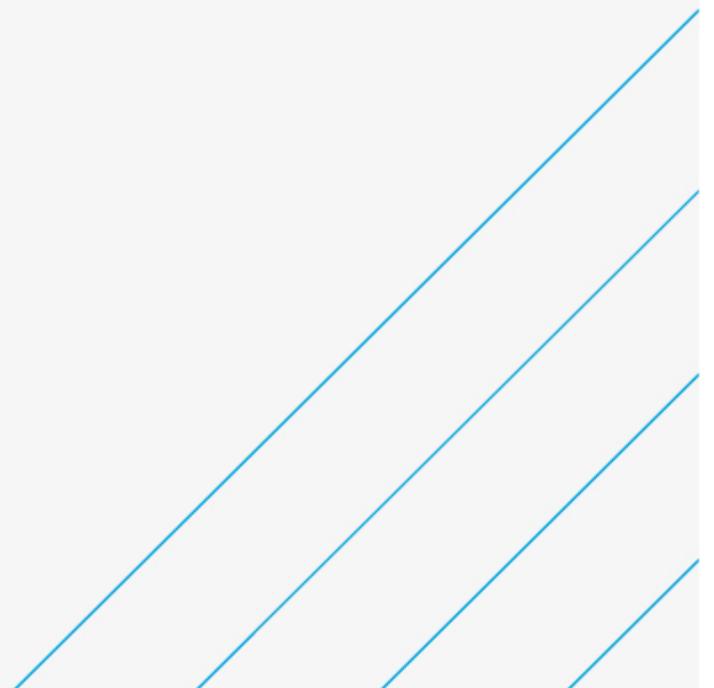


N77 Ballyragget Village to Ballynaslee Road Improvement Scheme

Environmental Impact Assessment Screening
Report

Kilkenny County Council

11/11/2020



Notice

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1. Introduction

Kilkenny County Council (KCC) appointed Atkins to prepare an Environmental Impact Assessment (EIA) Screening Report to support a Section 177AE Planning Application to An Bord Pleanála for the improvement of the existing N77 route between Ballyragget Village and Ballynaslee in County Kilkenny.

This existing stretch of N77 is limited because of its cross-sections and sub-standard alignment, which contribute to the absence of overtaking opportunities and inconsistent traffic flow regimes on the route. The proposed improvement works will provide safe overtaking opportunities, increase overall consistency and efficiency of the route and provide safer and more time efficient journeys. The proposed works will also provide safer access for Vulnerable Road Users (VRUs). The location of the proposed road improvement works is presented in Figure 1-1. Appendix A includes all relevant drawings relating to the proposed scheme.

1.1. Purpose of this Report

The purpose of this report is to determine whether the project requires the preparation of an Environmental Impact Assessment Report (EIAR). The project has been screened to generate a summarised overview of the potential impacts on the receiving environment, and in the context of relevant statutory requirements.

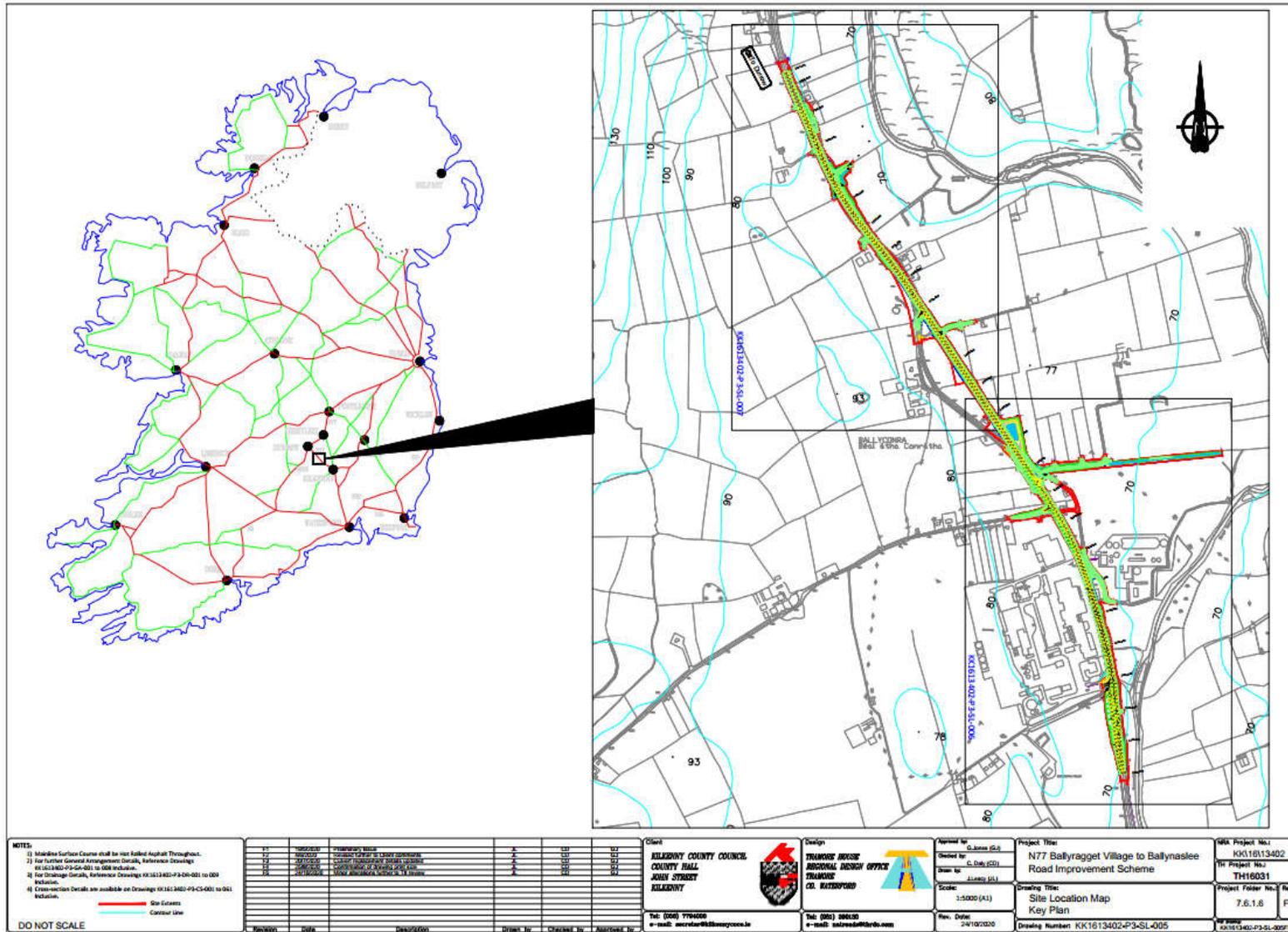


Figure 1-1 – Scheme Location

2. Methodology

The Environmental Impact Assessment (EIA) screening has been undertaken for the project based on the following methodology. The project has been screened in accordance with Section 50 of the Roads Acts 1993-2015 and Section 3.2 of the *'Guidelines on the Information to be contained in Environmental Impact Assessment Reports – Draft'* (EPA, 2017), the Environmental Impact Directive (85/337/EEC) (and all subsequent relevant amendments), and Planning and Development Regulations 2001-2020¹.

As set out under the relevant legislation (detailed further in Section 2.1 of this report), there are two key steps when carrying out EIA screening for a particular roads project;

- **Step 1** is to determine if the proposed infrastructure works represent a project as understood by the Directive and if a mandatory EIAR is required. Such projects are defined in Article 4 of the EIA Directive and set out in Annexes I and II. Projects requiring a mandatory EIAR are included under Section 50 of the Roads Act (1993-2015), S.I. No. 279 of 2019 amendments and the prescribed projects listed in Section 8 of the Roads Regulations, 1994 (S.I. No. 119 of 1994).
- **Step 2** is to determine if the project is likely to have significant effects on the receiving environment. Section 50 (1)(b) of the Roads Act (1993-2015) states that if An Bord Pleanála considers that any road development proposed (other than development to which paragraph (a) applies) consisting of the construction of a proposed public road or the improvement of an existing public road would be likely to have significant effects on the environment it shall direct that the development be subject to an environmental impact assessment. Section 50 (1)(e) of the Roads Act (1993-2015) states where a decision is being made pursuant to this subsection on whether a road development that is proposed would or would not be likely to have significant effects on the environment, An Bord Pleanála, or the Road Authority or the Authority concerned (as the case may be), shall take into account the relevant selection criteria specified in Annex III. Annex III has been transposed into Irish Legislation via Schedule 7 of the Planning and Development Regulations 2001-2020.

There are no exacting rules as to what constitutes “significant” in terms of environmental impacts. The responsibility is on Planning Authorities to carefully examine every aspect of a development in the context of characterisation of the project; location of the project and type and characteristics of potential impacts. It is generally not necessary to provide specialist studies or technical reports to complete this screening process, rather to investigate where further studies may be required, and where risks, if any, to the integrity of the receiving environment may lie.

For the purposes of screening sub-threshold development for EIA, all of the relevant information as presented within Planning and Development Regulations 2001-2020 (Schedule 7A) has been provided on behalf of the applicant, Kilkenny County Council. The potential for this scheme to pose a significant impact to the receiving environment has also been evaluated in accordance with criteria listed in the Planning & Development Regulations 2001-2020.

The findings of the EIA screening assessment have informed our professional opinion as to whether an EIAR is warranted, with due regard to all relevant statutory requirements and technical guidance. However ultimately it is the responsibility of the relevant planning authority to make a determination as to whether an EIAR is required for a particular project, based on the findings of the screening assessment.

Figure 2-1 provides a summary of the main steps involved in the EIA screening process.

¹ https://www.housing.gov.ie/sites/default/files/legislations/planning_and_development_regulations_2001-2020_unofficial_consolidationannotated16.09.2020.pdf.

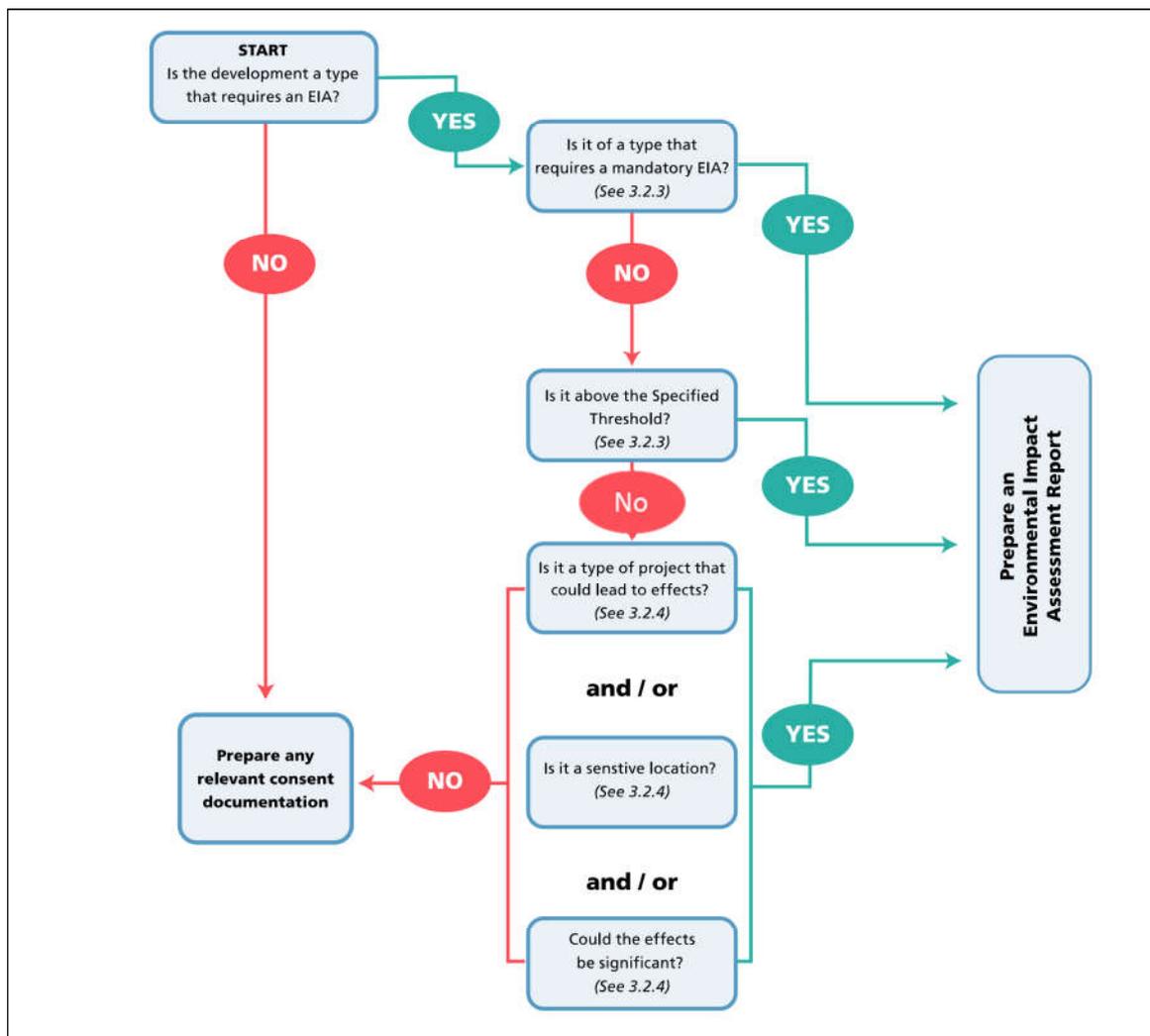


Figure 2-1 – EIA Screening Process (Source: ‘Guidelines on the Information to be contained in Environmental Impact Assessment Reports – Draft’ (EPA, 2017)).

