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APPENDICES

14 Material Assets

14.1 Introduction

This chapter describes the scope of works and methods applied in the identification and assessment of the potential effects of the construction and operation of the Ballyhale Flood Relief Scheme with regard to Material Assets.

The assessment techniques used are aimed at identifying the likely significant impacts, proposing suitable mitigation measures if required and identify the residual impacts.

The Material Assets Assessment has been completed by John Carr, Chartered Civil Engineer [B.Eng MSc CEng], DBFL Consulting Engineers.

John is a Chartered Civil/Environmental Engineer with over 10 years' experience specialising in the detailed design and design co-ordination of Civil Works. He holds an Honours degree in Civil Engineering from University College Dublin and a Masters in Environmental Engineering from Queens University Belfast.

Key skills include the design of storm, foul & water systems, design of SuDS infrastructure, flood modelling, roadworks, earthworks and site development. John also holds substantial experience in environmental consultancy including the preparation of Flood Risk Assessments, Environmental Impact Assessment (EIA) & environmental monitoring.

This Chapter is split into two sections. The first section assesses the impacts of the proposed scheme on the existing utility assets which includes the following infrastructure;

- Electricity;
- Water;
- Drainage;
- Gas; and
- Telecommunications (including broadband) and TV.

The second section assess the impacts of the proposed scheme on land and property assets. It also considers scheme impacts on economic prospects and development in the area in line with development plans.

14.2 Assessment Methodology

14.2.1 Scoring Matrix for Impact Assessment

The significance of the identified potential impacts is acknowledged by the combination of the magnitude of the potential impact and sensitivity of the receptor.

The generalised significance terms used in this assessment is in line with the EPA guidance reproduced below.

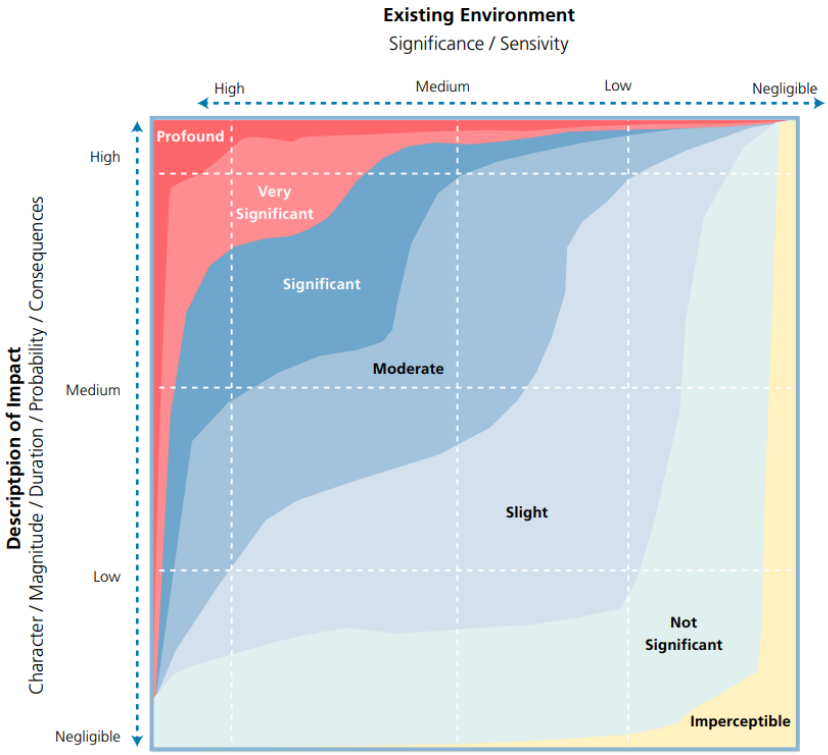

Figure 14-1: Significance Effect Matrix

In addition to significance, the effect on the receiving environment may be Positive, Neutral or Adverse.

14.2.2 Identification of Utility Services

Assessment of the existing infrastructure, services and public utilities in the vicinity of the site included the following:

- Review of Irish Water wastewater (foul drainage) and watermain records
- Review of Kilkenny County Council surface water drainage records
- Consultation with Kilkenny County Council.
- Review of ESB Networks service records and consultation with ESB Networks.

