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N52 Ardee Bypass

EIA SCREENING REPORT | September 2021

N52A-ROD-EGN-SW_AE-RP-EN-40001

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N52 Ardee Bypass

EIA Screening Report

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1. INTRODUCTION

1.1 Project Background

The N52 National Secondary route is approximately 174 km in length, running from the junction of the N2 in Ardee, through the counties of Louth, Meath, Westmeath, Offaly and Tipperary to its termination at Junction 26 on the M7 at Nenagh. The N52 is a major northeast – southwest strategic link, providing a direct route from the north east of the country and beyond to Belfast, to the south west of the country. The N52 also provides a direct connection between the European TEN-T road network, namely the M1, N2, N3, N4 (and N5 via the N4), M6 and M7. The N52 directly links the regional centres of Dundalk (via the N33 and M1) and Athlone (via the M6), whilst providing improved accessibility to Limerick City (via the M7).

The N52 commences in the centre of Ardee, resulting in high volumes of traffic in the town centre. The need for an N52 bypass of the town is outlined in national, regional and local policy and has been progressed by LCC over a number of years. In 1999, LCC and the National Roads Authority (NRA; now TII) first identified the need for the project. In 2001, approval for the project was received under the Part X process. I n 2005, an amendment to the alignment of the then proposed bypass resulted in submission of a revised planning application under the Part 8 process. The Part 8 application was approved by LCC in July 2005, with the associated Compulsory Purchase Order (CPO) confirmed by An Bord Pleanála in September 2006.

Due to funding constraints associated with the economic recession, the project was not able to progress to construction. Following the reactivation of the scheme in 2018, technical advisors carried out the detailed design of the project and fencing was erected in advance of the main construction contract. At this point, a number of concerns regarding the project design were raised by members of the local community, primarily in relation to the creation of two cul-de-sacs and potential impacts arising in terms of access.

Accordingly, LCC decided to undertake a detailed review of the project, and establish whether any design changes were required. ROD were appointed to undertake a detailed review of the scheme and develop an alternative design where necessary. This process has resulted in changes to the proposed junction arrangements. This revised proposal for the N52 Ardee Bypass is the subject of this Environmental Impact Assessment (EIA) Screening Report.

1.2 Statement of Purpose

The purpose of this EIA Screening Report is to inform the Competent Authority as to whether the proposed N52 Ardee Bypass, hereafter referred to as the 'proposed development', is subject to the requirements of the EIA Directive (as amended) and, therefore, whether an Environmental Impact Assessment Report (EIAR) is required for same.

1.3 Terms of Reference

Roughan & O'Donovan Consulting Engineers (ROD) have been engaged by Louth County Council (LCC) to undertake the EIA Screening for the proposed development, in accordance with the relevant legislative provisions and with reference to the relevant legislation and guidance documents, as outlined in the following sections.

1.4 Disposition

The contents of this EIA Screening Report are set out as follows:

1. Section 1 provides an introduction to the EIA Screening Process including an outline of the relevant legislative requirements. The screening assessment for Mandatory EIA is carried out in accordance with Schedule 5 of the Planning and Development Regulations 2001 (as amended) and S. 50 of the Roads Act, 1993, as amended by S. 9(1)(d)(i) of the Roads Act, 2007 (as amended).
2. Section 2 provides a description of the proposed development including the location and physical characteristics of the proposed development in accordance with Schedule 7A of the Planning and Development Regulations 2001 (as amended).
3. Section 3 outlines the policy context and need for the proposed development in light of European, national, regional and local planning policy.
4. Section 4 provides a Description of the Receiving Environment under the headings examined under EIA, with particular regard to the environmental sensitivity of geographical areas likely to be affected in accordance with Schedule 7A of the Planning and Development Regulations 2001 (as amended).
5. Section 5 outlines standard measures which will be implemented as part of the proposed development to ensure that impacts are minimised where possible.
6. Section 6 comprises the sub-threshold EIA screening assessment under the EIA topics. The assessment aims to identify any likely significant effects, to the extent of any information available on such effects, in accordance with Schedule 7A of the Planning and Development Regulations 2001 (as amended). Cumulative assessment with other proposed developments within the area are also assessed for likely significant impacts.
7. Section 7 provides the Screening conclusion and recommendation for the attention of the Competent Authority.

1.5 Legislation

Directive 2011/92/EU, as amended by Directive 2014/52/EU (the EIA Directive), requires that all public and private projects that are likely to have significant effects on the environment shall be subject to an Environmental Impact Assessment (EIA) prior to the granting of development consent by the Competent Authority. The EIA Directive has been transposed into Irish law through the Planning and Development Acts 2000 – 2019 and the Planning and Development Regulations 2001 (as amended).

Annex I of the EIA Directive sets out the thresholds for mandatory EIA. By default, EIA is a statutory requirement for projects of a type listed in Annex I. For projects of a type listed in Annex II of the EIA Directive ('sub-threshold projects'), a Sub-threshold EIA Screening Assessment is required. As defined by the European Commission (2017, p.10), the EIA Screening process *"… ascertains whether the Project's effects on the environment are expected to be significant, i.e. the Project is 'Screened' to determine whether an EIA is necessary"*.

Annexes I and II of the Directive have been transposed in Irish law through Parts 1 and 2 (respectively) of Schedule 5 of the Planning and Development Regulations 2001 (as amended).

1.6 Screening for Mandatory EIA

This first part of the EIA Screening exercise determines whether EIA is a statutory requirement for the proposed development under the discretionary provisions of the

Planning and Development Act 2000 (as amended), Schedule 5 of the Planning and Development Regulations 2001 (as amended) and in the case of road projects, Section 50 of the Roads Act 1993 (as amended) and Article 8 of the Roads Regulations 1994.

A review of Parts 1 and 2 of Schedule 5 of the Planning and Development Regulations 2001 (as amended) has determined that the proposed development does not screen in for mandatory or sub-threshold EIA on the basis of any of the thresholds set out therein. Furthermore, Table 1.1, below, presents the findings of the screening assessment in respect of the Roads Act 1993 and The Roads (Amendment) Regulations 2019.

Table 1.1 Screening Matrix for Mandatory EIA for Road Projects

Mandatory Threshold	Regulatory Reference	Assessment
Construction of a Motorway	S. 50(1)(a) of the Roads Act, 1993, as amended by S. 9(1)(d)(i) of the Roads Act, 2007 (as amended)	The proposed development is **not** a Motorway. **Mandatory threshold not reached.**
Construction of a Busway	S. 50(1)(a) of the Roads Act, 1993, as amended by S. 9(1)(d)(i) of the Roads Act, 2007 (as amended)	The proposed development is **not** a Busway. **Mandatory threshold not reached.**
Construction of a Service Area	S. 50(1)(a) of the Roads Act, 1993, as amended by S. 9(1)(d)(i) of the Roads Act, 2007 (as amended)	The proposed development is **not** a Service Area and does **not** incorporate a Service Area. **Mandatory threshold not reached.**
Any prescribed type of proposed road development consisting of the construction of a proposed public road or the improvement of an existing public road, namely: • The construction of a new road of four or more lanes, or the realignment or widening of an existing road so as to provide four or more lanes, where such new, realigned or widened road would be eight kilometres or more in length in a rural area, or 500 metres or more in length in an urban area • The construction of a new bridge or tunnel which would be 100 metres or more in length.	Article 8 of the Roads Regulations, 1994 (prescribed type of road development for the purposes of S. 50(1)(a)(iii) (now S.50(1)(a)(iv)) of Section 50 of the Act	**Neither** the existing road **nor** the proposed realigned road include four or more lanes. **Mandatory threshold not reached.** The proposed development does **not** involve the construction of a bridge or a tunnel of more than 100m in length. **Mandatory threshold not reached.**

In conclusion, it has been determined that the proposed development is not of a class which exceeds a threshold specified in the Planning and Development Regulations 2001 (as amended), the Roads Act 1993 or the Roads (Amendment) Regulations 2019, and therefore does not trigger a mandatory EIA. It follows that the proposed development is a sub-threshold development.

1.7 Methodology for Sub-threshold EIA Screening Assessment

In the previous section, it was established that the proposed development is sub-threshold for EIA. In such cases, it is the decision of the Competent Authority to determine whether completion of an EIA is required on the basis of whether the development is likely to result in significant environmental effects.

Schedule 7A of the Planning and Development Regulations 2001 (as amended) stipulates the information which the Applicant / Developer is required to provide regarding the proposed development to inform the sub-threshold EIA Screening Assessment (Table 1.2). In developing Chapters 2 and 4 of this report, which describe the proposed development and its receiving environment, respectively, efforts have been made to ensure all of the information listed in Schedule 7A has been disclosed and considered.

Item four of Schedule 7A states that "*The compilation of the information at paragraphs 1 to 3 shall take into account, where relevant, the criteria set out in Schedule 7 [of the Planning and Development Regulations 2001 – 2020].*" Therefore, the criteria set out within Schedule 7 of the Planning and Development Regulations 2001 (as amended) (Table 1.3) have also been considered in this EIA Screening Report where appropriate.

This EIA Screening Report will provide the Competent Authority with the information required to form an opinion as to whether the proposed development is likely to have significant effects on the environment and, as such, whether an EIA should be completed in respect thereof. It should be noted that EIA should only be completed for proposed developments which are considered likely to result in significant environmental effects, or for which insufficient information is available in order to allow such a conclusion to be reached:

> *"Screening should ensure that an EIA is carried out only for those Projects for which it is thought that a significant impact on the environment is possible, thereby ensuring a more efficient use of both public and private resources."* (European Commission, 2017; p. 23)

A separate Appropriate Assessment Screening Report has been prepared by ROD on behalf of LCC for the proposed development. This EIA Screening Report draws on the findings of same.

Table 1.2 Information to be provided by the Applicant or Developer for the purposes of screening sub-threshold development for EIA (as per Schedule 7A of the Planning and Development Regulations 2001 (as amended))

Schedule 7A Criteria:	This information is provided by the Applicant in:
1. A description of the proposed development, including in particular— (a) a description of the physical characteristics of the whole proposed development and, where relevant, of demolition works, and (b) a description of the location of the proposed development, with particular regard to the environmental sensitivity of geographical areas likely to be affected.	Section 2 of this EIA Screening Report Section 2 and Section 4 of this EIA Screening Report
2. A description of the aspects of the environment likely to be significantly affected by the proposed development.	Section 6 of this EIA Screening Report
3. A description of any likely significant effects, to the extent of the information available on such effects, of the proposed development on the environment resulting from— (a) the expected residues and emissions and the production of waste, where relevant, and (b) the use of natural resources, in particular soil, land, water and biodiversity.	Section 6 of this EIA Screening Report
4. The compilation of the information at paragraphs 1 to 3 shall take into account, where relevant, the criteria set out in Schedule 7 [of the Planning and Development Regulations 2001 – 2020].	Sections 2, 4, 5 and 6 of this EIA Screening Report

Table 1.3 Criteria for determining whether a sub-threshold development should be subject to an EIA (as per Schedule 7 of the Planning and Development Regulations 2001 (as amended))

1. Characteristics of the proposed development The characteristics of the proposed development, in particular – (a) The size and design of the whole of the proposed development, (b) Cumulation with other existing development and / or development the subject of a consent for proposed development for the purposes of Section 172 (1A) (b) of the Act and / or development the subject of any development consent for the purposes of the Environmental Impact Assessment Directive by or under any other enactment, (c) The nature of any associated demolition works. (d) The use of natural resources, in particular land, soil, water and biodiversity, (e) The production of waste. (f) Pollution and nuisances, (g) The risk of major accidents, and / or disasters which are relevant to the project concerned, including those cause by climate change, in accordance with scientific knowledge, and (h) The risks to human health (for example, due to water contamination or air pollution).
2. Location of proposed development The environmental sensitivity of geographical areas likely to be affected by the proposed development, with particular regard to – 1. The existing and approved land use, 2. The relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground,

3. The absorption capacity of the natural environment, paying particular attention to the following areas:
   i. Wetlands, riparian areas, river mouths;
   ii. Coastal zones and the marine environment;
   iii. Mountain and forest areas;
   iv. Nature reserves and parks;
   v. Areas classified or protected under legislation, including Natura 2000 areas designated pursuant to the Habitats Directive and the Birds Directive and;
   vi. Areas in which there has already been a failure to meet the environmental quality standards laid down in legislation of the European Union and relevant to the project, or in which it is considered that there is such a failure;
   vii. Densely populated areas;
   viii. Landscapes and sites of historical, cultural or archaeological significance.

3. Types and characteristics of potential impacts

The likely significant effects on the environment of proposed development in relation to criteria set out under paragraphs 1 and 2, with regard to the impact of the project on the factors specified in paragraph (b) (i) (I) to (V) of the definition of 'environmental impact assessment report' in Section 171A of the Act, taking into account –

(a) The magnitude and spatial extent of the impact (for example, geographical area and size of the population likely to be affected),

(b) The nature of the impact,

(c) The transboundary nature of the impact,

(d) The intensity and complexity of the impact,

(e) The probability of the impact,

(f) The expected onset, duration, frequency and reversibility of the impact,

(g) The cumulation of the impact with the impact of other existing and / or development the subject of a consent for proposed development for the purposes of section 172 (1A) (b) of the Act and / or development the subject of any development consent for the purposes of the Environmental Impact Assessment Directive by or under any other enactment, and

(h) The possibility of effectively reducing the impact.

1.8 Description of Effects

Table 1.4 presents the definitions of the types of environmental effects put forth in the *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, 2017). These definitions are used as the basis for the description of environmental effects identified in this report. The consideration of effects also takes into account direct, indirect, secondary and cumulative effects, as appropriate. Where other definitions of environmental effects are used under specific disciplines, these will be stated in the assessment methodology.

1.9 Guidelines

This Sub-threshold EIA Screening Assessment has been completed in accordance with the relevant legislative provisions and with reference to the relevant guidance documents. Particular reference has been given to the following:

- Schedules 7 and 7A of the Planning and Development Regulations 2001 (as amended);
- *Environmental Impact Assessment (EIA): Guidance for Consent Authorities Regarding Sub-Threshold Development* (DoEHLG), 2003);
- *Environmental Impact Assessment of Projects: Guidance on Screening* (European Commission, 2017);
- *Guidelines for Planning Authorities and An Bord Pleanála on Carrying Out Environmental Impact Assessment* (DoHPLG, 2018); and
- *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (Environmental Protection Agency (EPA), 2017).

Table 1.4 Definitions of effect types (as per EPA, 2017)

Quality	
Positive	A change which improves the quality of the environment
Neutral	No effects, or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error
Negative	A change which reduces the quality of the environment
Significance	
Imperceptible	An effect capable of measurement but without significant consequences
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends
Significant	An effect which, by its character, magnitude, duration or intensity significantly alters a sensitive aspect of the environment
Very significant	An effect which, by its character, magnitude, duration or intensity significant alters most of a sensitive aspect of the environment
Profound	An effect which obliterates sensitive characteristics
Extent and Context	
Extent	Describe the size of the area, the number of sites, and the proportion of a population affected by an effect
Context	Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Probability	
Likely	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented
Unlikely	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented
Duration and Frequency	
Momentary	Effects lasting from seconds to minutes
Brief	Effects lasting less than a day
Temporary	Effects lasting less than a year
Short-term	Effects lasting one to seven years
Medium-term	Effects lasting seven to fifteen years
Long-term	Effects lasting fifteen to sixty years
Permanent	Effects lasting over sixty years
Reversible	Effects that can be undone, for example through remediation or restoration
Frequency	Describe how often the effect will occur. (once, rarely, occasionally, frequently, constantly; or hourly, daily, weekly, monthly, annually)

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Location of Proposed Development

The proposed development is situated immediately west of the town of Ardee in Co. Louth. It traverses 6 townlands: Mandistown, Ballygowan, Boharnamoe, Townparks, Mullanstown and Glebe. Figure 2.1 below shows the location of the proposed road development.

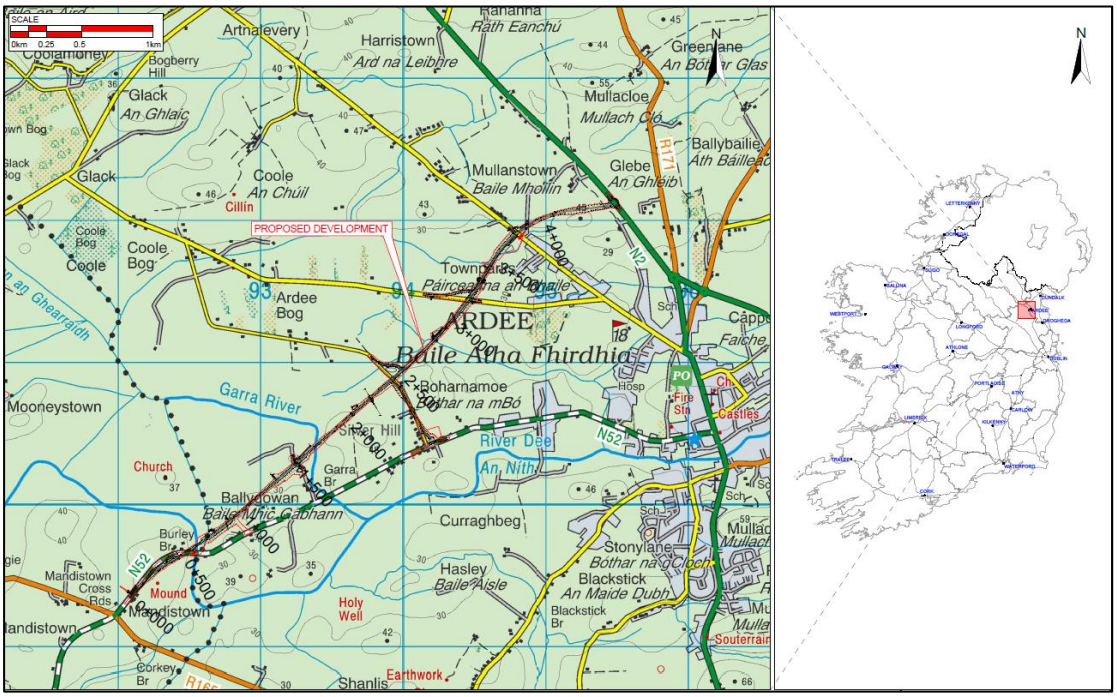


Figure 2.1 Location of the Proposed Development

2.2 Project Description

The proposed development comprises a bypass of Ardee town, Co. Louth. This bypass will be achieved through the realignment of approximately 4.5km of the existing N52 to the west of Ardee. The proposed development will comprise:

- Construction of a 4.5km fully offline road commencing north of the Mandistown crossroads to meet the N2 650m north of the roundabout with the N2, N33 and R171.
- The provision of 4 no. junctions on the Ardee Bypass:
  - A staggered T junction on the Silverhill Road, providing access to the Silverhill Road east and west of the proposed development;
  - A staggered T junction on the Townparks Road, providing access to the Townparks Road east and west of the proposed development;
  - A T-junction on the Mullanstown Road to the north providing access to the proposed development. The proposed development will create a cul-de-sac on Mullanstown Road by closing access on the southern (i.e. Ardee) side of the alignment; and
  - A multi-lane roundabout on the N2;
- Construction of 2 no. bridge structures spanning over River Dee and River Garra, both with a span of approximately 30m;
- Construction of pedestrian and cyclist facilities, as illustrated in Figure 2.4;

- Utilities and services diversion works and the connection of road / land drainage outfalls to the new SuDS drainage network system;
- Associated earthworks including excavation of peat and unacceptable material, excavation and processing of rock and other material, provision of material deposition areas, and deposition and recovery of unacceptable material for use in the works;
- Erection of temporary site compounds;
- Drainage works;
- Completion of landscaping works;
- Erection of safety barrier, public lighting and fencing;
- Completion of all accommodation works; and
- Implementation of environmental measures and all other ancillary works.

Drawings of the proposed development are provided in Appendix A in line with the above description.

2.2.1 Drainage

The proposed road design will include road drainage based on Sustainable Drainage Systems (SuDS) including attenuation for a 100-year flood event and 20% climate change and hydrocarbon interceptors prior to reaching the existing surface water drainage network and eventually the River Dee and River Garra. This will prevent impacts on water quality, both in terms of sedimentation, pollutants and the sudden increase in flows following a rainfall event, as a result of the proposed development. The drainage system developed for the proposed development will provide a suitable drainage system to service the road and to ensure that the drainage system within adjacent lands is not adversely impacted.

2.2.2 Bridge Structures

Two bridge structures will be provided across the River Dee and River Garra. The River Dee bridge will be provided just north of the existing N52 River Dee crossing, at a greenfield location. The crossing of the River Garra will be approximately 350m north of the existing Garra Bridge in a greenfield location. It is proposed to cross both rivers by means of clear span bridges with approximate spans of 30m. The bridge abutments will be designed and set back a minimum of 2.0m from the top of the natural riverbank to reduce the impacts of excavations directly adjacent to watercourses. The remainder of the watercourses will be crossed via culverts or diverted to an adjacent watercourse.

2.2.3 Pedestrian and Cyclist Provisions

Pedestrian and cycle facilities are a key element of the N52 Ardee Bypass development. This will include a shared cycle and pedestrian link from the southern tie-in to the existing N52 where this is stopped up at Burley Bridge which will facilitate pedestrian and cycle access to, and along the existing N52. On the proposed N52 Ardee Bypass pedestrian and cycle facilities are provided along the realigned section of the Silverhill Link Road creating a second link to the existing N52. A footway / cycleway of 3.0m in width will also be provided on the eastern side of the proposed bypass, which will connect from the Silverhill Road to the Townparks Road and Mullanstown Road to the north. Crossing points on the bypass will be provided at these locations to connect to the existing road network where these are intersected by the scheme.

The cycle way provisions will be in accordance with TII Publication Standard DN-GEO-03036. Figure 2.2 below illustrates a cross section of the proposed cycleway alongside the road carriageway (See Figure N52A-RODA-VES-SW_AE-DR-EN-300013 in

Appendix A for full drawing). The cycleway will comprise a 3.0m wide shared surface which will be parallel to the proposed road, segregated from the carriageway by a kerb and 2.0m separation zone.

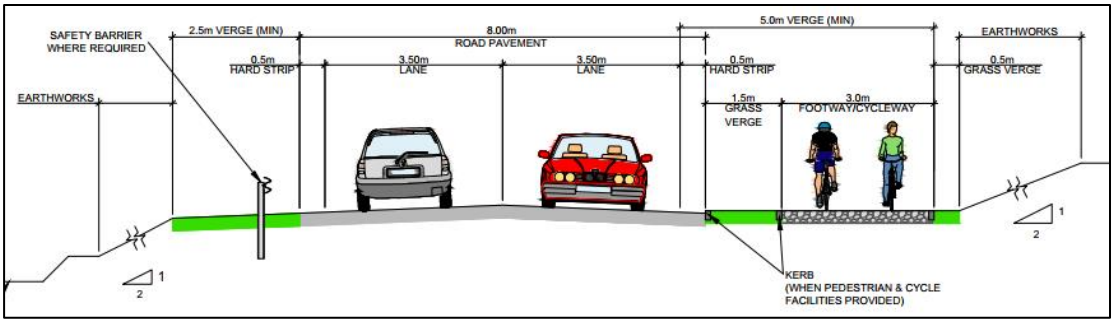


Figure 2.2 Typical shared pedestrian and cyclist provision

Pedestrian and cycle crossings of the N52 Ardee Bypass and the side roads that are crossed by the proposed development will be designed in accordance with TII Publication Standards DN-GEO-03060, as shown below in Figure 2.3.

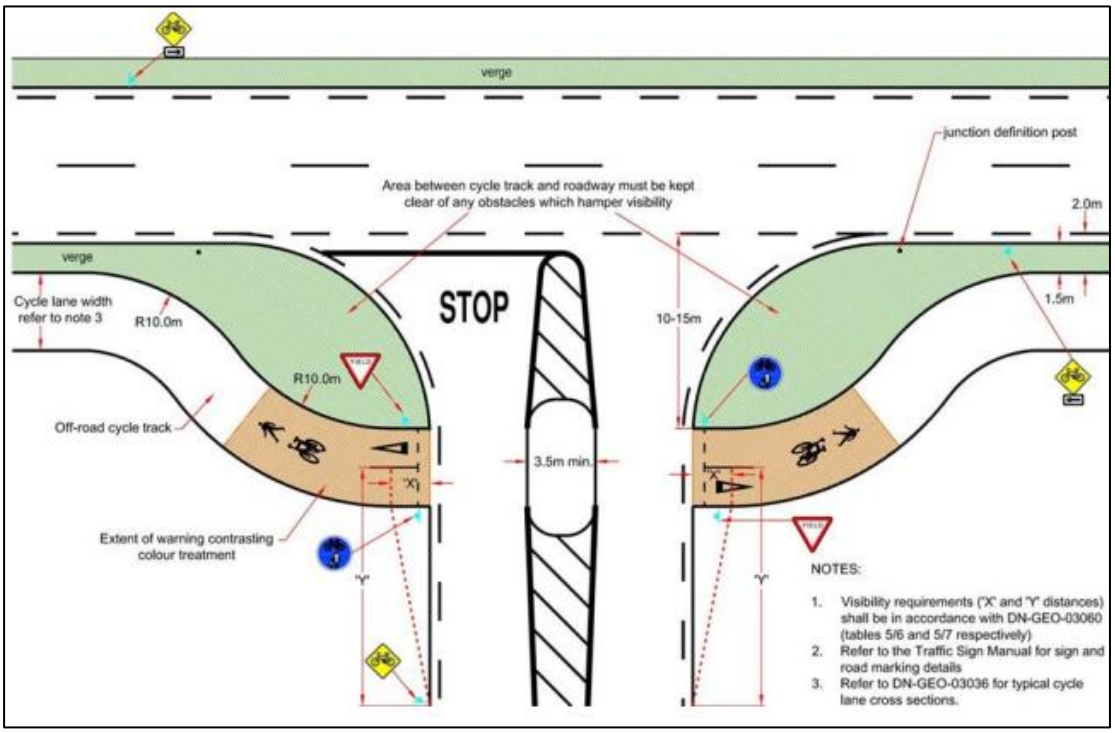


Figure 2.3 TII Publication Standards DN-GEO-03060 Figure 5.9

Figure 2.4 (see Drawing N52A ROD VES SW_AE DR EN 300014 in Appendix A) illustrates the connectivity within the community which will be enhanced through the incorporation of cycle and pedestrian facilities as part of the proposed development, introducing pedestrian and cycle facilities where none currently exist. Links between the existing N52 and the proposed bypass will be provided at two locations. The first being at the western tie in of the proposed development, where pedestrian and cyclist connectivity will be provided along the stopped up section of the existing N52 from Ch.0+000 to Ch.0+510 at Burley Bridge. The second will be provided along the retained Silverhill Side Road realignment at approx. Ch.2+400. The link at Silverhill Road can be extended along the line of the existing N52 providing connectivity to Ardee Town Centre.

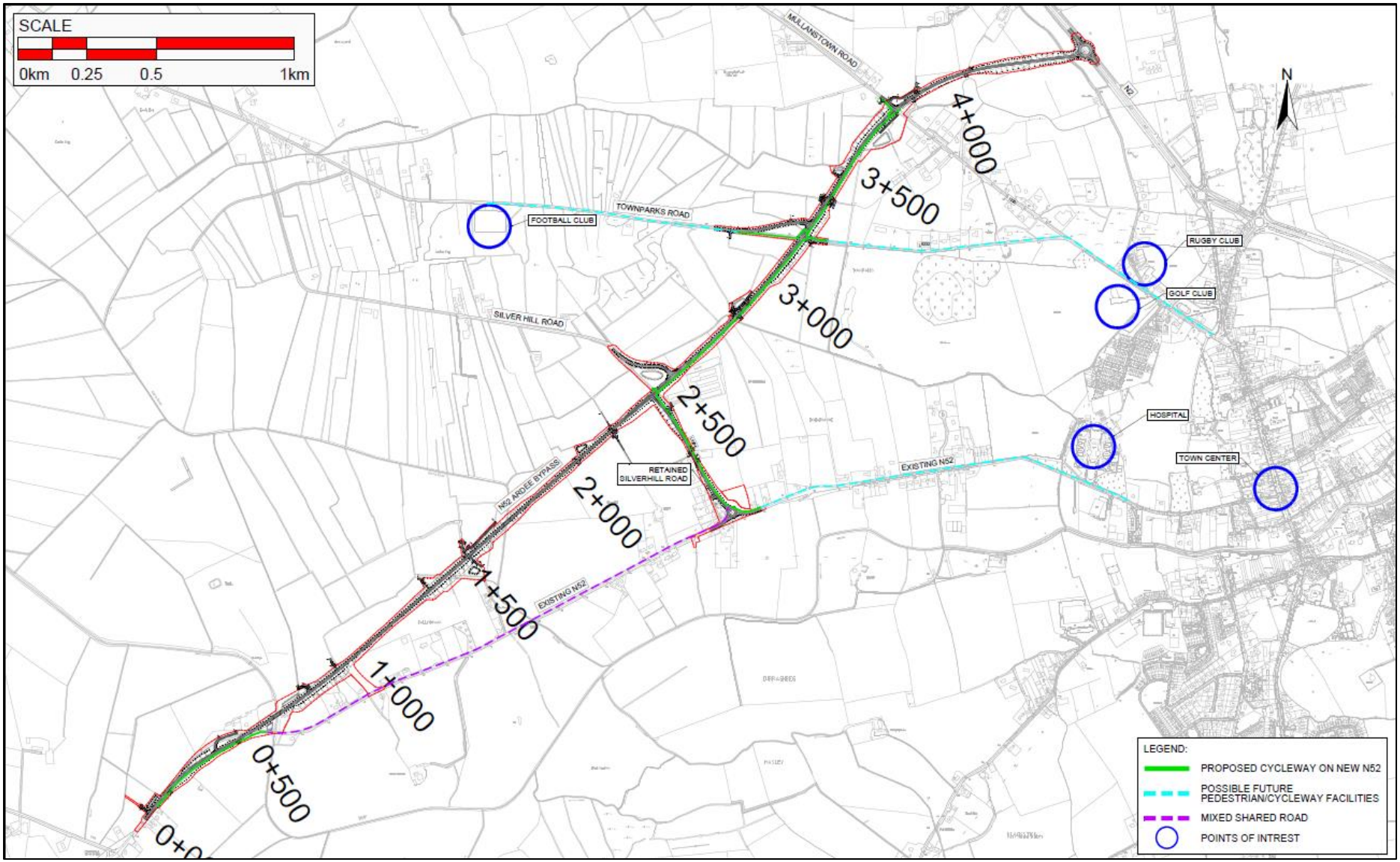


Figure 2.4 Overview of proposed cycle way provisions (see Appendix A for drawings)

2.3 Characteristics of the Proposed Development

2.3.1 Size and Design of the Whole Development

The proposed development will comprise 4.5km offline route, commencing north of the Mandistown crossroads. The alignment will begin by running to the south of the existing N52 before crossing the existing N52, removing a sub-standard curve and then crossing the River Dee, where the alignment will be accommodated via a new bridge to the north of the existing River Dee Bridge. The existing N52 will be stopped up at this point, where the alignment crosses the existing N52. Access will be maintained from the proposed development to the existing N52 at this location for cyclists and a cycle lane will be provided from the western extent of the development to Burley bridge on the existing N52. The alignment runs in a north east direction where it crosses Silverhill Road. A staggered T-junction will be provided at this intersection, providing access to both eastern and western arms of the intersected Silverhill Road, with a ghost island facility providing a refuge for right turning traffic. A cycleway will be provided along the eastern arm of the Silverhill Road to provide connection between the existing N52 and the proposed bypass and a new single lane roundabout will be provided on the existing N52 where it meets Silverhill Road. When it meets the proposed bypass, this cycleway will turn right / north-east, continuing along the southern side of the bypass between the Silverhill Road Junction to the Mullanstown Road Junction. Uncontrolled access points will be provided at the junctions of Silverhill, Townparks Road and Mullanstown Road for pedestrians and cyclists accessing the northern sections of these roads. Refuge islands will be provided to allow pedestrians and cyclists to cross one lane of traffic at a time.

A staggered junction will be provided for the Townparks Road to the east and west of the alignment. T-junctions with ghost island right turn lanes will be provided for both junctions. Where the alignment crosses Mullanstown Road, a T-junction will be provided to grant access to the north western direction, while access along the southern section of Mullanstown Road will not be provided and this section of road will form a cul-de-sac with no vehicular connection to the proposed development. Pedestrian and cyclist access will be maintained to the southern section of Mullanstown Road from the proposed bypass.

The alignment curves further east to meet the existing N2 650m north of the roundabout with N2, N33 and R171.

2.3.2 Overview of Construction Works

It is likely that the construction of the proposed road development will be progressed as a single construction contract with the construction phase lasting approximately 24 months. It is expected that the contract type for this will be an employer designed contract using the Capital Works Management Framework public works form of contract. The construction sequence will generally be as follows:

1. Site clearance;
2. Fencing,
3. Earthworks, including pre-earthworks drainage and temporary settlement ponds;
4. Construction of bridge foundations and superstructure;
5. Drainage works, including service diversions;
6. Pavement construction;
7. Accommodation works;
8. Installation of safety barriers, signs and environmental barriers;

9. Landscaping.

2.3.3 Alignment

The design for the N52 Ardee Bypass is in accordance with TII Publication Standards, in particular DN-GEO-03031 and DN-GEO-03060. The horizontal alignment utilises 2880m radii where possible to provide for overtaking where possible, before curving on a 720m desirable minimum radius to connect to the existing N2 north of Ardee.

The vertical alignment follows the existing topography, utilising low longitudinal gradients in conjunction with overtaking sight distance crest curves of 400K crest, in conjunction with the use of a number of desirable minimum crest curves of 100K.

The alignment is generally on a low height embankment typically of approximately 2m height, with localised areas increasing to 4m in height. The cuttings are small, with the exception of the cutting between the Mullanstown Road and the connection to the existing N2, where depths reach a maximum depth of approximately 6m.

2.3.4 In-stream Works

There are two bridges to be built as part of the proposed development, over the River Garra and the River Dee. These bridges will be clear span to avoid instream works.

There are a number of minor watercourses and field drains that are intercepted by the proposed development and these are typically piped under the road, or diverted to an adjacent stream that is piped under the road in pipe culverts. These pipe culverts will require in-stream works.

2.3.5 Materials

The majority of the proposed development lies over soils that are competent for building embankments on and with high reusability where excavated in cuttings. The proposed development also traverses lands which are subject to flooding, resulting in the deposition of soft silt strata. These soft silt layers do not possess the adequate strength and compressibility characteristics on which to construct a road and typically require to be excavated to firm strata and filled back to ground level to provide a firm foundation for the road construction. To minimise the volume of unacceptable material to be excavated, where possible the sub-strata will be improved by surcharging the existing ground to compress the sub-soils, eliminating the requirement to excavate these materials, thus minimising the volume of unsuitable material requiring disposal and the volume of materials requiring importation.

Earthworks materials that are being excavated are to be processed, where possible, to render them suitable for re-use in the road embankment or bunds to minimise the importation requirement, with a material deposition area identified that will be landscaped within the land take to accommodate materials that cannot be re-used within the road construction or environmental bunds. A material deposition area is envisaged at RHS at approximate chainage 3+725. It will receive all of approximately 4,450m^3 of peat excavated throughout the scheme, in addition to other non-processed excavated soft soil.