2.1. Relevant Legislation

The Environmental Impact Directive (85/337/EEC) was brought into force in 1985. Subsequent amendments were made with the following pieces of legislation - 97/11/EC, 2003/35/EC, 2009/31/EC, 2011/92/EU and 2014/52/EU. The Directive was originally transposed into Irish Law by the European Communities (Environmental Impact Assessment) Regulations, 1989 (S.I. No. 349/1989). This amended the Local Government (Planning and Development Act) 1963 and introduced the requirement for an Environmental Impact Assessment in certain specified circumstances. The most recent amendment to the Directive is focused on clarifying and simplifying the process of EIA. The screening criteria have been updated, and Member States have a mandate to simplify their assessment procedures. EIA reports are to be made more readily understandable to members of the general public. Section 50 of the Roads Acts 1993-2015 outlines certain categories of roads projects which require an EIAR.

Recent regulations ((Planning and Development) Environmental Impact Assessment Regulations 2018 - S.I No. 296 of 2018) transposing the 2014 EIA Directive were adopted in 2018. These regulations amend the Planning and Development Regulations 2001 (S.I. No.600 of 2001); they seek to transpose EIA Directive 2014/52/EU and to give further effect to the 2011 Directive, as follows:

- An EIAR is required as a matter of course on specified large-scale projects which have a high likelihood of impacting on the receiving environment. These projects are listed in full within the Planning & Development Regulations 2001-2020, Schedule 5, Part 1 – Development for the purposes of Part 10.
- Each EU Member State has discretionary consideration for the requirement of an EIA in relation to various processes and activities. These projects are listed in full within the Planning &

Development Regulations 2001-2020, Schedule 5, Part 2 – Development for the purposes of Part 10. If the proposed project is listed under Schedule 5, Part 2, but does not exceed the relevant stated thresholds, it is considered to be sub-threshold. Part 10, article 92 of the Planning & Development Regulations, 2001 as amended states “*sub-threshold development*” means *development of a type set out in Part 2 of Schedule 5, which does not equal or exceed, as the case may be, a quantity, area or other limit specified in that Schedule in respect of the relevant class of development*”. Any sub-threshold developments should be evaluated to determine if the project is likely to have a significant impact on the environment.

- Criteria to evaluate whether significant impacts on the receiving environment will arise from a proposed development are listed under Schedule 7 of the relevant Planning & Development Regulations 2001-2020. A list of the relevant information to be provided by the applicant or developer for the purposes of sub-threshold EIA screening is presented in Schedule 7A of the Regulations, and summarised below;
 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.
 2. A description of the aspects of the environment likely to be significantly affected by the proposed development.
 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.

The compilation of the information at paragraphs 1 to 3 shall take into account, where relevant, the criteria set out in Schedule 7.

3. Screening Assessment

3.1. Step 1 - Mandatory Screening for EIA

The scheme has been screened against the criteria outlined in Section 50(1)(a) of the Roads Act 1993-2019² and Article 8 of S.I. No. 119/1994- Roads Regulations, 1994³. This project does not fall within any category of development requiring a mandatory EIA; hence the preparation of an EIAR is not required under Section 50 (1)(a).

3.1.1. Sub-threshold Development Likely to Have Significant Effects on the Environment

The scheme has been screened against the criteria outlined in Section 50(1)(b) of the Roads Act 1993-2015, as follows;

'Where the Minister considers that any proposed road development (other than development to which paragraph (a) applies) consisting of the construction of a proposed public road or the improvement of an existing public road would be likely to have significant effects on the environment, he shall direct the road authority to prepare an environmental impact statement in respect of such proposed road development and the authority shall comply with such direction'.

Therefore, it is considered that the scheme should undergo an EIA screening to determine if an EIAR would be required in accordance with Section 50(1)(b) of the Roads Act 1993-2015.

3.2. Step 2 - Determining if the project is likely to have significant effect on the receiving environment.⁴

For ease of reference, each criterion which must be considered (as per the relevant regulations) in order to determine if the project is likely to have a significant effect on the receiving environment is set out below (*in italics*), followed by the corresponding response.

3.2.1. Description of the Proposed Development (Schedule 7A(1))

A description of the Physical Characteristics of the Whole Proposed Development and Where Relevant of Demolition Works (Schedule 7A (1) (a))

The proposed development will consist of the N77 Ballyragget Village to Ballynaslee Road Improvement Scheme, north of Ballyragget Village, in the townlands of Ballyconra and Ballynaslee, in County Kilkenny. The proposed development will consist of the realignment of a 2.44km section of the N77 to remove a bend immediately to the north of the Glanbia plant at Ballyragget, County Kilkenny. The proposed development will commence c. 250m south of the Glanbia plant at Ballyragget and extend northwards to tie in to the recently completed N77 Ballynaslee Realignment Scheme. The works will consist of 1740m of online realignment and 700m of offline realignment works, with associated drainage, including attenuation pond and swales; fencing; safety barriers; kerb line; signage; and all site development and landscaping works. The maximum likely excavation depth is 5m bgl which incorporates the drainage requirements for the scheme.

The overall aim of this scheme is to improve the consistency, accessibility and safety of the existing stretch of this route, and the relevant objectives are as follows (N77 Ballyragget Village to Ballynaslee Improvement Scheme Preliminary Design Report -Tramore Regional Design Office (THRDO, 2020);

- *To provide a suitable structural pavement to cater for existing and future traffic needs, including the likely increase in heavy vehicle trips as indicated within the TII National Transport Model NTpM;*
- *To improve the existing access arrangement at the Glanbia Plant having regard to the current TII DMRB and the volume of heavy vehicle trip movements to and from the plant; and,*
- *To provide safer and more efficient accessibility to the N77 route to the local community and all vulnerable road users (VRUs) (THRDO, 2020).*

² <http://www.irishstatutebook.ie/eli/1993/act/14/section/50/enacted/en/html#sec50>

³ <http://www.irishstatutebook.ie/eli/1994/si/119/made/en/print>

⁴ Pursuant to Schedule 7(A) of the Planning and Development Regulations as amended 2001-2020

The current Kilkenny County Council Development Plan 2014-2020 is under review with a draft Plan to be issued in Q3 2020. This proposed route is in accordance with an objective of Kilkenny County Council Development Plan 2014-2020 as follows:

To develop and agree an appropriately planned policy response to access for Glanbia and the Leggetsrath roundabout in conjunction with the National Roads Authority (KCC, 2014).'

The proposed route does not cross any reported Environmental Protection Agency (EPA) rivers or streams, however the River Nore flows in a southern direction ca. 30m east of the scheme at its closest point.

The type of road proposed to be constructed is a Type 1 Single Carriageway cross-section, all-purpose road with a 3.65m carriageway, a 2.5m hard shoulder and 3m grass verge in each direction constructed to the geometric standards of TII Publication DN-GEO-03031 (Rural Road Link Design). The cross section is shown in Figure 3-1.

The proposed geometric alignment of the scheme has been designed in accordance with TII Design Manual for Roads and Bridges and in particular DN-GEO-03030, DN-GEO-03031 and DN-GEO-03060.

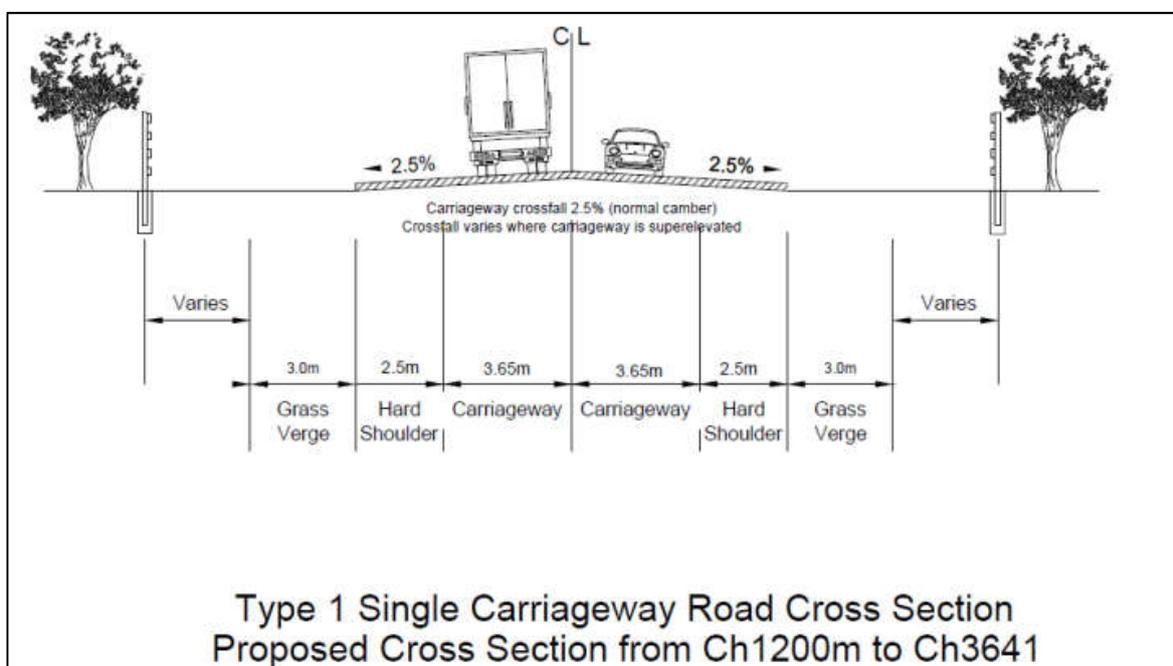


Figure 3-1 – Type 1 Single Carriageway

The N77 Ballyragget to Ballynaslee Road Improvement Scheme will involve an excavation volume of ca. 56,000m³ and a fill volume of ca. 42,000m³. The total likely volume of soils to be removed offsite during the construction phase will be ca. 39,000m³ comprising topsoil and unacceptable material. It is likely that ca.17,000m³ of the excavated material is suitable for reuse onsite without further processing.

A Description of the Location of the Proposed Development, with Particular Regard to the Environmental Sensitivity of Geographical Areas Likely to be Affected (Schedule 7A(1)(b)).

The land surrounding the scheme comprises predominately agricultural land with local roads and residential and agricultural properties. Glanbia Factory is located along and accessed from the proposed route.

Agronomy

Given the rural location of the proposed scheme and the close proximity of farmyards and the numerous agricultural fields surrounding the scheme, it is likely that a number of land holdings may be temporarily impacted during the construction works. ca. 700m of offline realignment works are proposed which will result in 18no. landholdings and ca 11.9529ha being impacted by the proposed

realignment works. This includes 10.8344ha of permanently acquired land and 1.1185ha of temporary acquired land.

