of the Water Framework Directive that waters used for the abstraction of drinking water are protected to avoid deterioration in quality. Where a development proposal has the potential to impact an Uisce Éireann Drinking Water Source(s), the applicant shall provide details of measures to be taken to ensure that there will be no negative impact to Uisce Éireann's Drinking Water Source(s) during the construction, operational and decommissioning phases of the development.

b) Hydrological / hydrogeological pathways between the applicant's site and receiving waters should be identified as part of an EIAR and/or the planning application.

c) Where the development proposes the backfilling of materials, the applicant is requested to include breakdown of the chemical components of the materials proposed.

d) Where the development proposes the backfilling of materials, the applicant is requested to include details of best practice monitoring regime(s) to inform protection of ground waters, aquifers and drinking water source abstractions.

e) Potential impacts of the development on the capacity of water services (*i.e. do existing water services have the capacity to cater for the new development*) - If your proposals require a connection(s) to either a public water supply or sewage collection system, you are advised to submit a Pre-Connection Enquiry (PCE) enquiry to Uisce Éireann to determine the feasibility of connection to the Uisce Éireann network ahead of lodging your planning application. The PCE should be submitted to Uisce Éireann well in advance of lodging your planning application.

Lodging a COF with your planning application helps avoids delays in the consenting process.

f) In relation to a development that would discharge trade effluent, any upstream treatment or attenuation of discharges required prior to discharging to an Uisce Éireann collection network.

g) In relation to the management of surface water; the potential impact of surface water discharges to combined sewer networks and potential measures to stop surface waters from combined sewers. Uisce Éireann does not permit surface waters into our sewer network.

h) Any physical impact on Uisce Éireann assets – reservoir, drinking water source, treatment works, pipes, pumping stations, discharges outfalls etc. including any relocation of assets.

i) When considering a development proposal, the applicant is advised to determine the location of public water services assets, possible connection points from the applicant's site / lands to the public network and any drinking water abstraction catchments to ensure these are included and fully assessed in any pre-planning proposals. Details, where known, can be obtained by emailing an Ordnance Survey map identifying the proposed location of the applicant's intended development to datarequests@water.ie

j) Other indicators or methodologies for identifying infrastructure located within the applicant's lands are the presence of registered wayleave agreements, visible manholes, vent stacks, valve chambers, marker posts etc. within the proposed site.

k) Any potential impacts on the assimilative capacity of receiving waters in relation to Uisce Éireann discharge outfalls including changes in dispersion / circulation characterises. Hydrological / hydrogeological pathways between the applicant's site and receiving waters should be identified within the report.

l) Any potential impact on the contributing catchment of water sources either in terms of water abstraction for the development (*and resultant potential impact on the capacity of the source*) or the potential of the development to influence / present a risk to the quality of the water abstracted by Uisce Éireann for public supply should be identified within the report.

m) Where a development proposes to connect to an Uisce Éireann network and that network either abstracts water from or discharges wastewater to a "protected"/ sensitive area, consideration as to whether the integrity of the site / conservation objectives of the site would be compromised should be identified within the report.

n) Uisce Éireann does not permit build over of its assets. Separation distances from public infrastructure, as per Uisce Éireann's Standards, Codes and Practices must be achieved. It is the applicant's responsibility to submit a diversion enquiry to Uisce Éireann Diversions Section (diversions@water.ie) prior to construction,

where a potential build over of public assets is in question and/or where the applicants proposals cannot achieve separation distances from public infrastructure as per UÉ Standards & Codes of Practice. As an applicant you are required to;

- survey the site to determine the exact location of the public assets. Any trial investigations should be carried out with the agreement and in the presence of Uisce Éireann. All queries relating to in situ public infrastructure should be directed to diversions@water.ie
- Provide evidence of separation distances between the existing Uisce Éireann assets and proposed structures, other services, trees, etc. have to be in accordance with UÉ Standards & Codes of Practice

o) Where an existing connection is in place, the applicant or developer may be required to enter into a new or revised water and/or wastewater connection agreement(s) with Uisce Éireann prior to the commencement of this development.

p) Where new connection(s) are sought, the applicant shall enter into water and/or wastewater connection agreement(s) with Uisce Éireann prior to the commencement of this development.

Queries relating to the comments above should be directed to planning@water.ie. EIAR Scoping Requests should be sent to planning@water.ie

Dermot Phelan,

Connections Delivery Manager

dankeohaneivyclash@hotmail.com

From: Housing Manager DAU <Manager.DAU@npws.gov.ie>
Sent: Friday 15 May 2026 15:42
To: Dan Keohane
Subject: RE: Ummera Gravel Pit, Macroom

Our Ref: G Pre00157/2026 (**Please quote in all related correspondence**)

A Chara,

I acknowledge receipt of your recent consultation.

Please note Development Applications Unit (DAU) is the coordinating unit for the Department of Housing, Local Government and Heritage, coordinating responses/submission from National Parks and Wildlife Service, National Monuments Service, Underwater Archaeology Unit and Architectural Heritage. All Correspondence to be issued to **Development Applications Unit only.** Please update your contact information to reflect this.

In the event of observations, you will receive a co-ordinated heritage-related response by email from Development Applications Unit (DAU).

The normal target turnaround for pre-planning and other general consultations is **six weeks** from date of receipt. In relation to general consultations from public bodies under the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 to 2011, the Department endeavours to meet deadline dates, where requested.

If you have not heard from DAU and wish to receive an update, please email manager.dau@npws.gov.ie

Kind regards,

Edel Griffin
Executive Officer
——
An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage
Aonad na nIarratas ar Fhorbairt
Development Applications Unit
Oifigí an Rialtais
Government Offices
Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman, Y35 AP90
Newtown Road, Wexford, County Wexford, Y35 AP90

From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: Friday 15 May 2026 12:02
To: Housing Manager DAU <Manager.DAU@npws.gov.ie>
Subject: FW: Ummera Gravel Pit, Macroom

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Dear Sir / Madam
I refer to the previous consultation (September 2019) in relation to the operational gravel pit in Ummera Macroom. The S37L application for further development was lodged in August 2020, as was the substitute consent application. An Coimisiún Pleanála has requested that the EIAR for the further development application be updated taking into

account the assessment methodology per the 2022 EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.*
A decision on the substitute consent application is still pending.

As part of the EIA, we wish to receive the views and comments from the NPWS-DAU on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Cork

086-8289167

From: Daniel Keohane <dkck@eircom.net>
Sent: Thursday 13 February 2020 17:06
To: 'manager.dau@chg.gov.ie' <manager.dau@chg.gov.ie>
Subject: FW: Ummera Gravel Pit, Macroom

Dear Sir / Madam
Drimoleague Concrete Works Ltd (DCWL) has appointed Keohane Geological & Environmental Consultancy to prepare the remedial Environment Impact Assessment Report (rEIAR) for the Ummera Gravel Pit near Macroom County Cork, as well as the EIAR for the continuation of gravel extraction at the site.

The lands at Ummera have been used for gravel extraction since the 1940's. DCWL (through its sister company, Murnane & O'Shea Ltd) became involved in the gravel pit in the mid 1970's and has continuously operated a relatively small-scale gravel extraction and washing operations since then. The gravel pit is in a rural setting in the catchment of the Sullane River. A determination was made by Cork County Council that extraction was undertaken after 01 February 1990 that would have required EIA, but such assessment was not carried out. DCWL has been instructed to apply for substitute consent which should include a rEIAR.

As part of the rEIA, we wish to receive the views and comments from the NPWS-DAU on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane

Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

086-8289167

dankeohaneivyclash@hotmail.com

From: National.roads <National.roads@corkrdo.ie>
Sent: Friday 15 May 2026 12:20
To: dankeohaneivyclash@hotmail.com
Cc: National.roads
Subject: FW: Ummera Gravel Pit, Macroom
Attachments: Ummera Gravel Pit location map.pdf

A Chara,

I wish to acknowledge receipt of your submission via national.roads@corkrdo.ie .

I confirm that this matter is receiving attention and our office will revert to you as soon as possible.

Is mise le meas,

The National Roads Team

Oifig na mBóithre Náisiúnta Chorcaí, Comhairle Contae Chorcaí, Richmond, Gleann Maghair, Corcaigh, T45 WA44 Éire
Cork National Roads Office, Cork County Council, Richmond, Glanmire, Cork, T45 WA44 Ireland
t +35321-4821046 | **w** www.corkrdo.ie

Smaoinigh ar an Timpeallacht sula ndéanann tú an ríomhphost seo a phriontáil.
Please consider the Environment before printing this mail.

*D'fhonn do cheist a phróiseáil, d'fhéadfadh sé a bheith riachtanach do Chomhairle Contae Chorcaí faisnéis phearsanta a bhailiú uait. Déanfar an fhaisnéis sin a phróiseáil de réir ár ráiteas príobháideachta atá ar fáil le breathnú **anseo**.*

*In order to process your query, it may be necessary for Cork County Council to collect Personal information from you. Such information will be processed in line with our privacy statement which is available to view **here**.*

From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: Friday 15 May 2026 12:07
To: National.roads <National.roads@corkrdo.ie>
Subject: FW: Ummera Gravel Pit, Macroom

Dear Sir / Madam
I refer to the previous consultation (September 2019) in relation to the operational gravel pit in Ummera Macroom. The S37L application for further development was lodged in August 2020, as was the substitute consent application. An Coimisiún Pleanála has requested that the EIAR for the further development application be updated taking into account the assessment methodology per the 2022 EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.*
A decision on the substitute consent application is still pending.

As part of the EIA, we wish to receive the views and comments from the Roads Design office on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Cork

086-8289167

From: Dan Keohane
Sent: Tuesday 28 April 2020 12:46
To: national.roads@corkrdo.ie
Subject: N22 Baile Bhuirne to Macroom Road Development

Dear Sir / Madam
Drimoleague Concrete Works Ltd (DCWL) operates a gravel pit at Ummera, approximately 2.5km NE of Macroom. The gravel pit is accessed from the N22 using regional road R618 (crossing Sullane Bridge) and local road L-3423. DCWL has appointed Keohane Geological & Environmental Consultancy to prepare the Environment Impact Assessment Report (EIAR) for the future development of the gravel pit.

As part of the EIA, we wish to receive the views and comments from the Roads Design office on the Ummera Gravel pit. We have already contacted TII. Also, I would like to get a copy (if available) of the construction stage TMP at the Sullane Bridge, as this may affect HGVs assessing the gravel pit.

I attach the site location map for the gravel pit. If you require further detail, please contact me.

Thank you
Dan Keohane

Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

086-8289167

dankeohaneivyclash@hotmail.com

From: Eoin McCarthy <Eoin.McCarthy@corkrdo.ie>
Sent: Friday 15 May 2026 17:17
To: National.roads; Ronan Crotty; Planning; dankeohaneivyclash@hotmail.com
Subject: RE: Ummera Gravel Pit, Macroom

All,

We don't have any details what is being proposed at the gravel pit at Ummera. If we get the details, we can send back a response.

Regards

Eoin McCarthy

Eoin McCarthy
Senior Executive Engineer

Oifig na mBóithre Náisiúnta Chorcaí
Cork National Roads Office
Comhairle Contae Chorcaí
Cork County Council

Oifig na mBóithre Náisiúnta Chorcaí, Comhairle Contae Chorcaí, Richmond, Gleann Maghair, Corcaigh, T45 WA44 Éire
Cork National Roads Office, Cork County Council, Richmond, Glanmire, Cork, T45 WA44 Ireland
d +35321-4858155 | t +35321-4821046 | m +35386-8355369| w www.corkrdo.ie

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From: National.roads <National.roads@corkrdo.ie>
Sent: Friday 15 May 2026 12:31
To: Eoin McCarthy <Eoin.McCarthy@corkrdo.ie>; Ronan Crotty <Ronan.Crotty@corkrdo.ie>; Planning <planning@corkrdo.ie>
Cc: National.roads <National.roads@corkrdo.ie>
Subject: FW: Ummera Gravel Pit, Macroom

Good Afternoon All,

Please see query/observation below received by email to this office.

You would appear to be the most appropriate persons to deal with this matter. I would be obliged therefore if you would issue a response in this case as soon as possible.

I can't find any reference to a response to Mr. Keohane from the N.R.O. on our system for his previous correspondence.

Please forward a copy of your response to me so that I can close my file in the matter. If you are not the appropriate persons to respond, please let me know as soon as possible so that the query can be re-directed.

Please note that emails relating to traffic accidents received via national.roads@corkrdo.ie or info@corkrdo.ie will be retained indefinitely. All other emails to these email addresses will be retained for a period of 7 years and will then be erased. If the current email is of relevance to your project then this should be retained on your project file. Where possible, the record should first be redacted to exclude all personal data. Under no circumstances should email correspondence be transmitted to a non Cork County Council party without first obtaining the consent of the sender or redacting the email to exclude all personal information.

Thank you,

Diane Power
Oifigeach Cleireachais | Clerical Officer

Oifig na mBóithre Náisiúnta Chorcaí, Comhairle Contae Chorcaí, Richmond, Gleann Maghair, Corcaigh, T45 WA44 Éire
Cork National Roads Office, Cork County Council, Richmond, Glanmire, Cork, T45 WA44 Ireland
d +35321-4858171 | **t** +35321-4821046 | **w** www.corkrdo.ie

Smaoinigh ar an Timpeallacht sula ndéanann tú an ríomhphost seo a phriontáil.
Please consider the Environment before printing this mail.

*D'fhonn do cheist a phróiseáil, d'fhéadfadh sé a bheith riachtanach do Chomhairle Contae Chorcaí faisnéis phearsanta a bhailiú uait. Déanfar an fhaisnéis sin a phróiseáil de réir ár ráiteas príobháideachta atá ar fáil le breathnú **anseo**.*

*In order to process your query, it may be necessary for Cork County Council to collect Personal information from you. Such information will be processed in line with our privacy statement which is available to view **here**.*

From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: Friday 15 May 2026 12:07
To: National.roads <National.roads@corkrdo.ie>
Subject: FW: Ummera Gravel Pit, Macroom

Dear Sir / Madam
I refer to the previous consultation (September 2019) in relation to the operational gravel pit in Ummera Macroom. The S37L application for further development was lodged in August 2020, as was the substitute consent application. An Coimisiún Pleanála has requested that the EIAR for the further development application be updated taking into account the assessment methodology per the 2022 EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.*
A decision on the substitute consent application is still pending.

As part of the EIA, we wish to receive the views and comments from the Roads Design office on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Cork

086-8289167

From: Dan Keohane
Sent: Tuesday 28 April 2020 12:46
To: national.roads@corkrdo.ie
Subject: N22 Baile Bhuirne to Macroom Road Development

Dear Sir / Madam
Drimoleague Concrete Works Ltd (DCWL) operates a gravel pit at Ummera, approximately 2.5km NE of Macroom. The gravel pit is accessed from the N22 using regional road R618 (crossing Sullane Bridge) and local road L-3423. DCWL has appointed Keohane Geological & Environmental Consultancy to prepare the Environment Impact Assessment Report (EIAR) for the future development of the gravel pit.

As part of the EIA, we wish to receive the views and comments from the Roads Design office on the Ummera Gravel pit. We have already contacted TII. Also, I would like to get a copy (if available) of the construction stage TMP at the Sullane Bridge, as this may affect HGVs assessing the gravel pit.

I attach the site location map for the gravel pit. If you require further detail, please contact me.

Thank you
Dan Keohane

Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

086-8289167

dankeohaneivyclash@hotmail.com

From: Info Opw <info@opw.ie>
Sent: Friday 15 May 2026 12:00
To: Dan Keohane
Subject: Automatic reply: Ummera Gravel Pit, Macroom

Thank you for your email to the Office of Public Works. Your query has been forwarded to the relevant section within the OPW for direct reply. If you do not receive a response within 20 working days, please email this address again for further assistance. All Media queries should be emailed to pressoffice@opw.ie This is an automated response. Please do not respond to this email. Go raibh maith agat as an ríomhphost uait chuig Oifig na nOibreacha Poiblí. Seoladh do cheist chuig an rannóg chuí taobh istigh den OPW a thabharfaidh freagra díreach duit. Sa chás nach bhgaigheann tú freagra taobh istigh de 20 lá oibre, seol ríomhphost chuig an seoladh seo arís le do thoil, chun cúnamh breise a fháil. Ba chóir ceisteanna meáin a sheoladh trí ríomhphost chuig pressoffice@opw.ie Is freagra uathoibrithe é seo. Ná seol freagra ar an ríomhphost seo le do thoil.
Email Disclaimer: https://www.gov.ie/en/organisation-information/439daf-email-disclaimer/

dankeohaneivyclash@hotmail.com

From: Info Opw <info@opw.ie>
Sent: Thursday 23 July 2026 11:29
To: Dan Keohane
Subject: Automatic reply: Ummera Gravel Pit, Macroom

Thank you for your email to the Office of Public Works. Your query has been forwarded to the relevant section within the OPW for direct reply. If you do not receive a response within 20 working days, please email this address again for further assistance. All Media queries should be emailed to pressoffice@opw.ie This is an automated response. Please do not respond to this email. Go raibh maith agat as an ríomhphost uait chuig Oifig na nOibreacha Poiblí. Seoladh do cheist chuig an rannóg chuí taobh istigh den OPW a thabharfaidh freagra díreach duit. Sa chás nach bhgaigheann tú freagra taobh istigh de 20 lá oibre, seol ríomhphost chuig an seoladh seo arís le do thoil, chun cúnamh breise a fháil. Ba chóir ceisteanna meáin a sheoladh trí ríomhphost chuig pressoffice@opw.ie Is freagra uathoibrithe é seo. Ná seol freagra ar an ríomhphost seo le do thoil.
Email Disclaimer: https://www.gov.ie/en/organisation-information/439daf-email-disclaimer/

dankeohaneivyclash@hotmail.com

From: INFO <Information@tii.ie>
Sent: Friday 15 May 2026 11:48
To: Dan Keohane
Subject: Acknowledgement Email - NOTE: Replies to acknowledgement emails are not checked.

A Chara,

Admhaíonn Bonneagar Iompair Éireann go bhfuarthas do ríomhphost.

Eiseofar freagra ar d'fhiosrúchán in am trátha.

Le gach dea-mhéin,

An tAonad Rialála agus Riaracháin
Bonneagar Iompair Éireann

TABHAIR FAOI DEARA: Ní sheiceáltar freagraí ar ríomhphoist admhála. Ba cheart ríomhphoist a sheoladh go díreach chuig info@tii.ie



Dear Sir/Madam,

Transport Infrastructure Ireland acknowledges receipt of your email.

A response to your enquiry will issue in due course.

Kind regards,

Regulatory and Administration Unit
Transport Infrastructure Ireland

NOTE: Replies to acknowledgement emails are not checked. Email should be sent to info@tii.ie directly.



In accordance with TII's Right to Disconnect policy, if you are receiving this email outside of normal working hours, I do not expect a response or action outside of your own working hours unless it is clearly noted as requiring urgent attention.

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dankeohaneivyclash@hotmail.com

From: Landuse Planning <LandUsePlanning@tii.ie>
Sent: Monday 8 June 2026 15:37
To: dankeohaneivyclash@hotmail.com
Cc: Landuse Planning
Subject: EIAR Scoping Consultation – Ummera Gravel Pit, near Macroom, Co. Cork
Attachments: TII26-136424 - EIS scoping Ummera Gravel Pit, Macroom.pdf

Dear Mr. Keohane

Please find attached a copy of TII's observation on the above scoping consultation

Please acknowledge receipt of this submission.

Acknowledgements can be forwarded to landuseplanning@tii.ie

Kind Regards,
Ruairí Dunne
Graduate Land Use Planner



In accordance with TII's Right to Disconnect policy, if you are receiving this email outside of normal working hours, I do not expect a response or action outside of your own working hours unless it is clearly noted as requiring urgent attention.

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Próiseálann BIÉ sonraí pearsanta a sholáthraítear dó i gcomhréir lena Fhógra ar Chosaint Sonraí atá ar fáil ag https://www.tii.ie/ga/compliance/data-protection-notice/

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Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Dan Keohane
Keohane Geological & Environmental
Consultancy
Ivy House
Clash
Carrigrohane
County Cork

Dáta | Date	**Ár dTag | Our Ref.**
8 June 2026	**TII26-136424**

Re: EIAR Scoping Consultation – Ummera Gravel Pit, near Macroom, Co. Cork

Dear Mr. Keohane,

Transport Infrastructure Ireland (TII) acknowledges receipt of your correspondence regarding the EIAR update for the proposed further development at the Ummera Gravel Pit, in the context of the requirements of An Coimisiún Pleanála and the *EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022)*.

National Strategic Outcome 2 of the National Planning Framework supports the protection and maintenance of the strategic capacity, safety and efficiency of the national roads network. This is reinforced by the National Development Plan 2021–2030, to ensure that the extensive transport networks are maintained to a high level to ensure quality levels of service, accessibility and connectivity to transport users.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid application referred.

The approach to be adopted by TII in making such submissions or comments will seek to uphold official policy and guidance as outlined in the Spatial Planning and National Roads Guidelines for Planning Authorities (2012). Regard should also be had to other relevant guidance available at www.TII.ie

The approach adopted in the EIAR should demonstrate that the proposed development will not adversely affect the safety, capacity or operational efficiency of the national road network.

In particular, the following matters should be addressed:

1. As set down in the Spatial Planning and National Roads Guidelines (2012), the primary purpose of the national road network is to provide strategic transport links

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between the main centres of population and employment, including key international gateways such as the main ports and airports, and to provide access between all regions. The EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network in order to demonstrate that the development can proceed complementary to safeguarding the capacity, safety and operational efficiency of that network.

2. Consultations should be had with the relevant Local Authority/National Roads Design Office (RDO) with regard to locations of existing and future national road schemes

3. Clearly identify haul routes proposed and fully assess the network to be traversed. Separate structure approvals/permits and other licences may be required in connection with the proposed haul route and all structures on the haul route should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal load proposed.

4. Where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. The Authority's Traffic and Transport Assessment Guidelines (2014) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the TII TTA Guidelines which addresses requirements for sub-threshold TTA.

5. The designers and assessors are asked to consult TII Publications to determine whether a Road Safety Audit is required.

6. As part of TII's responsibilities for managing and improving the country's national road and light rail networks, the Authority sets development guidance and standards for traffic and road assessments and construction that may be necessary by reason of proposed development location, scale or typology to be prepared to accompany applications for developments or works. Technical guidance and standards are contained in TII Publications, available at https://www.tiipublications.ie/

7. The developer, in conducting Environmental Impact Assessment, should have regard to TII Environment Guidelines that deal with assessment and mitigation measures for varied environmental factors and occurrences. In particular;

   (a) The EIAR should have regard to TII's Environmental Assessment and Construction Guidelines, including the Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March, 2014),

   (b) The EIAR should consider the European Communities (Environmental Noise) Regulations 2018 (S.I. No. 549 of 2018) and, in particular, how the development will may affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March, 2014)),

Yours faithfully,

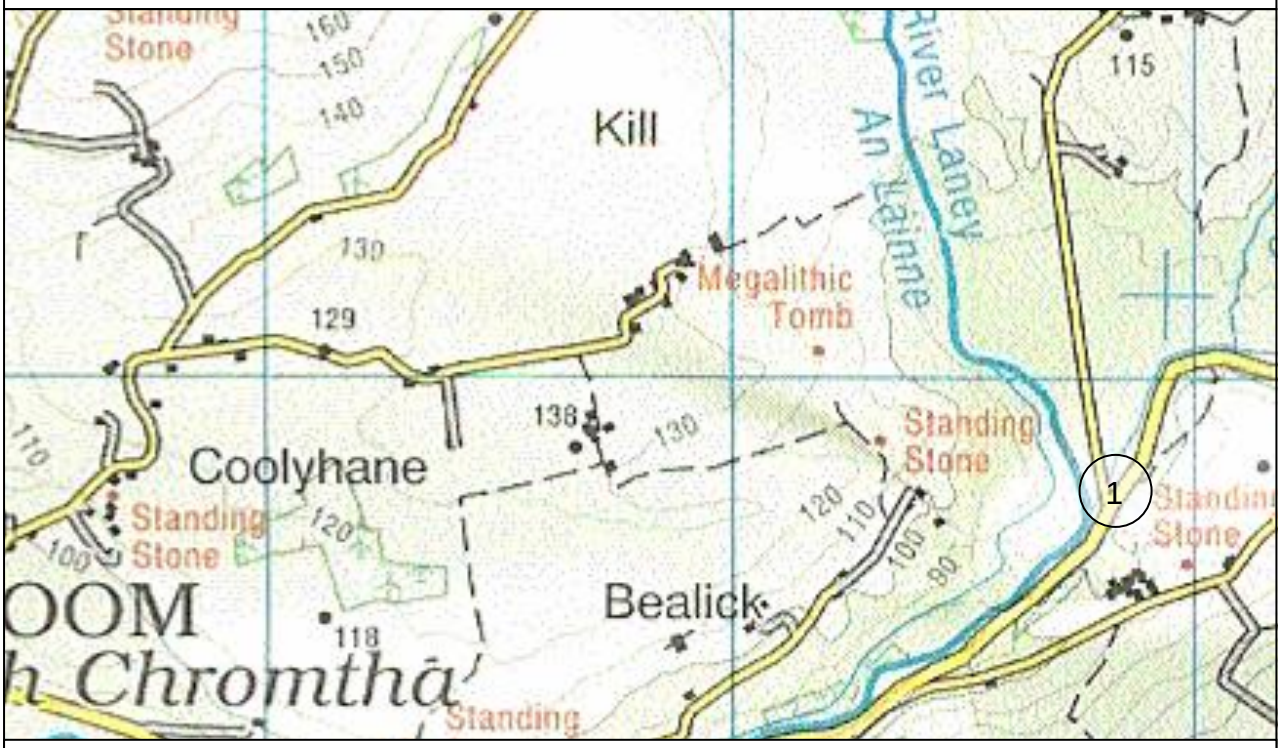


On Behalf of TII Land Use Planning

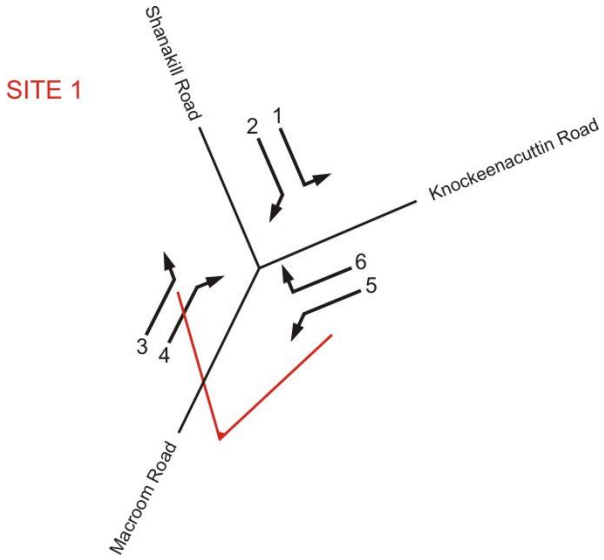
APPENDIX 4-1

TRAFFIC COUNT DATA – 2007, 2019 & 2026

Site Location



Movement Numbers & Directions



Job number: ATH/07/014	Job date: 16th January 2007	Drawing No: ATH/07/014-1	abacus Transportation Surveys
Client: Keohane Geological & Environmental Consultancy	Job day: Tuesday	Author: BCK	

ABACUS TRANSPORTATION SURVEYS

MACROOM TRAFFIC COUNT **JANUARY 2007**
MANUAL CLASSIFIED JUNCTION COUNT **ATH/07/014**

SITE: 01 DATE: 16th January 2007
LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3					
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT
07:00	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
07:15	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	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
H/TOT	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	1	1
08:00	0	0	0	0	0	0	2	0	0	0	0	2	3	0	0	0	0	3
08:15	0	0	0	0	0	0	1	1	0	0	0	2	1	0	0	0	0	1
08:30	0	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0
08:45	0	0	0	0	0	0	1	1	1	0	0	3	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	5	2	2	0	0	9	4	0	0	0	0	4
09:00	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	1	0	0	0	0	1
09:30	0	0	0	0	0	0	1	0	0	1	0	2	1	0	1	0	0	2
09:45	0	0	0	0	0	0	2	0	0	0	0	2	0	1	0	0	0	1
H/TOT	0	0	0	0	0	0	3	0	0	1	0	4	2	1	1	0	0	4
10:00	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	2	0	0	0	0	2
10:30	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
10:45	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1
H/TOT	0	0	0	0	0	0	2	0	0	0	0	2	3	0	0	0	0	3
11:00	0	0	0	0	0	0	1	0	0	0	0	1	3	1	0	0	0	4
11:15	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	1	0	0	0	0	1	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
H/TOT	0	0	0	0	0	0	2	0	0	0	0	2	4	2	0	0	0	6
12:00	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1
12:15	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1
12:30	0	0	1	0	0	1	1	0	0	1	0	2	1	0	0	0	0	1
12:45	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
H/TOT	1	0	1	0	0	2	1	2	0	1	0	4	2	0	0	1	0	3

ABACUS TRANSPORTATION SURVEYS

MACROOM TRAFFIC COUNT **JANUARY 2007**
MANUAL CLASSIFIED JUNCTION COUNT **ATH/07/014**

SITE: 01 DATE: 16th January 2007
LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 4						MOVEMENT 5						MOVEMENT 6					
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT
07:00	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	4	0	0	0	0	4	0	0	0	0	0	0
07:30	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0
07:45	0	0	0	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	14	0	0	0	0	14	0	0	0	0	0	0
08:00	0	0	0	0	0	0	5	0	0	0	1	6	0	0	0	0	0	0
08:15	0	0	0	1	0	1	3	1	0	0	0	4	0	0	0	0	0	0
08:30	5	0	0	0	0	5	5	0	0	0	0	5	0	0	0	0	0	0
08:45	0	0	1	0	0	1	4	1	0	0	0	5	0	0	0	0	0	0
H/TOT	5	0	1	1	0	7	17	2	0	0	1	20	0	0	0	0	0	0
09:00	6	2	0	0	0	8	7	1	0	0	0	8	0	0	0	0	0	0
09:15	3	1	1	0	0	5	10	2	0	0	0	12	1	0	0	0	0	1
09:30	3	0	1	0	0	4	2	2	0	1	0	5	0	0	0	0	0	0
09:45	3	1	0	1	0	5	5	0	1	0	0	6	0	0	0	0	0	0
H/TOT	15	4	2	1	0	22	24	5	1	1	0	31	1	0	0	0	0	1
10:00	3	2	0	0	0	5	5	2	0	0	0	7	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
10:30	0	1	0	0	0	1	4	0	0	0	0	4	0	0	0	0	0	0
10:45	3	0	0	0	0	3	4	1	1	0	0	6	0	0	0	0	0	0
H/TOT	6	3	0	0	0	9	13	3	1	0	0	17	0	0	0	0	0	0
11:00	4	0	0	0	0	4	5	0	0	0	0	5	0	0	0	0	0	0
11:15	5	1	0	1	0	7	3	0	0	0	0	3	0	0	0	0	0	0
11:30	1	3	0	0	0	4	2	1	0	1	0	4	0	0	0	0	0	0
11:45	3	0	0	1	0	4	2	0	0	0	0	2	0	0	0	0	0	0
H/TOT	13	4	0	2	0	19	12	1	0	1	0	14	0	0	0	0	0	0
12:00	4	0	0	0	0	4	5	2	0	0	0	7	0	0	0	0	0	0
12:15	6	0	0	0	0	6	3	1	0	1	0	5	1	0	0	0	0	1
12:30	6	1	0	0	0	7	2	1	1	0	0	4	1	0	0	0	0	1
12:45	3	0	1	0	0	4	1	0	0	0	0	1	0	0	1	0	0	1
H/TOT	19	1	1	0	0	21	11	4	1	1	0	17	2	0	1	0	0	3

ABACUS TRANSPORTATION SURVEYS

MACROOM TRAFFIC COUNT **JANUARY 2007**
MANUAL CLASSIFIED JUNCTION COUNT **ATH/07/014**

SITE: 01 DATE: 16th January 2007
LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3						MOVEMENT 4						MOVEMENT 5						MOVEMENT 6					
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**TIME**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**
13:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	13:00	1	0	0	0	0	1	2	0	0	1	0	3	0	0	0	0	0	0
13:15	1	0	0	0	0	1	1	0	0	0	0	1	2	0	0	0	0	2	13:15	2	0	0	0	0	2	2	1	0	0	0	3	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	13:30	3	1	0	0	0	4	4	0	0	0	0	4	0	0	0	0	0	0
13:45	0	0	0	0	0	0	1	1	0	0	0	2	0	0	1	0	0	1	13:45	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	2	1	0	0	0	3	5	0	1	0	0	6	**H/TOT**	10	1	0	0	0	11	8	1	0	1	0	10	0	0	0	0	0	0
14:00	0	0	0	0	0	0	2	0	1	0	0	3	3	0	0	0	0	3	14:00	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1
14:15	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	2	14:15	0	1	0	1	0	2	2	1	1	0	0	4	0	0	0	1	0	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	14:30	6	0	0	0	0	6	1	0	0	1	0	2	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	14:45	2	1	0	1	0	4	2	1	1	0	0	4	0	0	0	0	0	0
H/TOT	0	0	0	1	0	1	2	0	1	0	0	3	6	1	0	0	0	7	**H/TOT**	8	3	0	2	0	13	5	2	2	1	0	10	0	0	0	2	0	2
15:00	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	15:00	4	0	0	0	0	4	4	2	0	0	0	6	0	0	0	0	0	0
15:15	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	15:15	6	2	0	0	0	8	2	0	0	1	0	3	0	0	0	1	0	1
15:30	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	15:30	3	1	0	0	0	4	4	0	0	0	0	4	0	0	0	1	0	1
15:45	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	15:45	5	0	0	0	0	5	4	1	0	0	0	5	0	0	0	0	0	0
H/TOT	0	0	0	3	0	3	1	1	0	0	0	2	2	0	0	0	0	2	**H/TOT**	18	3	0	0	0	21	14	3	0	1	0	18	0	0	0	2	0	2
16:00	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	16:00	1	1	0	0	0	2	2	1	0	0	0	3	0	0	0	1	0	1
16:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	1	0	0	4	16:15	3	0	0	1	1	5	3	0	1	0	0	4	0	0	0	1	0	1
16:30	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	16:30	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0
16:45	0	0	0	0	0	0	1	0	0	0	0	1	2	2	0	0	0	4	16:45	2	1	0	0	0	3	2	0	0	1	0	3	0	0	0	1	0	1
H/TOT	0	0	0	2	0	2	2	0	1	0	0	3	6	2	1	0	0	9	**H/TOT**	6	2	0	1	1	10	9	1	1	1	0	12	0	0	0	3	0	3
17:00	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	17:00	3	1	1	0	0	5	2	1	1	0	0	4	0	0	0	0	0	0
17:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	17:15	3	0	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	0
17:30	0	0	0	0	0	0	2	0	1	0	0	3	0	0	0	0	0	0	17:30	5	1	0	0	0	6	2	0	0	0	0	2	0	0	0	0	0	0
17:45	0	0	0	0	0	0	2	0	0	0	0	2	5	0	0	0	0	5	17:45	5	0	0	0	0	5	7	1	0	0	0	8	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	6	0	1	0	0	7	11	0	0	0	0	11	**H/TOT**	16	2	1	0	0	19	12	2	1	0	0	15	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	18:00	11	1	0	0	0	12	2	0	0	0	0	2	0	0	0	0	0	0
18:15	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	18:15	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	18:30	11	1	0	0	0	12	1	0	0	0	0	1	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	18:45	2	0	0	0	0	2	3	0	0	0	0	3	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	2	0	0	0	0	2	7	0	0	0	0	7	**H/TOT**	30	2	0	0	0	32	6	0	0	0	0	6	0	0	0	0	0	0
P/TOT	2	0	1	6	0	9	31	6	5	2	0	44	52	6	3	1	1	63	**P/TOT**	146	25	5	7	1	184	145	24	7	7	1	184	3	0	1	7	0	11

ABACUS TRANSPORTATION SURVEYS

MACROOM TRAFFIC COUNT **JANUARY 2007**
MANUAL CLASSIFIED JUNCTION COUNT **ATH/07/014**

SITE: 01 DATE: 16th January 2007
LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

MACROOM TRAFFIC COUNT **30 MAY 2019** **MACROOM TRAFFIC COUNT** **30 MAY 2019**

MANUAL CLASSIFIED JUNCTION COUNT **MANUAL CLASSIFIED JUNCTION COUNT**

SITE: 01 DATE: 30-May-19 SITE: 01 DATE: 30-May-19

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3							MOVEMENT 4						MOVEMENT 5						MOVEMENT 6						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**TIME**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	
07:00	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	07:00	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	2	0	0	2	0	4	1	0	0	0	0	1	07:15	0	0	0	0	0	0	1	2	0	0	0	3	0	0	0	0	0	0	
07:30	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	1	1	07:30	0	0	0	0	0	0	5	1	0	0	0	6	0	0	0	0	0	0	
07:45	0	0	0	0	0	0	1	2	0	0	0	3	0	0	0	0	0	0	07:45	1	0	0	0	1	2	8	0	0	1	0	9	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	6	3	0	3	0	12	1	0	0	0	1	2	**H/TOT**	1	0	0	0	1	2	14	3	0	1	0	18	0	0	0	0	0	0	34
08:00	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	08:00	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	
08:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	08:15	1	0	0	0	1	2	10	0	0	0	1	11	0	0	1	0	0	1	
08:30	1	0	0	0	0	1	4	0	0	0	0	4	1	0	0	0	0	1	08:30	3	0	0	1	0	4	3	0	0	0	0	3	0	0	0	0	0	0	
08:45	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	08:45	2	1	1	0	0	4	4	1	1	0	0	6	0	0	0	0	0	0	
H/TOT	1	0	1	0	0	2	6	0	0	0	0	6	6	0	0	0	0	6	**H/TOT**	6	1	1	1	1	10	19	1	1	0	1	22	0	0	1	0	0	1	47
09:00	0	0	0	0	0	0	1	0	0	0	0	1	2	0	1	0	0	3	09:00	6	0	0	0	0	6	10	0	0	0	0	10	1	0	0	0	0	1	
09:15	0	0	0	0	0	0	5	0	0	0	0	5	1	1	1	0	0	3	09:15	1	0	0	0	0	1	5	0	0	0	0	5	0	0	0	0	0	0	
09:30	0	0	0	0	0	0	2	1	1	0	0	4	2	0	0	1	0	3	09:30	2	0	0	0	0	2	4	1	1	0	0	6	0	0	0	0	0	0	
09:45	0	0	0	0	0	0	2	0	1	0	0	3	2	1	1	0	0	4	09:45	2	0	0	0	0	2	5	0	0	0	0	5	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	10	1	2	0	0	13	7	2	3	1	0	13	**H/TOT**	11	0	0	0	0	11	24	1	1	0	0	26	1	0	0	0	0	1	64
10:00	2	0	0	0	0	2	4	0	0	0	0	4	2	0	0	0	0	2	10:00	6	0	0	0	0	6	3	0	0	0	0	3	1	0	0	0	0	1	
10:15	0	0	0	0	0	0	3	1	1	0	0	5	1	0	0	0	0	1	10:15	2	0	0	0	0	2	2	0	0	0	0	2	0	0	0	0	0	0	
10:30	0	0	0	0	0	0	3	0	0	0	0	3	1	0	0	0	0	1	10:30	5	0	0	1	0	6	1	0	0	1	0	2	0	0	0	0	0	0	
10:45	0	0	0	0	0	0	0	0	0	2	0	2	3	0	1	0	0	4	10:45	3	0	0	1	0	4	4	0	0	0	0	4	0	0	1	0	0	1	
H/TOT	2	0	0	0	0	2	10	1	1	2	0	14	7	0	1	0	0	8	**H/TOT**	16	0	0	2	0	18	10	0	0	1	0	11	1	0	1	0	0	2	55
11:00	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	11:00	5	0	0	0	0	5	5	0	3	0	0	8	0	0	0	0	0	0	
11:15	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	11:15	3	0	1	1	0	5	6	0	0	1	0	7	0	0	0	0	0	0	
11:30	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	11:30	3	0	1	0	0	4	4	0	2	1	0	7	0	0	0	0	0	0	
11:45	0	0	0	0	0	0	3	0	0	0	0	3	0	1	0	0	0	1	11:45	5	0	1	0	0	6	7	0	1	0	0	8	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	9	0	0	0	0	9	5	1	0	0	0	6	**H/TOT**	16	0	3	1	0	20	22	0	6	2	0	30	0	0	0	0	0	0	65
12:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	12:00	7	1	1	0	0	9	5	0	3	0	0	8	1	1	0	0	0	2	
12:15	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	1	0	3	12:15	4	0	1	0	0	5	3	0	1	0	0	4	0	0	0	0	0	0	
12:30	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	12:30	3	0	1	0	0	4	2	0	2	0	0	4	0	0	0	0	0	0	
12:45	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	12:45	3	0	3	0	0	6	0	0	2	0	0	2	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	3	0	0	0	0	3	6	0	0	1	0	7	**H/TOT**	17	1	6	0	0	24	10	0	8	0	0	18	1	1	0	0	0	2	54

MACROOM TRAFFIC COUNT **MAY 2019** **MACROOM TRAFFIC COUNT** **MAY 2019**

MANUAL CLASSIFIED JUNCTION COUNT **MANUAL CLASSIFIED JUNCTION COUNT**

SITE: 01 DATE: 30 May 2019 SITE: 01 DATE: 30 May 2019

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3							MOVEMENT 4						MOVEMENT 5						MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	
13:00	7	0	0	0	0	7	5	0	2	0	0	7	0	0	0	0	0	0	13:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	
13:15	0	0	2	0	0	2	3	0	2	0	0	5	0	0	0	0	0	0	13:15	0	0	0	0	0	0	1	0	0	0	0	1	4	0	0	0	0	4	
13:30	4	0	2	1	0	7	7	0	0	0	0	7	0	0	0	0	0	0	13:30	0	0	0	0	0	0	2	0	0	1	0	3	3	0	0	0	0	3	
13:45	4	0	1	0	0	5	6	0	0	0	0	6	0	0	0	1	0	1	13:45	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	2	
H/TOT	15	0	5	1	0	21	21	0	4	0	0	25	0	0	0	1	0	1	**H/TOT**	0	0	0	0	0	0	5	0	0	1	0	6	10	0	0	0	0	10	63
14:00	2	0	0	0	0	2	10	0	0	0	0	10	0	0	0	0	0	0	14:00	2	0	0	0	0	2	0	0	0	0	0	0	1	0	1	0	0	2	
14:15	3	0	0	0	0	3	4	0	3	0	0	7	0	0	0	0	0	0	14:15	0	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	
14:30	1	1	0	0	0	2	2	0	0	0	0	2	0	0	0	0	0	0	14:30	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	
14:45	5	1	0	0	0	6	4	0	0	0	0	4	0	0	0	0	0	0	14:45	0	0	0	0	0	0	4	0	0	0	0	4	1	0	0	0	0	1	
H/TOT	11	2	0	0	0	13	20	0	3	0	0	23	0	0	0	0	0	0	**H/TOT**	2	0	0	0	0	2	6	0	1	0	0	7	3	0	1	0	0	4	49
15:00	3	0	1	0	0	4	5	0	0	0	0	5	0	0	0	0	0	0	15:00	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	1	0	1	
15:15	2	0	1	0	0	3	2	0	1	0	0	3	0	0	0	0	0	0	15:15	0	0	0	0	0	0	4	0	0	0	0	4	3	0	0	0	0	3	
15:30	9	1	1	0	0	11	2	0	2	0	0	4	0	0	0	0	0	0	15:30	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	
15:45	8	0	1	0	0	9	2	0	1	0	0	3	0	0	0	0	0	0	15:45	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	
H/TOT	22	1	4	0	0	27	11	0	4	0	0	15	0	0	0	0	0	0	**H/TOT**	0	0	0	0	0	0	7	0	0	0	0	7	8	0	0	1	0	9	58
16:00	3	0	1	0	0	4	1	1	1	0	0	3	0	0	0	0	0	0	16:00	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	
16:15	5	0	2	0	1	8	2	0	1	0	0	3	1	0	1	0	0	2	16:15	0	0	0	0	0	0	3	0	0	0	0	3	6	2	0	0	0	8	
16:30	3	0	1	0	0	4	2	0	2	0	0	4	0	0	0	0	0	0	16:30	0	0	0	0	0	0	1	0	0	0	0	1	4	0	0	0	0	4	
16:45	4	0	1	0	0	5	0	0	1	0	0	1	0	0	0	0	0	0	16:45	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	1	0	3	
H/TOT	15	0	5	0	1	21	5	1	5	0	0	11	1	0	1	0	0	2	**H/TOT**	0	0	0	0	0	0	7	0	0	0	0	7	14	2	0	1	0	17	58
17:00	4	0	2	0	0	6	5	0	1	0	0	6	0	0	0	0	0	0	17:00	0	0	0	0	0	0	1	0	0	0	0	1	5	0	0	0	0	5	
17:15	1	1	1	0	0	3	2	0	2	0	0	4	0	0	0	0	0	0	17:15	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	2	0	6	
17:30	4	0	1	0	0	5	5	0	0	0	0	5	0	0	0	0	0	0	17:30	0	0	0	0	0	0	3	0	0	0	0	3	5	0	0	0	0	5	
17:45	9	1	0	0	0	10	2	0	0	0	0	2	0	0	0	0	0	0	17:45	0	0	0	0	0	0	1	0	0	1	0	2	3	0	0	1	0	4	
H/TOT	18	2	4	0	0	24	14	0	3	0	0	17	0	0	0	0	0	0	**H/TOT**	0	0	0	0	0	0	5	0	0	1	0	6	16	0	1	3	0	20	67
18:00	5	0	1	0	0	6	4	1	1	0	0	6	0	0	0	0	0	0	18:00	0	0	0	0	0	0	2	0	0	0	0	2	3	0	0	0	0	3	
18:15	4	0	1	0	0	5	3	2	1	0	0	6	0	0	0	0	0	0	18:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	
18:30	4	0	1	0	0	5	2	0	3	0	0	5	0	0	0	0	0	0	18:30	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	
18:45	7	0	0	0	0	7	4	0	1	0	0	5	0	0	0	0	0	0	18:45	0	0	0	0	0	0	2	0	0	0	0	2	0	2	2	0	0	4	
H/TOT	20	0	3	0	0	23	13	3	6	0	0	22	0	0	0	0	0	0	**H/TOT**	0	0	0	0	0	0	6	0	0	0	0	6	7	2	2	0	0	11	62
P/TOT	104	5	22	1	1	133	128	9	28	5	0	170	33	3	5	3	1	45	**P/TOT**	69	2	10	4	2	87	135	5	17	6	1	164	61	5	6	5	0	77	676
						132						165						42							83						158						72	