Depending on the final volume of the deposition area, a minor quantity of surplus soil may be deposited off-site in a suitably licensed facility or potentially reused on nearby projects. The overall earthworks balance is indicated in Table 2.1 below.

Table 2.1 Estimated earthworks quantities

Cumulative Cut	Cumulative Fill	Balance
185,000m³	227,500m³	42,500 m³ import requirement

The total area of land take associated with the proposed development is 275,500 m^2.

2.3.6 Traffic

A Local Area Model (LAM) was developed to assess the traffic impacts as a result of the project. Surveys undertaken to inform the 2018 baseline scenario included traffic monitoring units (TMUs), automatic traffic counts (ATCs), junction turning counts (JTCs). This data was supplemented by Automatic Number Plate Recognition (ANPR) surveys which provided detail on the origin and destination of traffic within the study area. Using the Transport Infrastructure Ireland (TII) National Traffic Model (NTM) as a base, the N52 LAM was developed for the study area.

The development of traffic growth forecasts for the Opening Year and Design Year N52 LAMs is based on the methodology set out in TII PAG Unit 5.3 – Travel Demand Forecasting (May 2019). This PAG unit sets out the criteria for using the zonal growth rates forecasting methodology which is used for forecasting traffic growth when using an Assignment Model.

2.3.7 Site Compounds

Site Compounds will be required during construction to ensure enough room is afforded for construction. The compounds may include offices, material storage areas, material processing areas, plant storage and parking for site and staff vehicles. These sites are proposed to remain in place for the duration of the contract but may be scaled up or down during particular activities on site. A site compound location has been identified at the Silverhill Road. This provides access from the existing National Road network for the early stages of construction, whilst also facilitating access to the proposed development via the Silverhill Road.

2.3.8 Land Acquisition

The total area of land take associated with the proposed development is 275,500m^2. The majority of the land required was subject to a Compulsory Purchase Order (CPO) as part of the planning application granted in 2006. Therefore, the majority of the lands required for the proposed development are already in the ownership of Louth County Council.

Due to changes in the design of the proposed development since the previous application, small areas of additional land are now required under a further CPO. The total area of additional land required for the proposed development is 25,740m^2.

2.3.9 Demolition

There is no demolition required as part of the construction of the proposed development.

3. NEED FOR THE PROPOSED DEVELOPMENT

The traffic volumes currently experienced cause significant congestion in the centre of Ardee. This leads to a reduction in operational capacity of the N2, reduced operating speeds, increased journey times and reduced journey time reliability.

The sub-standard nature of the N52 within the study area is highlighted as being deficient, with the cross-section below that of a Type 3 Single Carriageway. This reduced cross-section, with the current traffic volumes already impacts on the average journey times and this is expected to deteriorate further as traffic volumes increase.

The sub-standard nature of the N52 is further highlighted in the accident statistics, which show that the collision rate for this section of the N52 is 0.392 collisions per million vehicle kilometres, which is approximately 84% higher than the national average. This is also reflected in the TII collision rates, which highlights that most sections of the N52 have had a collision rate of twice above average and that the N2 through the centre of Ardee is consistently ranked as twice above average collision rate.

During the 9-year period between 2008 to 2016, there have been 37 collisions, which has resulted in 1 fatality, 5 serious injuries and 44 minor injuries. 37.8% of these collisions have involved vulnerable road users, with the fatality also the result of a collision with a pedestrian.

The need for the proposed development is consistent with the objectives of a number of European, national, regional and local planning and development policies. The review of European, national, regional and local planning policy documents presented in the following sections will highlight the need to improve this section of the N52 in order improve accessibility and connectivity to the north-west, improve road safety and to promote sustainable economic development in the region.

European Policy Context

- Trans-European Transport Network (TEN-T)
- EU Cycling Strategy (2017)

National Policy Context

- National Planning Framework to 2040
- National Development Plan 2018 – 2027
- Smarter Travel – A Sustainable Transport Future
- Investing in Our Transport Future – Strategic Investment Framework for Land Transport (2015)
- Road Safety Authority Road Safety Strategy 2013 – 2020
- National Secondary Roads Needs Study – East (2011)
- Climate Action Plan 2019

Regional Policy Context

- Eastern & Midland Regional Spatial and Economic Strategy 2019 – 2031

Local Policy Context

- Louth County Development Plan 2015 – 2021
- Ardee Local Area Plan 2010 – 2016

3.1 European Policy Context

3.1.1 Trans-European Transport Network (TEN-T)

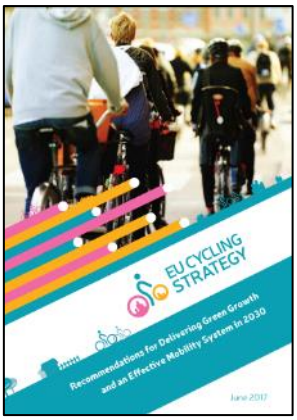
On the 11th of December 2013 Regulation (EU) No. 1315/2013 came into effect. This defines and provides legal guidance for the provision of the Trans-European Transport Network (TEN-T). The TEN-T policy is the infrastructure policy in Europe in relation to transport.

The TEN-T consists of two planning layers, namely the Core and Comprehensive transport networks. The Core network will form the backbone for transportation in Europe's Single Market. Its implementation will be progressed by the setting up of 9 major transport corridors that will bring together Member States and stakeholders. By 2030 it will remove bottlenecks, upgrade infrastructure and streamline cross border transport operations for passengers and businesses throughout the EU.
The new TEN-T Core network will be supported by a Comprehensive network of routes, feeding into the Core network at regional and national level. The target for completion of the Comprehensive network is 2050. The aim is to ensure that progressively, throughout the entire EU, the TEN-T will contribute to enhancing internal markets, strengthening territorial, economic and social cohesion and reducing greenhouse gas emissions.

The N52 national secondary route connects directly to the N2 which forms part of the TEN-T comprehensive road network and indirectly, via the N2 to the N33 which connects to the Core Network of the M1. Figure 2.1, overleaf, shows the extent of both the Core and Comprehensive transport networks in relation to roads, ports and airports within Ireland.

Figure 3.1 TEN-T Network

3.1.2 EU Cycling Strategy (2017)



The EU Cycling Strategy *Recommendations for Delivering Green Growth and an Effective Mobility System in 2030* consolidates a systematic review of all policies related to cycling, reviewing the current state of cycling in the European Union and providing a cycling implementation plan including recommendations addressed to the European level, complemented by recommendations to the national and regional/local level.

These regional and local recommendations include:

- Develop and maintain regional and local cycle route networks;
- Develop safe cycle routes to schools, city centres and business areas;
- Segregate cyclists from other traffic where there is high speed/high volume motorised traffic, or otherwise create safe conditions on roads where cyclists mix with motorised vehicles;
- Develop and maintain national cycle route networks;
- Develop and maintain regional and local cycle route networks.

In achieving a shift in mobility culture, the strategy requires EU cities to convince policymakers to support cycling; encourage people to cycle more; and to facilitate the cooperation amongst road users for safer cycling.

The strategy includes four core objectives for the timeframe of the document:

- Grow cycle use by 50% at an average across the EU;
- Halve rates for killed and seriously injured cyclists (in km cycled);
- Invest €3 billion in cycling in the period 2021 – 2027, and €6 billion from 2028 – 2034; and
- At a qualitative level, it is strongly advised that cycling is treated as an equal partner in the mobility system.

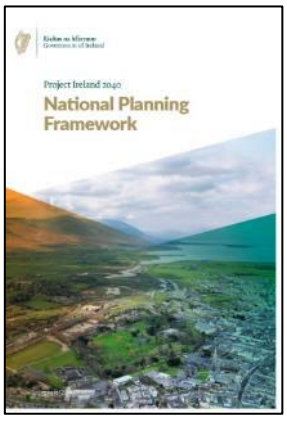
The proposed development will develop a local cycle route network by providing segregated cyclist facilities along the proposed bypass with connections to the existing Silverhill Road, Townparks Road and Mullanstown Road. This will maintain access across stopped up roads for pedestrian and cyclists and create local route networks which may encourage locals to cycle more.

3.2 National Policy Context

3.2.1 Project Ireland 2040

Project Ireland 2040 was launched by the Government in February 2018 as the overarching policy for spatial planning and development in Ireland during the period 2018 – 2040. It is comprised of two major policy documents, the National Planning Framework to 2040 (NPF) and the National Development Plan 2018 – 2027 (NDP). The NPF presents a broad national-level policy to guide strategic planning and development across Ireland, while the NDP sets out the 10-year public capital investment strategy required to support its implementation.

3.2.2 National Planning Framework to 2040



The overarching purpose of the NPF is *"to enable all parts of Ireland, whether rural or urban, to successfully accommodate growth and change, by facilitating a shift towards Ireland's regions and cities other than Dublin, while also recognising Dublin's ongoing key role"* (p. 20). It is the Government's high-level strategic plan for shaping the future growth and development of Ireland out to the year 2040. The ambition of the NPF is to *"to create a single vision, a shared set of goals for every community across the country"* by achieving a number of goals. These goals are expressed in this Framework as ten National Strategic Outcomes (NSOs), as illustrated in Figure 3.2.

With a view to realising these NSOs, a suite of National Policy Objectives (NPOs) are set out. The proposed development is discussed in relation to the relevant NSOs and NPOs in the following paragraphs.

NSO 1: Compact Growth

The NPF Compact Growth NSO 1 aims to promote residential development within existing built-up areas of cities, towns and villages, ensuring that these urban centres are viable attractive alternatives for people to discourage urban sprawl. Along with infill development, integrated transport and promoting regeneration and revitalisation of urban areas, pursuing a compact growth policy at national, regional and local level will secure a more sustainable future for our settlements and for our communities.

The N52 is a major northeast – southwest strategic link, providing a direct route from the north east of the country and beyond to Belfast, to the south west of the country as far as Junction 26 on the M7 at Nenagh. It joins the N2 in Ardee Town providing a link to the regional centre of Dundalk via the N33 and M1. Ardee is subject to high numbers of traffic on a daily basis due to these main connector routes travelling through the town centre. The provision of the proposed road development will remove this through traffic from the town centre, which causes congestion on a daily basis, regenerating the town centre and making it a more attractive place to live.

NSO 2: Enhanced Regional Accessibility

In terms of Enhanced Regional Accessibility, the aim of the NPF is to enhance connectivity between centres of population of scale to support the objectives of the NPF. Better accessibility between the four cities and to the Northern and Western regions will enable unrealised potential and to prepare for the potential impacts of Brexit.

Figure 3.2 **NSOs and Strategic Investment Priorities of Project Ireland 2040 (NPF and NDP). Source: National Planning Framework (2018)**

With regard to inter-urban roads, the following NPF objectives apply to the proposed road development:

- Maintaining the strategic capacity and safety of the national roads network including planning for future capacity enhancements;
- Improving average journey times targeting an average inter-urban speed of 90kph; and
- Advancing orbital traffic management solutions.

While Co. Louth is located in the Eastern and Midland Regional Assembly area, the North-East is a functional area that comprises part of two Regional Assembly areas that also includes most of Co. Cavan and Co. Monaghan in the Northern and Western

Region. The key driver for this regional area is the Dublin-Belfast cross-border network, focused on Drogheda, Dundalk and Newry. The significant influence of Dublin and the cross-border network extends to the county towns and other settlements within the north-eastern regional area as well as to parts of Co. Meath. Development must be supported by enhanced connectivity, quality of life, strengthened urban cores and more compact housing in urban settlements. This is to protect and manage the strategic capacity of transport infrastructure and to ensure that the distinctiveness of settlements and rural areas is maintained. NPO 2c states that *"Accessibility from the north-west of Ireland and between centres of scale separate from Dublin will be significantly improved, focused on cities and larger regionally distributed centres and on key east-west and north-south routes".*

The proposed development will improve access to the Dublin – Belfast Economic Corridor from Limerick City and the Athlone Regional Centre, and to the North West, via the N2 and A5. It also links with the EU TEN-T Core and Comprehensive Networks serving other cities and regional centres. By improving connectivity across these key routes, the N52 Ardee Bypass project will contribute to enhanced regional accessibility and will promote high-quality international connectivity, in accordance with the NSOs of the NPF.

NSO 3: Strengthened Rural Economies and Communities

Ireland's rural areas have faced many challenges in recent decades, including poor connectivity, emigration and loss of traditional industries and employment. Building on Government policy and the 2017 Action Plan for Rural Development, the NPF will place a major focus on rural areas in relation to, and not limited to the following:

- Planning for the future growth and development of rural areas, including addressing decline, with a special focus on activating the potential for the renewal and development of smaller towns and villages;
- Better co-ordination of existing investment programmes dealing with social inclusion, rural development and town and village renewal; and
- Addressing connectivity gaps.

The NPF emphasises that rural communities have a strong interrelationship between neighbouring towns and villages, often beyond county or regional boundaries. For instance, rural settlements of Silverhill, Townparks and Mullanstown served by the existing N61 interact with towns of Ardee, Dundalk, Dublin and Belfast in the Eastern and Northern Regions respectively through connectivity for work and goods.

The NPF's NPOs 15 and 17 set out the Government's policy in relation to future growth and development of rural areas:

- **NPO 15:** *"Support the sustainable development of rural areas by encouraging growth and arresting decline in areas that have experienced low population growth or decline in recent decades and by managing the growth of areas that are under strong urban influence to avoid over-development, while sustaining vibrant rural communities*".
- **NPO 17:** *"Enhance, integrate and protect the special physical, social, economic and cultural value of built heritage assets through appropriate and sensitive use now and for future generations."*

The proposed development is located in rural area of County Louth and will bypass the town of Ardee. By removing heavy traffic from the centre of Ardee, the proposed

development will provide an opportunity to revitalise the distinct character and built heritage of the town and promote its 'sense of place'.

The proposed development has integrated walking and cycling infrastructure within the design to preserve walking and cycling connections between the urban centre of Ardee town and the more rural communities of Silverhill, Townparks and Mullanstown and to provide new connections and circular routes between these communities. It will create an opportunity for the locals to travel to school and work within Ardee Town on foot or bicycle and will provide a new link between these townlands to enable family visit relatives and to access amenities and sportsgrounds within the community.

NSO 4: Sustainable Mobility

In relation to NSO 4, Sustainable Mobility, it is an objective of the NPF that *"Develop a* comprehensive *network of safe cycling routes in metropolitan areas to address travel needs and to provide similar facilities in towns and villages where appropriate"*. The need for investment in pedestrian and cycling infrastructure is reflected in the following NPOs:

- **NPO 27:** *"Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments, and integrating physical activity facilities for all ages."*
- **NPO 64:** *"Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy-efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions"*.

By providing new dedicated pedestrian and cyclist infrastructure along its route, the proposed development facilitates the use of sustainable, zero-carbon personal mobility options (i.e. walking and cycling) among local residents. It will allow those travelling between Ardee town and the rural hinterland to the west and north-west to utilise safe, sustainable and active modes of personal mobility. Furthermore, by reducing traffic congestion in Ardee town, the proposed development is likely to make the town centre and immediate environs a safer, healthier and more attractive environment for walkers and cyclists.

NSO 5: A Strong Economy supported by Enterprise, Innovation and Skills

The NPF states that the achievement of this NSO *"will depend on creating places that can foster enterprise and innovation and attract investment and talent… Delivering this outcome will require the coordination of growth and place making with investment in world class infrastructure…"*. The need for positive 'place making' in the rural environment is reflected in NPO 14, which aims to *"Protect and promote the sense of place and culture and the quality, character and distinctiveness of the Irish rural landscape that make Ireland's rural areas authentic and attractive places to live, work and visit"*. The proposed development may be expected to contribute to positive place making in Ardee town. By reducing congestion, improving air quality and reducing traffic-related noise, the bypass will make Ardee town a healthier and more attractive town environment in which to live and do business.

NSO 6: High-Quality International Connectivity

The NPF states that the provision of high-quality international connectivity *"is crucial for overall international competitiveness and addressing opportunities and challenges*

opportunities and challenges from Brexit". This NSO and its associated NPOs focus on improving international connectivity via improvement of airport and port infrastructure, rather than national road transport infrastructure *per se*. However, the proposed development improves connectivity to the M1 Drogheda-Dundalk-Newry corridor from the south west, in particular the regional centre of Athlone and Limerick City, whilst also alleviating congestion on the N2 through Ardee, also providing greater and more reliable connectivity from the North-West to Dublin Airport and Dublin Port.

NSO 7: Enhanced Amenity and Heritage

This NSO aims to *"ensure that our cities, towns and villages are attractive and can offer a good quality of life".* It aims to encourage *"greater city and town centre living, enhanced recreational spaces and attractiveness from a cultural, tourism and promotional perspective"*. It intends to do so largely through setting out objectives in relation to investment in well-designed public realm and recreational infrastructure. NPO 18a, for instance, aims to *"Support the proportionate growth of and appropriately designed development in rural towns that will contribute to their regeneration and renewal, including interventions in the public realm, the provision of amenities, the acquisition of sites and the provision of services"*. The need for improved walking and cycling routes is also explicitly stated in relation to this NSO. During the operational phase, the proposed development will reduce congestion and air pollution in historic Ardee town, creating a healthier and more attractive town environment, and thereby improving the quality of life of residents and workers in the town. By doing so it will also promote a greater appreciation of the town's significant, historic built heritage.

NSO 8: Transition to a Low Carbon and Climate Resilient Society

The NPF aims to contribute to a transition to a law-carbon and climate resilient society, largely through investment in renewable energy and the necessary new energy systems to support it at scale. While the proposed development does not relate to renewable energy, it can contribute to a certain degree of decarbonisation in a number of ways. By reducing congestion in Ardee town, the proposed development will reduce the need for variable speeds, braking and idling of vehicles with internal combustion engines in the town centre, which is expected to reduce net vehicular emissions of those travelling along the route. It will also provide new pedestrian and cyclist infrastructure along the route, facilitating and promoting the use of zero-carbon modes of personal mobility among local residents.

NSO 9: Sustainable Management of Water, Waste and other Environmental Resources

The NPF highlights that *"environmental resources such as our water sources […] are critical to our environmental and economic well-being into the future"*. NPO 60 states the aim to *"Conserve and enhance the rich qualities of natural and cultural heritage of Ireland in a manner appropriate to their significance"*. Water resources management is a central topic under this NSO. The need for sustainable water resources management is reflected in a number of NPOs:

- **NPO 57:** *"Enhance water quality and resource management by:*
    - *Ensuring flood risk management informs place-making by avoiding inappropriate development in areas at risk of flooding in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities.*
    - *Ensuring that River Basin Management Plan objectives are fully considered throughout the physical planning process.*

- *Integrating sustainable water management solutions, such as Sustainable Urban Drainage (SUDS), non-porous surfacing and green roofs, to create safe places."*

- **NPO 63:** *"Ensure the efficient and sustainable use and development of water resources and water services infrastructure in order to manage and conserve water resources in manner that supports a healthy society, economic development requirements and a cleaner environment."*

In relation to flood risk management, the NPF emphasises the *"particular importance"* of planning and development. A number of core objectives are set out in this respect, as follows:

- *"Avoiding inappropriate development in areas at risk of flooding;*
- *Avoiding new developments increasing flood risk elsewhere, including that which may arise from surface run off;*
- *Ensuring effective management of residual risks for development permitted in floodplains;*
- *Avoiding unnecessary restriction of national regional or local economic and social growth; and*
- *Improving the understanding of flood-risk and ensure flood risk management in accordance with best practice."*

The proposed development passes through an area which experiences frequent flooding. As stated above, it is a core objective of the NPF that, where development is permitted in floodplains, it needs to be ensured that associated residual risks are managed effectively. In order to ensure sustainable management of the water resources and wetland habitats in the area, the proposed development will incorporate sustainable drainage systems (SuDS), including use of attenuation ponds, culverting of existing watercourses and use of impermeable geotextile barriers to prevent dewatering of adjacent lands. A Site Specific Flood Risk Assessment has been undertaken in respect of the proposed development, the results of which are discussed herein.

Under this NSO, the NPF also sets out the need to improve air quality and reduce noise in urban areas and towns:

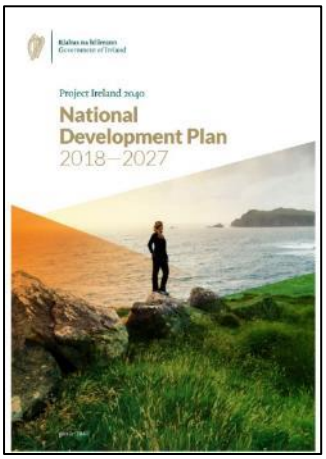
- **NPO 64:** *"Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions."*
- **NPO 65:** *"Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions."*

By reducing congestion (and, thereby, vehicular emissions and noise) in Ardee town, the proposed development will contribute to the achievement of these NPOs, increasing amenity and providing a healthier environment for local resident, workers and visitors.

NSO 10: Access to Quality Childcare, Education and Health Services

It is stated that *"Good access to a range of quality education and health services, relative to the scale of region, city, town, neighbourhood or community is a defining characteristic of attractive, successful and competitive places".* The design of the proposed development maintain access across the wider area for the rural communities to access Ardee, ensuring access is maintained to workplaces, childcare and healthcare facilities, and centres of education. By eliminating the bottleneck at Ardee town, the proposed bypass will also reduce journey times and accessibility for those travelling along the N52 and the N2 to educational, health and workplace facilities in Ardee and the surrounding towns, such as Dundalk.

3.2.3 National Development Plan 2018 – 2027



The National Development Plan (NDP) 2018 – 2027, is a ten-year strategy identifying priorities for public capital investment across all sectors, including Transport. The total investment is estimated at €116 billion over the next decade. The NDP has been designed to support the 10 NSOs in the NPF (refer to Section 3.2.1, above) through its ten Strategic Investment Priorities (Figure 3.2):

1. Housing and Sustainable Urban Development;
2. National Road Network;
3. Rural Development;
4. Environmentally Sustainable Public Transport;
5. Enterprise, Skills and Innovation Capacity;
6. Airports and Ports;
7. Culture, Heritage and Sport;
8. Climate Action;
9. Water Infrastructure; and
10. Education, Health and Childcare.

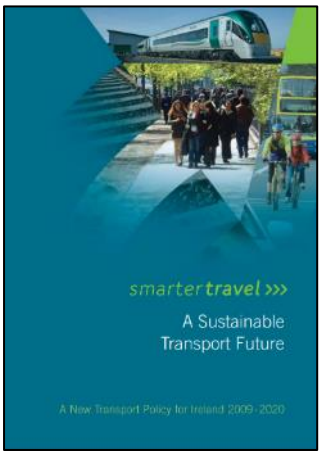
Brexit is a key consideration in terms of the overall context of the NDP, which states that *"The continued strengthening of the economic relationship between Dublin and Belfast can help reinforce the competitiveness of the Eastern and Midland Region, while also helping to mitigate the adverse effects of Brexit… the [NDP] will have a particular focus on building resilience and linkages in the cross-border regions".* It is also stated that *"Substantial progress has been made since the year 2000 in improving road linkages between Dublin and most of the other urban areas and regions. Under the [NDP], the objective is to complete those linkages so that every region and all major urban areas, particularly those in the North-West, which have been comparatively neglected until recently, are linked to Dublin by a high-quality road network".* The N52 Ardee Bypass is explicitly identified in the NDP as a key project, both (1) *"to support the ambition for development of the border region"* and (2) to improve accessibility between Dublin and the North-West.

Investment in regional and local roads is also identified as a priority in relation to NSO 3, Strengthened Rural Economies and Communities. The NDP states that *"Investment in national, regional and local road infrastructure will be […] guided by the findings of the* Department *of Tourism, Transport and Sport's SIFLT analysis"*. The Strategic Investment Framework for Land Transport (SIFLT) analysis is based on the following criteria:

- Roads will be maintained to a high quality;

- Roads will be improved to reduce journey times, remove bottlenecks and improve safety; and
- New roads will be built to connect communities and encourage economic activity.

3.2.4 Smarter Travel – A Sustainable Transport Future



Smarter Travel – A sustainable Transport Future is a sustainable transport policy for Ireland for the period 2009 – 2020. Delivering this policy is a key objective of Government because transport and travel trends are currently unsustainable.

Despite investment in road infrastructure, congestion will get worse, transport emissions will continue to grow, economic competitiveness will suffer, and quality of life will decline unless more sustainable transport policies are adopted. This document outlines the Government's vision for sustainability in transport by setting down key goals, which are to:

- Improve quality of life and accessibility to transport for all and, in particular, for people with reduced mobility and those who may experience isolation due to lack of transport;
- Improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks;
- Minimising the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions;
- Reduce overall travel demand and commuting distances travelled by the private car; and
- Improve security of energy supply by reducing dependency on imported fossil fuels.

The policy recognises importance of continued investment in transport to ensure an efficient economy and continued social development, but it also sets out the necessary steps to ensure that people choose more sustainable transport modes such as walking, cycling and public transport.

The policy contains 49 actions, which are grouped into essentially four overarching actions:

- *Actions to reduce distance travelled by private car and encourage smarter travel, including focusing population growth in areas of employment and to encourage people to live in close proximity to places of employment and the use of pricing mechanisms or fiscal measures to encourage behavioural change;*
- *Actions aimed at ensuring that alternatives to the car are more widely available, mainly through a radically improved public transport service and through investment in cycling and walking;*
- *Actions aimed at improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies, and;*
- *Actions aimed at strengthening institutional arrangements to deliver the targets.*

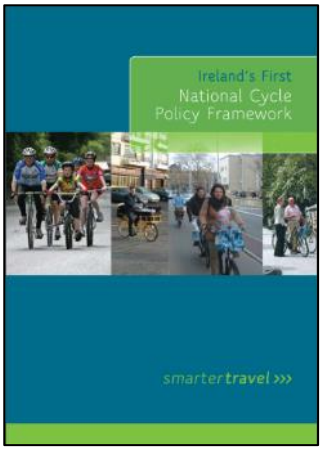
In relation to roads, the policy proposed is to invest in roads that *"will remove* bottlenecks*, ease congestion and pressure in towns and villages, and provide the necessary infrastructure links to support the National Spatial Strategy"* (p. 51) (now

superseded by the NPF). This is consistent with prioritised network improvements along the National Primary and Secondary Road Networks.

For bus transport providers, including the CIE Group and private operators, quality uncongested roads are an essential requirement. Investment in the road network is therefore a key ingredient in improved public transport in Ireland.
The project is in line with the goals of *Smarter Travel* in a number of ways:

- The N52 Ardee Bypass will reduce traffic volumes in the centre of Ardee, thereby encouraging the use of non-motorised forms of transport and low carbon public transport options in the town.
- The project will include pedestrian and cycleways linking the local road network to the bypass and will provide for future linkages on these local roads into the centre of Ardee. The linkages being provided will also improve access to sporting facilities located on the western periphery of Ardee, such as Ardee Celtic Soccer club and Ardee Rugby club.
- By reducing congestion and associated environmental impacts (e.g. air pollution) in Ardee, the project is expected to improve the quality of life of inhabitants and workers in the town.
- The project will remove an infrastructural bottleneck on the National Road Network, thereby enhancing connectivity and improving the efficiency of the road network.

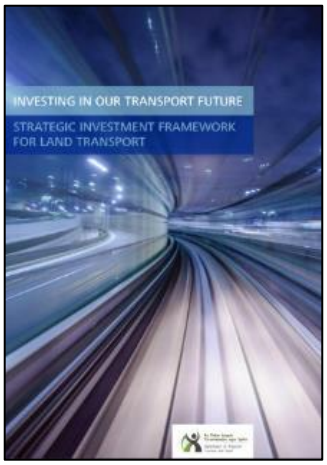
3.2.5 National Cycle Policy Framework 2009 – 2020



This framework sets out the National Cycle policy under the Smarter Travel policy. The stated vision of the National Cycle Policy is to "create a strong cycling culture in Ireland". The vision is not confined to urban areas, and it is stated that all cities, towns, villages, and rural areas will be bicycle friendly. It is an aspiration of this framework that, by 2020, 10% of all trips will be by bicycle. The development of a national network of both rural and urban cycle routes is a specific objective of the National Cycling Policy Framework.

The National Cycleway Policy Framework 2009-2020 has nineteen stated objectives to improve cycling provision within Ireland. The introduction of the proposed development support these objectives in its design. The incorporation of the cycle route as part of the proposed development will provide better connectivity between the rural settlements of Silverhill, Townparks Road and Mullanstown Road to the town of Ardee and other local amenities and sports grounds, while promoting cycling as a recreational activity for locals.

3.2.6 Investing in Our Transport Future – Strategic Investment Framework for Land Transport (2015)



The Strategic Investment Framework for Land Transport (SIFLT) published by the Department of Transport, Tourism and Sport (DTTaS) outlines the key principles against which national and regional, comprehensive and single mode-based plans and programmes will be drawn up and assessed. While the framework does not set out a list of projects to be prioritised, the following three priorities are listed:

- Priority 1 – Achieve steady state maintenance;

- Priority 2 – Address urban congestion; and
- Priority 3 – Maximise the value of the road network.

In terms of Priority 2, the report states that "*priority is to address urban congestion and improve the efficiency and sustainability of the urban transport systems*", while the provision of "*Improved and expanded walking and cycling infrastructure*" is outlined as a measure to be included.

The key principles for land transport investment are to:

- *Improve the quality of life of citizens and be consistent with environmental, climate and biodiversity objectives, imperatives and obligations, including those arising from the EU Habitats Directive;*
- *measures to address current and future urban congestion and to improve the efficiency and sustainability of urban transport, including walking and cycling infrastructure;*
- *investment should be targeted to maximise the contribution of the land transport networks by enhancing the efficiency of the existing network.*

It is also pointed out that *"In the case of roads, investment should provide access to poorly served regions, access for large-scale employment proposals, complete missing links or address critical safety issues"* (p. 28). It is stated that transport projects *"should maintain and improve the quality of life of citizens and be consistent with environmental, climate and biodiversity objectives, imperatives and obligations, including those arising from the EU Habitats Directive"* (p. 28).

The project is considered to be in accordance with the priorities and principles of the SFILT in a number of respects, including that:

- It will reduce the existing environmental impacts associated with traffic congestion in the historic centre of Ardee, thereby improving the quality of life of inhabitants and workers.
- It has incorporated walking and cycling infrastructure into the design of the development with the aim of enhancing local connectivity and provide efficient modes of transport.
- As discussed above, it will improve accessibility to the Regional Centres of Dundalk and Athlone from both within the Midlands and Eastern Region and from the North West Region in accordance with the NSOs of the NPF.

Allied with the fundamental scheme elements to ensure safe use of the proposed development by pedestrians and cyclists, by alleviating congestion and reducing through-traffic in Ardee, it is expected that the project will also improve safety for road-users and pedestrians in the town.

3.2.7 Road Safety Authority Road Safety Strategy 2013 – 2020

The Road Safety Authority (RSA) Road Safety Strategy 2013 – 2020, sets outs targets to be achieved in terms of road safety in Ireland as well as policy to achieve these targets. The primary target of this strategy is: "*A reduction of road collision fatalities on Irish roads to 25 per million population or less by 2020 is required to close the gap*

between Ireland and the safest countries. This means reducing deaths from 162 in 2012 to 124 or fewer by 2020".

The plan sets out strategies for engineering and infrastructure in terms of the benefits that they can have in terms of reducing collisions. The provision of the upgraded section of national road proposed by this project will support this RSA strategy. The strategy also targets a focus on serious injuries. "*In addition to continuing to reduce fatalities, a number of actions will be taken within the Strategy to refine the definition of a serious injury with a target for doing so. With a target of 124 fatalities by 2020, a realistic target for serious injuries should be in the region of 330 by 2020 or 61 per million population. Reduced fatalities and serious injuries will realise benefits for public health policy objectives, as well as reduced demands on the emergency services. A safer road environment will encourage more road users to walk and cycle, thus improving their wellbeing, reducing congestion and improving the environment. Better driving will reduce fuel costs and transport related emissions which will benefit everyone, especially those involved in business and industry*".

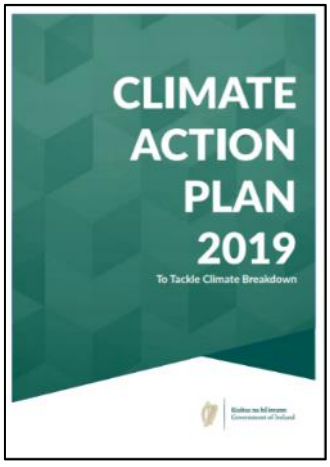
The N52 Ardee Bypass will support this strategy by removing traffic from a legacy route, with it's inherent safety issues that have resulted in an accident rate some 84% above the national average onto a new route designed to modern standards. In conjunction, the N52 Ardee Bypass will alleviate the congestion currently experienced on Ardee Main Street, diverting the traffic onto the proposed bypass. The provision of safe walking and cycling facilities along the proposed development and the incorporation of pedestrian and cyclist access from the bypass to the existing N52 and local roads will promote safe alternative routes to the private car.

3.2.8 National Secondary Roads Needs Study – East (2011)

The National Roads Authority (now TII) commissioned the National Secondary Road Needs Study (NSRNS) in order to determine necessary upgrades to the National Secondary Road (NSR) network and identify a prioritised list of improvement schemes based on a multi criteria analysis. The National Secondary Road Needs Study (NSRNS) was published by the National Roads Authority in March 2011. The Study divides each NSR into a number of sections and uses a multi-criteria analysis to determine a comparative score for each route under consideration. This score is suggested as the basis for prioritisation of the projects.

The Nation Secondary Road Needs Study considers the N52 Ardee Bypass to be in place, as such the benefits of this project have already been considered in the context of the positive impact on Ardee. It should be noted that the adjacent Ardee to Kells section of the N52 is listed as a Priority 1 scheme, in need of upgrading.

3.2.9 Climate Action Plan 2019



The 'Climate Action Plan' (CAP), published in June 2019, outlines the current status across key sectors including Electricity, Transport, Built Environment, Industry and Agriculture and outlines the various broadscale measures required for each sector to achieve ambitious decarbonisation targets. The CAP also details the required governance arrangements for implementation including carbon-proofing of policies, establishment of carbon budgets, a strengthened Climate Change Advisory Council and greater accountability to the Oireachtas.

In relation to the transport sector, the CAP identifies the electrification of transport as the most cost-effective

abatement opportunity. The CAP has set a transport sector reduction target of 45-50% in GHG emissions relative to 2030, pre-NDP (National Development Plan) projects. In order to achieve this, the Climate Action Plan 2019 proposes the introduction of new legislation to ban the sale of fossil fuel cars from 2030 and to stop granting NCT certificates from 2045 to fossil fuel cars.

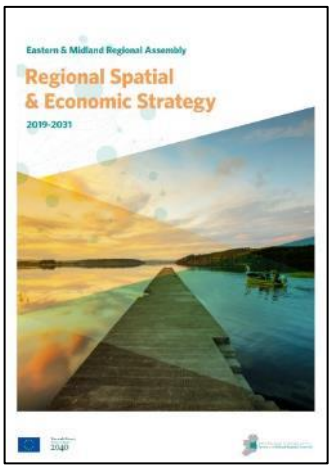
Section 10.3 of the Climate Action Plan also sets out *Measures to Deliver Targets* in relation to the targets set out in section 10.2 for Transport. One of the measures outlined as being critical to the success of achieving the transport targets is Modal Shift. The plan outlines the aim to provide good public transport, cycling and walking infrastructure, so people are less reliant on their cars, and congestion can be reduced. The integration of pedestrian and cycle facilities as a key element of the proposed development will provide safe infrastructure for non-vehicular road users. The incorporation of accesses from stopped up roads will allow connectivity to be maintained for pedestrians and cyclists and may encourage a modal shift as it will be the most efficient method of travel. The removal of future congestion within Ardee town will also allow public transport to function reliably, with improved journey times and improved journey amenity. Public transport will operate more efficiently and will be more attractive to commuters, contributing to placemaking where communities can prosper. In this way, the proposed development supports the Climate Action Plan.