Designated Conservation Area

A review of the Screening for Appropriate Assessment Report and Natura Impact Statement prepared by Ecofact (2020) identified that the proposed route does not lie within any Natura 2000 sites. There are 2no. Natura 2000 sites within the immediate vicinity of the proposed scheme; River Barrow and River Nore SAC (Site Code: 2162) and River Nore SPA (Site Code: 4233). The boundaries of these 2no. Natura 2000 sites are not the same. The SAC site incorporates areas of fields and woodlands close to the riverbanks. The SPA site boundary largely follows the alignment / riverbanks of the River Nore. The SAC site boundary is ca.10m east of the project site at its closest point. The SPA site boundary is 40m east of the scheme at the closest point.. There are 5no. other SACs within 15km of the scheme. The closest of which; Lisbigney Bog SAC, is located ca. 5.3km north east of the proposed scheme. There are no other SPAs within 15km of the scheme.

There are 16no. proposed Natural Heritage Areas (pNHAs) and no Natural Heritage Areas within 15km of the scheme. The closest pNHA is River Nore / Abbeyleix Woods Complex (Site Code: 002076) located ca.30m east of and connected to the proposed scheme via. land features. There are no Geological Heritage Areas within 15km of the proposed scheme.

There are no reported rivers / streams intercepted by the proposed scheme with the River Nore located ca. 30m east of the scheme. The River Nore flows in a southern direction past the scheme before becoming the Nore Estuary ca.40km south of the scheme (by land) and subsequently joining the New Ross Port Estuary and the Barrow Suir Nore Estuary.

The River Nore has been assigned an '*Unassigned*' Water Framework Directive (WFD) quality for the 2013 – 2018 monitoring period within vicinity of the proposed scheme with a small portion of the downstream section being assigned '*Good*' WFD quality before being re-assigned with an '*Unassigned*' quality. The section of the River Nore within vicinity of and upstream of the proposed scheme has been identified as '*At Risk*' of not meeting relevant WFD objectives with the downstream section of the River identified as '*Not at Risk*' of not meeting the WFD objectives.

The scheme lies predominantly within the Kilkenny-Ballynakill Gravels (IE_SE_G_163) Groundwater Body (GWB). According to GSI (2020) records there are 5no. groundwater wells within 30m of the scheme, none of which are reportedly used for public supply purposes or by Glanbia.

Hydrogeology

The proposed scheme is underlain by a '*regionally important gravel aquifer*' and '*regionally important karstified bedrock aquifer*' (GSI, 2020). Groundwater vulnerability beneath the proposed route has been classified by GSI (2020) as '*High*'. There are two designated source protection areas within the general vicinity of the scheme; the Seskin-Lisdowney-Ballyconra GWS; and the Glanbia (Ballyragget) Water Supply Scheme.

The Seskin-Lisdowney-Ballyconra GWS supplies potable water via underground distribution mains to various consumers along both sides of the proposed roadway realignment. The Seskin-Lisdowney-Ballyconra GWS has a pumped water supply mains between 2no. boreholes (with a third borehole used as a back-up supply) at a pump house in Ballinaslee and reservoirs in Seskin. The supply is fed to consumers via existing gravity main supply between the reservoirs in Seskin and Ballinaslee townland and eastern Ballyconra areas. The Source Protection Zone for this GWS is located ca. 0.23km west of the proposed scheme. The northern portion of the scheme is located within the Preliminary Source Protection Area.

Phase 1 and 2 Ground Investigation Interpretative Reports (Priority geotechnical, 2019), in addition to available information for the Glanbia (Ballyragget) Water Supply Scheme (EPA, 2010) and the Seskin-Lisdowney-Ballyconra GWS were reviewed to determine the potential for groundwater to be encountered and potentially impacted during the construction phase of the proposed scheme. In general there was no groundwater encountered during the ground investigation works with '*a low volume flow interpreted as locally perched groundwater at a depth of 4.3m bgl*' (below ground level).

The wells which primarily supply the Seskin-Lisdowney-Ballyconra GWS appear to be installed within the gravel aquifer beneath the scheme with reported groundwater levels of between 1 to 4m bgl (taking account of seasonal fluctuations) while the backup supply appears to be installed in the

bedrock aquifer with reported groundwater levels of between 5 to 25m bgl (taking account of seasonal fluctuations).

The depths to bedrock in the well-field which supplies the Glanbia (Ballyragget) Water Supply Scheme are reported to be 11.9m, 25.9m, 27m and >26.5m. Groundwater in the area surrounding this wellfield is reported to be *'deep beneath the ground surface, recorded as a standing water level at 12.6 –13.6 m below ground level in the boreholes'* (EPA, 2010).

In summary groundwater levels within the underlying gravel aquifer appear to be shallow (1-4m bgl) whilst groundwater levels within the limestone bedrock aquifer appear to be deeper (5-25m bgl).

A pre-construction well survey will be carried out at all properties within 150m of the proposed scheme, and will include all wells / boreholes which supply the Seskin-Lisdowney-Ballyconra GWS. Any wells which may potentially be at risk (via. resource / quality impacts) during the construction or operational phases will be identified and appropriate measures implemented in order to protect any vulnerable groundwater supplies within the vicinity.

Geology

The Phase 2 Ground Investigation Report (Priority Geotechnical Ltd., 2019) has identified that the scheme is underlain by Topsoil and silt at depths between 100mm bgl and 700mm bgl with silt / clay and gravel beneath the topsoil. Low to medium cobble content was encountered to a depth of 4.2m bgl. A search of GSI online records (2020) identified underlying bedrock as Crinoidal wackestone/packstone limestone of the Ballyadams Formation.

No karst features are recorded directly along the proposed scheme. 2no. phases of intrusive ground investigation were completed by Priority Geotechnical (2017 and 2019). 13no. trial pits were excavated to 3m bgl, and 5no. rotary core boreholes were progressed to 11m bgl. The superficial deposits were found to comprise, topsoil, made ground, sandy gravely silts and sandy clayey gravel. Rockhead (limestone) was encountered at 3.8m in the north of the scheme and 8.3m bgl in the south of the scheme. No evidence of karst (i.e. voids, infill cavities, extensive fracturing / weathering) was identified in the 5no. rotary core boreholes logs. The closest karst features are recorded ca. 1km west and ca. 2km east of the proposed scheme (GSI, 2020). Therefore, although no karst features were encountered directly beneath the scheme, karst features in localised areas cannot be excluded.

No landslides, or historic mines have been reported within the vicinity of the proposed scheme.

Flooding

The proposed scheme is located ca. 30m west of the River Nore at their closest. The River Nore has been identified by the OPW Floodinfo data source (2020) to have a *'medium probability'* of flooding in vicinity of the proposed open grassland swale to the north of the entrance to Glanbia. A Flood Risk Assessment (FRA) was completed by Atkins (2020) for the proposed development. The FRA concluded that *'the various information sources reviewed as part of this flood risk assessment have confirmed that the section of N77 under review for this road improvement scheme is not at risk from fluvial flooding from the River Nore for a 1 in 100-year or 1 in 1000-year flood event. Therefore, in accordance with the planning guidelines, the scheme extents are classified to fall within Flood Zone 'C'. It is noted however, that sections of the existing N77 to the south of the proposed scheme on approach to Ballyragget Village are at risk from fluvial flooding'*.

Biodiversity

An Ecological Impact Assessment (EclA) was prepared by Ecofact (2019; 2020) which identified the presence of Otter (*Lutra lutra*) ca. 1.1km downstream of the proposed scheme along the River Nore. Various other mammals including Badger (*Meles meles*) and Pine Marten (*Martes martes*) were identified within vicinity of the proposed scheme, however none of these were reported within the study area during the initial walkover survey or trail camera survey. No bat roosts were identified during the site walkovers. Kingfisher were reported downstream of the scheme but it is considered unlikely that they would use the proposed scheme location. The EclA has indicated that numerous fish species including Atlantic Salmon, Sea Lamprey and Brook Lamprey are within the general area of the proposed scheme with twaite shad potentially present. Ecofact have noted that *'it must be assumed that crayfish have the potential to be present. Freshwater Pearl Mussel are considered to be present in this stretch of the River Nore in small numbers. With the main population found between Poorman's Bridge and just above Ballyragget Bridge at the Glanbia Factory'*.

Archaeology and Cultural Heritage

There were a number of archaeological features and features of archaeological potential identified within the vicinity of the proposed scheme during an archaeo-geophysical survey conducted by Earthsound Archaeological Geophysics in 2018, as follows;

- A possible oval enclosure on the northern edge of the archaeo-geophysical survey area, which would have been intervisible with a recorded ring-ditch (KK004-040----), the extent and composition of which was fully mapped by the geophysics survey. This is located > 50m away from the proposed route;
- The extent and composition of ring-ditch (KK004-040----) was fully mapped by the surveys. It comprises an outer ditch, measuring 16m in diameter and a possible entranceway to the east. Enclosed within this ditch is a circular formation of pits, while further pits were detected surrounding the monument. This is located ca. 90m away from the proposed route;
- 2no. smaller ring ditches close to the southwestern corner of the archaeo-geophysical survey area which appear to be dissected by or contain a number of pits. The eastern most of the 2no. features may comprise two conjoined ring-ditches. These are located ca 50 from the proposed route.
- 2no. areas of archaeological potential were indicated from the geophysical survey which may be directly impacted by the proposed route. These have been interpreted from the archaeo-geophysical survey as a potential enclosure and potential ring-ditch.

The aspects of the environment which could potentially be significantly affected by the proposed development are evaluated further within Section 3.3.2 of this report (*'Location of proposed development - The environmental sensitivity of geographical areas likely to be affected by the proposed development'*) as required under Schedule 7 of the relevant regulations.

3.2.2. Description of Aspects of the Environment Likely to be Significantly affected by the Proposed Development (Schedule 7A (2)).

The proposed scheme does not lie within any Natura 2000 sites, nature reserves or existing/ proposed natural heritage areas (detailed in Section 3.2.1 of this report). However, there are 2no. Natura 2000 sites within the immediate vicinity of the proposed scheme; River Barrow and River Nore SAC (Site Code: 2162) and River Nore SPA (Site Code: 4233). The boundaries of these 2no. Natura 2000 sites are not the same. The SAC site boundary is ca.10m east of the project site at its closet point. The SPA site boundary is 40m east of the scheme at the closest point.

The Contractor will prepare a detailed Environmental Operating Plan (EOP) to ensure that there will be no significant impact on the Natura 2000 sites including as follows:

- The site compound will not be located within the boundaries of the SAC or SPA and all works will be carried out beyond the boundary of the SPA or SAC;
- The site compound will not be located within 50m of any watercourse;
- Bunded storage areas will be used to store oils, fuels, soil;
- Any stockpiling of materials will be outside of the SAC and SPA boundaries, 50m back from any watercourses, with bunding and silt fences, the location for stockpiling of materials will be agreed before the project is finalized;
- Terrastop Premium Silt Fences, or an equivalent alternative, will be installed around selected works areas and site compound;
- Mixing of materials will occur within the site compound and all wash water and waste / grey water will be stored securely. Uncontaminated U1 material can be reprocessed on site in the site compound for reuse and unacceptable U2 material encountered or generated onsite will be removed from the fenced site compound and brought to an existing licensed waste facility; and,
- Construction of open grass swale will occur in periods of dry weather.

It is likely that surface water quality will be improved following the upgrade of the N77.

The proposed attenuation pond and bypass petrol interceptors will be fitted with TII approved manual shut-off valves. An inspection regime of the bypass interceptors will be conducted by the council. NRA guidelines will be followed and mammal fencing at Ballyragget bridge will be repaired.

A proposed open grass swale, attenuation pond and bypass interceptors will also result in improving treatment for road run-off before discharge. Any road salt or grit used during winter months will also be attenuated within the proposed open grass swale.

It is likely that the upgraded drainage system will likely have a positive impact on the Natura 2000 sites.