- Review of Gas Networks Ireland service records and consultation with Gas Networks Ireland.
- Review of Eircom E-Maps.
- Review of Virgin Media service records.
- Utility Survey of the Storm Water Drainage Network

14.2.3 Identification of Land Use and Impact Significance

Assessment of the existing land and property environment included the following:

- Review of PRAI land ownership information
- Review of OSI and Geodirectory data
- Review of KCC Planning and Development Documentation
- Review of Topographical survey information
- Site Walkovers
- Liaison with landowners and stakeholders (See Chapter 3 - Consultations)

The sensitivity of Land/Property Receptors will be influenced by a variety of factors including but not limited to;

- Land use (Agricultural, Residential, Commercial, Stream bed, Road bed etc)
- Size of plot
- Level of usage
- Existing planning permissions

The magnitude of impact to Land/Property Receptors will be influenced by a variety of factors. A non-exhaustive General methodology is presented in Table 14-1;

Table 14-1 - Magnitude of Impact Criteria (Land and Property)

Magnitude	Criteria
High	[Adverse] An adverse impact on a property where the use of the property cannot continue. *Eg Full demolition or acquisition of a property or loss of access to a property* [Positive] A positive impact via the protection from flooding of a property to 1% AEP
Medium	[Adverse] An adverse impact on a property where the use of the property can continue. An impact of permanent duration resulting in a change to the character of the property. [Positive] A positive impact via the reduction in flooding to lands
Low	[Adverse] An adverse impact on a property where the use of the property can continue. An impact of permanent or temporary duration with a minimal or temporary effect on the character of the property.
Negligible	[Adverse] An adverse impact on a property that does not affect the use of the property. Eg. Acquisition of public road or stream bed only

14.3 Baseline Environment (Utilities)

There is a network of utilities from a variety of companies, which provide services to domestic, commercial and industrial customers across this relatively rural area. The majority of utilities are buried beneath public roads with numerous local connections branching from the main trunk services. There are also overhead utilities in the area.

The following sections describe the general utility network infrastructure in the area.

14.3.1 Existing Storm Water Infrastructure

The topography of the site falls towards the Ballyhale River with the primary roadway (the R448) following the River until it meets the Main Street Bridge where their paths diverge. There are a number of drainage lines which all discharge into the River. Site Investigations show the existing surface water drainage to be an approximately 400 x 475mm box culvert which runs along the length of the road until it discharges before the entrance to the Ballyhale Business Park.