As part of the Draft General Scheme of the Climate Action (Amendment) Bill 2019 (in January 2020), there will be an annually revised Plan which will require sectoral mitigation measures, within the ceilings of the 5-year carbon budget and sectoral decarbonisation ranges for the relevant period including an annual trajectory decarbonisation target range for each sector.

The Government approved the publication of the General Scheme for the Climate Action (Amendment) Bill 2019 in December 2019. The General Scheme was prepared for the purposes of giving statutory effect to the core objectives stated within the CAP. It is expected that the new Climate Action (Amendment) Bill (the Bill) will be published in the coming months, but at the time of writing this Environmental Impact Assessment Screening report is still in Draft form.

3.3 Regional Policy Context

3.3.1 Eastern & Midland Regional Spatial and Economic Strategy 2019 – 2031



There are three Regional Assemblies in Ireland – the Northern and Western Regional Assembly, Southern Regional Assembly, and Eastern and Midland Regional Assembly. These Regional Authorities are responsible for the development of the respective Regional Spatial and Economic Strategies (RSESs), and the Metropolitan Area Strategic Plans (MASPs) for Ireland's five cities – namely Dublin, Cork, Galway, Limerick and Waterford. These policy documents effectively implement the vision of the NPF at the regional level.

The Eastern and Midland Region takes in Counties Dublin, Louth, Meath, Kildare, Wicklow, Longford, Westmeath, Offaly and Laois, covering almost 14,500km² and over 2.3 million inhabitants – the smallest region by area but the largest in terms of population. The Regional Assembly, established in January 2015 following the dissolution of the Border, Dublin, Midland and Mid-East Regional Authorities, comprises of elected members from the twelve constituent Local Authorities, namely Dún Laoghaire–

Rathdown, Fingal, Kildare, Laois, Longford, Louth, Meath, Offaly, South Dublin, Westmeath, Wicklow and Dublin City. The RSES was published in June 2019, presenting the following vision for the region:

> *"To create a sustainable and competitive [Eastern and Midland] Region that supports the health and wellbeing of our people and places, from urban to rural, with access to quality housing, travel and employment opportunities for all." (p. 6)*

Ardee is categorised as a town within County Louth and is strategically located adjacent to the M1 and at the intersection of the N2, N33 and N52, close to the Regional Centre of Dundalk.

Regional Policy Objective (RPO) 8.10 states "The RSES supports appraisal and or delivery of the road projects set out in Table 8.4 subject to the outcome of appropriate environmental assessment and the planning process." Table 8.4 highlights the N52 Ardee Bypass as one of the road projects for the region.

With regards to cyclist provision, the RSES promotes the development of green infrastructure including greenways, blueways and peatways noting that they can provide a number of important functions including ecological corridors, local amenity, climate change adaptation and mitigation, and mentally restorative environment. The incorporation of cycle and pedestrian facilities will enable access from the proposed development onto local roads and will provide connectivity between rural and urban locations.

The N52 Ardee Bypass is therefore in accordance with the policies and objectives of the RSES.

3.4 Local Policy Context

3.4.1 Louth County Development Plan 2015 – 2021

The Louth County Development Plan outlines a number of objectives regarding transport infrastructure. As set out under Policy TC7, it is LCC's aim to:

> *"… provide and maintain a road hierarchy based on motorway, national routes, regional routes and local roads and to maintain the carrying capacity and lifespan of the road network and ensure high standards of safety for road users and to require that all proposals for development that would be likely to impact significantly on the carrying capacity of national routes be accompanied by traffic transport assessment, road safety impact assessment, road safety audits and mobility management plans, in accordance with the Spatial Planning and National Roads Guidelines 2012 and/or the Design Manual for Urban Roads and Streets (2013)."* (p. 222)

Section 4.6 of the Development plan outlines that the "*building of new roads, road improvement schemes and new residential developments, presents opportunities for the provision of pedestrian and cycle routes. Pedestrian and cycle routes should be as direct as practicable between commercial and residential areas and major attractors such as shops, schools and other community facilities, including public transport. Pedestrian and cycle routes provide for a range and choice of transport alternatives. These are sustainable modes of transport which will reduce car dependency, reduce emissions that contribute towards climate change and encourage an active lifestyle which will bring health benefits to the community. Such connections and provision of these facilities which provide for alternative modes of transport to places, facilities and amenities, helps to support and encourage an improved quality of life*." (p. 98)

Policy TC 23 also supports the integration of pedestrian and cycle provision in new transport projects:

> "*To incorporate, where feasible, provision for cycle and pedestrian paths within new road proposals and improvement schemes." (p. 235)*

Chapter 7 of the Development Plan, 'Transport', includes a Road Improvement Programme for the County to 2021. This programme includes the N52 Ardee Bypass (p. 231) to be implemented by the Council in conjunction with the NRA (now TII) over the period of the Plan. This is further reinforced by Policy TC20, which seeks to:

> *"… secure the implementation of the Council's Road Improvement Programme 2015 – 2021 […] in consultation and agreement with the Department of Transport and [NRA] subject to available funding and to keep free from development all lands identified for the construction and improvement of national, regional and local roads within the County. All proposed transport routes will be required to comply with the Habitats, EIA and SEA Directives."* (p. 232)

The Louth County Development Plan is currently under review and Public Consultation on the Draft Louth County Development Plan 2021 – 2027 was undertaken between November and December 2020.

While the Draft Plan may undergo further changes, it has been reviewed in light of the proposed development as follows. The draft Plan outlines in Chapter 7 Movement that there is a well-developed network of roads in Louth that are a fundamental part of the economic competitiveness of the County facilitating the efficient movement of goods and people. The strategic location of the County along the Dublin-Belfast Economic Corridor means the County benefits from access to the motorway network in addition to national primary and secondary routes, which provide connectivity with Dublin, Belfast and key service centres in the region and the border area. The N52 Dundalk-Nenagh (via Ardee and Kells) along with other national routes, is noted to provide an important level of connectivity between the Regional Growth Centres of Drogheda and Dundalk and key service centres in the wider region and beyond.

Whilst this Draft Plan promotes and supports a modal shift to more sustainable modes of transport it is also recognised that improvements to the existing road infrastructure in the County are required in order to improve connectivity and support more balanced economic development. This will allow settlements to fulfil their economic potential.

The N52 Ardee Bypass is listed as a National Road Project in Table 7.3 of the Draft Development Plan, the progression of which is supported by the Draft Plan. Section 7.8.2 N52 Ardee Bypass of the Draft Plan currently states the following:

> *"The need for a bypass of Ardee has been identified and included in national, regional and local policy for a number of years. However, due to funding constraints the project was not progressed. The scheme was reactivated in 2018 with a detailed review ongoing at the time of writing. The scheme has been included in the NDP. The RSES also recognises the benefits of the project and includes support for its progression and delivery in Regional Policy Objective 8.10.*
>
> *Policy Objective Mov 42: To support the progression of the N52 Ardee Bypass and to continue to work closely with Transport Infrastructure Ireland and Meath County Council and other stakeholders in the delivery of this project." (p. 7-20)*

Section 7.5.10 Cycling and Walking outlines the support for the development of walking and cycling infrastructure throughout the County to encourage a modal shift away from

a dependence on the private car. The following Policy Objectives support the development of pedestrian and cycleways as providing connectivity and a modal shift:

> *"MOV 20: To improve pedestrian and cycle connectivity to schools, third level colleges, bus and rail stations, and other public transport hubs.*
>
> *MOV 22: To promote walking and cycling as a safe, convenient, healthy, efficient, and environmentally friendly mode of transport for all age groups." (p.7-12)*

The proposed development will support the above listed Policy Objectives in providing new, safe infrastructure for pedestrians and cyclists.

3.4.2 Ardee Local Area Plan 2010 – 2016

The Ardee Local Area Plan presented a strategy for spatial planning and development in the town of Ardee, Co. Louth between 2010 and 2016. A new LAP for the town is yet to be drafted. The town of Ardee is described in the Plan as follows:

> *"Ardee is the principal town and population centre for mid-Louth. It is a well established and a successful local service, shopping and employment centre for both the town's population and an extensive hinterland, serving much of mid-Louth and neighbouring areas of County Meath… Ardee has expanded significantly over recent years, from a population of 3,568 in 2002 to an estimated population of 4,500 in 2010. This has been largely driven by car-borne residential commuter development, given the easy accessibility of Ardee to Dublin, Drogheda and Dundalk by road… The deteriorating economic climate that has emerged from 2008 onwards has had serious implications for employment in Ardee… Vacant units, together with traffic congestion have combined to undermine the appeal of the town centre. If Ardee is to remain a successful centre for residents, shoppers, businesses and visitors alike it is important that these issues are addressed."* (p. 1)

The Plan also describes Ardee's strategic location in terms of the wider National Roads Network and the resultant implications for traffic volumes in the town centre:

> *"Ardee town is strategically located on the intersection of the N2 national primary Dublin – Derry Route and the N52 national secondary Ardee-Nenagh route. The N33 provides direct access from Ardee to the M1 motorway and national motorway network. The N2 Dublin to Derry national route passes through the town centre and given the volumes of traffic, this causes serious traffic congestion."* (p. 21)

Chapter 4 of the Ardee Local Area Plan (LAP) outlines objectives in relation to transport infrastructure. Policy INF 12 states the need "To secure the construction, pending approval by the [NRA], of the N2 bypass and the N52 bypass and preserve free of development their proposed routes" (p. 21). Regarding the bypasses, the LAP states that:

> *"The council is proposing to construct by-passes on the N52 and N2 to the east and west of the town. When completed, the traffic congestion in Ardee town centre will be significantly improved. Lands have been purchased to facilitate the construction of the N52 section and this section is likely to proceed during the period of this Plan."* (p. 21).
>
> *"Traffic congestion in Ardee town centre is a major problem caused by the volumes of traffic passing through the town along the N2 Derry to Dublin National Primary route and the N52 Dundalk to Nenagh national secondary route. Traffic management plans, including pay parking, have improved the situation. When by-passes on the N2 and N52 are constructed, pending approval by the National Roads Authority, congestion will be greatly alleviated."* (p. 23)

3.5 Conclusion

The review of European, national, regional and local planning policy documents has outlined in this section, the need to improve this section of the N52 National Secondary Road in order improve accessibility and connectivity to the north-west, improve road safety and to promote sustainable economic development in the region.

4. DESCRIPTION OF THE RECEIVING ENVIRONMENT

This section of the report provides a description of the location and receiving environment of the proposed development, with particular regard to the environmental sensitivity of the area likely to be affected. Unless otherwise stated, the description of the receiving environment in the following sections is based on desk-based research and confirmed through site visits. Surveys have been conducted, as required, to inform this assessment.

4.1 Traffic & Transportation

The main roads within the vicinity of Ardee are as follows;

- N52 National Secondary Road
- N2 National Primary Road
- N33 National Primary Road
- R171 Regional Road
- R170 Regional Road
- R165 Regional Road

Ardee is the focal point of a number of national routes, in conjunction with a number of Regional Roads, as outlined above. This focuses the traffic from these national and regional routes into the centre of Ardee and the immediate periphery of Ardee. The extent of these routes is shown in Figure 4.1, below.

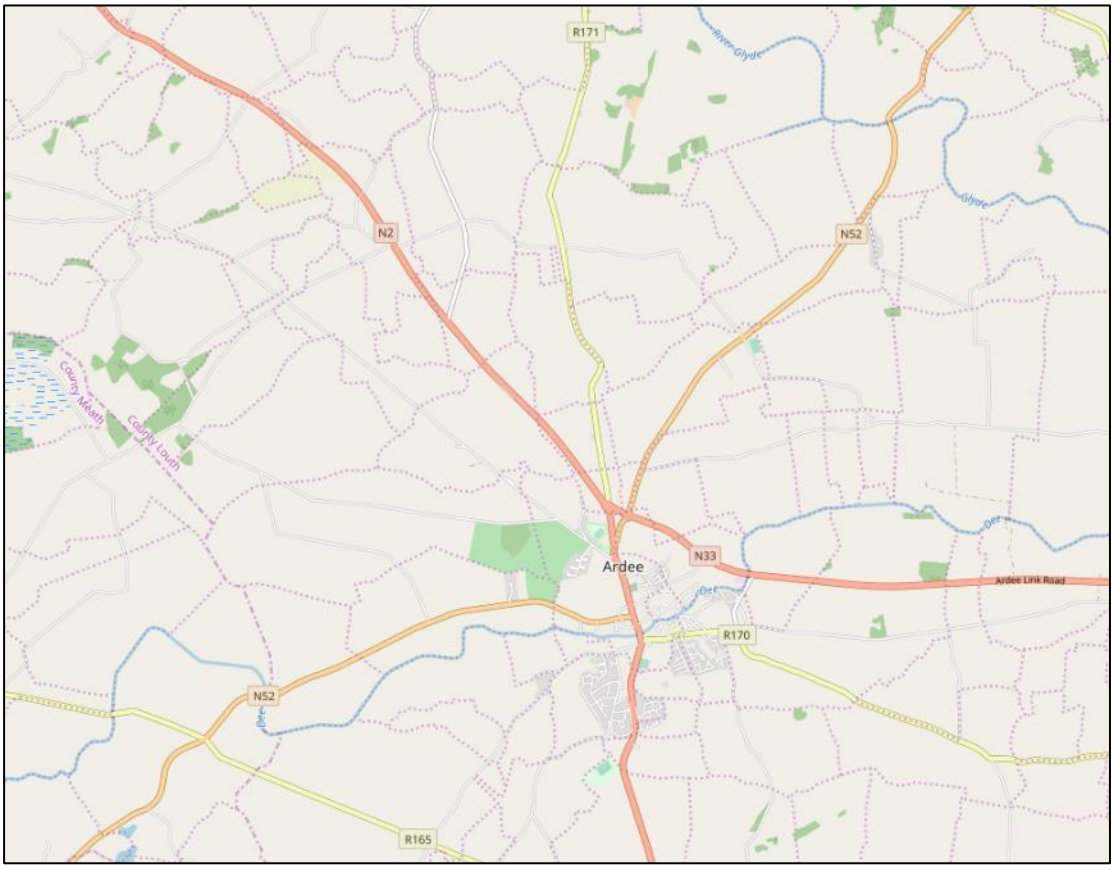


Figure 4.1 Existing Road Network at Ardee

4.1.1 Existing Road Conditions

The existing N52 in County Meath is subject to an 80km/h speed limit which continues to the townland of Boharnamoe, approximately 1.3km from the N52 / N2 junction in Ardee town, where the speed limit reduces to 60km/h and further reduces to the default 50km/h urban speed limit at approximately 850m from the junction. The N2 is subject to a 50km/h speed restriction through Ardee town centre, increasing to 60km/h south of the Carrickmacross Road Roundabout and further increasing to 100km/h once north of this roundabout.

This section of the N52 has a sub-standard cross section, with a paved width as low as 5.5m, no hard strips and a verge of minimal width, which leads to an unforgiving roadside. In conjunction with the reduced cross-section, the horizontal and vertical geometry is substandard, resulting in reduced visibility which is further impacted when the hedgerows are in full leaf, particularly for vehicles accessing the N52 from side road junctions and direct accesses. There are no suitable overtaking opportunities on the section of the route, which can lead to driver frustration.

Figure 4.2 North easterly view of the existing N52

The existing N52 forms a simple T junction with the N2 in the centre of Ardee town, where the junction is constrained by adjacent properties forcing HGV's to manoeuvre into the opposite carriageway (as shown in Figure 4.3) to be able to negotiate the turn, resulting in a conflict with southbound traffic on the N2 in the centre of Ardee. This leads to congestion on the high street, in conjunction with the on-street parking causing significant delays for through traffic.

A number of bus services travel to and from Ardee town or stop within the town on their route. The Bus Éireann route No. 167 to Dundalk departs from Ardee seven times per day and arrives into Ardee seven times per day. This route stops at three different locations within Ardee. In addition, the Bus Eireann route No. 182 stops in Ardee on its route from Drogheda to Monaghan. This route travels along the N2 and offers seven services in each direction per day. Along the same route, Bus Eireann also provide a route No. 182A which travels from Drogheda to Ardee. This service provides six northbound and six southbound services per day.

The N2 in the centre of Ardee forms the main street (Castle Street), which has numerous shops fronting directly onto the footpaths, with a combination of angle and parallel parking spaces provided adjacent to the kerb. There are three pedestrian

crossings within Ardee town centre, two controlled by pedestrian signals and one a zebra crossing. These crossings cover the majority of the retail centre of Ardee and are distributed throughout the length of the main street. Castle Street is a wide avenue through the centre of Ardee, accommodating pedestrians, parking vehicles and the national route traffic of the N2 and N52. It is approximately 18m in width at the junction with the N52 with parallel parking provided in the southbound direction. North of this parking provisions reduce the trafficked width of the N2 to approximately 11m.

Figure 4.3 Truck undertaking manoeuvre onto the N2 from the N52 in Ardee

Figure 4.4 Pedestrian crossing and parking on Ardee Main Street

Kerb buildouts are provided at pedestrian crossing points to locally reduce the width of the N2 to facilitate pedestrian movements as shown in Figure 4.4. No cycle facilities are present on this section of the N2. There are numerous junctions, with the N52 accessing the N2 in the centre of Ardee opposite Ardee Castle.

Traffic surveys were undertaken between the 9th of July and the 22nd of July 2018. This involved Automatic Traffic Counts (ATCs) at six locations within the study area (Figure 4.5). An ATC captures the number of vehicles passing a given point on a road and

classifies the vehicles into different vehicle classifications, for example cars, Light Goods Vehicles (LGV) and Heavy Goods Vehicles (HGV). Junction Turning Counts (JTC) were also undertaken at 4 junctions on Tuesday 10th July 2018 between 07:00- 20:00. The JTCs capture the total number of vehicles turning at a junction and observe which turn they take. As with the ATCs they also classify the traffic into different vehicle categories.

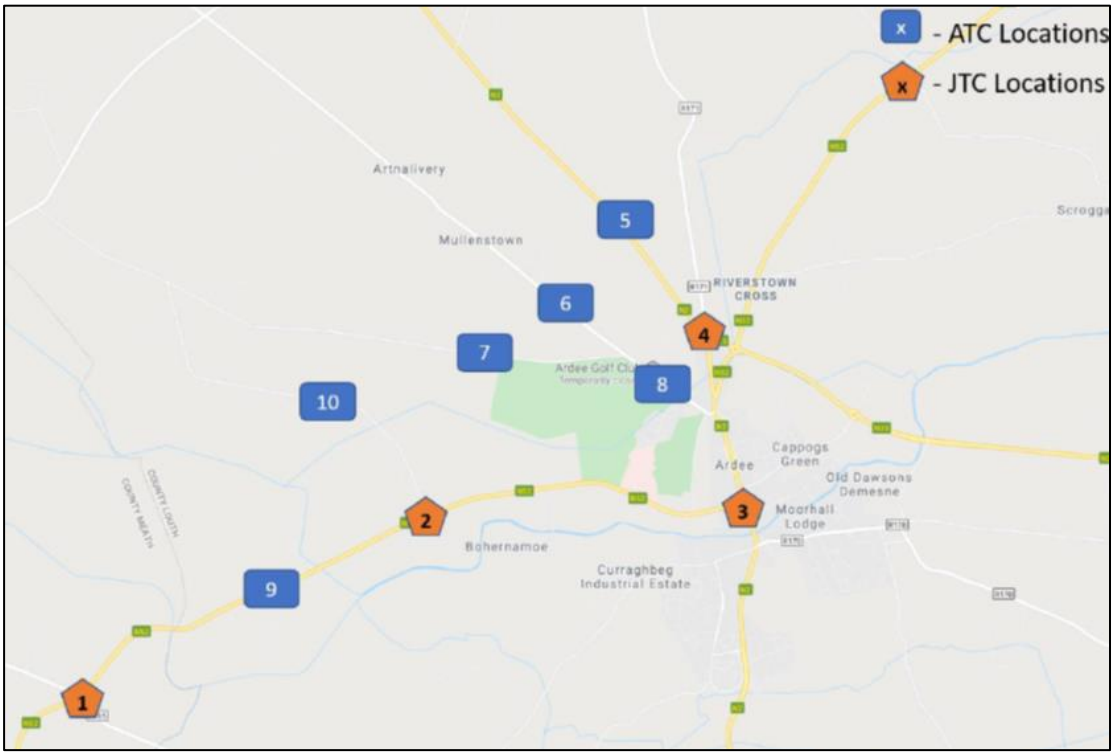


Figure 4.5 Traffic survey locations

Figure 4.6 ANPR origin-destination survey locations

Origin-destination ANPR surveys were undertaken on the 12th March 2020 at nine locations as shown in Figure 4.6, to supplement the 2018 traffic survey data. The AADT estimates of the existing road network are presented in Figure 4.7.

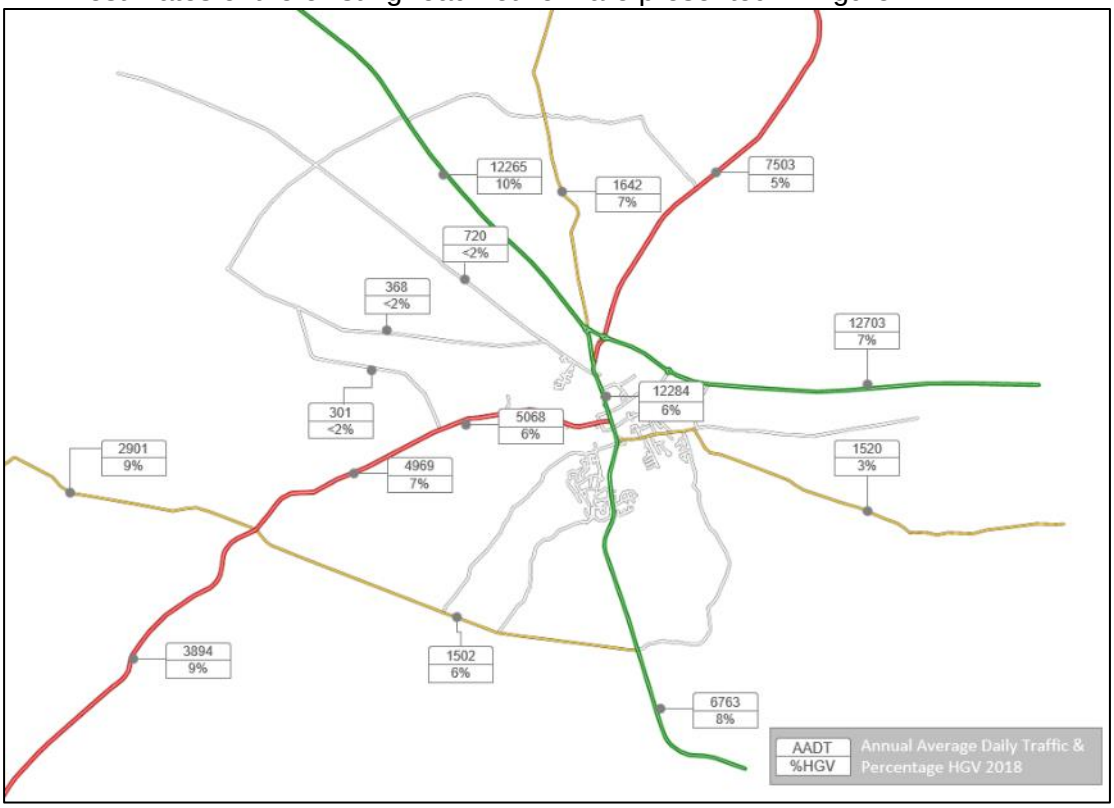


Figure 4.7 Modelled AADT figures for 2018

The Road Safety Authority (RSA) provide detailed information taken from the Garda Collision Records (CT86/PC16) for each collision from 1996 to 2016. The information from was reviewed and a summary of the collisions for both time periods (1996 to 2016 and 2008 to 2016) was prepared.

Examining this full collision history (1996 to 2016) and by applying the under-reporting factors, it is estimated that a total of approximately 359 persons have been killed or injured along the N52 from Mandistown Crossroads and the N2 junction, and along the N2 from the N52 to the Carrickmacross Roundabout. This equates to a rate of approximately 0.33 fatalities per annum along the corridor, with 1.64 serious injuries and approximately 15.1 minor injuries, as indicated in Table 4.1.

Table 4.1 Observed Casualties per Annum (1996 – 2016)

Severity	Observed Casualties [1]	Under-Reporting Factor [2]	Casualties	No. Casualties Per Annum
Fatal	7	1.02	7	**0.33**
Serious	23	1.50	34.5	**1.64**
Minor	106	3.00	318	**15.14**
Total	**136**		**359.5**	

[1] *Recorded Casualties from Garda Records*
[2] *Source: HEATCO "Developing Harmonised European Approaches for Transport Costing and Project Assessment"*

Examining the more recent collision history (2008 to 2016), as indicated in Table 4.2, and by applying the under reporting factors, it is estimated that a total of approximately 140 persons have been killed or injured along the N52 and N2 within the study area. This equates to a rate of approximately 0.111 fatalities per annum along the corridor, with 0.833 serious injuries and approximately 14.66 minor injuries, which indicates a broadly level trend.

Table 4.2 Observed Casualties per Annum (2008 – 2016)

Severity	Observed Casualties [1]	Under-Reporting Factor [2]	Casualties	No. Casualties Per Annum
Fatal	1	1.02	1	**0.111**
Serious	5	1.50	7.5	**0.833**
Minor	44	3.00	132	**14.66**
Total	**57**		**140.5**	

The collision history of these sections of the N52 and N2 indicates that it has a collision rate of 0.392 per million vehicle kilometres of travel. This is 84% higher than the national average rate of 0.213 per million kilometres of travel.

4.1.2 Existing Pedestrian & Cyclist Facilities

There are no pedestrian or cyclist facilities on the local roads intersected by the proposed development. The existing N52 has footpath provision from within the 60km/h zone in the northern verge, entering the urban environs of Ardee, but no other pedestrian facilities are evident and there are no cycle facilities within Ardee town.

Figure 4.8 Footpath provision on N52

In the rural sections, the footpath is typically 2m in width, however this reduces in width when closer to the urban centre of Ardee, to between 1.0m and 1.5m in width, as shown in Figure 4.9.

Figure 4.9 Reduced width footpath provision entering Ardee

On the N2 in the centre of Ardee town, there is footpath provision varying from 2 – 3m in width. The footpath has shop fronts opening directly onto it, and is adjacent to angled or parallel on-street parking, with kerb build-outs at pedestrian crossing points on the main street, as shown in Figure 4.10.

Figure 4.10 Pedestrian crossing point on Ardee Main Street

4.2 Population & Human Health

Ardee is located at the junction of the N2, N52 and N33 National roads in Co. Louth. The town is located along the route between Kells, Dundalk, Slane and Monaghan. Three Electoral Divisions (EDs) encompass the location of the proposed development as follows; Ardee Urban ED, Ardee Rural ED and Drumcondra. According to the CSO 2016 census SAPMAP data, the combined population of the three EDs is 9,173 persons as shown in Table 4.3.

Table 4.3 Population within Study Area

Electoral Division	Population (2011)	Population (2016)	% Change
Ardee Urban	4554	4919	8%
Ardee Rural	2875	2935	2.1%

Electoral Division	Population (2011)	Population (2016)	% Change
Drumcondra	1290	1304	1%
Total	8,779	9,173	4.9%

The town of Ardee is the main population centre located within the study area. According to the CSO[3], the area of Ardee Urban is 4.7 km² and has a high population density of 1046 persons / km². This is high compared to Ardee Rural which has an area of 62.34km², and a population density of 47.1 persons / km². Ardee Rural includes the townlands of Mullanstown, Townparks, Boharnamoe and Ballygowan to the west of Ardee. The furthermost south-western section of the proposed development is within the ED of Drumcondra and the townland of Mandistown which is located in County Meath. The population density of the Drumcondra electoral division is 45.55 persons / km². This is concentrated around the village of Drumcondra and in linear settlements along the regional and local roads, as well as the N52.

4.2.1 Community Facilities and Amenities

A number of community services are located in and around Ardee and in close proximity to the proposed development, which include:

- Ardee Educate Together National School
- Kidz Cottage Montessori
- Two no. hospitals (St Brigid's and St Joseph's)
- Ardee Library
- Three sports centres (Ardee Celtic FC, Ardee Golf Club and Ardee Rugby Club)
- Ardee Playground
- Ardee Fire Station
- Ardee Courthouse

There are a number of touristic and amenity areas located within and in proximity to the study area of project. The town of Ardee has a rich Medieval history and is known in Irish mythology as the site of the four-day battle between Cúchulainn and Ferdia, an event which is commemorated by a statue beside the River Dee on Bridge Street. Ardee also has two medieval castles on its Main Street. Ardee Castle is opposite the existing N52 where it meets the N2. The second, named Hatch's Castle is located on the Main Street also.

4.2.2 Existing Businesses

The majority of businesses are located within Ardee town centre, where the Main Street is currently prone to high levels of congestion. There are two businesses located on the Silverhill Road, namely Seamie Walsh Interiors and PJK Structural Steel Ltd.; while on the existing N52, Curtis Coffins is located west of the Silverhill junction, and both Hickey's Home Farm and PJ Callan Ltd are located between the Silverhill Junction and Ardee on the existing N52. There are a number of businesses on Townparks Road and Mullenstown Road also, including Ardee Precast Concrete Ltd, Douglas Nurseries and Horticultural Services, Ardee Car Parts, Diamond Cuts and Ardee Coach Trim Ltd.

[3]*Central Statistics Office – StatBank: Population and Movements. Available at: https://st atbank.cso.ie/*

4.2.3 Travel Patterns

The most common means of travel in 2016 for Co. Louth was found to be by car. Approx. 39% of the population was found to drive to work / school / college, while 21% were found to be a passenger in a car to their place of work / study. Only 15% of the population are found to travel on foot and 2% by bicycle.

Table 4.4 Travel Patterns for County Louth (CSO, 2016)

Means of Travel	No of Persons	% of Total Persons
On foot	12,637	15.6
Bicycle	1,459	1.8
Bus, minibus or coach	8,539	10.6
Train, DART or LUAS	1,033	1.3
Motorcycle or scooter	130	0.2
Motor car: Driver	31,142	38.5
Motor car: Passenger	16,876	20.9
Van	3,466	4.3
Other, incl. lorry	317	0.4
Work mainly at or from home	1,648	2.0
Not stated	3,552	4.4
All means of travel	80,799	100

4.3 Biodiversity

The landscape in the area of the proposed development is low-lying agricultural land. The dominant land use is grazing for cattle and sheep with some fields used for crops including potato and wheat. The fields are divided by a network of hedgerows and occasionally treelines. The Ardee Bog lies to the west of the proposed development and is a degraded raised bog which has suffered from anthropogenic pressures over recent years but still exhibits some characteristics and species composition of raised bog and wet/dry heath. The bog is surrounded by birch woodland and agricultural land includes long and narrow fields which are indicative of the extensive and ongoing drainage.

The Ardee Cutaway Bog proposed Natural Heritage Areas (pNHA) includes the bog, surrounding woodlands and fields. The proposed road development crosses the pNHA near Townparks at which point the pNHA is has been drained and fertilised and is now improved agricultural grassland of limited ecological value.

The proposed road development crosses two significant watercourses, the River Dee and the River Garra, which is a tributary of the River Dee. These watercourses have been subject to channelisation and the drainage of the surrounding land. Nevertheless, these watercourses are of ecological significance owing to the aquatic and riparian habitats providing for species including Otter, Kingfisher and Daubenton's Bat, and also in their function as ecological corridors.

There are 22 designated sites within the Zone of Influence of the proposed development. Three of these sites, the Dundalk Bay SAC, the Dundalk Bay SPA and the Dundalk Bay pNHA are downstream of the proposed development. The conservation importance of these site lies in the presence of vast areas of intertidal

habitats, marine habitats and the occurrence of birds listed on Annex 1 of the E.U. Habitats Directive.

Trees and hedgerows within the fence-line of the proposed road development were cleared and fenced off in 2018 and the land within the fence-line has been mostly uncultivated since.

4.3.1 Desk Study

A desk study has been undertaken to inform the assessment and has involved a thorough review and analysis of various documents, consultation and mapping relating to ecology in the vicinity of the proposed development and in the surrounding area. The desktop study and appraisal of the ecological constraints within the Constraints Study Area was undertaken using the following sources of information:

- Allott O'Connor (2001) N52/N2 Ardee Bypass Part X Report. Report by Allott O'Connor on behalf of Louth County Council.
- Allott O'Connor (2005) Changes in Alignment to the N52/ N2 Ardee Bypass Part VIII Report. Report by Allott O'Connor on behalf of Louth County Council.
- *Biodiversity Maps* (National Biodiversity Data Centre) <maps.biodiversityireland.ie> [accessed 25/05/2020]. Colhoun & Cummins (2013) *Birds of Conservation Concern in Ireland 2014-2019.*
- Daly, O.H. & Barron, S. (2014) Surveys of possible Marsh Fritillary sites and habitat in Cos Louth, Meath & Monaghan, Final report. Unpublished Report to National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
- EPA publicly available data relating to the Water Framework Directive status of waterbodies within the Zone of Influence.
- Foss, Crushell, O'Loughlin & Wilson (2011) Louth Wetland Identification Survey
- IPCC (1990) Ardee Bog Site Evaluation. Irish Peatland Conservation Council.
- IPCC (1998) Ardee Bog, Co. Louth. Survey and Evaluation Report. Irish Peatland Conservation Council.
- Keeley, Brian (2018) A Walkover Assessment of the Ardee Bypass, Co. Louth.
- Mitchell, F., & Tuite, B. (1995). The great bog of Ardee. Dundalk, County Louth Archaeological and Historical Society.
- NPWS *Designations Viewer*.
- NPWS *Flora Protection Order Map Viewer - Bryophytes.*
- NPWS documents related to national and European protected sites within the Zone of Influence.
- National Biodiversity Data Centre (NBDC) *Biodiversity Maps.*
- TOBIN (2019) N52 Ardee Bypass Ecology Walkover for Advance Fencing Contract. Report by TOBIN on behalf of Louth County Council.
- TOBIN (2009) N52 Ardee Bypass Badger Sett Reopening Report. December 2009. TOBIN Consulting Engineers.

4.3.2 Designated Sites

Designated sites fall into a number of categories based on the associated level of protection afforded:

- Special Areas of Conservation (SAC) are strictly protected sites designated under Directive 92/43/EEC ("the Habitats Directive"). Special Protection Areas

(SPA) are strictly protected sites classified in accordance with Article 4 of Directive 2009/147/EC ("the Birds Directive"). SACs and SPAs are referred to as "European Sites" and collectively form the Natura 2000 network.

- Natural Heritage Areas (NHA) are considered important for the habitats that are present or which hold species of plants and animals whose habitat needs protection. These areas are afforded statutory protection under the Wildlife Act, 1976 (as amended) ("the Wildlife Act").
- Proposed National Heritage Areas (pNHA) are sites of significance for wildlife and habitats but which have not yet been statutorily proposed or designated as NHA. These areas were proposed for protection on a non-statutory list which was published in 1995.