The various archaeological features which have been identified within vicinity of the scheme have the potential to be impacted by the proposed works (Section 3.2.1).

The other relevant aspects of the environment (including human health) which could potentially be significantly affected by the proposed scheme are the receiving groundwater and surface water environment, air quality environment, the receiving noise and vibration environment, and the receiving traffic environment, during the construction phase. These are outlined in further detail in the following paragraphs.

The works will be located primarily along the existing road network with a short section (ca. 700m) of agricultural land being excavated. The maximum likely depth of cutting is 5m. Based on the ground investigation for the scheme, there is potential that shallow groundwater could be encountered at this depth within the gravel aquifer beneath the scheme. However the maximum cut depth will occur in localised areas. Taking account of the proposed well survey, and based on the proposed design for the scheme and the location of the supply wells for the Seskin-Lisdowney-Ballyconra GWS no significant impacts to groundwater quality or supply, and no associated human health impacts (via. potable water use) are likely.

The River Nore flows in a southern direction ca. 30m east of the proposed scheme before continuing south to eventually join with the Barrow Suir Nore Estuary. An Outline Environmental Operation Plan (EOP) has been prepared by Ecofact which will be developed into a final EOP by the appointed contractor prior to the commencement of construction works. Due to the nature and scale of the project and the additional mitigation measures that will be implemented during construction it is not likely that the construction works, and operation of the proposed development will not have a significant impact on surface water quality.

Dust may be generated during the construction phase of the proposed development. The Air Quality Index for the general area of the proposed scheme is 'good' (EPA, 2020). However, management of dust will be in line with relevant best practice measures such as those set out in '*Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes*' (NRA, 2011). Due to the nature and scale of the project it is likely that the construction works, and operation of the proposed scheme will not have a significant impact on air quality.

Construction will require the use of machinery and the presence of such machines may result in a temporary increase of noise and /or vibration. Noise levels shall not exceed the indicative levels of acceptability for construction noise in an urban environment as set out in the NRA guidance 'Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes' (NRA, 2014). Contractors will be required to comply with the requirements of the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations, 1988 as amended in 1990 and 1996 (S.I. No. 320 of 1988, S.I. No. 297 of 1990 and S.I. No. 359 of 1996), and the Safety, Health and Welfare at Work (Control of Noise at Work) Regulations, 2006 (S.I. No. 371 of 2006). 4no. properties are noted to be present within the immediate vicinity / along the scheme. Given the proximity of the proposed development these properties have been identified as potential noise sensitive receptors during the construction stage. Appropriate noise and vibration control measures will be implemented during the construction phase to reduce the risk of noise issues arising. Such measures will be detailed fully in a detailed EOP which will be developed by the Contractor.

AWN Consulting Limited (AWN) carried out a baseline noise survey to measure existing traffic noise levels at the closest properties along the length of the study area. A total of 7no. locations were surveyed, one unattended and 6 attended. The results of the baseline survey confirm that properties immediately along the N77 road edge experience highest traffic noise levels. At the majority of the assessment locations within 80m of the road edge with a direct line of sight to the road, traffic noise levels are above 60dB L_{den}.

To determine the potential noise impact of the proposed road improvement scheme, a 3D noise model of the existing and proposed alignment was developed for the future traffic years of 2023 and 2053. Road traffic noise levels were predicted at twenty properties within the study area using the projected traffic flows for the two assessment years. It was determined that mitigation is required at one location

(Noise receptor Ref: N12) where the proposed road is realigned from the front to the rear of the property in question.

Noise mitigation in the form of a noise barrier has been proposed and modelled for this location (Noise receptor Ref: N12) to reduce traffic noise levels to below the TII design goal of 60dB L_{den}. With the proposed barrier in place, calculated noise levels are reduced at this location for both assessment years to within the design goal. Traffic noise levels at the front of the property in question will be reduced by the order of 11dB due to traffic being removed from the existing section of the N77 fronting the property. Due to the nature and scale of the project it is likely that the construction works, and operation of the proposed development will not have a significant impact on noise levels.

3.2.3. Description of Any Likely Significant Effects (To the Extent of The Information Available on Such Effects) of The Proposed Development on The Environment (Schedule 7A(3)).

The Expected Residues and Emissions and the Production of Waste where relevant (Schedule 7A (3)(a)).

The proposed scheme may give rise to air, noise and water emissions. However, the project will be designed in order to minimise any potential impacts as a result of these emissions during the operational phase. Standard mitigation measures will be implemented by the Contractor (refer to section 3.3.4) to address potential air and noise emissions during the construction phase. The Contractor will ensure that onsite storm water management during the construction phase is carried out in accordance with relevant best practice measures as set out in Construction Industry Research and Information Association (CIRIA) guidance 'C532 - Control of Water Pollution from Construction Sites'.

During the construction phase the following waste streams will be generated: soil, construction and demolition (C&D) waste, mixed municipal waste (MMW), recyclables such as plastic wrapping, wooden pallets, paper and/or waste electrical and electronic equipment (WEEE). All waste generated will be disposed of by the Contractor in accordance with all relevant waste management legislation. The Contractor will be responsible for segregating each waste type as per the relevant List of Waste (LoW) (also referred to European Waste Catalogue (EWC)) code. Waste materials must be removed offsite by a suitably permitted waste haulage contractor who holds a current valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO).

It will be the responsibility of the appointed Contractor to prepare a project specific Detailed C&D Waste Management Plan (WMP), in accordance with 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Waste Projects' in advance of commencing the works to ensure all waste is removed off site to a suitably licenced waste collector. The proposed development is not likely to have a significant environmental effect with regard to expected residues and emissions and the production of waste.

The Use of Any Natural Resources in particular soil, land, water and biodiversity (Schedule 7A (3)(b)).

Natural resources in the area are required to facilitate the development of this scheme during construction phases. The scheme will predominantly be constructed along the existing N77 with ca. 700m offline impacting on agricultural land. Due to the scale and nature of the scheme it is not likely that it will have a significant impact on land.

The N77 Ballyragget to Ballynaslee Road Improvement Scheme will involve an excavation volume of ca. 56,000m³ and a fill volume of ca. 42,000m³. It is likely that ca. 17,000m³ of the excavated material is suitable for reuse onsite without further processing and therefore ca. 39,000m³ will require offsite disposal or further processing to make suitable for on-site works. The contractor shall employ soil stabilisation measures where feasible to further reduce the quantity of remaining material being disposed offsite. All soil requiring disposal offsite will require testing against the EPA "Determining if Waste is Hazardous" criteria, and (EPA, 2015), and the waste acceptance criteria (WAC) for the receiving facilities before being moved offsite to an appropriate, licenced, permitted or registered facility.

No karst features are recorded beneath the proposed scheme. Limestone rockhead was encountered at depths of 3.8m bgl in the north and 8.3m bgl in the south. The maximum depth of excavation is likely to be ca. 5m bgl in a localised area towards the centre of the scheme where the depth to rockhead is likely to be ca. 7m bgl. It is unlikely that the proposed scheme will encounter bedrock. Due to the nature and scale of the proposed scheme it is not likely that there will be a significant

impact on any potential karst features which may be present, or the underlying geological / hydrogeological conditions.

All excess material will be transported directly offsite to a licenced/ permitted/ registered waste disposal facility. Suitable soil will be required to be imported as engineering grade fill material during the proposed works. The use of other natural resources with respect to soils and land will not be required arising from the proposed development.

Small sections of field boundaries will require removal. The use of other natural resources with respect to biodiversity will not be required arising from the proposed development.

Therefore, based on the environmental setting, and taking account of the nature, scale and location of the proposed scheme other than standard construction materials, the proposed development (during both construction and operational phases) will not have a significant impact on natural resources.

3.2.4. The Compilation of The Information at Paragraphs 1 To 3 Shall Take into Account, where Relevant, the Criteria set out in Schedule 7 (Schedule 7A(4)).

All relevant criteria set out in Schedule 7 of the Regulations is presented in Section 3.3 ('Criteria for Determining Whether Development Listed in Part 2 of Schedule 5 Should be subject to an EIA') of this screening report.

During the preparation of Sections 3.2.1 to 3.2.3 (i.e. Schedule 7A (1) to (3)) all pertinent Schedule 7 information has been taken account of as required, with specific details presented in the following section of this report (Section 3.3).

3.3. Criteria for Determining Whether Development Listed in Part 2 of Schedule 5 Should be subject to an EIA⁵

3.3.1. Characteristics of proposed development (Schedule 7(1))

The size and design of the whole of the proposed development (Schedule 7(1)(a))

Refer to Section 3.2.1 under 'A description of the Physical Characteristics of the Whole Proposed Development and Where Relevant of Demolition Works (Schedule 7A (1) (a))'. Planning Drawings are included in Appendix A.

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 (Schedule 7(1) (b))

Committed Development

A search of Kilkenny County Council Planning records has been undertaken for the applications submitted within the last 7 years in the vicinity of the scheme. The majority of these planning applications are small scale projects. These include renovations to the Glanbia Factory, projects which appear to be already constructed, small scale agricultural developments and retention of residential houses.

This search identified 2no. developments which are in close proximity to the proposed scheme which are considered could potentially act in combination with the proposed scheme, as follows;

- Planning Application Reference No. 16607 (Granted June 2017);
The planning application is for a solar PV panel array, consisting of up to 50,000m² of solar panels on ground mounted steel frames, electricity control room, power inverter units, underground cable ducts, security fence, solar powered CCTV and lamp standards and all associated works. This development is located ca. 600m west of the scheme and likely accessed via. the existing Glanbia Site.
- Planning Application Reference No. 17669 (Granted March 2018);

⁵ Pursuant to Schedule 7 of the Planning and Development Regulations as amended 2001-2020

The planning application is for proposed works which will include a solar farm on an area of approximately 39.6 hectares, comprising photovoltaic panels on ground mounted frames, 20 no. single storey inverter/transformer stations, 1 no. onsite 38 KV substation, 2 no. steel storage containers, security fencing, CCTV and all associated ancillary development works. Elgin Energy Services Ltd, are applying for the proposed solar farm to have planning permission that is effective for 10 years (and an operational period of 30 years). This development is located ca. 1.2km west of the scheme and is accessed via. the local road located immediately north of Glanbia.

The developments mentioned above are relatively minor projects and due to the nature, size and scale of these projects, and the fact that a Traffic Management Plan will be implemented during the construction stage of the proposed project, it is not likely that they will act in combination with the proposed scheme to cause significant impacts.

The nature of any associated demolition works (Schedule 7(1)(c))

There are no demolition works required as part of the proposed scheme.

The use of natural resources, in particular land, soil, water and biodiversity (Schedule 7(1)(d))

Refer to Section 3.2.3 under 'The Use of Any Natural Resources in particular soil, land, water and biodiversity (Schedule 7A (3)(b))'. No significant impact on land soil water and biodiversity is likely from the proposed scheme.

The production of waste (Schedule 7(1)(e))

Refer to Section 3.2.3 under the 'The Expected Residues and Emissions and the Production of Waste where relevant (Schedule 7A (3)(a))'. All waste will be removed to an appropriately licenced/ permitted waste disposal/ recovery facility. No significant impact with regard to the production of waste is likely from the proposed scheme.

Pollution and nuisances (Schedule 7(1)(f))

Refer to Section 3.2.2 under 'Description of Aspects of the Environment Likely to be Significantly affected by the Proposed Development (Schedule 7A (2))'. The contractor will develop a site specific EOP prior to commencement of the proposed development, which will include specific mitigation measures to be implemented to fully address any potential surface water impacts and monitoring as necessary. No significant impact from pollution or nuisance is likely from the proposed scheme.

The risk of major accidents, and/or disasters which are relevant to the project concerned, including those caused by climate change, in accordance with scientific knowledge (Schedule 7(1)(g))

There are no Seveso (COMAH) establishments within 15km of the proposed scheme.

Due to the nature and scale of the works and control procedures to be implemented it is considered therefore, that the likely impact from accidents and /or disasters including those caused by climate change is not significant.