MACROOM TRAFFIC COUNT **08 OCTOBER 2019**

MANUAL CLASSIFIED JUNCTION COUNT

SITE: 01 DATE: 08-Oct-19

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

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

MACROOM TRAFFIC COUNT **08 OCTOBER 2019**

MANUAL CLASSIFIED JUNCTION COUNT

SITE: 01 DATE: 08-Oct-19

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 4						MOVEMENT 5						MOVEMENT 6							
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT		
07:00	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	1	2	0	0	0	3	0	0	0	0	0	0		
07:30	0	0	0	0	0	0	5	1	0	0	0	6	0	0	0	0	0	0		
07:45	1	0	0	0	1	2	7	0	0	1	0	8	0	0	0	0	0	0		
H/TOT	1	0	0	0	1	2	13	3	0	1	0	17	0	0	0	0	0	0		32
08:00	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0		
08:15	1	0	0	0	1	2	9	0	0	0	1	10	0	0	1	0	0	1		
08:30	2	0	0	1	0	3	6	0	0	0	0	6	0	0	0	0	0	0		
08:45	3	1	1	0	0	5	5	1	1	0	0	7	0	0	0	0	0	0		
H/TOT	6	1	1	1	1	10	22	1	1	0	1	25	0	0	1	0	0	1		52
09:00	6	0	0	0	0	6	11	0	0	0	0	11	0	0	0	0	0	0		
09:15	1	0	0	0	0	1	6	0	0	0	0	6	1	0	0	0	0	1		
09:30	2	0	0	0	0	2	6	1	0	0	0	7	0	0	0	0	0	0		
09:45	2	0	0	1	0	3	3	0	0	0	0	3	0	0	0	0	0	0		
H/TOT	11	0	0	1	0	12	26	1	0	0	0	27	1	0	0	0	0	1		62
10:00	6	0	0	0	0	6	2	0	0	0	0	2	1	0	0	0	0	1		
10:15	1	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0		
10:30	7	0	0	2	0	9	4	0	0	1	0	5	0	0	0	0	0	0		
10:45	2	0	0	1	0	3	3	0	0	0	0	3	0	0	1	0	0	1		
H/TOT	16	0	0	3	0	19	10	0	0	1	0	11	1	0	1	0	0	2		51
11:00	5	0	0	0	0	5	3	0	0	0	0	3	0	0	0	0	0	0		
11:15	3	0	0	1	0	4	4	0	0	2	0	6	0	0	0	0	0	0		
11:30	3	0	0	0	0	3	6	0	0	1	0	7	0	0	0	0	0	0		
11:45	5	0	0	0	0	5	6	0	0	0	0	6	0	0	0	0	0	0		
H/TOT	16	0	0	1	0	17	19	0	0	3	0	22	0	0	0	0	0	0		56
12:00	7	1	0	0	0	8	2	0	0	0	0	2	0	1	0	0	0	1		
12:15	5	0	0	0	0	5	2	0	0	0	0	2	0	0	0	0	0	0		
12:30	3	0	0	0	0	3	3	0	1	0	0	4	0	0	0	0	0	0		
12:45	2	0	0	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0		
H/TOT	17	1	0	0	0	18	8	0	1	0	0	9	0	1	0	0	0	1		38

MACROOM TRAFFIC COUNT **MAY 2019 MACROOM TRAFFIC COUNT** **08 OCTOBER 2019**

MANUAL CLASSIFIED JUNCTION COUNT **MANUAL CLASSIFIED JUNCTION COUNT**

SITE: 01 DATE: 08 October 2019 SITE: 01 DATE: 08 October 2019

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3							MOVEMENT 4						MOVEMENT 5						MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13:00	9	0	0	0	0	9	5	0	0	0	0	5	0	0	0	0	0	0	
13:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	13:15	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	
13:30	0	0	0	0	0	0	1	0	0	1	0	2	4	0	0	0	0	4	13:30	3	0	0	1	0	4	6	0	0	0	0	6	0	0	0	0	0	0	
13:45	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	2	13:45	4	0	1	1	0	6	7	0	0	0	0	7	0	0	0	1	0	1	
H/TOT	0	0	0	0	0	0	4	0	0	1	0	5	9	0	0	0	0	9	**H/TOT**	16	0	1	2	0	19	22	0	0	0	0	22	0	0	0	1	0	1	56
14:00	1	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	2	14:00	3	0	0	0	0	3	9	0	0	0	0	9	0	0	0	0	0	0	
14:15	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	14:15	4	0	0	0	0	4	6	0	1	0	0	7	0	0	0	0	0	0	
14:30	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	14:30	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	
14:45	0	0	0	0	0	0	4	0	0	0	0	4	1	0	0	0	0	1	14:45	3	1	0	1	0	5	4	0	0	0	0	4	0	0	0	0	0	0	
H/TOT	1	0	0	0	0	1	6	0	0	0	0	6	3	0	1	0	0	4	**H/TOT**	10	2	0	1	0	13	20	0	1	0	0	21	0	0	0	0	0	0	45
15:00	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	1	0	1	15:00	3	0	0	0	0	3	5	0	0	0	0	5	0	0	0	0	0	0	
15:15	0	0	0	0	0	0	4	0	0	0	0	4	3	0	0	0	0	3	15:15	3	0	0	0	0	3	1	0	1	0	0	2	0	0	0	0	0	0	
15:30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	15:30	7	1	0	2	0	10	1	0	0	0	0	1	0	0	0	0	0	0	
15:45	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	15:45	7	0	0	0	0	7	2	0	0	0	0	2	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	7	0	0	0	0	7	7	0	0	1	0	8	**H/TOT**	20	1	0	2	0	23	9	0	1	0	0	10	0	0	0	0	0	0	48
16:00	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	16:00	3	0	0	0	0	3	1	1	0	0	0	2	0	0	0	0	0	0	
16:15	0	0	0	0	0	0	4	0	0	0	0	4	7	2	0	0	0	9	16:15	5	0	0	0	1	6	2	0	1	0	0	3	1	0	0	0	0	1	
16:30	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	1	0	3	16:30	4	0	0	1	0	5	2	0	0	0	0	2	0	0	0	0	0	0	
16:45	0	0	0	0	0	0	3	0	0	0	0	3	1	0	0	0	0	1	16:45	4	0	0	1	0	5	0	0	0	0	0	0	1	0	0	0	0	1	
H/TOT	0	0	0	0	0	0	9	0	0	0	0	9	12	2	0	1	0	15	**H/TOT**	16	0	0	2	1	19	5	1	1	0	0	7	2	0	0	0	0	2	52
17:00	0	0	0	0	0	0	1	0	0	0	0	1	6	0	0	0	0	6	17:00	4	0	0	0	0	4	5	0	1	0	0	6	0	0	0	0	0	0	
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	17:15	1	1	0	0	0	2	2	0	2	0	0	4	0	0	0	0	0	0	
17:30	0	0	0	0	0	0	2	0	0	0	0	2	3	0	0	0	0	3	17:30	4	0	0	0	0	4	5	0	0	0	0	5	0	0	0	0	0	0	
17:45	0	0	0	0	0	0	3	0	0	1	0	4	7	0	0	2	0	9	17:45	9	1	0	0	0	10	3	0	0	0	0	3	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	6	0	0	1	0	7	16	0	0	3	0	19	**H/TOT**	18	2	0	0	0	20	15	0	3	0	0	18	0	0	0	0	0	0	64
18:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	18:00	6	0	1	0	0	7	4	1	0	0	0	5	0	0	0	0	0	0	
18:15	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	3	18:15	3	0	1	0	0	4	4	2	0	0	0	6	0	0	0	0	0	0	
18:30	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	18:30	3	0	1	0	0	4	2	0	0	0	0	2	0	0	0	0	0	0	
18:45	0	0	0	0	0	0	2	0	0	0	0	2	0	2	0	0	0	2	18:45	7	0	0	0	0	7	5	0	0	0	0	5	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	6	0	0	0	0	6	9	2	0	0	0	11	**H/TOT**	19	0	3	0	0	22	15	3	0	0	0	18	0	0	0	0	0	0	57
P/TOT	4	0	0	0	0	4	78	4	3	8	0	93	87	6	4	9	1	107	**P/TOT**	166	7	5	13	3	194	184	9	8	5	1	207	4	1	2	1	0	8	613	613
						4						85						98						181						202						7	

MACROOM TRAFFIC COUNT **12 MARCH 2026**

MANUAL CLASSIFIED JUNCTION COUNT

SITE: 01 DATE: 12-Mar-26

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday

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

MACROOM TRAFFIC COUNT **12 MARCH 2026**

MANUAL CLASSIFIED JUNCTION COUNT

SITE: 01 DATE: 12-Mar-26

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday

	MOVEMENT 4						MOVEMENT 5						MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	
07:00	2	1	0	0	0	3	2	1	0	0	0	3	0	0	0	0	0	0	
07:15	2	0	0	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0	
07:30	2	0	0	1	0	3	4	1	0	0	0	5	0	0	0	0	0	0	
07:45	0	1	0	0	0	1	1	1	0	0	0	2	0	0	0	0	0	0	
H/TOT	6	2	0	1	0	9	8	3	0	0	0	11	0	0	0	0	0	0	36
08:00	2	0	1	0	1	4	4	1	0	0	1	6	0	0	0	0	0	0	
08:15	2	2	0	0	0	4	8	0	0	0	0	8	0	0	0	0	0	0	
08:30	3	2	0	0	0	5	12	1	0	0	0	13	0	0	0	0	0	0	
08:45	4	1	0	0	0	5	8	1	0	0	0	9	1	0	0	0	0	1	
H/TOT	11	5	1	0	1	18	32	3	0	0	1	36	1	0	0	0	0	1	95
09:00	6	0	0	0	0	6	7	0	0	0	0	7	0	0	0	0	0	0	
09:15	1	0	0	0	0	1	11	1	0	0	0	12	0	0	0	0	0	0	
09:30	4	0	0	0	0	4	3	1	0	1	0	5	0	0	0	0	0	0	
09:45	3	2	0	1	0	6	5	1	0	1	0	7	0	0	0	0	0	0	
H/TOT	14	2	0	1	0	17	26	3	0	2	0	31	0	0	0	0	0	0	71
10:00	1	1	0	0	0	2	3	0	0	0	0	3	0	0	0	0	0	0	
10:15	3	0	0	1	0	4	7	0	0	0	0	7	0	0	0	0	0	0	
10:30	4	0	0	0	0	4	2	0	0	0	0	2	0	0	0	0	0	0	
10:45	2	0	0	1	0	3	5	1	0	0	0	6	0	0	0	0	0	0	
H/TOT	10	1	0	2	0	13	17	1	0	0	0	18	0	0	0	0	0	0	47
11:00	1	1	0	0	0	2	3	0	0	0	0	3	0	0	0	0	0	0	
11:15	3	0	0	1	0	4	7	0	0	0	0	7	0	0	0	0	0	0	
11:30	4	0	0	0	0	4	2	0	0	0	0	2	0	0	0	0	0	0	
11:45	2	0	0	1	0	3	5	1	0	0	0	6	0	0	0	0	0	0	
H/TOT	10	1	0	2	0	13	17	1	0	0	0	18	0	0	0	0	0	0	47
12:00	9	0	0	0	0	9	3	0	0	0	0	3	0	0	0	0	0	0	
12:15	2	1	1	0	0	4	2	1	1	0	0	4	0	0	1	0	0	1	
12:30	2	0	0	0	0	2	2	1	0	0	0	3	0	0	0	0	0	0	
12:45	4	0	0	0	0	4	2	1	0	0	0	3	0	0	0	0	0	0	
H/TOT	17	1	1	0	0	19	9	3	1	0	0	13	0	0	1	0	0	1	52

MANUAL CLASSIFIED JUNCTION COUNT MANUAL CLASSIFIED JUNCTION COUNT

SITE: 01 DATE: 12-Mar-26 SITE: 01 DATE: 12-Mar-26

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3							MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	
13:00	0	0	0	0	0	0	2	1	0	0	0	3	4	0	0	0	0	4	13:00	3	0	0	0	0	3	6	0	0	0	0	6	0	0	0	0	0	0	
13:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	13:15	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	
13:30	0	0	0	0	0	0	2	0	0	0	0	2	4	0	0	0	0	4	13:30	5	0	0	0	0	5	2	0	0	0	0	2	0	0	0	0	0	0	
13:45	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	13:45	4	1	1	0	0	6	2	1	0	0	0	3	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	5	1	0	0	0	6	10	0	0	0	0	10	H/TOT	12	1	1	0	0	14	13	1	0	0	0	14	0	0	0	0	0	0	44
14:00	0	1	0	0	0	1	2	1	0	0	0	3	2	0	0	0	0	2	14:00	3	0	0	0	0	3	5	0	0	0	0	5	0	0	0	0	0	0	
14:15	0	0	0	0	0	0	4	0	0	0	0	4	2	2	0	0	0	4	14:15	3	1	0	0	0	4	4	1	0	0	0	5	0	0	0	0	0	0	
14:30	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	14:30	4	1	0	0	0	5	3	1	0	0	0	4	0	0	0	0	0	0	
14:45	0	0	0	0	0	0	2	0	0	0	0	2	3	0	0	0	0	3	14:45	6	0	0	0	0	6	6	0	0	1	0	7	0	0	0	0	0	0	
H/TOT	0	1	0	0	0	1	9	2	0	0	0	11	7	2	0	0	0	9	H/TOT	16	2	0	0	0	18	18	2	0	1	0	21	0	0	0	0	0	0	60
15:00	0	0	0	0	0	0	1	1	0	0	0	2	3	1	0	1	0	5	15:00	2	0	1	0	0	3	6	0	0	0	0	6	0	0	0	0	0	0	
15:15	0	0	0	0	0	0	3	0	0	0	0	3	2	1	0	0	0	3	15:15	3	0	0	1	0	4	4	2	0	0	0	6	0	0	0	0	0	0	
15:30	0	0	0	0	0	0	2	0	0	1	0	3	2	0	1	0	0	3	15:30	2	0	1	0	0	3	2	0	1	0	0	3	0	0	0	0	0	0	
15:45	0	0	0	0	0	0	2	0	0	0	0	2	3	0	0	0	0	3	15:45	2	0	0	0	0	2	4	0	0	0	0	4	0	0	1	0	0	1	
H/TOT	0	0	0	0	0	0	8	1	0	1	0	10	10	2	1	1	0	14	H/TOT	9	0	2	1	0	12	16	2	1	0	0	19	0	0	1	0	0	1	56
16:00	0	0	0	0	0	0	4	1	0	0	0	5	6	0	0	0	0	6	16:00	7	0	0	0	0	7	6	0	0	1	1	8	0	0	0	0	0	0	
16:15	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	16:15	1	0	0	0	1	2	4	0	0	0	0	4	0	0	0	0	0	0	
16:30	0	0	0	0	0	0	0	2	0	0	1	3	4	1	0	0	0	5	16:30	9	0	0	0	0	9	1	0	0	0	0	1	0	0	0	0	0	0	
16:45	0	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	0	2	16:45	5	0	0	0	0	5	3	0	0	0	0	3	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	4	4	0	0	1	9	15	2	0	0	0	17	H/TOT	22	0	0	0	1	23	14	0	0	1	1	16	0	0	0	0	0	0	65
17:00	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	1	0	4	17:00	7	0	0	0	0	7	3	0	0	0	0	3	0	0	0	0	0	0	
17:15	0	0	0	0	0	0	3	1	0	0	0	4	5	0	0	0	0	5	17:15	8	0	0	0	0	8	5	0	0	0	0	5	0	0	0	0	0	0	
17:30	0	0	0	0	0	0	3	0	0	0	0	3	3	2	1	1	0	7	17:30	8	1	0	0	0	9	3	2	0	0	0	5	0	0	0	0	0	0	
17:45	0	0	0	0	0	0	3	1	0	0	0	4	5	0	0	0	0	5	17:45	5	2	0	0	0	7	5	0	0	0	0	5	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	10	2	0	0	0	12	16	2	1	2	0	21	H/TOT	28	3	0	0	0	31	16	2	0	0	0	18	0	0	0	0	0	0	82
18:00	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	18:00	4	0	0	0	0	4	3	0	0	0	0	3	0	0	0	0	0	0	
18:15	0	0	0	0	0	0	3	0	0	0	0	3	1	0	0	0	0	1	18:15	4	0	0	0	0	4	2	0	0	0	0	2	0	0	0	0	0	0	
18:30	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	2	18:30	7	0	0	0	0	7	4	1	0	0	0	5	0	0	0	0	0	0	
18:45	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	2	18:45	3	0	0	0	0	3	7	0	0	0	0	7	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	6	0	0	0	0	6	10	1	0	0	0	11	H/TOT	18	0	0	0	0	18	16	1	0	0	0	17	0	0	0	0	0	0	52
P/TOT	1	1	0	0	0	2	106	18	4	5	1	134	97	19	9	5	1	131	P/TOT	173	18	5	7	2	205	202	22	2	4	2	232	1	0	2	0	0	3	707	707
						2						129						126							198						228						3	

Total HGV traffic at Junction 1 = 21

AM Traffic Survey Ummera, Macroom Co Cork
Date: 12 July 2026
Weather: Sunny

Junction 2: L-3423/ R618 Priority Junction

Turning Movement:	Vehicle Type:	Count (15 minute intervals): 07:30-07:45	07:45-08:00	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15	09:00-09:30	
A-B	Car/ LGV	4	1	10	11	2	6	4	6	
	MGV / OGV1	0	0	2	0	1	0	1	0	
	HGV /OGV2	0	1	1	0	0	0	0	0	
	Bus/ Coach	0	0	0	0	0	0	0	0	
	Motor Cycle	0	0	0	0	0	0	0	0	
A-C	Car/ LGV	13	14	15	15	10	10	15	18	
	MGV / OGV1	1	1	0	1	0	0	1	2	
	HGV /OGV2	2	2	1	0	1	1	1	0	
	Bus/ Coach	0	0	0	0	0	0	0	0	
	Motor Cycle	0	0	0	0	0	0	0	0	
B-A	Car/ LGV	12	13	20	22	20	20	10	18	
	MGV / OGV1	0	0	0	0	1	0	0	1	
	HGV /OGV2	1	0	0	0	0	0	0	1	
	Bus/ Coach	0	0	0	0	0	0	0	0	
	Motor Cycle	0	0	0	0	0	0	0	0	
B-C	Car/ LGV	3	4	3	1	6	9	3	6	
	MGV / OGV1	1	1	0	0	0	1	0	0	
	HGV /OGV2	0	0	0	0	0	0	0	0	
	Bus/ Coach	0	0	0	0	0	0	0	0	
	Motor Cycle	0	0	0	0	0	0	0	0	
C-A	Car/ LGV	12	10	11	16	17	14	26	24	
	MGV / OGV1	0	0	1	0	0	0	2	1	
	HGV /OGV2	1	0	3	0	0	0	0	0	
	Bus/ Coach	0	0	0	0	0	1	0	0	
	Motor Cycle	1	0	0	0	1	0	0	0	
C-B	Car/ LGV	1	3	2	5	4	5	3	3	
	MGV / OGV1	0	0	0	0	0	0	0	0	
	HGV /OGV2	0	0	0	0	0	0	0	0	
	Bus/ Coach	0	0	0	0	0	0	0	0	
	Motor Cycle	0	0	0	0	0	0	0	0	

Road Arm Assignment:



PM Traffic Survey Ummera, Macroom Co Cork
Date: 12 July 2026
Weather: Sunny

Junction 2: L-3423/ R618 Priority Junction

Turning Movement:	Vehicle Type:	Count (15 minute intervals): 16:00-16:15	16:15-16:30	16:30-16:45	16:45-17:00	17:00-17:15	17:15-17:30	17:30-17:45	17:45-18:00	18:00-18:15
A-B	Car/ LGV	15	13	12	21	25	24	26	20	28
	MGV / OGV1	1	1	0	1	0	1	0	0	0
	HGV /OGV2	1	1	1	1	0	1	0	0	2
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	1	0	0	0	0	0
A-C	Car/ LGV	14	18	17	22	19	19	26	16	22
	MGV / OGV1	0	0	0	0	1	2	2	0	2
	HGV /OGV2	2	0	0	1	2	0	1	0	0
	Bus/ Coach	0	1	0	0	0	0	0	0	1
	Motor Cycle	0	1	1	0	0	0	0	0	0
B-A	Car/ LGV	14	11	11	8	15	20	5	17	8
	MGV / OGV1	0	1	0	1	0	1	1	1	0
	HGV /OGV2	1	1	0	1	0	0	2	0	1
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	1	0	0	0	0	0	0	0
B-C	Car/ LGV	2	1	5	2	5	6	5	2	2
	MGV / OGV1	0	0	0	0	0	0	0	0	0
	HGV /OGV2	0	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0	0
C-A	Car/ LGV	27	18	26	29	20	24	26	31	19
	MGV / OGV1	2	1	1	0	0	2	0	1	0
	HGV /OGV2	1	0	0	1	1	1	0	0	1
	Bus/ Coach	0	0	1	0	0	1	1	0	0
	Motor Cycle	2	0	0	0	1	0	0	0	0
C-B	Car/ LGV	1	5	4	4	3	5	4	5	2
	MGV / OGV1	0	0	0	0	0	0	0	0	0
	HGV /OGV2	0	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0	0

Road Arm Assignment:



AM Traffic Survey Ummera, Macroom Co Cork
Date: 12 July 2026
Weather: Sunny

Junction 3: R618/ R582 Priority Junction

Turning Movement:	Vehicle Type:	Count (15 minute intervals): 07:30-07:45	07:45-08:00	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15	09:00-09:30	
A-B	Car/ LGV	11	13	8	9	7	11	8	12	
	MGV / OGV1	1	1	2	0	0	0	1	2	
	HGV /OGV2	1	0	0	0	0	0	0	0	
	Bus/ Coach	0	0	0	0	0	0	0	0	
	Motor Cycle	0	0	0	0	0	0	0	0	
A-C	Car/ LGV	54	56	60	45	37	36	36	40	
	MGV / OGV1	2	1	5	2	2	4	4	0	
	HGV /OGV2	3	2	0	1	1	0	0	0	
	Bus/ Coach	1	0	0	0	0	1	0	0	
	Motor Cycle	0	0	0	0	0	0	0	0	
B-A	Car/ LGV	7	2	8	8	9	11	8	15	
	MGV / OGV1	0	0	0	0	0	0	2	1	
	HGV /OGV2	0	0	0	0	0	0	0	0	
	Bus/ Coach	0	0	0	0	0	0	0	0	
	Motor Cycle	1	0	0	0	0	0	0	0	
B-C	Car/ LGV	16	24	22	30	28	24	24	31	
	MGV / OGV1	0	0	1	0	1	0	0	1	
	HGV /OGV2	2	1	2	0	0	0	0	1	
	Bus/ Coach	0	0	0	0	0	1	0	0	
	Motor Cycle	0	0	0	0	1	0	0	0	
C-A	Car/ LGV	30	51	37	61	68	94	71	85	
	MGV / OGV1	3	2	3	2	3	4	1	1	
	HGV /OGV2	0	1	0	2	2	2	0	0	
	Bus/ Coach	0	0	0	0	1	2	1	0	
	Motor Cycle	0	0	0	0	0	1	0	0	
C-B	Car/ LGV	6	2	17	17	3	6	10	11	
	MGV / OGV1	0	0	1	1	1	0	1	0	
	HGV /OGV2	1	3	2	0	1	1	1	0	
	Bus/ Coach	0	0	0	0	0	0	0	0	
	Motor Cycle	0	0	0	0	0	0	0	0	

Road Arm Assignment:



PM Traffic Survey Ummera, Macroom Co Cork
Date: 12 July 2026
Weather: Sunny

Junction 3: R618/ R582 Priority Junction

Turning Movement:	Vehicle Type:	Count (15 minute intervals): 16:00-16:15	16:15-16:30	16:30-16:45	16:45-17:00	17:00-17:15	17:15-17:30	17:30-17:45	17:45-18:00	18:00-18:15
A-B	Car/ LGV	18	8	16	24	18	25	33	16	25
	MGV / OGV1	0	0	0	0	1	3	3	0	1
	HGV /OGV2	0	0	0	0	0	0	0	0	1
	Bus/ Coach	0	1	0	0	0	0	0	0	1
	Motor Cycle	0	1	0	0	0	0	0	0	0
A-C	Car/ LGV	67	56	69	53	79	65	60	63	72
	MGV / OGV1	4	0	2	1	1	0	0	1	1
	HGV /OGV2	2	0	0	1	0	1	1	0	0
	Bus/ Coach	0	2	0	0	0	0	1	0	0
	Motor Cycle	0	1	0	2	0	1	0	0	1
B-A	Car/ LGV	14	10	13	15	7	14	11	15	8
	MGV / OGV1	2	1	0	0	0	1	0	0	0
	HGV /OGV2	1	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	1	0	0
	Motor Cycle	0	0	0	0	0	0	0	0	0
B-C	Car/ LGV	26	20	25	22	27	31	20	33	19
	MGV / OGV1	0	1	1	1	0	1	0	2	0
	HGV /OGV2	1	1	0	2	1	1	1	0	2
	Bus/ Coach	0	0	1	0	0	1	0	0	0
	Motor Cycle	2	1	0	0	1	0	0	0	0
C-A	Car/ LGV	74	81	75	77	115	106	82	86	97
	MGV / OGV1	2	1	2	0	0	1	2	0	2
	HGV /OGV2	0	0	0	2	1	0	1	1	0
	Bus/ Coach	0	0	1	0	0	0	0	2	0
	Motor Cycle	6	0	0	0	1	0	0	0	1
C-B	Car/ LGV	13	21	13	18	25	19	21	20	26
	MGV / OGV1	2	1	0	1	0	0	0	0	0
	HGV /OGV2	2	1	1	2	2	1	0	0	2
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	1	1	0	0	0	0	0

Road Arm Assignment:



APPENDIX 4-2

TRAFFIC & TRANSPORT ASSESSMENT REPORT

For **Drimoleague Concrete Works Ltd.**

Ummera Gravel Pit, Macroom, Co. Cork

Application for Further Development

An Coimisiún Pleanála Case Number ABP-308194-20



Traffic and Transport Assessment

July 2026

MHL & Associates Ltd.

Consulting Engineers





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1.0 INTRODUCTION

1.1 Document Introduction

1.1.1 MHL Consulting Engineers has been instructed by Drimoleague Concrete Works Limited to prepare a Traffic & Transport Assessment (TTA) in support of a planning application for the further development of the existing gravel pit in Ummera, Macroom, Co. Cork. The TTA was requested by An Coimisiún Pleanála in correspondence dated 1st October 2025.

1.1.2 This TTA will assess how the proposed development will impact the surrounding roads network and consider appropriate access arrangements.

1.1.3 The key junctions in the area surrounding the proposed development are shown in **Figure 1.1.1** and are as follows:

- Junction 1: L-3423/ L-7478 Priority Junction.
- Junction 2: R618/ L-3423 Priority Junction.
- Junction 3: R582/ R618 Priority Junction



Figure 1.1.1: Junction Locations

1.1.4 As required per Item 8 (2) of An Coimisiún Pleanála's request for further information, new traffic counts were undertaken at each of identified junctions for the purposes on this assessment. Refer to **Section 3.2** for details.

1.2 Document Structure

1.2.1 A TTA is an appropriate form of assessment for the scale of the proposed development. The structure of this TTA is in accordance with TII (Transport Infrastructure Ireland) Document, Traffic and Transport Assessment Guidelines, 2014.

The aim of this TTA is to identify the characteristics of the application site and surrounding area, examine the likely transport implications, and ensure appropriate infrastructure provided.

The key issues that need to be addressed within this TTA, with reference to the size and location of the development proposal, are as follows:

- Review of the site location, composition and local roads network.
- Analysis of Road Safety data for the most recent period available.
- A review of the relevant planning and transport policy.
- Description of the development proposal.
- Description and justification for the proposed access arrangement, including all necessary swept-path assessments and visibility splays.
- Forecast trip generation as agreed with the Local Authority.
- The use of appropriate and agreed traffic modelling software for the assessment of individual junctions.
- Provide With/Without Development assessment for each of the critical junctions.
- Assess significance of development generated traffic upon the surrounding transport infrastructure and identify any necessary mitigation.

1.2.2 The TTA concludes that the proposed development, in traffic and transportation terms is acceptable, and there are no traffic and transportation reasons that should prevent the Planning Authority from recommending approval of this application.

2.0 NON-TECHNICAL SUMMARY

2.1 A TTA has been prepared in response to An Coimisiún Pleanála's request for further information (in correspondence dated 1st October 2025) relating to the application for further development of the Ummera Gravel Pit – case number ABP-308194-20.

2.2 The TTA has demonstrated the following:

(i) Junction 1: L-3423/ L-7478 Priority Junction is shown to currently operate well within capacity and will continue to do so during morning & evening peaks with the development in place up to design year 2042.

(ii) Junction 2: R618/ L-3423 Priority Junction currently operates within capacity during both morning & evening peaks and will continue to do so with the development in place up to design year 2042. The junction maintains a 'reasonably free-flow (no delay incurred)' level of service at its maximum peak modelled in design year 2042.

(iii) Junction 3: R582/ R618 Priority Junction currently operates within capacity during both morning & evening peaks and will continue to do so with the development in place up to design year 2042. The junction maintains a 'reasonably free-flow (no delay incurred)' level of service at its maximum peak modelled in design year 2042.

(iv) The road network has sufficient capacity to cater for development traffic travelling via the proposed haulage route. All junctions maintain a 'free-flow' level of service throughout the modelled analysis when the average daily trips from the gravel pit are added.

(v) The access arrangements are safe and suitable and are in accordance with the Design Manual for Roads & Bridges (DMRB) and the Design Manual for Urban Roads & Streets (DMURS).



Figure 2.2.1: Proposed Development

3.0 EXISTING CONDITIONS

3.1 Introduction

3.1.1 This section describes the base data used to develop the junction models, the critical links and junctions, committed transport proposals to the area (including the completed Macroom Bypass) and other surrounding proposed development.

3.2 Baseline Traffic Conditions

3.2.1 A variety of different data sources have been used, including:

- 12-hour/ Peak hour classified turning counts (3 sites, refer **Figure 3.2.1** below);
- Background OS Mapping and aerial photography;
- On-site junction measurements including geometric data for each of the modelled junctions;

3.2.2 A total of 3 turning count surveys were undertaken as part of the study. Counts were undertaken at each site as shown in **Figure 3.2.1.** The survey at Site 1 was completed on Thursday 12th March 2026 by the design team at the junction for a 12-hour period. The surveys at sites 2 & 3 were completed on Thursday 2nd July by the design team for the morning and evening peak periods only. The counts were completed on days when local schools and the Macroom Bypass were in operation to ensure an accurate reflection of existing traffic conditions was modelled in the analysis. The existing gravel pit was also in operation while the surveys were undertaken.

3.2.3 On-site measurements including lane widths and junction turning radii were undertaken by MHL and were incorporated in the constructed models.



Figure 3.2.1: Traffic Count Survey Locations

3.2.4 The following figures present the recorded traffic figures for each of the surveyed junctions:

	MOVEMENT 1 (B-C)					MOVEMENT 2 (B-A)					MOVEMENT 3 (A-B)					MOVEMENT 4 (A-C)					MOVEMENT 5 (C-A)					MOVEMENT 6 (C-B)					
TIME	CAR	LGV	OGV1	OGV2	BUS	CAR	LGV	OGV1	OGV2	BUS	CAR	LGV	OGV1	OGV2	BUS	CAR	LGV	OGV1	OGV2	BUS	CAR	LGV	OGV1	OGV2	BUS	CAR	LGV	OGV1	OGV2	BUS	TOT
07:00	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	2	1	0	0	0	2	1	0	0	0	0	0	0	0	0	9
07:15	0	0	0	0	0	3	0	0	0	0	1	0	0	1	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	8
07:30	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	1	0	4	1	0	0	0	0	0	0	0	0	10
07:45	0	0	0	0	0	3	0	0	1	0	1	0	0	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	9
08:00	0	0	0	0	0	4	0	0	0	0	2	1	0	1	0	2	0	1	0	1	4	1	0	0	1	0	0	0	0	0	18
08:15	0	0	0	0	0	7	1	0	1	0	4	1	1	0	0	2	2	0	0	0	8	0	0	0	0	0	0	0	0	0	27
08:30	0	0	0	0	0	6	0	0	0	0	2	0	0	0	0	3	2	0	0	0	12	1	0	0	0	0	0	0	0	0	26
08:45	0	0	0	0	0	4	0	1	0	0	2	1	1	0	0	4	1	0	0	0	8	1	0	0	0	1	0	0	0	0	24
09:00	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	6	0	0	0	0	7	0	0	0	0	0	0	0	0	0	18
09:15	0	0	0	0	0	6	1	0	1	0	1	0	0	0	0	1	0	0	0	0	11	1	0	0	0	0	0	0	0	0	22
09:30	0	0	0	0	0	4	1	1	0	0	1	0	0	0	0	4	0	0	0	0	3	1	0	1	0	0	0	0	0	0	16
09:45	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	2	0	1	0	5	1	0	1	0	0	0	0	0	0	15
10:00	0	0	0	0	0	3	1	0	0	0	1	0	0	0	0	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	10
10:15	0	0	0	0	0	1	0	0	0	0	2	2	1	0	0	3	0	0	1	0	7	0	0	0	0	0	0	0	0	0	17
10:30	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	9
10:45	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	2	0	0	1	0	5	1	0	0	0	0	0	0	0	0	11
11:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	6
11:15	0	0	0	0	0	3	0	0	0	0	2	2	1	0	0	3	0	0	1	0	7	0	0	0	0	0	0	0	0	0	19
11:30	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	10
11:45	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	2	0	0	1	0	5	1	0	0	0	0	0	0	0	0	12
12:00	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	9	0	0	0	0	3	0	0	0	0	0	0	0	0	0	15
12:15	0	0	0	0	0	1	0	0	0	0	2	1	1	0	0	2	1	1	0	0	2	1	1	0	0	0	0	1	0	0	14
12:30	0	0	0	0	0	3	1	2	0	0	2	1	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	0	0	0	14
12:45	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	0	0	0	2	1	0	0	0	0	0	0	0	0	9
13:00	0	0	0	0	0	2	1	0	0	0	4	0	0	0	0	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0	16
13:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	4
13:30	0	0	0	0	0	2	0	0	0	0	4	0	0	0	0	5	0	0	0	0	2	0	0	0	0	0	0	0	0	0	13
13:45	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	4	1	1	0	0	2	1	0	0	0	0	0	0	0	0	11
14:00	0	1	0	0	0	2	1	0	0	0	2	0	0	0	0	3	0	0	0	0	5	0	0	0	0	0	0	0	0	0	14
14:15	0	0	0	0	0	4	0	0	0	0	2	2	0	0	0	3	1	0	0	0	4	1	0	0	0	0	0	0	0	0	17
14:30	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	4	1	0	0	0	3	1	0	0	0	0	0	0	0	0	11
14:45	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	6	0	0	0	0	6	0	0	1	0	0	0	0	0	0	18
15:00	0	0	0	0	0	1	1	0	0	0	3	1	0	1	0	2	0	1	0	0	6	0	0	0	0	0	0	0	0	0	16
15:15	0	0	0	0	0	3	0	0	0	0	2	1	0	0	0	3	0	0	1	0	4	2	0	0	0	0	0	0	0	0	16
15:30	0	0	0	0	0	2	0	0	1	0	2	0	1	0	0	2	0	1	0	0	2	0	1	0	0	0	0	0	0	0	12
15:45	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	2	0	0	0	0	4	0	0	0	0	0	0	1	0	0	12
16:00	0	0	0	0	0	4	1	0	0	0	6	0	0	0	0	7	0	0	0	0	6	0	0	1	1	0	0	0	0	0	26
16:15	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	1	0	0	0	1	4	0	0	0	0	0	0	0	0	0	10
16:30	0	0	0	0	0	0	2	0	0	1	4	1	0	0	0	9	0	0	0	0	1	0	0	0	0	0	0	0	0	0	18
16:45	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	5	0	0	0	0	3	0	0	0	0	0	0	0	0	0	11
17:00	0	0	0	0	0	1	0	0	0	0	3	0	0	1	0	7	0	0	0	0	3	0	0	0	0	0	0	0	0	0	15
17:15	0	0	0	0	0	3	1	0	0	0	5	0	0	0	0	8	0	0	0	0	5	0	0	0	0	0	0	0	0	0	22
17:30	0	0	0	0	0	3	0	0	0	0	3	2	1	1	0	8	1	0	0	0	3	2	0	0	0	0	0	0	0	0	24
17:45	0	0	0	0	0	3	1	0	0	0	5	0	0	0	0	5	2	0	0	0	5	0	0	0	0	0	0	0	0	0	21
18:00	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	4	0	0	0	0	3	0	0	0	0	0	0	0	0	0	13
18:15	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	10
18:30	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	7	0	0	0	0	4	1	0	0	0	0	0	0	0	0	15
18:45	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	3	0	0	0	0	7	0	0	0	0	0	0	0	0	0	14

Figure 3.2.2: Site 1: L-3423/ L-7478 Priority Junction Traffic Survey

Junction 2: L-3423/ R618 Priority Junction									
Turning Movement:	Vehicle Type:	Count (15 minute intervals):							
		07:30-07:45	07:45-08:00	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15	09:00-09:30
A-B	Car/ LGV	4	1	10	11	2	6	4	6
	MGV / OGV1	0	0	2	0	1	0	1	0
	HGV /OGV2	0	1	1	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0
A-C	Car/ LGV	13	14	15	15	10	10	15	18
	MGV / OGV1	1	1	0	1	0	0	1	2
	HGV /OGV2	2	2	1	0	1	1	1	0
	Bus/ Coach	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0
B-A	Car/ LGV	12	13	20	22	20	20	10	18
	MGV / OGV1	0	0	0	0	1	0	0	1
	HGV /OGV2	1	0	0	0	0	0	0	1
	Bus/ Coach	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0
B-C	Car/ LGV	3	4	3	1	6	9	3	6
	MGV / OGV1	1	1	0	0	0	1	0	0
	HGV /OGV2	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0
C-A	Car/ LGV	12	10	11	16	17	14	26	24
	MGV / OGV1	0	0	1	0	0	0	2	1
	HGV /OGV2	1	0	3	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	1	0	0
	Motor Cycle	1	0	0	0	1	0	0	0
C-B	Car/ LGV	1	3	2	5	4	5	3	3
	MGV / OGV1	0	0	0	0	0	0	0	0
	HGV /OGV2	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0
Total		52	50	69	71	63	67	66	80

Figure 3.2.3: Site 2: R618/ L-3423 Priority Junction - AM Traffic Survey

Junction 2: L-3423/ R618 Priority Junction										
Turning Movement:	Vehicle Type:	Count (15 minute intervals):								
		16:00-16:15	16:15-16:30	16:30-16:45	16:45-17:00	17:00-17:15	17:15-17:30	17:30-17:45	17:45-18:00	18:00-18:15
A-B	Car/ LGV	15	13	12	21	25	24	26	20	28
	MGV / OGV1	1	1	0	1	0	1	0	0	0
	HGV /OGV2	1	1	1	1	0	1	0	0	2
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	1	0	0	0	0	0
A-C	Car/ LGV	14	18	17	22	19	19	26	16	22
	MGV / OGV1	0	0	0	0	1	2	2	0	2
	HGV /OGV2	2	0	0	1	2	0	1	0	0
	Bus/ Coach	0	1	0	0	0	0	0	0	1
	Motor Cycle	0	1	1	0	0	0	0	0	0
B-A	Car/ LGV	14	11	11	8	15	20	5	17	8
	MGV / OGV1	0	1	0	1	0	1	1	1	0
	HGV /OGV2	1	1	0	1	0	0	2	0	1
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	1	0	0	0	0	0	0	0
B-C	Car/ LGV	2	1	5	2	5	6	5	2	2
	MGV / OGV1	0	0	0	0	0	0	0	0	0
	HGV /OGV2	0	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0	0
C-A	Car/ LGV	27	18	26	29	20	24	26	31	19
	MGV / OGV1	2	1	1	0	0	2	0	1	0
	HGV /OGV2	1	0	0	1	1	1	0	0	1
	Bus/ Coach	0	0	1	0	0	1	1	0	0
	Motor Cycle	2	0	0	0	1	0	0	0	0
C-B	Car/ LGV	1	5	4	4	3	5	4	5	2
	MGV / OGV1	0	0	0	0	0	0	0	0	0
	HGV /OGV2	0	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0	0
Total		83	74	79	93	92	107	99	93	88

Figure 3.2.4: Site 2: R618/ L-3423 Priority Junction - PM Traffic Survey

Junction 3: R618/ R582 Priority Junction									
Turning Movement:	Vehicle Type:	Count (15 minute intervals):							
		07:30-07:45	07:45-08:00	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15	09:00-09:30
A-B	Car/ LGV	0	0	0	0	1	0	0	0
	MGV / OGV1	0	0	0	0	0	0	0	0
	HGV /OGV2	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0
A-C	Car/ LGV	54	56	60	45	37	36	36	40
	MGV / OGV1	2	1	5	2	2	4	4	0
	HGV /OGV2	3	2	0	1	1	0	0	0
	Bus/ Coach	1	0	0	0	0	1	0	0
	Motor Cycle	0	0	0	0	0	0	0	0
B-A	Car/ LGV	0	0	0	0	0	0	1	0
	MGV / OGV1	0	0	0	0	0	0	0	0
	HGV /OGV2	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0
B-C	Car/ LGV	16	24	22	30	28	24	24	31
	MGV / OGV1	0	0	1	0	1	0	0	1
	HGV /OGV2	2	1	2	0	0	0	0	1
	Bus/ Coach	0	0	0	0	0	1	0	0
	Motor Cycle	0	0	0	0	1	0	0	0
C-A	Car/ LGV	30	51	37	61	68	94	71	85
	MGV / OGV1	3	2	3	2	3	4	1	1
	HGV /OGV2	0	1	0	2	2	2	0	0
	Bus/ Coach	0	0	0	0	1	2	1	0
	Motor Cycle	0	0	0	0	0	1	0	0
C-B	Car/ LGV	6	2	17	17	3	6	10	11
	MGV / OGV1	0	0	1	1	1	0	1	0
	HGV /OGV2	1	3	2	0	1	1	1	0
	Bus/ Coach	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0
Total		118	143	150	161	150	176	150	170

Figure 3.2.5: Site 3: R582/ R618 Priority Junction - AM Traffic Survey

Junction 3: R618/ R582 Priority Junction										
Turning Movement:	Vehicle Type:	Count (15 minute intervals):								
		16:00-16:15	16:15-16:30	16:30-16:45	16:45-17:00	17:00-17:15	17:15-17:30	17:30-17:45	17:45-18:00	18:00-18:15
A-B	Car/ LGV	0	0	0	0	1	0	0	0	0
	MGV / OGV1	0	0	0	0	0	0	0	0	0
	HGV /OGV2	0	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0	0
A-C	Car/ LGV	67	56	69	53	79	65	60	63	72
	MGV / OGV1	4	0	2	1	1	0	0	1	1
	HGV /OGV2	2	0	0	1	0	1	1	0	0
	Bus/ Coach	0	2	0	0	0	0	1	0	0
	Motor Cycle	0	1	0	2	0	1	0	0	1
B-A	Car/ LGV	0	0	0	0	0	1	0	0	0
	MGV / OGV1	0	0	0	0	0	0	0	0	0
	HGV /OGV2	0	0	0	0	0	0	0	0	0
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	0	0	0	0	0	0	0
B-C	Car/ LGV	26	20	25	22	27	31	20	33	19
	MGV / OGV1	0	1	1	1	0	1	0	2	0
	HGV /OGV2	1	1	0	2	1	1	1	0	2
	Bus/ Coach	0	0	1	0	0	1	0	0	0
	Motor Cycle	2	1	0	0	1	0	0	0	0
C-A	Car/ LGV	74	81	75	77	115	106	82	86	97
	MGV / OGV1	2	1	2	0	0	1	2	0	2
	HGV /OGV2	0	0	0	2	1	0	1	1	0
	Bus/ Coach	0	0	1	0	0	0	0	2	0
	Motor Cycle	6	0	0	0	1	0	0	0	1
C-B	Car/ LGV	13	21	13	18	25	19	21	20	26
	MGV / OGV1	2	1	0	1	0	0	0	0	0
	HGV /OGV2	2	1	1	2	2	1	0	0	2
	Bus/ Coach	0	0	0	0	0	0	0	0	0
	Motor Cycle	0	0	1	1	0	0	0	0	0
Total		201	187	191	183	254	229	189	208	223

Figure 3.2.6: Site 3: R582/ R618 Priority Junction - PM Traffic Survey

3.2.5 The data presented in the above figures shows the peak hour traffic periods for both morning and evening respectively at each junction to be as follows

- Site 1: 08:00 – 09:00 and 17:00 – 18:00
- Site 2: 08:30 – 09:30 and 17:00 – 18:00
- Site 3: 08:30 – 09:30 and 17:00 – 18:00

For the purpose of the modelling analysis, the peak hour traffic periods are included in order to obtain the worst-case traffic build-up results. This ensures a robust analysis of the road network is conducted.