There is one SAC, two SPAs and 19 pNHAs located within the 15km of the proposed road development. Drawing No. N52A-RODA-VES-SW_AE-DR-EN-300015 illustrates the European Sites within 15km of the Project. The details of these sites are presented in Table 4.5.

Table 4.5 Designated Sites within 15km of the Study Area

Site Code	Site Name	Distance from Study Area (km)[4]
004091	Stabannan – Braganstown SPA	5.3 km East
000455	Dundalk Bay SAC	12.4 km East
004026	Dundalk Bay SPA	12.4 km East
001454	Ardee Cutaway Bog pNHA	within study area
001616	Louth Hall and Ardee Woods pNHA	400 m east
001587	Mentrim Lough pNHA	0.8km south west
000552	Corstown Loughs pNHA	2.2km west
001806	Kildemock Marsh pNHA	2.6km south
000456	Stabannan – Braganstown pNHA	3.0km east
001828	Reaghstown Marsh pNHA	5.3km north west
001461	Darver Castle Woods pNHA	6.6km north east
001464	Mellifont Abbey Woods pNHA	7.5km south
001594	Ballyhoe Lough pNHA	8.4km north west
001803	Stephenstown Pond pNHA	10.5km north
000455	Dundalk Bay pNHA	11.1km east
001608	Monalty Lough pNHA	12.1km north west
001462	Drumcah, Toprass & Cortial Loughs pNHA	12.2km north
001801	Barmeath Woods pNHA	12.4km south east
000561	Lough Naglack pNHA	12.8km north
001671	Spring and Corcrin Loughs pNHA	13.5km north west
000560	Lough Fea Demesne pNHA	14.8 km north
001592	Boyne Woods pNHA	14.8km south

[4] Nearest straight-line distance "as the crow flies" measured via distance calculator tools in GIS.

4.3.3 Rare and Protected Species

The Department of Culture, Heritage and Gaeltacht (the NPWS) and the National Biodiversity Data Centre (NBDC) provided records of species protected under European and national legislation within the relevant hectads and constraints study area respectively. Upon a more detailed review of these species records, the species that were recorded in the past 10 years were included in the list below. There were many protected bird species recorded within the site. As a result, bird species that are listed under Annex I of the Birds Directive and/or are red listed on the list of birds of conservation concern Ireland (2014 – 2019) are included below (the new BoCCI list has not been published at the time of writing). The following protected species under these criteria have been recorded within the study area:

- Otter (*Lutra lutra*)
- Daubenton's Bat (*Myotis daubentonii*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)
- Badger (*Meles meles*)
- Pygmy Shrew (*Sorex minutus*)
- Hedgehog (*Erinaceus europaeus*)
- Common Frog (*Rana temporaria*)
- Large White Moss (*Leucobryum glaucum*)
- Golden Plover (*Pluvialis apricaria*)
- Peregrine Falcon (*Falco peregrinus*)
- Kingfisher (*Alcedo atthis*)
- Merlin (*Falco columbarius*)
- Whooper Swan (*Cygnus cygnus*)
- Curlew (*Numenius arquata*)
- Northern Lapwing (*Vanellus vanellus*)
- Barn Owl (*Tyto alba*)
- Black-headed Gull (*Chroicocephalus ridibundus*)
- Herring Gull (*Larus argentatus*)
- Yellowhammer (*Emberiza citronella*)

4.3.4 Field Surveys

Field survey were conducted along the route of the proposed development between February 2020 and November 2020. The following guidelines were adhered to:

- *Ecological Survey Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (NRA, 2008)
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA, 2009)
- *Best Practice Guidance for Habitat Survey and Mapping* (Smith *et al.*, 2011)
- *A Guide to Habitats in Ireland* (Fossitt, 2000)
- *Interpretation Manual of European Union Habitats* (European Commission, 2013)
- *Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes (NRA, 2006)*

- *Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)*

4.3.5 Habitats

In 2018, the lands within the route corridor were fenced and trees and hedgerows were removed. This area is now a mosaic of habitats varying from meadow to recolonising bare ground with native herbaceous species. Remnants of old crops including potatoes and barley are also found growing in this area. Part of the fenced off area is grazed by cattle.

Outside the route corridor, the land use is agricultural and is dominated by pasture. Fields vary from improved grassland (GA1) to wet grassland (GS4) dominated by rushes. The fields are separated by a network of treelines (WL1), hedgerows (WL2) and ditches (FW4). Whooper Swan, Greylag Geese, Lapwing and Curlew have been recorded in the fields close to the proposed development. The route crosses the River Dee, River Garra and a number of drainage ditches. Both the River Dee and River Garra correspond to Depositing/ Lowland Rivers (FW2). The watercourses in the footprint of the proposed development drain into the River Dee which enters the sea in Dundalk Bay, which is designated as an SAC, SPA and pNHA. The River Dee and River Garra correspond to the Annex 1 habitat 'Watercourses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation' (3260) and contain valuable habitats that support protected species.

The Ardee Bog lies to the north-west of the development and is the most easterly raised bog (PB1) in Ireland. The fence line of the route is approximately 270m from the edge of the bog. Extensive and ongoing drainage, turf cutting and developments have degraded the Ardee Bog. Dense heather growth and the presence of Scot's Pine and Birch on the bog indicate that the bog is drying out in places. The site supports a mosaic of bog and wet heath vegetation (HH3), with such species as Round-leaved Sundew (*Drosera rotundifolia*) and Devil's-bit Scabious (*Succisa pratensis*). Channels and wet pools on the site support Bogbean (*Menyanthes trifoliata*). A notable feature of the site is the presence of areas where bog mosses (*Sphagnum spp*.) and cottongrasses (*Eriophorum spp*.) occur abundantly. The Ardee Cutaway Bog pNHA includes the bog as well the surrounding birch woodland (WN7) and agricultural land around the bog. The route will travel across the eastern part of the pNHA which is agricultural grassland and of little ecological value itself.

Parts of the Ardee Cutaway Bog pNHA corresponds to the Annex 1 habitats 'Degraded Raised Bogs Capable of Natural Regeneration' (7120) and 'Northern Atlantic wet heaths with Erica tetralix' (4010).

Watercourses

The route crosses two major watercourses, the River Dee and one of its tributaries, the River Garra. The rivers flow east and enter the sea in Dundalk Bay. Both of the rivers have been subject to channelisation. The River Dee supports species including Otter, Kingfisher and Daubenton's Bat. It also contains salmonid nursery and adult habitat, and supports stocks of salmon, sea trout and brown trout. The river also supports lamprey and European eel amongst other species.

4.3.6 Protected Species

Protected mammals including Badger, Otter and Hare are present in the area of the proposed development. There is one badger sett 25m from the fence line of the proposed development and sign of badger (prints, paths) were frequently recorded during the surveys. Otter prints were recorded on the banks of the River Dee and this

species is assumed to be present along the River Garra. No Otter holts or couches were recorded within 150m of the proposed development. Hare was recorded in the fields around the proposed development and on the Ardee Bog.

Four species of bats are present in the area of the proposed development, with Daubenton's Bat being recorded on the River Dee.

Given the proximity of the proposed development to the Ardee Bog it is assumed that Common Frog and Smooth Newt are present in the vicinity of the proposed development. The proposed development will not result in the loss of any breeding ponds. Common lizard is assumed to be present in the Ardee Bog.

4.3.7 Birds

Typical farmland species are present in the vicinity of the proposed development including red-listed Yellowhammer (*Emberiza citrinella*) and Meadow Pipit (*Anthus pratensis*). Flocks of Whooper Swan (*Cygnus cygnus)* with small numbers of Greylag Geese (*Anser anser)* were recorded feeding in the fields to the west of the proposed development. Flocks were consistently recorded in one field 1.5km north-west of the proposed development. Curlew (*Numenius arquata*), Lapwing (*Vanellus vanellus*) and Teal (*Anas crecca*) have been recorded feeding in the area following flood events. There have also been reports of Curlew nesting near the Ardee Bog.

4.4 Soils and Geology

The proposed development runs through flat to gently undulating natural terrain. The land cover is almost exclusively agricultural (pasture), with rivers and existing transportation routes crossing the alignment locally.

Geomorphology

The geomorphology of the landscape within the vicinity of the proposed development is flat to gently undulating. A series of low ridges connected to drumlin and moraine ridge landforms can be found stretching in a southwest-northeast direction across the area and surrounding lands. The existing N52 alignment generally follows the line of one such low ridge. The defining geomorphological feature of the study area is Ardee Bog, an area of cut raised bog positioned centrally in the study area. Two rivers, the Garra River and the River Dee, are found in the west and south of the study area. Several smaller streams are also recorded, as well as the drainage features related to Ardee Bog.

Apart from the N52, the area is crossed largely by local roads, with the exception of the N2, N33 and R171, which cross the urban environment to the east of the proposed development (north of Ardee town).

A single karst feature has been recorded within the study area, a well found within the grounds of St Brigid's Hospital.

Solid Geology

In terms of bedrock geology, the route is underlain by the Clontail Formation, consisting of calcareous red mica greywacke of Silurian age; Cruicetown Group, consisting of argillaceous bioclastic limestone; and Navan Beds consisting of dark limestone, mudstone and sandstone.

Soils and Subsoil Deposits

In terms of quaternary geology, the route is underlain primarily by glacial till, with both fine-grained soil and coarse gravels (potentially glaciofluvial) present. The Geological Survey of Ireland (GSI) maps show areas of cut peat at the eastern end of Ardee Bog and in the vicinity of Rivers Dee and Garra. Available ground investigation results, however, show the surficial peaty layer to be less than 1.0m thick and not continuously present. Up to 7.0 m of soft silts and clays can be found under the peat at some locations.

Made Ground

Ardee town has been identified from the GSI mapping to be Urban, which is consistent with the designation of Made Ground. Made ground is likely to exhibit variable strength and compressibility characteristics with residential, retail, industrial developments and existing road connections around the town. Due to the greenfield nature of the proposed development, it is not likely that contaminated land will be encountered, however small areas may be encountered in close proximity to the transport arteries of the N2 and N52.

4.5 Hydrology and Hydrogeology

The proposed road development crosses multiple watercourses, as identified on EPA mapping (Fig. 4.11). The River Dee is the largest of these. The proposed development will traverse the River Garra approx. 1 km upstream of the point where it confluences with the River Dee. These watercourses and their catchment are discussed below.

The study area is within the Water Framework Directive (WFD) Catchment number 06: Newry, Fane, Glyde and Dee. This is a cross border catchment with a surface area of 2,125km², 1390km² of which is located within the Republic of Ireland (RoI). The catchment is characterised by the upland area of the Carlingford Peninsula, which is underlain by granites and other ingneous rocks, and undulating land to the south, and a heavily drumlinised (lenticular, steep sloped hills) landscape in the western half of the catchment. There are extensive gravel deposits along much of the coast in this catchment, which are an important local groundwater resource. The Newry-Fane-Glyde-Dee catchment comprises 15 sub-catchments with 68 river water bodies, ten lakes, nine transitional and four coastal water bodies, and 19 groundwater bodies. There are no heavily modified water bodies or artificial water bodies in the catchment.

The study area comprises a number of sub-catchments within the Newry-Fane-Glyde-Dee catchment (sub-catchments 06_01, 06_04, 06_10 and 06_15). The southern section of the study area drains to the River Dee through sub-catchments 6_01, 06_04 and 06_15. The River Dee is the main waterbody located within the study area. The River Dee rises near Bailieboro in Co. Cavan and flows in a north easterly direction for over 30 miles, passing through Ardee before entering the sea at Annagassan. It is joined by a number of smaller streams such as the White and Corkey Rivers from the south and Garra River from the north. This river can cater for all game anglers, as it possesses stocks of native wild brown trout as well as salmon and sea trout. The River Dee traverses the southern part of Ardee town.

The EPA water quality status for the years 2013 – 2018 (as accessed on catchments.ie on 23/01/20) range from poor to moderate for the River Dee. In general, sections of the river in the west of the study area have a status of 'poor' while those to the east of the town are given a status of 'moderate'. All watercourses within the study area have been given a WFD risk score of being 'at risk'. This means that it is at risk of deteriorating or being at less than 'good' status in the future. Game angling is also popular in Ardee (OPW, Flood Risk Management Plan, Neagh Bann 2018). To the

north of the study area, the River Bawn, which is part of the Glyde catchment, has not been assigned a WFD risk score, as it is under review.

Hydromorphology is a key consideration in defining waterbody status as per the WFD. The Dee and Garra river catchments show indications of historic alterations including channelisation and land drainage.

Figure 4.11 Watercourses at the location of the proposed development

4.5.1 Flooding

Several historical and predictive flood indicator datasets have been reviewed including floodinfo.ie, Benefitting Land maps, Ordnance Survey of Ireland (OSi) flood indicators, and Catchment Flood Risk Assessment and Management (CFRAM) mapping. All datasets indicate elevated levels of flood risk within the townlands of Townparks, Mandistown and Ballygowan.

The Ardee Bog area acts as the natural floodplain for the Rivers Dee, Garra and their tributaries, attenuating flood waters in extreme events, thus lessening flood volumes downstream (i.e. within Ardee). Mapping from floodinfo.ie shows flooding in the vicinity of Ardee Bog (Figure 4.12). The Rivers Dee and Garra appear to respond quickly to intense rainfall events. There are multiple records of flooding in the bog area with relatively frequent return periods (~1 in 10-year). Additionally, there appears to be overland flow paths between the two catchments in extreme events. There is an overland flow path upstream of Burley Bridge on the River Dee with flood waters directed east to join the River Garra.

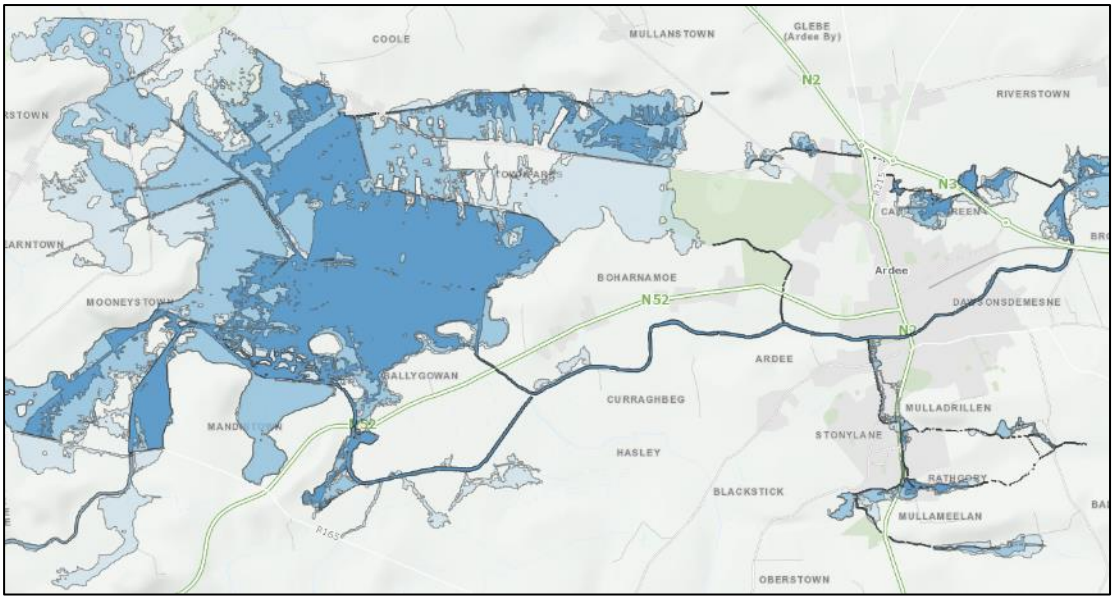


Figure 4.12 Ardee Bog flooding (floodinfo.ie)

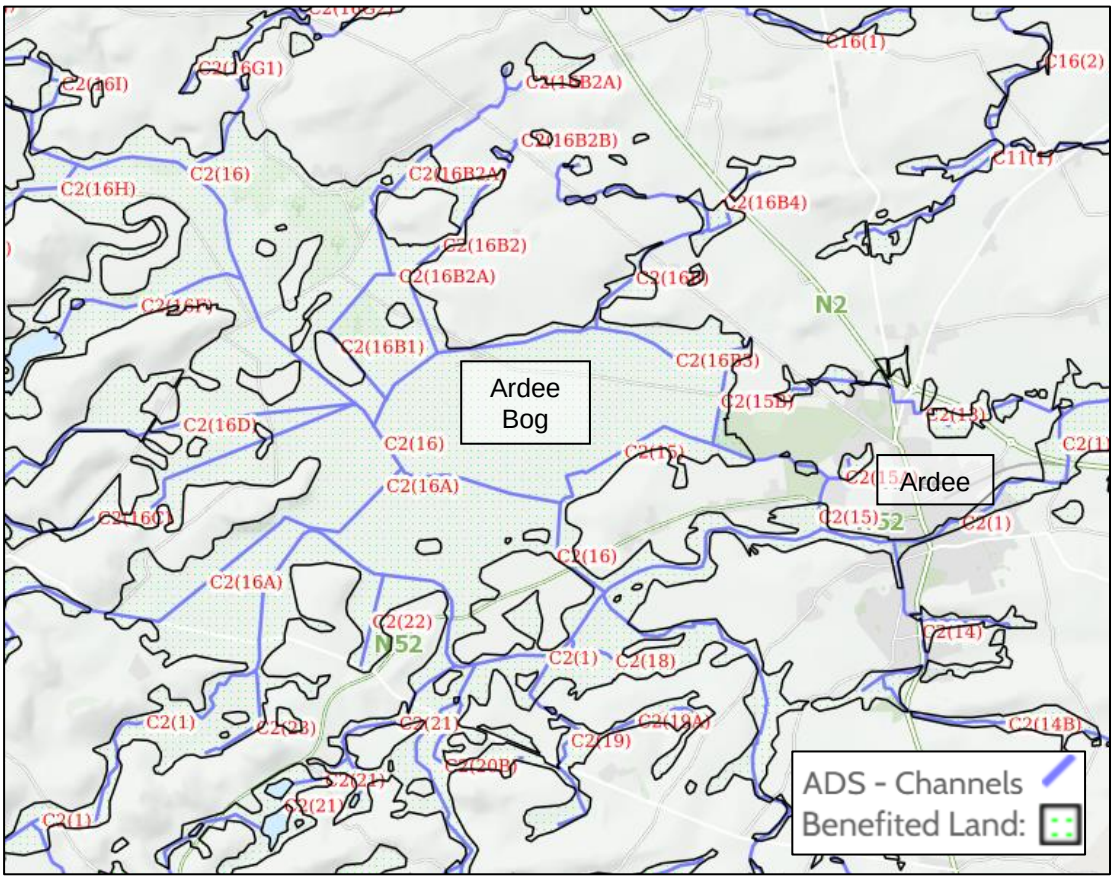


Figure 4.13 Arterial Drainage Project managed channels (ADS) and benefiting lands (floodinfo.ie)

There are two OPW managed Arterial Drainage Projects and existing flood relief projects within the Neagh Bann River Basin, namely the Monaghan Blackwater and the Glyde & Dee Arterial Drainage Projects, and the existing flood relief projects (OPW Neagh Bann Flood Risk Management Plan, 2018). Figure 4.13 shows the highly complex connectivity between the OPW Managed channels in the vicinity of Ardee Bog. Ardee Bog has been greatly reduced in size due to historic peat harvesting and

agricultural drainage works, which have left the area crossed by multiple minor watercourses that drain to the Dee and Garra rivers. A Site Specific Flood Risk Assessment has been undertaken to inform the impact assessment in Section 6 of this report.

4.5.2 Aquifers

There are two main aquifers within the footprint of the proposed development as can be seen in Figure 4.14. One is situated to the north within townlands Glebe and Mullinstown and extends south into Townparks, Bohernamoe and Ballygowan. This is classified as a 'Poor Aquifer – Bedrock' which is Generally Unproductive except for Local Zones. The second aquifer which underlies the western and eastern extents of the proposed development and which is the prominent aquifer within the townlands of Townparks, Bohernamoe, Ballygowan and Curraghbeg, is a 'Locally Important Aquifer – Bedrock', which is Moderately Productive only in Local Zones.

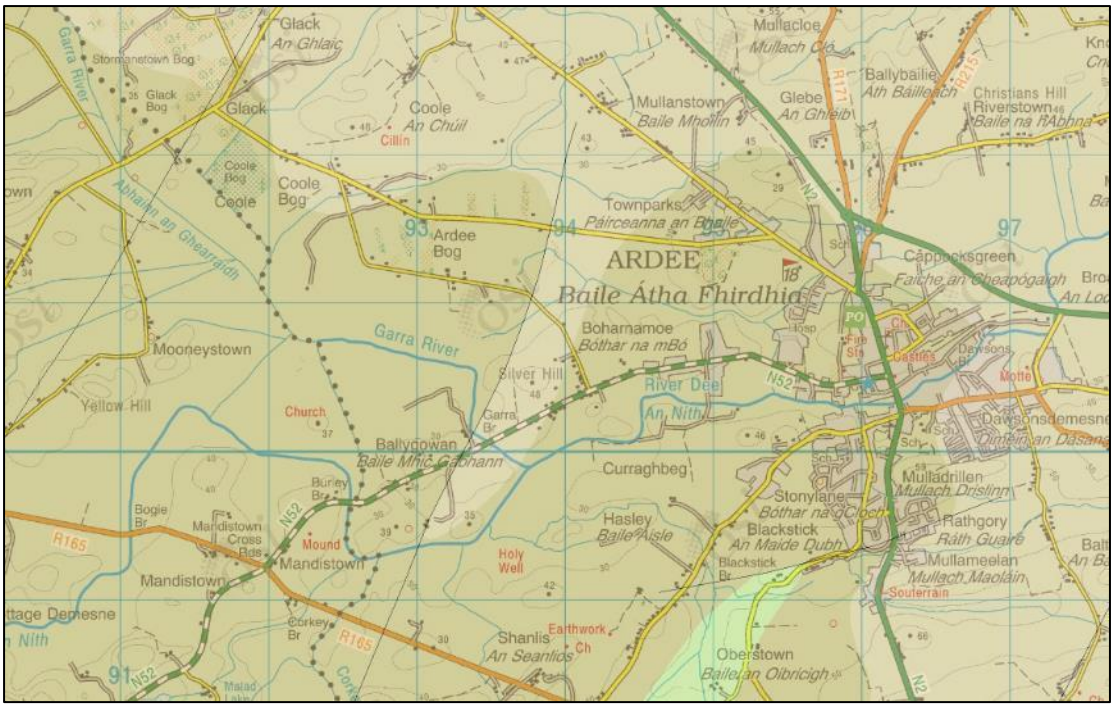


Figure 4.14 Groundwater resources (aquifers) within the study area (source: https://dcenr.maps.arcgis.com/)

4.5.3 Drinking Water Supply

The Curraghbeg Boreholes, which contributes water to the Ardee Water Supply Project, is located southwest of Ardee. Water is also abstracted from the River Dee for the Supply Project. LCC requested Source Protection Zone delineation for the Curraghbeg Borehole from the GSI, in order to develop Source Protection Zones for the entire zone of contribution to the groundwater component of the Ardee Water Supply[5]. The Zone of Contribution is shown in Figure 4.15.

[5] *Establishment of Groundwater Source Protection Zones Ardee Water Supply Project Curraghbeg Borehole. Geological Survey of Ireland.*

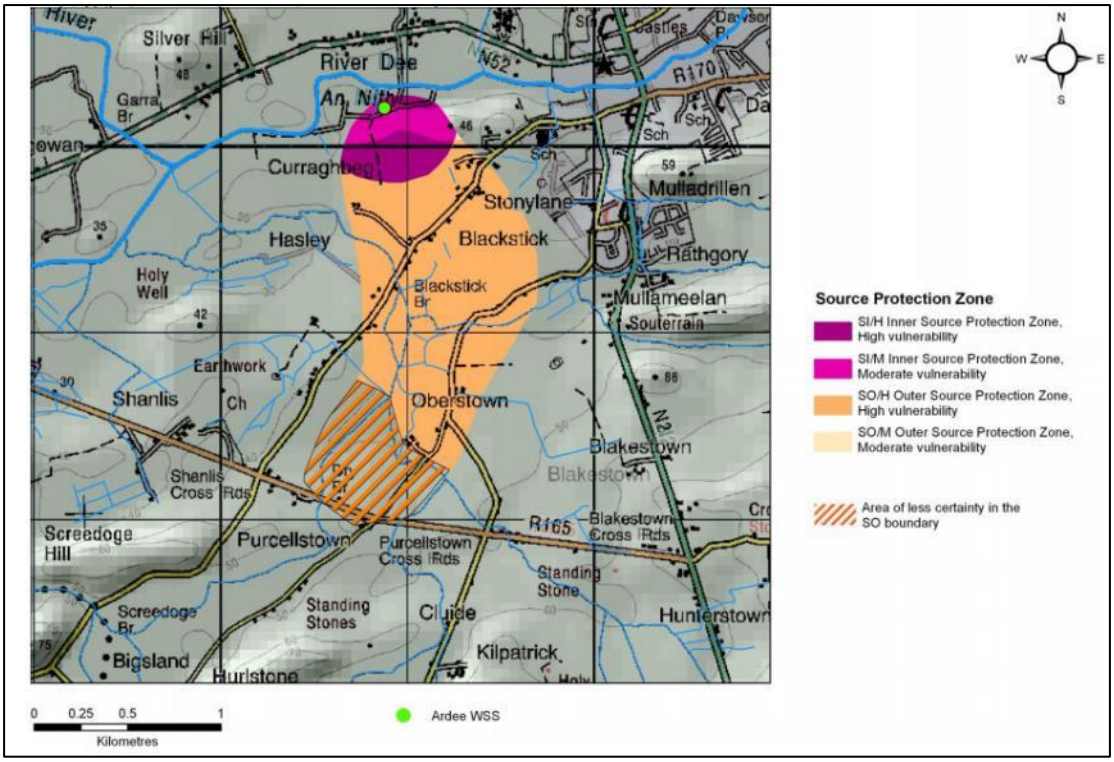


Figure 4.15 Source Protection Zone for the Curraghbeg Borehole

4.5.4 Groundwater Vulnerability

The groundwater vulnerability rating within the study area ranges from Low (L) to Extreme (E). As shown in Figure 4.16, below, the area around Ardee bog and to the west, is ranked as Low groundwater vulnerability. There are small areas of 'Extreme' vulnerability or 'rock at or near the surface or karst' within and around the study area. Those within the study area are visible at Mandistown to the south along the R165 and at the Hospital (St Brigids) on the N52 on approach to Ardee town. In general, across the study area, the groundwater vulnerability ranges from 'moderate' to 'high'.

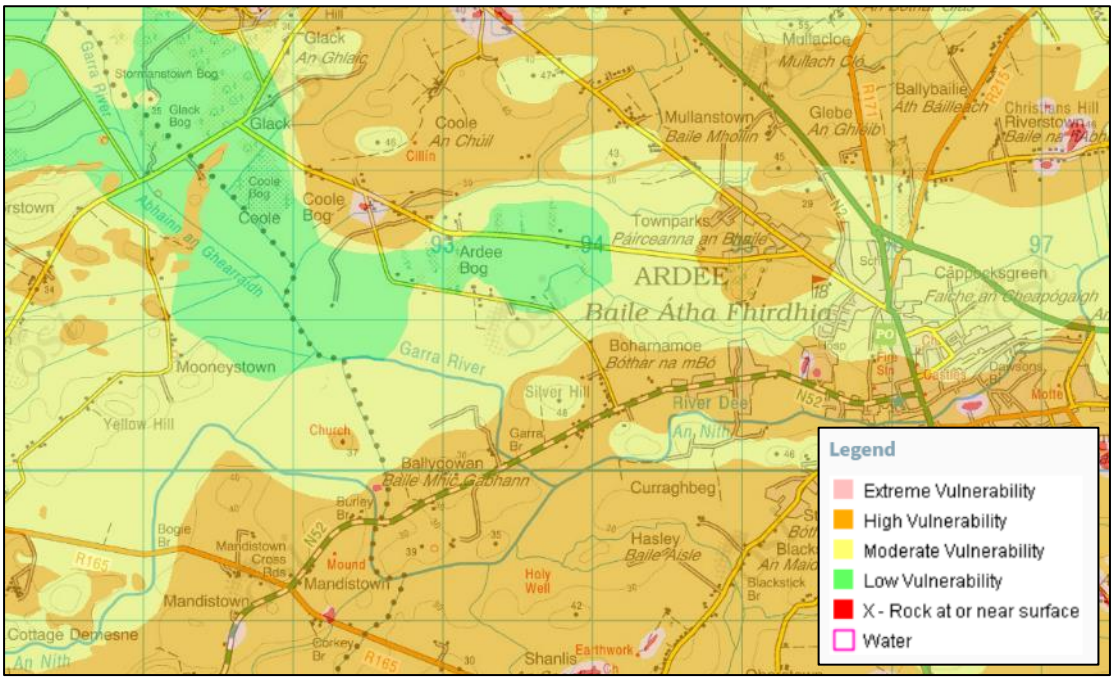


Figure 4.16 Groundwater vulnerability in the study area

4.5.5 Existing Road Drainage

The road drainage on the existing N52 is mostly 'over the edge', wherein unattenuated and untreated run-off makes its way to watercourses via drainage ditches.

4.6 Air Quality and Climate

4.6.1 Air Quality

The location of the proposed development is within EPA air quality Zone D. A review of EPA monitoring data for representative Zone D locations was undertaken to provide an indication of the prevailing air quality conditions within the study area. The TII guidelines (2011) state that the local air quality assessment should focus on nitrogen dioxide (NO_2) and particulate matter of ≤10 µm in diameter (PM_{10}), as these are the pollutants of greatest concern with respect to road traffic.

NO_2 monitoring was carried out at two rural Zone D locations in Emo and Kilkitt in recent years, and at an urban location, Castlebar (EPA, 2019a). The NO_2 annual average in 2018 was 3 µg/m^3 at both rural sites with an annual average of 8 µg/m^3 at Castlebar. Long-term average concentrations measured at all locations were significantly lower than the annual average limit value of 40 µg/m^3. The maximum 1-hour limit value of 200 µg/m^3 (measured as a 99.8th percentile; i.e. 18 exceedances allowed per year) was not exceeded in any year for any of the Zone D locations. The average results at the Zone D locations over the last five years suggests an average of 8 µg/m^3 as a background concentration. Based on the above information, a conservative estimate of the current background NO_2 concentration for the location of the proposed development is 9 µg/m^3.

Long-term PM_{10} measurements carried out at the rural Zone D location in Kilkitt in 2018 gave an average level of 9 µg/m^3 (EPA, 2019a). Results are also available for Kilkitt to observe the trend in concentrations over the last five years. The average result at Kilkitt over the last five years is 9 µg/m^3. Based on the above information, a conservative estimate of the current background PM_{10} concentration for the location of the proposed development is 10 µg/m^3.

4.6.2 Climate

Anthropogenic emissions of greenhouse gases in Ireland included in the EU 2020 strategy are outlined in the most recent review by the EPA, which details emissions up to 2018 (EPA, 2020). The data published in 2020 states that Ireland has exceeded its 2018 annual limit set under the EU's Effort Sharing Decision (ESD), 406/2009/EC by 5.59 million tonnes carbon dioxide equivalent (Mt CO_2eq).

For 2018, total national greenhouse gas emissions are estimated to be 60.93 Mt CO_2eq. This is 0.1% lower (0.07 Mt CO_2eq) than emissions in 2017. Agriculture was the largest sectoral contributor in 2018, at 33.9% of the total, with the transport sector accounting for 20.1% of emissions of CO_2. Greenhouse gas emissions from the transport sector increased by 1.6% or 0.20 Mt CO_2eq in 2018. This was the fifth year out of the last six years to 2018 with increased emissions in the transport sector. Private diesel cars increased by 7.7% in 2018 while the number of passenger petrol cars decreased by 4.5%.

The EPA report, *Ireland's Greenhouse Gas Emissions Projections 2018 – 2040* (EPA, 2019b) notes that there is a long-term projected decrease in greenhouse gas emissions as a result of inclusion of new climate mitigation policies and measures that formed part of the Government's *National Development Plan*, published in 2018. Implementation of these are classed as a "With Additional Measures scenario" for

future greenhouse gas emissions trends. A transition from generating electricity using coal and peat to wind power, and from diesel to electric vehicles are envisaged under this scenario. While emissions are projected to decrease in these areas, emissions from agriculture are projected to grow steadily due to an increase in animal numbers. However, over the period 2013 to 2020, Ireland is projected to cumulatively exceed its compliance obligations with the EU's Effort Sharing Decision (Decision No. 406/2009/EC) 2020 targets by approximately 10 Mt CO_2eq under the "With Existing Measures" scenario and by 9 Mt CO_2eq under the "With Additional Measures" scenario (EPA, 2019b). As discussed in section 3.2.7 above, Targets for the transport sector are outlined in section 10.2 of the Climate Action Plan. These targets focus on reducing the CO_2 eq. emissions from the sector, increasing the number of EVs, improving the supporting charging network and increasing biofuels in road transport.

4.7 Noise and Vibration

A baseline noise survey in the area was completed on the 15th and 16th October 2020. The noise levels in the area of the proposed road alignment are dominated by existing road traffic noise and agricultural activities. Noise levels in the area range from approximately 50 dB Lden to 65 dB Lden depending on the proximity to existing road traffic sources. These are typical noise levels for such an area.

Based on the "Draft Advice Notes for Preparing Environmental Impact Statements issued by the EPA" (EPA, 2017) and relevant TII Guidance, the following sensitive receptors should be considered during impact assessment:

- Residential properties;
- Hospitals;
- Hotels and holiday accommodation; and
- Schools and rehabilitation workshops.

The principal sensitive receptors within the study area for the Noise and Visual assessment are residential properties. There are 55 no. properties within 300m of the proposed development which will be assessed for noise and vibration impacts associated with the operation of the development. 5 no. of these are within 50m of the proposed alignment. As outlined above, the noise levels currently experienced at these properties are dominated by existing traffic noise and agricultural activities depending on their proximity to the existing road traffic sources.

There are a high number of noise sensitive receptors located along the existing N52, and along the N2 through Ardee town which include residential houses, businesses, hospitals and schools which are currently subject to high levels of noise due to traffic levels and congestion.

4.8 Landscape & Visual Amenity

There are a number of characteristics of the study area that are experienced or viewed, and which contribute an experience of a gently varying, rural but working landscape close to an historic town.

One of the key characteristics is the topographic variation that creates a slightly more elevated and more cultivated agricultural landscape with the supporting road system and the main urban area. This elevated area forms a bowl-type enclosure of low-lying land which has been partly reclaimed from bog, but this feature is still legible in its distinctive field pattern, vegetation and regular flooding. The landscape is well treed

with hedgerows and small to medium sized broadleaved woodlands with small rivers and streams slowly meandering through the topography.