The risks to human health (for example, due to water contamination or air (Schedule 7(1)(h)) pollution)

Refer to Section 3.3.2 under 'Description of Aspects of the Environment Likely to be Significantly affected by the Proposed Development (Schedule 7A (2))'. Dust may be generated during the construction phase. However, management of dust will be in line with best practice such as that set out in 'Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes' (NRA, 2011).

Noise levels, during the construction phase, shall not exceed the indicative levels of acceptability for construction noise in an urban environment as set out in the NRA guidance 'Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes' (NRA, 2014). Contractors will be required to comply with the requirements of the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations, 1988 as amended in 1990 and 1996 (S.I. No. 320 of 1988, S.I. No. 297 of 1990 and S.I. No. 359 of 1996), and the Safety, Health and Welfare at Work (Control of Noise at Work) Regulations, 2006 (S.I. No. 371 of 2006). No significant impact on human health due to noise pollution is likely to occur during the operational phase of the project.

The Ballyconra Public Water Supply (PWS) and Source Protection Zone is located ca. 0.23km west of the proposed scheme with the northern portion of the scheme located within the Seskin Group Scheme Preliminary Source Protection Area.

Based on the location, scale and nature of the proposed development no significant environmental or human health impacts will arise with respect to groundwater based on the following technical rationale;

- The majority of the scheme is proposed to be completed either at grade or with fill;
- Localised areas of cut are likely (the maximum likely excavation depth is ca. 5m bgl including drainage / infiltration requirements) with potential for shallow groundwater to be encountered within the gravel aquifer; however based on the design, no potential significant impacts are considered to be likely at either the Seskin-Lisdowney-Ballyconra Group Water Scheme, or the Glanbia (Ballyragget) Water Supply Scheme. In addition, the zone of contribution of the Ballyconra Public Water Supply (PWS) is >200m upgradient of the scheme.

In order to ensure that no localised impacts are encountered at any private well supplies in the vicinity of the scheme a pre-construction well survey will be carried out at all properties within 150m of the proposed scheme, and will include all wells / boreholes which supply the Seskin-Lisdowney-Ballyconra GWS to confirm which properties are using wells, the location of the wells, the condition of the wells, well use, and any potential specific well protection measures (in terms of well condition and baseline water quality) as may be required.

Given the location, nature and scale of the proposed development, the overall risks of adverse impacts to human health are low.

3.3.2. Location of proposed development - The environmental sensitivity of geographical areas likely to be affected by the proposed development (Schedule 7(2))

The existing and approved land use (Schedule 7(2)(a))

The scheme will be located in a rural area predominantly along the existing N77 with a portion of the route within agricultural lands. It is likely that there will be no significant impact on land use.

The relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground (Schedule 7(2)(b))

Refer to Section 3.2.3 under 'The Use of Any Natural Resources in particular soil, land, water and biodiversity (Schedule 7A (3)(b))'. The proposed development is not likely to have a significant environmental effect with regard to the use of any natural resources.

The absorption capacity of the natural environment, paying particular attention to the following areas (Schedule 7(2)(c)):

(i) Wetlands, riparian areas, river mouths

The proposed scheme is located primarily along the existing N77 and agricultural land. No significant impacts on wetlands or riparian areas are likely.

(ii) Coastal zones and the marine environment.

The proposed development is located ca.50km north of the estuarine waters of New Ross Port and Barrow Suir Nore Estuary, and therefore no impacts are likely.

(iii) Mountain and forest areas.

There are no mountain or forest areas within the vicinity of the scheme. The closest reported forested area is located on the eastern bank of the River Nore and therefore will not be significantly impacted.

(iv) Nature reserves and parks

There are no nature reserves or parks within 15km of the scheme.

(v) Areas classified or protected under legislation, including Natura 2000 areas designated pursuant to the Habitats Directive and the Birds Directive

The proposed scheme does not lie within any Natura 2000 sites. There are 2no. Natura 2000 Sites located along the River Nore and therefore connected to the proposed scheme. Refer to the Appropriate Assessment Screening and Natura Impact Statements (Ecofact, 2019; 2020).

There are 16no. proposed Natural Heritage Areas (pNHAs) and no Natural Heritage Areas within 15km of the scheme. The closest pNHA is River Nore / Abbeyleix Woods Complex (Site Code: 002076) located ca.30m east (at its closest point) of and connected to the proposed scheme via. land features. There are no Geological Heritage Areas within 15km of the proposed scheme.

Given the scale and nature of the proposed works and the additional mitigation measures that will be implemented during the construction phase, it is considered that the proposed scheme will not give rise to significant effects on the River Barrow and River Nore SAC and the River Nore SPA. The NIS prepared by Ecofact (2020) concluded

“that provided all mitigation measures are adhered to, direct, indirect and cumulative impacts that may arise from the proposed road improvement works on the N77 in Co. Kilkenny will be avoided and therefore will not affect the integrity of the either the River Barrow and River Nore SAC and the River Nore SPA”

(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.

The scheme lies within the Kilkenny-Ballynakill Gravels (IE_SE_G_163) Groundwater Body (GWB). The groundwater status of which is ‘Good’ for the 2013-2018 monitoring period (EPA, 2020). The Kilkenny-Ballynakill Gravels GWB body is ‘Not at Risk’ of not achieving Good status in accordance with the EU Water Framework Directive (WFD). Due to the nature, scale and location of the works the proposed scheme is not likely to significantly impact groundwater quality.

The River Nore has been assigned an ‘Unassigned’ Water Framework Directive (WFD) quality for the 2013 – 2018 monitoring period within vicinity of the proposed scheme with a small portion of the downstream section being assigned ‘Good’ WFD quality, before being re-assigned with an ‘Unassigned’ quality. The section of the River Nore within vicinity of and upstream of the proposed scheme has been identified as ‘At Risk’ of not meeting relevant WFD objectives with the downstream section of the River identified as ‘Not at Risk’ of not meeting the WFD objectives. However, given that appropriate mitigation measures will be put in place during construction, the proposed development is not likely to have a significant impact on surface water quality.

Air quality in the area is reported as ‘Good’ (EPA 2020). Due to the nature and scale of the project it is likely that there will be no significant impact on air quality. Dust may be generated during the construction phase which has the potential to impact on human health. However, management of dust will be in line with best practice such as that set out in ‘Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes’ (NRA, 2011).

It is likely that during construction there may be an increase in noise volumes. The Contractor will be required to develop a site specific EOP and implement standard construction control measures to minimise noise levels associated with construction works. Noise levels shall not exceed the indicative levels of acceptability for construction noise in an urban environment as set out in the TII guidance ‘Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes’ (TII, 2014). During operation and construction of the proposed development noise mitigation in the form of a noise barrier has been proposed and modelled for 1no. location (Noise receptor Ref: N12) to reduce traffic noise levels to below the TII design goal of 60dB L_{den}. With the proposed barrier in place, calculated noise levels are reduced at this location for both assessment years to within the design goal. Traffic noise levels at the front of the property (Noise receptor Ref: N12) in question will be reduced by the order of 11dB due to traffic being removed from the existing section of the N77 fronting the property.

In summary there have been no significant or persistent failures in meeting environmental quality standards within the general area of the proposed scheme.

(vii) Densely populated areas

The proposed development will be constructed in rural County Kilkenny with a population of 99,232 based on the 2016 census (CSO, 2020). The development will be constructed predominantly along the existing N77 and through a small section of agricultural lands. There are some residential properties adjacent to the proposed scheme. The proposed

scheme is located within the Ballyconra (089) electoral division. The population of this area in 2011 was reported as 255. The population size has fallen by 6.3% to 239 in 2016 (CSO (2020)). The proposed scheme is located in a rural area and therefore there will be no significant impact on densely populated areas.

(viii) Landscapes and sites of historical, cultural or archaeological significance

There were a number of archaeological features and features of archaeological potential identified within the vicinity of the proposed scheme during an archaeo-geophysical survey conducted by Earthsound Archaeological Geophysics in 2018, as follows;

- A possible oval enclosure on the northern edge of the archaeo-geophysical survey area, which would have been intervisible with a recorded ring-ditch (KK004-040----), the extent and composition of which was fully mapped by the geophysics survey. This is located ca. 50m away from the proposed route;
- The extent and composition of ring-ditch (KK004-040----) was fully mapped by the surveys. It comprises an outer ditch, measuring 16m in diameter and a possible entranceway to the east. Enclosed within this ditch is a circular formation of pits, while further pits were detected surrounding the monument. This is located ca. 50m away from the proposed route;
- 2no. smaller ring ditches close to the southwestern corner of the archaeo-geophysical survey area which appear to be dissected by or contain a number of pits. The eastern most of the 2no. features may comprise two conjoined ring-ditches. These are located ca 50 from the proposed route.
- 2no. areas of archaeological potential were indicated from the archaeo-geophysical survey which may be directly impacted by the proposed route. These have been interpreted from the archaeo-geophysical survey as a potential enclosure and potential ring-ditch.

The proposed scheme will not result in any significant negative impacts on any recorded archaeological sites listed in the SMR/RMP for Co. Kilkenny or on the architectural heritage resource. The proposed scheme will have the potential to result in localised direct negative impacts on elements of two anomalies identified during the geophysical survey as potential enclosures. It is noted that neither the potential enclosure nor the potential ring-ditch are listed in the SMR/RMP and have no surface expressions or likely amenity value. The existing state of preservation of the potential enclosures and ring-ditch are unknown but it is noted that the geophysical survey indicates that both appear to have been disturbed by ploughing activity in recent centuries. It is also noted that the discovery of previously unrecorded archaeological features is a common occurrence on linear infrastructure schemes. While the proposed scheme will result in localised direct negative impacts on these two potential enclosures such impacts are typically ameliorated following approval of road schemes through preservation by record (by archaeological excavation following the approval of the National Monuments Service) and are unlikely to result in any significant negative impacts on the wider archaeological environment.

3.3.3. Types and characteristics of potential impacts (Schedule 7(3))

The likely significant effects on the environment of the proposed development have been evaluated taking into account the following specific criteria.

The magnitude and spatial extent of the impact (for example, geographical area and size of the population likely to be affected) (Schedule 7(3)(a))

The spatial extent of potential impacts is limited to the footprint of the proposed scheme which is 11.95ha (refer to Figure 1-2). Based on the location, current site setting, and the nature of the proposed scheme, any potential impacts (during the construction and operational phases) are not likely to be significant in magnitude.

The nature of the impact (Schedule 7(3)(b))

There will be no significant impact on the receiving environment arising from the proposed development (during the construction or operational phases).

The transboundary nature of the impact (Schedule 7(3)(c))

There is no potential for transboundary impacts as a result of the proposed development (during the construction or operational phases).

The intensity and complexity of the impact (Schedule 7(3)(d))

There will be no significant impact on the receiving environment arising from the proposed development (during the construction or operational phases).

The probability of the impact (Schedule 7(3)(e))

The probability of such impacts on the receiving environment is low given the following considerations;

- The receiving environment is not considered to be at risk of significant impact due to the nature and scale of the proposed scheme;
- The Contractor will be obliged to implement standard best practice procedures prior to commencement of the proposed development including all environmental control measures for the onsite management of any pollution / nuisance issues which could arise during the construction phase.
- The Contractor will develop a site specific EOP, prior to commencement of the proposed development which will clearly set out all environmental control measures for the onsite management of any pollution / nuisance issues which could arise during the construction phase.

The expected onset, duration, frequency and reversibility of the impact (Schedule 7(3)(f))

The probability of impacts on the receiving environment is considered to be low, as previously outlined. Therefore, there shall be no requirement for the reversibility of the impacts caused by this development (during the construction or operational phases).

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 (Schedule 7(3)(g))

As previously detailed no significant cumulative impacts associated with the project (during the construction or operational phases) have been identified, arising from other existing and/or approved projects. Refer to Section 3.3.1 under ‘*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 (Schedule 7(1)(b)).*’

The possibility of effectively reducing the impact (Schedule 7(3)(h))

Significant effects on the receiving environment are not likely as a result of the provision of the proposed development (during the construction or operational phases). A project specific EOP will be prepared by the appointed Contractor prior to the works commencing which will clearly set out all environmental control measures for the onsite management of any pollution / nuisance issues which could arise during the construction phase.