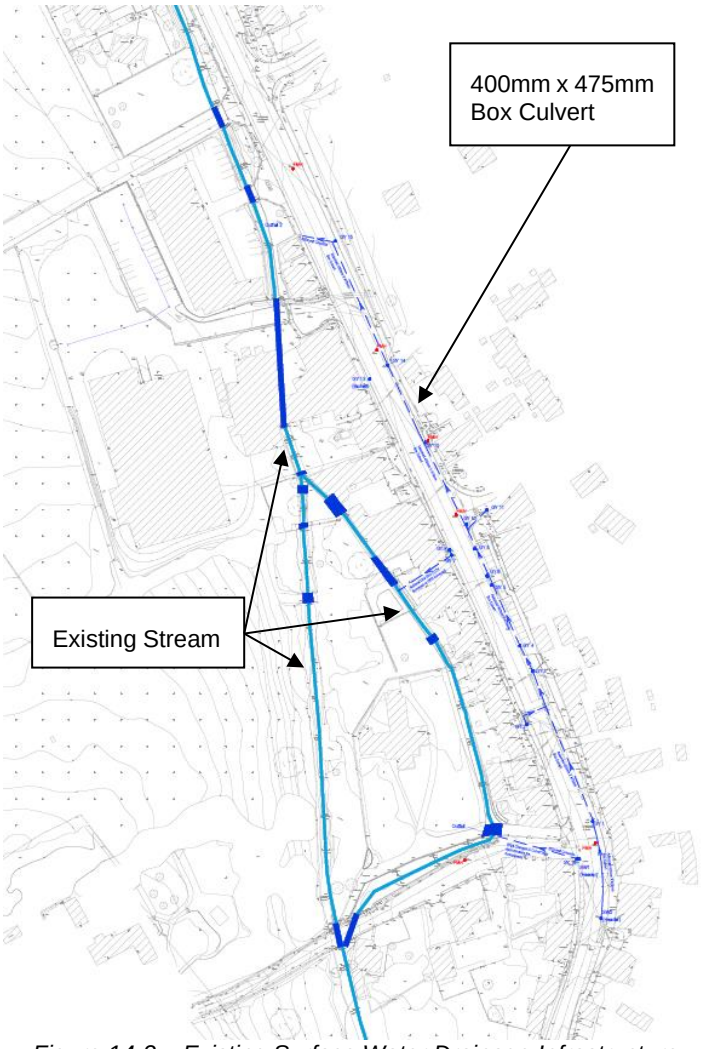

Figure 14-2 – Existing Surface Water Drainage Infrastructure

14.3.2 Existing Foul Water Infrastructure

According to wastewater drainage records from Irish Water and Kilkenny County Council, there is an existing 225mm diameter foul sewer network which runs along the primary roadway (the R448) within Ballyhale. This 225mm diameter foul sewer runs to a Treatment Plant located in the Kiltorcan Business Park which discharges to the Ballyhale Stream. There are a number of outlet pipes that discharge from properties into the Ballyhale River.

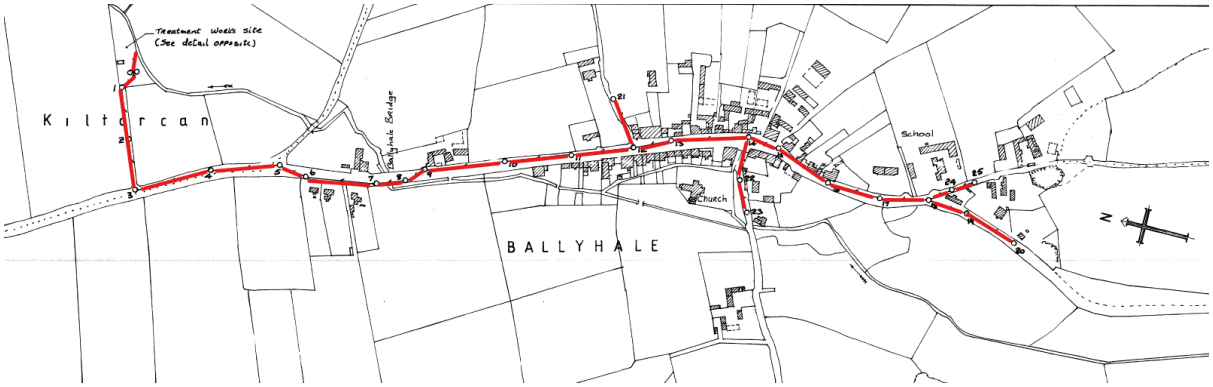

Figure 14-3 – Existing Foul infrastructure (Foul Line ————)

14.3.3 Existing Irish Water Infrastructure

According to Irish Water Records there is an existing 100mm watermain network which serves Ballyhale. It runs along the primary roadway (the R448) within Ballyhale and branches off to serve the various developments in Ballyhale.

14.3.4 Existing ESB Infrastructure

There is a large network of local distribution infrastructure in the area with a mix of overhead and underground cables. The following cables are located throughout the overall area with a map provided in Figure 14-4.

- Green-MV (10KV/20KV) Overhead Lines;
- Blue-LV (400V/230V) Overhead Lines and;
- Red-MV/LV (10KV/20KV/400V/230V) Underground Cable Routes.

In general, the distribution infrastructure follows the roads.