3.2.6 The percentage of classified vehicles was used within the generated traffic models to reflect existing conditions more accurately (HGV% averaged across the four junctions calculated at 3%).

3.3 Site Location and Composition

3.3.1 The application site is located in Ummera, Macroom, County Cork, with access to the site via the existing entrance access off the L-3423 local road.

3.4 Local Roads Network

This section identifies the three modelled junctions and depicts the AM & PM peak hour traffic movements. All three junctions form part of the proposed primary haulage routes for the development traffic to the DCWL Bredagh Cross facility, refer to **Figure 6.1.**

3.4.1 *Junction 1: L-3423/ L-7478 Priority Junction*

This junction is located approx. 80m to the south of the gravel pit's existing entrance and forms part of the primary route connecting the site to the wider regional road network. The L-3423 has a posted speed limit of 60kph. The measured AADT (Annual Average Daily Traffic) at the junction is 873.



Image 3.4.1: Image of L-3423/ L-7478 junction

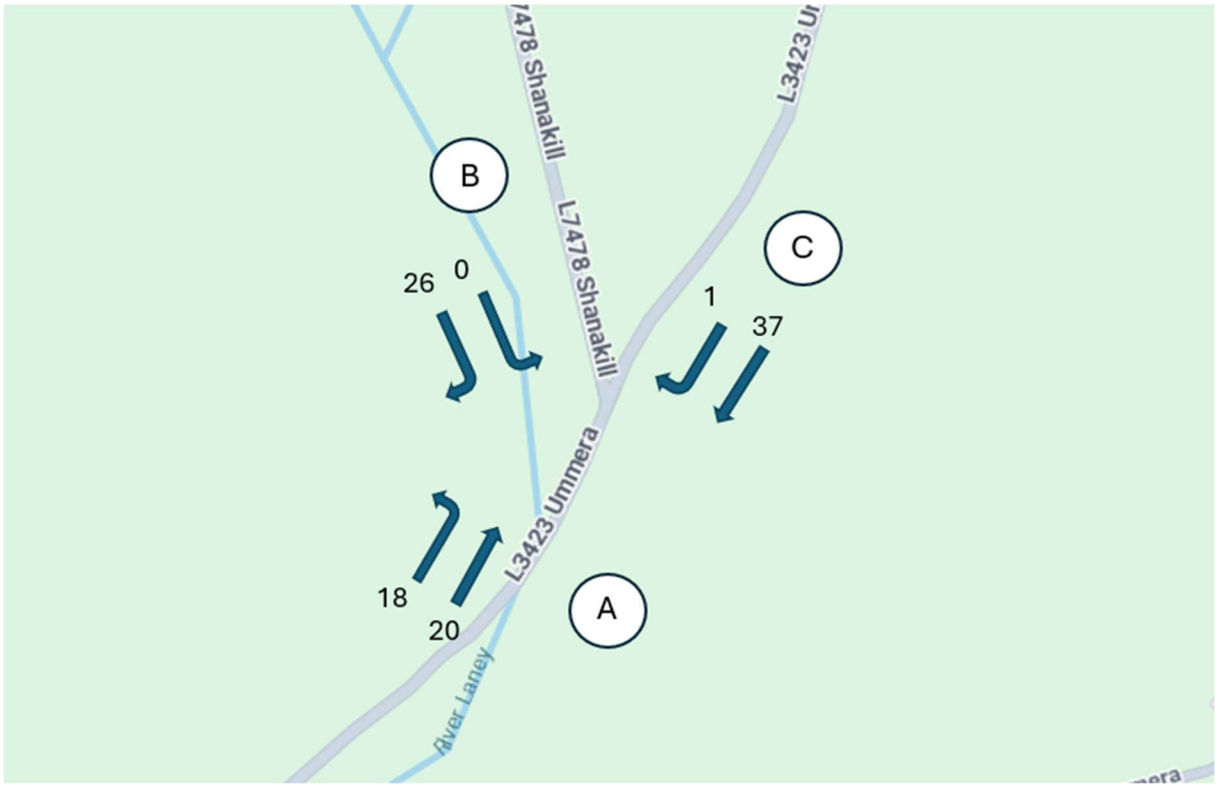


Figure 3.4.1: L-3423/ L-7478 junction – AM Peak Hour Flows

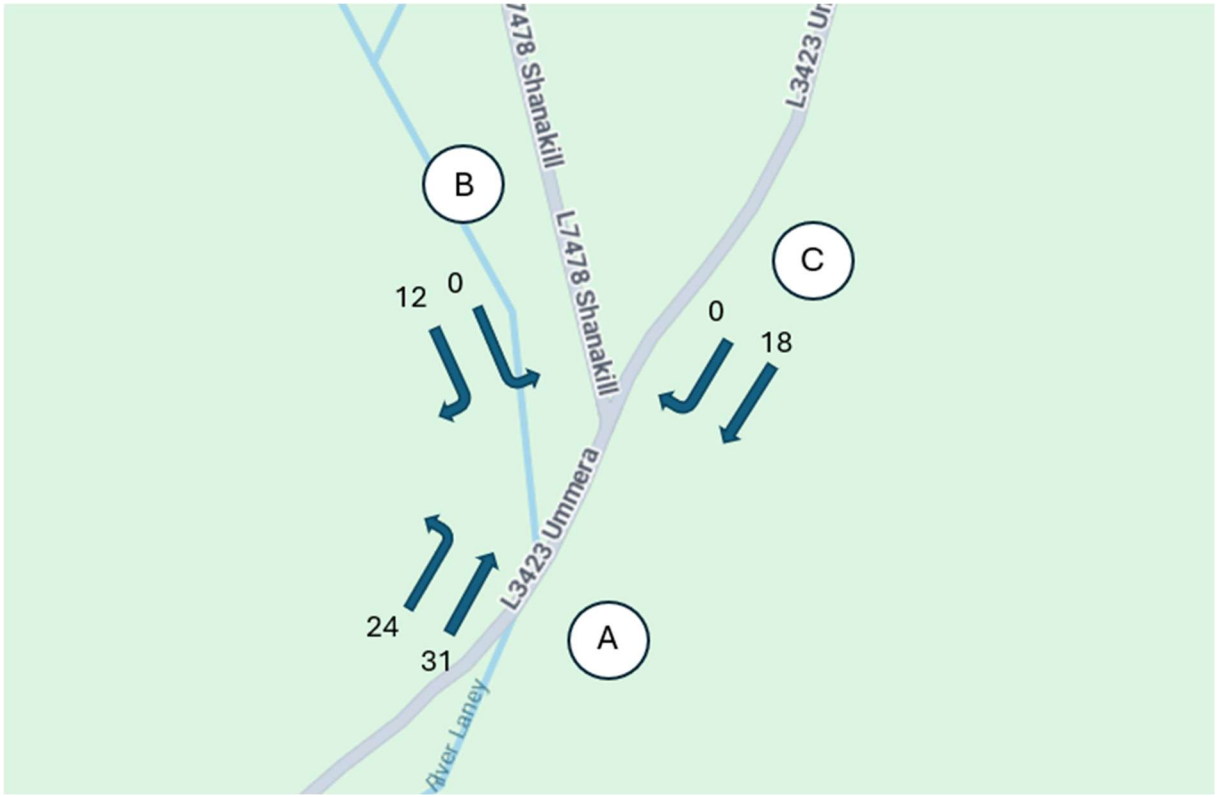


Figure 3.4.2: L-3423/ L-7478 junction – PM Peak Hour Flows

3.4.2 *Junction 2: R618/ L-3423 Priority Junction*

This junction connects the local road network to the wider regional road network and provides access towards Macroom for local traffic. This junction also forms part of the primary route

linking Coachford to Macroom. The measured AADT (Annual Average Daily Traffic) at the junction is 2480.



Image 3.4.2: Image of R618/ L-3423 junction

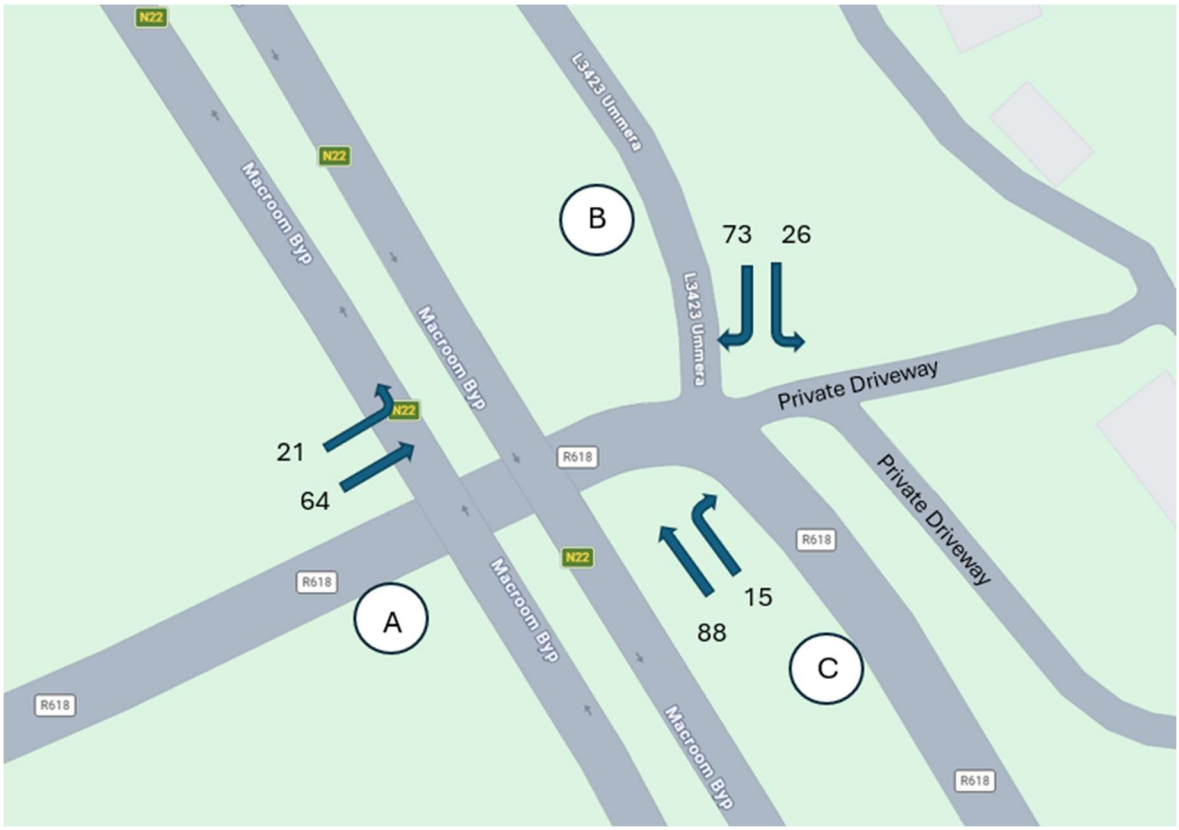


Figure 3.4.3: R618/ L-3423 junction – AM Peak Hour Flows

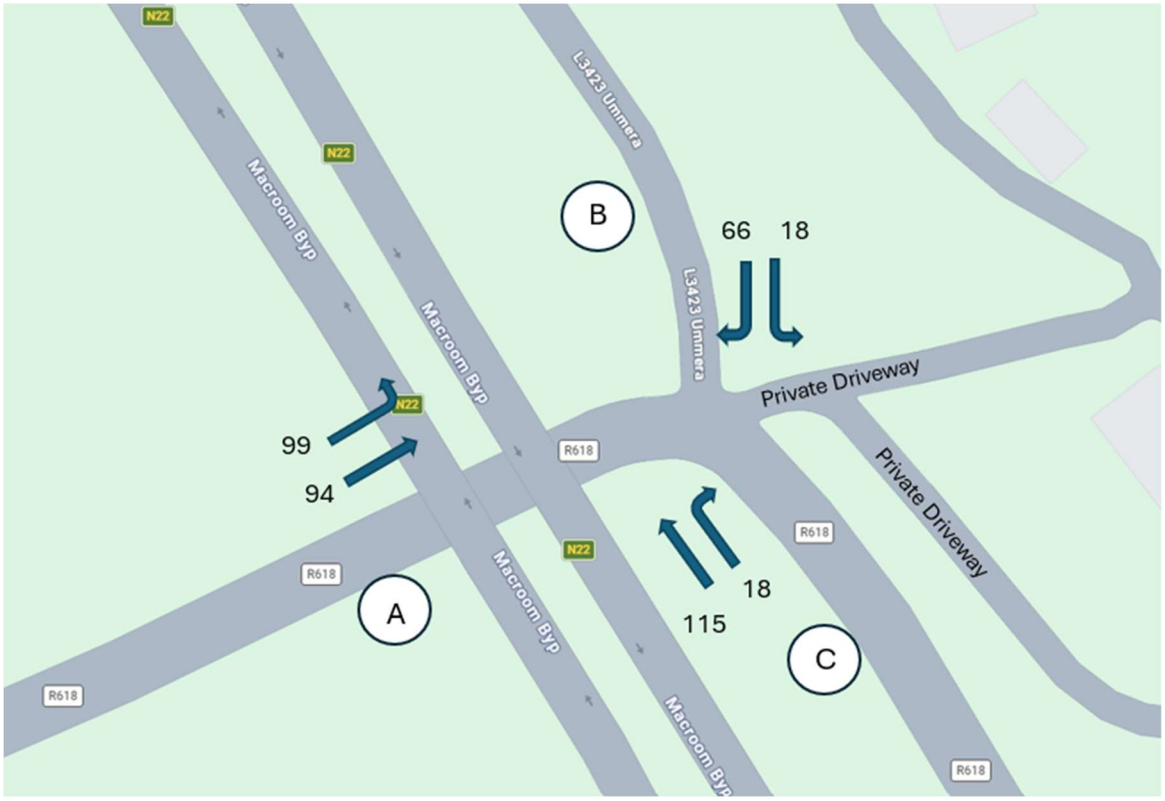


Figure 3.4.4: R618/ L-3423 junction – PM Peak Hour Flows

3.4.3 *Junction 3: R582/ R618 Priority Junction*

There are two junctions linking roads R618 and R582 with this junction, pictured below, primarily serving vehicles travelling onto the R582 and vehicles travelling onto the R618 when heading towards Macroom. Traffic leaving Macroom will generally utilise the other junction to access the R618. This junction forms part of the route for HGV's travelling between the gravel pit and the Bredagh Cross facility. The measured AADT (Annual Average Daily Traffic) at the junction is 5,850.



Image 3.4.3: Image of R582/ R618 priority junction

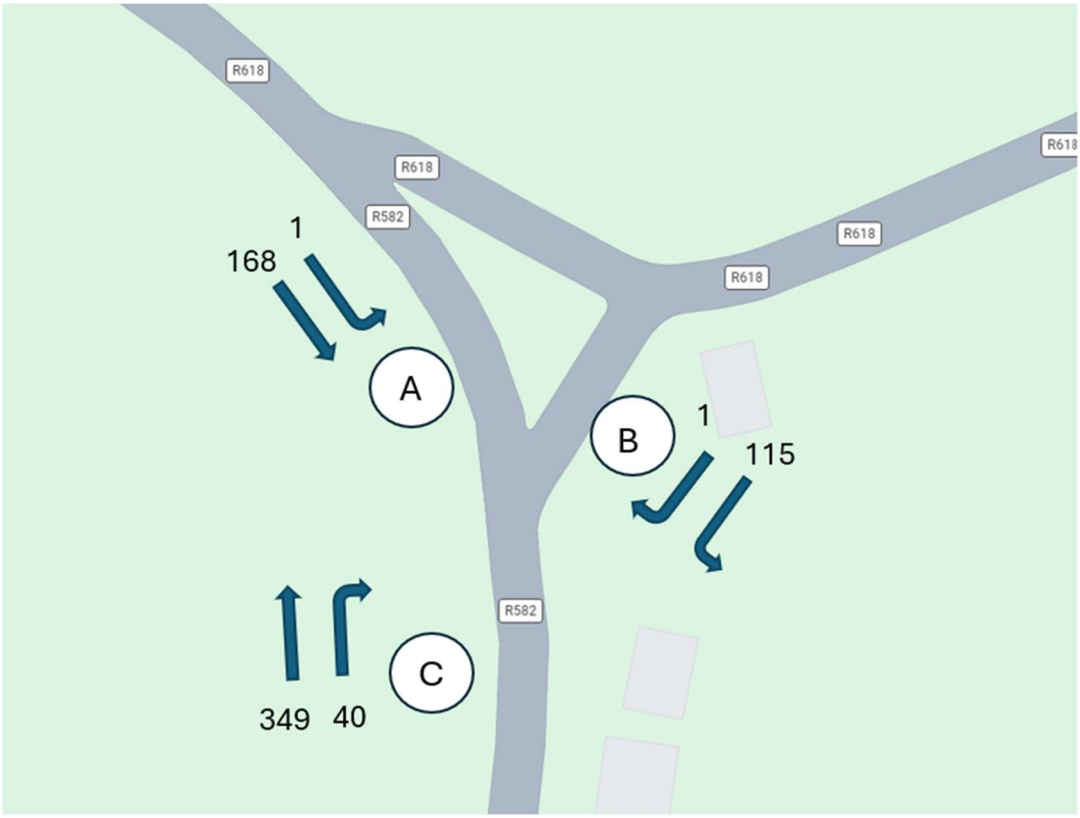


Figure 3.4.5: R582/ R618 priority junction – AM Peak Hour Flows

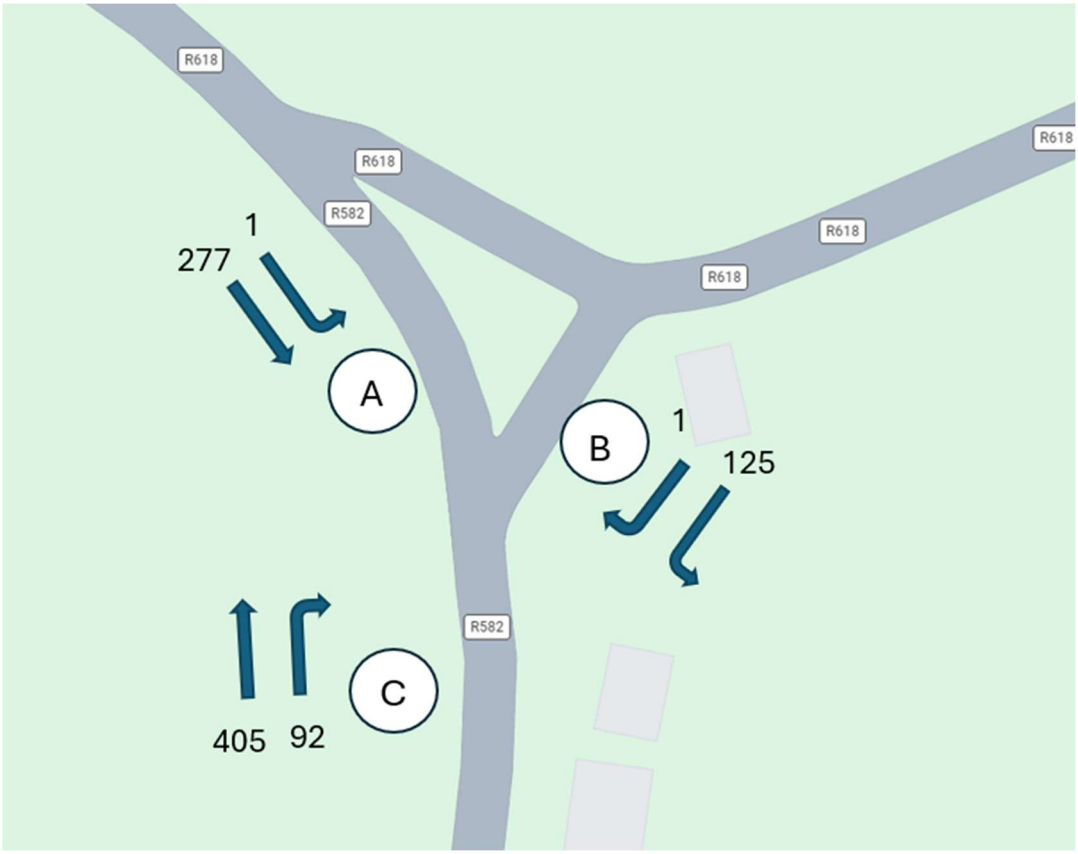


Figure 3.4.6: R582/ R618 priority junction – PM Peak Hour Flows

3.4.4 *Macroom Bypass*

The Macroom Bypass scheme was completed and fully opened to the public in November 2023 resulting in a dramatic change to the traffic movements experienced in the Macroom area. Prior to the completion of the bypass, slow moving and standstill traffic was commonplace during peak hours on the R618 (formerly N22) which runs through Macroom town centre. For this reason, the L-3423 local road was commonly utilised as part of a "rat run" by drivers wishing to avoid standstill traffic. The completion of the bypass removed the majority of pass-through traffic which would utilise the L-3423 "rat run" meaning that traffic movements at the identified junctions 2 & 3 have reduced. This reduction in traffic movements will have created extra capacity at these junctions. The haulage route identified by DCWL does not utilise the bypass, refer **Figure 6.1.1**. Some 3rd party haulage companies may access the bypass for their purposes although this would be considered unusual or rare with access to the bypass located approx. 1.5km to the south of Junction 3.

4.0 PROPOSED DEVELOPMENT

4.1 Introduction

4.1.1 Following submission of a substitute consent application for the Ummera Gravel Pit, Drimoleague Concrete Works Ltd. applied to An Bord Pleanála (now An Coimisiún Pleanála (ACP)) for its further development in September 2020 – case number ABP-308194-20. In correspondence dated 1st October 2025, ACP requested that a TTA be prepared for the development. The further development sought is for a 15-year lifespan.

4.1.2 The proposed development access will be via the current access to the gravel pit.



Figure 4.1.1: Proposed Site Layout (utilising existing entrance)

4.2 Phasing

4.2.1 While extraction at the site is ongoing, a start year of 2027 is taken for the purposes of this analysis, To demonstrate the impact of the development on the local road network, the Traffic Impact Assessment includes the base year (2026), the design year 2027 (Opening Year), the design year +5 (2032), and the design year +15 (2042).

4.3 Construction Stage Traffic Impact

4.3.1 In terms of traffic generation, the enabling works in advance of normal quarry operation are expected to be the same as the traffic generated during the operational phase. For this reason, the results of the junction analysis in **Section 7.0** when the gravel pit is in operation will also reflect the construction stage traffic impact.

5.0 TRAFFIC GENERATION / FORECASTING

5.1.1 This section describes the traffic generation from the scheme and is based on the anticipated extracted material quantities for a typical day of operation. Travel times for HGV's travelling between the proposed scheme and the existing Drimoleague Concrete Works site at Bredagh Cross have been accounted for in the trip volumes.

5.1.2 When in operation, material will be drawn utilising HGVs from the site to the DCWL Bredagh Cross facility for processing. A specific haulage route has been designated for this trip, as shown in **Figure 6.1.1**. In addition to this, other carriers/ contractors/ individuals will draw from the site. These other carriers may utilise HGVs, trailers, mini tippers, etc. for their purposes.

5.1.3 DCWL drivers typically bring their HGV vehicles home and begin their work day at 8:00am. To ensure a robust analysis of each junction, it will be assumed that all traffic arriving to the site will be via the identified haulage route, refer **Section 6.1.2**. This approach will cluster arrival traffic to the development and ensure a worst-cast scenario is modelled at each junction.

5.1.4 The anticipated average extraction at the proposed site will be 50,000 tonnes/annum or 1,000 tonnes/week. For DCWL drivers, this equates to approx. 3 loads per day with up to 3 trucks drawing independently on busier days. To ensure a robust assessment of the traffic impact, a worst-case scenario of all 3 DCWL drivers arriving and departing during peak traffic hours is assumed. In addition to this, one further HGV has been added to allow for other miscellaneous carriers also arriving and departing during peak hours.

5.1.5 One full-time employee will be working at the development site when it is in operation, implying that one private car will travel to/from the site during peak hours. Traffic movements generated by this employee has been allowed for in the trip generation figures shown in **Table 5.1** below.

5.1.6 The following **Table 5.**1 presents the anticipated arrivals and departures at the development site during the AM & PM peak hours on a typical day. The trips shown have been converted to Passenger Car Equivalent (PCU) values for the purposes of analysing the capacity at each of the identified junctions. Vehicle to PCU conversion factor for a Heavy Goods Vehicle (HGV) is 2.3.

Ummera Gravel Pit	AM PEAK		PM PEAK	
	Arrivals	Departures	Arrivals	Departures
Quarry Trip Generation				
Peak Trips (converted to pcu)	*10*	*9*	*9*	*10*
Total Peak Trips (pcu)	*19*		*19*	

Table 5.1 Proposed Development Traffic in 2027

5.1.7 The nature of extraction is that it fluctuates based on demand. The above table presents the trips generated during the peak traffic hours for a typical day of operation.

5.1.8 In addition to development traffic, recorded background traffic was factored using TII (Transport Infrastructure Ireland) Project Appraisal Guidelines (PE-PAG-02017) for use in future year scenarios. The following table presents the factors used on recorded vehicle counts based on Link Based Growth Rates (Central Growth) for the Cork County Area.

			Cars/LGV	HGV	Combined
Count %			97%	3%	**100%**
2026	**to**	**2027**	1.019	1.038	**1.019**
2026	**to**	**2032**	1.095	1.192	**1.098**
2026	**to**	**2042**	1.184	1.372	**1.190**

TII Project Appraisal Guidelines for National Roads Unit 5.3
Travel Demand Projections (PE-PAG-0217-02)

Table 5.2 Background Traffic Growth Rates Per Annum

6.0 TRIP ATTRACTION AND DISTRIBUTION

6.1.1 This section describes the methodology used in the distribution of development specific traffic onto the modelled network.

6.1.2 A specified haulage route, as shown in **Figure 6.1.1**, has been proposed for HGV traffic travelling between the proposed scheme lands and the existing Drimoleague Concrete Works facility at Bredagh Cross via Dunmanway and Drimoleague. This makes the distribution of development traffic at each of the analysed junctions very predictable.



Figure 6.1.1: Haulage route between Bredagh Cross facility and proposed site

6.1.3 Development traffic not travelling to the Bredagh Cross facility has also been assigned to the same route for the purposes of modelling. This approach adds a cluster of vehicles to each junction to allow for a more stringent assessment of each junction.

6.1.4 Traffic flow matrices have been developed for each Junction for the following scenarios:

- 2026 Current Year Flows AM/PM
- 2027 AM/PM With/Without Dev (Opening Year)
- 2032 AM/PM With/Without Dev (Design year +5)
- 2042 AM/PM With/Without Dev (Design year +15)

6.1.5 As stated in **Section 3.2.2**, the existing gravel pit was in operation when the traffic surveys were recorded. To ensure and thorough and robust analysis of each junction is undertaken, the full traffic generation as determined in **Section 5.0** will be added in the "With Development" scenarios.

6.1.6 *Junction 1: L-3423/ L-7478 Priority Junction*



Figure 6.1.2: Junction 1 Arm Designation

AM

Origin \ Destination	A	B	C	Tot
A	0	18	20	38
B	26	0	0	26
C	37	1	0	38
Total	63	19	20	102

PM

Origin \ Destination	A	B	C	Tot
A	0	24	31	55
B	12	0	0	12
C	18	0	0	18
Total	30	24	31	85

Table 6.1 Junction 1: Existing 2026 AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	18	20	39
B	27	0	0	27
C	38	1	0	39
Total	64	19	20	104

PM

Origin \ Destination	A	B	C	Tot
A	0	24	32	56
B	12	0	0	12
C	18	0	0	18
Total	31	24	32	87

Table 6.2 Junction 1: 2027 Without Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	18	30	49
B	27	0	0	27
C	47	1	0	48
Total	73	19	30	123

PM

Origin \ Destination	A	B	C	Tot
A	0	24	41	65
B	12	0	0	12
C	28	0	0	28
Total	41	24	41	106

Table 6.3 Junction 1: 2027 With Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	20	22	42
B	29	0	0	29
C	41	1	0	42
Total	69	21	22	112

PM

Origin \ Destination	A	B	C	Tot
A	0	26	34	60
B	13	0	0	13
C	20	0	0	20
Total	33	26	34	93

Table 6.4 Junction 1: 2032 Without Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	20	32	52
B	29	0	0	29
C	50	1	0	51
Total	78	21	32	131

PM

Origin \ Destination	A	B	C	Tot
A	0	26	43	69
B	13	0	0	13
C	30	0	0	30
Total	43	26	43	112

Table 6.5 Junction 1: 2032 With Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	21	24	45
B	31	0	0	31
C	44	1	0	45
Total	75	23	24	121

PM

Origin \ Destination	A	B	C	Tot
A	0	29	37	65
B	14	0	0	14
C	21	0	0	21
Total	36	29	37	101

Table 6.6 Junction 1: 2042 Without Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	21	34	55
B	31	0	0	31
C	53	1	0	54
Total	84	23	34	140

PM

Origin \ Destination	A	B	C	Tot
A	0	29	46	74
B	14	0	0	14
C	31	0	0	31
Total	46	29	46	120

Table 6.7 Junction 1: 2042 With Development AM/PM Peak Hour Traffic Movements

6.1.7 *Junction 2: R618/ L-3423 Priority Junction*

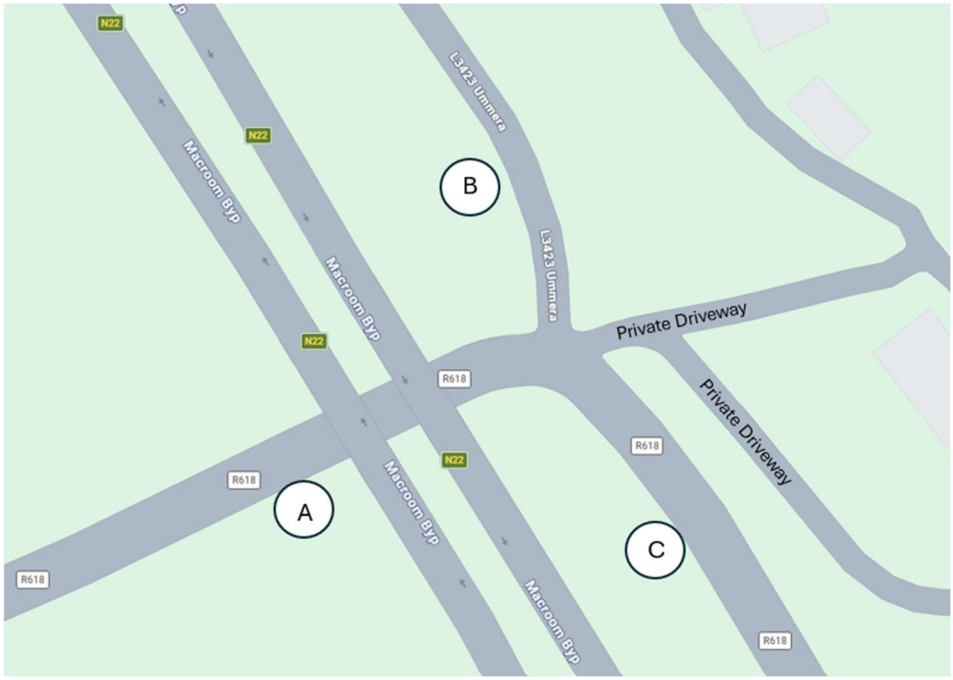


Figure 6.1.3: Junction 2 Arm Designation

AM

Origin \ Destination	A	B	C	Tot
A	0	21	64	85
B	73	0	26	99
C	88	15	0	103
Total	161	36	90	287

PM

Origin \ Destination	A	B	C	Tot
A	0	99	94	193
B	66	0	18	84
C	115	17	0	132
Total	181	116	112	409

Table 6.8 Junction 2: 2026 AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	21	65	87
B	74	0	27	101
C	90	15	0	105
Total	164	37	92	293

PM

Origin \ Destination	A	B	C	Tot
A	0	101	96	197
B	67	0	18	86
C	117	17	0	135
Total	185	118	114	417

Table 6.9 Junction 2: 2027 Without Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	31	65	97
B	83	0	27	110
C	90	15	0	105
Total	173	47	92	312

PM

Origin \ Destination	A	B	C	Tot
A	0	110	96	206
B	77	0	18	96
C	117	17	0	135
Total	195	127	114	436

Table 6.10 Junction 2: 2027 With Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	23	70	93
B	80	0	29	109
C	97	16	0	113
Total	177	40	99	315

PM

Origin \ Destination	A	B	C	Tot
A	0	109	103	212
B	72	0	20	92
C	126	19	0	145
Total	199	127	123	449

Table 6.11 Junction 2: 2032 Without Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	33	70	103
B	89	0	29	118
C	97	16	0	113
Total	186	50	99	334

PM

Origin \ Destination	A	B	C	Tot
A	0	118	103	221
B	82	0	20	102
C	126	19	0	145
Total	209	136	123	468

Table 6.12 Junction 2: 2032 With Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	25	76	101
B	87	0	31	118
C	105	18	0	123
Total	192	43	107	341

PM

Origin \ Destination	A	B	C	Tot
A	0	118	112	230
B	79	0	21	100
C	137	20	0	157
Total	215	138	133	487

Table 6.13 Junction 2: 2042 Without Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	35	76	111
B	96	0	31	127
C	105	18	0	123
Total	201	53	107	360

PM

Origin \ Destination	A	B	C	Tot
A	0	127	112	239
B	89	0	21	110
C	137	20	0	157
Total	225	147	133	506

Table 6.14 Junction 2: 2042 With Development AM/PM Peak Hour Traffic Movements

6.1.8 *Junction 3: R582/ R618 Priority Junction*



Figure 6.1.4: Junction 3 Arm Designation

AM

Origin \ Destination	A	B	C	Tot
A	0	1	168	169
B	1	0	115	116
C	349	40	0	389
Total	350	41	283	674

PM

Origin \ Destination	A	B	C	Tot
A	0	1	277	278
B	1	0	125	126
C	405	92	0	497
Total	406	93	402	901

Table 6.15 Junction 3: 2026 AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	1	171	172
B	1	0	117	118
C	356	41	0	397
Total	357	42	289	687

PM

Origin \ Destination	A	B	C	Tot
A	0	1	282	283
B	1	0	127	128
C	413	94	0	507
Total	414	95	410	919

Table 6.16 Junction 3: 2027 Without Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	1	171	172
B	1	0	126	127
C	356	51	0	407
Total	357	52	298	706

PM

Origin \ Destination	A	B	C	Tot
A	0	1	282	283
B	1	0	137	138
C	413	103	0	516
Total	414	104	420	938

Table 6.17 Junction 3: 2027 With Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	1	184	186
B	1	0	126	127
C	383	44	0	427
Total	384	45	311	740

PM

Origin \ Destination	A	B	C	Tot
A	0	1	304	305
B	1	0	137	138
C	445	101	0	546
Total	446	102	441	989

Table 6.18 Junction 3: 2032 Without Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	1	184	186
B	1	0	135	136
C	383	54	0	437
Total	384	55	320	759

PM

Origin \ Destination	A	B	C	Tot
A	0	1	304	305
B	1	0	147	148
C	445	110	0	555
Total	446	111	451	1008

Table 6.19 Junction 3: 2032 With Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	1	200	201
B	1	0	137	138
C	415	48	0	463
Total	416	49	337	802

PM

Origin \ Destination	A	B	C	Tot
A	0	1	330	331
B	1	0	149	150
C	482	109	0	591
Total	483	111	478	1072

Table 6.20 Junction 3: 2042 Without Development AM/PM Peak Hour Traffic Movements

AM

Origin \ Destination	A	B	C	Tot
A	0	1	200	201
B	1	0	146	147
C	415	58	0	473
Total	416	59	346	821

PM

Origin \ Destination	A	B	C	Tot
A	0	1	330	331
B	1	0	159	160
C	482	118	0	600
Total	483	120	488	1091

Table 6.21 Junction 3: 2042 With Development AM/PM Peak Hour Traffic Movements

7.0 NETWORK MODELLING RESULTS

7.1 Introduction

7.1.1 This section presents the results of the traffic modelling of the three identified junctions presented both with/without development in place for the year 2026, the Opening Year 2027, the Opening Year + 5 (2032), and the Opening Year +15 (2042). The Junctions 10 PICADY software was used to analyse each junction. The complete results sheets for all of the generated models are provided as an Appendix A.

7.1.2 The Junctions 10: PICADY modelling software produces an RFC % (Ratio of Flow to Capacity), a Delay figure measured in seconds and a LOS (Level of Service) which are used to compare the effects the development will have on the junction being modelled. An RFC of 85% on a junction implies that the junction has reached capacity but is still operational with delay incurred. The following **Table 7.1** describes the different LOS and the implications for the junctions being assessed.

Level of Service A	Free-Flow
Level of Service B	Reasonably Free-Flow (no delay incurred)
Level of Service C	Stable Operation (busy but operational with acceptable delay incurred)
Level of Service D	Borderline Unstable (Junctions reaching capacity – but still operational-delay incurred)
Level of Service E	Extremely Unstable (Junctions at capacity or over, any incident will cause a grid-lock situation- significant delay incurred)
Level of Service F	Breakdown (Junctions over capacity, unacceptable delay traffic at a standstill)

Table 7.1 Level of Service

7.2 Junctions 10 PICADY Results

7.2.1 The PICADY results for the each junction both with/without development for the modelled years are presented in **Table 7.2**.

7.2.2 The current year (2026) results are representative of how the junction currently operates during peak periods. Figures 6.1.2, 6.1.3, & 6.1.4 should be referred to for arm designation when interpreting the results. The constructed model is deemed to be fit for purpose.

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2026 Base											
Junction 1 - Stream B-AC	D1	0.1	7.57	0.06	A	163%	D2	0	7.33	0.03	A	155%
Junction 1 - Stream C-AB		0	5.76	0	A			0	0	0	A	
Junction 2 - Stream B-AC		0.3	10.97	0.25	B	[Junction 2 - Stream B-AC]		0.3	11.22	0.22	B	[Junction 2 - Stream B-AC]
Junction 2 - Stream C-AB		0	5.66	0.03	A			0	5.73	0.04	A	
Junction 3 - Stream B-AC		0.2	4.86	0.15	A			0.2	5.26	0.17	A	
Junction 3 - Stream C-B		0.1	7.21	0.08	A			0.2	8.68	0.2	A	
	2027 No Dev											
Junction 1 - Stream B-AC	D3	0.1	7.59	0.06	A	159%	D4	0	7.34	0.03	A	152%
Junction 1 - Stream C-AB		0	5.75	0	A			0	0	0	A	
Junction 2 - Stream B-AC		0.3	11.04	0.25	B	[Junction 2 - Stream B-AC]		0.3	11.3	0.23	B	[Junction 2 - Stream B-AC]
Junction 2 - Stream C-AB		0	5.65	0.03	A			0	5.72	0.04	A	
Junction 3 - Stream B-AC		0.2	4.89	0.15	A			0.2	5.29	0.17	A	
Junction 3 - Stream C-B		0.1	7.24	0.08	A			0.3	8.75	0.2	A	
	2027 With Dev											
Junction 1 - Stream B-AC	D5	0.1	7.66	0.06	A	139%	D6	0	7.4	0.03	A	131%
Junction 1 - Stream C-AB		0	5.73	0	A			0	0	0	A	
Junction 2 - Stream B-AC		0.4	11.51	0.28	B	[Junction 2 - Stream B-AC]		0.3	11.84	0.26	B	[Junction 2 - Stream B-AC]
Junction 2 - Stream C-AB		0	5.67	0.03	A			0	5.73	0.04	A	
Junction 3 - Stream B-AC		0.2	4.95	0.16	A			0.2	5.37	0.18	A	
Junction 3 - Stream C-B		0.1	7.4	0.1	A			0.3	8.97	0.22	A	
	2032 No Dev											
Junction 1 - Stream B-AC	D7	0.1	7.64	0.06	A	140%	D8	0	7.37	0.03	A	133%
Junction 1 - Stream C-AB		0	5.75	0	A			0	0	0	A	
Junction 2 - Stream B-AC		0.4	11.44	0.28	B	[Junction 2 - Stream B-AC]		0.3	11.7	0.25	B	[Junction 2 - Stream B-AC]
Junction 2 - Stream C-AB		0	5.64	0.03	A			0.1	5.72	0.04	A	
Junction 3 - Stream B-AC		0.2	4.99	0.16	A			0.2	5.45	0.19	A	
Junction 3 - Stream C-B		0.1	7.33	0.09	A			0.3	9.04	0.22	A	
	2032 With Dev											
Junction 1 - Stream B-AC	D9	0.1	7.71	0.06	A	122%	D10	0	7.43	0.03	A	115%
Junction 1 - Stream C-AB		0	5.72	0	A			0	0	0	A	
Junction 2 - Stream B-AC		0.4	11.94	0.3	B	[Junction 2 - Stream B-AC]		0.4	12.28	0.28	B	[Junction 2 - Stream B-AC]
Junction 2 - Stream C-AB		0	5.66	0.03	A			0.1	5.74	0.04	A	
Junction 3 - Stream B-AC		0.2	5.06	0.17	A			0.2	5.54	0.2	A	
Junction 3 - Stream C-B		0.1	7.5	0.11	A			0.3	9.27	0.24	A	
	2042 No Dev											
Junction 1 - Stream B-AC	D11	0.1	7.7	0.07	A	121%	D12	0	7.4	0.03	A	114%
Junction 1 - Stream C-AB		0	5.73	0	A			0	0	0	A	
Junction 2 - Stream B-AC		0.4	11.94	0.3	B	[Junction 2 - Stream B-AC]		0.4	12.27	0.27	B	[Junction 2 - Stream B-AC]
Junction 2 - Stream C-AB		0	5.63	0.04	A			0.1	5.71	0.04	A	
Junction 3 - Stream B-AC		0.2	5.12	0.18	A			0.3	5.65	0.21	A	
Junction 3 - Stream C-B		0.1	7.46	0.1	A			0.3	9.4	0.24	A	
	2042 With Dev											
Junction 1 - Stream B-AC	D13	0.1	7.77	0.07	A	106%	D14	0	8.21	0.03	A	93%
Junction 1 - Stream C-AB		0	5.71	0	A			0	0	0	A	
Junction 2 - Stream B-AC		0.5	12.49	0.33	B	[Junction 2 - Stream B-AC]		0.5	14.19	0.3	B	[Junction 2 - Stream B-AC]
Junction 2 - Stream C-AB		0	5.65	0.04	A			0.1	6.29	0.04	A	
Junction 3 - Stream B-AC		0.2	5.19	0.19	A			0.3	6.32	0.22	A	
Junction 3 - Stream C-B		0.1	7.63	0.12	A			0.4	10.62	0.26	B	

Table 7.2: PICADY software modelling results for each junction (refer Appendix A for full results)

7.3 Junction 1: L-3423/ L-7478 Priority Junction

7.3.1 The results indicate that the junction currently operates well within capacity and will continue to do so up to and including the design year 2042 with the development in place. The maximum future year RFC (Ratio of Flow to Capacity) is 7% in 2042 AM peak. The junctions Level of Service at this maximum RFC is A – Free Flow. The full results are included in the Appendix section of this report.