3.4. Step 3 – Potential for Significant Effects on the Receiving Environment

All relevant information as required under Schedule 7A has been provided on behalf of Kilkenny County Council and is presented within Section 3.2 of this screening report. The potential for this project to pose a significant impact to the receiving environment has also been evaluated in accordance with criteria listed in the Planning & Development Regulations 2001 - 2020 (Schedule 7), as presented within Section 3.3 of this screening report, and Section 50(1)(b) of the Roads Act 1993-2015.

Based on the information provided within Section 3.2 and 3.3 of this report, it is considered that due to the size, nature, and characteristics of the proposed development, no significant effects on the receiving environment are expected; hence the preparation of a sub-threshold EIAR is not required.

3.5. Screening Conclusion

This EIA screening assessment has been carried out in accordance with the Planning and Development Regulations 2001 - 2020 (which give effect to the provisions of EU Directive

2014/52/EU), and the Roads Acts 1993-2015. The report assessed the impact of this scheme in conjunction with committed development in the surrounding area.

Based on all available information, and taking account of the scale, nature and location of the proposed scheme it is our opinion that the preparation of an EIAR is not a mandatory requirement (under Section 50 of the Roads Acts 1993-2015). The project is deemed a sub-threshold development; hence the potential for significant environmental effects arising as a result of the proposed scheme has been evaluated, in accordance with the requirements of Schedule 7A and Schedule 7 of the Planning and Development Regulations 2001-2020.

Key findings are summarised as follows;

- Due to the limited nature of the works it is considered that there will be no significant cumulative impacts with other developments in the general area.
- Limited noise, vibration and dust emissions may be generated during construction and operational phase; however, this is likely to be minimal in effect and will cause no significant impact.
- Soil and waste will be generated during construction; however, this is not likely to have a significant impact.
- There will be no significant impact on biodiversity, groundwater or traffic.
- There may be some potential impacts on surface water; however due to the nature and scale of the project and standard control procedures during construction which shall be implemented this will not be significant.
- There will be no significant impact on archaeological features provided that the areas of potential archaeology are excavated and recorded in consultation with the National Monuments Service of the Department of Culture Heritage and the Gaeltacht.

In summary, no significant adverse impacts to the receiving environment will arise as a result of the proposed development.

Accordingly, we consider that the preparation of an EIAR is not required for the scheme.

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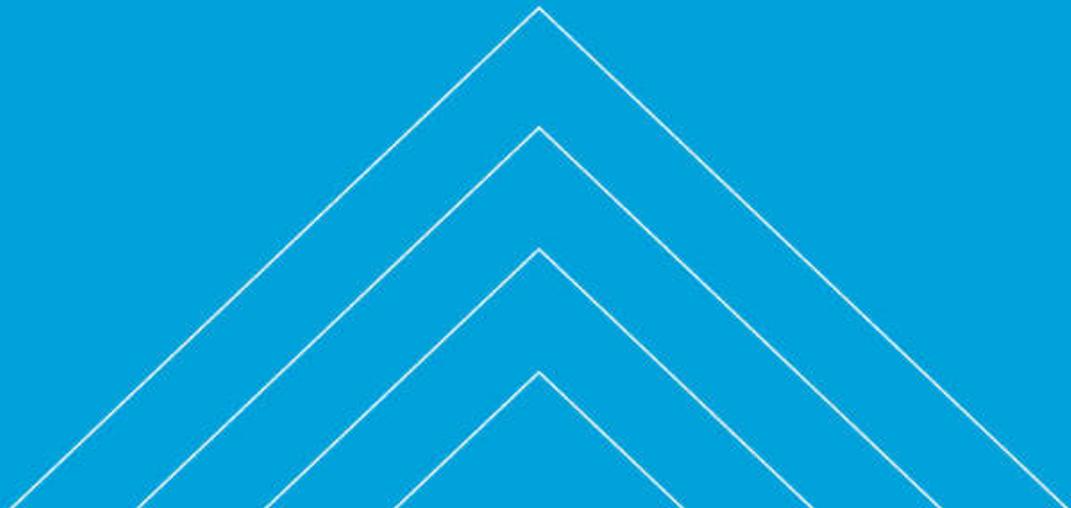
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Appendices



Appendix A - Proposed Scheme Drawings

Refer to the following drawings included as part of this planning application:

- Drawing Ref. KK1613402-P3-SL-005
- Drawing Ref. KK1613402-P3-SL-006
- Drawing Ref. KK1613402-P3-SL-007
- Drawing Ref. KK1613402-P3-GA-001
- Drawing Ref. KK1613402-P3-GA-002
- Drawing Ref. KK1613402-P3-GA-003
- Drawing Ref. KK1613402-P3-GA-004
- Drawing Ref. KK1613402-P3-GA-005
- Drawing Ref. KK1613402-P3-GA-006
- Drawing Ref. KK1613402-P3-GA-007
- Drawing Ref. KK1613402-P3-GA-008
- Drawing Ref. KK1613402-P3-DR-001
- Drawing Ref. KK1613402-P3-DR-002
- Drawing Ref. KK1613402-P3-DR-003
- Drawing Ref. KK1613402-P3-DR-004
- Drawing Ref. KK1613402-P3-DR-005
- Drawing Ref. KK1613402-P3-DR-006
- Drawing Ref. KK1613402-P3-DR-007
- Drawing Ref. KK1613402-P3-DR-008
- Drawing Ref. KK1613402-P3-DR-009

Appendix B. Cultural Heritage Impact Assessment Screening Report

**N77 Ballyragget Village to Ballynaslee Road
Improvement Scheme**

Cultural Heritage EIA Screening Report

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Document Control Sheet

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1 Introduction

This report has been prepared in order to inform the EIA screening process for the N77 Ballyragget Village to Ballynaslee Road Improvement Scheme in order to determine whether the scheme will result in a significant adverse effect on the cultural heritage environment of the area. It should be noted that this report is not intended as a cultural heritage impact assessment of the scheme but it is intended that it will inform further assessment studies to be prepared for the planning process which will include the results of systematic field inspections of the route as well as elements of the cultural heritage resource within its environs.

The report has been compiled following consultation with the TII Archaeologist overseeing this scheme (Ms Bernice Kelly) and is intended to collate the results of a Preliminary Cultural Assessment of the scheme, which was prepared by the TII Archaeologist in January 2018¹, and a subsequent Geophysical Survey report prepared by Earthsound Archaeological Geophysics (EAG)² in June 2018. A summary of results of both of these studies is presented within the main body of this report (Section 2) which should be read in consultation with the full copies of both reports provided in Appendices 2 and 3. The numbering system for known archaeological monuments, undesignated cultural heritage sites (CHS) and geophysical anomalies (GA) used in both reports is replicated herein in order to provide ease of cross-referencing.

The layout of the scheme has undergone slight amendments since 2018 and the results of both studies have been reviewed based on the current scheme design in order to assess whether it has the potential to result in a significant adverse impact on the wider archaeological, architectural and cultural heritage environment of the area. Appendix 1 of this report presents mapping of the current scheme design showing the locations of the known archaeological monuments and cultural heritage sites identified in the TII Preliminary Cultural Heritage Assessment as well as the anomalies identified during the geophysical survey.

¹ Kelly, B. (2018) *N77 Ballyragget Village to Ballynaslee Road Improvement Scheme: Preliminary Cultural Heritage Assessment*

² Gimson, H and Hogan, C. (2018) *N77 Ballyragget Village to Ballynaslee Road Improvement Scheme, County Kilkenny: Geophysical Survey (Licence 18R0092)*.

2 Assessment of Potential for Significant Effects

This section presents the results of a review of the current scheme design with reference to the relevant results of the TII Preliminary Cultural Heritage Assessment Report and the EAG Geophysical Survey Report which were prepared for the scheme in 2018. The aim of this review is to determine if the scheme will result in any likely significant adverse impacts on the wider cultural heritage environment and has been informed by TII *Guidelines for the Assessment of Archaeological/Architectural Heritage Impacts of National Road Schemes* which defines a significant impact as follows:

An impact which, by its magnitude, duration or intensity, alters an important aspect of the environment. An impact like this would be where part of a site would be permanently impacted upon, leading to a loss of character, integrity and data about the archaeological feature/site.

2.1 Review of TII Preliminary Cultural Heritage Assessment Report

This assessment was prepared in 2018 and presents the results of a detailed desktop study and field inspection of the proposed scheme and also provides a summary of the legal and planning frameworks relevant to the cultural heritage resource, including archaeology and architectural heritage.

This assessment identified 40 known archaeological sites or monuments listed in the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) in the townlands of the proposed scheme, three of which comprise redundant records (Table 1). None of these known archaeological sites will be directly impacted by the scheme.

Only one of these known archaeological sites is located within 100m of the scheme and this comprises a ring-ditch at Ballyconra (Table 1, Ref. No. 19), which is approximately 90m to the east of the scheme (Appendix 1; Figure 1). This is one of a cluster of ring-ditches, none of which have any visible surface expression, possibly associated with a coaxial field system located within a 550m expanse between the N77 and the River Nore. It is located in grassland 'on top of a natural rise in gently undulating terrain' with 'fair to good views in all directions'³. It is recorded on an aerial photograph (GB90.BM.18, 14 July 1990) which shows a cropmark defined by two concentric fosses. There is no visible trace of the monument at ground level and the proposed scheme is located outside its surrounding Zone of Notification as designated by the National Monuments Service. The results of the geophysical survey of this ring-ditch are presented below.

The assessment notes that the exact location of a further three sites in the area which are listed in the SMR—an unclassified castle in Ballyconra (Ref. No. 18), a burial (Ref. No. 38) and deserted medieval settlement (Ref. No. 37) in Ballynaslee—is unknown. There were no traces of these unlocated sites identified during the subsequent geophysical survey of the green field areas incorporating the footprint of the scheme and its environs.

There is one Protected Structure listed in the Record of Protected Structures (RPS) for County Kilkenny (2014) within the townlands of the proposed scheme. The structure in question is Ballyconra House (RPS Ref C312), located circa 175 m to the west of the study area. It is described in the RPS as a detached seven-bay two-storey over basement house with dormer attic, dated 1724, on an L-shaped plan. It is suggested that it was possibly a mill owner's house originally. Ballyconra House is also listed in the National Inventory of Architectural Heritage (Reg. No. 12400402) as are the gates / railings / walls of the entrance to Ballyconra House located on a section of the N77 to the south of the current

³ Information obtained from <http://webgis.archaeology.ie/historicenvironment> (reviewed by present writer on 23/03/20)

scheme extent (Reg. No. 12400404). No likely significant adverse impacts on Ballyconra House are predicted.

A number of cultural heritage sites are also identified in the report and include a roadside boundary wall associated with Ballyconra House demesne (Ref. CHS 1). A section of this wall which will be directly impacted by the scheme is already severed by the N77 and contains portions with modern/unsympathetic materials. Its context and setting have also been previously negatively impacted by the development of the Glanbia plant adjacent to its location and this feature may, therefore, potential to form part of the curtilage of the house. The assessment also included a review of historic Ordnance Survey mapping for the study area, complemented by selected site visits, and this led to the identification of 18 other sites of potential cultural heritage value within the 100m study area (Table 3 and Appendix 1, Figure 2). None of these sites are listed in the SMR/RMP, Record of Protected Structures or National Inventory of Ireland. While the scheme will directly impact on a range of these cultural heritage sites this will not result in any likely significant adverse impacts.