Figure 4.17 Field patterns and vegetation in the vicinity of the proposed development

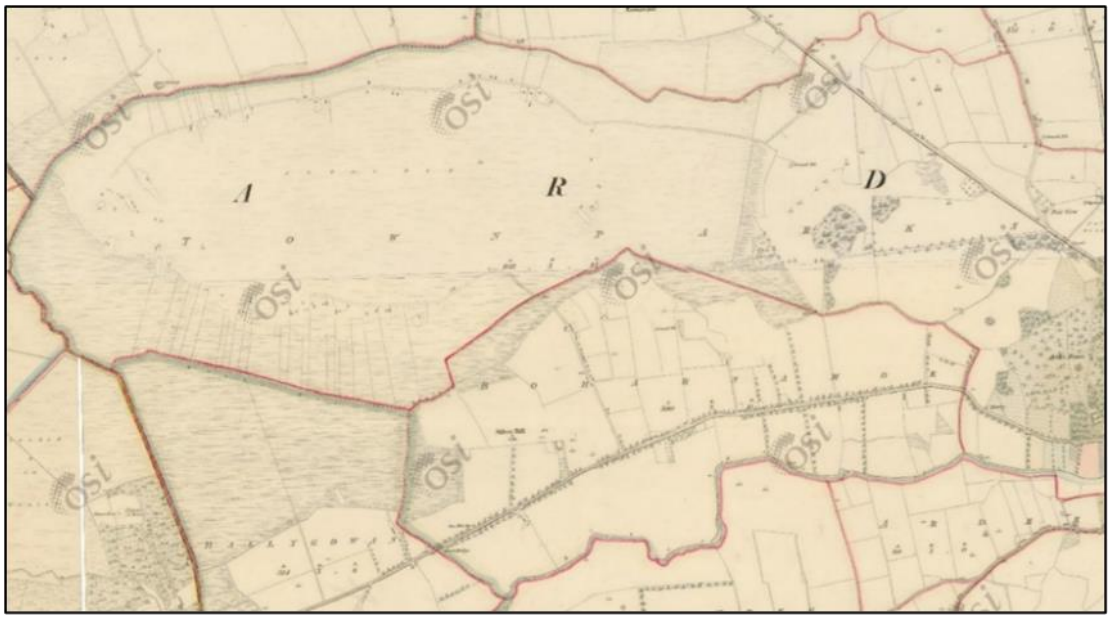


Figure 4.18 19th Century map of Ardee Bog and townland boundary

These features, characteristics or values are tabulated in Table 4.6 in terms of 'Enhancement Values' (those aspects or characteristics of the landscape that are supportive of change and development) and 'Conservation Values' (those values or aspects of the receiving environment that should be protected and conserved).

The generally unspoilt rural character of the receiving environment – its working agricultural landscape; gently rolling topography; local minor roads and scattered residences, trees, tree lines and hedgerows / field boundaries and patterns; small

streams and rivers; and scattered stone structures and features – form the core conservation values. These conservation values are further enhanced by the presence of Ardee Bog, a pNHA and distinctive landscape (Area of High Scenic Quality) and associated scenic route and viewpoint.

Figure 4.19 Residential receptors in the study area

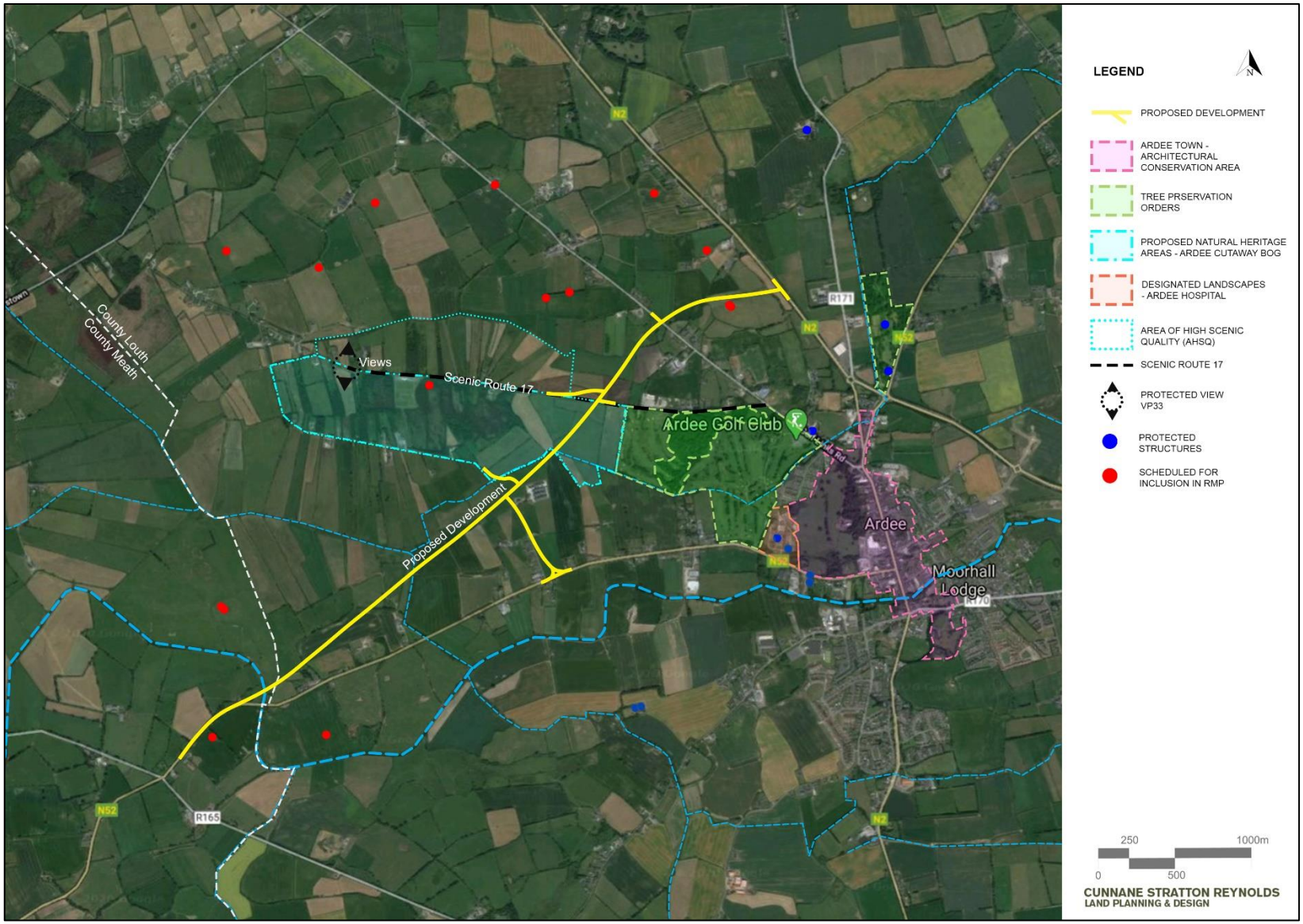


Figure 4.20 Protected and designated areas in the study area

Table 4.6 Landscape Characteristics and Values

No.	Landscape Characteristic, Element or Feature	Landscape Value
Enhancement Values		
1	Heavily trafficked character of Ardee town, a protected ACA	The historic town of Ardee has much to offer visitors, residents and local businesses, as a place of interest and character.
2		Policy (of the LAP) to develop a town by-pass to enhance the town and traffic movement
3	Development plan policy of a balanced approach to landscape protection and socioeconomic development	Landscape is a working place for use as well as enjoyment
4	Landscape character of 'Muirhevna Plain' LCA, which is of local importance and medium sensitivity	
Conservation Values		
1	Working agricultural landscape	A sense of a mixed agricultural landscape as expressed in the pasturelands, field patterns and farm buildings
2	An existing transport corridor associated with the main settlements	The current location of the N52 has a logical and historic rationale running along a natural ridgeline and is well integrated into the wider valley landscape
3	Local Roads and Residential Receptors	The local roads provide transport and communications routes for the population residing in the dispersed rural dwellings across the study area, and for agricultural and other commercial operations. The rural character of the landscape and unspoilt views generate residential amenity value enjoyed by the residents of the study area
4	Ardee Bog: pNHA and Area of High Scenic Quality with designated scenic route and protected viewpoint	A sense of quality and nature in the rural landscape
5	Trees, tree lines and woodlands – protected and other	Trees are high quality visual elements in the landscape, providing enclosure and structure, and are a primary contributor to visual amenity value in the landscape as well as ecological value. In places, they have historic significance and therefore significant cultural historic value.
6	Field boundaries and hedgerows	As linear, connected habitat corridors, hedgerows have significant ecological value. As indicators of historic land boundaries, they have significant cultural historic value. With woodlands, they provide enclosure and structure in the landscape. The hedgerows are a primary contributor to visual amenity value in the landscape.

No.	Landscape Characteristic, Element or Feature	Landscape Value
7	Topography and landform	The attractive, gently rolling landscape creates variation and interest, offering views of / from elevated locations, and enclosure screening from lower areas.
8	Unspoilt rural but working agricultural character	Visual and landscape amenity
9	River Corridors	Adding visual and ecological interest and value
10	Archaeological features	A sense of quality, timelessness and continuity in the rural landscape
11	Built heritage, structures and stone walls	A sense of quality, timelessness and continuity in the rural landscape

4.9 Cultural Heritage

Cultural heritage comprises archaeology (including known archaeological sites and monuments, areas of archaeological potential and underwater archaeology); architectural heritage (that is, buildings and structures of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest); folklore; and history.

Ardee is an example of a medieval walled town with a distinctive central main street and long, narrow plots extending away on each side. In medieval times it was an important Norman walled town situated in the southern part of the ancient territory known as the Plain of Muirheimhne. This identity is enhanced by Hatch's Castle and Ardee Castle, surviving medieval fortified town houses, and the intact street pattern.

The following sources have been used in identifying cultural heritage sites within the vicinity of the proposed development:

- National Monuments Service (NMS) *Historic Environmental Viewer*;
- Record of Protected Structures (RPS) for Co. Louth;
- The NMS *National Monuments in State Care: Ownership & Guardianship* (2009);
- Ordnance Survey of Ireland (OSi) historic mapping (six-inch 1837 map and 25-inch 1890 map); and
- Bing Maps © aerial imagery (2020).

The architectural sites listed in Table 4.7 have been identified within 500m of the proposed development.

Table 4.7 Recorded Archaeological Sites Within 500m of Proposed Development

Ref.	Description	Distance from Proposed Development
ME007-002----	Barrow – Mound Barrow	60m
ME007-001001-	Graveyard	480m
ME007-001----	Church	480m
LH017-001----	Enclosure	370m
LH014-054----	Souterrain	480m
LH014-043001-	Burial Ground	45m
LH014-043002-	Enclosure	50m
LH014-042----	Castle – Unclassified	280m

There are no recorded Architectural Heritage sites within 500m of the proposed development.

Excavations were carried out along the route of the proposed development in 2012 as part of the N52 Ardee Bypass Archaeological Services Contract prior to the commencement of construction works for the previous N52 Ardee Bypass which was granted planning in 2001 and 2006. Stage (i) Test Excavation and Survey Services and Stage (ii) Pre-Excavation Services on the scheme were carried out under archaeological licence number 12E0374 by Ross MacLeod of Rubicon Heritage Services Ltd. Stage (i) Test Excavation and Survey Services were carried out between

Monday 22nd and Wednesday 7th November 2012. As part of Stage (i) standard test excavation and Stage (i) test excavations in wetland a total of 238 test trenches were excavated across 32 fields, comprising a total of 11,592.42 linear metres of trenching. Two areas of archaeological interest – Ballygowan 1 and Boharnamoe 1 – were identified during testing. Stage (i) also involved the survey of one townland boundary along the length of the route (MacLeod and Long 2012) and the removal of topsoil near a known or suspected monument. Rubicon Heritage also carried out Stage (i) testing and Stage (ii) pre-excavation services at another area of archaeological interest identified as Mullanstown 1 in 2012 (Licence Ref.: 12E373). See Figure 4.21 below for the locations of these three areas of archaeological interest.

Stage (ii) Pre-Excavation Services (additional trenching, cleaning and mapping of the area of archaeological interest identified during Stage (i) a and c test trenching) were carried out by Rubicon Heritage Services Ltd on behalf of Louth County Council during the same period. Stage (ii) Services confirmed the presence of burnt mounds at Ballygowan 1 and Boharnamoe 1. These sites were fully excavated as part of this scheme (Licence ref.: 13E289 and 13E290). Stage (iii) excavation services were also provided at Mullanstown 1 by IAC Ltd in 2014 (Licence Ref.: 13E288) to preserve-by-record through appropriate rescue excavation any significant archaeological features or deposits discovered by earlier investigations, so as to mitigate impacts on the archaeological remains that may be discovered within the footprint of the project.

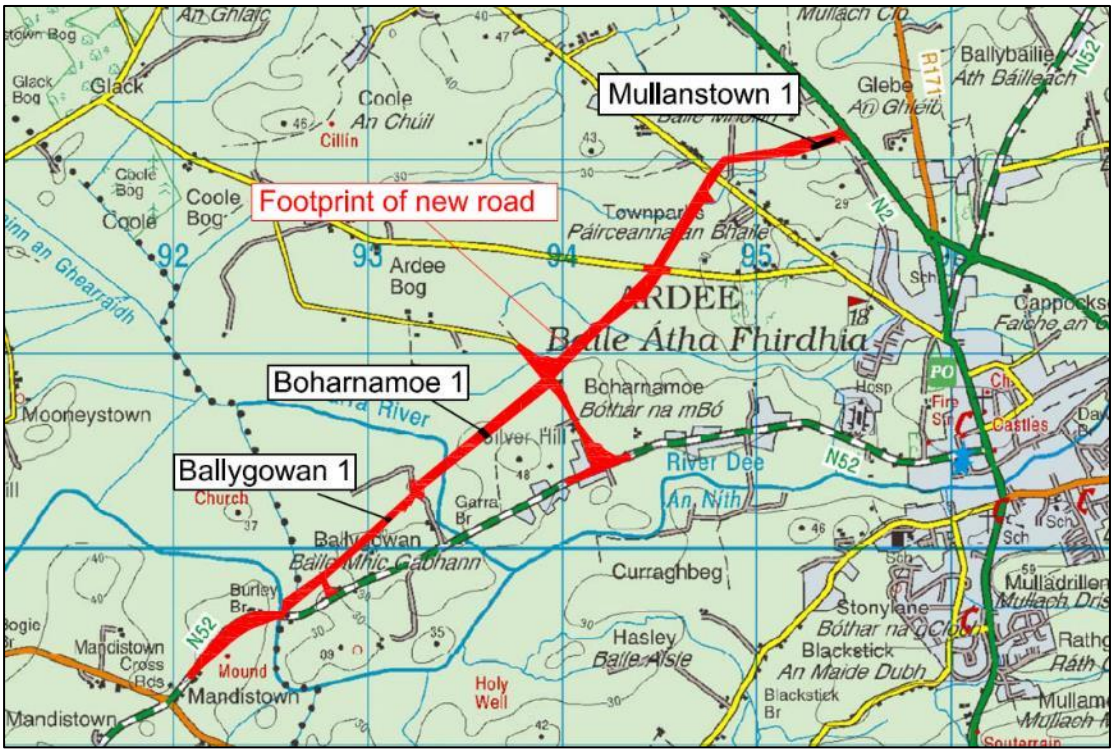


Figure 4.21 Locations of Sites

The ditches, kiln, pits and burial at Mullanstown 1 are likely to be peripheral features associated with the cemetery enclosure RMP LH014-043 located to the immediate west. It is likely that the Mullanstown cemetery enclosure was in existence for a number of generations and the dates obtained for the features in Mullanstown 1 would support/suggest this. These features are just small, peripheral, fragments of this important site.

4.10 Material Assets and Land

Agriculture and Land

Due to the greenfield nature of the site, the main land use within the vicinity of the proposed development is agriculture. The majority of this land is owned by Louth County Council under a Compulsory Purchase Order (CPO) which was granted in 2006. The lands within this CPO were previously used for agriculture and fencing was erected in 2018.

Farm Type

The majority of the agricultural enterprises affected by the proposed development comprise grassland enterprises such as sheep and beef farming and land that is used for silage and hay. In addition, lands are used for tillage enterprises with crops visible in the fields. There are two known agricultural enterprise which are classed as high sensitivity, these are Duleek Poultry farm on Silver Hill Road and a Dairy Enterprise which is also located on Silver Hill Road which will be affected.

Non-Agriculture

This aspect of the baseline environment considers adjacent properties and community facilities. There are a number of residential dwellings located along the National and Local roads crossed by the proposed development, namely the N52, the Silverhill Road, Townparks Road, Mullanstown Road and the N2. Cul-de-sacs or junctions will be provided as per the proposed design, where the proposed development crosses these roads.

There are also a number of community amenities located on these roads within the vicinity of the proposed development, namely Ardee Celtic Football Club on Townparks Road, Ardee Golf Club and Ardee Rugby Club on Golf Links Road.

Utilities

ESB have a 38kV high voltage overhead powerline that is located to the east of the proposed development in a north south direction, in conjunction with predominantly overhead low and medium voltage supplies, which will not be impacted by the proposed development.

There are a number of low voltage ESB supplies to properties within the vicinity of the proposed development that will require diversion, raising or alteration as part of the development.

There is a 250mm high pressure transmission gas main crossing the proposed development in a north west to south east direction, which will require diversion and protection works to facilitate the proposed development.

Irish water have water supply infrastructure located predominately on the existing road network that will require diversion works to be undertaken to facilitate the proposed development.

5. STANDARD MEASURES

The following standard measures will be included in the design and construction to avoid, reduce or prevent likely negative impacts:

- TII Guidelines and standard practice pollution control measures shall be implemented during the construction phase, including:
  - All material including oils, solvents and paints will be stored within temporary bunded areas or dedicated bunded containers;
  - The Contractor will not be permitted to use lands liable to flooding for the storage of materials and will be required to monitor weather forecasts to ensure works within flood prone areas are not undertaken in during times of flood.
  - Refuelling will take place in a designated bunded area away from surface water gullies, drains and water bodies, in the event of refuelling outside of this area, fuel will be transported in a mobile double skinned tank;
  - All machinery and plant used will be regularly maintained and serviced and will comply with appropriate standards to ensure that leakage of diesel, oil and lubricants is prevented;
  - Spill kits and hydrocarbon absorbent packs will be available and drip trays will be used during refuelling;
  - Elements of the bridge will be prefabricated to reduce the need for pouring wet concrete on site.
- Standard practice drainage and pollution prevention measures will be implemented to prevent / minimise potential run-off from the proposed material deposition area at Ch. 3+725.
- Non-return valves will be provided on all attenuation pond outlets, to ensure that water can't back-up through the outlet and into the pond(s).
- During the detailed noise impact assessment of the project, appropriate noise mitigation measures will be outlined to ensure that the construction daytime noise limit of 70dB L_{Aeq}dB will be complied with at all sensitive receptor locations (TII, 2014). Noise mitigation measures will be employed to ensure the construction noise limits are not exceeded along the entire length of the proposed development. The contract documents will clearly specify the construction noise criteria which the construction works must operate within. The Contractor undertaking the construction of the works will be obliged to take specific noise abatement measures and comply with the recommendations of BS 5228- 1:2009+A1:2014.
- During the course of the detailed assessment of the proposed N52 alignment (at the next stage of the design process), noise mitigation measures in the form of noise bunds/barriers, a low noise surfacing or a combination of the two, will be provided where required in accordance with the TII *Guidelines for the Treatment of Noise and Vibration in National Road Schemes* (2004).
- The proposed route traverses' areas indicated as liable to flood in extreme events. Conveyance within the floodplain will be maintained by the provision of adequately sized watercourse crossings and flood conveyance culverts to ensure that the road embankment does not act as a barrier to the flood waters. The road embankment from ground level to the 1:100 year flood level will be constructed of coarse graded granular fill (Class 6A) that has a void ratio of 30%, to allow storage of flood waters within the embankment. The design of the scheme will ensure that it will have no residual significant impact on flooding.

- In respect to wetlands systems (Ardee bog) the road drainage will be designed to achieve a drainage neutral effect on these sensitive habitats utilising Sustainable Drainage Systems (SuDS) throughout. This is achieved (where possible) by preserving existing drainage paths, culverting watercourses appropriately and, to prevent dewatering effects of the road formation, the provision of impervious subsurface liners. In areas of peat excavation, a longitudinal impermeable geotextile barrier will be installed along the edge of the road formation face to prevent /block the draining of the peat. Additionally, transverse impermeable barriers will be provided at intervals to prevent the road formation draining adjacent wetland areas.
- A Construction Environmental Management Plan (CEMP) will be developed as the design of the project is further refined, this will include an Environmental Operating Plan, dust management plan and Construction Erosion and Sediment Control Plan (CESCP). The details contained within these plans will be incorporated into the Works Requirements that the Contractor will be required to adhere to.
- A pre-construction survey will be undertaken 2 – 3 weeks prior to construction to ensure that protected species such as Otter, Badger and Kingfisher have not taken up residence within the construction envelope. The survey will cover the footprint of the proposed development and a 50m buffer. Should any protected species shelters (e.g. holts, setts) be found, the SEM will seek direction from the NPWS. The requirement for licensable mitigation measures, such the temporary closure of the badger sett at Ch. 2+680, will be determined following the preconstruction survey. Any works will comply with TII (2006) *Guidelines on the Treatment of Badger Prior to the Construction of National Road Schemes*. The preconstruction survey will be carried out in accordance with *Ecological Survey Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (NRA, 2008).
- Watercourse crossings will be designed to ensure that mammal passage is not impeded.
- Badger and Otter fencing will be provided along the route to guide these species to mammal underpasses and other safe crossing points.
- All works in proximity to watercourses will follow TII guidance, as per the following documents:
    - *Guidelines for the crossing of Watercourses During Construction of National Road Schemes* (TII, 2008); and,
    - *Guidelines on Protection of Fisheries during Construction Works in and adjacent to Waters* (IFI, 2016).

    Measures contained in these documents include the following:
    - Prior to any excavations, the works area will be assessed and clearly *delineated* with temporary fencing. The minimum area necessary will be identified as part of the works area and there will be no access to works vehicles outside the fenced off areas.
    - All storage of plant, excavated material/topsoil and other materials required for construction, will be held within the fenced area.
    - No washing of plant, vehicles or equipment will be completed within 50m of a watercourse. The site foreman will ensure that all deliveries are required to complete wash-out at their own company base, i.e. not on site.
    - In all circumstances, excavation depths and volumes will be minimised, and excavated material will be re-used where possible.

- The measures prescribed in the CEMP will be strictly adhered to during both the construction and the operational phase.

- The use of machinery carries the potential for accidental hydrocarbon contamination of works areas by fuel spillages or oil leaks for example. The works will be carried out in accordance with the following measures to avoid such impacts:
  - Mobile storage such as fuel bowsers will be bunded to 110% capacity to prevent spills. Tanks for bowsers and generators will be double-skinned.
  - When not in use, all valves and fuel trigger guns from fuel storage containers will be locked.
  - All plant refuelling will take place using mobile fuel bowsers. Plant refuelling will take place as far as practicable from watercourses. A spill kit and drip tray shall be on site at all times and available for all refuelling operations. Equipment will not be left unattended during refuelling. All pipework from containers to pump nozzles will have anti-siphon valves fitted.
  - Strict procedures for plant inspection, maintenance and repairs will be detailed in the contractor's method statements and machinery shall be checked for leaks before arrival on-site.
  - All site plant will be inspected at the beginning of each day prior to use. Defective plant will not be used until the defect is satisfactorily fixed.
  - All major repair and maintenance operations will take place off-site.
- As stated above, a CESCP will be finalised by the successful Contractor prior to the commencement of works. It will be implemented throughout the proposed works and include, at a minimum, the following good practice measures:
  - All constructional compound areas will be required to be set back a minimum of 10m from river and stream channels and out of potential floodplain areas.
  - Surface water flowing onto the construction area will be minimised through the provision of berms, diversion channels and cut-off ditches.
  - Management of excess material stockpiles will be undertaken so as to prevent siltation of watercourse systems through run-off due to rainfall events. This may involve allowing the establishment of vegetation on the exposed soil and the diversion of run-off water off these stockpiles to settlement ponds.
  - Where constructional works are carried out adjacent to turloughs, fens or surface waterbodies, protection of such waterbodies from silt loading shall be achieved through use of grassed buffer areas, timber fencing with silt fences or earthen berms to provide adequate treatments of run-off to the watercourses.
  - Settlement ponds, silt traps and bunds shall be used, as appropriate, and construction within watercourses shall be avoided / minimised. Where pumping of water is to be carried out, filters will be used at intake points and discharge will be through a sediment trap.
  - All watercourses that occur in areas of land that will be used for site compound / storage facilities will be fenced off at a minimum distance of 10m. In addition, measures will be implemented to ensure that silt laden or contaminated surface water run-off from the compound does not discharge directly to watercourses. Compounds shall not be constructed on lands designated as Flood Zone A or B in accordance with the OPW

Flood Risk Management Guidelines (2009). Compounds will not be permitted in or within 100 metres of a European Site.

- The storage of oils, fuel, chemicals and hydraulic fluids will be in secure areas within the site compounds and will not occur within a minimum of 10m from watercourses. Storage tanks shall have secondary containment provided by means of an above ground bund to capture any oil leakage. Storage tanks and associated provision, including bunds, will conform to the current guidelines for oil storage and will be undertaken in accordance with *Best Practice Guide BPGCS005 – Oil Storage Guidelines* (Enterprise Ireland, n.d.).
- Foul drainage from all site offices and construction facilities will be taken off site and disposed of by a licensed contractor in accordance with legislation to prevent pollution of rivers and local water supply.
- The construction discharge will be treated such that it will not reduce the environmental quality standard of the receiving watercourses.
- Riparian vegetation along the identified sensitive watercourse will be fenced off to provide a buffer zone for its protection to a minimum distance of 5m with the exception of proposed crossing points.
- Any surface water abstracted from a river for use during construction shall be through a pump fitted with a filter to prevent intake of fish.
- The use and management of concrete in or close to watercourses will be carefully controlled to avoid spillage which as stated earlier has a deleterious effect on water chemistry and aquatic habitats and species.

- During the operational phase, Louth County Council will be responsible for carrying out regular, maintenance of attenuation ponds.

6. SUB-THRESHOLD EIA SCREENING ASSESSMENT

6.1 Assessment of Aspects of the Environment and Significance of Impacts

Having regard to the location and characteristics of the proposed development, an assessment of the likely significant effects of the proposed development on the environmental criteria considered in EIA, is presented in Table 6.1 in accordance with Schedule 7A of the Planning and Development Regulations 2001 (as amended).

Table 6.1 Assessment of characteristics and likely significance of impacts on EIA environmental receptors

EIA Receptor	Screening Assessment	Screened In / Out?
Population and Human Health	**Construction Stage** Properties will experience temporary negative effects during construction from noise and air emissions associated with construction, however noise mitigation measures will be employed to ensure the construction noise limits are not exceeded along the entire length of the proposed development, while a Dust Management Plan will be implemented to ensure that dust levels are kept to a minimum. Traffic delays may arise during the construction stage while tie-ins to the existing roads in the locality are being constructed. These works will be managed by the contractor to ensure that associated nuisance and delays are kept to a minimum. **Operation Stage** The proposed road development will provide improved connectivity for the population of Ardee by removing through traffic from Ardee town centre and providing a link from the existing N52 to the N2, bypassing the town centre. This will have a positive impact on Ardee town centre by removing congestion, noise and air pollution and making it a more attractive, healthier environment to live in. Cycle and Pedestrian facilities alongside the new N52 Ardee Bypass will provide enhanced connectivity for pedestrians and cyclists along the new development, with connectivity provided to adjoining local roads. There are a number of local residents who travel to and from Ardee along the Silverhill, Townparks and Mullanstown roads to work, school and to town who will benefit from the proposed cycle facilities. Access to community facilities including Ardee Celtic FC, Ardee Rugby Club and Ardee Golf Club will be maintained with additional links for pedestrians and cyclists between the Silverhill, Townparks and Mullanstown Roads. The existing N52 will provide safer conditions for cyclists accessing the town due to reduced traffic volumes, while a connection to the proposed bypass will be provided at both the tie-in west of Burley Bridge and on the realigned Silverhill link road. Vehicular access to community facilities will not be impeded with connectivity remaining across the proposed road development at Townparks Road via a staggered junction, to allow access the Ardee Celtic FC grounds. Those travelling south along Mullanstown Road will be able to access the Ardee Golf and Rugby clubs via the proposed development and the Townparks road. A southbound link from the proposed bypass onto the existing N52 at Silverhill will provide access to those facilities on the N52 including Hickey's Home Farm Shop and St. Brigid's Hospital. As detailed above, a number of existing roads will be intersected by the proposed new bypass. In order to minimise associated impacts on residents, landowners, business owners and workers using the roads, staggered junctions have been provided on	Out

EIA Receptor	Screening Assessment	Screened In / Out?
	the Silverhill Road and Townparks Road intersections. There are a number of businesses located on the Mullanstown Road, who eastern arm will be stopped up under the scope of the proposed development. Those located on the northern arm of the Mullanstown Road will be able to access the new bypass via the T-junction, before travelling east to the N2, west to Kells or to Ardee town centre via the Townparks Road. Similarly, those businesses on the southern arm of the Mullanstown Road (which will be subject to a cul de sac) can access the town centre as usual, or they can use the Townparks Road to access the proposed bypass, from where they can access the N2 or Mullanstown Road. While there will be minor additions to journey times for road users as a result of the intersection of existing roads and the closure of the eastern arm of the Mullanstown Road, the number of road users affected will be relatively small and no significant impacts are predicted, e.g. in relation to socioeconomics, journey characteristics or severance. **No likely significant effects[6] are predicted.**	
Biodiversity	**Designated Sites** A separate AA Screening has been prepared, considering the likely significant effects of the proposed development on European (Natura 2000) Sites. This screening assessment has determined that *"the Project, either individually or in combination with other plans and projects, it is not likely to have a significant effect on any European site"*. The route passes through the eastern fringe of the Ardee Cutaway Bog pNHA. The direct habitat loss within the pNHA is agricultural grassland and is not considered significant. A Flood Risk Assessment (FRA) has been undertaken to assess the impact of the proposed development on the hydrology of the area. The design of the road has included mitigation measures in terms of flood conveyance culverts to ensure conveyance within the floodplain while SuDS drainage measures will provide a neutral drainage effect on sensitive habitats. This will include impervious subsurface liners either in transverse or longitudinal configuration as described in Section 5, above, which will prevent impacts on the Ardee Bog. **Habitats** The route corridor was cleared of vegetation in 2019. The proposed development will require works in the vicinity of the River Dee, the River Garra and a number of drains and ditches. Pollution control measures in line with TII Guidelines shall be outlined in a Construction Environmental Management Plan, as outlined in Section 5, above, and implemented during the construction phase. Significant negative effects are not considered likely in terms of surface water pollution. Design measures for the watercourse crossings include abutment set back from the riverbank and the avoidance of light spill onto the watercourses. Accordingly, no significant aquatic ecological impacts are expected.	Out

[6] As per definition in Table 3.3 of EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Draft)* (2017) (refer to Table 1.4, above).

EIA Receptor	Screening Assessment	Screened In / Out?
	Protected Species The construction and operation of the proposed road development has the potential to impact protected species. Ecological surveys in accordance with best practice have been carried out and standard mitigation measures will be implemented during the construction and operational phases. Significant impacts on protected species are not anticipated. **No likely significant negative effects[6] above are predicted.**	
Soils and Geology	**Land Take** The road alignment will sit on the underlying soil currently used for agricultural purposes and switch the land use to urban / transportation. **Excavation and Importation of Soil** Road projects situated in weak and compressible soil routinely include excavation of poor soil layers and replacement with more competent borrowed material. Peaty surface layer encountered locally on the N52 Ardee Bypass and other soft organic soils will likely have to be excavated and disposed of in the designated material recovery sites. The majority of soft clays and silts will be improved in-situ by surcharging with the help of vertical band drains, thus eliminating the need for their excavation and disposal and the need for importation of good quality material. A minor quantity of surplus soil may need be deposited off-site in a suitably licensed facility or potentially reused on nearby projects. Neither of these features constitutes a significant impact. A portion of the route runs through the outer parts of Ardee Bog pHNA, however very little peat (up to maximum 0.7m thickness) has been encountered in ground investigations in the footprint of the proposed development, confirming the visual observations that the bog has historically been turned into agricultural land, particularly on its eastern margin. Fill material will be required for embankment construction. This will either be obtained from the cuttings associated with the proposed development or from the nearby borrow areas in glacial till which is ubiquitous in the general area. The route alignment involves earthworks of modest size, with embankments typically between 3 and 5m high and much shorter cuttings up to 8m high. Bedrock is not expected to be exposed during construction. **Soil Inclusions**	Out

EIA Receptor	Screening Assessment	Screened In / Out?
	Bridges over the River Dee and the Garra River will likely require piled foundations owing to soft soils in the vicinity of the river. This is a routine construction element and a wide array of piling techniques (bored concrete piles, driven steel piles, etc.) are available to suit the construction and environmental requirements. **Contaminated Land** No contaminated land is expected to be encountered on the route of the proposed development, which is almost entirely on agricultural land. On locations with increased risk of encountering contaminated land such as tie-ins and crossings of the existing roads, appropriate testing will be carried out and waste management protocols will be followed. **Geological Heritage** The alignment crosses the northern extreme of the Ardee-Newtown Bedform Field designated Geological Heritage site. The impacts of earthwork features will be imperceptible due to relative difference in scale between the Geological Heritage site (approx. 50 km²) and size of its glacial features compared to the earthwork size. **Karst and Economic Geology** There will be no impact on karst and / or economic geology as a result of the proposed development. **No likely significant effects[6] are predicted.**	
Hydrology	**Flood Risk** The proposed development crosses the River Dee, River Garra and Ardee Bog. Ardee Bog has been greatly reduced in size due to historic peat harvesting and agricultural drainage works, which have left the area crossed by multiple minor watercourses that drain to the Dee and Garra rivers. OPW predictive flood mapping indicates that the proposed route is within the 1 in 1000-year (plus climate change) flood extents emanating from the aforementioned watercourses and bog. The proposed development will include measures to mitigate the impact of building within a floodplain including porous embankment construction and flood conveyance culverts. The resultant impact will be permanent imperceptible negative. A number of the proposed attenuation ponds are situated in flood-prone areas. The crest of the bunds that form the attenuation ponds are above the 1:100-year flood levels, such that they are not envisaged to be inundated in a flood event through overtopping. However, the outfalls of the ponds to the receiving watercourses are below the 1:100-year flood level in most instances. To ensure that flood waters can't back-up through the outlet into the pond, non-return valves will be provided on all attenuation pond outlets. In the case of more severe than 1:100-year flood events, in which one or more attenuation pond is flooded, there will be mobilisation of fine sediment and contaminants. Assuming regular maintenance of ponds, the associated impact would be minor.	Out

EIA Receptor	Screening Assessment	Screened In / Out?
	A proposed material deposition area at Ch. 3+725 is immediately adjacent to the headwaters of a River Garra tributary. While the area is not known to flood, standard drainage and pollution prevention measures in line with TII Guidelines will be undertaken to prevent / minimise potential run-off from this area. **Water Quality** The construction phase involves limited in-stream works and works in close proximity to the Rivers Dee and Garra as well as their tributaries. Standard pollution control measures in line with TII Guidelines shall be implemented during the construction phase. Significant negative effects are not considered likely in terms of surface water pollution. The proposed development includes a drainage design featuring pollutant prevention technologies, including sustainable drainage systems (SuDS) measures and petrol interceptors. This constitutes an improvement on the existing scenario, wherein unattenuated and untreated run-off from the road surface, which is likely to contain small concentrations of hydrocarbons and other pollutants, is being discharged to watercourses in the study area. The inclusion of SuDS measures in the proposed drainage design will result in a reduction in the concentration of pollutants being discharged to watercourses, including the Rivers Dee and Garra. This is a positive, permanent moderate impact. **Hydromorphology** There is potential for moderate negative hydromorphological impacts during the construction phase due to increased sediment run-off when constructing the carriageway, bridge crossings and new surface water drainage infrastructure. The proposed development will require an increase in hardstanding areas and the construction of new bridge crossings which could negatively impact watercourse hydromorphology, including alterations to erosion / depositional processes and changing scour patterns in the watercourse channels and floodplains. During the operational phase there is the potential for permanent significant negative impacts to the Ardee Bog's hydrological integrity by altering surface and subsurface drainage pathways in the vicinity of the site. These impacts will be mitigated by the implementation of standard sediment management techniques, the implementation of SuDS and the use of longitudinal and transverse impermeable barriers in areas of peat excavation. The resultant impact will be permanent imperceptible negative. **Public Water Supply** The main water supply for Ardee town comes from the River Dee and Curraghbeg Boreholes, located south of the N52, 1km east of Silver Hill. The Rivers Dee and Garra have been designated as drinking water rivers in accordance with European Communities (Drinking Water) (No. 2) Regulations 2007 (SI no. 278/2007). Pollution of the watercourses during construction and operation of the proposed development could directly impact the provision of potable water for Ardee. Potential impacts during the construction phase may be exacerbated by the site flooding, potentially mobilising pollutants in the water column.	