7.4 Junction 2: R618/ L-3423 Priority Junction

7.4.1 The results indicate that the junction currently operates within capacity and will continue to do so up to and including the design year 2042 with the development in place. The maximum future year RFC (Ratio of Flow to Capacity) is 33% in 2042 AM peak. The junctions Level of Service at this maximum RFC is B – Reasonably Free-Flow (no delay incurred). The full results are included in the Appendix section of this report.

7.5 Junction 3: R582/ R618 Priority Junction

7.5.1 The results indicate that the junction currently operates within capacity and will continue to do so up to and including the design year 2042 with the development in place. The maximum future year RFC (Ratio of Flow to Capacity) is 26% in 2042 PM peak. The junctions Level of Service at this maximum RFC is B – Reasonably Free-Flow (no delay incurred). The full results are included in the Appendix section of this report.

7.6 Summary of Modelling Results

7.6.1 The three identified junctions have been modelled to determine available junction capacity during the current morning and evening peak traffic scenario and future scenarios both with/without the development in place.

7.6.2 All three junctions modelled as part of this analysis are shown to maintain a Level of Service (LOS) of A – Free Flow or B – Reasonably Free Flow during all modelled scenarios up to and including Design Year 2042 (Opening Year +15).

7.6.3 The results indicate that there is sufficient available capacity at each modelled junction to cater for development traffic during periods of busy quarry operations.

8.0 CUMULATIVE IMPACT

8.1 As outlined in **Section 5.0** of this report, industry standard growth rates have been applied to background traffic for future year assessments (to account for further development within the area). These growth rates make allowance for modal shift targets as set by national policy but do not take account of site-specific measures that may be implemented to mitigate against traffic generation from a particular development.

9.0 ROAD SAFETY

9.1 Existing Road Network Safety

9.1.1 From accessing Ireland's road collisions database produced from the Road Safety Authority, included as shown in **Figure 9.1**, it can be seen that there have been road traffic incidents in the greater area of the Macroom from 2016 to 2024.

9.1.2 One incident occurred at a location in close proximity to the modelled junction 3. This incident occurred in 2018 with the collision resulting in serious injury to 1 driver.

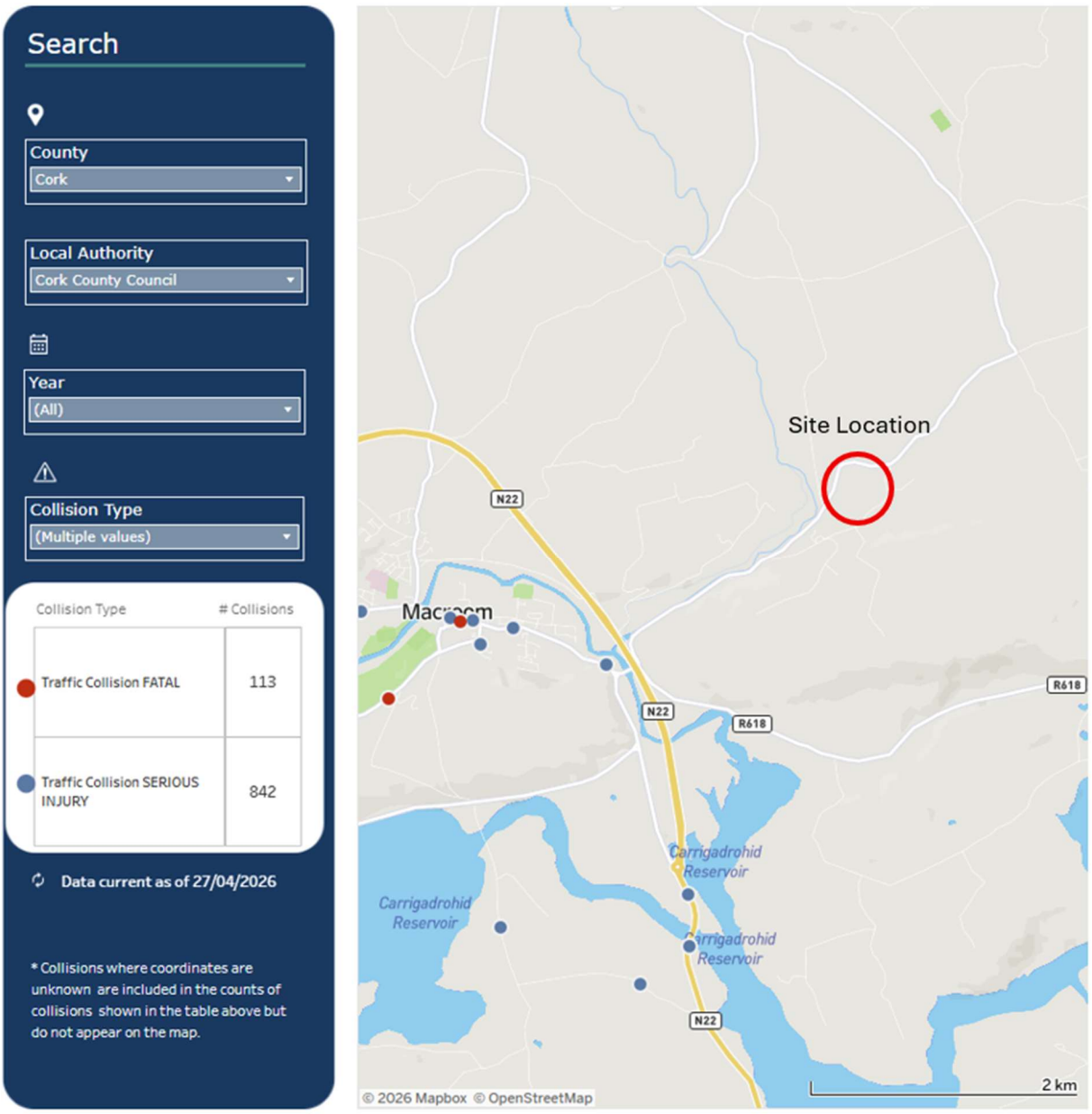


Table 9.1: RSA Map of Collisions for surrounding area

9.2 Proposed Road Safety Mitigation Measures

The proposed development will include a number of measures that are deemed necessary to ensure road safety in the area.

9.2.1 The proposed boundary treatments adjacent to the access will accommodate appropriate sight distances for vehicles approaching and exiting the development. This includes cutting back of dense vegetation as necessary to ensure the sight distances are maintained to the north and increased to the south with the reprofiling of the adjacent ditch.

9.2.2 Typically, HGV's carrying material to and from the site will arrive interspersed throughout the day avoiding a clustered arrival.

9.2.3 The haulage route identified for HGV's travelling between the development site and the Bredagh Cross facility, refer to **Figure 6.1.1**, was selected as the most suitable for the quarry vehicles to travel in order to minimise any potential safety concerns on the existing road network. The modelling results indicate that there is sufficient capacity in the existing road network to cater for the proposed haulage route.

9.2.5 Existing warning signage will be maintained, and an additional warning sign erected, along the L-3423, in accordance with the relevant standards, for traffic approaching the development entrance junction from both directions. The additional warning sign will be erected 150m south of the site entrance on the L-3423.

9.2.6 The L-3423 has a posted speed limit of 60kph implying sightlines of 120m are desirable at the entrance junction to the development site. The likelihood of an accident occurring involving development traffic is unlikely with HGV access to the site solely from the L-3423 with good visibility in excess of 120m to the north and to be provided to the south.

10.0 ENVIRONMENTAL IMPACT

10.1 Development traffic flow onto the existing road network will have a negative environmental impact. A number of on-site environmental impact mitigation measures are proposed to reduce the negative environmental impact of the development.

10.1.1 The access road into the gravel pit will be paved with associated improvements to drainage at the entrance.

10.1.2 The access road will be wetted as required to suppress dust.

10.1.3 The access road and/or public road will be swept as required should debris fall or be carried onto its surface.

11.0 INTERNAL LAYOUT & PARKING PROVISION

11.1 **Figure 4.1.1** presents the proposed layout which includes the provision of a fuel storage shed & refuelling pad, on-site parking, and site office.

12.0 PUBLIC TRANSPORT

12.1 Not applicable

13.0 ACCESSIBILITY AND INTEGRATION

13.1 Not applicable

14.0 ACCESS FOR PEOPLE WITH DISABILITIES

14.1 Not applicable

15.0 REFERENCES

- National Roads Authority (May 2014) Traffic and Transport Assessment Guidelines NRA, Dublin
- Institution of Highways & Transportation (1994) Guidelines for Traffic Impact Assessment IHT, London
- National Roads Authority (2000) Road Geometry Handbook NRA, Dublin
- National Roads Authority (revised 2003) Design Manual for Roads and Bridges NRA, Dublin
- Department of Transport (May 2019) Design Manual for Urban Roads and Streets
- RSA Ireland Road Collisions

  https://www.rsa.ie/road-safety/statistics/collisions

APPENDIX A: TRAFFIC MODEL OUTPUTS – JUNCTIONS 10

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.1.1.1905
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+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Import of Traffic Modelling 3 Junctions.j10
Path: N:\TIA\26062TT Ummera Gravel Pit Macroom\Traffic Modelling
Report generation date: 7/24/2026 2:32:05 PM

»2026 Base, AM
»2026 Base, PM
»2027 No Dev, AM
»2027 No Dev, PM
»2027 With Dev , AM
»2027 With Dev, PM
»2032 No Dev , AM
»2032 No Dev , PM
»2032 With Dev , AM
»2032 With Dev, PM
»2042 No Dev , AM
»2042 No Dev , PM
»2042 With Dev , AM
»2042 With Dev , PM

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2026 Base											
Junction 1 - Stream B-AC	D1	0.1	7.57	0.06	A	163 % [Junction 2 - Stream B-AC]	D2	0.0	7.33	0.03	A	155 % [Junction 2 - Stream B-AC]
Junction 1 - Stream C-AB		0.0	5.76	0.00	A			0.0	0.00	0.00	A	
Junction 2 - Stream B-AC		0.3	10.97	0.25	B			0.3	11.22	0.22	B	
Junction 2 - Stream C-AB		0.0	5.66	0.03	A			0.0	5.73	0.04	A	
Junction 3 - Stream B-AC		0.2	4.86	0.15	A			0.2	5.26	0.17	A	
Junction 3 - Stream C-B		0.1	7.21	0.08	A			0.2	8.68	0.20	A	
	2027 No Dev											
Junction 1 - Stream B-AC	D3	0.1	7.59	0.06	A	159 % [Junction 2 - Stream B-AC]						
Junction 1 - Stream C-AB		0.0	5.75	0.00	A							
Junction 2 - Stream B-AC		0.3	11.04	0.25	B							
Junction 2 - Stream C-AB		0.0	5.65	0.03	A							
Junction 3 - Stream B-AC		0.2	4.89	0.15	A							
Junction 3 - Stream C-B		0.1	7.24	0.08	A							
	2027 No Dev											
Junction 1 - Stream B-AC							D4	0.0	7.34	0.03	A	152 % [Junction 2 - Stream B-AC]
Junction 1 - Stream C-AB								0.0	0.00	0.00	A	
Junction 2 - Stream B-AC								0.3	11.30	0.23	B	
Junction 2 - Stream C-AB								0.0	5.72	0.04	A	
Junction 3 - Stream B-AC								0.2	5.29	0.17	A	

Junction 3 - Stream C-B								0.3	8.75	0.20	A	
	2027 With Dev											
Junction 1 - Stream B-AC	D5	0.1	7.66	0.06	A	139 % [Junction 2 - Stream B-AC]	D6	0.0	7.40	0.03	A	131 % [Junction 2 - Stream B-AC]
Junction 1 - Stream C-AB		0.0	5.73	0.00	A			0.0	0.00	0.00	A	
Junction 2 - Stream B-AC		0.4	11.51	0.28	B			0.3	11.84	0.26	B	
Junction 2 - Stream C-AB		0.0	5.67	0.03	A			0.0	5.73	0.04	A	
Junction 3 - Stream B-AC		0.2	4.95	0.16	A			0.2	5.37	0.18	A	
Junction 3 - Stream C-B		0.1	7.40	0.10	A			0.3	8.97	0.22	A	
	2032 No Dev											
Junction 1 - Stream B-AC	D7	0.1	7.64	0.06	A	140 % [Junction 2 - Stream B-AC]						
Junction 1 - Stream C-AB		0.0	5.75	0.00	A							
Junction 2 - Stream B-AC		0.4	11.44	0.28	B							
Junction 2 - Stream C-AB		0.0	5.64	0.03	A							
Junction 3 - Stream B-AC		0.2	4.99	0.16	A							
Junction 3 - Stream C-B		0.1	7.33	0.09	A							
	2032 No Dev											
Junction 1 - Stream B-AC							D8	0.0	7.37	0.03	A	133 % [Junction 2 - Stream B-AC]
Junction 1 - Stream C-AB								0.0	0.00	0.00	A	
Junction 2 - Stream B-AC								0.3	11.70	0.25	B	
Junction 2 - Stream C-AB								0.1	5.72	0.04	A	
Junction 3 - Stream B-AC								0.2	5.45	0.19	A	
Junction 3 - Stream C-B								0.3	9.04	0.22	A	
	2032 With Dev											
Junction 1 - Stream B-AC	D9	0.1	7.71	0.06	A	122 % [Junction 2 - Stream B-AC]	D10	0.0	7.43	0.03	A	115 % [Junction 2 - Stream B-AC]
Junction 1 - Stream C-AB		0.0	5.72	0.00	A			0.0	0.00	0.00	A	
Junction 2 - Stream B-AC		0.4	11.94	0.30	B			0.4	12.28	0.28	B	
Junction 2 - Stream C-AB		0.0	5.66	0.03	A			0.1	5.74	0.04	A	
Junction 3 - Stream B-AC		0.2	5.06	0.17	A			0.2	5.54	0.20	A	
Junction 3 - Stream C-B		0.1	7.50	0.11	A			0.3	9.27	0.24	A	
	2042 No Dev											
Junction 1 - Stream B-AC	D11	0.1	7.70	0.07	A	121 % [Junction 2 - Stream B-AC]						
Junction 1 - Stream C-AB		0.0	5.73	0.00	A							
Junction 2 - Stream B-AC		0.4	11.94	0.30	B							
Junction 2 - Stream C-AB		0.0	5.63	0.04	A							
Junction 3 - Stream B-AC		0.2	5.12	0.18	A							
Junction 3 - Stream C-B		0.1	7.46	0.10	A							
	2042 No Dev											
Junction 1 - Stream B-AC							D12	0.0	7.40	0.03	A	114 % [Junction 2 - Stream B-AC]
Junction 1 - Stream C-AB								0.0	0.00	0.00	A	
Junction 2 - Stream B-AC								0.4	12.27	0.27	B	
Junction 2 - Stream C-AB								0.1	5.71	0.04	A	
Junction 3 - Stream B-AC								0.3	5.65	0.21	A	
Junction 3 - Stream C-B								0.3	9.40	0.24	A	
	2042 With Dev											
Junction 1 - Stream B-AC	D13	0.1	7.77	0.07	A	106 % [Junction 2 - Stream B-AC]	D14	0.0	8.21	0.03	A	93 % [Junction 2 - Stream B-AC]
Junction 1 - Stream C-AB		0.0	5.71	0.00	A			0.0	0.00	0.00	A	
Junction 2 - Stream B-AC		0.5	12.49	0.33	B			0.5	14.19	0.30	B	
Junction 2 - Stream C-AB		0.0	5.65	0.04	A			0.1	6.29	0.04	A	
Junction 3 - Stream B-AC		0.2	5.19	0.19	A			0.3	6.32	0.22	A	
Junction 3 - Stream C-B		0.1	7.63	0.12	A			0.4	10.62	0.26	B	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	7/16/2026
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MHL\bhill
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	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
5.75					✓	Delay	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 segment length (min)	Run automatically
D1	2026 Base	AM	ONE HOUR	00:00	01:30	15	✓
D2	2026 Base	PM	ONE HOUR	00:00	01:30	15	✓
D3	2027 No Dev	AM	ONE HOUR	00:00	01:30	15	✓
D4	2027 No Dev	PM	ONE HOUR	00:00	01:30	15	✓
D5	2027 With Dev	AM	ONE HOUR	00:00	01:30	15	✓
D6	2027 With Dev	PM	ONE HOUR	00:00	01:30	15	✓
D7	2032 No Dev	AM	ONE HOUR	00:00	01:30	15	✓
D8	2032 No Dev	PM	ONE HOUR	00:00	01:30	15	✓
D9	2032 With Dev	AM	ONE HOUR	00:00	01:30	15	✓
D10	2032 With Dev	PM	ONE HOUR	00:00	01:30	15	✓
D11	2042 No Dev	AM	ONE HOUR	00:00	01:30	15	✓
D12	2042 No Dev	PM	ONE HOUR	00:00	01:30	15	✓
D13	2042 With Dev	AM	ONE HOUR	00:00	01:30	15	✓
D14	2042 With Dev	PM	ONE HOUR	00:00	01:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2026 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		1.99	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		4.12	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.26	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	163	Junction 2 - Stream B-AC	2.11	A

Arms

Arms

Junction	Arm	Name	Description	Arm type
1	A	untitled		Major
	B	untitled		Minor
	C	untitled		Major
2	A	untitled		Major
	B	untitled		Minor
	C	untitled		Major
3	A	untitled		Major
	B	untitled		Minor
	C	untitled		Major

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
1	C	6.00				70.0	✓	0.00
2	C	6.00				80.0	✓	0.00
3	C	6.00		✓	2.20	20.0		-

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
1	B	One lane	3.50	25	15
2	B	One lane	2.20	0	0
3	B	One lane	5.00	250	250

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	518	0.094	0.238	0.150	0.341
	B-C	665	0.102	0.258	-	-
	C-B	615	0.238	0.238	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
2	B-A	440	0.080	0.202	0.127	0.289
	B-C	574	0.088	0.222	-	-
	C-B	620	0.240	0.240	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
3	B-A	837	0.152	0.385	0.242	0.550
	B-C	938	0.144	0.363	-	-
	C-B	586	0.227	0.227	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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 segment length (min)	Run automatically
D1	2026 Base	AM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	38	100.000
	B		ONE HOUR	✓	26	100.000
	C		ONE HOUR	✓	38	100.000
2	A		ONE HOUR	✓	85	100.000
	B		ONE HOUR	✓	99	100.000
	C		ONE HOUR	✓	103	100.000
3	A		ONE HOUR	✓	169	100.000
	B		ONE HOUR	✓	116	100.000
	C		ONE HOUR	✓	389	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	18	20
	B	26	0	0
	C	37	1	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	21	64
	B	73	0	26
	C	88	15	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	168
	B	1	0	115
	C	349	40	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.06	7.57	0.1	A	24	36
	C-AB	0.00	5.76	0.0	A	0.97	1
	C-A					34	51
	A-B					17	25
	A-C					18	28
2	B-AC	0.25	10.97	0.3	B	91	136
	C-AB	0.03	5.66	0.0	A	16	24
	C-A					79	118
	A-B					19	29
	A-C					59	88
3	B-AC	0.15	4.86	0.2	A	106	160
	C-A					320	480
	C-B	0.08	7.21	0.1	A	37	55
	A-B					0.92	1
	A-C					154	231

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	20	5	508	0.039	19	0.0	0.0	7.359	A
	C-AB	0.79	0.20	626	0.001	0.78	0.0	0.0	5.756	A
	C-A	28	7			28				
	A-B	14	3			14				
	A-C	15	4			15				
2	B-AC	75	19	447	0.167	74	0.0	0.2	9.620	A
	C-AB	13	3	649	0.019	12	0.0	0.0	5.656	A
	C-A	65	16			65				
	A-B	16	4			16				
	A-C	48	12			48				
3	B-AC	87	22	890	0.098	87	0.0	0.1	4.482	A
	C-A	263	66			263				
	C-B	30	8	557	0.054	30	0.0	0.1	6.830	A
	A-B	0.75	0.19			0.75				
	A-C	126	32			126				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	23	6	507	0.046	23	0.0	0.0	7.448	A
	C-AB	0.95	0.24	628	0.002	0.95	0.0	0.0	5.736	A
	C-A	33	8			33				
	A-B	16	4			16				
	A-C	18	4			18				
2	B-AC	89	22	443	0.201	89	0.2	0.2	10.155	B
	C-AB	15	4	655	0.023	15	0.0	0.0	5.631	A
	C-A	77	19			77				
	A-B	19	5			19				
	A-C	58	14			58				
3	B-AC	104	26	881	0.118	104	0.1	0.1	4.637	A
	C-A	314	78			314				
	C-B	36	9	551	0.065	36	0.1	0.1	6.987	A
	A-B	0.90	0.22			0.90				
	A-C	151	38			151				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	29	7	504	0.057	29	0.0	0.1	7.569	A
	C-AB	1	0.29	632	0.002	1	0.0	0.0	5.709	A
	C-A	41	10			41				
	A-B	20	5			20				
	A-C	22	6			22				
2	B-AC	109	27	437	0.249	109	0.2	0.3	10.944	B
	C-AB	19	5	663	0.029	19	0.0	0.0	5.596	A
	C-A	94	24			94				
	A-B	23	6			23				
	A-C	70	18			70				
3	B-AC	128	32	868	0.147	128	0.1	0.2	4.861	A
	C-A	384	96			384				
	C-B	44	11	543	0.081	44	0.1	0.1	7.209	A
	A-B	1	0.28			1				
	A-C	185	46			185				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	29	7	504	0.057	29	0.1	0.1	7.569	A
	C-AB	1	0.29	632	0.002	1	0.0	0.0	5.709	A
	C-A	41	10			41				
	A-B	20	5			20				
	A-C	22	6			22				
2	B-AC	109	27	437	0.249	109	0.3	0.3	10.965	B
	C-AB	19	5	663	0.029	19	0.0	0.0	5.597	A
	C-A	94	24			94				
	A-B	23	6			23				
	A-C	70	18			70				
3	B-AC	128	32	868	0.147	128	0.2	0.2	4.863	A
	C-A	384	96			384				
	C-B	44	11	543	0.081	44	0.1	0.1	7.209	A
	A-B	1	0.28			1				
	A-C	185	46			185				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	23	6	507	0.046	23	0.1	0.0	7.452	A
	C-AB	0.95	0.24	628	0.002	0.95	0.0	0.0	5.736	A
	C-A	33	8			33				
	A-B	16	4			16				
	A-C	18	4			18				
2	B-AC	89	22	443	0.201	89	0.3	0.3	10.188	B
	C-AB	15	4	655	0.023	15	0.0	0.0	5.632	A
	C-A	77	19			77				
	A-B	19	5			19				
	A-C	58	14			58				
3	B-AC	104	26	881	0.118	104	0.2	0.1	4.639	A
	C-A	314	78			314				
	C-B	36	9	551	0.065	36	0.1	0.1	6.992	A
	A-B	0.90	0.22			0.90				
	A-C	151	38			151				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	20	5	508	0.039	20	0.0	0.0	7.363	A
	C-AB	0.79	0.20	626	0.001	0.79	0.0	0.0	5.758	A
	C-A	28	7			28				
	A-B	14	3			14				
	A-C	15	4			15				
2	B-AC	75	19	447	0.167	75	0.3	0.2	9.672	A
	C-AB	13	3	649	0.019	13	0.0	0.0	5.659	A
	C-A	65	16			65				
	A-B	16	4			16				
	A-C	48	12			48				
3	B-AC	87	22	890	0.098	87	0.1	0.1	4.489	A
	C-A	263	66			263				
	C-B	30	8	557	0.054	30	0.1	0.1	6.837	A
	A-B	0.75	0.19			0.75				
	A-C	126	32			126				

2026 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		1.04	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		2.59	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.62	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	155	Junction 2 - Stream B-AC	1.87	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2026 Base	PM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	55	100.000
	B		ONE HOUR	✓	12	100.000
	C		ONE HOUR	✓	18	100.000
2	A		ONE HOUR	✓	193	100.000
	B		ONE HOUR	✓	84	100.000
	C		ONE HOUR	✓	132	100.000
3	A		ONE HOUR	✓	278	100.000
	B		ONE HOUR	✓	126	100.000
	C		ONE HOUR	✓	497	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	24	31
	B	12	0	0
	C	18	0	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	99	94
	B	66	0	18
	C	115	17	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	277
	B	1	0	125
	C	405	92	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.03	7.33	0.0	A	11	17
	C-AB	0.00	0.00	0.0	A	0	0
	C-A					17	25
	A-B					22	33
	A-C					28	43
2	B-AC	0.22	11.22	0.3	B	77	116
	C-AB	0.04	5.73	0.0	A	19	28
	C-A					102	154
	A-B					91	136
	A-C					86	129
3	B-AC	0.17	5.26	0.2	A	116	173
	C-A					372	557
	C-B	0.20	8.68	0.2	A	84	127
	A-B					0.92	1
	A-C					254	381

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	9	2	508	0.018	9	0.0	0.0	7.207	A
	C-AB	0	0	605	0.000	0	0.0	0.0	0.000	A
	C-A	14	3			14				
	A-B	18	5			18				
	A-C	23	6			23				
2	B-AC	63	16	429	0.147	63	0.0	0.2	9.805	A
	C-AB	15	4	644	0.023	15	0.0	0.0	5.722	A
	C-A	85	21			85				
	A-B	75	19			75				
	A-C	71	18			71				
3	B-AC	95	24	860	0.110	94	0.0	0.1	4.701	A
	C-A	305	76			305				
	C-B	69	17	538	0.129	69	0.0	0.1	7.660	A
	A-B	0.75	0.19			0.75				
	A-C	209	52			209				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	11	3	507	0.021	11	0.0	0.0	7.259	A
	C-AB	0	0	603	0.000	0	0.0	0.0	0.000	A
	C-A	16	4			16				
	A-B	22	5			22				
	A-C	28	7			28				
2	B-AC	76	19	422	0.179	75	0.2	0.2	10.364	B
	C-AB	18	5	649	0.028	18	0.0	0.0	5.708	A
	C-A	100	25			100				
	A-B	89	22			89				
	A-C	85	21			85				
3	B-AC	113	28	845	0.134	113	0.1	0.2	4.922	A
	C-A	364	91			364				
	C-B	83	21	529	0.156	83	0.1	0.2	8.064	A
	A-B	0.90	0.22			0.90				
	A-C	249	62			249				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	13	3	504	0.026	13	0.0	0.0	7.331	A
	C-AB	0	0	600	0.000	0	0.0	0.0	0.000	A
	C-A	20	5			20				
	A-B	26	7			26				
	A-C	34	9			34				
2	B-AC	92	23	413	0.224	92	0.2	0.3	11.198	B
	C-AB	23	6	656	0.035	23	0.0	0.0	5.690	A
	C-A	122	31			122				
	A-B	109	27			109				
	A-C	103	26			103				
3	B-AC	139	35	824	0.168	139	0.2	0.2	5.253	A
	C-A	446	111			446				
	C-B	101	25	516	0.196	101	0.2	0.2	8.669	A
	A-B	1	0.28			1				
	A-C	305	76			305				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	13	3	504	0.026	13	0.0	0.0	7.331	A
	C-AB	0	0	600	0.000	0	0.0	0.0	0.000	A
	C-A	20	5			20				
	A-B	26	7			26				
	A-C	34	9			34				
2	B-AC	92	23	413	0.224	92	0.3	0.3	11.218	B
	C-AB	23	6	656	0.035	23	0.0	0.0	5.691	A
	C-A	122	31			122				
	A-B	109	27			109				
	A-C	103	26			103				
3	B-AC	139	35	824	0.168	139	0.2	0.2	5.256	A
	C-A	446	111			446				
	C-B	101	25	516	0.196	101	0.2	0.2	8.678	A
	A-B	1	0.28			1				
	A-C	305	76			305				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	11	3	507	0.021	11	0.0	0.0	7.262	A
	C-AB	0	0	603	0.000	0	0.0	0.0	0.000	A
	C-A	16	4			16				
	A-B	22	5			22				
	A-C	28	7			28				
2	B-AC	76	19	422	0.179	76	0.3	0.2	10.391	B
	C-AB	18	5	649	0.028	18	0.0	0.0	5.709	A
	C-A	100	25			100				
	A-B	89	22			89				
	A-C	85	21			85				
3	B-AC	113	28	844	0.134	113	0.2	0.2	4.927	A
	C-A	364	91			364				
	C-B	83	21	529	0.156	83	0.2	0.2	8.077	A
	A-B	0.90	0.22			0.90				
	A-C	249	62			249				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	9	2	508	0.018	9	0.0	0.0	7.210	A
	C-AB	0	0	605	0.000	0	0.0	0.0	0.000	A
	C-A	14	3			14				
	A-B	18	5			18				
	A-C	23	6			23				
2	B-AC	63	16	429	0.147	63	0.2	0.2	9.852	A
	C-AB	15	4	644	0.023	15	0.0	0.0	5.725	A
	C-A	85	21			85				
	A-B	75	19			75				
	A-C	71	18			71				
3	B-AC	95	24	860	0.110	95	0.2	0.1	4.710	A
	C-A	305	76			305				
	C-B	69	17	538	0.129	69	0.2	0.1	7.684	A
	A-B	0.75	0.19			0.75				
	A-C	209	52			209				

2027 No Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		2.03	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		4.15	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.27	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	159	Junction 2 - Stream B-AC	2.12	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2027 No Dev	AM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	38	100.000
	B		ONE HOUR	✓	27	100.000
	C		ONE HOUR	✓	39	100.000
2	A		ONE HOUR	✓	86	100.000
	B		ONE HOUR	✓	101	100.000
	C		ONE HOUR	✓	105	100.000
3	A		ONE HOUR	✓	172	100.000
	B		ONE HOUR	✓	118	100.000
	C		ONE HOUR	✓	397	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	18	20
	B	27	0	0
	C	38	1	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	21	65
	B	74	0	27
	C	90	15	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	171
	B	1	0	117
	C	356	41	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.06	7.59	0.1	A	25	37
	C-AB	0.00	5.75	0.0	A	0.97	1
	C-A					35	52
	A-B					17	25
	A-C					18	28
2	B-AC	0.25	11.04	0.3	B	93	139
	C-AB	0.03	5.65	0.0	A	16	24
	C-A					81	121
	A-B					19	29
	A-C					60	89
3	B-AC	0.15	4.89	0.2	A	108	162
	C-A					327	490
	C-B	0.08	7.24	0.1	A	38	56
	A-B					0.92	1
	A-C					157	235

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	20	5	508	0.040	20	0.0	0.0	7.372	A
	C-AB	0.79	0.20	627	0.001	0.78	0.0	0.0	5.751	A
	C-A	29	7			29				
	A-B	14	3			14				
	A-C	15	4			15				
2	B-AC	76	19	447	0.170	75	0.0	0.2	9.653	A
	C-AB	13	3	650	0.019	13	0.0	0.0	5.649	A
	C-A	66	17			66				
	A-B	16	4			16				
	A-C	49	12			49				
3	B-AC	89	22	889	0.100	88	0.0	0.1	4.495	A
	C-A	268	67			268				
	C-B	31	8	556	0.056	31	0.0	0.1	6.847	A
	A-B	0.75	0.19			0.75				
	A-C	129	32			129				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	24	6	507	0.048	24	0.0	0.0	7.464	A
	C-AB	0.95	0.24	629	0.002	0.95	0.0	0.0	5.731	A
	C-A	34	9			34				
	A-B	16	4			16				
	A-C	18	4			18				
2	B-AC	91	23	443	0.205	91	0.2	0.3	10.202	B
	C-AB	15	4	656	0.023	15	0.0	0.0	5.622	A
	C-A	79	20			79				
	A-B	19	5			19				
	A-C	58	15			58				
3	B-AC	106	27	880	0.121	106	0.1	0.1	4.653	A
	C-A	320	80			320				
	C-B	37	9	550	0.067	37	0.1	0.1	7.008	A
	A-B	0.90	0.22			0.90				
	A-C	154	38			154				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	30	7	504	0.059	30	0.0	0.1	7.589	A
	C-AB	1	0.29	632	0.002	1	0.0	0.0	5.703	A
	C-A	42	10			42				
	A-B	20	5			20				
	A-C	22	6			22				
2	B-AC	111	28	437	0.254	111	0.3	0.3	11.013	B
	C-AB	19	5	664	0.029	19	0.0	0.0	5.586	A
	C-A	96	24			96				
	A-B	23	6			23				
	A-C	72	18			72				
3	B-AC	130	32	867	0.150	130	0.1	0.2	4.884	A
	C-A	392	98			392				
	C-B	45	11	543	0.083	45	0.1	0.1	7.236	A
	A-B	1	0.28			1				
	A-C	188	47			188				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	30	7	504	0.059	30	0.1	0.1	7.589	A
	C-AB	1	0.29	632	0.002	1	0.0	0.0	5.703	A
	C-A	42	10			42				
	A-B	20	5			20				
	A-C	22	6			22				
2	B-AC	111	28	437	0.254	111	0.3	0.3	11.035	B
	C-AB	19	5	664	0.029	19	0.0	0.0	5.589	A
	C-A	96	24			96				
	A-B	23	6			23				
	A-C	72	18			72				
3	B-AC	130	32	867	0.150	130	0.2	0.2	4.886	A
	C-A	392	98			392				
	C-B	45	11	543	0.083	45	0.1	0.1	7.236	A
	A-B	1	0.28			1				
	A-C	188	47			188				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	24	6	507	0.048	24	0.1	0.1	7.468	A
	C-AB	0.95	0.24	629	0.002	0.95	0.0	0.0	5.733	A
	C-A	34	9			34				
	A-B	16	4			16				
	A-C	18	4			18				
2	B-AC	91	23	443	0.205	91	0.3	0.3	10.233	B
	C-AB	15	4	656	0.023	15	0.0	0.0	5.623	A
	C-A	79	20			79				
	A-B	19	5			19				
	A-C	58	15			58				
3	B-AC	106	27	880	0.121	106	0.2	0.1	4.655	A
	C-A	320	80			320				
	C-B	37	9	550	0.067	37	0.1	0.1	7.013	A
	A-B	0.90	0.22			0.90				
	A-C	154	38			154				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	20	5	508	0.040	20	0.1	0.0	7.376	A
	C-AB	0.79	0.20	627	0.001	0.79	0.0	0.0	5.753	A
	C-A	29	7			29				
	A-B	14	3			14				
	A-C	15	4			15				
2	B-AC	76	19	447	0.170	76	0.3	0.2	9.704	A
	C-AB	13	3	650	0.019	13	0.0	0.0	5.650	A
	C-A	66	17			66				
	A-B	16	4			16				
	A-C	49	12			49				
3	B-AC	89	22	889	0.100	89	0.1	0.1	4.502	A
	C-A	268	67			268				
	C-B	31	8	556	0.056	31	0.1	0.1	6.856	A
	A-B	0.75	0.19			0.75				
	A-C	129	32			129				

2027 No Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		1.02	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		2.59	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.63	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	152	Junction 2 - Stream B-AC	1.88	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2027 No Dev	PM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	56	100.000
	B		ONE HOUR	✓	12	100.000
	C		ONE HOUR	✓	18	100.000
2	A		ONE HOUR	✓	197	100.000
	B		ONE HOUR	✓	85	100.000
	C		ONE HOUR	✓	134	100.000
3	A		ONE HOUR	✓	283	100.000
	B		ONE HOUR	✓	128	100.000
	C		ONE HOUR	✓	507	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	24	32
	B	12	0	0
	C	18	0	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	101	96
	B	67	0	18
	C	117	17	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	282
	B	1	0	127
	C	413	94	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.03	7.34	0.0	A	11	17
	C-AB	0.00	0.00	0.0	A	0	0
	C-A					17	25
	A-B					22	33
	A-C					29	44
2	B-AC	0.23	11.30	0.3	B	78	117
	C-AB	0.04	5.72	0.0	A	19	28
	C-A					104	156
	A-B					93	139
	A-C					88	132
3	B-AC	0.17	5.29	0.2	A	117	176
	C-A					379	568
	C-B	0.20	8.75	0.3	A	86	129
	A-B					0.92	1
	A-C					259	388

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	9	2	508	0.018	9	0.0	0.0	7.209	A
	C-AB	0	0	604	0.000	0	0.0	0.0	0.000	A
	C-A	14	3			14				
	A-B	18	5			18				
	A-C	24	6			24				
2	B-AC	64	16	428	0.149	63	0.0	0.2	9.848	A
	C-AB	15	4	644	0.023	15	0.0	0.0	5.720	A
	C-A	86	22			86				
	A-B	76	19			76				
	A-C	72	18			72				
3	B-AC	96	24	858	0.112	96	0.0	0.1	4.719	A
	C-A	311	78			311				
	C-B	71	18	537	0.132	70	0.0	0.2	7.698	A
	A-B	0.75	0.19			0.75				
	A-C	212	53			212				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	11	3	506	0.021	11	0.0	0.0	7.262	A
	C-AB	0	0	603	0.000	0	0.0	0.0	0.000	A
	C-A	16	4			16				
	A-B	22	5			22				
	A-C	29	7			29				
2	B-AC	76	19	421	0.181	76	0.2	0.2	10.422	B
	C-AB	18	5	649	0.028	18	0.0	0.0	5.705	A
	C-A	102	26			102				
	A-B	91	23			91				
	A-C	86	22			86				
3	B-AC	115	29	843	0.137	115	0.1	0.2	4.945	A
	C-A	371	93			371				
	C-B	85	21	528	0.160	84	0.2	0.2	8.115	A
	A-B	0.90	0.22			0.90				
	A-C	254	63			254				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	13	3	504	0.026	13	0.0	0.0	7.335	A
	C-AB	0	0	600	0.000	0	0.0	0.0	0.000	A
	C-A	20	5			20				
	A-B	26	7			26				
	A-C	35	9			35				
2	B-AC	94	23	412	0.227	93	0.2	0.3	11.279	B
	C-AB	23	6	656	0.036	23	0.0	0.0	5.686	A
	C-A	124	31			124				
	A-B	111	28			111				
	A-C	106	26			106				
3	B-AC	141	35	822	0.172	141	0.2	0.2	5.286	A
	C-A	455	114			455				
	C-B	103	26	515	0.201	103	0.2	0.2	8.740	A
	A-B	1	0.28			1				
	A-C	310	78			310				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	13	3	504	0.026	13	0.0	0.0	7.335	A
	C-AB	0	0	600	0.000	0	0.0	0.0	0.000	A
	C-A	20	5			20				
	A-B	26	7			26				
	A-C	35	9			35				
2	B-AC	94	23	412	0.227	94	0.3	0.3	11.299	B
	C-AB	23	6	656	0.036	23	0.0	0.0	5.689	A
	C-A	124	31			124				
	A-B	111	28			111				
	A-C	106	26			106				
3	B-AC	141	35	822	0.172	141	0.2	0.2	5.288	A
	C-A	455	114			455				
	C-B	103	26	515	0.201	103	0.2	0.3	8.751	A
	A-B	1	0.28			1				
	A-C	310	78			310				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	11	3	506	0.021	11	0.0	0.0	7.265	A
	C-AB	0	0	603	0.000	0	0.0	0.0	0.000	A
	C-A	16	4			16				
	A-B	22	5			22				
	A-C	29	7			29				
2	B-AC	76	19	421	0.181	77	0.3	0.2	10.450	B
	C-AB	18	5	649	0.028	18	0.0	0.0	5.709	A
	C-A	102	26			102				
	A-B	91	23			91				
	A-C	86	22			86				
3	B-AC	115	29	843	0.137	115	0.2	0.2	4.948	A
	C-A	371	93			371				
	C-B	85	21	528	0.160	85	0.3	0.2	8.130	A
	A-B	0.90	0.22			0.90				
	A-C	254	63			254				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	9	2	508	0.018	9	0.0	0.0	7.210	A
	C-AB	0	0	604	0.000	0	0.0	0.0	0.000	A
	C-A	14	3			14				
	A-B	18	5			18				
	A-C	24	6			24				
2	B-AC	64	16	428	0.149	64	0.2	0.2	9.895	A
	C-AB	15	4	644	0.023	15	0.0	0.0	5.723	A
	C-A	86	22			86				
	A-B	76	19			76				
	A-C	72	18			72				
3	B-AC	96	24	858	0.112	96	0.2	0.1	4.728	A
	C-A	311	78			311				
	C-B	71	18	537	0.132	71	0.2	0.2	7.723	A
	A-B	0.75	0.19			0.75				
	A-C	212	53			212				

2027 With Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		1.73	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		4.39	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.43	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	139	Junction 2 - Stream B-AC	2.27	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2027 With Dev	AM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	48	100.000
	B		ONE HOUR	✓	27	100.000
	C		ONE HOUR	✓	48	100.000
2	A		ONE HOUR	✓	96	100.000
	B		ONE HOUR	✓	110	100.000
	C		ONE HOUR	✓	105	100.000
3	A		ONE HOUR	✓	172	100.000
	B		ONE HOUR	✓	127	100.000
	C		ONE HOUR	✓	407	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	18	30
	B	27	0	0
	C	47	1	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	31	65
	B	83	0	27
	C	90	15	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	171
	B	1	0	126
	C	356	51	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.06	7.66	0.1	A	25	37
	C-AB	0.00	5.73	0.0	A	0.99	1
	C-A					43	65
	A-B					17	25
	A-C					28	41
2	B-AC	0.28	11.51	0.4	B	101	151
	C-AB	0.03	5.67	0.0	A	16	24
	C-A					81	121
	A-B					28	43
	A-C					60	89
3	B-AC	0.16	4.95	0.2	A	117	175
	C-A					327	490
	C-B	0.10	7.40	0.1	A	47	70
	A-B					0.92	1
	A-C					157	235

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	20	5	506	0.040	20	0.0	0.0	7.415	A
	C-AB	0.80	0.20	629	0.001	0.79	0.0	0.0	5.726	A
	C-A	35	9			35				
	A-B	14	3			14				
	A-C	23	6			23				
2	B-AC	83	21	444	0.186	82	0.0	0.2	9.914	A
	C-AB	13	3	648	0.019	13	0.0	0.0	5.665	A
	C-A	66	17			66				
	A-B	23	6			23				
	A-C	49	12			49				
3	B-AC	96	24	889	0.108	95	0.0	0.1	4.531	A
	C-A	268	67			268				
	C-B	38	10	556	0.069	38	0.0	0.1	6.946	A
	A-B	0.75	0.19			0.75				
	A-C	129	32			129				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	24	6	503	0.048	24	0.0	0.1	7.516	A
	C-AB	0.96	0.24	632	0.002	0.96	0.0	0.0	5.701	A
	C-A	42	11			42				
	A-B	16	4			16				
	A-C	27	7			27				
2	B-AC	99	25	440	0.225	99	0.2	0.3	10.546	B
	C-AB	15	4	654	0.024	15	0.0	0.0	5.641	A
	C-A	79	20			79				
	A-B	28	7			28				
	A-C	58	15			58				
3	B-AC	114	29	880	0.130	114	0.1	0.1	4.702	A
	C-A	320	80			320				
	C-B	46	11	550	0.083	46	0.1	0.1	7.133	A
	A-B	0.90	0.22			0.90				
	A-C	154	38			154				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	30	7	500	0.059	30	0.1	0.1	7.656	A
	C-AB	1	0.30	636	0.002	1	0.0	0.0	5.667	A
	C-A	52	13			52				
	A-B	20	5			20				
	A-C	33	8			33				
2	B-AC	121	30	434	0.279	121	0.3	0.4	11.487	B
	C-AB	19	5	661	0.029	19	0.0	0.0	5.608	A
	C-A	96	24			96				
	A-B	34	9			34				
	A-C	72	18			72				
3	B-AC	140	35	867	0.161	140	0.1	0.2	4.950	A
	C-A	392	98			392				
	C-B	56	14	543	0.103	56	0.1	0.1	7.397	A
	A-B	1	0.28			1				
	A-C	188	47			188				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	30	7	500	0.059	30	0.1	0.1	7.656	A
	C-AB	1	0.30	636	0.002	1	0.0	0.0	5.669	A
	C-A	52	13			52				
	A-B	20	5			20				
	A-C	33	8			33				
2	B-AC	121	30	434	0.279	121	0.4	0.4	11.515	B
	C-AB	19	5	661	0.029	19	0.0	0.0	5.609	A
	C-A	96	24			96				
	A-B	34	9			34				
	A-C	72	18			72				
3	B-AC	140	35	867	0.161	140	0.2	0.2	4.952	A
	C-A	392	98			392				
	C-B	56	14	543	0.103	56	0.1	0.1	7.399	A
	A-B	1	0.28			1				
	A-C	188	47			188				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	24	6	503	0.048	24	0.1	0.1	7.520	A
	C-AB	0.96	0.24	632	0.002	0.97	0.0	0.0	5.703	A
	C-A	42	11			42				
	A-B	16	4			16				
	A-C	27	7			27				
2	B-AC	99	25	440	0.225	99	0.4	0.3	10.584	B
	C-AB	15	4	654	0.024	15	0.0	0.0	5.644	A
	C-A	79	20			79				
	A-B	28	7			28				
	A-C	58	15			58				
3	B-AC	114	29	880	0.130	114	0.2	0.2	4.704	A
	C-A	320	80			320				
	C-B	46	11	550	0.083	46	0.1	0.1	7.135	A
	A-B	0.90	0.22			0.90				
	A-C	154	38			154				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	20	5	506	0.040	20	0.1	0.0	7.422	A
	C-AB	0.80	0.20	629	0.001	0.80	0.0	0.0	5.728	A
	C-A	35	9			35				
	A-B	14	3			14				
	A-C	23	6			23				
2	B-AC	83	21	444	0.186	83	0.3	0.2	9.978	A
	C-AB	13	3	648	0.019	13	0.0	0.0	5.668	A
	C-A	66	17			66				
	A-B	23	6			23				
	A-C	49	12			49				
3	B-AC	96	24	889	0.108	96	0.2	0.1	4.538	A
	C-A	268	67			268				
	C-B	38	10	556	0.069	38	0.1	0.1	6.953	A
	A-B	0.75	0.19			0.75				
	A-C	129	32			129				