Table 1: Known archaeological sites within environs of scheme identified in TII Preliminary Cultural Assessment Report

Ref No	RMP/SMR No.	Class	Townland	ITM E	ITM N	Approx. distance to scheme (m)	Likely Significant Effect
1	KK004-008----	Redundant record	Ballyconra	N/A	N/A	-	No
2	KK004-008001-	Church	Ballyconra	643371	673710	320	No
3	KK004-008002-	Graveyard	Ballyconra	643371	673700	305	No
4	KK004-011----	Ringfort - rath	Ballyconra	643072	673015	250	No
5	KK004-012----	Ring-ditch	Ballyconra	643711	673160	290	No
6	KK004-013----	Redundant record	Ballyconra	N/A	N/A	-	No
7	KK004-013001-	Ring-ditch	Ballyconra	643950	673391	600	No
8	KK004-013002-	Ring-ditch	Ballyconra	643971	673360	610	No
9	KK004-013003-	Field system	Ballyconra	643851	673370	480	No
10	KK004-013004-	Ring-ditch	Ballyconra	643899	673323	480	No
11	KK004-013005-	Redundant record	Ballyconra	643891	673270	494	No
12	KK004-013006-	Redundant record	Ballyconra	643901	673220	450	No
13	KK004-014----	Enclosure	Ballyconra	644142	672956	105	No
14	KK004-021----	Architectural fragment	Ballyconra	643951	672410	95	No
15	KK004-022----	Enclosure	Ballyconra	642493	671545	1,395	No
16	KK004-024----	Armorial plaque (present location)	Ballyconra	643660	671860	170	No
17	KK004-024001-	House - 17th century	Ballyconra	643651	671861	175	No
18	KK004-033----	Castle - unclassified	Ballyconra	N/A	N/A	-	No
19	KK004-040----	Ring-ditch	Ballyconra	643470	673189	90	No
20	KK009-013----	Redundant record	Ballyconra	N/A	N/A	-	No
21	KK009-013001-	Church	Ballyconra	642918	671294	1,090	No
22	KK009-013002-	Graveyard	Ballyconra	642931	671319	1,060	No
23	KK009-013003-	Architectural fragment	Ballyconra	642941	6713321	1,055	No
24	KK009-013004-	Ritual site - holy well	Ballyconra	642930	671235	1,115	No
25	KK009-013005-	Earthwork	Ballyconra	642941	671330	1,060	No
26	KK009-013006-	Wall monument	Ballyconra	642932	671298	1,090	No
27	KK009-013007-	Graveslab	Ballyconra	642926	671297	1,085	No
28	KK004-001----	Enclosure	Ballynaslee	642825	674741	705	No
29	KK004-002----	Church	Ballynaslee	642965	674759	715	No
30	KK004-002001-	Graveyard	Ballynaslee	642968	674748	705	No
31	KK004-003----	Enclosure	Ballynaslee/	642082	673690	790	No

Ref No	RMP/SMR No.	Class	Townland	ITM E	ITM N	Approx. distance to scheme (m)	Likely Significant Effect
			Seskin				
32	KK004-004----	Enclosure	Ballynaslee	642223	673428	750	No
33	KK004-005001-	Megalithic structure	Ballynaslee	642288	673379	740	No
34	KK004-005002-	Megalithic structure	Ballynaslee	642288	673379	740	No
35	KK004-006----	Enclosure	Ballynaslee	642413	673468	560	No
36	KK004-007----	Ringfort - rath	Ballynaslee	642746	673519	240	No
37	KK004-028----	Settlement deserted - Medieval	Ballynaslee	N/A	N/A	-	No
38	KK004-029----	Burial	Ballynaslee	N/A	N/A	-	No
39	KK004-034----	Ringfort – rath	Ballynaslee	642381	673770	485	No
40	KK004-041----	Enclosure	Ballynaslee	642815	675248	1,190	No

Table 2: Undesignated cultural heritage sites (CHS) within environs of scheme identified in TII Preliminary Cultural Assessment Report

CHS ref	Townland	Type	ITM E	ITM N	1 st ed. 6-inch	1 st ed. 25-inch	Description	Likely Significant Effect
CHS 1	Ballyconra	Ballyconra House & Demesne boundary wall	643872	671851	Y	Y	W verge of N77. Direct impact on c80 m of roadside boundary. Predominantly rubble built where extant. Largely removed along N extents. Intermittently reinforced with concrete.	No
CHS 2	Ballyconra	Structures	643859	672185	Y	Y	Cluster of two or three buildings depicted on historic mapping close to E verge of present N77. No longer extant. Foundations of these structures may be uncovered in course of groundworks.	No
CHS 3	Ballyconra	Roadside boundary wall	643840	672228	Y	Y	E verge of N77 on S approach to Glanbia Waste Treatment Facility entrance, formerly providing access to 'Ballyconra Mill'. Direct impact on approx. 250 m of low, coursed rubble wall with occasional cutstone? coping.	No
CHS 4	Ballyconra	Roadside boundary wall	643796	672395	Y	Y	E verge of N77 to N of entrance to Glanbia Waste Treatment Facility, which formerly provided access to 'Ballyconra Mill'. Direct impact on approx. 28 m of low, coursed rubble wall with	No

CHS ref	Townland	Type	ITM E	ITM N	1 st ed. 6-inch	1 st ed. 25-inch	Description	Likely Significant Effect
							occasional coping of upright rubble stone. Where it extends further to N, it has been rebuilt/reinforced.	
CHS 5	Ballyconra	Structure	643799	672411	Y	Y	Cluster of buildings indicated on historic mapping immediately north of entrance to Glanbia Waste Treatment Facility (which is now located on the former site of Ballyconra Mill). Area now heavily overgrown, buildings partially extant but roofless, their layout mirrors footprint of structures as depicted on 25-inch mapping. Structure(s) lie within 2m of roadside boundary wall and may be impacted by scheme.	No
CHS 6	Ballyconra	Old road	643776	672478	Y	Y	Original road has been realigned to remove a steep bend. The scheme will traverse a section of the original road, now in use as private access. W side of original road is flanked by a coursed stone wall (CHS7 below)	No
CHS 7	Ballyconra	Demesne Wall Ballyconra House	643692	672662	Y	Y	W side of original road (CHS6 above) is flanked by a coursed stone wall – on 1st ed. 6-inch mapping, this wall appears to form part of the demesne wall of Ballyconra House. Another section of this wall bounds E side of the N77 and may be impacted by the scheme.	No
CHS 8	Ballyconra	Roadside memorial	643692	672653	N	N	Memorial stone set in grass verge to E of N77 dedicated to 'Susan Doyle' who died on 15/12/1987 aged 8 years. Will be directly impacted by scheme.	No
CHS 9	Ballyconra	Old road	643586	672824	Y	Y	Original road has been realigned to remove a steep bend. The scheme will traverse a section of the original road, now in use as local access.	No
CHS 10	Ballyconra	Structures	643527	672876	Y	Y	Cluster of two or three buildings depicted on historic mapping close to NE verge of present N77. No longer extant. Foundations of these	No

CHS ref	Townland	Type	ITM E	ITM N	1 st ed. 6-inch	1 st ed. 25-inch	Description	Likely Significant Effect
							structures may be uncovered in course of groundworks.	
CHS 11	Ballyconra	Structure	643362	673228	N	Y	Derelict late 19th Century vernacular cottage flanking laneway (see CHS12 below) – will be directly impacted by scheme.	No
CHS 12	Ballyconra	Laneway	643303	673216	Y	Y	Narrow laneway granting access to several properties to E and NE of N77. Flanked by small buildings on the historic mapping.	No
CHS 13	Ballyconra	Old roadway	643235	673329	Y	Y	Original road has been realigned to remove a steep bend. The scheme will traverse a section of the original road, now in use as local access.	No
CHS 14	Ballyconra/ Ballynaslee	Townland & Parish boundary	643096	673515	Y	Y	ENE-WSW orientated segment of townland boundary between Ballynaslee and Ballyconra, and Parish boundary between Durrow and Aharney - comprises both roadbed and field boundary. Any verge widening may impact on the boundary.	No
CHS 15	Ballynaslee	Quarry	643042	673618	Y	Y	Scheme will directly impact on site of quarry, flanking NE verge of N77, appears in disuse on 1st ed. 25-inch mapping.	No
CHS 16	Ballynaslee	Retaining wall	642981	673653	?	?	Where road level is higher than adjacent ground level at W side of N77, a retaining wall holds the field bank in place. The wall is of random rubble, built to courses and capped with larger, horizontally laid stones. This wall will not be impacted by the scheme.	No
CHS 17	Ballynaslee	Gravel pit	642965	673725	N	Y	Site of former gravel pit, flanking E verge of N77.	No
CHS 18	Ballynaslee	Laneway	642925	673775	Y	Y	Scheme will clip portion of lane leading from W edge of N77 to buildings present on historic map.	No
CHS 19	Structure	Ballyconra	643256	673204	Y	Y	Direct impact on overgrown structure on north side of lane CHS12 with evidence of galvanised sheet roofing	No

2.2: Review of Earthsound Archaeological Geophysical Report

A geophysical survey on behalf of Kilkenny County Council/TII, was conducted over an area of archaeological potential to the west of the Zone of Notification of a Recorded Monument KK004-040--- as part of the assessment of the scheme. A magnetometer survey was undertaken at a sample resolution of 0.5m x 0.25m and significant potential archaeological remains were further investigated using a resistivity survey at a sampling resolution of 0.5 x 0.25 m. The survey was conducted upon a bedrock geology consisting of Crinoidal Wackestone/Packstone Limestone, beneath well-drained glaciofluvial sands and gravels. The majority of the survey area was covered in pasture with two fields recently ploughed and seeded.

The geophysical survey revealed five clearly defined features within the survey area that are interpreted as archaeological sites and these are identified in Table 3. The survey also revealed a number of potential archaeological/agricultural features as well as evidence for agricultural processes detected through soil disturbance, relict field boundaries, cultivation furrows and potential boundary ditches. Two areas which are likely to contain the remains of relict buildings were also identified on the western edge of the survey area. The geophysical anomalies that extend into the road-take area are identified in Table 4.

The following tables present details on a number of geophysical anomalies identified by EAG and their locations in relation to the proposed scheme are illustrated in Appendix 1 (Figures 3 and 4). Those examples interpreted in the report as likely archaeological sites are detailed in Table 3 and the determination of the potential for significant impacts on such examples is based on the potential for the scheme to result in a loss of character, integrity and data on any archaeological features that may exist at their locations. A number of the anomalies identified within the EAG report are interpreted as being of unknown origin and the potential that they may be archaeological or agricultural origin is noted. The identified examples that extend into the road-take are identified in Table 4 and, as the nature and origin of these features is unknown, no likely significant impacts are predicted.

Table 3: Geophysical anomalies interpreted in EAG report as archaeological sites

Ref.	Description	Comment	Approx. Distance from scheme	Likely Significant Effect
GA 15/31	Two arcing ditches enclosing isolated responses	GA 15 (Magnetometer): Enclosure ditch 11m in diameter which appears to contain two possible entranceways to the east and west. Within the enclosure a number of possible pits and two ditches or gullies were detected GA 31 (Resistivity): Ring-ditch, 12m in diameter, which matches the location of anomaly 15 within the magnetometer data. The ring-ditch appears to be dissected by a number of high resistance deposits which could represent stone, compacted earth or potentially dried out pits	0m	Potential significant effect (scheme will negatively impact on an approx. 7m wide section of the east half of the enclosure)
GA 37	Arcing ditch, surrounding a series of possible ditch and pits	Possible enclosure ditch, 36m in diameter, which surrounds an arcing trend of possible pits and a ditch	0m	Potential significant effect (scheme will negatively impact on an approx. 21m wide section of the west half of the enclosure)
GA 28	Arcing low resistance ditch	Possible ring-ditch, 18m in diameter	15m	No
GA 46	Circular ditch which encloses an internal ring of pits.	Circular enclosure ditch which is recorded monument Ring-ditch (KK004-040----). Measuring 14m in diameter there is a possible entranceway to the east. The ring-ditch is surrounded by a large number of possible pits and encloses a circular formation of pits measuring 8m in diameter	90m	No
GA 56	Circular ditch	Small ring-ditch, 6.5m in diameter, with a central possible pit and an external pit. The geophysical signature of the ring-ditch indicates that it could comprise of closely spaced pits instead of a ditch. A possible entranceway and associated pits were detected on the southern edge of the feature	30m	No
GA 61	Circular ditch dissected by pits	Possible ring-ditch measuring 5.5m in diameter	50	No