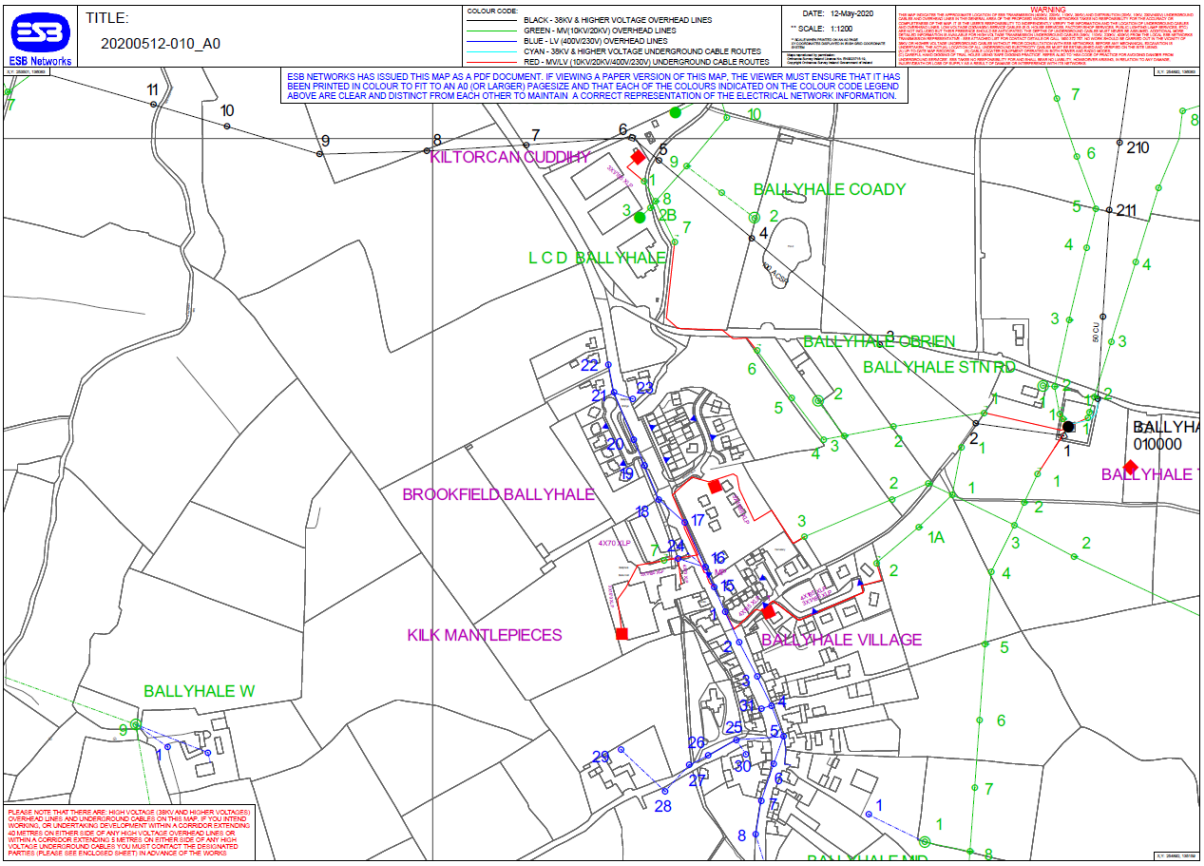

Figure 14-4- Overall ESB Infrastructure in the vicinity of the Ballyhale Flood Defence Scheme

14.3.5 Existing Gas Infrastructure

According to service records from Gas Networks Ireland, there is no Gas Networks Ireland Infrastructure within the Townlands of Ballyhale. There is an existing High Pressure Transmission Pipe Line which passes at its closest approximately 300m from the Ballyhale Shamrocks GAA grounds.