2027 With Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		0.85	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		2.86	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.78	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	131	Junction 2 - Stream B-AC	2.03	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2027 With Dev	PM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	65	100.000
	B		ONE HOUR	✓	12	100.000
	C		ONE HOUR	✓	28	100.000
2	A		ONE HOUR	✓	206	100.000
	B		ONE HOUR	✓	95	100.000
	C		ONE HOUR	✓	134	100.000
3	A		ONE HOUR	✓	283	100.000
	B		ONE HOUR	✓	138	100.000
	C		ONE HOUR	✓	516	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	24	41
	B	12	0	0
	C	28	0	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	110	96
	B	77	0	18
	C	117	17	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	282
	B	1	0	137
	C	413	103	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.03	7.40	0.0	A	11	17
	C-AB	0.00	0.00	0.0	A	0	0
	C-A					26	39
	A-B					22	33
	A-C					38	56
2	B-AC	0.26	11.84	0.3	B	87	131
	C-AB	0.04	5.73	0.0	A	19	28
	C-A					104	156
	A-B					101	151
	A-C					88	132
3	B-AC	0.18	5.37	0.2	A	127	190
	C-A					379	568
	C-B	0.22	8.97	0.3	A	95	142
	A-B					0.92	1
	A-C					259	388

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	9	2	506	0.018	9	0.0	0.0	7.249	A
	C-AB	0	0	603	0.000	0	0.0	0.0	0.000	A
	C-A	21	5			21				
	A-B	18	5			18				
	A-C	31	8			31				
2	B-AC	72	18	425	0.168	71	0.0	0.2	10.142	B
	C-AB	15	4	643	0.023	15	0.0	0.0	5.734	A
	C-A	86	22			86				
	A-B	83	21			83				
	A-C	72	18			72				
3	B-AC	104	26	858	0.121	103	0.0	0.1	4.765	A
	C-A	311	78			311				
	C-B	78	19	537	0.144	77	0.0	0.2	7.810	A
	A-B	0.75	0.19			0.75				
	A-C	212	53			212				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	11	3	503	0.021	11	0.0	0.0	7.310	A
	C-AB	0	0	601	0.000	0	0.0	0.0	0.000	A
	C-A	25	6			25				
	A-B	22	5			22				
	A-C	37	9			37				
2	B-AC	85	21	418	0.204	85	0.2	0.3	10.808	B
	C-AB	18	5	647	0.028	18	0.0	0.0	5.722	A
	C-A	102	26			102				
	A-B	99	25			99				
	A-C	86	22			86				
3	B-AC	124	31	843	0.147	124	0.1	0.2	5.004	A
	C-A	371	93			371				
	C-B	93	23	528	0.175	92	0.2	0.2	8.264	A
	A-B	0.90	0.22			0.90				
	A-C	254	63			254				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	13	3	500	0.026	13	0.0	0.0	7.396	A
	C-AB	0	0	597	0.000	0	0.0	0.0	0.000	A
	C-A	31	8			31				
	A-B	26	7			26				
	A-C	45	11			45				
2	B-AC	105	26	409	0.256	104	0.3	0.3	11.815	B
	C-AB	23	6	654	0.036	23	0.0	0.0	5.706	A
	C-A	124	31			124				
	A-B	121	30			121				
	A-C	106	26			106				
3	B-AC	152	38	822	0.185	152	0.2	0.2	5.372	A
	C-A	455	114			455				
	C-B	113	28	515	0.220	113	0.2	0.3	8.954	A
	A-B	1	0.28			1				
	A-C	310	78			310				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	13	3	500	0.026	13	0.0	0.0	7.396	A
	C-AB	0	0	597	0.000	0	0.0	0.0	0.000	A
	C-A	31	8			31				
	A-B	26	7			26				
	A-C	45	11			45				
2	B-AC	105	26	409	0.256	105	0.3	0.3	11.841	B
	C-AB	23	6	654	0.036	23	0.0	0.0	5.707	A
	C-A	124	31			124				
	A-B	121	30			121				
	A-C	106	26			106				
3	B-AC	152	38	822	0.185	152	0.2	0.2	5.374	A
	C-A	455	114			455				
	C-B	113	28	515	0.220	113	0.3	0.3	8.967	A
	A-B	1	0.28			1				
	A-C	310	78			310				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	11	3	503	0.021	11	0.0	0.0	7.311	A
	C-AB	0	0	601	0.000	0	0.0	0.0	0.000	A
	C-A	25	6			25				
	A-B	22	5			22				
	A-C	37	9			37				
2	B-AC	85	21	418	0.204	86	0.3	0.3	10.844	B
	C-AB	18	5	647	0.028	18	0.0	0.0	5.725	A
	C-A	102	26			102				
	A-B	99	25			99				
	A-C	86	22			86				
3	B-AC	124	31	843	0.147	124	0.2	0.2	5.011	A
	C-A	371	93			371				
	C-B	93	23	528	0.175	93	0.3	0.2	8.281	A
	A-B	0.90	0.22			0.90				
	A-C	254	63			254				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	9	2	506	0.018	9	0.0	0.0	7.253	A
	C-AB	0	0	603	0.000	0	0.0	0.0	0.000	A
	C-A	21	5			21				
	A-B	18	5			18				
	A-C	31	8			31				
2	B-AC	72	18	425	0.168	72	0.3	0.2	10.199	B
	C-AB	15	4	643	0.023	15	0.0	0.0	5.735	A
	C-A	86	22			86				
	A-B	83	21			83				
	A-C	72	18			72				
3	B-AC	104	26	858	0.121	104	0.2	0.1	4.773	A
	C-A	311	78			311				
	C-B	78	19	537	0.144	78	0.2	0.2	7.837	A
	A-B	0.75	0.19			0.75				
	A-C	212	53			212				

2032 No Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		2.02	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		4.29	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.29	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	140	Junction 2 - Stream B-AC	2.17	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2032 No Dev	AM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	42	100.000
	B		ONE HOUR	✓	29	100.000
	C		ONE HOUR	✓	42	100.000
2	A		ONE HOUR	✓	93	100.000
	B		ONE HOUR	✓	109	100.000
	C		ONE HOUR	✓	113	100.000
3	A		ONE HOUR	✓	185	100.000
	B		ONE HOUR	✓	127	100.000
	C		ONE HOUR	✓	427	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	20	22
	B	29	0	0
	C	41	1	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	23	70
	B	80	0	29
	C	97	16	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	184
	B	1	0	126
	C	383	44	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.06	7.64	0.1	A	27	40
	C-AB	0.00	5.75	0.0	A	0.98	1
	C-A					38	56
	A-B					18	28
	A-C					20	30
2	B-AC	0.28	11.44	0.4	B	100	150
	C-AB	0.03	5.64	0.0	A	17	26
	C-A					87	130
	A-B					21	32
	A-C					64	96
3	B-AC	0.16	4.99	0.2	A	117	175
	C-A					351	527
	C-B	0.09	7.33	0.1	A	40	61
	A-B					0.92	1
	A-C					169	253

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	22	5	508	0.043	22	0.0	0.0	7.408	A
	C-AB	0.79	0.20	627	0.001	0.79	0.0	0.0	5.744	A
	C-A	31	8			31				
	A-B	15	4			15				
	A-C	17	4			17				
2	B-AC	82	21	446	0.184	81	0.0	0.2	9.855	A
	C-AB	14	3	652	0.021	13	0.0	0.0	5.638	A
	C-A	72	18			72				
	A-B	17	4			17				
	A-C	53	13			53				
3	B-AC	96	24	885	0.108	95	0.0	0.1	4.552	A
	C-A	288	72			288				
	C-B	33	8	554	0.060	33	0.0	0.1	6.905	A
	A-B	0.75	0.19			0.75				
	A-C	139	35			139				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	26	7	506	0.052	26	0.0	0.1	7.507	A
	C-AB	0.96	0.24	630	0.002	0.95	0.0	0.0	5.722	A
	C-A	37	9			37				
	A-B	18	4			18				
	A-C	20	5			20				
2	B-AC	98	24	441	0.222	98	0.2	0.3	10.478	B
	C-AB	17	4	658	0.025	17	0.0	0.0	5.609	A
	C-A	85	21			85				
	A-B	21	5			21				
	A-C	63	16			63				
3	B-AC	114	29	875	0.130	114	0.1	0.1	4.728	A
	C-A	344	86			344				
	C-B	40	10	548	0.072	39	0.1	0.1	7.082	A
	A-B	0.90	0.22			0.90				
	A-C	165	41			165				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	32	8	503	0.064	32	0.1	0.1	7.644	A
	C-AB	1	0.30	633	0.002	1	0.0	0.0	5.692	A
	C-A	45	11			45				
	A-B	22	6			22				
	A-C	24	6			24				
2	B-AC	120	30	435	0.276	120	0.3	0.4	11.408	B
	C-AB	21	5	667	0.031	21	0.0	0.0	5.570	A
	C-A	103	26			103				
	A-B	25	6			25				
	A-C	77	19			77				
3	B-AC	140	35	861	0.162	140	0.1	0.2	4.986	A
	C-A	422	105			422				
	C-B	48	12	539	0.090	48	0.1	0.1	7.332	A
	A-B	1	0.28			1				
	A-C	203	51			203				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	32	8	503	0.064	32	0.1	0.1	7.644	A
	C-AB	1	0.30	633	0.002	1	0.0	0.0	5.695	A
	C-A	45	11			45				
	A-B	22	6			22				
	A-C	24	6			24				
2	B-AC	120	30	435	0.276	120	0.4	0.4	11.435	B
	C-AB	21	5	667	0.031	21	0.0	0.0	5.571	A
	C-A	103	26			103				
	A-B	25	6			25				
	A-C	77	19			77				
3	B-AC	140	35	861	0.162	140	0.2	0.2	4.988	A
	C-A	422	105			422				
	C-B	48	12	539	0.090	48	0.1	0.1	7.332	A
	A-B	1	0.28			1				
	A-C	203	51			203				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	26	7	506	0.052	26	0.1	0.1	7.509	A
	C-AB	0.96	0.24	630	0.002	0.96	0.0	0.0	5.722	A
	C-A	37	9			37				
	A-B	18	4			18				
	A-C	20	5			20				
2	B-AC	98	24	441	0.222	98	0.4	0.3	10.517	B
	C-AB	17	4	658	0.025	17	0.0	0.0	5.612	A
	C-A	85	21			85				
	A-B	21	5			21				
	A-C	63	16			63				
3	B-AC	114	29	875	0.130	114	0.2	0.2	4.731	A
	C-A	344	86			344				
	C-B	40	10	548	0.072	40	0.1	0.1	7.087	A
	A-B	0.90	0.22			0.90				
	A-C	165	41			165				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	22	5	508	0.043	22	0.1	0.0	7.412	A
	C-AB	0.79	0.20	627	0.001	0.79	0.0	0.0	5.746	A
	C-A	31	8			31				
	A-B	15	4			15				
	A-C	17	4			17				
2	B-AC	82	21	446	0.184	82	0.3	0.2	9.918	A
	C-AB	14	3	652	0.021	14	0.0	0.0	5.638	A
	C-A	71	18			71				
	A-B	17	4			17				
	A-C	53	13			53				
3	B-AC	96	24	885	0.108	96	0.2	0.1	4.560	A
	C-A	288	72			288				
	C-B	33	8	554	0.060	33	0.1	0.1	6.912	A
	A-B	0.75	0.19			0.75				
	A-C	139	35			139				

2032 No Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		1.03	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		2.69	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.68	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	133	Junction 2 - Stream B-AC	1.94	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2032 No Dev	PM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	60	100.000
	B		ONE HOUR	✓	13	100.000
	C		ONE HOUR	✓	20	100.000
2	A		ONE HOUR	✓	212	100.000
	B		ONE HOUR	✓	92	100.000
	C		ONE HOUR	✓	145	100.000
3	A		ONE HOUR	✓	305	100.000
	B		ONE HOUR	✓	138	100.000
	C		ONE HOUR	✓	546	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	26	34
	B	13	0	0
	C	20	0	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	109	103
	B	72	0	20
	C	126	19	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	304
	B	1	0	137
	C	445	101	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.03	7.37	0.0	A	12	18
	C-AB	0.00	0.00	0.0	A	0	0
	C-A					18	28
	A-B					24	36
	A-C					31	47
2	B-AC	0.25	11.70	0.3	B	84	127
	C-AB	0.04	5.72	0.1	A	21	32
	C-A					112	168
	A-B					100	150
	A-C					95	142
3	B-AC	0.19	5.45	0.2	A	127	190
	C-A					408	613
	C-B	0.22	9.04	0.3	A	93	139
	A-B					0.92	1
	A-C					279	418

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	10	2	508	0.019	10	0.0	0.0	7.231	A
	C-AB	0	0	604	0.000	0	0.0	0.0	0.000	A
	C-A	15	4			15				
	A-B	20	5			20				
	A-C	26	6			26				
2	B-AC	69	17	426	0.163	68	0.0	0.2	10.046	B
	C-AB	17	4	646	0.026	17	0.0	0.0	5.719	A
	C-A	92	23			92				
	A-B	82	21			82				
	A-C	78	19			78				
3	B-AC	104	26	852	0.122	103	0.0	0.1	4.804	A
	C-A	335	84			335				
	C-B	76	19	533	0.143	75	0.0	0.2	7.848	A
	A-B	0.75	0.19			0.75				
	A-C	229	57			229				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	12	3	506	0.023	12	0.0	0.0	7.288	A
	C-AB	0	0	602	0.000	0	0.0	0.0	0.000	A
	C-A	18	4			18				
	A-B	23	6			23				
	A-C	31	8			31				
2	B-AC	83	21	419	0.197	83	0.2	0.2	10.696	B
	C-AB	21	5	652	0.032	21	0.0	0.0	5.705	A
	C-A	110	27			110				
	A-B	98	24			98				
	A-C	93	23			93				
3	B-AC	124	31	836	0.148	124	0.1	0.2	5.056	A
	C-A	400	100			400				
	C-B	91	23	523	0.174	91	0.2	0.2	8.316	A
	A-B	0.90	0.22			0.90				
	A-C	273	68			273				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	14	4	503	0.028	14	0.0	0.0	7.368	A
	C-AB	0	0	599	0.000	0	0.0	0.0	0.000	A
	C-A	22	6			22				
	A-B	29	7			29				
	A-C	37	9			37				
2	B-AC	101	25	409	0.248	101	0.2	0.3	11.679	B
	C-AB	27	7	659	0.040	26	0.0	0.1	5.687	A
	C-A	133	33			133				
	A-B	120	30			120				
	A-C	113	28			113				
3	B-AC	152	38	813	0.187	152	0.2	0.2	5.445	A
	C-A	490	122			490				
	C-B	111	28	509	0.218	111	0.2	0.3	9.028	A
	A-B	1	0.28			1				
	A-C	335	84			335				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	14	4	503	0.028	14	0.0	0.0	7.368	A
	C-AB	0	0	599	0.000	0	0.0	0.0	0.000	A
	C-A	22	6			22				
	A-B	29	7			29				
	A-C	37	9			37				
2	B-AC	101	25	409	0.248	101	0.3	0.3	11.704	B
	C-AB	27	7	659	0.040	27	0.1	0.1	5.690	A
	C-A	133	33			133				
	A-B	120	30			120				
	A-C	113	28			113				
3	B-AC	152	38	813	0.187	152	0.2	0.2	5.447	A
	C-A	490	122			490				
	C-B	111	28	509	0.218	111	0.3	0.3	9.041	A
	A-B	1	0.28			1				
	A-C	335	84			335				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	12	3	506	0.023	12	0.0	0.0	7.288	A
	C-AB	0	0	602	0.000	0	0.0	0.0	0.000	A
	C-A	18	4			18				
	A-B	23	6			23				
	A-C	31	8			31				
2	B-AC	83	21	419	0.197	83	0.3	0.2	10.729	B
	C-AB	21	5	652	0.032	21	0.1	0.0	5.706	A
	C-A	110	27			110				
	A-B	98	24			98				
	A-C	93	23			93				
3	B-AC	124	31	836	0.148	124	0.2	0.2	5.063	A
	C-A	400	100			400				
	C-B	91	23	523	0.174	91	0.3	0.2	8.332	A
	A-B	0.90	0.22			0.90				
	A-C	273	68			273				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	10	2	508	0.019	10	0.0	0.0	7.231	A
	C-AB	0	0	604	0.000	0	0.0	0.0	0.000	A
	C-A	15	4			15				
	A-B	20	5			20				
	A-C	26	6			26				
2	B-AC	69	17	426	0.163	69	0.2	0.2	10.102	B
	C-AB	17	4	646	0.026	17	0.0	0.0	5.722	A
	C-A	92	23			92				
	A-B	82	21			82				
	A-C	78	19			78				
3	B-AC	104	26	852	0.122	104	0.2	0.1	4.813	A
	C-A	335	84			335				
	C-B	76	19	533	0.143	76	0.2	0.2	7.876	A
	A-B	0.75	0.19			0.75				
	A-C	229	57			229				

2032 With Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		1.74	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		4.53	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.44	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	122	Junction 2 - Stream B-AC	2.32	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2032 With Dev	AM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	52	100.000
	B		ONE HOUR	✓	29	100.000
	C		ONE HOUR	✓	51	100.000
2	A		ONE HOUR	✓	103	100.000
	B		ONE HOUR	✓	118	100.000
	C		ONE HOUR	✓	113	100.000
3	A		ONE HOUR	✓	185	100.000
	B		ONE HOUR	✓	136	100.000
	C		ONE HOUR	✓	437	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	20	32
	B	29	0	0
	C	50	1	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	33	70
	B	89	0	29
	C	97	16	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	184
	B	1	0	135
	C	383	54	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.06	7.71	0.1	A	27	40
	C-AB	0.00	5.72	0.0	A	0.99	1
	C-A					46	69
	A-B					18	28
	A-C					29	44
2	B-AC	0.30	11.94	0.4	B	108	162
	C-AB	0.03	5.66	0.0	A	17	26
	C-A					87	130
	A-B					30	45
	A-C					64	96
3	B-AC	0.17	5.06	0.2	A	125	187
	C-A					351	527
	C-B	0.11	7.50	0.1	A	50	74
	A-B					0.92	1
	A-C					169	253

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	22	5	505	0.043	22	0.0	0.0	7.451	A
	C-AB	0.80	0.20	630	0.001	0.80	0.0	0.0	5.719	A
	C-A	38	9			38				
	A-B	15	4			15				
	A-C	24	6			24				
2	B-AC	89	22	442	0.201	88	0.0	0.2	10.123	B
	C-AB	14	3	650	0.021	13	0.0	0.0	5.653	A
	C-A	72	18			72				
	A-B	25	6			25				
	A-C	53	13			53				
3	B-AC	102	26	885	0.116	102	0.0	0.1	4.591	A
	C-A	288	72			288				
	C-B	41	10	554	0.073	40	0.0	0.1	7.004	A
	A-B	0.75	0.19			0.75				
	A-C	139	35			139				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	26	7	502	0.052	26	0.0	0.1	7.560	A
	C-AB	0.97	0.24	633	0.002	0.97	0.0	0.0	5.693	A
	C-A	45	11			45				
	A-B	18	4			18				
	A-C	29	7			29				
2	B-AC	106	27	438	0.242	106	0.2	0.3	10.835	B
	C-AB	17	4	656	0.025	17	0.0	0.0	5.627	A
	C-A	85	21			85				
	A-B	30	7			30				
	A-C	63	16			63				
3	B-AC	122	31	875	0.140	122	0.1	0.2	4.779	A
	C-A	344	86			344				
	C-B	49	12	548	0.089	48	0.1	0.1	7.209	A
	A-B	0.90	0.22			0.90				
	A-C	165	41			165				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	32	8	499	0.064	32	0.1	0.1	7.711	A
	C-AB	1	0.30	638	0.002	1	0.0	0.0	5.656	A
	C-A	55	14			55				
	A-B	22	6			22				
	A-C	35	9			35				
2	B-AC	130	32	431	0.301	129	0.3	0.4	11.908	B
	C-AB	21	5	665	0.032	21	0.0	0.0	5.592	A
	C-A	103	26			103				
	A-B	36	9			36				
	A-C	77	19			77				
3	B-AC	150	37	862	0.174	150	0.2	0.2	5.055	A
	C-A	422	105			422				
	C-B	59	15	539	0.110	59	0.1	0.1	7.497	A
	A-B	1	0.28			1				
	A-C	203	51			203				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	32	8	499	0.064	32	0.1	0.1	7.713	A
	C-AB	1	0.30	638	0.002	1	0.0	0.0	5.658	A
	C-A	55	14			55				
	A-B	22	6			22				
	A-C	35	9			35				
2	B-AC	130	32	431	0.301	130	0.4	0.4	11.941	B
	C-AB	21	5	665	0.032	21	0.0	0.0	5.595	A
	C-A	103	26			103				
	A-B	36	9			36				
	A-C	77	19			77				
3	B-AC	150	37	862	0.174	150	0.2	0.2	5.057	A
	C-A	422	105			422				
	C-B	59	15	539	0.110	59	0.1	0.1	7.500	A
	A-B	1	0.28			1				
	A-C	203	51			203				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	26	7	502	0.052	26	0.1	0.1	7.562	A
	C-AB	0.97	0.24	633	0.002	0.97	0.0	0.0	5.693	A
	C-A	45	11			45				
	A-B	18	4			18				
	A-C	29	7			29				
2	B-AC	106	27	438	0.242	106	0.4	0.3	10.882	B
	C-AB	17	4	656	0.025	17	0.0	0.0	5.628	A
	C-A	85	21			85				
	A-B	30	7			30				
	A-C	63	16			63				
3	B-AC	122	31	875	0.140	122	0.2	0.2	4.783	A
	C-A	344	86			344				
	C-B	49	12	548	0.089	49	0.1	0.1	7.212	A
	A-B	0.90	0.22			0.90				
	A-C	165	41			165				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	22	5	505	0.043	22	0.1	0.0	7.458	A
	C-AB	0.80	0.20	630	0.001	0.80	0.0	0.0	5.719	A
	C-A	38	9			38				
	A-B	15	4			15				
	A-C	24	6			24				
2	B-AC	89	22	442	0.201	89	0.3	0.3	10.198	B
	C-AB	14	3	650	0.021	14	0.0	0.0	5.656	A
	C-A	71	18			71				
	A-B	25	6			25				
	A-C	53	13			53				
3	B-AC	102	26	885	0.116	103	0.2	0.1	4.600	A
	C-A	288	72			288				
	C-B	41	10	554	0.073	41	0.1	0.1	7.017	A
	A-B	0.75	0.19			0.75				
	A-C	139	35			139				

2032 With Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		0.86	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		2.96	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.82	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	115	Junction 2 - Stream B-AC	2.09	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2032 With Dev	PM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	69	100.000
	B		ONE HOUR	✓	13	100.000
	C		ONE HOUR	✓	30	100.000
2	A		ONE HOUR	✓	221	100.000
	B		ONE HOUR	✓	102	100.000
	C		ONE HOUR	✓	145	100.000
3	A		ONE HOUR	✓	305	100.000
	B		ONE HOUR	✓	148	100.000
	C		ONE HOUR	✓	555	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	26	43
	B	13	0	0
	C	30	0	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	118	103
	B	82	0	20
	C	126	19	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	304
	B	1	0	147
	C	445	110	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.03	7.43	0.0	A	12	18
	C-AB	0.00	0.00	0.0	A	0	0
	C-A					28	41
	A-B					24	36
	A-C					39	59
2	B-AC	0.28	12.28	0.4	B	94	140
	C-AB	0.04	5.74	0.1	A	21	32
	C-A					112	168
	A-B					108	162
	A-C					95	142
3	B-AC	0.20	5.54	0.2	A	136	204
	C-A					408	613
	C-B	0.24	9.27	0.3	A	101	151
	A-B					0.92	1
	A-C					279	418

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	10	2	505	0.019	10	0.0	0.0	7.271	A
	C-AB	0	0	602	0.000	0	0.0	0.0	0.000	A
	C-A	23	6			23				
	A-B	20	5			20				
	A-C	32	8			32				
2	B-AC	77	19	423	0.182	76	0.0	0.2	10.347	B
	C-AB	17	4	645	0.026	17	0.0	0.0	5.733	A
	C-A	92	23			92				
	A-B	89	22			89				
	A-C	78	19			78				
3	B-AC	111	28	852	0.131	111	0.0	0.1	4.850	A
	C-A	335	84			335				
	C-B	83	21	533	0.155	82	0.0	0.2	7.963	A
	A-B	0.75	0.19			0.75				
	A-C	229	57			229				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	12	3	502	0.023	12	0.0	0.0	7.336	A
	C-AB	0	0	600	0.000	0	0.0	0.0	0.000	A
	C-A	27	7			27				
	A-B	23	6			23				
	A-C	39	10			39				
2	B-AC	92	23	416	0.221	91	0.2	0.3	11.099	B
	C-AB	21	5	650	0.032	21	0.0	0.0	5.721	A
	C-A	110	27			110				
	A-B	106	27			106				
	A-C	93	23			93				
3	B-AC	133	33	836	0.159	133	0.1	0.2	5.120	A
	C-A	400	100			400				
	C-B	99	25	523	0.189	99	0.2	0.2	8.474	A
	A-B	0.90	0.22			0.90				
	A-C	273	68			273				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	14	4	499	0.029	14	0.0	0.0	7.429	A
	C-AB	0	0	596	0.000	0	0.0	0.0	0.000	A
	C-A	33	8			33				
	A-B	29	7			29				
	A-C	47	12			47				
2	B-AC	112	28	405	0.277	112	0.3	0.4	12.248	B
	C-AB	27	7	657	0.040	26	0.0	0.1	5.707	A
	C-A	133	33			133				
	A-B	130	32			130				
	A-C	113	28			113				
3	B-AC	163	41	813	0.200	163	0.2	0.2	5.536	A
	C-A	490	122			490				
	C-B	121	30	509	0.238	121	0.2	0.3	9.257	A
	A-B	1	0.28			1				
	A-C	335	84			335				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	14	4	499	0.029	14	0.0	0.0	7.429	A
	C-AB	0	0	596	0.000	0	0.0	0.0	0.000	A
	C-A	33	8			33				
	A-B	29	7			29				
	A-C	47	12			47				
2	B-AC	112	28	405	0.277	112	0.4	0.4	12.283	B
	C-AB	27	7	657	0.040	27	0.1	0.1	5.710	A
	C-A	133	33			133				
	A-B	130	32			130				
	A-C	113	28			113				
3	B-AC	163	41	813	0.200	163	0.2	0.2	5.538	A
	C-A	490	122			490				
	C-B	121	30	509	0.238	121	0.3	0.3	9.272	A
	A-B	1	0.28			1				
	A-C	335	84			335				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	12	3	502	0.023	12	0.0	0.0	7.337	A
	C-AB	0	0	600	0.000	0	0.0	0.0	0.000	A
	C-A	27	7			27				
	A-B	23	6			23				
	A-C	39	10			39				
2	B-AC	92	23	416	0.221	92	0.4	0.3	11.140	B
	C-AB	21	5	650	0.032	21	0.1	0.0	5.723	A
	C-A	110	27			110				
	A-B	106	27			106				
	A-C	93	23			93				
3	B-AC	133	33	836	0.159	133	0.2	0.2	5.125	A
	C-A	400	100			400				
	C-B	99	25	523	0.189	99	0.3	0.2	8.494	A
	A-B	0.90	0.22			0.90				
	A-C	273	68			273				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	10	2	505	0.019	10	0.0	0.0	7.271	A
	C-AB	0	0	602	0.000	0	0.0	0.0	0.000	A
	C-A	23	6			23				
	A-B	20	5			20				
	A-C	32	8			32				
2	B-AC	77	19	423	0.182	77	0.3	0.2	10.417	B
	C-AB	17	4	645	0.026	17	0.0	0.0	5.737	A
	C-A	92	23			92				
	A-B	89	22			89				
	A-C	78	19			78				
3	B-AC	111	28	852	0.131	112	0.2	0.2	4.860	A
	C-A	335	84			335				
	C-B	83	21	533	0.155	83	0.2	0.2	7.995	A
	A-B	0.75	0.19			0.75				
	A-C	229	57			229				

2042 No Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		2.02	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		4.47	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.33	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	121	Junction 2 - Stream B-AC	2.24	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2042 No Dev	AM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	45	100.000
	B		ONE HOUR	✓	31	100.000
	C		ONE HOUR	✓	45	100.000
2	A		ONE HOUR	✓	101	100.000
	B		ONE HOUR	✓	118	100.000
	C		ONE HOUR	✓	123	100.000
3	A		ONE HOUR	✓	201	100.000
	B		ONE HOUR	✓	138	100.000
	C		ONE HOUR	✓	463	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	21	24
	B	31	0	0
	C	44	1	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	25	76
	B	87	0	31
	C	105	18	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	200
	B	1	0	137
	C	415	48	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.07	7.70	0.1	A	28	43
	C-AB	0.00	5.73	0.0	A	0.98	1
	C-A					40	60
	A-B					19	29
	A-C					22	33
2	B-AC	0.30	11.94	0.4	B	108	162
	C-AB	0.04	5.63	0.0	A	19	29
	C-A					93	140
	A-B					23	34
	A-C					70	105
3	B-AC	0.18	5.12	0.2	A	127	190
	C-A					381	571
	C-B	0.10	7.46	0.1	A	44	66
	A-B					0.92	1
	A-C					184	275

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	23	6	507	0.046	23	0.0	0.0	7.438	A
	C-AB	0.79	0.20	628	0.001	0.79	0.0	0.0	5.735	A
	C-A	33	8			33				
	A-B	16	4			16				
	A-C	18	5			18				
2	B-AC	89	22	443	0.200	88	0.0	0.2	10.102	B
	C-AB	15	4	655	0.024	15	0.0	0.0	5.631	A
	C-A	77	19			77				
	A-B	19	5			19				
	A-C	57	14			57				
3	B-AC	104	26	881	0.118	103	0.0	0.1	4.626	A
	C-A	312	78			312				
	C-B	36	9	551	0.066	36	0.0	0.1	6.982	A
	A-B	0.75	0.19			0.75				
	A-C	151	38			151				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	28	7	505	0.055	28	0.0	0.1	7.550	A
	C-AB	0.96	0.24	631	0.002	0.96	0.0	0.0	5.712	A
	C-A	39	10			39				
	A-B	19	5			19				
	A-C	22	5			22				
2	B-AC	106	27	438	0.242	106	0.2	0.3	10.823	B
	C-AB	19	5	661	0.029	19	0.0	0.0	5.601	A
	C-A	92	23			92				
	A-B	22	6			22				
	A-C	68	17			68				
3	B-AC	124	31	870	0.143	124	0.1	0.2	4.824	A
	C-A	373	93			373				
	C-B	43	11	545	0.079	43	0.1	0.1	7.178	A
	A-B	0.90	0.22			0.90				
	A-C	180	45			180				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	34	9	502	0.068	34	0.1	0.1	7.698	A
	C-AB	1	0.30	635	0.002	1	0.0	0.0	5.679	A
	C-A	48	12			48				
	A-B	23	6			23				
	A-C	26	7			26				
2	B-AC	130	32	431	0.301	129	0.3	0.4	11.909	B
	C-AB	24	6	671	0.036	24	0.0	0.0	5.562	A
	C-A	111	28			111				
	A-B	28	7			28				
	A-C	84	21			84				
3	B-AC	152	38	855	0.178	152	0.2	0.2	5.117	A
	C-A	457	114			457				
	C-B	53	13	535	0.099	53	0.1	0.1	7.457	A
	A-B	1	0.28			1				
	A-C	220	55			220				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	34	9	502	0.068	34	0.1	0.1	7.700	A
	C-AB	1	0.30	635	0.002	1	0.0	0.0	5.682	A
	C-A	48	12			48				
	A-B	23	6			23				
	A-C	26	7			26				
2	B-AC	130	32	431	0.301	130	0.4	0.4	11.942	B
	C-AB	24	6	671	0.036	24	0.0	0.0	5.563	A
	C-A	111	28			111				
	A-B	28	7			28				
	A-C	84	21			84				
3	B-AC	152	38	855	0.178	152	0.2	0.2	5.119	A
	C-A	457	114			457				
	C-B	53	13	535	0.099	53	0.1	0.1	7.460	A
	A-B	1	0.28			1				
	A-C	220	55			220				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	28	7	505	0.055	28	0.1	0.1	7.552	A
	C-AB	0.96	0.24	631	0.002	0.96	0.0	0.0	5.714	A
	C-A	39	10			39				
	A-B	19	5			19				
	A-C	22	5			22				
2	B-AC	106	27	438	0.242	106	0.4	0.3	10.868	B
	C-AB	19	5	662	0.029	19	0.0	0.0	5.602	A
	C-A	92	23			92				
	A-B	22	6			22				
	A-C	68	17			68				
3	B-AC	124	31	870	0.143	124	0.2	0.2	4.828	A
	C-A	373	93			373				
	C-B	43	11	545	0.079	43	0.1	0.1	7.181	A
	A-B	0.90	0.22			0.90				
	A-C	180	45			180				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	23	6	507	0.046	23	0.1	0.0	7.447	A
	C-AB	0.80	0.20	628	0.001	0.80	0.0	0.0	5.735	A
	C-A	33	8			33				
	A-B	16	4			16				
	A-C	18	5			18				
2	B-AC	89	22	443	0.201	89	0.3	0.3	10.178	B
	C-AB	15	4	655	0.024	15	0.0	0.0	5.634	A
	C-A	77	19			77				
	A-B	19	5			19				
	A-C	57	14			57				
3	B-AC	104	26	881	0.118	104	0.2	0.1	4.635	A
	C-A	312	78			312				
	C-B	36	9	551	0.066	36	0.1	0.1	6.992	A
	A-B	0.75	0.19			0.75				
	A-C	151	38			151				

2042 No Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		1.03	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		2.81	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.75	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	114	Junction 2 - Stream B-AC	2.02	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2042 No Dev	PM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	66	100.000
	B		ONE HOUR	✓	14	100.000
	C		ONE HOUR	✓	21	100.000
2	A		ONE HOUR	✓	230	100.000
	B		ONE HOUR	✓	100	100.000
	C		ONE HOUR	✓	157	100.000
3	A		ONE HOUR	✓	331	100.000
	B		ONE HOUR	✓	150	100.000
	C		ONE HOUR	✓	591	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	29	37
	B	14	0	0
	C	21	0	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	118	112
	B	79	0	21
	C	137	20	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	330
	B	1	0	149
	C	482	109	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.03	7.40	0.0	A	13	19
	C-AB	0.00	0.00	0.0	A	0	0
	C-A					19	29
	A-B					27	40
	A-C					34	51
2	B-AC	0.27	12.27	0.4	B	92	138
	C-AB	0.04	5.71	0.1	A	23	34
	C-A					121	182
	A-B					108	162
	A-C					103	154
3	B-AC	0.21	5.65	0.3	A	138	206
	C-A					442	663
	C-B	0.24	9.40	0.3	A	100	150
	A-B					0.92	1
	A-C					303	454

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	11	3	507	0.021	10	0.0	0.0	7.254	A
	C-AB	0	0	603	0.000	0	0.0	0.0	0.000	A
	C-A	16	4			16				
	A-B	22	5			22				
	A-C	28	7			28				
2	B-AC	75	19	422	0.178	74	0.0	0.2	10.330	B
	C-AB	18	4	649	0.028	18	0.0	0.0	5.706	A
	C-A	100	25			100				
	A-B	89	22			89				
	A-C	84	21			84				
3	B-AC	113	28	845	0.134	112	0.0	0.2	4.908	A
	C-A	363	91			363				
	C-B	82	21	529	0.155	81	0.0	0.2	8.029	A
	A-B	0.75	0.19			0.75				
	A-C	248	62			248				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	13	3	505	0.025	13	0.0	0.0	7.316	A
	C-AB	0	0	600	0.000	0	0.0	0.0	0.000	A
	C-A	19	5			19				
	A-B	26	7			26				
	A-C	33	8			33				
2	B-AC	90	22	414	0.217	90	0.2	0.3	11.083	B
	C-AB	22	6	655	0.034	22	0.0	0.0	5.690	A
	C-A	119	30			119				
	A-B	106	27			106				
	A-C	101	25			101				
3	B-AC	135	34	827	0.163	135	0.2	0.2	5.196	A
	C-A	433	108			433				
	C-B	98	24	518	0.189	98	0.2	0.2	8.563	A
	A-B	0.90	0.22			0.90				
	A-C	297	74			297				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	15	4	502	0.031	15	0.0	0.0	7.404	A
	C-AB	0	0	597	0.000	0	0.0	0.0	0.000	A
	C-A	23	6			23				
	A-B	32	8			32				
	A-C	41	10			41				
2	B-AC	110	28	403	0.273	110	0.3	0.4	12.243	B
	C-AB	29	7	663	0.043	28	0.0	0.1	5.669	A
	C-A	144	36			144				
	A-B	130	32			130				
	A-C	123	31			123				
3	B-AC	165	41	802	0.206	165	0.2	0.3	5.644	A
	C-A	531	133			531				
	C-B	120	30	503	0.239	120	0.2	0.3	9.387	A
	A-B	1	0.28			1				
	A-C	363	91			363				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	15	4	502	0.031	15	0.0	0.0	7.404	A
	C-AB	0	0	597	0.000	0	0.0	0.0	0.000	A
	C-A	23	6			23				
	A-B	32	8			32				
	A-C	41	10			41				
2	B-AC	110	28	403	0.273	110	0.4	0.4	12.274	B
	C-AB	29	7	663	0.043	29	0.1	0.1	5.673	A
	C-A	144	36			144				
	A-B	130	32			130				
	A-C	123	31			123				
3	B-AC	165	41	802	0.206	165	0.3	0.3	5.649	A
	C-A	531	133			531				
	C-B	120	30	503	0.239	120	0.3	0.3	9.402	A
	A-B	1	0.28			1				
	A-C	363	91			363				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	13	3	505	0.025	13	0.0	0.0	7.320	A
	C-AB	0	0	600	0.000	0	0.0	0.0	0.000	A
	C-A	19	5			19				
	A-B	26	7			26				
	A-C	33	8			33				
2	B-AC	90	22	414	0.217	90	0.4	0.3	11.124	B
	C-AB	22	6	655	0.034	22	0.1	0.0	5.694	A
	C-A	119	30			119				
	A-B	106	27			106				
	A-C	101	25			101				
3	B-AC	135	34	827	0.163	135	0.3	0.2	5.202	A
	C-A	433	108			433				
	C-B	98	24	518	0.189	98	0.3	0.2	8.584	A
	A-B	0.90	0.22			0.90				
	A-C	297	74			297				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	11	3	507	0.021	11	0.0	0.0	7.255	A
	C-AB	0	0	603	0.000	0	0.0	0.0	0.000	A
	C-A	16	4			16				
	A-B	22	5			22				
	A-C	28	7			28				
2	B-AC	75	19	422	0.178	76	0.3	0.2	10.395	B
	C-AB	18	4	649	0.028	18	0.0	0.0	5.710	A
	C-A	100	25			100				
	A-B	89	22			89				
	A-C	84	21			84				
3	B-AC	113	28	845	0.134	113	0.2	0.2	4.918	A
	C-A	363	91			363				
	C-B	82	21	529	0.155	82	0.2	0.2	8.063	A
	A-B	0.75	0.19			0.75				
	A-C	248	62			248				

2042 With Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	Junction 3	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		1.76	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		4.73	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		1.47	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	106	Junction 2 - Stream B-AC	2.39	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2042 With Dev	AM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	55	100.000
	B		ONE HOUR	✓	31	100.000
	C		ONE HOUR	✓	54	100.000
2	A		ONE HOUR	✓	111	100.000
	B		ONE HOUR	✓	127	100.000
	C		ONE HOUR	✓	123	100.000
3	A		ONE HOUR	✓	201	100.000
	B		ONE HOUR	✓	147	100.000
	C		ONE HOUR	✓	473	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	21	34
	B	31	0	0
	C	53	1	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	35	76
	B	96	0	31
	C	105	18	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	200
	B	1	0	146
	C	415	58	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.07	7.77	0.1	A	28	43
	C-AB	0.00	5.71	0.0	A	1.00	1
	C-A					49	73
	A-B					19	29
	A-C					31	47
2	B-AC	0.33	12.49	0.5	B	117	175
	C-AB	0.04	5.65	0.0	A	19	29
	C-A					93	140
	A-B					32	48
	A-C					70	105
3	B-AC	0.19	5.19	0.2	A	135	202
	C-A					381	571
	C-B	0.12	7.63	0.1	A	53	80
	A-B					0.92	1
	A-C					184	275

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	23	6	504	0.046	23	0.0	0.0	7.482	A
	C-AB	0.80	0.20	631	0.001	0.80	0.0	0.0	5.710	A
	C-A	40	10			40				
	A-B	16	4			16				
	A-C	26	6			26				
2	B-AC	96	24	440	0.217	95	0.0	0.3	10.384	B
	C-AB	15	4	653	0.024	15	0.0	0.0	5.646	A
	C-A	77	19			77				
	A-B	26	7			26				
	A-C	57	14			57				
3	B-AC	111	28	881	0.126	110	0.0	0.1	4.666	A
	C-A	312	78			312				
	C-B	44	11	551	0.079	43	0.0	0.1	7.083	A
	A-B	0.75	0.19			0.75				
	A-C	151	38			151				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	28	7	501	0.056	28	0.0	0.1	7.603	A
	C-AB	0.97	0.24	634	0.002	0.97	0.0	0.0	5.682	A
	C-A	48	12			48				
	A-B	19	5			19				
	A-C	31	8			31				
2	B-AC	114	29	435	0.262	114	0.3	0.4	11.196	B
	C-AB	19	5	659	0.029	19	0.0	0.0	5.619	A
	C-A	92	23			92				
	A-B	31	8			31				
	A-C	68	17			68				
3	B-AC	132	33	870	0.152	132	0.1	0.2	4.876	A
	C-A	373	93			373				
	C-B	52	13	545	0.096	52	0.1	0.1	7.310	A
	A-B	0.90	0.22			0.90				
	A-C	180	45			180				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	34	9	498	0.069	34	0.1	0.1	7.766	A
	C-AB	1	0.30	639	0.002	1	0.0	0.0	5.644	A
	C-A	58	15			58				
	A-B	23	6			23				
	A-C	37	9			37				
2	B-AC	140	35	428	0.327	139	0.4	0.5	12.447	B
	C-AB	24	6	669	0.036	24	0.0	0.0	5.584	A
	C-A	111	28			111				
	A-B	39	10			39				
	A-C	84	21			84				
3	B-AC	162	40	855	0.189	162	0.2	0.2	5.189	A
	C-A	457	114			457				
	C-B	64	16	535	0.119	64	0.1	0.1	7.631	A
	A-B	1	0.28			1				
	A-C	220	55			220				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	34	9	498	0.069	34	0.1	0.1	7.768	A
	C-AB	1	0.30	639	0.002	1	0.0	0.0	5.646	A
	C-A	58	15			58				
	A-B	23	6			23				
	A-C	37	9			37				
2	B-AC	140	35	428	0.327	140	0.5	0.5	12.489	B
	C-AB	24	6	669	0.036	24	0.0	0.0	5.587	A
	C-A	111	28			111				
	A-B	39	10			39				
	A-C	84	21			84				
3	B-AC	162	40	855	0.189	162	0.2	0.2	5.191	A
	C-A	457	114			457				
	C-B	64	16	535	0.119	64	0.1	0.1	7.634	A
	A-B	1	0.28			1				
	A-C	220	55			220				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	28	7	501	0.056	28	0.1	0.1	7.608	A
	C-AB	0.97	0.24	634	0.002	0.97	0.0	0.0	5.684	A
	C-A	48	12			48				
	A-B	19	5			19				
	A-C	31	8			31				
2	B-AC	114	29	435	0.262	115	0.5	0.4	11.252	B
	C-AB	19	5	659	0.029	19	0.0	0.0	5.623	A
	C-A	92	23			92				
	A-B	31	8			31				
	A-C	68	17			68				
3	B-AC	132	33	870	0.152	132	0.2	0.2	4.879	A
	C-A	373	93			373				
	C-B	52	13	545	0.096	52	0.1	0.1	7.316	A
	A-B	0.90	0.22			0.90				
	A-C	180	45			180				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	23	6	504	0.046	23	0.1	0.0	7.494	A
	C-AB	0.80	0.20	631	0.001	0.81	0.0	0.0	5.712	A
	C-A	40	10			40				
	A-B	16	4			16				
	A-C	26	6			26				
2	B-AC	96	24	440	0.217	96	0.4	0.3	10.470	B
	C-AB	15	4	653	0.024	15	0.0	0.0	5.649	A
	C-A	77	19			77				
	A-B	26	7			26				
	A-C	57	14			57				
3	B-AC	111	28	881	0.126	111	0.2	0.1	4.673	A
	C-A	312	78			312				
	C-B	44	11	551	0.079	44	0.1	0.1	7.094	A
	A-B	0.75	0.19			0.75				
	A-C	151	38			151				