Table 4: Geophysical anomalies within road-take that are of unknown origin

Ref.	Description	Comment	Potential Likely Significant Effect
GA 06	Linear possible ditch	Linear ditch which truncates anomalies 4 & 5. A possible relict boundary it terminates at Anomaly 7	No
GA 13	Linear double ditch	Double ditch which may be agricultural or archaeological in origin	No
GA 14	Area of magnetic enhancement	Enhancement associated with archaeological processes or agricultural remains	No
"	Linear Trend	Archaeological or geological in nature	No
"	Cultivation furrows	Series of parallel cultivation furrows lying on an NW-SE axis	No
"	Areas of magnetic disturbance	Interference from modern debris and boundaries	No
GA 16	Two linear possible ditches	Possible ditches of archaeological or agricultural origin	No
GA 17	Two parallel ditches	Ditches probably representing a relict field boundary	No
GA 36	Linear ditch	Ditch which may be agricultural in origin, however its location matches a geotech investigation area so may have been caused by this activity	No
GA 38	Linear ditch	Linear agricultural boundary ditch which represents a continuation to anomaly 24	No
GA 40	Arcing area of magnetic enhancement	Enhancement caused by agricultural or archaeological processes	No
"	Linear and curvilinear trend	Archaeological or geological in nature	No
"	Cultivation furrows	Series of parallel cultivation furrows lying on an NW-SE axis	No
"	Areas of magnetic disturbance	Interference from modern debris and boundaries	No
GA 51	Linear ditch	Linear probable agricultural boundary	No
GA 52	Curvilinear ditch	Linear probable agricultural boundary which may connect with anomaly 51	No
GA 57	Three linear ditches	Linear ditches of probable agricultural origin	No
"	Linear ditches of probable agricultural origin	Archaeological or geological in nature	No
"	Cultivation furrows	Series of cultivation furrows lying in two alignments	No
"	Areas of magnetic disturbance	Interference from modern debris and boundaries	No
"	Isolated high resistance anomaly	Possible near surface stone, stone deposit or potentially a dried out pit	No
GA 72	Linear ditch	Linear probable agricultural boundary	No
GA 74	Isolated magnetically enhanced response	Possible pit of unknown origin	No
GA 75	Two interconnecting ditches	Two linear interconnecting probable agricultural boundaries	No
"	Linear and curvilinear trend	Archaeological or geological in nature	No

Ref.	Description	Comment	Potential Likely Significant Effect
"	Areas of magnetic disturbance	Interference from modern debris and boundaries	No

3 Conclusions

Based on the review of the assessments previously undertaken for this proposed scheme in conjunction with the current design, it is concluded that the scheme will not result in significant adverse impacts on any archaeological sites listed in the SMR/RMP for Co. Kilkenny or on the architectural and cultural heritage resource of the area.

The proposed scheme will have the potential to result in localised direct significant adverse impacts on elements of two anomalies identified during the geophysical survey and these have been interpreted by EAG as a potential enclosure (GA 37) and ring-ditch (GA ref. 15/31). The potential exists that these may form sub-surface remains of levelled sites associated with the known cluster of ring-ditch sites located within the lands to the east, but this interpretation would require systematic archaeological test excavation and post-excavation analyses to confirm. It is noted that neither of these potential archaeological sites are listed in the SMR/RMP and have no surface expressions or likely amenity value. In addition, the existing state of preservation of these potential sites is unknown but it is noted that the geophysical survey indicates that both appear to have been disturbed by ploughing activity in recent centuries. It is also noted that the discovery of previously unrecorded archaeological features is a common occurrence on linear infrastructure schemes. While the proposed scheme will result in localised direct adverse significant impacts on these two potential archaeological sites such impacts are typically mitigated following approval of road schemes through preservation by record (i.e. by archaeological excavation of elements within the road-take under licence from the Minister for Culture, Heritage and the Gaeltacht) and are unlikely to result in any significant adverse impacts on the wider archaeological environment.

This proposed road scheme is covered by the provisions of the *Code of Practice for Archaeology* agreed between TII and the Minister for Arts, Heritage, Regional, Rural and Gaeltacht Affairs (2017). A detailed updated cultural heritage impact assessment of the scheme, which will incorporate the results of the geophysical survey, will be undertaken in accordance with the TII *Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes* and the *Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes*. As part of this, consultation will be required with the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht.

Appendix 1: Mapping



Figure 1: Location of proposed scheme (red line) and known archaeological sites identified in TII Preliminary Cultural Heritage Report (please cross-reference with Table 1)

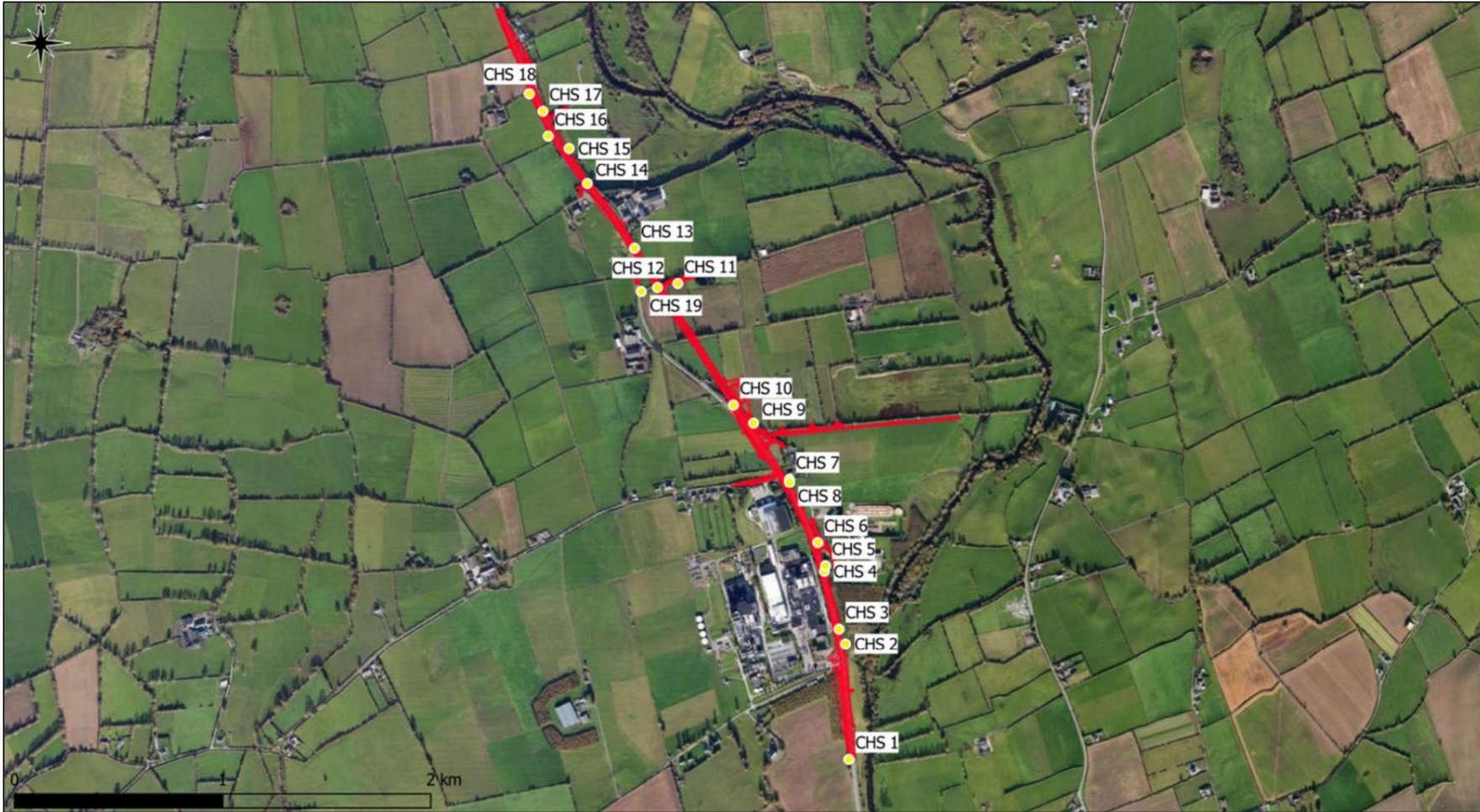


Figure 2: Location of proposed scheme (red line) and undesignated cultural heritage sites identified in TII Preliminary Cultural Heritage Report (please cross-reference with Table 2)



Figure 3: Location of scheme superimposed on EAG magnetometry interpretation map (please cross-reference with Tables 3 and 4)

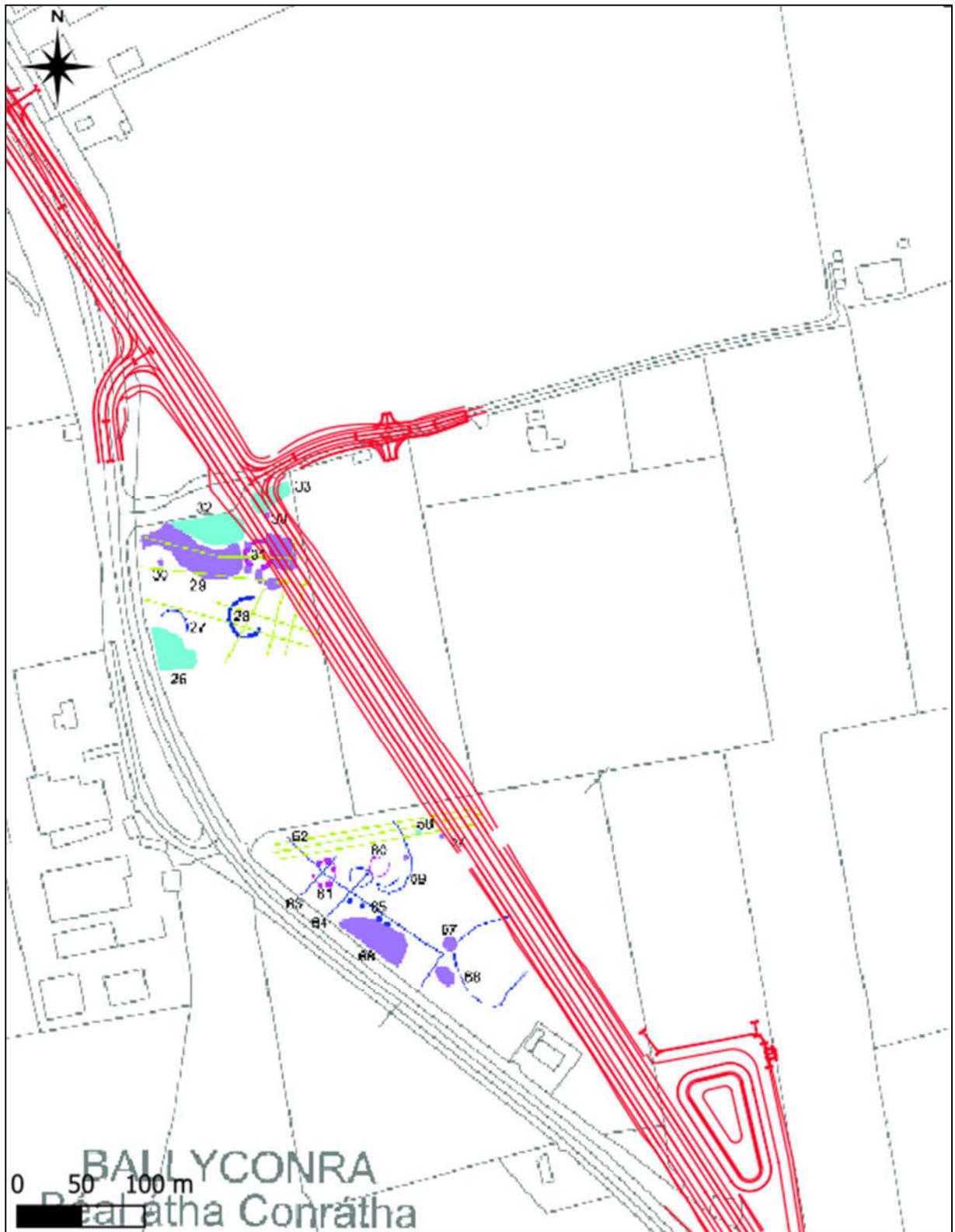


Figure 4: Location of scheme superimposed on EAG resistivity interpretation map (please cross-reference with Tables 3 and 4)

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