EIA Receptor	Screening Assessment	Screened In / Out?
	Nonetheless, it is envisaged that implementation of standard practice pollution control measures in line with TII Guidelines will limit any negative impacts, overall resulting in a potential temporary slight impact. **No likely significant effects[6] are predicted.**	
Hydrogeology	**<u>Aquifers</u>** The proposed development intersects two main aquifers in the area with a less prominent aquifer located to the northeast end of the development running through the Glebe and Mullanstown area south to Townparks. This less prominent aquifer is also adjacent to the Ardee Bog, located west of this area, and is considered a "Poor Quality" aquifer as listed on the Geological Survey Ireland (GSI) Bedrock Aquifer database for the Ardee area. This aquifer is described as generally unproductive bedrock and would likely have limited impacts during the construction phase of the proposed road. While the route will traverse a section of the perimeter of the Ardee Bog, the limited removal of peat material to provide a suitable base for the construction of the roadway will likely have minimal impacts on the hydrogeology of the bog itself. The removal of additional soils near the eastern extent of Ardee Bog is expected to result in a minimal impact on the drainage of the bog, which is already extensively drained through a series of field drains and ditches. In addition, the placement of culverts will ensure that the hydrological regime is maintained during any future flood events. The GI conducted in 2013 throughout the proposed project area included test pits, soakaway test pits, soil borings for site lithology, and laboratory testing to determine hydraulic conductivity of soils. During the completion of the test pits during the investigation, groundwater was not encountered in any of the test pits completed, which were all completed to a depth of 1.3m bgs. In general, percolation rates of test pits ranged from 4.415E-06 m/s to 7.752E-06 m/s which correlates to a lower hydraulic connectivity (k-value), meaning groundwater flow would be limited through the soils. Given that the rates are low, the excavation and replacement of peats with a mixture of the removed overburden and imported soils will have a limited impact on the hydraulic conductivity and connectivity of Ardee Bog and the project area. The boreholes completed during the GI provided the local lithology to determine the connectivity between Ardee Bog and the proposed work area which could impact drainage of the bog. The use of longitudinal and transverse impermeable barriers in areas of peat excavation, however, will ensure that the proposed development does not alter the hydrology of the area. **<u>Groundwater Vulnerability</u>** Groundwater vulnerability in the area immediately to the west of the proposed new River Dee crossing is listed primarily as "High" with a much smaller area listed as "Extremely Vulnerable" with rock at/or near the surface and possible karst formations as well. Potential impacts to groundwater will likely be limited to localized areas within the extent of the proposed road from potential petrol runoff from stormwater events. While the likelihood of large releases to the surrounding groundwater is low, the potential exists due to the forecasted increased traffic along the road which could negatively impact groundwater in those	Out

EIA Receptor	Screening Assessment	Screened In / Out?
	areas demarcated as having high vulnerability to impacts. These impacts will be avoided by an attenuation pond with a treatment facility which will aid in the removal of any sediment and petrol runoff. The proposed drainage system will eliminate the likelihood of negative impacts to the subsoils as it will divert any impacted run-off to an attenuation pond system prior to discharging into the receiving watercourse. Without the implementation of a SuDS drainage system, a negative impact could have resulted to the subsoils as the removal of overlying peat which had acted as a natural filtration. The use of the drainage system will result in positive impacts on run-off draining from the road surface. The proposed drainage system will eliminate the likelihood of negative impacts to the subsoils areas. The depths of peat encountered throughout the scheme are minimal, with a maximum depth of 1m, but more typically 0.5m depth, resulting in a minimal increase in risk of pollution to the sub-soils underlaying the peat. **No likely significant effects[6] are predicted.**	
Air Quality and Climate	**<u>Construction Phase</u>** The construction of the proposed development has the potential to impact air quality through short-term dust related emissions. Dust emissions may occur as a result of construction related activities. A dust management plan shall be formulated as part of the CEMP. Provided these standard dust mitigation measures are employed throughout the site, air quality impacts as a result of construction activities are predicted to be short term and imperceptible at nearby sensitive receptors. There is the potential for a number of GHG emissions to atmosphere during the construction of the proposed development which could impact climate. Construction vehicles, generators and embodied carbon in construction materials, among other sources (e.g. excavated peat) may give rise to GHG emissions. However, these emissions are not predicted to be significant in terms of Ireland's climate targets, due to the relatively small scale of the proposed development. **<u>Operational Phase</u>** During its operation, the proposed development will divert traffic from the heavily congested Ardee town onto the proposed bypass, thus reducing congestion within the town and improving the air quality for receptors within that area. At the same time, newly impacted receptors within 200m of the proposed development will experience an increase in air pollutant emissions as a result of the proposed development. However, air quality at these newly impacted receptors is not predicted to change significantly relative to the baseline scenario due to their existing proximity to the existing N52. The provision of pedestrian and cyclist facilities may result in a reduction of vehicular journeys, in particular for journeys to local amenities.	Out

<table>
<tr><th>EIA Receptor</th><th>Screening Assessment</th><th>Screened In / Out?</th></tr>
<tr><td></td><td>Operational stage traffic-related greenhouse gas emissions are not predicted to significantly impact climate. The proposed development will reduce congestion and will allow for better, more efficient driving, thereby reducing emissions of air pollutants and CO_2 and thereby reducing the impact on climate, compared with the existing scenario. There are currently no sector specific emissions targets outlined for the reduction of greenhouse gas emissions against which to quantify the contribution of the proposed development.

No likely significant effects[6] are predicted.</td><td></td></tr>
<tr><td>Noise and Vibration</td><td><u>Construction Phase</u>
As stated in the TII Guidelines, "there is no published Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project". Local authorities, where appropriate, should control construction activities by imposing limits on the hours of operation and consider noise limits at their discretion. Transport Infrastructure Ireland (TII) considers that the noise levels in Table 6.1.A are typically deemed acceptable (TII, 2014). Note: that these values are indicative only; it may be appropriate to apply more stringent limits in areas where pre-existing noise levels are low. These construction noise limits will be applied to the proposed development.

Table 6.1.A Maximum permissible noise levels at the façade of dwellings during construction
<table>
<tr><th>Days & Times</th><th>$L_{Aeq\ (1\ hour)}$ dB</th><th>$L_{pA(max)slow}$ dB</th></tr>
<tr><td>Monday to Friday - 07.00 to 19.00 hrs</td><td>70</td><td>80</td></tr>
<tr><td>Monday to Friday - 19.00 to 22.00 hrs</td><td>60</td><td>65</td></tr>
<tr><td>Saturday - 08.00 to 16.30 hrs</td><td>65</td><td>75</td></tr>
<tr><td>Sundays & Bank Holidays - 08.00 to 16.30 hrs</td><td>60</td><td>65</td></tr>
</table>
Note: Construction activities at these times, other than that required in respect of emergency works, will normally require the explicit permission of Louth County Council.
References: Table 6.1 - Maximum permissible noise levels at the façade of dwellings during construction (Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes March 2014)
Table 1: Maximum permissible noise levels at the façade of dwellings during construction (Guidelines for the Treatment of Noise and Vibration in National Road Schemes, 2004)

An initial construction phase noise impact assessment indicates that at distances of beyond 50m from the works, the construction daytime noise limit of 70dB L_{Aeq} can typically be complied with. At distances of up to 25m from the works, there</td><td>Out</td></tr>
</table>

EIA Receptor	Screening Assessment	Screened In / Out?
	is potential for the noise limit criterion to be exceeded in the absence of construction noise mitigation measures. During the detailed noise impact assessment of the project, appropriate noise mitigation measures will be outlined to ensure that the construction daytime noise limit of 70dB L_{Aeq} will be complied with at all sensitive receptor locations. Noise mitigation measures will be employed to ensure the construction noise limits are not exceeded along the entire length of the development. The contract documents will clearly specify the construction noise criteria which the construction works must operate within. The Contractor undertaking the construction of the works will be obliged to take specific noise abatement measures and comply with the recommendations of *BS 5228- 1:2009+A1:2014*. **Operational Phase** The noise level prediction parameter is the L_{den} noise indicator as specified in the TII *Guidelines for the Treatment of Noise and Vibration in National Road Schemes* (2004). This is a composite of L_{Aeq} values for L_{Day}, $L_{Evening}$ and L_{Night}. The design goal set out in the TII document is to achieve 60dB L_{den} (free field residential façade criterion) or less at each receptor. The TII document states that mitigation measures are only deemed necessary when the following three conditions are satisfied at designated sensitive receptors: 1. The combined expected maximum traffic noise level, i.e. the relevant noise level, from the proposed road scheme together with other traffic in the vicinity is greater than the design goal - 60dB L_{den}; 2. The relevant noise level is at least 1dB more than the expected traffic noise level without the proposed road scheme in place; and 3. The contribution to the increase in the relevant noise level from the proposed road scheme is at least 1dB. An initial prediction of the likely noise levels at receptors in proximity to the proposed development, based on the Design Year 2038 AADT volumes, was carried out using the *Calculation for Road Traffic Noise* (CRTN) methodology and CadnaA noise modelling software. Traffic noise predictions indicate that at Mullanstown, where the route of the proposed development crosses the existing Mullanstown Road, the nearest noise sensitive receptors at this location may experience a noise level of up to 63 dB(A) L_{den}. Such a noise level is in excess of the TII design goal of 60 dB(A) L_{den} at noise sensitive receptors. The predicted noise levels at receptors in proximity to the proposed N52 alignment indicate that noise mitigation measures will potentially be necessary in order to achieve the design goal of 60dB L_{den} at certain properties. This will depend on proximity to the proposed bypass, the proximity to the existing N52, the proposed vertical alignment relative to existing topography and the existing and anticipated future traffic volumes in proximity to the property. The predicted future noise level (i.e. results of noise modelling) as well as the difference between the existing noise level and the predicted future noise level will determine if noise mitigation measures will be required. Noise mitigation measures will not be necessary at properties	

EIA Receptor	Screening Assessment	Screened In / Out?
	in close proximity to the existing N52, as these properties will either experience no significant change in traffic noise levels or a reduction in noise level, depending on their location relative to the proposed N52 alignment. Throughout the length of the proposed development, some level of cuttings and embankments will be required to allow for the construction of the proposed N52 alignment. Cuttings have the potential to provide natural noise attenuation, whereas embankments have the potential to allow road traffic noise to propagate unattenuated further from the road. Deep cuttings will attenuate the potential noise impact to a greater extent than a shallow cutting. During the course of the detailed assessment of the proposed N52 alignment (at the next stage of the design process), the noise impact assessment methodology and detailed mitigation design will include for the use of noise prediction modelling software. The proposed N52 alignment with corresponding traffic data for the Base Year, Year of Opening and the Design Year will be input to the model. Existing and proposed digital terrain data will be used to interpret potential 'natural noise mitigation' in the noise prediction model. Topographical data will be modified to reflect changes in the terrain due to the preferred route alignment and these changes will be based on information provided in the design drawings for the preferred route alignment. All noise sensitive receptors within 300 m of the proposed N52 alignment will be represented in the noise model. All residences will be identified using Ordnance Survey mapping and field investigation will be carried out to determine whether houses are bungalows, two storey residences and if the attic in each residence is used as a living space, where possible. The noise prediction model will be validated against actual noise monitoring data collected as part of the baseline assessment of the detailed Noise Impact Assessment process. Accurate noise impact prediction and subsequently noise mitigation design will be completed using the noise prediction modelling approach described. Either noise bunds/barriers, a low noise surfacing or a combination of the two will be provided along the proposed road development as required to ensure compliance with the recommended levels. The residual impacts of the proposed N52 alignment will be assessed taking into account the recommended noise mitigation measures. It is predicted that with the inclusion of the recommended noise mitigation measures, traffic noise levels associated with the proposed road combined with traffic along the adjacent surrounding roads will be within the noise design criterion of 60dB L_{den} and therefore, significant effects are not likely. TII accepts that it may not always be sustainable to provide adequate mitigation in order to achieve the design goal. Therefore, a structured approach will be taken in order to ameliorate as far as practicable. The 2014 noise guidance document notes that: *"in some cases the attainment of the design goal may not be possible by sustainable means".* It can be expected that temporary short-term noise impacts will occur during construction of the proposed development. These will be ameliorated to achieve the construction noise guidelines through specific mitigation recommendations. Mitigation	

EIA Receptor	Screening Assessment	Screened In / Out?
	measures will be outlined (where required) to minimise the future operational traffic noise impact to meet the design goals for the project. **No likely significant effects[6] are predicted.**	
Landscape and Visual Amenity	The landscape constraints assessment of the receiving environment describes a number of characteristics that are experienced or viewed. These contribute an experience of a gently varying rural but working landscape close to an historic town. The features, characteristics or values of the area are summarised / tabulated in Section 4.8 of this report and can be categorised as Enhancement Values – those aspects or characteristics of the landscape that are supportive of change and development – and Conservation Values – those values or aspects of the receiving environment that should be protected and conserved and the constraint or opportunity they provide for the proposed development. Clearly, the socio-economic and urban environmental requirements of the historic town of Ardee and local development plan policy support the need for a bypass, these are the core enhancement values locally. The generally unspoilt rural character of the receiving environment, its working agricultural landscape, gently rolling topography, local minor roads and scattered residences, trees, tree lines and hedgerows / field boundaries and patterns, small streams and rivers and scattered stone structures and features, form the core conservation values. These conservation values are further enhanced by the presence of Ardee Bog, a pNHA and distinctive landscape, an Area of High Scenic Quality and associated scenic route and viewpoint. The proposed development will have a negative effect on the core conservation values described above, specifically: • The integrity and completeness of the rural landscape character north of the existing N52 will be eroded. The magnitude of this is regarded as Medium and Negative. A Medium Magnitude effect is defined as change that is moderate in extent, resulting in partial loss or alteration to key elements features or characteristics of the landscape, and / or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape (adapted from TII (2020), *PE-ENV-01101*). • The magnitude of the impact on the integrity and completeness of the protected landscape, habitat and scenic qualities of Ardee Bog is predicted to be High and Negative. A High Magnitude effect is defined as change that is moderate to large in extent, resulting in major alteration to key elements features or characteristics of the landscape and / or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the landscape (adapted from TII (2020), *PE-ENV-01101*).	Out

EIA Receptor	Screening Assessment	Screened In / Out?
	It is noted that the drainage design will limit hydrological impacts on the bog and its drainage functions, as well as its ecological role. Screen planting will reduce the visual impact and whilst acknowledging that a small part of the bog will be separated from the main body of the bog this will constitute a localised impact and the main landscape feature will remain, if visually slightly reduced. Over time, proposed mitigation will reduce the magnitude of the above impacts. The overall Significance of these Effects, allowing for the mitigation described above – the Magnitude of Impacts and the Sensitivity of the landscape – are, therefore, regarded as Moderate and Negative. **No likely significant effects**[6] **are predicted.**	
Cultural Heritage	There are 8 no. recorded archaeological sites within 500m of the proposed development. Three of these sites are within 100m of the proposed development. ME007-002----, a Barrow – mound Barrow is located 60m south of the western extent of the development in the townland of Mandistown. It is scoped by the National Monuments service as *"A circular or oval earthen or earth and stone mound with no external features. Mounds found in association with other barrow types are likely to be mound barrows. They are funerary in nature and contain and/or cover burials. Excavated examples have been dated to the Bronze and Iron Ages (c. 2400 BC - AD 400)."* Two further sites are located in the townland of Mullanstown including a Burial Ground Ref. No. LH014-043001- and an Enclosure Ref. No. LH014-043002-. The proposed development will be located 45 and 50m respectively from these two historic sites. The proposed development is not likely to have any direct impacts on the sites in question. Any indirect impacts on their setting are likely to be imperceptible. A suite of archaeological testing and excavations were undertaken in previous years (2002 – 2014) to identify, and preserve-by-record any significant archaeological features or deposits discovered by earlier investigations. As a result of this being done as part of the previous planning application for the N52 Ardee Bypass, it is not likely that there are any unknown significant archaeological features remaining below ground. The proposed development is therefore not likely to have any significant impacts on any below ground sites which are undiscovered. Any additional areas to the CPO will be subject to archaeological testing prior to construction in a similar fashion. There are no protected structures within 500m of the proposed development. Therefore, there will be no significant impacts on architectural sites.	Out

EIA Receptor	Screening Assessment	Screened In / Out?
	No likely significant effects[6] are predicted.	
Material Assets and Land	**Construction Stage** While the majority of the land required for construction of the proposed development is already in the ownership of Louth County Council, small areas of private land will need to be acquired through CPO to accommodate the design of the development. There will be no agricultural buildings affected by the proposed development. The utilities identified within the boundary of the proposed development will be accommodated through the design of the proposed development. Where utilities require realignment, this will be provided in consultation with the utility provider. A 250mm high pressure transmission gas main which crosses the alignment of the proposed development in a north west to south east direction will be diverted to facilitate the proposed development. There will be no dwelling houses demolished by the proposed development. The curtilage of three no. residential properties on the Silverhill Road will be directly affected to accommodate the proposed junction with the existing N52. **Operational Stage** A number of agricultural properties will be affected by land take and severance. Mitigation Measures will entail accommodation works such as replacement of or new accesses to land holdings, animal underpasses to connect severed land where warranted, and provision of new access tracks to severed lands. It is considered that through the provision of mitigation measures for the agricultural properties affected, to ensure the lands can continue to be used, and the provision of replacement boundaries for the properties affected, the overall residual impacts are likely to be long-term, not significant and negative. **No likely significant effects[6] are predicted.**	Out
Major Accidents and Disasters	The potential for the construction phase of the proposed development to result in major accidents and/or disasters is low. All works will be subject to the implementation of a Construction Environmental Management Plan (CEMP) and Traffic Management Plan (TMP) to be prepared by the contractor and in agreement with the local authority prior to construction. Construction works will be subject to the normal health and safety controls and will be short-term in nature. A flood risk assessment has been undertaken to assess the proposed development for the existing and future sources of flood risk. The drainage network for the proposed development on the site will incorporate Sustainable Drainage Systems (SuDS) for the purpose for managing surface water in terms of both flow and quality. During the operational phase the N52 Ardee Bypass will remove traffic from the existing legacy alignment, which has substandard geometry, an unforgiving roadside and a high degree of junctions and direct accesses onto a new engineered alignment designed in accordance with the latest TII	Out

EIA Receptor	Screening Assessment	Screened In / Out?
	Publication Standards for a design speed of 100km/h. Segregated walking and cycling facilities will also be provided for these users. The proposed development will therefore reduce the risk of accidents and collisions compared to the existing scenario. **No likely significant effects[6] are predicted.**	
Interactions	Interactions between environmental effects are likely to occur during both construction and operation as a result of the proposed road development. **Construction** During construction stage, interactions will occur between air quality and climate, noise and vibration, landscape and visual and population and human health. Mitigation measures proposed to reduce noise and air quality impacts during construction will also mitigate the effects on population and human health through the reduction in nuisances and visual effects during construction. The small scale and short-term nature of some of these interactions are not likely to result in significant environmental effects. **Operation** During operation, the main interaction will be between noise and vibration, landscape and visual and population and human health. Landscape planting will be designed as required, to reduce the impact of the proposed development on nearby receptors. **No likely significant effects[6] are predicted.**	Out

6.2 Cumulative Impacts

This section presents a preliminary consideration of likely significant impacts which may be expected to arise as a result of the combined effects of the proposed development and other, proposed or existing developments and plans. This cumulative assessment has considered cumulative impacts that are:

i. Likely;

ii. Significant; and

iii. Relating to an event which has either occurred or is reasonably foreseeable together with the impacts from this development.

The following sources were consulted to inform this assessment:

- Proposed developments and developments that have been granted planning permission within the preceding five years in the immediate vicinity of the proposed development, as recorded in the Louth County Council Planning Portal and Meath County Council Planning Portal (checked on the 04th of November 2020);
- Projects listed on the EIA Portal; and
- Development objectives of the Louth County Council Development Plan (2015-2021) and the Ardee Local Area Plan (2010-2016).

Developments and plans which might potentially give rise to cumulative impacts of the character described above are discussed below.

6.2.1 Light Industrial / warehouse on Kells Road (Planning Ref 20160)

Permission for 1 no. light industrial/warehouse building including offices extending to a total floor area of 1193sqm. The proposed development includes surface car parking, enclosed yard, truck wash bay, waste water treatment system and all associated site development works. An NIS was provided for the application. On review of the planning documents, it is not anticipated that significant effects will arise as a result the proposed development.

6.2.2 3 no poultry houses & 2 no egg/general purpose stores (Planning Ref 2022)

Extension of duration was granted in March 2020 for planning ref 15/233 which comprises permission to construct 3 no poultry houses & 2 no egg/ general purpose stores together with all ancillary structures (to include meal storage bin(s) & soiled water tanks) and all associated site works associated with the proposed development. This development is located between the N2 and the R171 approximately 200m from the northern tie in of the proposed road development. Access to the site will be provided on the R171. Due to the size and nature of the development, it is not likely that there will be significant cumulative impacts as a result of the development in combination with the proposed N52 Ardee Bypass.

6.2.3 4 no. Poultry Houses and associated infrastructure (Planning ref: 19469).

Application for planning permission to construct 4 No. Poultry Houses together with roofed/enclosed service yard, 1 No. office, 1 No. Generator Store, and 1 No. Bin/General Purpose Store along with all ancillary structures and associated site works associated with the above development. The development is located at Rathescar Middle, Dunleer, Co. Louth. This application relates to a development, which is for the purposes of an activity requiring a Licence under part IV of the Environmental Protection Agency (Licensing) Regulations 1994 to 2013. An EIAR has been submitted with this planning application. This project is 9km south east of the proposed development and is currently appealed to ABP.

6.2.4 Continuance of operation of existing permitted quarry (Planning ref: LB200106).

Lagan Materials Ltd. intend to apply for permission for development at Heronstown, Lobinstown, Navan, Co. Meath. The development will consist of the continuance of operation of the existing permitted quarry (ABP 17.QD.0017), a lateral and vertical extension to the existing quarry including the deepening of the quarry extraction area by two extractive benches to 50m OD, within a total quarry extraction area of c. 4.5 hectares, an increase in the permitted extraction rate to 200,000 tonnes per annum, provision of an aggregates and overburden stockpiling area and settlement lagoon system (c. 2,000m^2), and restoration of the site to natural habitat after uses following completion of extraction, within an overall application area of c. 14.12 hectares, and all for a period of 20 years. An EIAR has been prepared in respect of this planning application. This project is 8.5km south-west of the proposed development and is currently awaiting planning decision. On review of the EIAR, it is not anticipated that significant cumulative impacts will occur in relation to the proposed Ardee Bypass.

6.2.5 Construction of 1 no. pig house together with all ancillary structures (Planning ref: 19113; ABP-305468-19).

An appeal has been made to An Bord Pleanala against the decision made on the 23rd day of August, 2019 by Louth County Council bearing the above Register reference number, 19113, which decision was to grant permission to John Lambe. The application to the planning authority was described as an application for permission: - to construct 1 no. pig house together with all ancillary structures, (to include meal storage bin(s)), and all site works associated with the proposed development at Rossmakay, Knockbridge, Co. Louth. Following a request from An Bord Pleanála an EIAR and a Revised NIS is being submitted. This project is 12km northeast of the proposed development and is currently in planning. It is not anticipated that significant cumulative impacts will arise as a result of the proposed Ardee Bypass.

6.2.6 Integrated Pharmaceutical manufacturing facility (Planning ref: 19 861).

Planning permission was granted for the proposed development, comprising of the following; 1. A three storey Pharmaceutical manufacturing facility sized approximately 15,520 square metres and approximately 26 metres high and with roof mounted plant and equipment and stacks. 2. A four storey Administration and Laboratory building sized 8,789 square metres and approximately 22.5 metres high and with roof mounted plant and equipment and stacks. 3. A two storey modular support laboratory sized approximately 820 square metres and approximately 10.1 metres high and with roof mounted plant and equipment and stacks. 4. A single storey boiler/utility area sized approximately 864 square metres and 9.6 metres high including two boiler stacks approximately 31 metres high. 5. 4no. modular plant and equipment storage units sized approximately 35 square metres and 3 metres high per unit. 6. A single storey drum store sized approximately 75 square metres and 6 metres high. 7. A single storey waste store sized approximately 75 square metres and 6 metres high. 8. Siteworks including carpark for 278 cars, docking areas, yard areas housing external plant, tanks and equipment, a large landscaped berm to the North and West of the facility, a surface water attenuation pond, roads, and underground services, external lighting, security fencing, fire water tanks and modular housing for pumps, 2 no. vehicular entrances off the previously permitted internal road access currently under construction, bicycle shelters and facilities for E-car charging and disabled parking as well as all associated site works and landscaping. This application consists of development for an activity for which a licence under Part IV of the Environmental Protection Agency Act 1992 (as amended by the Protection of the Environment Act, 2003) is required. An EIAR and NIS accompany this application. This project is 13km northeast of the proposed development. Due to the distance between the developments, it is not anticipated that significant cumulative impacts will arise as a result of the proposed Ardee Bypass.

6.2.7 Strategic Housing Development (Planning ref: ABP-304782-19).

Planning permission was granted for the proposed development consisting of 483 no. dwellings, a childcare facility of 677 sqm, a new access junction and works to the Blackrock Road, 2 no. pedestrian and cyclist accesses onto Bóthar Maol, landscaped open spaces, internal roadways and potable, surface and foul water infrastructure. The proposed residential element of 483 no. units comprises of 258 no. detached, semi-detached and terraced houses, 213 no. apartments in 7 no. apartment blocks, and 6 no. own-door apartments and 6 no. duplex units in 2 no. duplex over apartment blocks. The duplex over apartment units are 3 storeys in height, the proposed apartment Blocks A, B, C, E, F, and G are 4 storeys in height, and Block D is 3 storeys. Blocks A, B and F accommodate underground car parking. The proposed 2 storey childcare facility of 677 sqm has an outdoor play area of 660 sqm and is located near the main entrance to the site. A total of 824 no. car parking spaces and 512 no. bicycle spaces are proposed. An EIAR and NIS have been prepared in respect of the proposed development. This project is 15km northeast of the proposed development, therefore it is not anticipated that significant cumulative impacts will arise as a result of the proposed Ardee Bypass.

6.2.8 Backfilling of existing quarry (Planning ref: 19521).

Kilsaran Concrete Unlimited Company intends to apply for planning permission for development at this site at Moutaintown and Cluide townlands, Dunleer, Co. Louth. The development, within an application area of 16.7 hectares will comprise restoration by backfilling of a former quarry and includes: Backfilling an existing void created by previous extraction of rock to surrounding ground level and the restoration of the site to long-term beneficial agricultural use by the importation of c.3.6 million tonnes of natural inert waste and/or non-waste materials suitable for restoration purposes, principally excess soil, stone and/or broken rock; Installation of site and services infrastructure for the duration of the development, Upgrade of former quarry site infrastructure; Use of a former quarry storage shed as a waste inspection and quarantine facility and for storage of plant and machinery; Dewatering of the existing quarry void by pumping; The separation of any intermixed construction and demolition waste prior to removal off-site to authorised waste disposal or recovery facilities; Temporary stockpiling of imported topsoil pending re-use; and Restoration of the excavated landform (including placement of cover soils and seeding) to agricultural grassland. The development will be carried out on a phased basis and will be completed within 10 years with an additional 2 years to complete restoration works (total duration sought is 12 years). A waste licence will be required from the Environmental Protection Agency (EPA) in respect of waste used for backfilling and restoration purposes. A waste facility permit will also be sought from Louth County Council to facilitate intake of waste pending the grant of a waste licence from the EPA. An EIAR has been prepared in respect of this planning application. This project is 14km east of the proposed development and is currently in planning. It is not anticipated that significant cumulative impacts will arise as a result of the proposed Ardee Bypass due to the distance between the two developments.

6.2.9 To amend a permitted Biodiesel Manufacturing Facility (Planning ref. KA180354)

Planning permission was granted for an amendment to a permitted Biodiesel Manufacturing Facility (Meath County Council Reg. Ref. KA/160786), on a site of 1.49 hectares. The development will consist of the reconfiguration of the process building and associated tank farm and the provision of a new gas electricity generation unit with heat recovery. The reconfiguration on site will consist of: A revised configuration of the process building, resulting in an increase of c.53 sqm in the gross floor area of the building from c. 3,284 sqm to c. 3,337 sqm. There is no increase in the overall height of the building; An increase in the footprint of the tank farm and number of external

storage tanks from 12 no. to 21 no.; Amendments to the permitted drainage layout; The proposed amendments do not result in an increase in the overall permitted production of 25,000 tonnes of biodiesel per annum. The following works will be completed as enabling works (as permitted under Reg. Ref. KA/160786): Site access works, excavation works and gravel infill to allow for the provision of foundations for the permitted layout of the process building. This project is 9km west of the proposed development. It is not anticipated that significant cumulative impacts will arise as a result of the proposed Ardee Bypass.

6.2.10 Two No. Free Range Poultry houses, together with all ancillary structures (Planning ref: KA/201448)

Planning permission to construct 2 No. Free Range Poultry houses, together with all ancillary structures (to include 4 No. Meal Bins and 1 No. Soiled water tank) and associated site works arising from the above development at Fletcherstown, Wilkinstown Navan, Co. Meath. This application relates to a development, which is for the purposes of an activity requiring a Licence under part IV of the Environmental Protection Agency (Licensing) Regulations 1994 to 2013. An EIAR will be submitted with this planning application. This project is 10km southwest of the proposed development and is currently in planning. It is not anticipated that significant cumulative impacts will arise as a result of the proposed Ardee Bypass.

6.2.11 Approximately 4km of underground electricity transmission cable (Planning ref: KA171177; PL02.247401)

The development will consist of: the installation of approximately 4km of underground electricity transmission cable across private lands and within the public roads numbered R165, L74021 and L7408. The cable will be installed predominantly in excavated trenches of approximately 1.2m in depth and will include associated underground ducting, joint bays, chamber bays, sheath link boxes and inspection chambers: ducting across the length of span of 1 no. bridge/culvert and directional drilling at 1 no. bridge/culvert; and all associated site development and reinstatement works. The proposed development is part of a larger overall development which will involve the installation of approximately 13km of underground electricity transmission cable from the permitted (wind farm) substation in the townland of Taghart South, County Cavan to the existing electricity substation in the townland of Meath Hill, County Meath and also extends into lands in the townlands of Taghart South, Corlea, Cornamagh, Collops, Corglass, Drumsallagh, Corawaddy, Carnagee, Cornakill, Dunaree, Lisanisky, Lisasturrin, Corgarry and Larchfield Glebe, County Cavan, and installed within the L7553, L3524, L3525, L3526, R165, L7612, L 3536, L7611, R164, R162 and L7561 within the adjoining planning authority jurisdiction of Cavan County Council. A concurrent planning application for that part of the overall development located within County Cavan has been submitted to Cavan County Council. This planning application is accompanied by an EIAR, which includes an assessment of the likely impacts of the proposed development, as a whole and in combination with the relevant off-site or secondary developments which will occur as a direct result of the proposed development, including the wind farm development permitted pursuant to County Cavan Planning Register Reference 16/74 & An Bord Pleanála Reference PL02.247401. This project is 11km north west of the proposed development at its nearest point and is currently in planning. It is not anticipated that significant cumulative impacts will arise as a result of the proposed Ardee Bypass due to the distance between the two projects.

6.2.12 5km of 20kV underground cable (Planning ref: PL02.248394)

Planning permission has been granted for a 20k V underground electricity grid connection of c. 5km (4.6km on Co. Cavan and 0.2km in Co. Meath), connecting an already permitted substation to the national electricity grid at Kingscourt Substation,

for the purpose of connecting 5no wind turbine granted under PL02.2236608, which may be summarised as follows:

- Underground trench of c. 1m to accommodate cable ducting along the existing road infrastructure except for c. 400m at the start agricultural,
- The ducting will sit in a trench which will have a minimum width of c.325mm and depth of c. 925mm,
- Installation of 17 cable joint bays (concrete chambers) and ancillary marker posts and plates,
- 3 no. bridge crossings, and
- 3 no. culvert crossings.

This project is 14km north west of the proposed development at its nearest point and therefore is not anticipated that significant cumulative impacts will arise as a result of the proposed Ardee Bypass.

6.2.13 N2 Ardee to Castleblayney Road Scheme

35km of Type 2 dual carriageway linking Ardee, Co. Louth to Castleblayney, Co. Monaghan. An 'Emerging Preferred Route Corridor' has been published and the project has launched the next stage of public consultation. This scheme is <1km from the proposed development. An EIAR and an AA Screening will be undertaken to assess the impacts of the scheme. The details of the scheme are not available as of yet due to the current stage. It is expected that if both projects were to proceed, the proposed development would be constructed in advance of the N2 Ardee to Castleblayney Road Scheme. It is anticipated that the operational stage of the developments will have a positive cumulative effect on connectivity and access within and around Ardee and further north to Monaghan. It is not anticipated from the information currently available, that significant cumulative impacts will arise as a result of the proposed Ardee Bypass and the N2 Ardee to Castleblayney Road Scheme. As the proposed N52 Ardee Bypass will be subject to planning in advance of the N2 project, the N2 Ardee to Castleblayney project will be required to consider the cumulative impact of the N52 Ardee Bypass within their EIAR.

6.2.14 N2 Slane Bypass Road Scheme

4km of Type 2 single carriageway bypassing the village of Slane and including a new bridge over the River Boyne. The scheme is currently undergoing Phase 3 – Design and Environmental Evaluation. This project is 15km south of the proposed development. While the predicted impacts of the N2 Slane Bypass Road Scheme is not available at the time of writing, it is anticipated that due to the distance between the two schemes, significant cumulative impacts will not arise as a result of the proposed Ardee Bypass. As the proposed N52 Ardee Bypass will be subject to planning in advance of the N2 Slane Bypass Road Scheme, the Slane Bypass project will be required to consider the cumulative impact of the N52 Ardee Bypass within their planning documents.

6.2.15 N52 Grange to Clontail

The realignment of the N52 National Secondary route in the townlands of Grange, Castletown, Stephenstown, Fringestown, Mitchelstown and Clontail comprising the construction of a Type 2 Single Carriageway road for a distance of 4.8 km from a location approximately 300m south west of Cassidy's Cross (N52/R162 junction) to a tie in point approximately 300m northeast of Mitchelstown Cross; and associated accommodation & fencing works, landscaping works, surface water drainage / attenuation works and ancillary works. This project is approximately 6km west of the

proposed development. The Part 8 planning application is currently open for public consultation.