2042 With Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	L3423 - L7478	T-Junction	Two-way	Two-way	Two-way		0.96	A
2	L-3423/ R618	T-Junction	Two-way	Two-way	Two-way		3.39	A
3	R618/ R582	T-Junction	Two-way	Two-way	Two-way		2.08	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	93	Junction 2 - Stream B-AC	2.39	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2042 With Dev	PM	ONE HOUR	00:00	01:30	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	75	100.000
	B		ONE HOUR	✓	14	100.000
	C		ONE HOUR	✓	31	100.000
2	A		ONE HOUR	✓	239	100.000
	B		ONE HOUR	✓	110	100.000
	C		ONE HOUR	✓	157	100.000
3	A		ONE HOUR	✓	331	100.000
	B		ONE HOUR	✓	160	100.000
	C		ONE HOUR	✓	600	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	29	46
	B	14	0	0
	C	31	0	0

Junction 2

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	127	112
	B	89	0	21
	C	137	20	0

Junction 3

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	330
	B	1	0	159
	C	482	118	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction 1

Heavy Vehicle %

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Junction 2

Heavy Vehicle %

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Junction 3

Heavy Vehicle %

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	B-AC	0.03	8.21	0.0	A	13	19
	C-AB	0.00	0.00	0.0	A	0	0
	C-A					28	43
	A-B					27	40
	A-C					42	63
2	B-AC	0.30	14.19	0.5	B	101	151
	C-AB	0.04	6.29	0.1	A	23	34
	C-A					121	182
	A-B					117	175
	A-C					103	154
3	B-AC	0.22	6.32	0.3	A	147	220
	C-A					442	663
	C-B	0.26	10.62	0.4	B	108	162
	A-B					0.92	1
	A-C					303	454

Main Results for each time segment

00:00 - 00:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	11	3	504	0.021	10	0.0	0.0	8.024	A
	C-AB	0	0	601	0.000	0	0.0	0.0	0.000	A
	C-A	23	6			23				
	A-B	22	5			22				
	A-C	35	9			35				
2	B-AC	83	21	419	0.198	82	0.0	0.3	11.698	B
	C-AB	18	4	647	0.028	18	0.0	0.0	6.290	A
	C-A	100	25			100				
	A-B	96	24			96				
	A-C	84	21			84				
3	B-AC	120	30	845	0.143	120	0.0	0.2	5.452	A
	C-A	363	91			363				
	C-B	89	22	529	0.168	88	0.0	0.2	8.960	A
	A-B	0.75	0.19			0.75				
	A-C	248	62			248				

00:15 - 00:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	13	3	501	0.025	13	0.0	0.0	8.103	A
	C-AB	0	0	598	0.000	0	0.0	0.0	0.000	A
	C-A	28	7			28				
	A-B	26	7			26				
	A-C	41	10			41				
2	B-AC	99	25	411	0.240	99	0.3	0.3	12.652	B
	C-AB	22	6	653	0.034	22	0.0	0.0	6.277	A
	C-A	119	30			119				
	A-B	114	29			114				
	A-C	101	25			101				
3	B-AC	144	36	827	0.174	144	0.2	0.2	5.790	A
	C-A	433	108			433				
	C-B	106	27	518	0.205	106	0.2	0.3	9.600	A
	A-B	0.90	0.22			0.90				
	A-C	297	74			297				

00:30 - 00:45

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	15	4	498	0.031	15	0.0	0.0	8.212	A
	C-AB	0	0	595	0.000	0	0.0	0.0	0.000	A
	C-A	34	9			34				
	A-B	32	8			32				
	A-C	51	13			51				
2	B-AC	121	30	400	0.303	121	0.3	0.5	14.139	B
	C-AB	29	7	661	0.043	29	0.0	0.1	6.261	A
	C-A	144	36			144				
	A-B	140	35			140				
	A-C	123	31			123				
3	B-AC	176	44	802	0.220	176	0.2	0.3	6.317	A
	C-A	531	133			531				
	C-B	130	32	503	0.258	130	0.3	0.4	10.594	B
	A-B	1	0.28			1				
	A-C	363	91			363				

00:45 - 01:00

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	15	4	498	0.031	15	0.0	0.0	8.212	A
	C-AB	0	0	595	0.000	0	0.0	0.0	0.000	A
	C-A	34	9			34				
	A-B	32	8			32				
	A-C	51	13			51				
2	B-AC	121	30	400	0.303	121	0.5	0.5	14.187	B
	C-AB	29	7	661	0.043	29	0.1	0.1	6.259	A
	C-A	144	36			144				
	A-B	140	35			140				
	A-C	123	31			123				
3	B-AC	176	44	802	0.220	176	0.3	0.3	6.322	A
	C-A	531	133			531				
	C-B	130	32	503	0.258	130	0.4	0.4	10.617	B
	A-B	1	0.28			1				
	A-C	363	91			363				

01:00 - 01:15

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	13	3	501	0.025	13	0.0	0.0	8.104	A
	C-AB	0	0	598	0.000	0	0.0	0.0	0.000	A
	C-A	28	7			28				
	A-B	26	7			26				
	A-C	41	10			41				
2	B-AC	99	25	411	0.240	99	0.5	0.4	12.717	B
	C-AB	22	6	653	0.034	22	0.1	0.1	6.279	A
	C-A	119	30			119				
	A-B	114	29			114				
	A-C	101	25			101				
3	B-AC	144	36	827	0.174	144	0.3	0.2	5.798	A
	C-A	433	108			433				
	C-B	106	27	518	0.205	106	0.4	0.3	9.629	A
	A-B	0.90	0.22			0.90				
	A-C	297	74			297				

01:15 - 01:30

Junction	Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	B-AC	11	3	504	0.021	11	0.0	0.0	8.027	A
	C-AB	0	0	601	0.000	0	0.0	0.0	0.000	A
	C-A	23	6			23				
	A-B	22	5			22				
	A-C	35	9			35				
2	B-AC	83	21	419	0.198	83	0.4	0.3	11.796	B
	C-AB	18	4	647	0.028	18	0.1	0.0	6.294	A
	C-A	100	25			100				
	A-B	96	24			96				
	A-C	84	21			84				
3	B-AC	120	30	845	0.143	121	0.2	0.2	5.468	A
	C-A	363	91			363				
	C-B	89	22	529	0.168	89	0.3	0.2	9.008	A
	A-B	0.75	0.19			0.75				
	A-C	248	62			248				

APPENDIX B: TRAFFIC SURVEYS

Available upon request



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APPENDIX 5-1

NOISE SURVEY DETAILS

Survey details 19.03.26

Project	
Project ref.	260141
Client	Keohane Geological & Environmental Consultancy OBO Drimoleague Concrete Works Ltd.
Location	DCWL quarry Ummera Macroom Co. Cork
Stations	Onsite: N2 N3 N4 Offsite: N1
Microphone positions	Free field 1.5 m above ground level
Time	Thursday 19.03.26 0800-1700
Purpose	Residual survey
Comment	DCWL washing plant ; limited loader use
Operator	Sinéad Fagan MA TechIOA
Standard	ISO 1996 (2016 & 2017)
Field calibrator	Bruel & Kjaer Type 4231 Serial 3017723 Verification: 23.02.26

Weather	
Cloud cover	0 %
Precipitation	0 mm
Temperature	4 rising to 10 °C
Wind direction	W
Wind speed	0-3 m/s
Wind measurement	Anemo anemometer 2 m above ground level

Instrument 1	
Stations used	N1
Instrument	NTi XL2 ('xl1') IEC 61672-1:2013 Class 1
SLM serial	A2A-13658-E0
Microphone serial	A14735 + pre-amp 7066
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	26.02.25
Field calibration	19.03.26 0717 @ mV/Pa
Post survey drift check	<0.2 dB

Instrument 2	
Stations used	N2
Instrument	NTi XL2 ('xl2') IEC 61672-1:2013 Class 1
SLM serial	A2A-15392-E0
Microphone serial	A16340 + pre-amp 7266
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	25.02.25
Field calibration	19.03.26 0723 @ 42.0 mV/Pa
Post survey drift check	<0.2 dB

Instrument 3	
Stations used	N3
Instrument	NTi XL2 ('xl3') IEC 61672-1:2013 Class 1
SLM serial	A2A-17932-E0
Microphone serial	A18747 + pre-amp 7956
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	23.02.26
Field calibration	19.03.26 0801 @ 42.5 mV/Pa
Post survey drift check	<0.2 dB

Instrument 4	
Stations used	N4
Instrument	NTi XL2 ('xl4') IEC 61672-1:2013 Class 1
SLM serial	A2A-15429-E0
Microphone serial	A16329 + pre-amp 7945
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	24.02.26
Field calibration	19.03.26 0801 @ 38.4 mV/Pa
Post survey drift check	<0.2 dB

Uncertainty	
Residual noise	u_i = 0.5 dB c_i = 1 dB where source dominates, >20 dB where source becomes masked c_iu_i range = 0.5 to >10 dB
Weather conditions	Levels representative of contemporaneous conditions only c_iu_i = 2 dB at wind vector + or x Otherwise c_iu_i >2 dB
Anemometer height	Not possible to measure wind speed at 10 m Anemometer height of 2 m may increase meteorological uncertainty
Precipitation	Precipitation = 0 mm during reported intervals c_iu_i = 0 dB
Operating conditions	Levels representative of contemporaneous operating conditions only c_iu_i <1 dB
Location	c_iu_i = 0 dB at free field positions c_iu_i = 0.4 dB at near field & reflective field positions
Instrument	IEC 61672-1 class 1 specifications u = 0.5 dB.
Combined	3 dB to >10 dB, depending on position Variation chiefly to meteorology & residual noise intrusion
Expanded	6 dB to >10 dB, 95 % coverage

Survey details 2019

Project	
Project ref.	231
Client	Keohane Geological & Environmental Consultancy OBO Drimoleague Concrete Works Ltd.
Location	DCWL quarry Ummera Macroom Co. Cork
Stations	Onsite: N2 N3 N4 Offsite: N1
Microphone positions	Free field 1.5 m above ground level
Time	Thursday 31.10.19 0900-1600
Purpose	Quarry survey
Comment	DCWL washing plant in continuous use
Operator	Damian Brosnan BSc MSc MIOA MIEI
Standard	ISO 1996 (2016 & 2017)
Field calibrator	Bruel & Kjaer Type 4231 Serial 2342544 Laboratory verification 14.02.19 by Sonitus Systems

Weather	
Cloud cover	100 %
Precipitation	0 mm
Temperature	12 °C
Wind direction	SW
Wind speed	0-2 m/s
Wind measurement	Anemo anemometer 2 m above ground level

Instrument 1	
Stations used	N2
Instrument	NTi XL2 ('xl1') IEC 61672-1:2013 Class 1
SLM serial	A2A-13658-E0
Microphone serial	A14735 + pre-amp 7066
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	14.02.19 by Sonitus Systems Compliance certificate available on request
Field calibration	31.10.19 0904 @ 39.6 mV/Pa
Post survey drift check	93.9 dB

Instrument 2	
Stations used	N4
Instrument	NTi XL2 ('xl2') IEC 61672-1:2013 Class 1
SLM serial	A2A-14337-E0
Microphone serial	A14972 + pre-amp 7266
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	14.02.19 by Sonitus Systems Compliance certificate available on request
Field calibration	31.10.19 0855 @ 43.9 mV/Pa
Post survey drift check	93.9 dB

Instrument 3	
Stations used	N3
Instrument	NTi XL2 ('xl3') IEC 61672-1:2013 Class 1
SLM serial	A2A-15392-E0
Microphone serial	A16340 + pre-amp 7956
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	13.12.18 by NTi Compliance certificate available on request
Field calibration	31.10.19 0849 @ 43.6 mV/Pa
Post survey drift check	93.9 dB

Instrument 4	
Stations used	N1
Instrument	NTi XL2 ('xl4') IEC 61672-1:2013 Class 1
SLM serial	A2A-15429-E0
Microphone serial	A16329 + pre-amp 7945
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	13.12.18 by NTi Compliance certificate available on request
Field calibration	31.10.19 1916 @ 41.7 mV/Pa
Post survey drift check	93.9 dB

Project	
Project ref.	231
Client	Keohane Geological & Environmental Consultancy OBO Drimoleague Concrete Works Ltd.
Location	DCWL quarry Ummera Macroom Co. Cork
Stations	Onsite: N2 N3 N4 Offsite: N1
Microphone positions	Free field 1.5 m above ground level
Time	Thursday 24.10.19 0730-1315
Purpose	Residual survey
Comment	DCWL washing plant shut down; limited loader use
Operator	Damian Brosnan BSc MSc MIOA MIEI
Standard	ISO 1996 (2016 & 2017)
Field calibrator	Bruel & Kjaer Type 4231 Serial 2342544 Laboratory verification 14.02.19 by Sonitus Systems

Weather	
Cloud cover	10 %
Precipitation	0 mm
Temperature	4 rising to 10 °C
Wind direction	SW
Wind speed	0-1 m/s
Wind measurement	Anemo anemometer 2 m above ground level

Instrument 1	
Stations used	N4
Instrument	NTi XL2 ('xl1') IEC 61672-1:2013 Class 1
SLM serial	A2A-13658-E0
Microphone serial	A14735 + pre-amp 7066
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	14.02.19 by Sonitus Systems Compliance certificate available on request
Field calibration	24.10.19 0955 @ 39.2 mV/Pa
Post survey drift check	93.9 dB

Instrument 2	
Stations used	N2
Instrument	NTi XL2 ('xl2') IEC 61672-1:2013 Class 1
SLM serial	A2A-14337-E0
Microphone serial	A14972 + pre-amp 7266
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	14.02.19 by Sonitus Systems Compliance certificate available on request
Field calibration	24.10.19 0754 @ 43.4 mV/Pa
Post survey drift check	93.9 dB

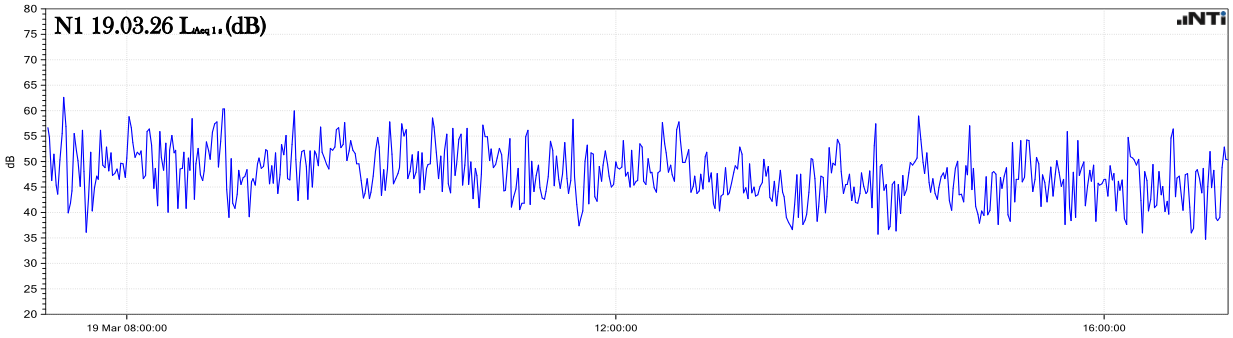
Instrument 3	
Stations used	N3
Instrument	NTi XL2 ('xl3') IEC 61672-1:2013 Class 1
SLM serial	A2A-15392-E0
Microphone serial	A16340 + pre-amp 7956
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	13.12.18 by NTi Compliance certificate available on request
Field calibration	24.10.19 0733 @ 44.1 mV/Pa
Post survey drift check	93.9 dB

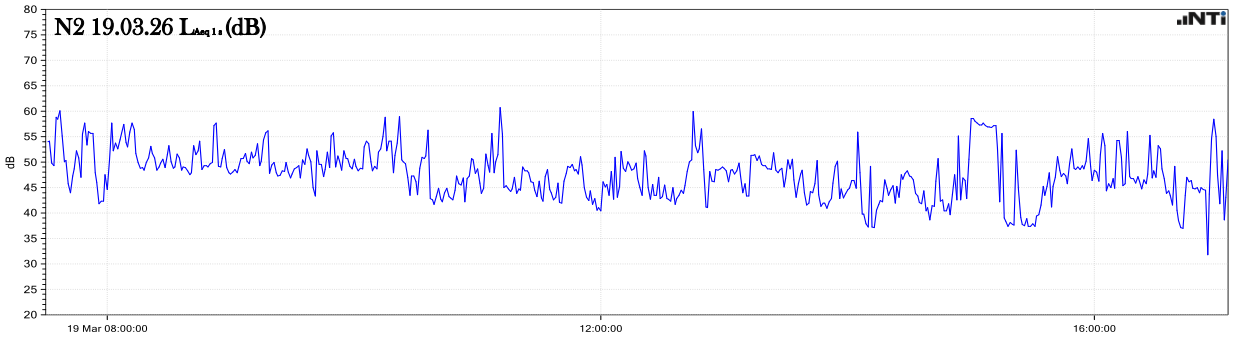
Instrument 4	
Stations used	N1
Instrument	NTi XL2 ('xl4') IEC 61672-1:2013 Class 1
SLM serial	A2A-15429-E0
Microphone serial	A16329 + pre-amp 7945
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	13.12.18 by NTi Compliance certificate available on request
Field calibration	24.10.19 0731 @ 42.2 mV/Pa
Post survey drift check	93.9 dB

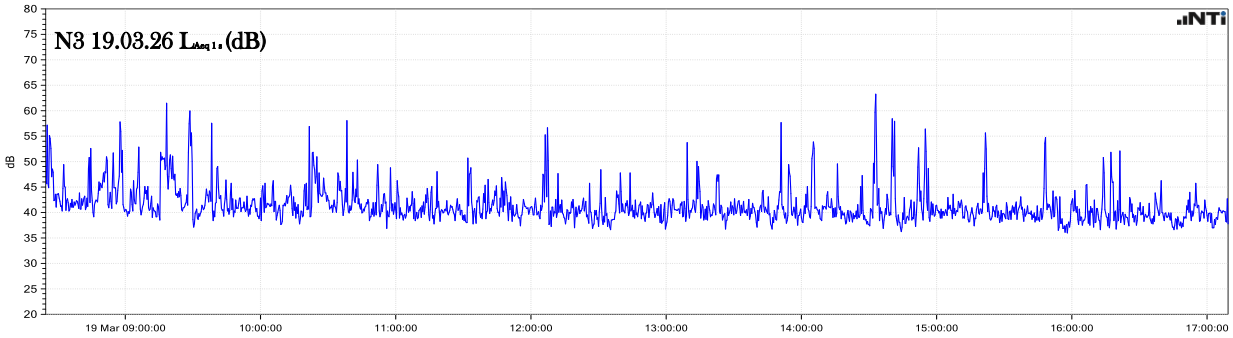
Uncertainty	
Residual noise	u_i = 0.5 dB c_i = 1 dB where source dominates, >20 dB where source becomes masked c_iu_i range = 0.5 to >10 dB
Weather conditions	Levels representative of contemporaneous conditions only c_iu_i = 2 dB at wind vector + or x Otherwise c_iu_i >2 dB
Anemometer height	Not possible to measure wind speed at 10 m Anemometer height of 2 m may increase meteorological uncertainty
Precipitation	Precipitation = 0 mm during reported intervals c_iu_i = 0 dB
Operating conditions	Levels representative of contemporaneous operating conditions only c_iu_i <1 dB
Location	c_iu_i = 0 dB at free field positions c_iu_i = 0.4 dB at near field & reflective field positions
Instrument	IEC 61672-1 class 1 specifications u = 0.5 dB.
Combined	3 dB to >10 dB, depending on position Variation chiefly to meteorology & residual noise intrusion
Expanded	6 dB to >10 dB, 95 % coverage

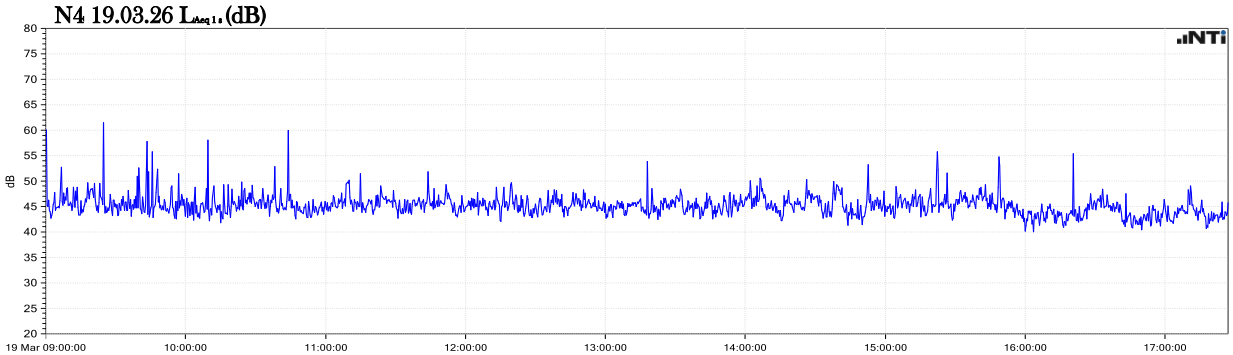
Baseline profiles

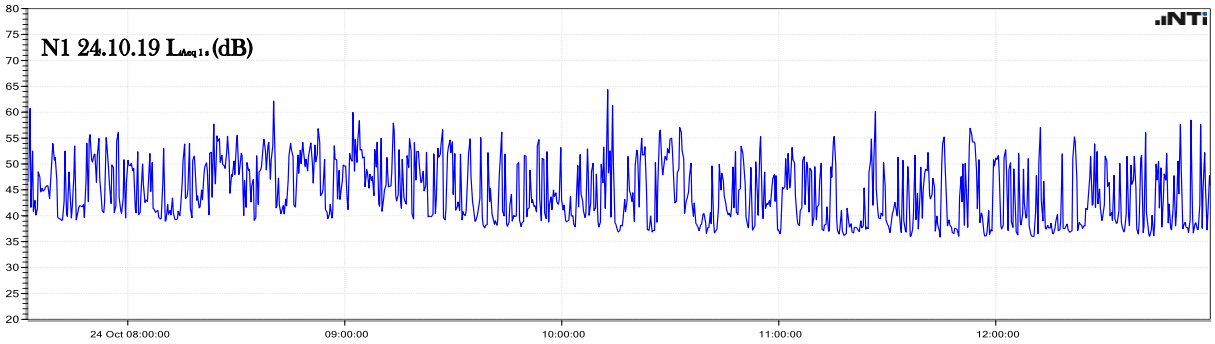
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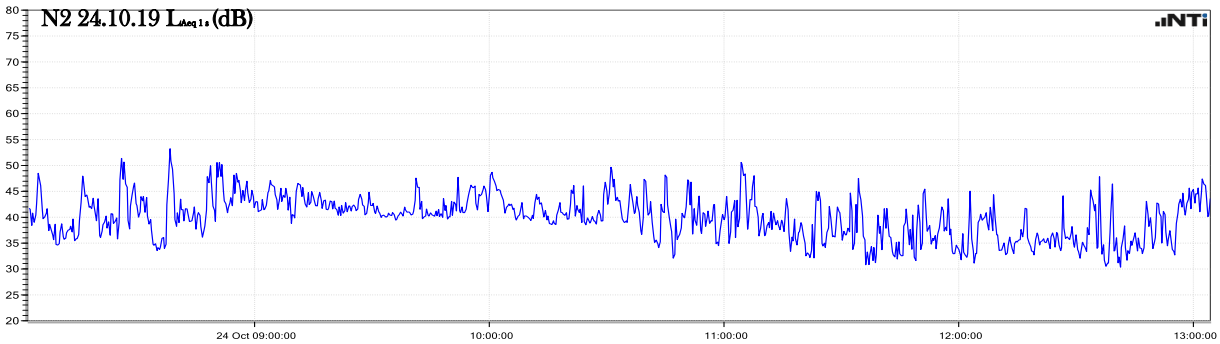


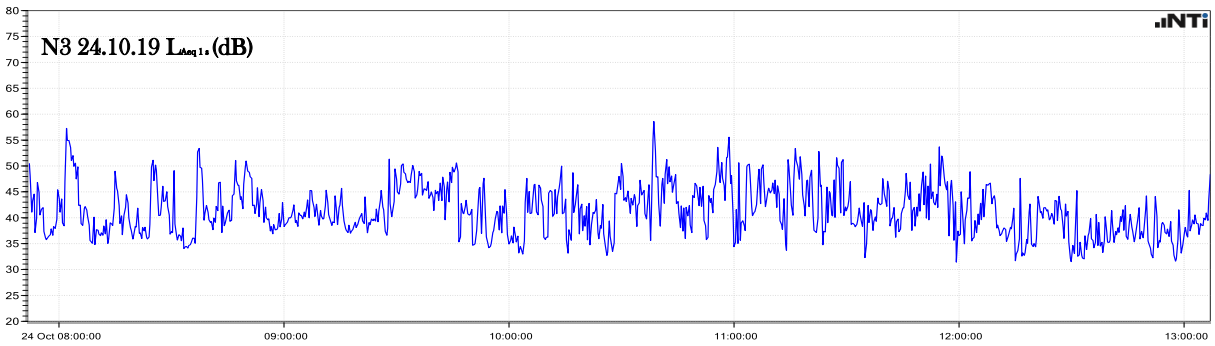


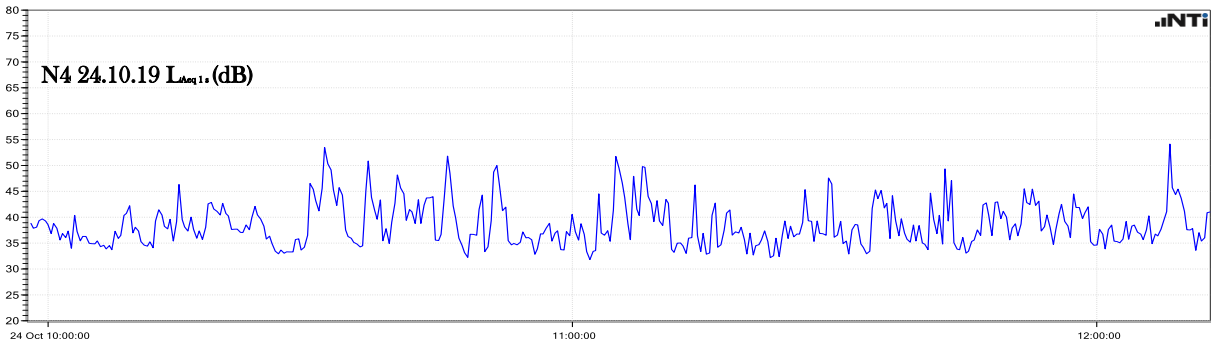


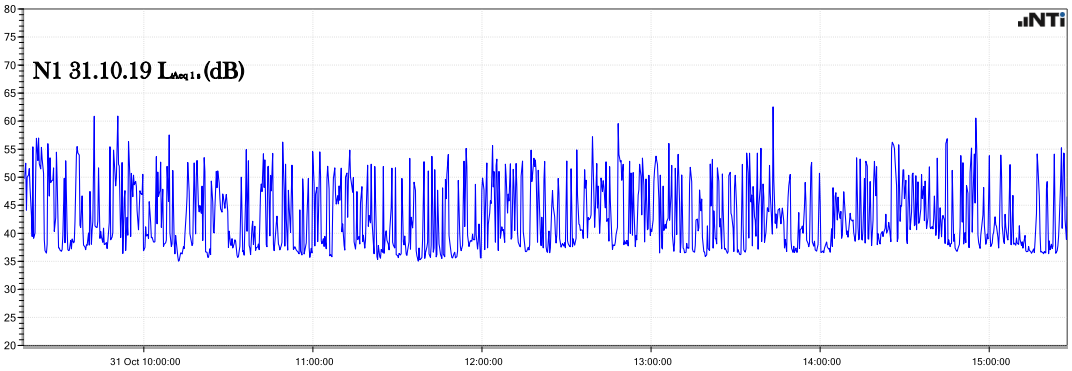


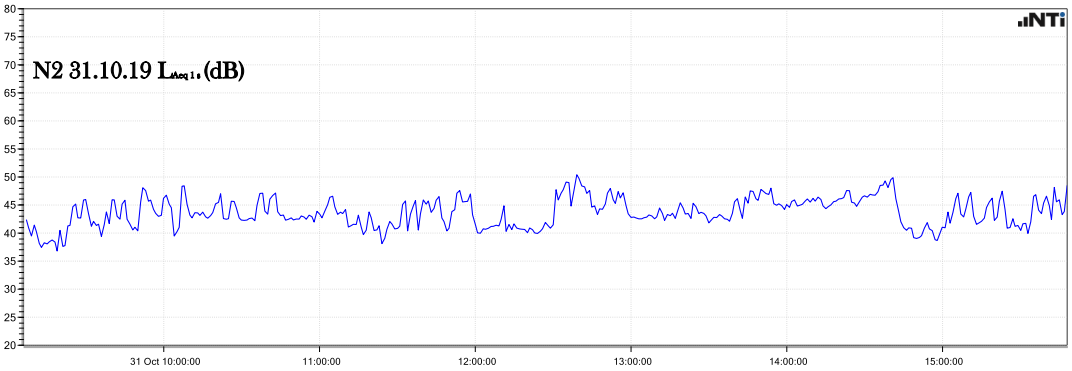

N1 24.10.19 LAeq1s (dB)
24 Oct 08:00:00
09:00:00
10:00:00
11:00:00
12:00:00

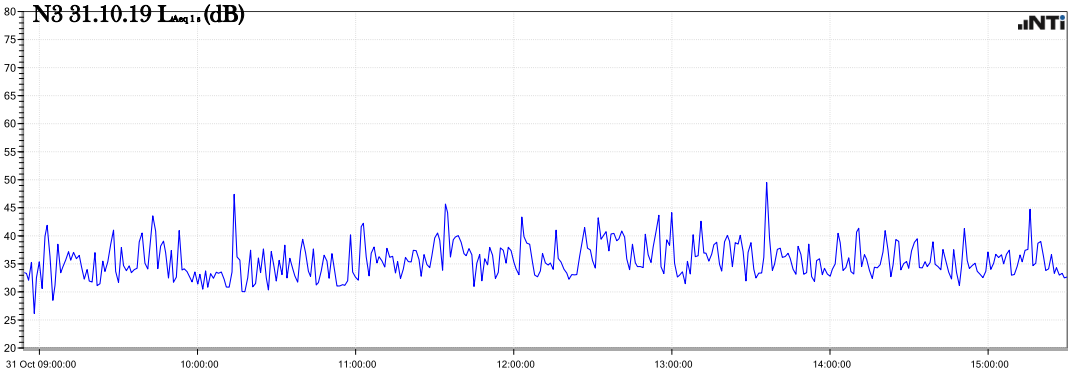

N2 24.10.19 LAeq1s (dB)
24 Oct 09:00:00
10:00:00
11:00:00
12:00:00
13:00:00

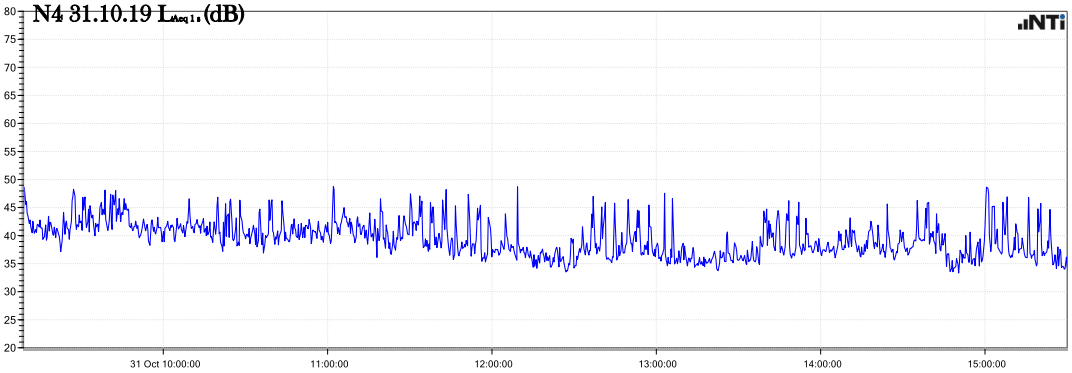

N3 24.10.19 LAeq1s (dB)
24 Oct 08:00:00
09:00:00
10:00:00
11:00:00
12:00:00
13:00:00


N4 24.10.19 LAeq1s (dB)
24 Oct 10:00:00
11:00:00
12:00:00


N1 31.10.19 LAeq1s (dB)
NTi
80
75
70
65
60
55
50
45
40
35
30
25
20
31 Oct 10:00:00
11:00:00
12:00:00
13:00:00
14:00:00
15:00:00


N2 31.10.19 LAeq1s (dB)
NTi
80
75
70
65
60
55
50
45
40
35
30
25
20
31 Oct 10:00:00
11:00:00
12:00:00
13:00:00
14:00:00
15:00:00


N3 31.10.19 LAeq1s (dB)
NTi
80
75
70
65
60
55
50
45
40
35
30
25
20
31 Oct 09:00:00
10:00:00
11:00:00
12:00:00
13:00:00
14:00:00
15:00:00


N4 31.10.19 LAeq1s (dB)
NTi
80
75
70
65
60
55
50
45
40
35
30
25
20
31 Oct 10:00:00
11:00:00
12:00:00
13:00:00
14:00:00
15:00:00

Baseline noise data

Survey 19.03.26

Station	N1 (dB)			N2 (dB)			N3 (dB)			N4 (dB)		
	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$
0730-0745	50	53	37	54	56	35	-	-	-	-	-	-
0745-0800	50	52	44	53	55	40	-	-	-	-	-	-
0800-0815	53	57	40	55	60	42	-	-	-	-	-	-
0815-0830	51	56	38	51	53	48	44	45	39	-	-	-
0830-0845	54	57	38	51	52	47	48	50	39	-	-	-
0845-0900	53	53	37	52	53	47	43	46	38	-	-	-
0800-0900	**53**	**56**	**38**	**52**	**54**	**46**	-	-	-	-	-	-
0900-0915	49	52	43	51	53	47	51	54	39	47	49	42
0915-0930	53	56	40	51	52	47	45	45	37	49	49	42
0930-0945	53	57	39	50	54	40	41	44	38	47	48	41
0945-1000	51	56	38	51	55	44	42	45	37	47	48	41
0900-1000	**52**	**56**	**39**	**51**	**54**	**44**	**47**	**47**	**38**	**47**	**49**	**41**
1000-1015	52	55	40	53	55	41	46	47	38	47	48	40
1015-1030	52	54	41	52	54	41	46	44	38	46	48	42
1030-1045	53	53	41	49	47	41	42	44	37	48	49	43
1045-1100	52	56	40	47	50	41	41	44	37	45	47	42
1000-1100	**52**	**55**	**41**	**51**	**54**	**41**	**44**	**45**	**37**	**47**	**48**	**41**
1100-1115	49	53	37	53	54	41	41	43	37	46	48	43
1115-1130	50	50	38	46	50	40	43	44	37	46	48	43
1130-1145	50	50	36	46	49	40	42	45	37	46	48	42
1145-1200	49	52	40	47	49	39	45	45	37	46	48	43
1100-1200	**50**	**52**	**38**	**49**	**51**	**40**	**42**	**44**	**37**	**46**	**48**	**43**
1200-1215	50	52	43	48	52	41	40	42	36	46	47	43
1215-1230	51	54	43	47	50	40	42	44	36	46	48	42
1230-1245	51	55	40	50	49	40	40	43	37	45	48	42
1245-1300	46	49	38	50	53	40	43	45	37	46	48	43
1200-1300	**50**	**53**	**40**	**49**	**51**	**40**	**43**	**43**	**36**	**46**	**48**	**42**
1300-1315	48	49	41	48	51	41	41	43	37	45	47	42
1315-1330	43	45	36	49	54	41	41	43	37	46	47	42
1330-1345	47	51	35	47	51	40	44	43	36	45	47	42
1345-1400	48	51	36	45	47	40	44	44	37	45	47	42
1300-1400	**47**	**49**	**36**	**48**	**52**	**40**	**43**	**44**	**37**	**45**	**47**	**42**
1400-1415	49	53	35	47	49	36	41	42	36	47	49	43
1415-1430	51	53	35	46	50	37	51	46	36	46	49	42
1430-1445	47	49	40	45	46	37	45	46	36	46	49	42
1445-1500	49	50	37	50	51	37	41	43	37	46	48	41
1400-1500	**49**	**51**	**36**	**47**	**50**	**36**	**47**	**44**	**36**	**46**	**49**	**42**
1500-1515	47	50	35	57	58	42	44	44	37	46	48	43
1515-1530	50	54	35	43	42	36	40	42	37	47	49	42

1530-1545	48	51	36	46	49	37	43	44	36	47	49	43
1545-1600	48	51	35	50	53	45	42	44	36	46	48	42
1500-1600	**48**	**52**	**35**	**52**	**57**	**37**	**42**	**43**	**37**	**46**	**49**	**42**
1600-1615	48	52	35	51	54	31	43	45	35	43	46	40
1615-1630	46	50	35	50	52	36	40	42	36	45	47	40
1630-1645	49	52	34	47	50	33	40	42	36	45	48	40
1645-1700	48	52	34	51	53	29	40	42	36	43	46	39
1600-1700	**48**	**51**	**35**	**50**	**52**	**31**	**41**	**43**	**36**	**44**	**47**	**40**
Average 1 h	**50**	**53**	**38**	**50**	**53**	**39**	**44**	**44**	**37**	**46**	**48**	**42**

Survey 31.10.19

Station	N1 (dB)			N2 (dB)			N3 (dB)			N4 (dB)		
	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$
0900-0915	-	-	-	-	-	-	37	40	27	41	44	29
0915-0930	-	-	-	42	46	36	35	38	31	42	45	38
0930-0945	49	50	36	43	47	39	38	40	32	44	47	40
0945-1000	50	54	36	45	48	39	36	38	30	42	45	39
0900-1000	**-**	**-**	**-**	**-**	**-**	**-**	**37**	**39**	**30**	**43**	**45**	**35**
1000-1015	46	49	35	45	48	40	37	37	29	42	44	39
1015-1030	47	52	36	44	47	42	34	38	29	42	45	38
1030-1045	47	50	36	45	48	42	36	39	31	42	44	38
1045-1100	47	50	36	43	44	42	35	36	30	41	44	38
1000-1100	**47**	**51**	**36**	**44**	**47**	**42**	**36**	**38**	**30**	**42**	**44**	**38**
1100-1115	48	53	36	44	46	40	37	39	32	42	45	38
1115-1130	45	48	36	41	43	38	36	39	29	41	43	36
1130-1145	45	47	35	44	47	39	40	43	30	43	46	37
1145-1200	46	48	36	45	48	40	36	40	31	41	44	36
1100-1200	**46**	**49**	**36**	**44**	**47**	**39**	**38**	**41**	**30**	**42**	**45**	**36**
1200-1215	48	53	36	41	43	39	37	38	33	39	40	35
1215-1230	47	51	36	41	43	39	37	41	32	36	38	34
1230-1245	48	51	38	48	50	44	40	42	34	40	43	35
1245-1300	49	53	37	46	48	42	39	42	33	40	42	36
1200-1300	**48**	**52**	**37**	**45**	**49**	**39**	**38**	**41**	**32**	**39**	**41**	**35**
1300-1315	48	53	36	43	45	41	37	39	31	38	39	35
1315-1330	46	49	36	44	46	41	38	41	31	36	38	34
1330-1345	50	51	36	44	46	41	40	40	32	40	43	35
1345-1400	44	47	37	46	49	44	35	38	32	40	43	36
1300-1400	**47**	**50**	**36**	**45**	**47**	**41**	**38**	**39**	**31**	**39**	**41**	**35**
1400-1415	44	46	37	46	47	43	37	39	33	39	41	36
1415-1430	49	53	38	46	48	44	37	40	32	39	42	36
1430-1445	48	52	38	47	50	42	36	39	33	41	43	37
1445-1500	49	49	37	40	42	38	36	37	31	37	39	34
1400-1500	**48**	**51**	**37**	**46**	**49**	**39**	**36**	**39**	**32**	**39**	**41**	**35**

1500-1515	43	43	37	44	47	40	36	38	33	42	45	36
1515-1530	-	-	-	44	47	40	37	39	32	39	42	34
Average 1 h	**47**	**50**	**36**	**45**	**48**	**40**	**37**	**39**	**31**	**40**	**43**	**35**

Survey 24.10.19

Station	N1 (dB)			N2 (dB)			N3 (dB)			N4 (dB)		
	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$
0745-0800	50	55	39	-	-	-	-	-	-	-	-	-
0800-0815	46	48	39	-	-	-	47	53	35	-	-	-
0815-0830	51	56	40	44	48	36	43	48	36	-	-	-
0830-0845	51	55	39	43	47	34	44	47	35	-	-	-
0845-0900	50	55	39	45	49	38	45	49	38	-	-	-
0800-0900	**50**	**54**	**39**	**44**	**48**	**36**	**45**	**49**	**36**	**-**	**-**	**-**
0900-0915	52	56	39	44	46	41	41	44	38	-	-	-
0915-0930	50	55	39	42	44	40	42	43	36	-	-	-
0930-0945	48	51	38	42	42	40	47	51	36	-	-	-
0945-1000	47	51	38	43	46	40	43	47	34	-	-	-
0900-1000	**49**	**53**	**39**	**43**	**45**	**40**	**43**	**46**	**36**	**-**	**-**	**-**
1000-1015	51	53	37	43	45	39	43	46	33	38	41	33
1015-1030	50	54	37	42	45	39	42	46	33	39	42	33
1030-1045	48	50	37	43	47	34	48	51	36	44	48	34
1045-1100	47	51	37	41	45	33	47	50	32	42	46	32
1000-1100	**49**	**52**	**37**	**42**	**46**	**36**	**45**	**48**	**34**	**41**	**44**	**33**
1100-1115	47	51	37	43	47	34	46	51	32	43	47	32
1115-1130	48	48	36	39	43	32	47	52	33	39	41	32
1130-1145	45	50	36	39	41	31	42	45	33	40	43	31
1145-1200	49	53	36	39	42	31	46	50	32	41	45	33
1100-1200	**47**	**51**	**36**	**40**	**43**	**32**	**45**	**50**	**33**	**41**	**44**	**32**
1200-1215	47	51	36	38	41	32	42	46	32	42	44	32
1215-1230	46	49	37	37	39	33	40	45	33	-	-	-
1230-1245	47	51	36	39	41	30	38	40	31	-	-	-
1245-1300	49	50	37	40	44	32	38	41	32	-	-	-
1200-1300	**47**	**50**	**37**	**39**	**41**	**32**	**40**	**43**	**32**	**-**	**-**	**-**
Average 1 h	**48**	**52**	**38**	**42**	**45**	**35**	**44**	**47**	**34**	**41**	**44**	**33**

APPENDIX 7-1

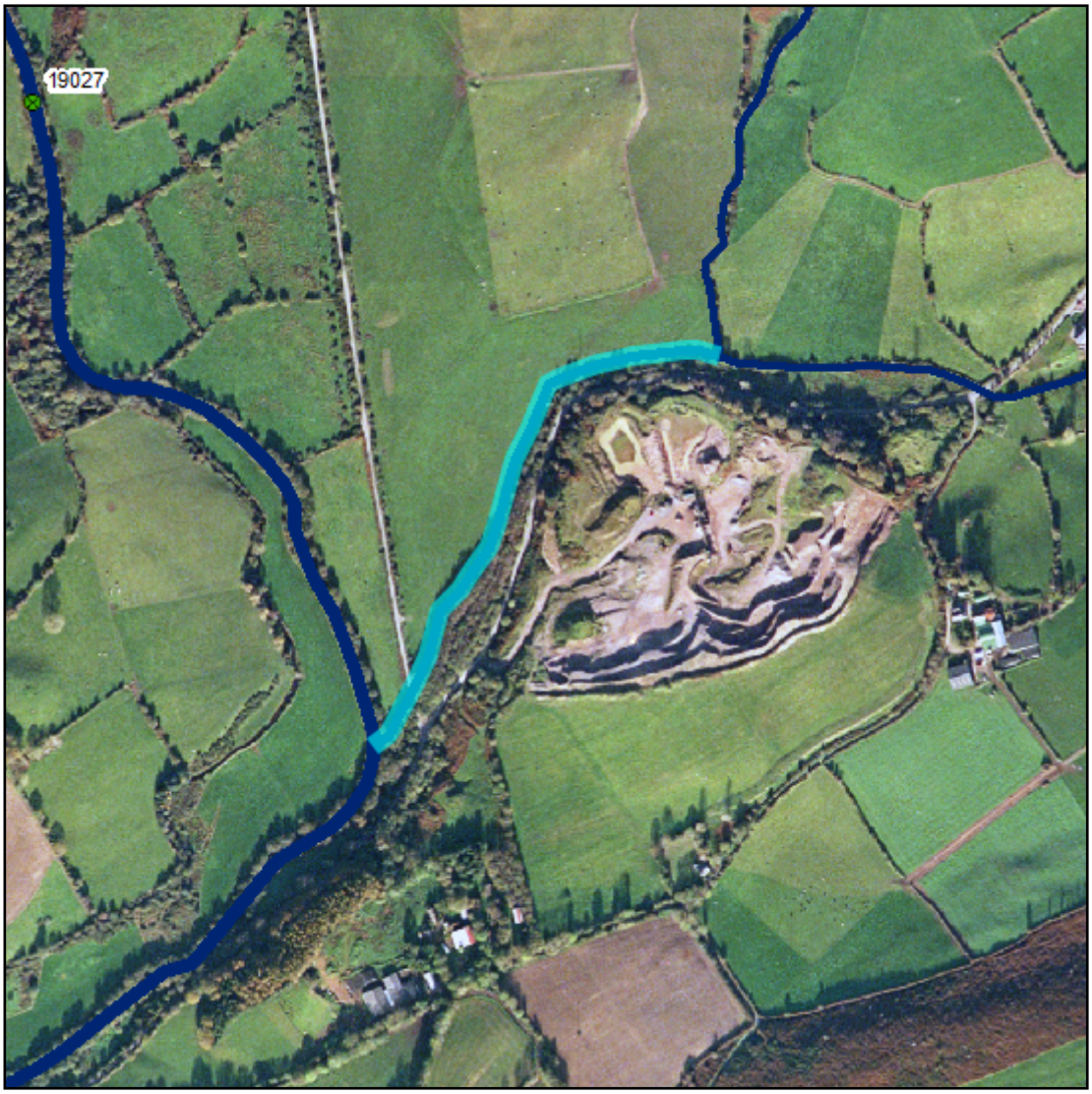
FLOW DURATION CURVE – CLASHAVOON (BEALICK) STREAM

Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

River Name	BEALICK(19_906)
XY Location	136863,73855 (ING)

River Segment Map



Disclaimer
The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

Disclaimer

The source of hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

The user should familiarise himself/herself with the catchment being studied and confirm that the ungauged site is in a natural catchment where flows conditions are suitable for the use of the model.