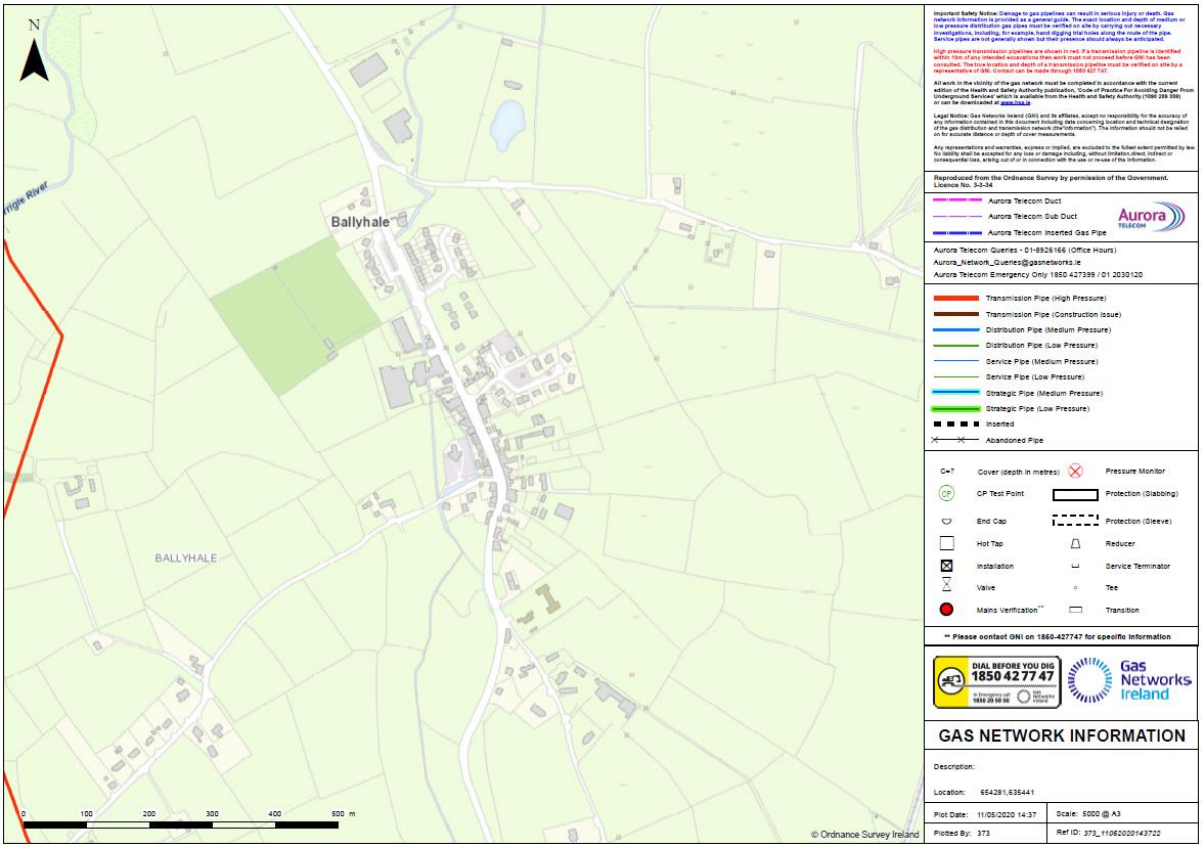

Figure 14-5 – Overall Gas Networks Ireland Infrastructure in the vicinity of the Ballyhale Flood Defence Scheme

14.3.6 Existing Telecommunications Infrastructure

According to service records from Eir there is existing underground services within Ballyhale along the primary roadway (the R448) and within several of the secondary roads.

14.4 Baseline Environment (Land and Property)

The proposed scheme extent spans approximately 33 landholdings including KCC, private landholders and as well land within partial or complete ownership of state and semi state bodies.

Ballyhale was previously the subject of a Local Area Plan however this expired in 2010. Kilkenny City and County Development Plan (CDP) 2021 is now the relevant planning policy document for development in Ballyhale. This document does not provide land zoning within the village however provides a settlement boundary defining an area within which appropriate development will be encouraged and which is not subject to the County's Rural Housing policy.

Chapter 2 of this EIAR (Planning and Policy) summaries permitted planning permissions in the vicinity of the scheme, no existing planning permissions are affected by the proposed scheme.

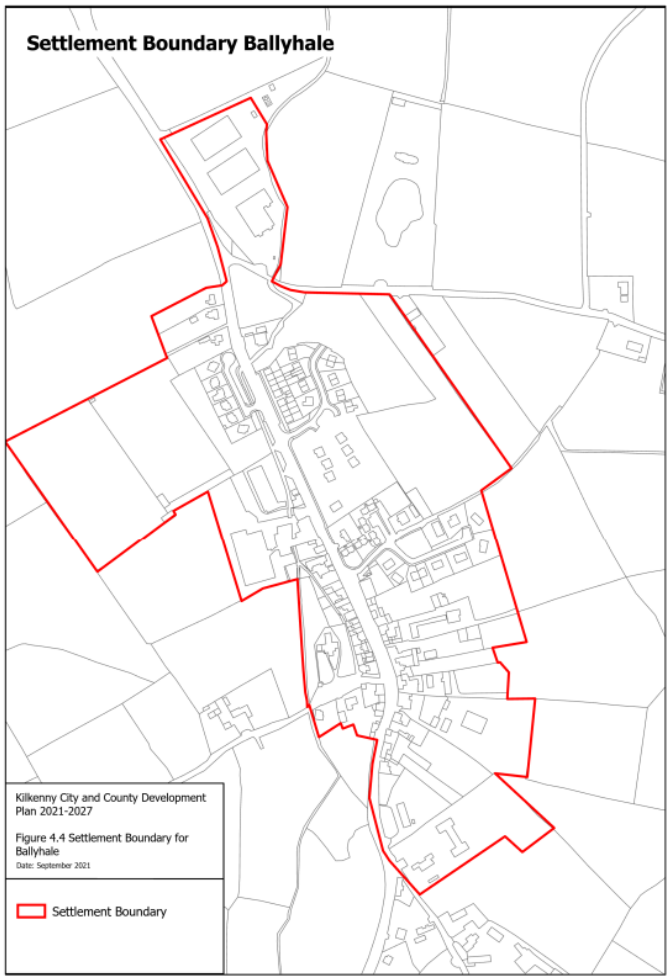

Figure 14-6- Ballyhale Settlement Boundary
[Source - Kilkenny City and County Development Plan 2021]

Existing land use in Ballyhale is typically agricultural beyond the village centre. Within the village there are existing residential, ecclesiastical (Ballyhale Church) educational (Primary School), commercial (Business Parks) and sports club (Ballyhale Shamrocks) uses.