6.2.16 Glyde and Dee Arterial Drainage Scheme 2018-2022

Within the Glyde and Dee Arterial Drainage Scheme the exact location and type of required maintenance activity varies over time. The following works are planned for the channels and embankments on the Glyde and Dee Scheme within the timeframe 2018-2022:

- Silt and vegetation management
- Bush cutting/ branch trimming
- Tree cutting
- Mulching

The proposed development will clearspan the River Dee as part of the design which will not interfere with the existing banks of the river. The Arterial Drainage Scheme has been accounted for as part of the hydrological assessment for the N52 Ardee Bypass and therefore significant cumulative impacts on the hydrological regime are not anticipated.

6.2.17 Louth County Development Plan 2015-2021

The Louth County Development Plan outlines a number of objectives regarding transport infrastructure. As set out under Policy TC7, it is LCC's aim to:

> *"… provide and maintain a road hierarchy based on motorway, national routes, regional routes and local roads and to maintain the carrying capacity and lifespan of the road network and ensure high standards of safety for road users and to require that all proposals for development that would be likely to impact significantly on the carrying capacity of national routes be accompanied by traffic transport assessment, road safety impact assessment, road safety audits and mobility management plans, in accordance with the Spatial Planning and National Roads Guidelines 2012 and/or the Design Manual for Urban Roads and Streets (2013)."* (p. 222)

Chapter 7 of the Development Plan, 'Transport', includes a Road Improvement Programme for the County to 2021. This programme includes the N52 Ardee Bypass (p. 231) to be implemented by the Council in conjunction with the NRA (now TII) over the period of the Plan. This is further reinforced by Policy TC20, which seeks to:

> *"… secure the implementation of the Council's Road Improvement Programme 2015 – 2021 […] in consultation and agreement with the Department of Transport and [NRA] subject to available funding and to keep free from development all lands identified for the construction and improvement of national, regional and local roads within the County. All proposed transport routes will be required to comply with the Habitats, EIA and SEA Directives."* (p. 232)

The proposed development is in line with the objectives outlined in the County Development Plan, for the proper planning and sustainable development of the county. It is not anticipated that the proposed development will result in cumulative impacts in combination with the objectives in the County Development Plan.

6.2.18 Ardee Local Area Plan 2010-2016

The Ardee Local Area Plan presented a strategy for spatial planning and development in the town of Ardee, Co. Louth between 2010 and 2016. A new LAP for the town is yet to be drafted.

Chapter 4 of the Ardee Local Area Plan (LAP) outlines objectives in relation to transport infrastructure. Policy INF 12 states the need "To secure the construction, pending approval by the [NRA], of the N2 bypass and the N52 bypass and preserve free of development their proposed routes" (p. 21). Regarding the bypasses, the LAP states that:

> *"The council is proposing to construct by-passes on the N52 and N2 to the east and west of the town. When completed, the traffic congestion in Ardee town centre will be significantly improved. Lands have been purchased to facilitate the construction of the N52 section and this section is likely to proceed during the period of this Plan."* (p. 1).
>
> *"Traffic congestion in Ardee town centre is a major problem caused by the volumes of traffic passing through the town along the N2 Derry to Dublin National Primary route and the N52 Dundalk to Nenagh national secondary route. Traffic management plans, including pay parking, have improved the situation. When by-passes on the N2 and N52 are constructed, pending approval by the National Roads Authority, congestion will be greatly alleviated."* (p. 23)

As outlined in the above objectives of the Ardee Local Area Plan, the proposed development is likely to result in positive cumulative effects for the town of Ardee and the connectivity along the N52 and N2 in combination with other proposed projects.

6.2.19 Conclusion

As a result of the above assessment, and on review of the above reasonably foreseeable developments, it is considered that significant cumulative effects are not likely as a result of the proposed Ardee Bypass and the variety of developments identified and outlined above.

7. SCREENING CONCLUSION AND RECOMMENDATION

This EIA Screening Report has determined that the proposed development does not exceed the thresholds that trigger the mandatory requirement for EIA and subsequently the proposed development is deemed to be a sub-threshold development. Accordingly, an EIA Screening Assessment has been carried out in respect of this sub-threshold development in accordance with Schedule 7A of the Planning and Development Regulations 2001 (as amended). The Screening Assessment has found that the proposed development is **not likely** to result in significant negative environmental effects. It is therefore recommended to the Competent Authority that the proposed development would not be likely to have significant effects on the environment by virtue of its characteristics, location, size or potential impacts and an Environmental Impact Assessment need not be undertaken in respect of same.

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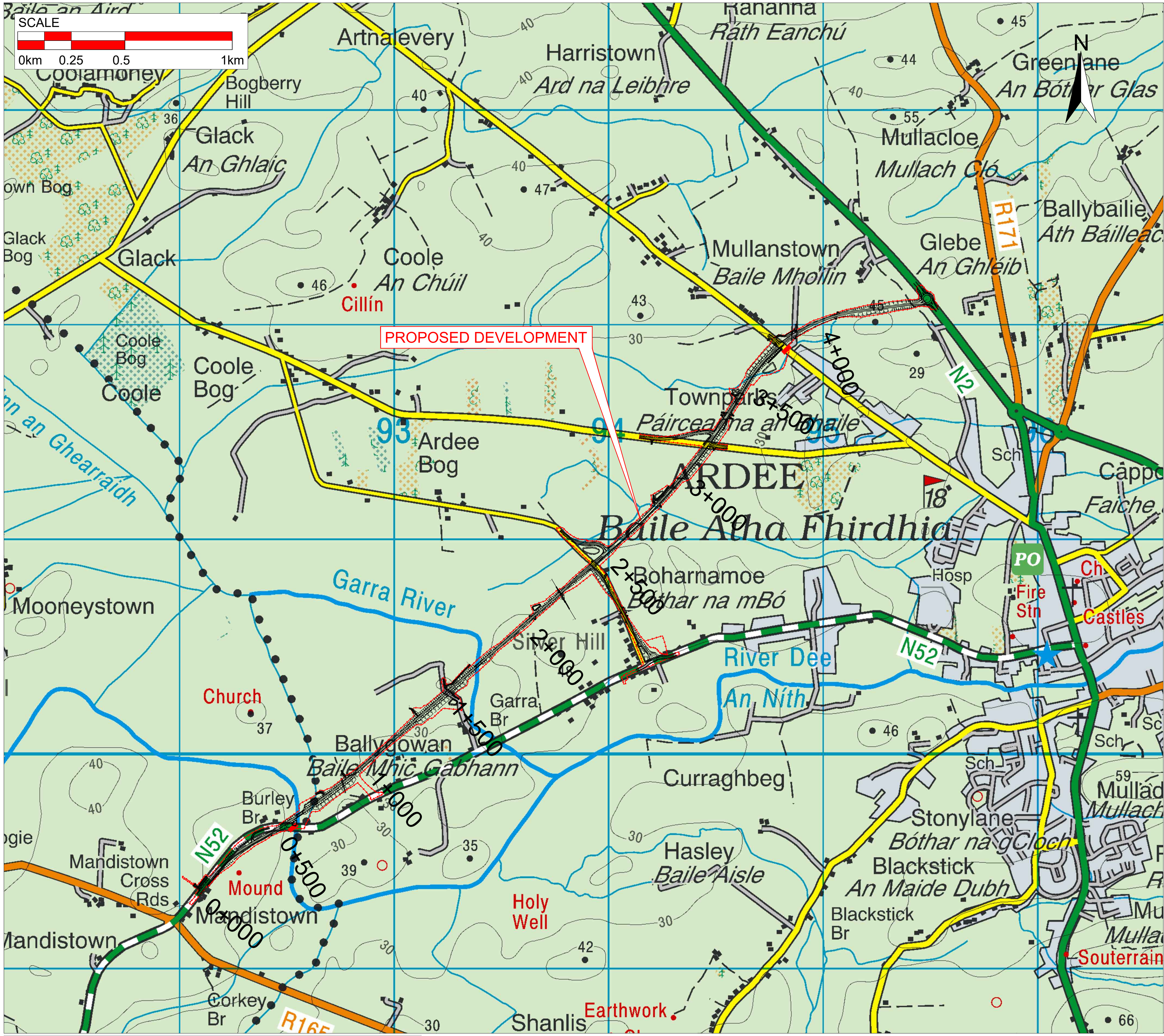
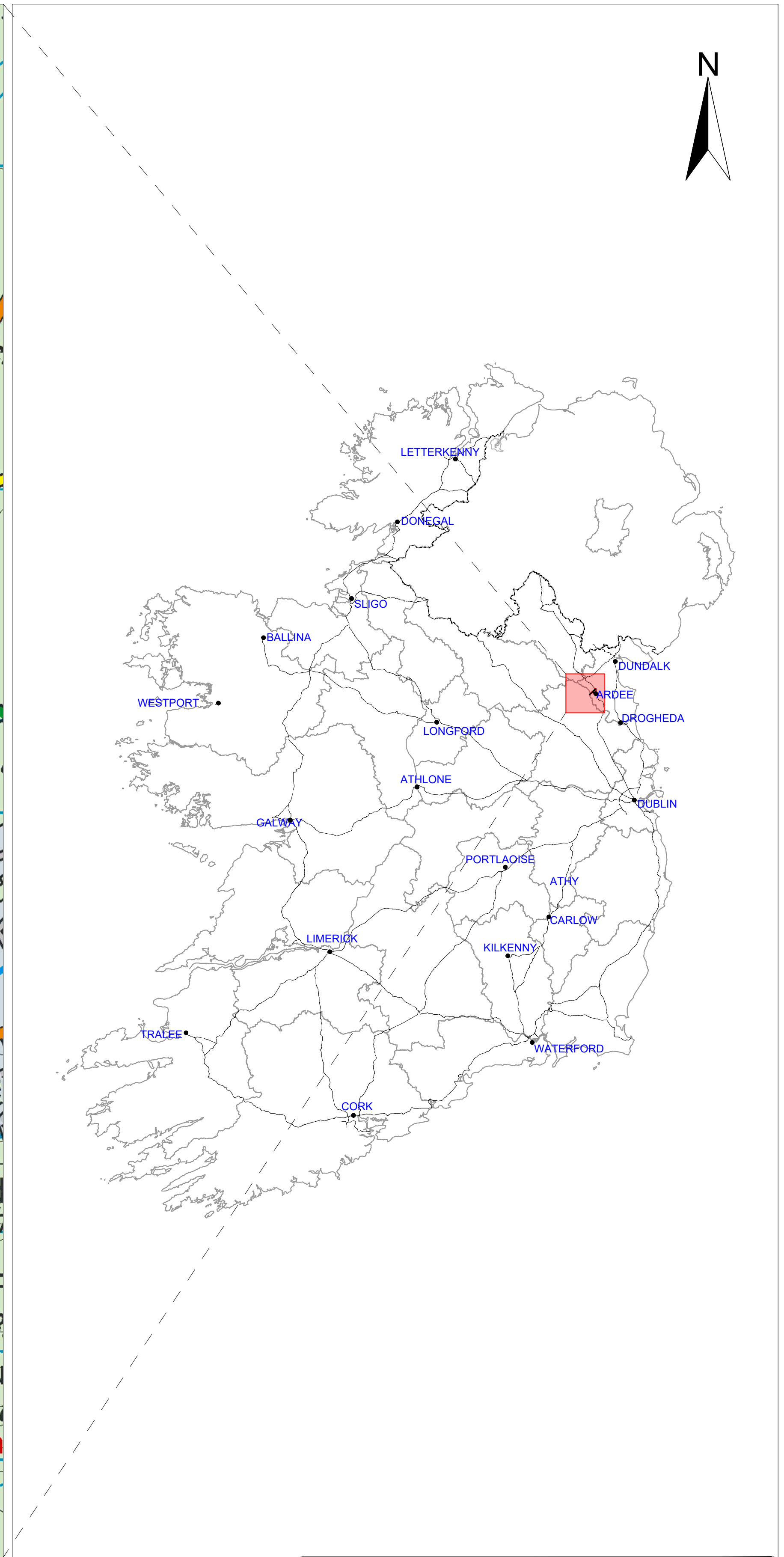
APPENDIX A

DRAWINGS





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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	POS	GR	RJS	S0 - Work In Progress

Project Stage: EIA Screening

Project Title: N52 ARDEE BYPASS

Drawing Title: Location Plan

Drawing Number	Project	Originator	Volume	Location	Type	Role	Number
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Scale (A3): N.T.S. | Date: November 2020 | Job No: 19.153 | Rev: -

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SCALE

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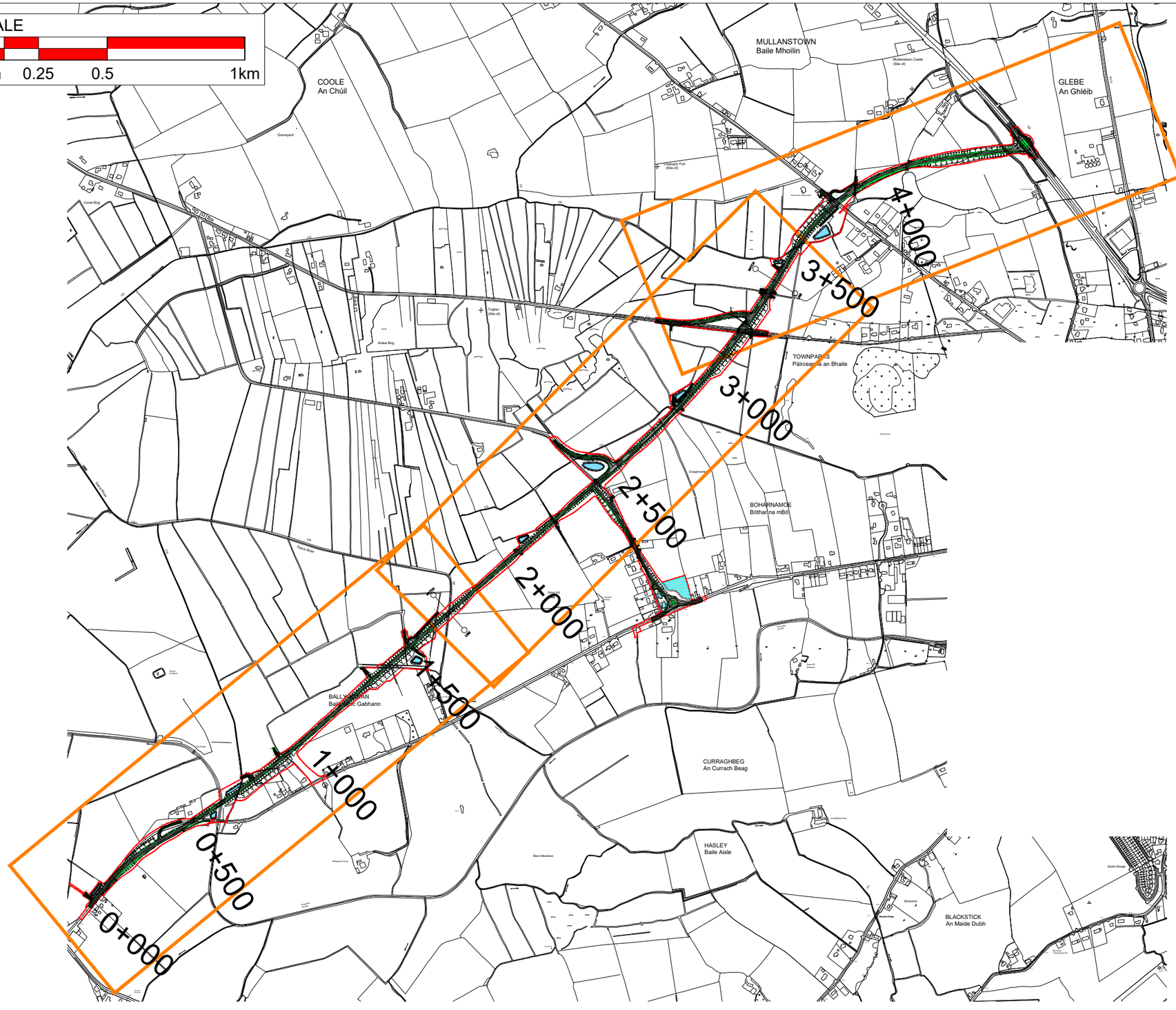

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Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	MAINLINE PLAN & PROFILE SHEET LAYOUT

Drawing Number	Project	Originator	Volume	Location	Type	Role	Number
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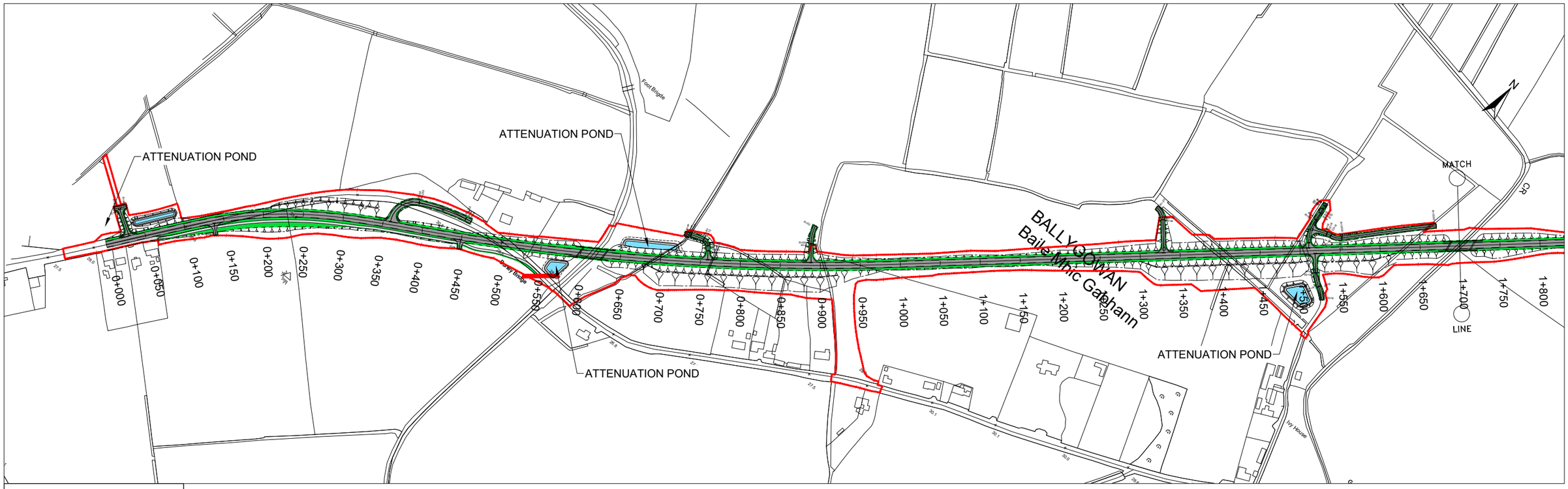
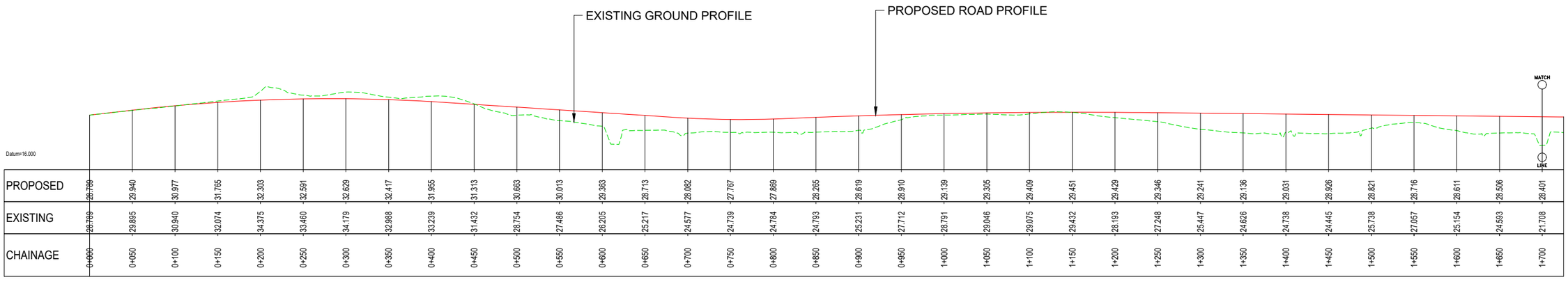


LEGEND:

- CPO LINE
- ATTENUATION PONDS
- CARRIAGEWAY AND HARD SHOULDER
- GRASS VERGE
- FOOTPATH / CYCLEWAY / HARDSTANDING
- PROPOSED SITE COMPOUND
- EXISTING ROAD PROFILE
- PROPOSED ROAD PROFILE



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0+250	33.460	32.591
0+300	34.179	32.629
0+350	32.988	32.417
0+400	33.239	31.955
0+450	31.432	31.313
0+500	28.754	30.663
0+550	27.486	30.013
0+600	26.205	29.363
0+650	25.217	28.713
0+700	24.577	28.082
0+750	24.739	27.767
0+800	24.784	27.869
0+850	24.793	28.265
0+900	25.231	28.619
0+950	27.712	28.910
1+000	28.791	29.139
1+050	29.046	29.305
1+100	29.075	29.409
1+150	29.432	29.451
1+200	28.193	29.429
1+250	27.248	29.346
1+300	25.447	29.241
1+350	24.626	29.136
1+400	24.738	29.031
1+450	24.445	28.926
1+500	25.738	28.821
1+550	27.057	28.716
1+600	25.154	28.611
1+650	24.593	28.506
1+700	21.708	28.401

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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	GR	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
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Drawing Title	MAINLINE PLAN & PROFILE SHEET 1 OF 3
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number: N52A - ROD - VES - SW_AE - DR - EN - 300003
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Date:	November 2020
Job No:	19.153
Rev:	P0

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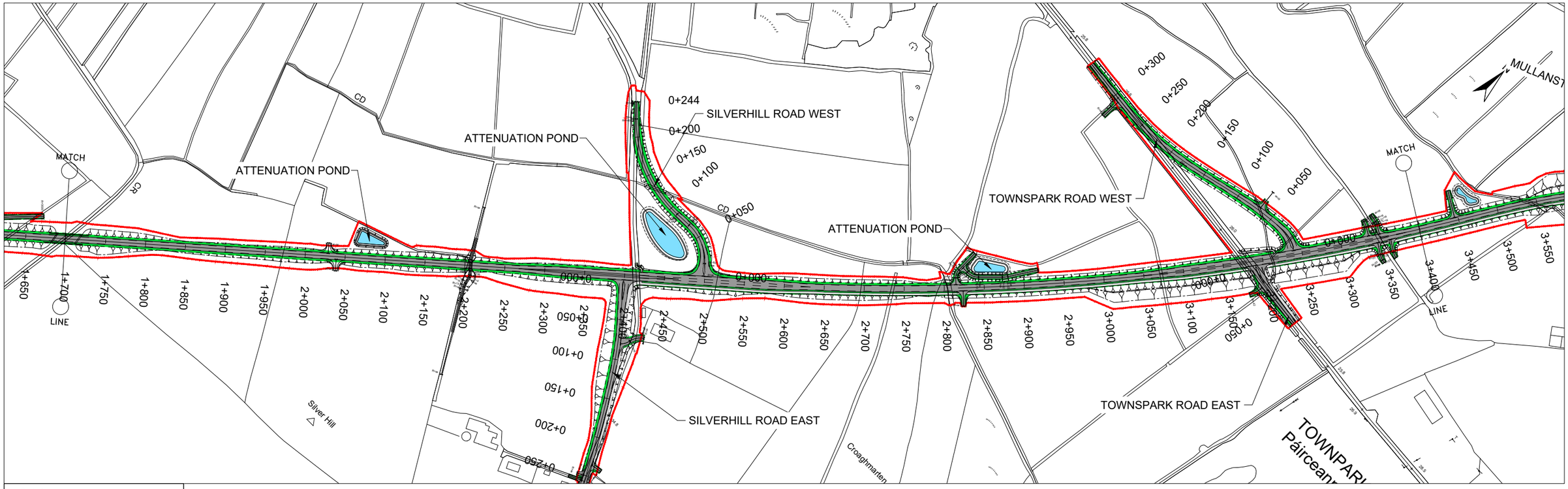
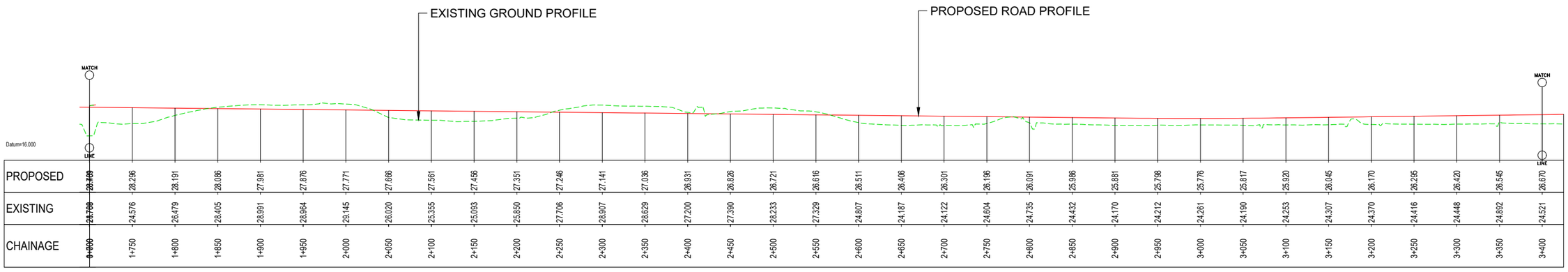


LEGEND:

- CPO LINE
- ATTENUATION PONDS
- CARRIAGEWAY AND HARD SHOULDER
- GRASS VERGE
- FOOTPATH / CYCLEWAY / HARDSTANDING
- PROPOSED SITE COMPOUND
- EXISTING ROAD PROFILE
- PROPOSED ROAD PROFILE



CHAINAGE	0+000	0+050	0+100	0+150	0+200	0+250	1+650	1+700	1+750	1+800	1+850	1+900	1+950	2+000	2+050	2+100	2+150	2+200	2+250	2+300	2+350	2+400	2+450	2+500	2+550	2+600	2+650	2+700	2+750	2+800	2+850	2+900	2+950	3+000	3+050	3+100	3+150	3+200	3+250	3+300	3+350	3+400
EXISTING	28.708	24.576	26.479	28.405	28.991	28.964	29.145	26.020	25.355	25.093	25.850	27.706	28.907	28.629	27.200	27.390	28.233	27.329	24.807	24.187	24.122	24.604	24.735	24.432	24.170	24.212	24.261	24.190	24.253	24.307	24.370	24.416	24.448	24.892	24.521							
PROPOSED	28.708	28.296	28.191	28.086	27.981	27.876	27.771	27.666	27.561	27.456	27.351	27.246	27.141	27.036	26.931	26.826	26.721	26.616	26.511	26.406	26.301	26.196	26.091	25.986	25.881	25.798	25.776	25.817	25.920	26.045	26.170	26.295	26.420	26.545	26.670							

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Bonneagar Iompair Éireann Transport Infrastructure Ireland
Comhairle Contae Lú Louth County Council
NATIONAL ROADS DESIGN OFFICE
Westmeath County Council

No.	Revision	Date	By	Chk'd	App'd

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www.rod.ie

Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	GR	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	MAINLINE PLAN & PROFILE SHEET 2 OF 3
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number: N52A - ROD - VES - SW_AE - DR - EN - 300004
Scale (A3)	1:5,000 H 1:1,000 V
Date:	November 2020
Job No:	19.153
Rev:	P0

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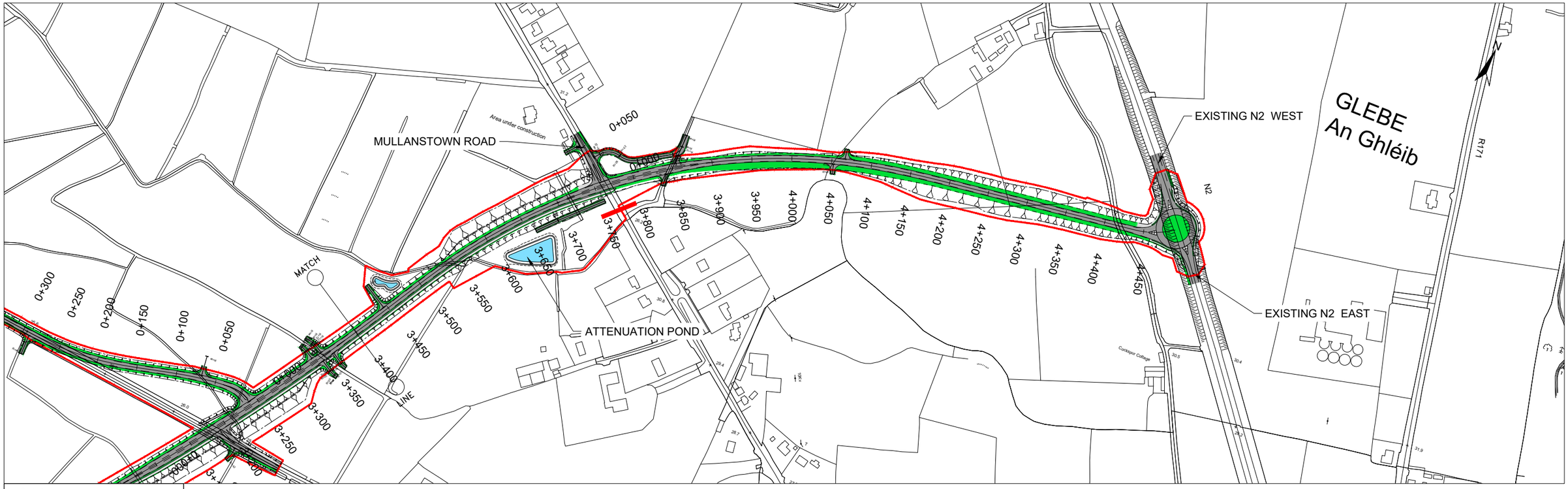

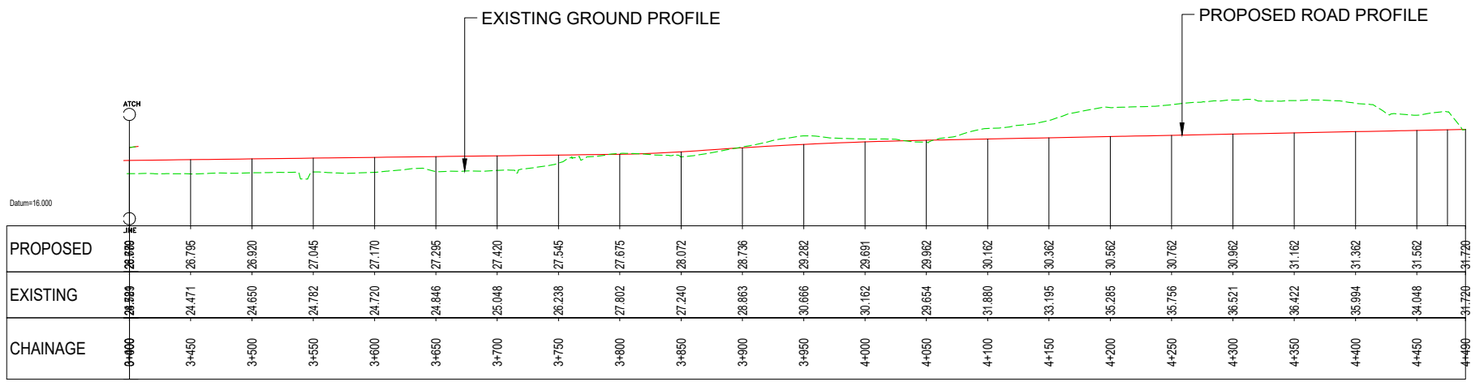

LEGEND:

🟥	CPO LINE
●	ATTENUATION PONDS
▨	CARRIAGEWAY AND HARD SHOULDER
🟩	GRASS VERGE
▨	FOOTPATH / CYCLEWAY / HARDSTANDING
☒	PROPOSED SITE COMPOUND
– –	EXISTING ROAD PROFILE
—	PROPOSED ROAD PROFILE

PROPOSED	[illegible]	26.795	26.920	27.045	27.170	27.295	27.420	27.545	27.675	28.072	28.736	29.282	29.691	29.962	30.162	30.362	30.562	30.762	30.962	31.162	31.362	31.562	31.720
EXISTING	[illegible]	24.471	24.650	24.782	24.720	24.846	25.048	26.238	27.802	27.240	28.863	30.666	30.162	29.654	31.880	33.195	35.285	35.756	36.521	36.422	35.994	34.048	31.720
CHAINAGE	[illegible]	3+450	3+500	3+550	3+600	3+650	3+700	3+750	3+800	3+850	3+900	3+950	4+000	4+050	4+100	4+150	4+200	4+250	4+300	4+350	4+400	4+450	4+490

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Project Ireland
2040

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Louth County Council

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Westmeath County Council

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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	GR	GR	RJS	S0 - Work In Progress

Project Stage: EIA Screening

Project Title: N52 ARDEE BYPASS

Drawing Title:
MAINLINE
PLAN & PROFILE
SHEET 3 OF 3

Drawing Number	Project	Originator	Volume	Location	Type	Role	Number
	N52A	ROD	VES	SW_AE	DR	EN	300005

Scale (A3) 1:5,000 H 1:1,000 V | Date: November 2020 | Job No: 19.153 | Rev: P0

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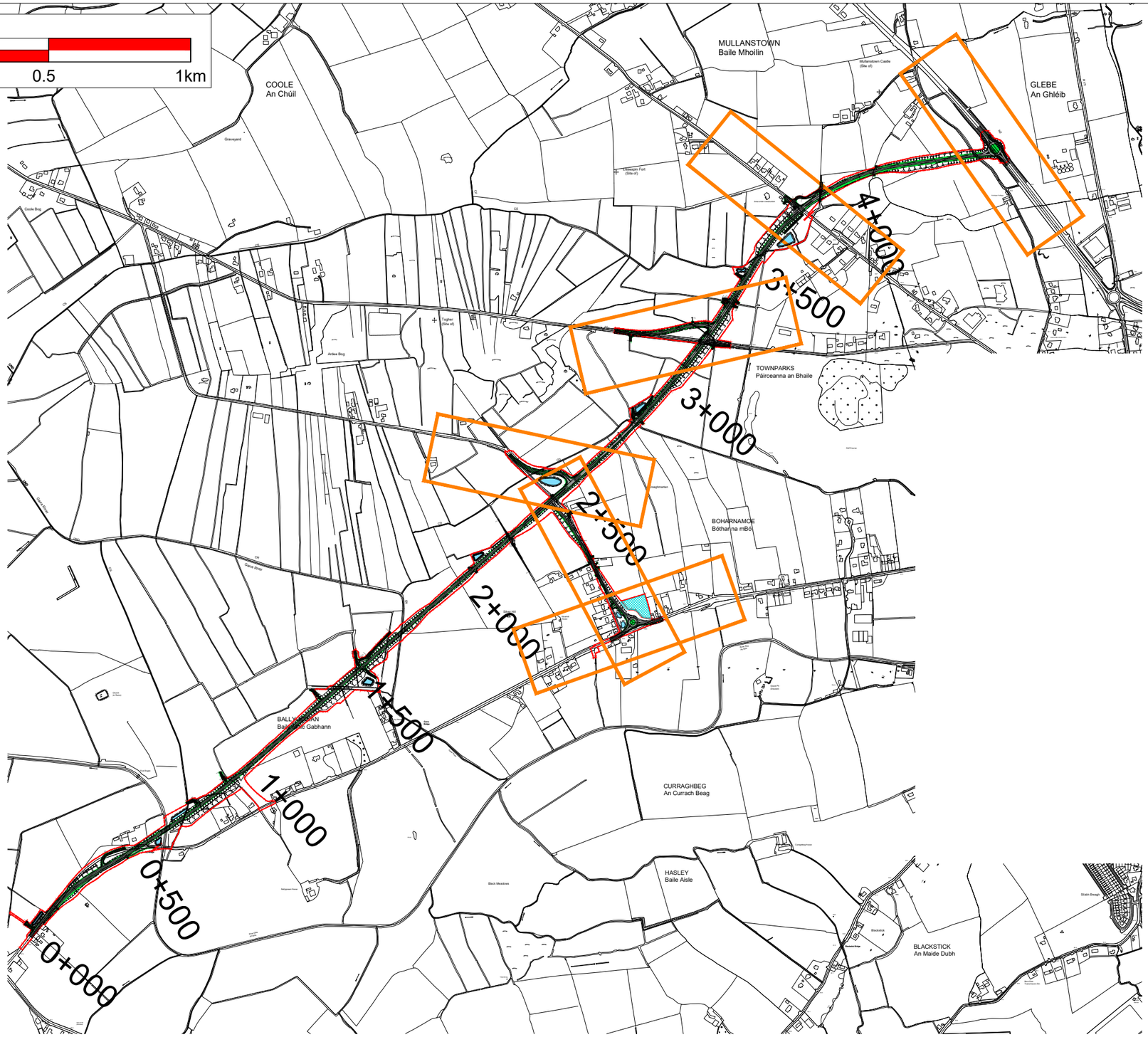
SCALE