It is strongly recommended that the user examine the catchment descriptors contained in the report produced and confirm that the percentages of the various constituent elements are comparable to a natural catchment.

If the flow in a catchment is not entirely natural, the estimation of flows using the model in these catchments could be affected due to:

- existence of local conduit karst within the catchment;
- the selected location itself is on local conduit karst;
- regulation of the river flow on the river channel (e.g. power station, sluice gates etc)
- impacts of abstractions upstream of the selected location or the impact of the discharge associated with the abstraction into the same/different catchment;
- estimates of flow being sought at locations effected by storage effects at, or near, lake outfalls;
- lack of similar catchments with observed flows, ie where catchment descriptors lie outside the range of available gauging station catchments (e.g. the catchment area is under 5 km²);
- any other special circumstances that may affect river flows.

Expert judgement will be required to ensure that the estimate of flow is not unduly affected by any of these influences.

Please note that the model does not provide estimates of flood peaks and, specifically, should not be used for that purpose.

The EPA has also prepared estimates of DWF and long term 95 percentile flows which are also presented on the EPA web site. These data are presented at http://www.epa.ie/whatwedo/monitoring/water/hydrometrics/data/

The data produced by the model for specific stations should be compared to the data contained in this file of DWF and long term 95percentile flows.

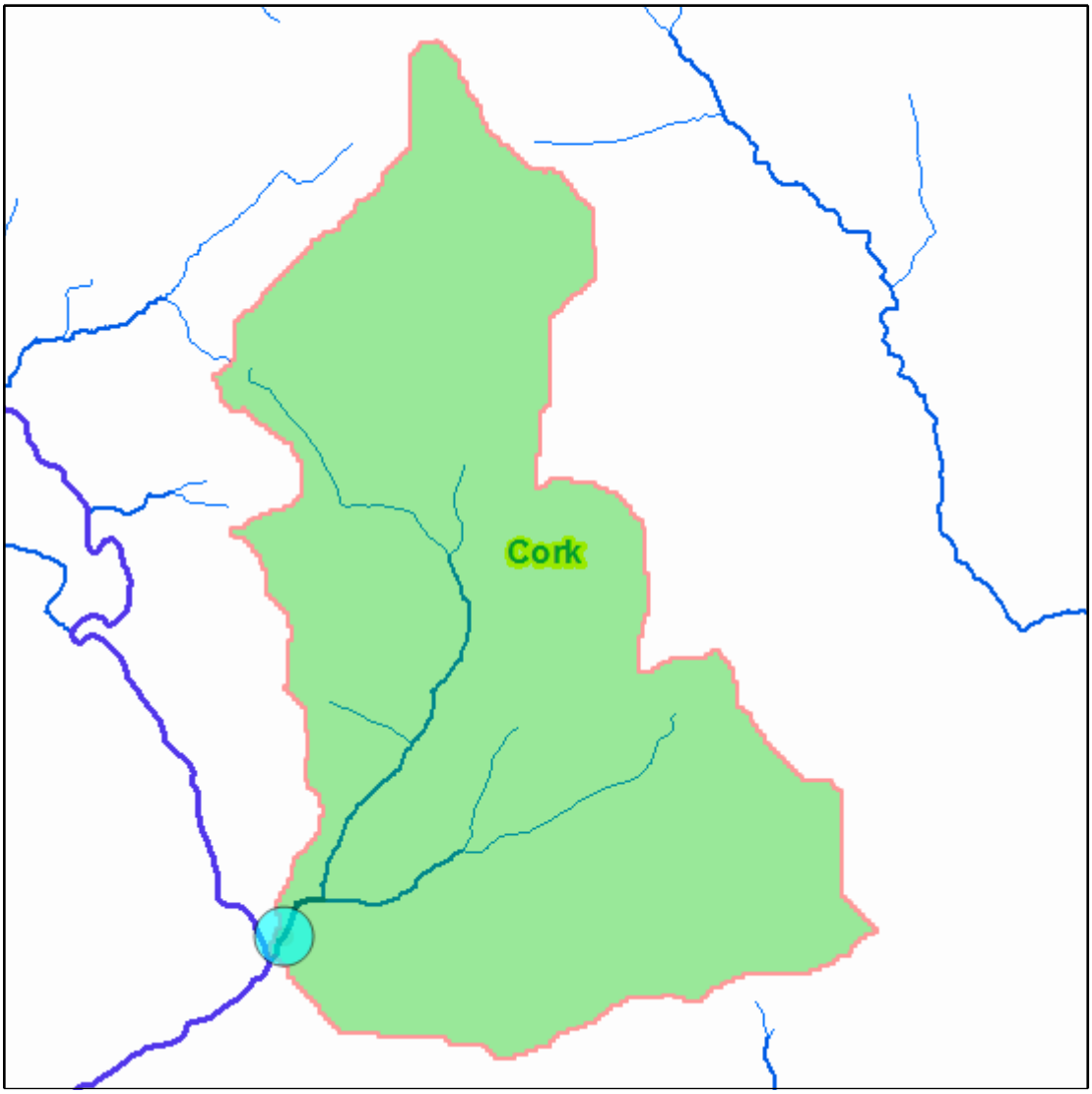
Disclaimer
The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

River Name	BEALICK(19_906)
XY Location	136863,73855 (ING)

Nested Catchment Map

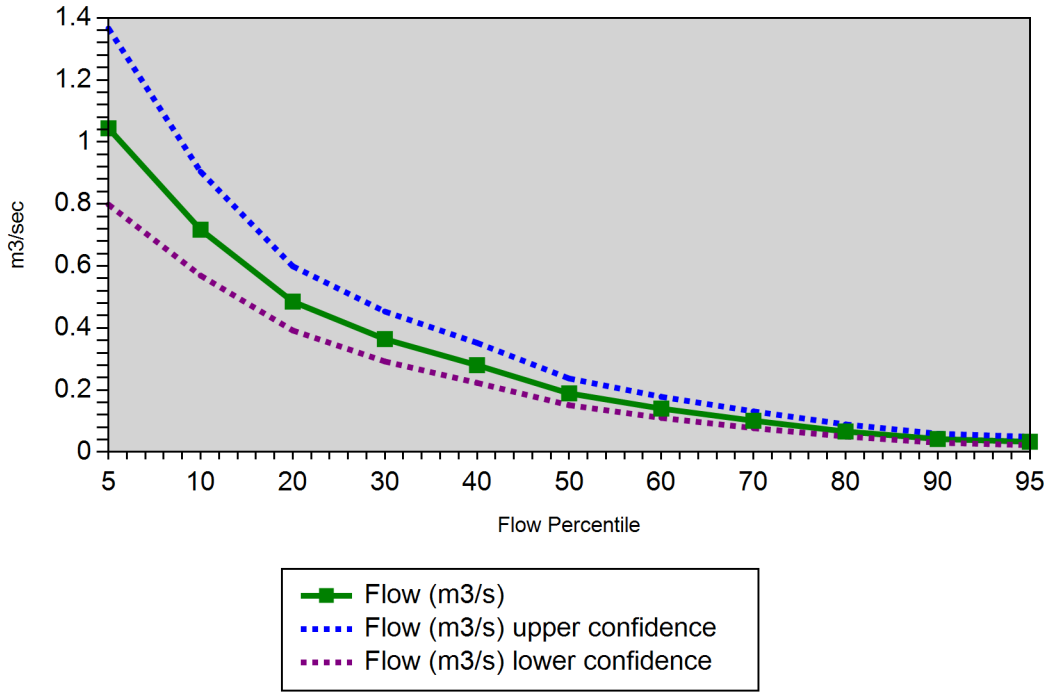


Disclaimer
The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

Flow Duration Curve (Flow in m3/sec)



%ile	flow(m3/sec)	upper 95% confidence limit m3/sec	lower 95% confidence limit m3/sec
5	1.044	1.366	0.798
10	0.717	0.904	0.569
20	0.485	0.599	0.392
30	0.364	0.453	0.292
40	0.28	0.352	0.223
50	0.189	0.237	0.151
60	0.14	0.178	0.11
70	0.101	0.131	0.077
80	0.066	0.089	0.05
90	0.042	0.059	0.03
95	0.033	0.049	0.022

Disclaimer
The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

Catchment Descriptors		
General		
Descriptor	**Unit**	**Value**
Area	sq km	11.2
Average Annual Rainfall (61-90)	mm/yr	1260
Stream Length	km	8.9
Drainage Density	Channel length (km)/catchment area (sqkm)	0.8
Slope	Percent Slope	8.4
FARL	Index (range 0:1)	1

Soil	
Code	**% of Catchment**
Poorly Drained	5.6
Well Drained	93.7
Alluvmin	0.5
Peat	0.3
Water	0
Made	0

Disclaimer
The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

Subsoil Permeability		
Code	**Explanation**	**% of Catchment**
H	High	0.7
M	Moderate	47.9
L	Low	0
ML	Moderate/Low	0
NA	No Subsoil/Bare Rock	51.4

Aquifer		
Code	**Explanation**	**% of Catchment**
LG_RG	LG:Locally important sand-gravel aquifer RG: Regionally important sand-gravel aquifer	0
LL	Locally important aquifer which is moderately productive only in local zones	99
LM_RF	LM: Locally important aquifer which is generally moderately productive RF: Regionally important fissured bedrock aquifer	0
PU_PL	PU: Poor aquifer which is generally unproductive PL: Poor aquifer which is generally unproductive except for local zones	1
RKC_RK	Regionally important karstified aquifer dominated by conduit flow	0
RKD_LK	Regionally important karstified aquifer dominated by diffuse flow	0

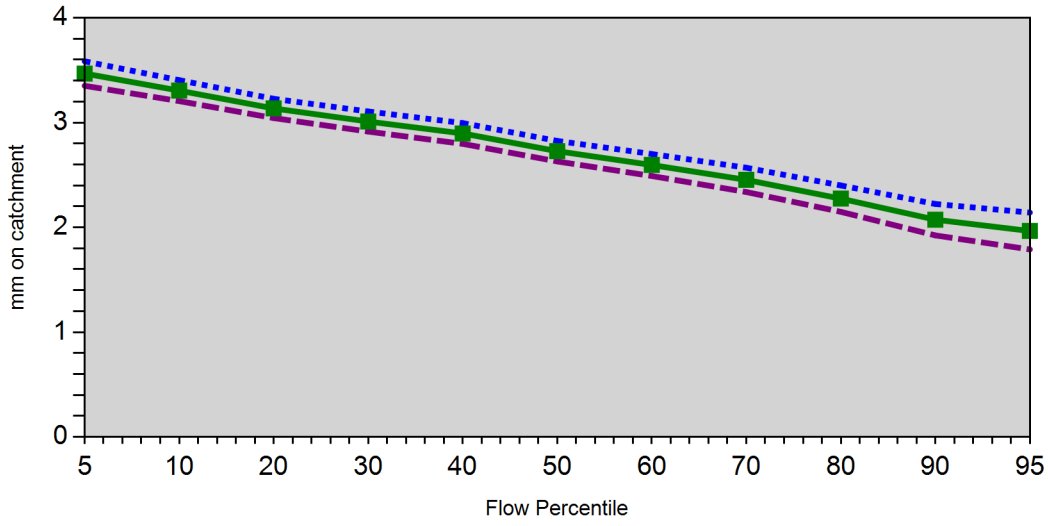
Stations in Pooling group			
%ile Flow	**Station 1**	**Station 2**	**Station 3**
5	19044	19032	23005
10	19044	19032	19009
20	19044	19032	19009
30	19044	19032	19009
40	19044	19032	19009
50	25038	19016	18001
60	25038	19016	18001
70	25038	19016	18001
80	25038	19009	18001
90	25038	19009	18001
95	25038	19009	18001

Disclaimer
The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

Flow Duration Curve (mm on catchment)



Log Flow (mm on catchment)			
%ile	mm	upper 95% confidence limit	lower 95% confidence limit
5	3.468	3.585	3.351
10	3.305	3.405	3.205
20	3.135	3.227	3.043
30	3.01	3.106	2.914
40	2.896	2.995	2.797
50	2.727	2.825	2.629
60	2.595	2.7	2.49
70	2.453	2.569	2.337
80	2.274	2.4	2.148
90	2.073	2.223	1.923
95	1.965	2.141	1.789

Disclaimer
The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

APPENDIX 7-2

SURFACE WATER ANALYSIS – LABOATORY REPORTS

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Certificate of Analysis

Customer: Enva Chemistry Laboratory
Raffeen Industrial Estate
Ringaskiddy Road
Monkstown
Co. Cork

Condition: Normal
Description: SW1 Ummera Pit

Certificate No: 103251
Certificate Date: 14/06/2019
Sample Id: 1922163
Customer Order: FAO AS KEO027
Page : 4 of 9
Date Received: 30/05/2019
Date Tested: 30/05/2019

Test	Result	Units	Method
Ammonia as N	<0.2	mg/L	ENVCM-115
Nitrate as Nitrogen	5.1	mg/L	ENVCM-015
Nitrite as Nitrogen*	0.008	mg/L	ENVCM-014
Orthophosphate	<0.1	mg/L	ENVCM-18
Biochemical Oxygen Demand	<4	mg/L	ENVCM-031
Dissolved Oxygen*	10.05	mg/L	ENVCM-88
Total Suspended Solids	<10	mg/L	ENVCM-034
pH @ 25deg C	7.41	pH Units	ENVCM-023
Total Nitrogen*	5.55	mg/L	ENVCM-016
Total Phosphorous	<0.1	mg/L	ENVCM-019

***= Not accredited. ^ = Subcontracted.**

NOTE 1 : All analysis carried out based on "Standard Methods for the Examination of Water and Wastewater" 23rd edition (APHA, AWWA, WEF) or associated BS Standard.
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NOTE 3 : Results apply to the sample as received.

Signed:

Orla Dalton
Laboratory/Quality Manager

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.185T

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Certificate of Analysis

Customer: Enva Chemistry Laboratory
Raffeen Industrial Estate
Ringaskiddy Road
Monkstown
Co. Cork

Condition: Normal
Description: SW2 Ummera Pit

Certificate No: 103251
Certificate Date: 14/06/2019
Sample Id: 1922164
Customer Order: FAO AS KEO027
Page : 5 of 9
Date Received: 30/05/2019
Date Tested: 30/05/2019

Test	Result	Units	Method
Ammonia as N	<0.2	mg/L	ENVCM-115
Nitrate as Nitrogen	5.2	mg/L	ENVCM-015
Nitrite as Nitrogen*	0.002	mg/L	ENVCM-014
Orthophosphate	<0.1	mg/L	ENVCM-18
Biochemical Oxygen Demand	<4	mg/L	ENVCM-031
Dissolved Oxygen*	10.22	mg/L	ENVCM-88
Total Suspended Solids	18	mg/L	ENVCM-034
pH @ 25deg C	7.2	pH Units	ENVCM-023
Total Nitrogen*	5.69	mg/L	ENVCM-016
Total Phosphorous	<0.1	mg/L	ENVCM-019

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Laboratory/Quality Manager

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Certificate of Analysis

Customer: Enva Chemistry Laboratory
Raffeen Industrial Estate
Ringaskiddy Road
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Co. Cork

Condition: Normal
Description: SW3 Ummera Pit

Certificate No: 103251
Certificate Date: 14/06/2019
Sample Id: 1922165
Customer Order: FAO AS KEO027
Page : 6 of 9
Date Received: 30/05/2019
Date Tested: 30/05/2019

Test	Result	Units	Method
Ammonia as N	<0.2	mg/L	ENVCM-115
Nitrate as Nitrogen	2.3	mg/L	ENVCM-015
Nitrite as Nitrogen*	0.003	mg/L	ENVCM-014
Orthophosphate	<0.1	mg/L	ENVCM-18
Biochemical Oxygen Demand	<4	mg/L	ENVCM-031
Dissolved Oxygen*	10.27	mg/L	ENVCM-88
Total Suspended Solids	16	mg/L	ENVCM-034
pH @ 25deg C	7.38	pH Units	ENVCM-023
Total Nitrogen*	2.88	mg/L	ENVCM-016
Total Phosphorous	<0.1	mg/L	ENVCM-019

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Signed:

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Laboratory/Quality Manager

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW1

Certificate No: 103404
Certificate Date: 18/07/2019
Sample Id: 1927068
Customer Order: Ummera
Page : 1 of 3
Date Received: 02/07/2019
Date Tested: 02/07/2019

Test	Result	Units	Method
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Nitrate as Nitrogen	5.56	mg/L	ENVCM-015
Orthophosphate	<0.1	mg/L	ENVCM-18
Orthophosphate as PO4^	0.108	mg/L	ENVCMX
BOD^	<1	mg/L	ENVCMX
Total Suspended Solids	<2	mg/L	ENVCM-034

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NOTE 3 : Results apply to the sample as received.

Signed:

Orla Dalton
Laboratory/Quality Manager

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW2

Certificate No: 103404
Certificate Date: 18/07/2019
Sample Id: 1927069
Customer Order: Ummera

Date Received: 02/07/2019
Date Tested: 02/07/2019

Test	Result	Units	Method
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Nitrate as Nitrogen	5.56	mg/L	ENVCM-015
Orthophosphate	<0.1	mg/L	ENVCM-18
Orthophosphate as PO4^	<0.1	mg/L	ENVCMX
BOD^	<1	mg/L	ENVCMX
Total Suspended Solids	<2	mg/L	ENVCM-034

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW3

Certificate No: 103404
Certificate Date: 18/07/2019
Sample Id: 1927070
Customer Order: Ummera
Page : 3 of 3
Date Received: 02/07/2019
Date Tested: 02/07/2019

Test	Result	Units	Method
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Nitrate as Nitrogen	2.4	mg/L	ENVCM-015
Orthophosphate	<0.02	mg/L	ENVCM-18
Orthophosphate as PO4^	<0.1	mg/L	ENVCMX
BOD^	<1	mg/L	ENVCMX
Total Suspended Solids	<2	mg/L	ENVCM-034

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW1

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945077
Customer Order: Ummera Pit
Page : 1 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
Total Suspended Solids^	<2	mg/L	ENVCMX
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Total Phosphorous*^	0.0556	mg/L	ENVCMX
BOD^	1.15	mg/L	ENVCMX
Nitrate ^	3.63	mg/L	ENVCMX
Nitrate as NO3^	16.1	mg/L	ENVCMX
Nitrite ^	0.017	mg/L	ENVCMX
Nitrite as NO2^	0.056	mg/L	ENVCMX
Total Nitrogen^	4.03	mg/L	ENVCMX
Dissolved Oxygen^	10.6	mg/L	ENVCMX

***= Not accredited. ^ = Subcontracted.**

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Laboratory/Quality Manager

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW1

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945077
Customer Order: Ummera Pit
Page : 2 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
pH ^	7.67	pH Units	ENVCMX
Ortho Phosphate	0.0294	mg/L	ENVCMX

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW2

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945078
Customer Order: Ummera Pit
Page : 3 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
Total Suspended Solids^	<2	mg/L	ENVCMX
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Total Phosphorous*^	0.0574	mg/L	ENVCMX
BOD^	1.18	mg/L	ENVCMX
Nitrate ^	3.77	mg/L	ENVCMX
Nitrate as NO3^	16.7	mg/L	ENVCMX
Nitrite ^	0.0173	mg/L	ENVCMX
Nitrite as NO2^	0.057	mg/L	ENVCMX
Total Nitrogen^	4.15	mg/L	ENVCMX
Dissolved Oxygen^	10.9	mg/L	ENVCMX

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www.enva.com

Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW2

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945078
Customer Order: Ummera Pit
Page : 4 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
pH ^	7.68	pH Units	ENVCMX
Ortho Phosphate	0.03	mg/L	ENVCMX

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
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Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW3

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945079
Customer Order: Ummera Pit
Page : 5 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
Total Suspended Solids^	2.45	mg/L	ENVCMX
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Total Phosphorous*^	0.0393	mg/L	ENVCMX
BOD^	1.4	mg/L	ENVCMX
Nitrate ^	2.41	mg/L	ENVCMX
Nitrate as NO3^	10.7	mg/L	ENVCMX
Nitrite ^	<0.0152	mg/L	ENVCMX
Nitrite as NO2^	<0.05	mg/L	ENVCMX
Total Nitrogen^	2.62	mg/L	ENVCMX
Dissolved Oxygen^	10.6	mg/L	ENVCMX

***= Not accredited. ^ = Subcontracted.**

NOTE 1 : All analysis carried out based on "Standard Methods for the Examination of Water and Wastewater" 23rd edition (APHA, AWWA, WEF) or associated BS Standard.
NOTE 2 : The above test results only apply to test item as described in sample description.
NOTE 3 : Results apply to the sample as received.

Signed:



Orla Dalton
Laboratory/Quality Manager

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW3

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945079
Customer Order: Ummera Pit
Page : 6 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
pH ^	7.43	pH Units	ENVCMX
Ortho Phosphate	<0.02	mg/L	ENVCMX

***= Not accredited. ^ = Subcontracted.**

NOTE 1 : All analysis carried out based on "Standard Methods for the Examination of Water and Wastewater" 23rd edition (APHA, AWWA, WEF) or associated BS Standard.
NOTE 2 : The above test results only apply to test item as described in sample description.
NOTE 3 : Results apply to the sample as received.

Signed:

Orla Dalton
Laboratory/Quality Manager

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Institiúid na hInbhuanaitheachta
Sustainability Institute

Analysis Certificate (Ummera Pit)				
	Sampling Date	19/06/2026	19/06/2026	19/06/2026
	Arrival Date	19/06/2026	19/06/2026	19/06/2026
EPA approved	**Sample**	**SW1**	**SW2**	**SW3**
Yes	**Total Nitrogen (mg N/l)**	3.039	3.285	2.228
Yes	**Nitrate (mg N/l)**	1.679	1.927	0.916
Yes	**Nitrate (mg NO_3/l)**	7.436	8.535	4.057
N/A	**Nitrite (mg N/l)**	0.015	0.015	0.011
N/A	**Nitrite (mg NO_2/l)**	0.049	0.049	0.036
Yes	**Ammonia (mg N/l)**	0.097	0.105	0.087
Yes	**Orthothosphate (mg P/l)**	0.078	0.083	0.069
Yes	**Orthothosphate (mg PO_4/l)**	0.239	0.255	0.212
Yes	**Total-P (mg P/l)**	0.169	0.170	0.179
Yes	**BOD (mg O_2/l)**	3.3	3.1	3.5
Yes	**Suspended Solids (mg/l)**	12.4	12.4	18.0
Yes	**pH**	7.52	7.35	7.20
N/A	**Turbidity (NTU)**	12.28	11.95	16.95

Sample Arrival Date: 19-06-26 / Report Date: 25-06-26

APPENDIX 9-1

RECORDED MONUMENTS IN STUDY AREA

Appendix 9-1: Recorded Monuments in the Study Area

CO071-009---- KILL Ritual site - holy well

Not shown on 1842 and 1901 OS 6-inch maps. In pasture, c. 65m WNW of bullaun stone (CO071-010----). Stone-lined well, now dry; covering capstone lies beside it. Not in holy use.

CO071-010---- KILL Bullaun stone

In pasture, c. 65m to ESE of holy well (CO071-009----). Rectangular stone (0.69m x 0.73m) with circular hollow (diam. 0.26m) on top. Believed locally to cure warts.

CO071-018001- BEALICK Kiln – lime

On S side of road, built in natural hollow against rocky break in slope. Rectangular structure (8m x 4m; front H 5.4m; rear H 0.4m). Front elevation (N) has arched recess (H 2m; Wth 1.65m; D 2m) with lower inner arch and sloping slabs to rear. Front wall has shallow horizontal ledge 0.4m above top of arch recess. Circular funnel (diam. 1.85m); top of kiln heavily overgrown. Shown on 1842 OS 6-inch map.

CO071-018002- Cist

Shown only on 1938 OS 6-inch map as 'Ancient Burial (site of)'. Examined by Windle (1912, 169-72), who found small stone-lined grave containing fragments of encrusted urn, food vessel and human bones. Excavation by O'Kelly (1944, 116-21) revealed rectangular stone-lined cist (L c. 0.5m; Wth c. 0.4m; D c. 0.43m), covered by flat slab (c. 0.91m square); floor unpaved. Contents of cist re-examined by O'Kelly and further fragments of urn and food vessel recovered as well as 'a small quantity of finely comminuted' cremated bone (ibid., 118). Encrusted urn (H 0.27m; diam. base 0.10m; rim 0.31m) 'of the usual encrusted type - narrow bands of clay applied to the surface of the finished pot before firing. The encrustations are decorated with incised lines to give a herring-bone effect; inside the rim is also decorated. About one third of food vessel recovered (H c. 0.12m); mainly red-brown in colour and decorated with bands of 'oblique lightly-scored lines arranged in a broad herring-bone pattern'; the rim is decorated internally also. Windle's examination of the bones suggested that 'the interment was that of a female'. Following excavation, cist was reconstructed above ground slightly forward of its original position, where covering slab can still be seen.

CO071-019 ---- BEALICK Standing stone

Not shown on 1842 and 1904 OS 6-inch maps. In pasture, atop hill. Stone (H 1.2m; 1.86m x 1.1m) is subrectangular in plan, long axis N-S. Probably natural feature.

CO071-020---- BEALICK Megalithic tomb - wedge tomb

On W-facing slope of River Laney valley. Well-preserved gallery (L c. 2m; Wth 1.05m to W, 1.25m to E) aligned WNW-ESE; represented by two sidestones to N, one to S and backstone to E; single outer-wall stone to S. Two loose slabs at W end of S side. Gallery decreases in height from W to E; covered by single roofstone. No indications of surrounding mound.

CO071-026---- Fulacht fia SHANAKILL

In boggy ground, on S side of stream. Shown on 1938 OS 6-inch map as mound. Area inaccessible.

CO071-028---- COOLKISHA Standing stone

Not shown on 1842 and 1904 OS 6-inch maps. In pasture, on SW-facing slope. Stone (H 0.72m; 0.84m x 0.2m) is subrectangular in plan, long axis WNW-ESE.

CO071-030---- CURRAGHANEARLA Standing stone

Not shown on 1842 OS 6-inch map. In pasture, on NW-facing slope. Stone (H 1.5m; 1mx 0.7m) is subrectangular in plan, long axis ENE-WSW.

CO071-031---- CURRAGHANEARLA Fulacht fia

In reclaimed pasture, on S side of stream. Shown on 1938 OS 6-inch map as kidney-shaped mound. No visible surface trace.

CO071-056001- UMMERA Souterrain

Two entrances to souterrains (c. 10m apart) recorded by Hartnett (1939, 108), who noted that chambers are 'excavated in the sub-soil and have collapsed internally thus making them impossible to examine'. Openings still visible; inaccessible.

CO071-056002- UMMERA Souterrain

Two entrances to souterrains (c. 10m apart) recorded by Hartnett (1939, 108), who noted that chambers are 'excavated in the sub-soil and have collapsed internally thus making them impossible to examine'. Openings still visible; inaccessible.

CO071-057---- UMMERA Standing stone

In pasture, on S-facing slope. Stone (H 1.25m; 0.89m x 0.2m) is subrectangular in plan, long axis WNW-ESE.

CO071-058---- UMMERA Fulacht fia

On E side of stream, in sand and gravel works. Shown on 1938 OS 6-inch map as circular mound. No visible surface trace.

CO071-059001- UMMERA Ringfort – rath

In pasture. Arc of hachures SE->SW depict bank on 1938 OS 6-inch map, broken line SW->SE completes circle enclosing oval area. Circular, slightly raised area (diam. 23m) enclosed by low earthen bank in parts (int. H 0.3m; ext. H 0.4m). According to local information, known as the fort field. Fulacht fiadh (CO071-059002-) c. 20m to SE of enclosure.

CO071-059002- UMMERA Fulacht fia

In pasture, immediately SE of levelled circular enclosure (CO071-05901-). Partially overgrown horseshoe-shaped mound of burnt material (L 6.2m; Wth 5.8m; H 0.5m); opening (Wth 4.2m) faces WSW.

CO071-099001- COOLKISHA Redundant record

Roadside. Adjacent features marked 'Dolmen' and 'Dolmen (site of)' only on 1938 OS 6-inch map. Described by Megalithic Survey as 'two boulders incorporated into a roadside fence' and 'a slab, 1.50m in maximum dimension, forming a bridge across a roadside ditch'; now no trace of either feature.

CO071-099002- COOLKISHA Redundant record

Listed as a 'non-antiquity' in the SMR (1988) and the RMP (1998). As a non-antiquity this feature does not constitute an archaeological monument.

APPENDIX 10-1

BAT ACTIVITY SURVEY REPORT

BAT ACTIVITY SURVEY AT UMMERAGRAVEL PIT, MACROOM, CO. CORK



Report Prepared for

Atkins,

Cork Airport Business Park

Cork

By

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27th June 2019

INTRODUCTION

I was contracted by Atkins to conduct a bat activity survey at Ummera Gravel Pit, near Macroom, Co. Cork.

Ummera Gravel Pit is a located in the rural townland of Ummera, approximately 2.5km north-east of Macroom. Bat surveys have been requested to include in substitute consent and Section 37L further development applications.

AIMS OF BAT SURVEY

(a) To determine the importance of the site for bats.

(b) To assess the impact of existing and any further extension works on bats using the site.

(c) To make recommendations in order to reduce the impact of any existing or extension works on bats using the site.

BAT SPECIES

Bats belong to the Order Chiroptera and to date nine species are recorded as resident in Ireland. These nine species are divided into two families – Family Vespertilionidae which contain nine of our Irish species (Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri*, Whiskered bat *Myotis mystacinus*, Leisler's bat *Nyctalus leisleri*, Long-eared bat *Plecotus auritus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Common Pipistrelle *Pipistrellus pipistrellus* and Nathusius's Pipistrelle *Pipistrellus nathusii*) and one species in the family Rhinolophidae –the Lesser Horseshoe bat *Rhinolophus hipposideros.*

Brandt's bat *Myotis brandtii* has only been recorded once in Ireland from a site in Co. Wicklow and is classified as a vagrant. In 2013 a single male Greater horseshoe bat *Rhinolophus ferrumequinum* was recorded in Co. Wexford. This bat was also considered to be a vagrant.

Any of the nine resident species of bats could potentially be recorded on site, as Ummera is within the distribution range for all nine species.

Legislation

The serious decline in bat populations both in Ireland and across Europe has led to conservation measures and appropriate legislation being drawn up and implemented in an attempt to stabilise population numbers. It is estimated that bat populations across Europe have decreased by up to 60% in the last 30 years. As they are highly specialised animals, bats serve as biological indicators and are often amongst the first animal species to show signs of population change due to the activities of man. Destruction of roosts and foraging areas, coupled with the widespread use of pesticides, are the key reasons for the decline in numbers of bats in Ireland. Efforts should be made to retain known bat colonies and methods to lessen disturbance to these animals should be incorporated into any development.

Bats' dependency on insects has left them vulnerable to habitat destruction, land drainage, agricultural intensification and increased use of pesticides. Their reliance on buildings has also made them vulnerable to building repairs and the use of chemicals for timber treatment.

Roosting or hibernation sites in caves, mines, trees and disused buildings are also often lost to development.

Irish Legislation

Wildlife Act 1976 – In the Republic of Ireland, under Schedule 5 of the Wildlife Act 1976 all bats and their roosts are protected by law. It is an offence to disturb either without the appropriate licence. This Act was further strengthened by the Wildlife Amendment Act 2000.

E.U. Legislation

Under the Habitats Directive 1992 (EEC 92/43), each member state of the E.U. was requested to identify habitats of national importance and priority species of flora and fauna. These habitats are now designated as Special Areas of Conservation (SAC). In Ireland, all bat species, except one are classified as Annex IV species under the Habitats Directive. Annex IV species are species in need of strict protection. The exception is the Lesser Horseshoe bat which is an Annex II species (Priority Species). Annex II species are species requiring the designation of Special Areas of Conservation specifically for their protection.

All species of bat in Ireland are strictly protected under the Habitats Directive to include deliberate disturbance of these species, particularly during the periods of breeding, rearing and hibernation. It also specifies deterioration or destruction of breeding or resting places.

International Legislation

Ireland has ratified two international wildlife laws pertaining to bats

(a) The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, 1982) – part of this convention stipulates that all bat species and their habitats are to be conserved.
(b) The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, Enacted 1983). This was instigated to protect migrant species across all European boundaries.

DATA SEARCH

A search of Bat Conservation Ireland's database was conducted to establish what bat roosts are known in vicinity of Ummera. The mid-point of the site was taken as W370 738.

There are no known bat roosts listed within 1km of Ummera Gravel Pit.

When the search is extended to 10km from Ummera Gravel Pit there is a total of 48 roosts listed. However, the vast majority of these records date from 2000/2001. The most recent

records are from 2007; i.e. 12 years ago. Of the 48 roosts listed only 24 were confirmed roosts with more than one bat. Many of the other records were for bat droppings only recorded but no bats present. Other records also represent bats flying in the vicinity of a property but not recorded roosting on site.

Roosts within 10km Of Ummera Gravel Pit

- Private Residence – W44094 89553 - Rylane, Co. Cork (2007). 12 Common pipistrelles
- Bridelands House – W427 668 – Inchrahilly, Crookestown, Co. Cork (2001). Approx. 40 Soprano pipistrelles + unspecified no. of Brown long-eared bats
- Derelict Cottage – W343 661 – Ardaneneen, Kilmurray, Co. Cork (2000/2001). 6 Brown long-eared bats + 1 Lesser horseshoe bat
- Dromleigh National School - W284 653 – Dromleigh, Kilmichael, Macroom (2000). Large quantity of Soprano pipistrelle droppings – Maternity roost
- Farm Buildings – W289 764 – Gortnalicky, Clonfrohid, Macroom (2001). 6 Brown long-eared bats
- Private Residence – W339 730 - New Road, Macroom (1999). 300+ Soprano pipistrelles
- Private Residence – W337 732 – Masseytown Road, Macroom (1999). 210 Soprano pipistrelles
- Private Residence – W360 675 – Teereeven, Kilmurray, Macroom (1999) 200+ Soprano pipistrelles
- Inchaleagh Farm Building W399753 – Bealnamorive, (2001) 5 Soprano pipistrelles
- Inchaleagh House – W399753 – Bealnamorive, (2001) 30+ Soprano pipistrelles
- Killinardrish House – W417 723 – Carrigadrohid, Macroom (2001). Large quantity of Soprano pipistrelle droppings
- Killinardrish Old Barracks – W415 723 – Carrigadrohid, Macroom (2001). 1500+ Soprano pipistrelle roost
- Linnamilla Bridge – W313 728 – Raleigh North, Macroom (2000). 2 Daubenton's bats
- Ballymichael Bridge - W390 670 - Kilmurray Macroom (2000/2004) 7/2 Daubenton's bats
- Nettleville Demense Farmhouse – W431 725 – Carrigagulla, Co. Cork (2001). 10 Whiskered bats, 1 Soprano pipistrelle + 1 Brown Long-eared
- Oakgrove Estate Barn - W425 735 - Carrigadrohid, (2001) 10 Soprano pipistrelle + Brown long-eared droppings
- Prospect House - W404 725 - Carrigadrohid (2001) 30 Common pipistrelles
- Rockgrove House Outbuilding - W439 747 - Coachford, Co. Cork (2001/2008) 20 Whiskered, large amount of Brown long-eared droppings
- Ruin Nettleville House - W431 725 - Carrigagulla, Co. Cork (2000). 5 bats – either Daubentons or Brown long-eared
- Ruined Cottage Annahalla – W30132 69920 - Annahalla, Kilmichael (2007) 11 Lesser Horseshoe bats
- Two storey Stable - W318 704 - Annahalla East, The Gearagh, Macroom (1999) c. 10 Leisler's bats

- Stables St Olans Lodge - W436 754 - Beacnamarbh, Co. Cork (2001) c. 10 Brown long-eared bats
- The Lodge Warrencourt - W377 668 - Kilmurray, Macroom (1999) 100+ Soprano pipistrelles
- Wood Cabin - W381 827 - Carrigagukka, Ballinagree, Macroom (2004) 5 Common pipistrelles

SITE VISIT

Ummera Gravel Pit was visited during daylight hours on 27th June 2019 to familiarise surveyors with the layout of the site and any Health and Safety issues to be aware of prior to the night time survey.

Ummera Gravel Pit is situated in the townland of Ummera, approximately 2.5 km north-east of Macroom town, Co. Cork. The gravel pit site lies directly to the east of the River Lainey which flows in a south west direction past the gravel pit before joining The River Sullane approximately 2 km downstream just below Laney Bridge. The Clashavoon Stream, a tributary of the Laney River forms the western and northern landownership boundary.

Ummera Gravel Pit is enclosed by two local roads which circle most of the perimeter of the site (Figure 1).

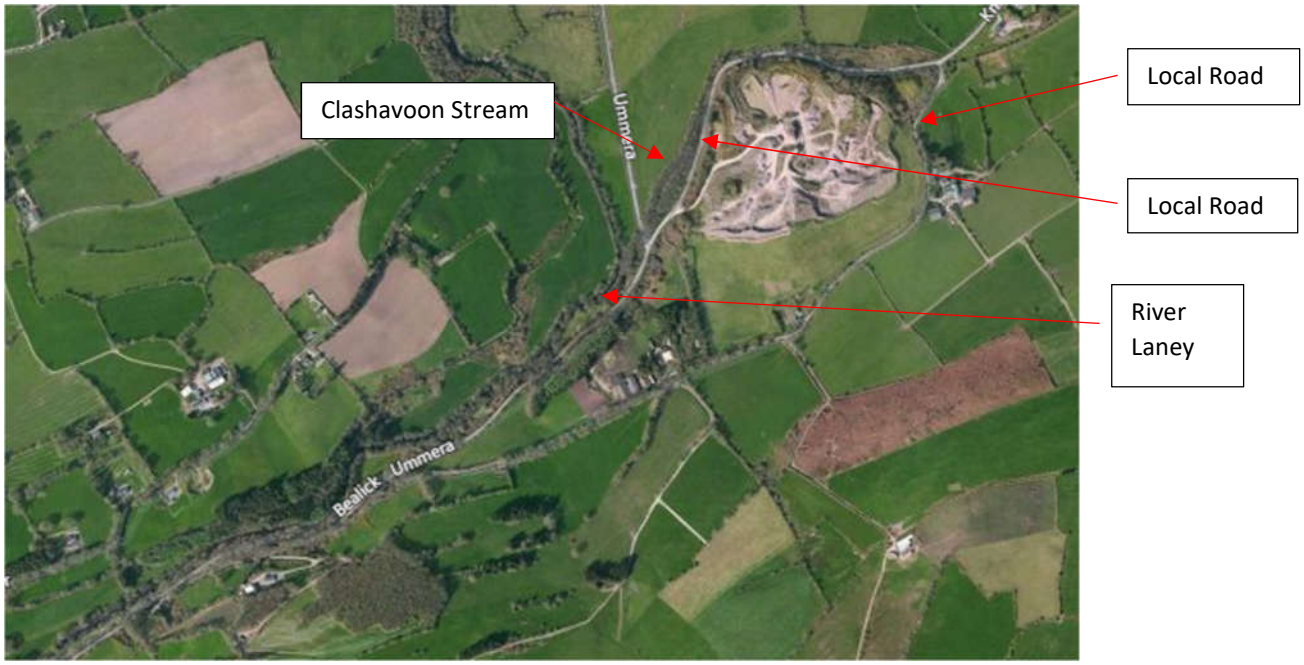


Figure 1 – Aerial View of Ummera Gravel Pit showing location of River Laney.

During daylight hours on 27th June 2019 two Songmeter 4 bat detectors were set up on site to remotely monitor bat activity at two locations overnight. The position of the Songmeters is

illustrated in Figure 2. These units were programmed to run from 20mins before sunset to 20 mins after sunset.

The first Songmeter was placed on an earthen bank at the settlement pond at the northern end of the site (Photo 3). Figure 2 shows two settlement ponds but on the date of the survey there was water in the easternmost pond only. The western pond was dry.

The second location selected was on a track in the centre of the site (Photo 5). This track was lined with immature scrub willow.



Figure 2 – Aerial view of Ummera Gravel Pit showing position of the two Songmeter 4 detectors (red star) placed on site overnight.

METHODOLOGY

Two remote bat detectors were placed at separate locations on site to record bat activity overnight. These locations were selected during the day time visit and Songmeters were put in position at this time.

The site was assessed to select suitable areas for dusk and dawn surveys. There is a mature treeline of deciduous trees on the south western boundary of the site. This tree line was selected to be surveyed with bat detectors in the dawn period the following morning.

The only buildings on site are a small metal container used as a site office and a tool shed/store room. Derelict farm buildings are located at the south-western corner of the landholding, adjacent to the mature tree line; these are outside the quarry site boundary.

On the night of 27th June 2019, two surveyors conducted emergence surveys at dusk, followed by walked transects of the site. Dawn surveys were conducted on the morning of 28th June 2019 to record any bats returning to roosts prior to sunrise. Equipment used included a Pettersson D240X time expansion bat detector, a Pettersson D200 heterodyne detector and an Echometer Touch Pro detector plugged into an iPad.

Dusk Survey

Date: 27.06.19

Sunset = 21.57

Temp = 16 C

Weather = light breeze, dry, 60% cloud cover

One surveyor conducted an emergence watch at the site office. The second surveyor conducted an emergence survey at the southern edge of the extraction area to investigate if bats were commuting from the farm buildings on the local road immediately to the south of the quarry. The dusk surveys commenced 20 mins before sunset and lasted 1.5 hours.