Figure 14-7 below presents the scheme boundary over existing aerial mapping. Figure 14-8 below presents the scheme boundary over existing building usage in the village.

These maps demonstrate that areas within the red line are primarily either agricultural lands, lands containing existing stream channel or sections of existing public roads. The scheme extents also contain limited areas of private residential lands, church access routes and lands to the rear of existing pub and garda station.

Existing stream channels within the village where works are proposed are primarily within private ownership. In particular the below is noted regarding the existing stream channel.

- Existing boundaries typically are present on either side of the stream channel where it forms the land boundary.
- Stream channels are present around three sides of the church.
- The stream channel runs through to the rear of existing properties on the west side of Main St (R448). For some of these properties half the stream channel is in their mapped ownership at the rear boundary and others have additional private lands extending beyond the stream typically accessed via private culvert /bridge
- A portion of Arrigle Business Park has been built over the stream channel and the stream runs in a culvert under the buildings in this area. The scheme does not propose any works to the culvert or buildings above other than acquiring maintenance rights through the existing culvert.
- The stream channel runs through the front of Ballyhale Business Park which is accessed via existing private bridge over the stream.

It is noted the scheme extents shown in the figures includes both temporary (construction stage) land requirement and the permanent scheme footprint.

Figure 14-7- Scheme Extents over Aerial Mapping
[Aerial Imagery Source – Bing Maps]