0km 0.25 0.5 1km



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Project Ireland 2040

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Transport Infrastructure Ireland

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Louth County Council

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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	GR	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	SIDEROAD PLAN & PROFILE SHEET LAYOUT
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number N52A - ROD - VES - SW_AE - DR - EN - 300006
Scale (A3)	N.T.S.
Date:	November 2020
Job No:	19.153
Rev:	P0

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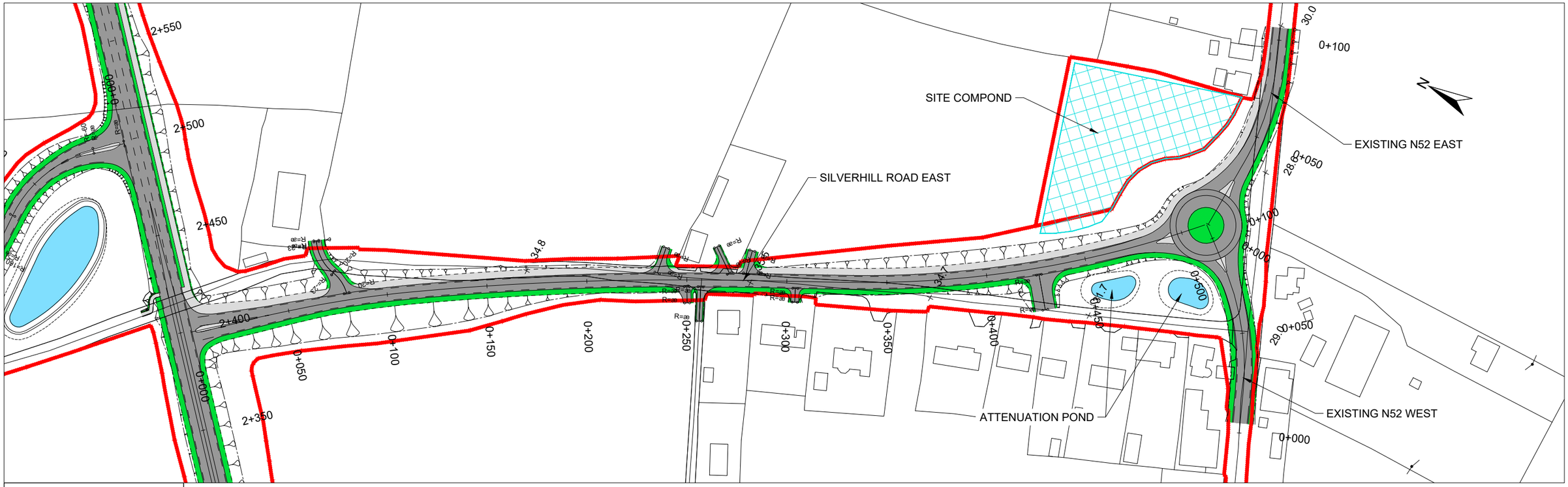
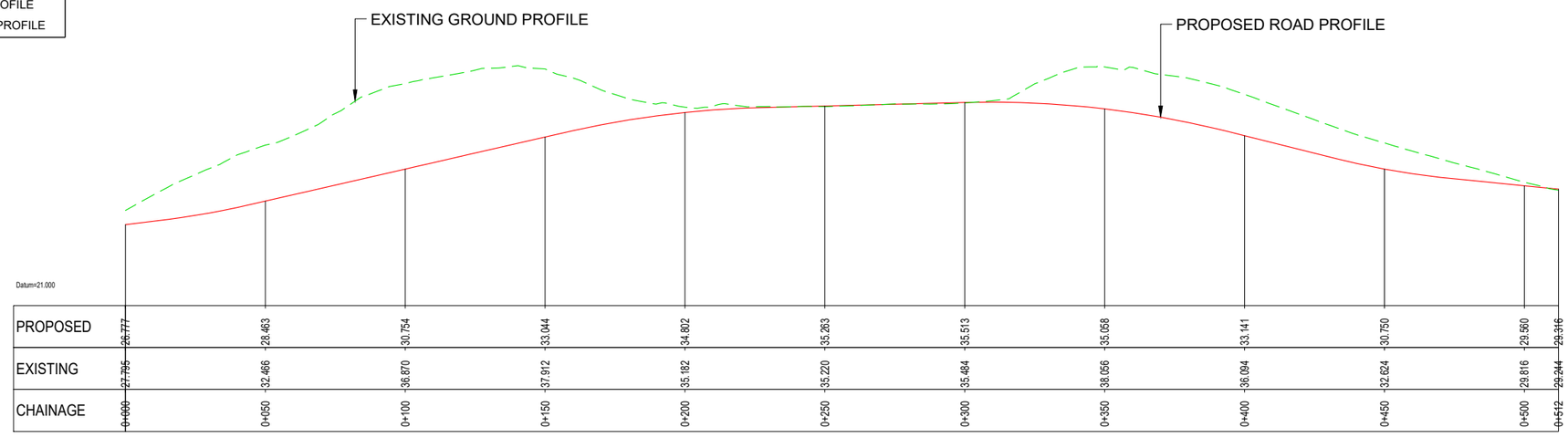


LEGEND:

- CPO LINE
- ATTENUATION PONDS
- CARRIAGEWAY AND HARD SHOULDER
- GRASS VERGE
- FOOTPATH / CYCLEWAY / HARDSTANDING
- PROPOSED SITE COMPOUND
- EXISTING ROAD PROFILE
- PROPOSED ROAD PROFILE



PROPOSED	28.777	28.463	30.754	33.044	34.802	35.263	35.513	35.058	33.141	30.750	29.560	29.316
EXISTING	27.795	32.466	36.870	37.912	35.182	35.220	35.484	38.056	36.094	32.624	29.816	29.244
CHAINAGE	0+000	0+050	0+100	0+150	0+200	0+250	0+300	0+350	0+400	0+450	0+500	0+512

SILVERHILL ROAD EAST
SCALE 1:1000H @ A1
1:200V @ A1

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Bonneagar Iompair Éireann Transport Infrastructure Ireland
Comhairle Contae Lú Louth County Council
NATIONAL ROADS DESIGN OFFICE
Westmeath County Council

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www.rod.ie

Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	GR	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	SIDEROAD SILVERHILL ROAD EAST - PLAN & PROFILE
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number N52A - ROD - HML - SW_AE - DR - EN - 300007
Scale (A3)	1:2,000 H 1:400 V
Date:	November 2020
Job No:	19.153
Rev:	P0

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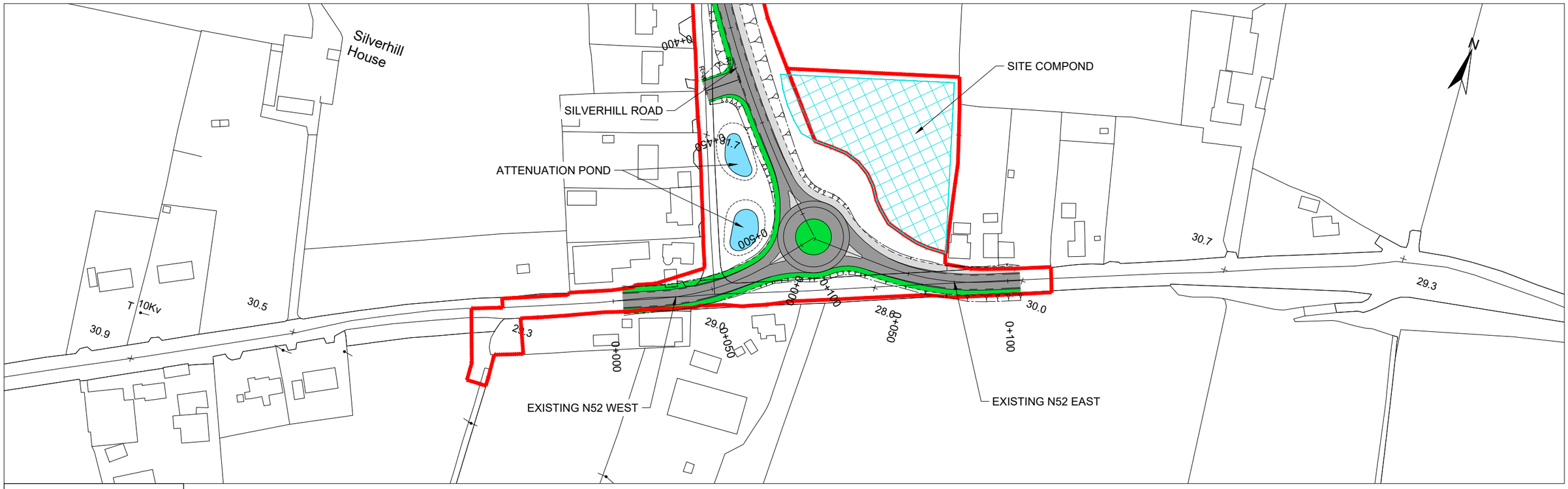
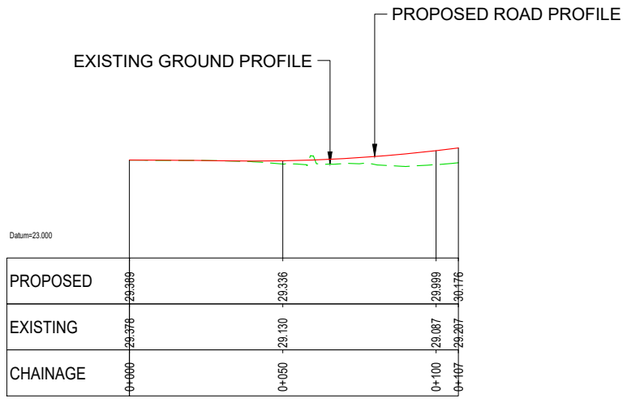
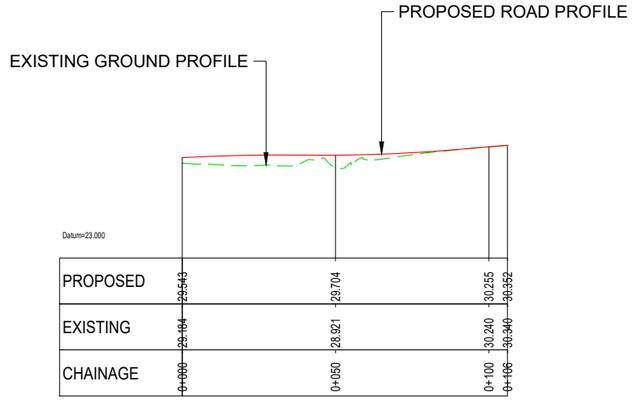


LEGEND:

- CPO LINE
- ATTENUATION PONDS
- CARRIAGEWAY AND HARD SHOULDER
- GRASS VERGE
- FOOTPATH / CYCLEWAY / HARDSTANDING
- PROPOSED SITE COMPOUND
- EXISTING ROAD PROFILE
- PROPOSED ROAD PROFILE



EXISTING N52 WEST
SCALE 1:1000H @ A1
1:200V @ A1



EXISTING N52 EAST
SCALE 1:1000H @ A1
1:200V @ A1

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Bonneagar Iompair Éireann Transport Infrastructure Ireland
Comhairle Contae Lú Louth County Council
NATIONAL ROADS DESIGN OFFICE
Westmeath County Council

No.	Revision	Date	By	Chk'd	App'd

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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	GR	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	SIDEROAD EXISTING N52 - PLAN & PROFILE
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number N52A - ROD - VES - SW_AE - DR - EN - 300008
Scale (A3)	1:2,000 H 1:400 V
Date:	November 2020
Job No:	19.153
Rev:	P0

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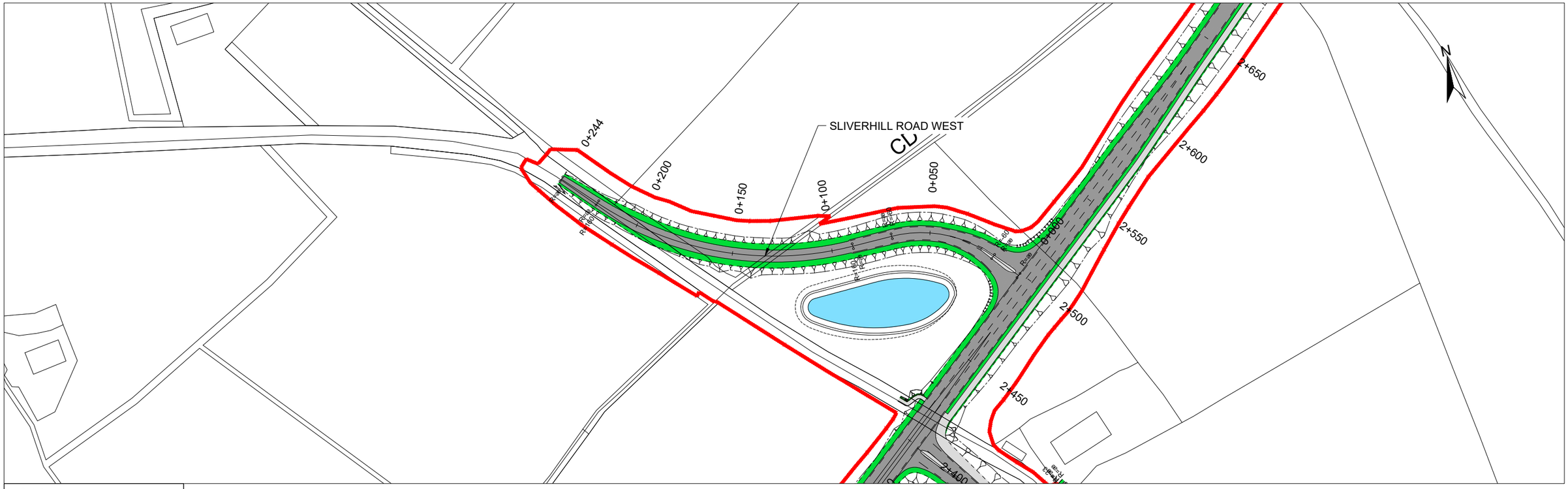
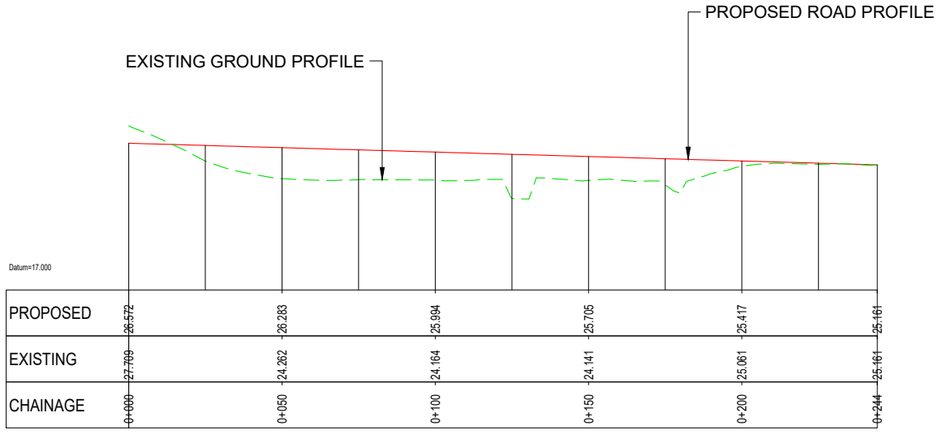


LEGEND:

- CPO LINE
- ATTENUATION PONDS
- CARRIAGEWAY AND HARD SHOULDER
- GRASS VERGE
- FOOTPATH / CYCLEWAY / HARDSTANDING
- PROPOSED SITE COMPOUND
- EXISTING ROAD PROFILE
- PROPOSED ROAD PROFILE



CHAINAGE	0+000	0+050	0+100	0+150	0+200	0+244
EXISTING	27.709	24.262	24.164	24.141	25.061	25.161
PROPOSED	26.572	26.283	25.994	25.705	25.417	25.161

SILVERHILL ROAD WEST

SCALE 1:1000H @ A1
1:200V @ A1

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Westmeath County Council

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www.rod.ie

Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	GR	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	SIDEROAD SILVERHILL ROAD WEST - PLAN & PROFILE
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number N52A - ROD - HML - SW_AE - DR - EN - 300009
Scale (A3)	1:2,000 H 1:400 V
Date:	November 2020
Job No:	19.153
Rev:	P0

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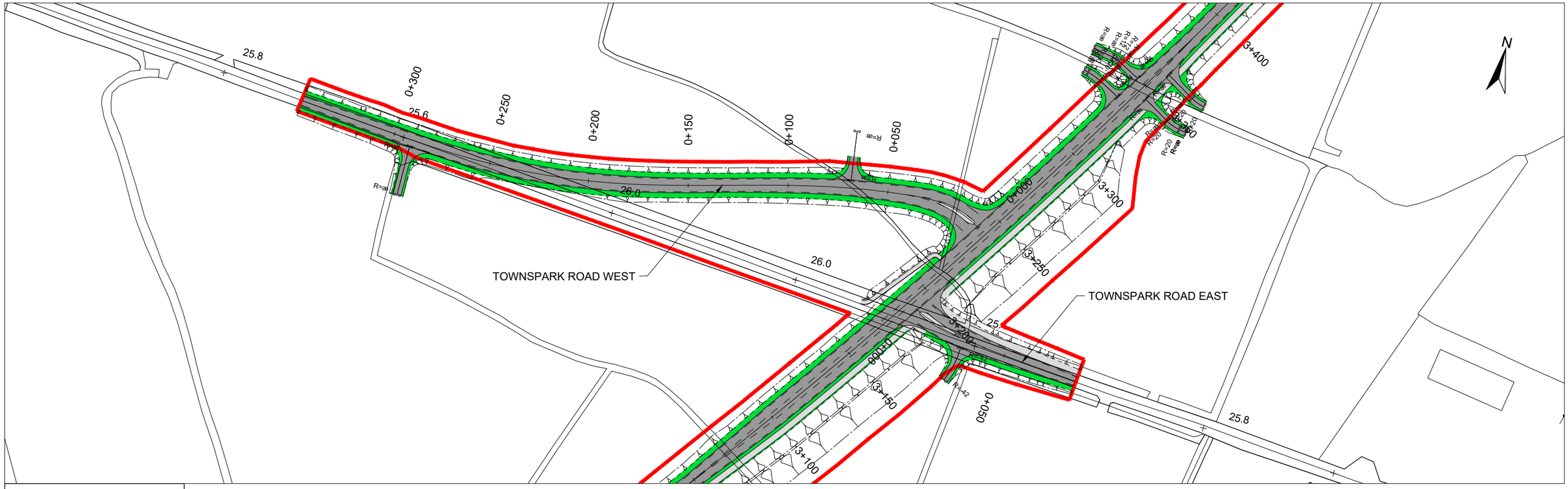
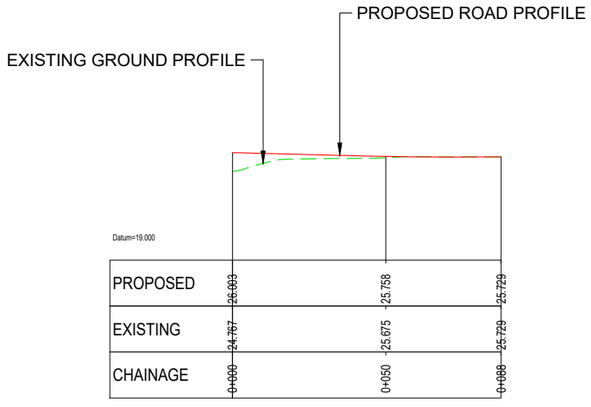
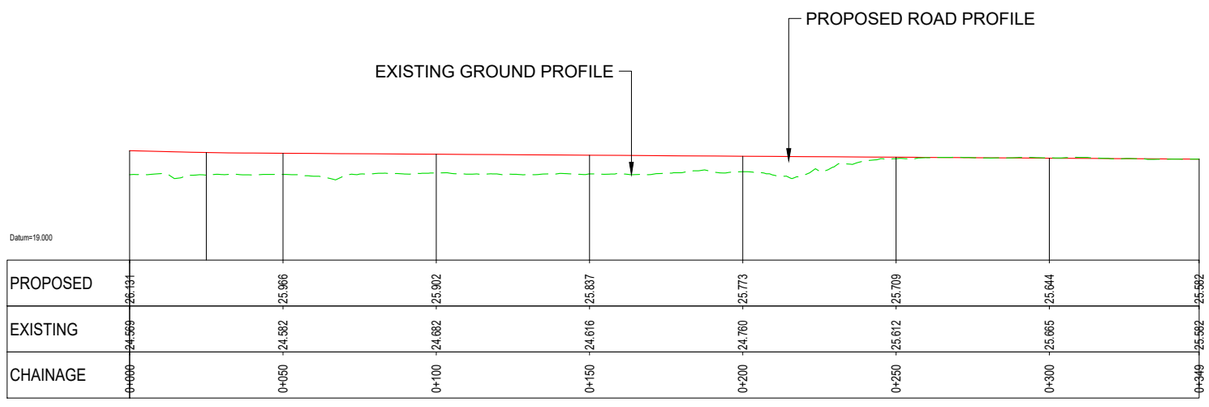


LEGEND:

- CPO LINE
- ATTENUATION PONDS
- CARRIAGEWAY AND HARD SHOULDER
- GRASS VERGE
- FOOTPATH / CYCLEWAY / HARDSTANDING
- PROPOSED SITE COMPOUND
- EXISTING ROAD PROFILE
- PROPOSED ROAD PROFILE



TOWNPARK ROAD EAST
SCALE 1:1000H @ A1
1:200V @ A1



TOWNPARK ROAD WEST
SCALE 1:1000H @ A1
1:200V @ A1

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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	GR	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	SIDEROAD TOWNPARKS ROAD - PLAN & PROFILE
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number N52A - ROD - VES - SW_AE - DR - EN - 300010
Scale (A3)	1:2,000 H 1:400 V
Date:	November 2020
Job No:	19.153
Rev:	P0

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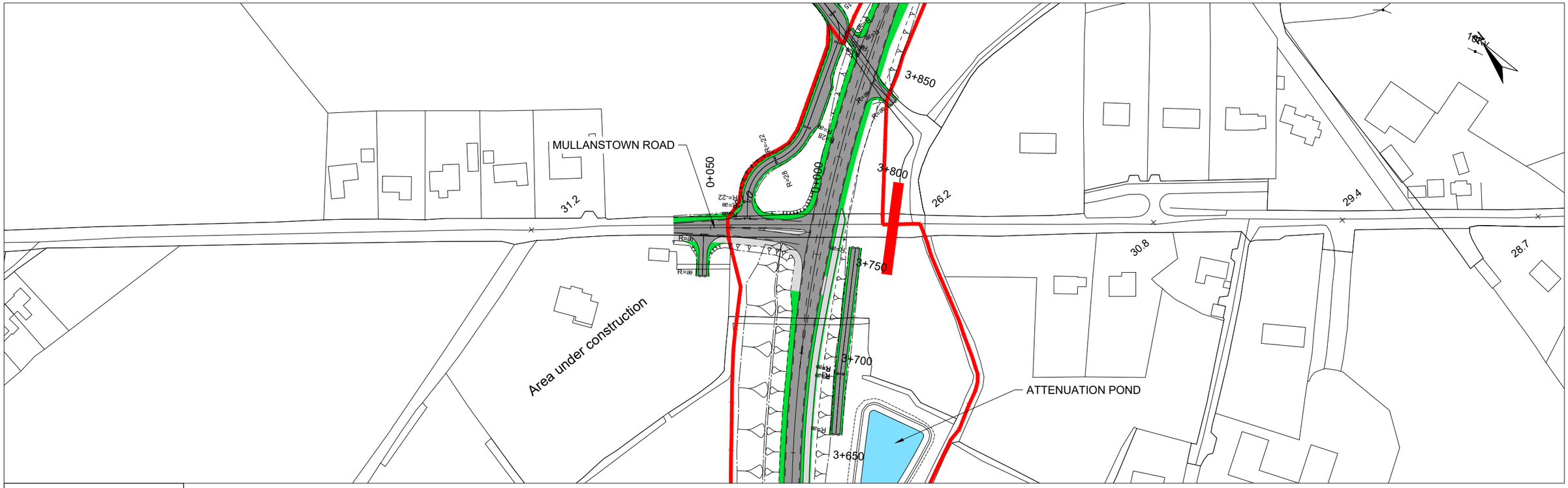
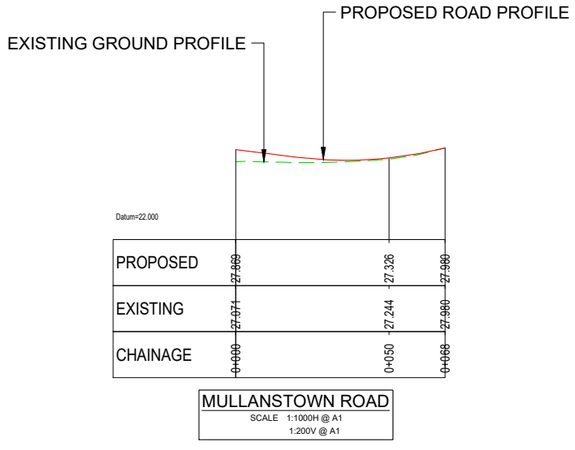


LEGEND:

- CPO LINE
- ATTENUATION PONDS
- CARRIAGEWAY AND HARD SHOULDER
- GRASS VERGE
- FOOTPATH / CYCLEWAY / HARDSTANDING
- PROPOSED SITE COMPOUND
- EXISTING ROAD PROFILE
- PROPOSED ROAD PROFILE



MULLANSTOWN ROAD
SCALE 1:1000H @ A1
1:200V @ A1

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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	GR	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	SIDEROAD MULLANSTOWN ROAD - PLAN & PROFILE
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number N52A - ROD - VES - SE_AE - DR - EN - 300011
Scale (A3)	1:2,000 H 1:400 V
Date:	November 2020
Job No:	19.153
Rev:	P0

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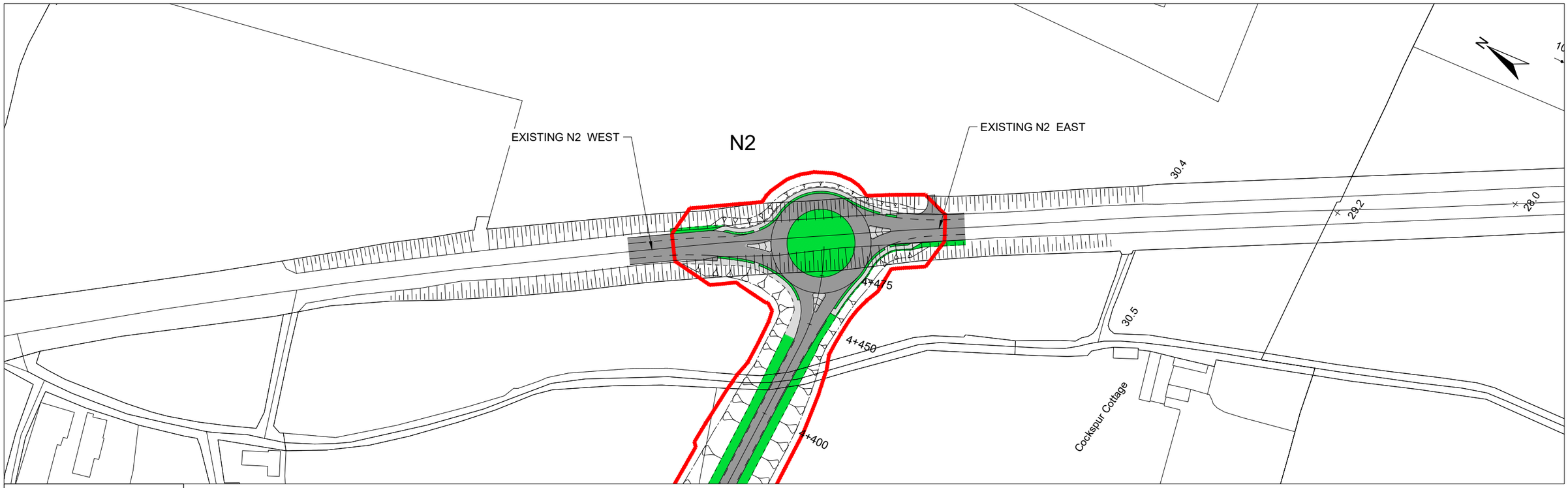

LEGEND:

- CPO LINE
- ATTENUATION PONDS
- CARRIAGEWAY AND HARD SHOULDER
- GRASS VERGE
- FOOTPATH / CYCLEWAY / HARDSTANDING
- PROPOSED SITE COMPOUND
- EXISTING ROAD PROFILE
- PROPOSED ROAD PROFILE

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Rialtas na hÉireann Government of Ireland
Tionscadal Éireann Project Ireland 2040
Bonneagar Iompair Éireann Transport Infrastructure Ireland
Comhairle Contae Lú Louth County Council
NATIONAL ROADS DESIGN OFFICE
Westmeath County Council

No.	Revision	Date	By	Chk'd	App'd

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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	GR	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	SIDEROAD EXISTING N2 - PLAN & PROFILE
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number N52A - ROD - VES - SW_AE - DR - EN - 300012
Scale (A3)	1:2,000 H 1:400 V
Date:	November 2020
Job No:	19.153
Rev:	P0

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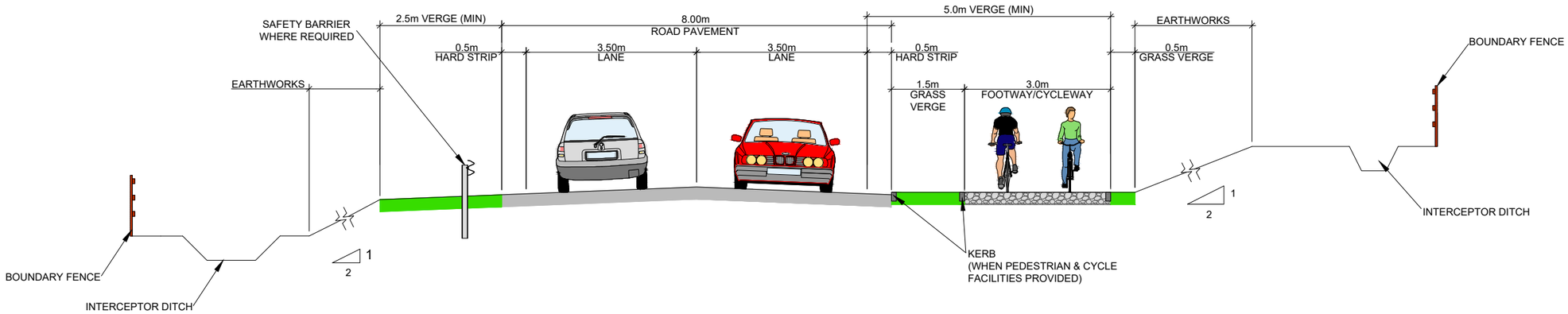
TYPE 2 SINGLE CARRIAGEWAY WITH SHARED USE TWO WAY CYCLE FACILITIES WITH PEDESTRIANS (DESIRABLE MIN)

SCALE 1:100 (@ A3)
SCALE 1:50 (@ A1)



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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	MB	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	PROPOSED N52 ARDEE CROSS SECTIONS
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number: N52A - ROD - VES - SW_AE - DR - EN - 300013
Scale (A3)	N.T.S.
Date:	November 2020
Job No:	19.153
Rev:	P0

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DO NOT SCALE USE FIGURED DIMENSIONS ONLY

SCALE

0km 0.25 0.5 1km

N

MULLANSTOWN ROAD

N2

4+000

3+500

3+000

2+500

2+000

1+500

1+000

0+500

0+00

TOWNPARKS ROAD

FOOTBALL CLUB

SILVER HILL ROAD

RETAINED SILVERHILL ROAD

N52 ARDEE BYPASS

EXISTING N52

EXISTING N52

RUGBY CLUB

GOLF CLUB

HOSPITAL

TOWN CENTER

BALLYGOWAN

CURRAGHBEG

HASLEY

LEGEND:

- PROPOSED CYCLEWAY ON NEW N52
- POSSIBLE FUTURE PEDESTRIAN/CYCLEWAY FACILITIES
- MIXED SHARED ROAD
- POINTS OF INTREST

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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	MB	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	PROPOSED CYCLE WAY PROVISIONS
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number: N52A - ROD - VES - SW_AE - DR - EN - 300014
Scale (A3)	N.T.S.
Date:	November 2020
Job No:	19.153
Rev:	P0

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LEGEND:

- LIKELY ZONE OF IMPACT
- SPECIAL AREA OF CONSERVATION (SAC)
- SPECIAL PROTECTION AREAS (SPA)

SCALE

0km 1 2.5 5 10km

N

DUNDALK BAY SPA & SAC

CARLINGFORD MOUNTAIN SAC

CARLINGFORD LOUGH SPA

CARLINGFORD SHORE SAC

STABANNAN-BRAGANSTOWN SPA

PROPOSED DEVELOPMENT

IRISH SEA
Muir Éireann

KILLYCONNY BOG (CLOGHBALLY) SAC

RIVER BOYNE AND RIVER BLACKWATER SPA & SAC

CLOGHER HEAD SAC

BOYNE COAST AND ESTUARY SAC

BOYNE ESTUARY SPA

RIVER BOYNE AND RIVER BLACKWATER SPA & SAC

BOYNE COAST AND ESTUARY SAC

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Drawn	Designed	Checked	Approved	Suitability Code - Description
LA	POS	GR	RJS	S0 - Work In Progress

Project Stage	EIA Screening
Project Title	N52 ARDEE BYPASS
Drawing Title	Designated Sites and Likely Zone of Impact
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number: N52A - ROD - VES - SW_AE - DR - EN - 300015
Scale (A3)	N.T.S.
Date:	November 2020
Job No:	19.153
Rev:	P0

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