Results: No bats emerged from the site office. No bats were recorded commuting from the farm buildings on the local road on the southern boundary of the site.

Transects

Walking transects with hand held bat detectors were commenced immediately after completing the emergence surveys. Common pipistrelles were recorded intermittently foraging on the access track from the local road and in the vicinity of the settlement pond. No bats were recorded foraging within the extraction area.

Several Soprano and Common pipistrelles were recorded over the grass field to the south of the extraction area and along the mature treeline on the south-western boundary of the site.

Dawn Survey

Sunrise = 05.17

Temperature = 13 C

Weather = Overcast, calm & intermittent light drizzle

The dawn survey commenced 1.5 hours before sunrise. Low levels of foraging activity of both Soprano and Common pipistrelles were recorded along the mature tree line. No swarming was detected and no bats returned to roost in the trees prior to sunrise.

Results of Songmeter recordings

<u>Songmeter at Settlement pond</u> – Total no. of calls = 142 calls

48.6% Common pipistrelle, 23.2% Soprano pipistrelle, 11.3% Brown long-eared, 9.8% Leisler's, 7% Whiskered/Daubenton's

<u>Songmeter on Track</u>– Total number of calls = 32

65.63% Common pipistrelle, 31.25% Leisler's, 3.13% Soprano pipistrelle

Common pipistrelles were the most frequently recorded species at both sites. 5 species were detected at the settlement pond but overall activity levels were low. The close proximity of the River Laney and Clashavoon Stream running close to the western and northern boundary of the site most likely resulted in elevated levels of bats at the settlement pond. On the date of the survey, the settlement pond was very silty, no insects were visible and foraging conditions for bats looked poor.

CONCLUSIONS

Relatively low levels of overnight bat activity were recorded on the Songmeter placed at the settlement pond on site and very low levels of bat activity at the central location in the extraction area. Ummera extraction is not an important foraging site for bats.

No bat roosts were recorded on site.

There are excellent foraging sites for bats along the route of the River Laney and the Clashavoon Stream very close to the western and northern boundary of the site. These watercourses have mature deciduous wood land along their banks.

PHOTOGRAPHS



Photo 1 – washing & screening machinery on site.



Photo 2 – Settlement pond at northern end of site.



Photo 3 – Songmeter 4 in position on earthen bank at settlement pond (GPS 37044 73946).



Photo 4 – Westernmost settlement pond dry on date of survey.



Photo 5 – Central track where Songmeter was placed overnight (GPS 37100 73802).



Photo 6 – working area of gravel pit.



Photo 7 – South western end of site looking towards mature tree line.



Photo 8 – Grass field to south of working area.



Photo 9 – Deciduous treeline on south western boundary of gravel pit.



Photo 10 – local road to south of site.

APPENDIX 10-2

APPROPRIATE ASSESSMENT SCREENING REPORT

Appropriate Assessment Screening Report

Ummera Gravel Pit Further Development Application

Case Number: ABP-308194-20

Prepared for:

Drimoleague Concrete Works Ltd

Prepared by:

JKW Environmental Ltd

August 2026

DOCUMENT CONTROL				
Client	Drimoleague Concrete Works Ltd			
Project Title	Ummer Gravel Pit Application for Further Development			
Rev	Status	Author	Reviewed By	Approved By
00	Draft	KN		

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1. Introduction

1.1 Background

JKW Environmental Ltd was commissioned by Drimoleague Concrete Works Limited (the Applicant) to undertake an Appropriate Assessment in respect of the proposed further development of Ummera Gravel Pit, Ummera, County Cork (the Site). The Site comprises an existing gravel pit for which an application for substitute consent was submitted to An Bord Pleanála (now An Coimisiún Pleanála) in August 2020 – case number ABP-308036-20. The application for the further development of the gravel pit was subsequently lodged with An Bord Pleanála in September 2020 – case number ABP-308194-20.

The Applicant is seeking permission for the further development of the existing gravel pit. An Environmental Impact Assessment Report (EIAR) was submitted in support of the application. Following its review of the application, An Coimisiún Pleanála issued a request for Further Information dated 1 October 2025 requesting, amongst other matters, the submission of an Appropriate Assessment Screening Report and, if deemed necessary, a Natura Impact Statement, in accordance with Article 6(3) of the Habitats Directive and Sections 177U and 177V of the Planning and Development Act 2000 (as amended).

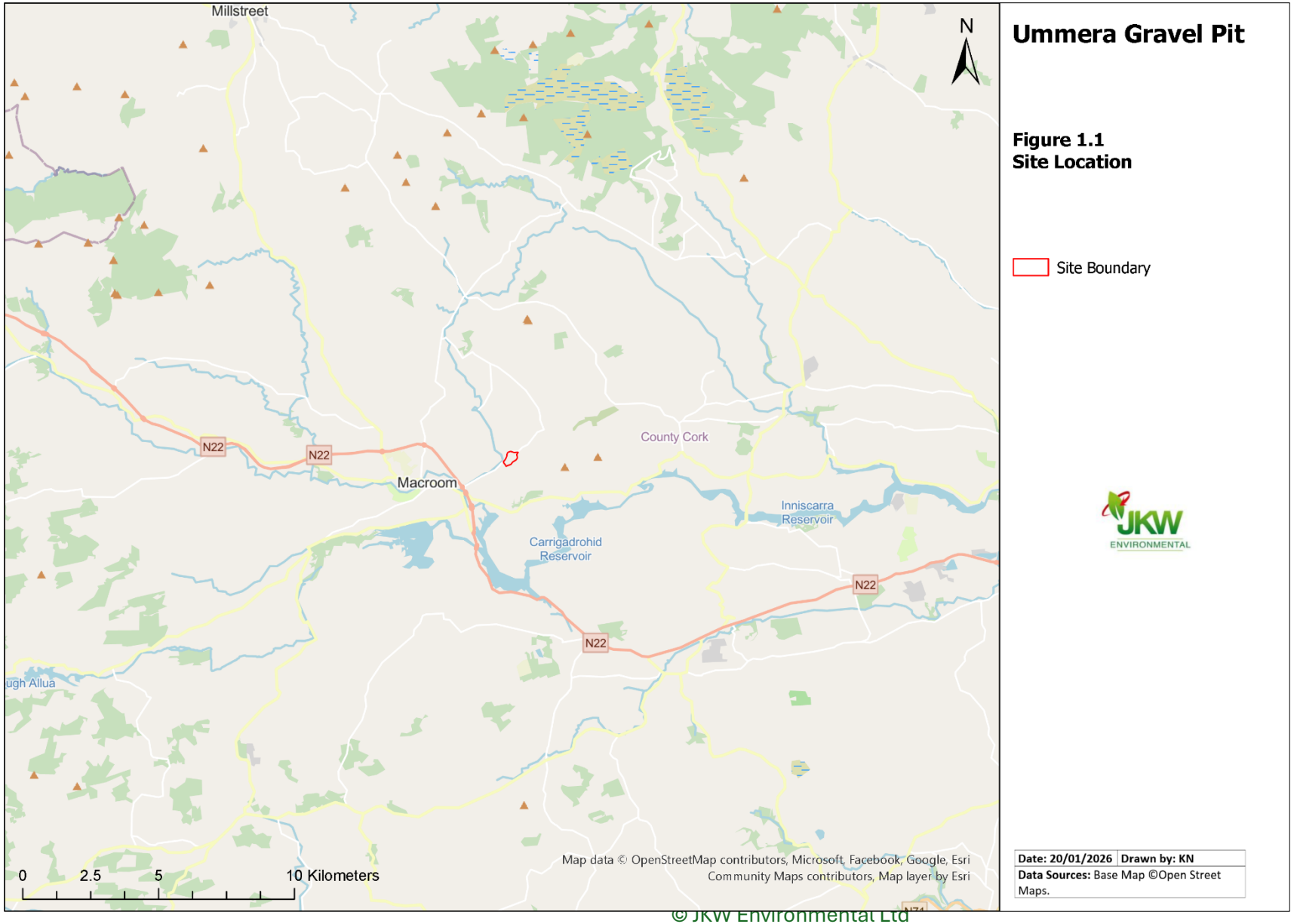
This Appropriate Assessment has been prepared in response to that request for Further Information. It assesses the potential for effects on European sites arising from the proposed further development of Ummera Gravel Pit, having regard to the conservation objectives of those sites. The assessment has been undertaken using current best scientific knowledge and in accordance with relevant European Commission and Irish guidance.

This Appropriate Assessment has been informed by the Environmental Impact Assessment Report (EIAR) prepared in support of the further development application, which describes the proposed development, the receiving environment, and the surface water, groundwater and hydrological context. The assessment relies on this information for the purposes of identifying source-pathway-receptor linkages and assessing the potential for effects on European sites.

This Appropriate Assessment has been prepared in accordance with the requirements of Article 6(3) of the Habitats Directive and the Planning and Development Act 2000 (as amended). It assesses whether the proposed development, either alone or in combination with other plans or projects, will adversely affect the integrity of any European site in view of the conservation objectives of those sites.

The site location (hereinafter referred to as "the Site") is shown in Figure 1.1.

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2. Relevant Legislation

European Nature Directives (Habitats and Birds)

The Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) forms the basis for the designation of Special Areas of Conservation. Similarly, Special Protection Areas are classified under the Birds Directive (Council Directive 2009/147/EEC on the Conservation of Wild Birds). Collectively, Special Areas of Conservation (SAC) and Special Protection Areas (SPA) are referred to as the Natura 2000 network. In general terms, they are considered to be of exceptional importance for rare, endangered or vulnerable habitats and species within the European Community.

Under Article 6(3) of the Habitats Directive an appropriate assessment must be undertaken for any plan or project that is likely to have a significant effect on the conservation objectives of a Natura 2000 site. An appropriate assessment is an evaluation of the potential impacts of a plan or project on the conservation objectives of a Natura 2000 site, and the development, where necessary, of mitigation or avoidance measures to preclude negative effects.

Article 6, paragraph 3 of the EC Habitats Directive 92/43/EEC ("the Habitats Directive") states that: *"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public"*

The Habitats Directive is transposed into Irish law by the EC (Birds and Natural Habitats) Regulations 2011 – 2015. Part XAB of the Planning and Development Acts 2000 to 2020 transposes Article 6(3) and 6(4) of the Habitats Directive in respect of land use plans and proposed projects requiring development consent.

EC (Birds and Natural Habitats) Regulations 2011 to 2021 – Part 5

Part 5 of the EC (Birds and Natural Habitats) Regulations 2011 – 2021 sets out the circumstances under which an 'appropriate assessment' is required. Section 42(1) requires that 'a screening for Appropriate Assessment of a plan or project for which an application for consent is received, or which a public authority wishes to undertake or adopt, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the European site.' Section 42(2) expands on this, stipulating that a public authority must carry out a screening for Appropriate Assessment before consent for a plan or project is given, or a decision to undertake or adopt a plan or project is taken. To assist a public authority to discharge its duty in this respect, Section 42(3)(a) gives them the authority to direct a third party to provide a Natura Impact Statement and Section 42(3)(b) allows them to request any additional information that is considered necessary for the purposes of undertaking a screening assessment.

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Section 42(6) requires that 'the public authority shall determine that an Appropriate Assessment of a plan or project is required where the plan or project is not directly connected with or necessary to the management of the site as a European Site and if it cannot be excluded, on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site'.

Planning and Development Acts 2000 to 2024 - PART XAB

The relevant sections of Part XAB of the Planning and Development Acts 2000 – 2024 are set out below.

Screening for appropriate assessment

Section 177U requires that— (1) A screening for appropriate assessment of a draft Land use plan or application for consent for proposed project shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed project, individually or in combination with another plan or project is likely to have a significant effect on the European site.

(2) A competent authority shall carry out a screening for appropriate assessment under subsection (1) before—

(a) a Land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made, or

(b) consent for a proposed project is given.

(3) In carrying out screening for appropriate assessment of a proposed project a competent authority may request such information from the applicant as it may consider necessary to enable it to carry out that screening, and may consult with such persons as it considers appropriate and where the applicant does not provide the information within the period specified, or any further period as may be specified by the authority, the application for consent for the proposed project shall be deemed to be withdrawn.

(4) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed project, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or proposed project, individually or in combination with other plans or projects, will have a significant effect on a European site.

(5) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed project, as the case may be, is not required if it can be excluded, on the basis of objective information, that the draft Land use plan or proposed project, individually or in combination with other plans or projects, will have a significant effect on a European site.

(6) (a) Where, in relation to a proposed project, a competent authority makes a determination that an appropriate assessment is required, the competent authority shall give notice of the determination, including reasons for the determination of the competent authority, to the following—

(i) the applicant,

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(ii) if appropriate, any person who made submissions or observations in relation to the application to the competent authority, or

(iii) if appropriate, any party to an appeal or referral.

(b) Where a competent authority has determined that an appropriate assessment is required in respect of a proposed project it may direct in the notice issued under paragraph (a) that a Natura impact statement is required.

(c) Paragraph (a) shall not apply in a case where the application for consent for the proposed project was accompanied by a Natura impact statement.

(7) A competent authority shall, as soon as may be after making the Land use plan or making a decision in relation to the application for consent for proposed project, make available for inspection by members of the public during office hours at the offices of the authority, and may also publish on the internet —

(a) any determination that it makes in relation to a draft Land use plan under subsection (4) or (5) as the case may be, and reasons for that determination, and

(b) any notice that it issues under subsection (6) in relation to a proposed project.

(8) In this section 'consent for proposed project' means, as appropriate —

(a) a grant of permission,

(b) a decision of the Board to grant permission on a planning application or an appeal,

(c) consent for development under Part IX,

(d) approval for development that may be carried out by a local authority under Part X or Part XAB or development that may be carried out under Part XI,

(e) approval for development on the foreshore under Part XV,

(f) approval for development under section 43 of the Act of 2001,

(g) approval for development under section 51 of the Roads Act 1993, or

(h) a substitute consent under Part XA.

(9) In deciding upon a declaration or a referral under section 5 of this Act a planning authority or the Board, as the case may be, shall where appropriate, conduct a screening for appropriate assessment in accordance with the provisions of this section.

(10) In deciding upon an application under section 176A or a determination review or an application referral under section 176C, a planning authority or the Board, as the case may be, shall, where appropriate, conduct a screening for appropriate assessment in accordance with the provisions of this section.

Natura impact report and natura impact statement

Section 177T states that— (1) (a) A Natura impact report means a statement for the purposes of Article 6 of the Habitats Directive, of the implications of a Land use plan, on its own or in

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combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.

(b) A Natura impact statement means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than on European site, in view of the conservation objectives of the site or sites.

(2) Without prejudice to the generality of subsection (1), a Natura impact report or a Natura impact statement, as the case may be, shall include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European site in view of the conservation objectives of the site or sites.

(3) As respects a draft National Planning Framework, the Government shall prepare a Natura impact report in relation to a draft Land use plan and the following bodies shall also prepare a Natura impact report in relation to a draft Land use plan—

(a) as respects a draft regional spatial and economic strategy, the regional assembly for whose area the draft strategy is made,

(aa) as respects a draft National Planning Framework, the Minister

(b) as respects a draft planning scheme in respect of all or any part of a strategic development zone, the planning authority (which term shall be construed in accordance with section 168(5)) for whose area the draft scheme is made,

(c) as respects a draft development plan or draft variation of a development plan, the planning authority for whose area the draft plan or draft variation is made, and

(d) as respects a draft local area plan, the planning authority in whose area the local area concerned is situate.

(4) The applicant for consent for proposed development may, or if directed in accordance with subsection (5) by a competent authority, shall furnish a Natura impact statement to the competent authority in relation to the proposed development.

(5) At any time following an application for consent for proposed development a competent authority may give a notice in writing to the applicant concerned, directing him or her to furnish a Natura impact statement

(6) Where an applicant for consent for proposed development who, having been directed in accordance with subsection (5), fails to furnish a Natura impact statement within the period specified in the notice, or any further period as may be specified by the competent authority, the application for consent for the proposed development shall be deemed to be withdrawn.

(7) (a) Without prejudice to subsection (1) a Natura impact report or a Natura impact statement shall include all information prescribed by regulations under section 177AD.

(b) Where appropriate, a Natura impact report or a Natura impact statement shall include such other information or data as the competent authority considers necessary to enable it to ascertain if the draft Land use plan or proposed development will not affect the integrity of the site.

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3. Methods

3.1 Desk Study

A desk study was carried out to collate information available on Natura 2000 sites within the potential zone of influence of the development. The Site and the surrounding area were viewed using satellite imagery[1]. Cork County Council planning portal[2] and An Coimisiún Pleanála portal[3] were accessed for information on other permitted and proposed development within the zone of influence of the project. The National Parks and Wildlife Service (NPWS) website[4] was accessed for information on Natura 2000 sites. Environmental Protection Agency (EPA) Maps[5] was accessed for other environmental information relevant to preparation of this report.

The following documents were referenced during the desk-top study to inform the Appropriate Assessment and the baseline ecology information:

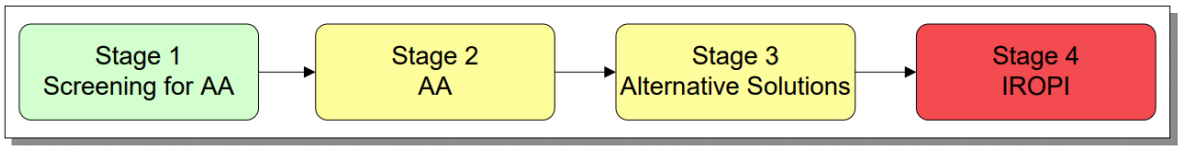
- Online data available on European sites and habitats/species as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie, including conservation objectives documents
- Online data available on protected species as held by the National Biodiversity Data Centre (NBDC) from www.biodiversityireland.ie, specifically related to the records recorded within the 2 km grid squares (ITM) – W37R & W37S.
- Birds of Conservation Concern in Ireland (Gilbert et al, 2021), available at https://birdwatchireland.ie/birds-of-conservation-concern-in-ireland/
- Information on the surface water network and surface water quality in the area available from www.epa.ie
- Information on soils, geology and hydrogeology in the area available from the Geological Survey Ireland (GSI) online Spatial Resources service. Available from https://www.gsi.ie/en-ie/data-and-maps/Pages/Groundwater.aspx
- Ordnance Survey of Ireland mapping and aerial photography available from https://tailte.ie/
- GeoHive online mapping (https://geohive.ie/index.html)
- Cork County Development Plan 2022-2028.

3.2 Appropriate Assessment Process

The Department of the Environment Heritage and Local Government Guidelines (DELHG, 2009), outlines the European Commission's methodological guidance (EC, 2002). This guidance promotes a four-stage process in completing an AA. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required. Throughout the process, the precautionary principle must be applied, so that any uncertainties do not result in adverse impacts on a site. These guidance documents identify a staged approach to conducting an AA, as shown below.

[1] www.google.ie/maps
[2] https://planning.corkcoco.ie/eplan/searchtypes
[3] https://www.pleanala.ie/en-ie/home
[4] https://www.npws.ie/protected-sites
[5] https://gis.epa.ie/)

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Stage 1: Screening – Initial screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

- whether a plan or project is directly connected to or necessary for the management of the site, and
- whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of its conservation objectives.

For those sites where potential adverse impacts are identified, either alone or in combination with other plans or projects, further assessment is necessary to determine if the proposals will have an adverse impact on the integrity of a European designated site, in view of the site's conservation objectives (i.e. the process proceeds to Stage 2).

Stage 2: Appropriate Assessment - This stage requires a more in-depth evaluation of the plan or project, and the potential direct and indirect impacts of them on the integrity and interest features of the European designated site(s), alone and in-combination with other plans and projects, taking into account the site's structure, function and conservation objectives. Where required, mitigation or avoidance measures will be suggested.

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where mitigation cannot be achieved, then alternative solutions will need to be considered (i.e. the process proceeds to Stage 3).

Stage 3: Alternative Solutions - Where adverse impacts on the integrity of Natura 2000 sites are identified, and mitigation cannot be satisfactorily implemented, alternative ways of achieving the objectives of the plan or project that avoid adverse impacts need to be considered. If none can be found, the process proceeds to Stage 4.

Stage 4: Imperative Reasons of Overriding Public Interest (IROPI)/Derogation - This stage is required where an alternative solution is not available. In this situation, the project can only proceed for Imperative Reasons of Overriding Public Interest (IROPI), despite the plan or project resulting in adverse effects on European Site(s). This stage provides for an assessment of compensation measures to maintain or enhance the overall coherence of the Natura 2000 network. The Commission must be informed of the compensatory measures. Compensatory measures must be practical, implementable, likely to succeed, proportionate and enforceable, and they must be approved by the Minister.

3.3 Zone of Influence

The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2018).

Sites are screened out based on one or a combination of the following criteria:

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- The existence of potential for pathways for significant effects, such as hydrological links, project proposals and the site to be screened;
- The distance of the relevant site from the project boundary; and
- The existence of a link between identified threats or vulnerabilities at a site to potential impacts that may arise from the project.

Irish guidance (DoEHLG, 2010)[6] states, for the zone of influence of plans, that "*A distance of 15 km is currently recommended in the case of plans, as a potential zone of influence, and this distance is derived from UK guidance (Scott Wilson et al, 2006)". The guidance goes on to state that "for projects, the distance could be much less than 15 km, and in some cases less than 100 m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects."*

Guidance from the Office of the Planning Regulator (OPR)[7] states that "*The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15 km)".*

The zone of influence for this project was identified through a review of the nature of the project, the type of impacts and effects that could have arisen as a result, the distance between the project and European sites, and the qualifying interests of the European sites.

3.4 Characterising Impacts

The methodology for the assessment of impacts is derived from the Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites (EC, 2002). When describing changes/activities and impacts on ecosystem structure and function, the types of impacts that are commonly presented include the following:

- direct and indirect effects,
- short- and long-term effects,
- construction, operational, restoration and deconstruction / demolition effects, and
- isolated, interactive and cumulative effects.

Impacts that could potentially have occurred through the implementation of the project can be categorised under a number of impact categories as outlined in the EC 2002 document as follows:

- Loss/Reduction of habitat area,
- Disturbance to key species,
- Habitat or species fragmentation,

[6] Appropriate Assessment of Plans and Projects in Ireland -Guidance for Planning Authorities
[7] https://www.opr.ie/wp-content/uploads/2021/03/9729-Office-of-the-Planning-Regulator-Appropriate-Assessment-Screening-booklet-15.pdf

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- Reduction in species density, and
- Changes in key indicators of conservation value such as decrease in water quality and quantity.

The concept of the 'integrity of the site' is explained in the EU publication Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, as follows;

'*It is clear from the context and from the purpose of the directive that the 'integrity of the site' relates to the site's conservation objectives. For example, it is possible that a plan or project will adversely affect the integrity of a site only in a visual sense or only habitat types or species other than those listed in Annex I or Annex II. In such cases, the effects do not amount to an adverse effect for purposes of Article 6(3), provided that the coherence of the network is not affected. On the other hand, the expression 'integrity of the site' shows that focus is here on the specific site. Thus, it is not allowed to destroy a site or part of it on the basis that the conservation status of the habitat types and species it hosts will anyway remain favourable within the European territory of the Member State.*

As regards the connotation or meaning of 'integrity', this can be considered as a quality or condition of being whole or complete. In a dynamic ecological context, it can also be considered as having the sense of resilience and ability to evolve in ways that are favourable to conservation. The 'integrity of the site' has been usefully defined as 'the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified'

A site can be described as having a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self-repair and self-renewal under dynamic conditions is maintained, and a minimum of external management support is required. When looking at the 'integrity of the site', it is therefore important to take into account a range of factors, including the possibility of effects manifesting themselves in the short, medium and long-term.

The integrity of the site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives.

3.5 Likely Significant Effects

The threshold for a likely significant effect is treated in the screening exercise as being above a *de minimis* level[8]. The opinion of the Advocate General in CJEU case C-258/11 outlines:

"*the requirement that the effect in question be 'significant' exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill.*"

[8] Sweetman v. An Bord Pleanála (Court of Justice of the EU, case C-285/11). A de minimis effect is a level of risk that is too small to be concerned with when considering ecological requirements of an Annex I habitat or a population of Annex II species present on a European site necessary to ensure their favourable conservation condition. If low level effects on habitats or individuals of species are judged to be in this order of magnitude and that judgment has been made in the absence of reasonable scientific doubt, then those effects are not considered to be likely significant effects.

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In this report, therefore, 'relevant' European sites are those within the potential zone of influence of the quarry operations, and to which likely significant effect pathways were identified through the source-pathway-receptor model.

3.6 Guidance

Documents associated with the development and relevant ecology databases were consulted as part of this assessment. The following guidelines and legal judgements were used in the completion of this assessment;

- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites – European Commission Methodical Guidance on the provisions of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (European Commission 2001)
- Office of the Planning Regulator (OPR) Practice Note PN01, Appropriate Assessment Screening for Development Management (2021).
- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DoEHLG 2009).
- Integrated Biodiversity Impact Assessment – Streamlining AA, SEA and EIA Processes: Practitioner's Manual (EPA 2013).
- European Court of Justice Ruling 11th April 2013 Case C- 258/11 Peter Sweetman and Others v An Bord Pleanála - Criteria to be applied when assessing the likelihood that N6 Galway City Outer Bypass Road scheme will adversely affect the integrity of Lough Corrib SAC.
- High Court Ruling 25th July 2014 by Ms. Justice Finlay Geoghegan; Neutral Citation [2014] IEHC 400; High Court Record No. 2013 802 JR; Kelly -v- An Bord Pleanála – Judicial review of grant of planning by An Bord Pleanála for two wind farm phases in County Roscommon.
- High Court Ruling 24th November 2014 by Mr. Justice Hedigan; Neutral Citation [2014] IEHC 557; High Court Record No. 2014 320 JR; Rossmore Properties Limited & Anor -v- An Bord Pleanála.
- High Court Ruling 25th February 2016 by Mr. Justice Barton. Neutral Citation [2016] IEHC 134; High Court Record No. 2013 450 JR; Balz & Anor -v- An Bord Pleanála.
- European Court of Justice ruling 12th April 2018 in respect of Case C-323/17 (People Over Wind & Sweetman) - it is not appropriate for the purposes of Appropriate Assessment (AA), at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of a plan or project.
- European Court of Justice ruling 19th April 2018 in respect of Case C-164/17, Compensation vs Mitigation, Grace & Sweetman Vs ABP.
- High Court Ruling 8th February 2019 by Justice Barniville in respect of Kelly -v- An Bord Pleanála & anor. The Court concludes "as a matter of fact and law, that SUDS are not mitigation measures which a competent authority is precluded from considering at the stage 1 screening stage". The Irish High Court ([2019] IEHC 84).
- Heather Hill Management Company CLG v An Bord Pleanála (Burkeway Homes Limited as Notice Party) [2019] IEHC 450. Mr. Justice Garrett Simons granted an order of certiorari setting aside the decision of the Board to grant permission for a residential development of 197 units at Bearna Co. Galway, on the basis that it was a material contravention of the Galway County Development Plan (the CDP), it failed to carry out a 'justification test' as required and failed to carry out proper Appropriate Assessment screening.

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- European Commission. Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, (21-11-18) C (2018) 7261 Final. Commission Notice Brussels.
- Court of Justice judgment 15 June 2023, Case C-721/21 Eco Advocacy CLG v An Bord Pleanála.

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4. Description of Baseline Ecology

The Site comprises an existing gravel pit located in a rural agricultural landscape in the vicinity of Ummera, Macroom, County Cork. Land use in the wider area is characterised by a mosaic of agricultural grassland, hedgerows, local road infrastructure and dispersed rural dwellings. The Site itself is disturbed and modified as a result of historic extraction activities and does not support habitats of conservation value that are qualifying interests of any European site.

A review of species records on the National Biodiversity Data Centre Ireland (NBDC) website shows records indicating the presence of protected species: Badger (*Meles meles*), Irish Stoat (*Mustela erminea subsp. hibernica*), Hedgehog (*Erinaceus europaeus*), Leisler's Bat (*Nyctalus leisleri*), and Red Squirrel (*Sciurus vulgaris*) and within the 2km polygons (W37R & W37S) surrounding the Site.

With respect to regional hydrology, the Site is within the Lee, Cork Harbour and Youghal Bay WFD Catchment, the Sullane_SC_020 sub-catchment and the Laney_040WFD River sub basin.

The Curraghanearla Stream (EPA Code: 19C86) flows along the northern boundary of the Site, adjacent to the public road. This watercourse has a WFD river waterbody status of 'High' for the 2019–2024 reporting period and is listed as 'Under Review' under the third cycle WFD risk assessment.

At the northern boundary of the Site, the Curraghanearla Stream joins the Bealick Stream (EPA Code: 19B45), also referred to as the Clashavoon Stream. The Bealick / Clashavoon Stream is a third-order watercourse which flows south-west along the western boundary of the Site. This watercourse also has a WFD river waterbody status of 'High' for the 2019–2024 period and is similarly listed as 'Under Review' under the third cycle WFD risk assessment.

Downstream of the Site, the Bealick / Clashavoon Stream flows south-west, passes beneath a local road, and joins the River Laney. The River Laney subsequently flows into the Sullane River, which in turn discharges to the Carrigadrohid Reservoir, a major impoundment on the River Lee system. Downstream of Carrigadrohid Reservoir, the River Lee flows into Inniscarra Reservoir before continuing eastwards towards Cork Harbour and associated transitional waters. This downstream sequence is described in the EIAR and reflects a catchment containing multiple significant hydrological controls and impoundments.

The Site is located within the Ballinhassig West groundwater body, which has been classified as having 'Good' groundwater status for the 2019–2024 WFD reporting period and is identified as 'Not at risk' under the third cycle WFD risk assessment.

The underlying geology comprises a combination of Poor Aquifer – Bedrock, which is generally unproductive except in localised zones, and Locally Important Aquifer – Bedrock, which is moderately productive only in discrete local zones. Groundwater vulnerability in the area is identified as high in places, reflecting shallow overburden and bedrock conditions.

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5. Stage 1 - Appropriate Assessment Screening

5.1 Identification of Natura 2000 Sites

The first step in the identification of Natura 2000 sites is to determine the potential zone of influence of the historical operation of the gravel pit. When the zone of influence of the Site has been determined, Natura 2000 sites within this area can be identified. The potential for these sites to have been affected can be evaluated by considering:

- Scale and type of the proposed works.
- Proximity to the works.
- Qualifying interests.
- Ecological[9] and Landscape[10] connectivity.

A source-pathway-receptor model has been used to establish which European Sites could occur within the zone of influence of the project. Under such a model the project, as described above, represents the source. The receptors represent European Sites and their associated qualifying features of interest.

European Sites and their associated qualifying features are likely to occur in the zone of influence of the project only where the above pathways establish a link between the project site and European Sites or where the project site is likely to play an important role in supporting populations of mobile species that are listed as special conservation interests/qualifying species for surrounding European Sites.

Table 5.1 provides a determination as to whether each of the European Sites listed occur within the zone of influence of the project. Figure 5.1 show the locations of the Natura 2000 sites within 15km of the project.

[9] Connectivity is defined as a measure of the functional availability of the habitats needed for a particular species to move through a given area. Examples include the flight lines used by bats to travel between roosts and foraging areas or the corridors of appropriate habitat needed by some slow colonising species if they are to spread (CIEEM, 2018)

[10] Landscape connectivity is a combined product of structural and functional connectivity, i.e. the effect of physical landscape structure and the actual species use of the landscape (Kettunen et al. 2007)

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Table 5.1. Natura 2000 Sites within zone of influence

Natura 2000 Site Distance from Site[11]	Qualifying Interests	Conservation Objectives	Pathway	Description of Potential Impacts	Potential Pathways for Further Assessment
Special Areas of Conservation (SACs)					
The Gearagh SAC [000108] c. 3.5 km south west	**Habitats:** [3260] Floating River Vegetation [3270] Chenopodion rubri p.p. and Bidention p.p. vegetation [91A0] Old Oak Woodlands [91E0] Alluvial Forests* **Species:** [1355] Otter (*Lutra lutra*)	To maintain or restore the favourable conservation condition of habitats designated within The Gearagh SAC which is defined by a list of specific attributes and targets. Full details of the conservation objectives can be found at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000108.pdf	There are no surface water pathways connecting the Site to The Gearagh SAC. The SAC is located upstream of the confluence of the River Lee and the River Sullane, whereas the Site lies downstream within the Lee catchment. Groundwater flow beneath the gravel pit is localised and is not directly connected to The Gearagh SAC.	The Gearagh SAC is designated for a range of freshwater and terrestrial qualifying interests, including alluvial woodland habitats and otter, which may be sensitive to changes in hydrology, water quality and physical disturbance. The Site is located at a distance from the SAC and does not overlap with, or occur adjacent to, the designated site. There is no land take within the SAC, no loss or fragmentation of woodland or other terrestrial habitats, and no direct disturbance of qualifying interests associated with the historical operation of the gravel pit. In addition, there are no surface water or	No. No source–pathway–receptor linkage has been identified between the Site and The Gearagh SAC. Accordingly, there is no potential for likely significant effects on the qualifying interests of the SAC, either alone or in combination with other plans or projects, and the Site can be screened out at Stage 1 Appropriate Assessment.

[11] Measured in a straight line between the Site and closest point of Natura 2000 site boundary

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				groundwater pathways connecting the Site to The Gearagh SAC, and the Site lies downstream of the SAC within the River Lee catchment. On this basis, no direct or indirect impacts on the freshwater or terrestrial qualifying interests, or on the conservation objectives of The Gearagh SAC, could have occurred.	
Special Protection Areas (SPAs)					
The Gearagh SPA [004109] c. 4.6 km south west	Teal (*Anas crecca*) [A052] Mallard *(Anas platyrhynchos*) [A053] Coot (*Fulica atra*) [A125] Wigeon (*Mareca penelope*) [A855] Wetland and Waterbirds [A999]	To maintain or restore the favourable conservation condition of habitats designated within The Gearagh SPA which is defined by a list of specific attributes and targets. Full details of the conservation objectives can be found at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004109.pdf	There are no surface water pathways connecting the Site to The Gearagh SPA. The SPA is located upstream of the confluence of the River Lee and the River Sullane, whereas the Site lies downstream within the Lee catchment. Groundwater flow beneath the gravel pit is localised and is not directly connected to The Gearagh SPA.	The Gearagh SPA is designated for wetland and waterbird species which may be sensitive to disturbance. The Site is located approximately 4.6 km from the SPA and does not overlap with, or occur adjacent to, the designated site. Given this separation distance, there is no potential for noise, visual disturbance or other forms of direct disturbance associated with the historical operation of the gravel pit to affect qualifying bird species within the SPA. There is no land take within the SPA, no loss or fragmentation of supporting	No. No source–pathway–receptor linkage has been identified between the Site and The Gearagh SPA. Given the separation distance of approximately 4.6 km and the absence of any disturbance, hydrological or ecological pathways, there is no potential for likely significant effects on the qualifying interests of the SPA, either alone or in combination with

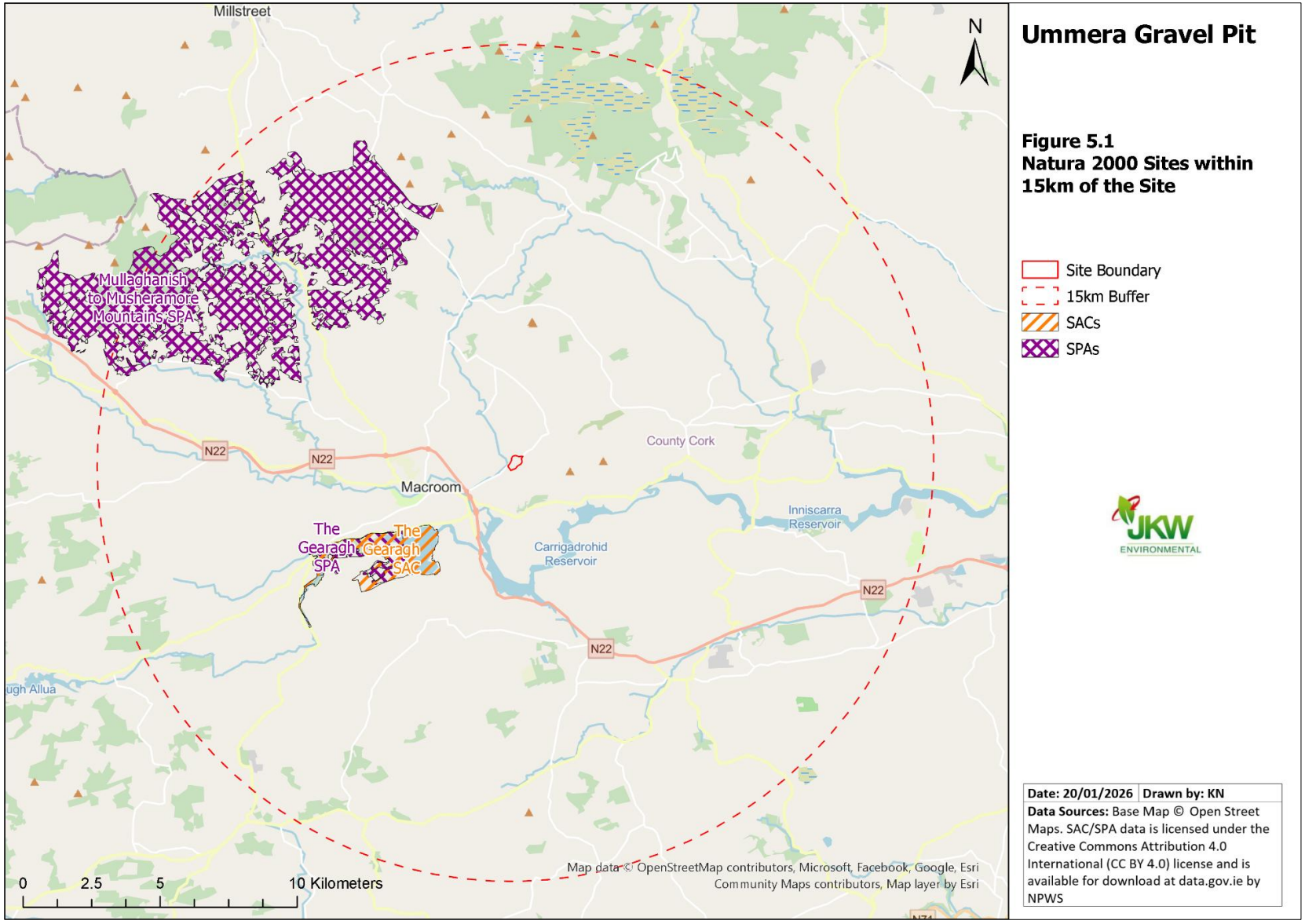
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				habitats, and no surface water or groundwater pathways connecting the Site to the SPA. On this basis, no direct or indirect impacts on the qualifying interests or conservation objectives of The Gearagh SPA could have occurred.	other plans or projects. The Site can therefore be screened out at Stage 1 Appropriate Assessment.
Mullaghanish to Musheramore Mountains SPA [004162] c. 6.9km north west	Hen Harrier (*Circus cyaneus*) [A082]	To maintain or restore the favourable conservation condition of habitats designated within Mullaghanish to Musheramore Mountains SPA which is defined by a list of specific attributes and targets. Full details of the conservation objectives can be found at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004162.pdf	There are no direct surface water, groundwater or terrestrial pathways connecting the Site to the Mullaghanish to Musheramore Mountains SPA. The SPA is located approximately 6.9 km north-west of the Site and is hydrologically and ecologically disconnected from the gravel pit. Groundwater flow beneath the Site is localised and does not connect to the SPA.	The Mullaghanish to Musheramore Mountains SPA is designated for Hen Harrier, which may be sensitive to disturbance and changes to supporting habitats. The Site is located approximately 6.9 km from the SPA and does not overlap with, or occur adjacent to, the designated site. Given this separation distance, there is no potential for noise, visual disturbance or other forms of disturbance associated with the historical operation of the gravel pit to affect Hen Harrier within the SPA. There is no land take within the SPA, no loss or fragmentation of supporting habitats, and no ecological or hydrological pathways linking the Site to	No. No source–pathway–receptor linkage has been identified between the Site and the Mullaghanish to Musheramore Mountains SPA. Given the separation distance and the absence of disturbance, hydrological or ecological pathways, there is no potential for likely significant effects on the qualifying interests of the SPA, either alone or in combination with other plans or projects. The Site can

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				the SPA. On this basis, no direct or indirect impacts on the qualifying interests or conservation objectives of the Mullaghanish to Musheramore Mountains SPA could have occurred.	therefore be screened out at Stage 1 Appropriate Assessment.

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On the basis of the information presented above, including the identification of European sites, the assessment of potential source-pathway-receptor linkages, and the site-specific screening outcomes set out in Table 5.1, it can be concluded that the proposed further development of Ummera Gravel Pit will not give rise to likely significant effects on any European site, either alone or in combination with other plans or projects. In all cases, the absence of a credible source-pathway-receptor linkage between the proposed development and any European site allows likely significant effects on the qualifying interests and conservation objectives of those sites to be excluded at Stage 1 Appropriate Assessment Screening. Accordingly, a Stage 2 Appropriate Assessment is not required.

5.2 Likely Cumulative Impact of the Site on European Sites, in-combination with other plans and projects

Article 6(3) of the Habitats Directive requires that the potential for likely significant effects on European sites be considered both individually and in combination with other plans or projects. Accordingly, this section considers whether the proposed further development of Ummera Gravel Pit could result in likely significant effects on any European site when considered in combination with other existing or reasonably foreseeable plans or projects.

The assessment of in-combination effects has been informed by the same source-pathway-receptor framework applied to the individual site screening presented in Section 5.1 and Table 5.1. In-combination effects can only arise where two or more plans or projects act together through a shared pathway to affect the qualifying interests and conservation objectives of the same European site.

As outlined in Section 5.1, no credible source-pathway-receptor linkage has been identified between the proposed development and any European site. The Site is not directly connected to any European site by surface water or groundwater pathways, is located downstream of the Gearagh SAC and Gearagh SPA within the River Lee catchment, and there are no pathways for habitat loss, habitat fragmentation, disturbance or other indirect effects on the qualifying interests of any European site.

In the absence of any source-pathway-receptor linkage between the proposed development and any European site, there is no mechanism by which cumulative effects could occur when the proposed development is considered in combination with other plans or projects. Where no pathway exists for an individual effect to occur, there can be no in-combination effect.

It can therefore be concluded that the proposed further development of Ummera Gravel Pit will not give rise to likely significant effects on any European site, either alone or in combination with other plans or projects. Accordingly, the proposed development can be screened out for Appropriate Assessment at Stage 1.

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6. Article 6(3) Appropriate Assessment Screening Statement and Conclusions

The findings of this Appropriate Assessment Screening are presented in accordance with the European Commission's Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2021), Managing Natura 2000 Sites: the Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018), and the Department of the Environment's Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DoEHLG, 2010).

6.1 Data Collected to Carry Out Assessment

This screening assessment was informed by a review of National Parks and Wildlife Service site synopses and published conservation objectives for the relevant European sites. Consideration was also given to the findings of the Environmental Impact Assessment Report (EIAR), including information on baseline ecology, hydrology and the receiving environment. Ordnance Survey mapping and aerial photography were reviewed to assess the spatial relationship between the Site, surrounding land uses, hydrological features and European sites.

This information was used to inform the identification and assessment of potential source–pathway–receptor linkages arising from the operation of the gravel pit, in accordance with best scientific knowledge and the precautionary principle.

6.2 Concluding Statement

This Appropriate Assessment Screening has examined, in view of best scientific knowledge and applying the precautionary principle, whether the operation of the Ummera Gravel Pit, either alone or in combination with other plans or projects, is likely to have a significant effect on any European site.

European sites identified within the wider zone of influence of the Site include The Gearagh SAC, The Gearagh SPA, and the Mullaghanish to Musheramore Mountains SPA. The screening assessment has demonstrated that there are no credible hydrological, ecological or disturbance pathways connecting the Site to any of these European sites. The Site is located downstream of The Gearagh SAC and SPA within the River Lee catchment, at a substantial distance from all European sites, and does not overlap with or occur adjacent to any designated area. No land take, habitat loss, habitat fragmentation or disturbance of qualifying interests has been identified in relation to the further operation of the gravel pit.

In the absence of any functional source–pathway–receptor linkages, and having regard to the nature and scale of the further operation of the gravel pit and the conservation objectives of the relevant European sites, it can be concluded, on the basis of objective scientific information, that the development will not give rise to, and is not likely to give rise to, significant effects on any Natura 2000 site, either individually or in combination with other plans or projects.

Accordingly, it can be concluded beyond reasonable scientific doubt that the further operation of the Ummera Gravel Pit will not adversely affect the integrity of any European site, and that a Stage 2 Appropriate Assessment is not required under Article 6(3) of the Habitats Directive.

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