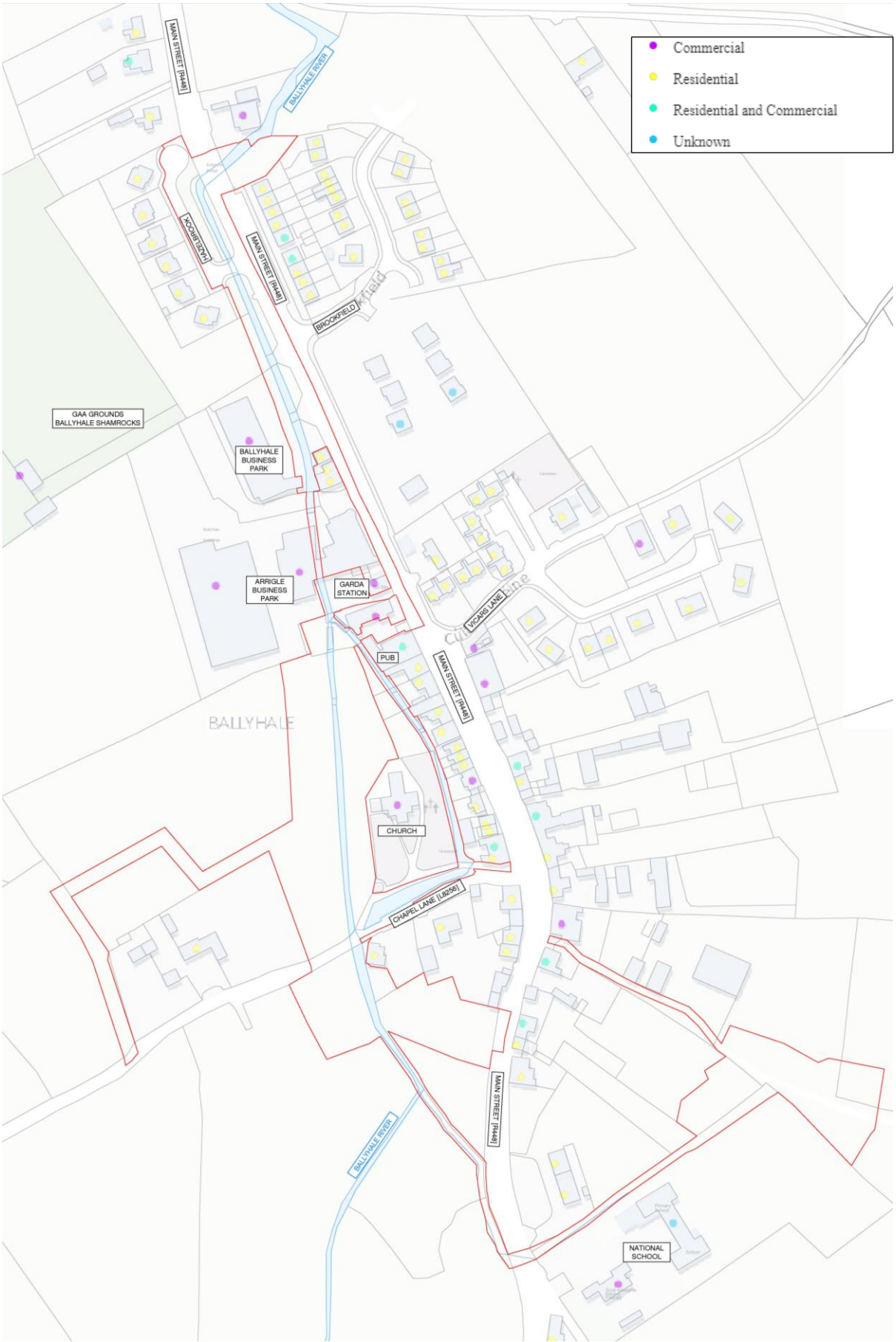

Figure 14-8- Scheme Extents over Geodirectory Building Use Mapping [Source Myplan.ie]

14.5 Predicted Impacts of the Proposed Development (Utilities)

14.5.1 Construction Phase

This section identifies a list of likely and significant effects to the infrastructure, services and public utilities within the subject site caused by the construction of the proposed development in the absence of mitigation measures.

Potential effects that may arise during the construction phase include:

- Contamination or blockage of surface water infrastructure due to construction activities.
- Contamination or damage to potable water supply and associated risk to human health.
- Damage to existing underground and over-ground infrastructure.
- Diversion of existing ESB lines may lead to loss of connectivity to and / or interruption of supply from the electrical grid.
- Potential loss of connection to the Irish Water and Telecommunications infrastructure while carrying out works.

Unmitigated significance is presented in Table 14-2.

Table 14-2 – Unmitigated Significance – Construction Stage

Receptor	Receptor Sensitivity	Nature of Impact	Impact Magnitude	Duration of effect	Impact Significance
Storm Water Infrastructure	Low	Negative	Slight	Short-term	Slight
Foul Water Infrastructure	Low	Negative	Slight	Short-term	Slight
Water	Low	Negative	Slight	Short-term	Slight
ESB / Electricity	High	Negative	Slight	Short-term	Slight
Gas	High	Negative	Slight	Short-term	Slight
Telecoms	Low	Negative	Slight	Short-term	Slight

14.5.2 Operational Phase

Potential operational phase effects on infrastructure, services and public utilities are negligible and short term in nature.

14.5.3 Do-Nothing Effect

If the proposed Scheme were not to proceed, the opportunity to mitigate against flooding up the to 1% AEP flood event would be lost and, during flood conditions, the following risks to Material Assets (Utilities) are anticipated:

- Damage/increased loading to utility infrastructure located in areas which become inundated during flood conditions.

If the “do nothing” option were chosen, the opportunity to protect utility assets in Ballyhale Village from flooding up to the 1% AEP flood event would be lost.

14.5.4 Worst Case Scenario

Under a ‘worst case’ scenario, accidental contact is made with an electricity cable during the construction phase, through the failure of on-site controls. If this were to occur with construction workers or the public in close proximity, the serious injury or loss of life could result.

Worst case scenarios envisioned are extreme occurrences of the potential effects identified above in conjunction with failure of mitigation measures including:

- Adherence to the Construction & Environmental Management Plan.

Given the scale of the site, nature of ESB infrastructure in the area, and relatively standard nature of the works involved the likelihood of a “worst case” event is extremely low.

14.6 Predicted Impacts of the Proposed Development (Land and Property)

The scheme will require land take (either via acquisition or via wayleave) from 31 plots to facilitate construction of the proposed works and for ongoing maintenance of the scheme in the operational phase. The land parcels to be acquired are identified in the CPO documentation associated with the scheme. An extract of the CPO mapping is presented in Figure 14-9 – CPO Map for reference.

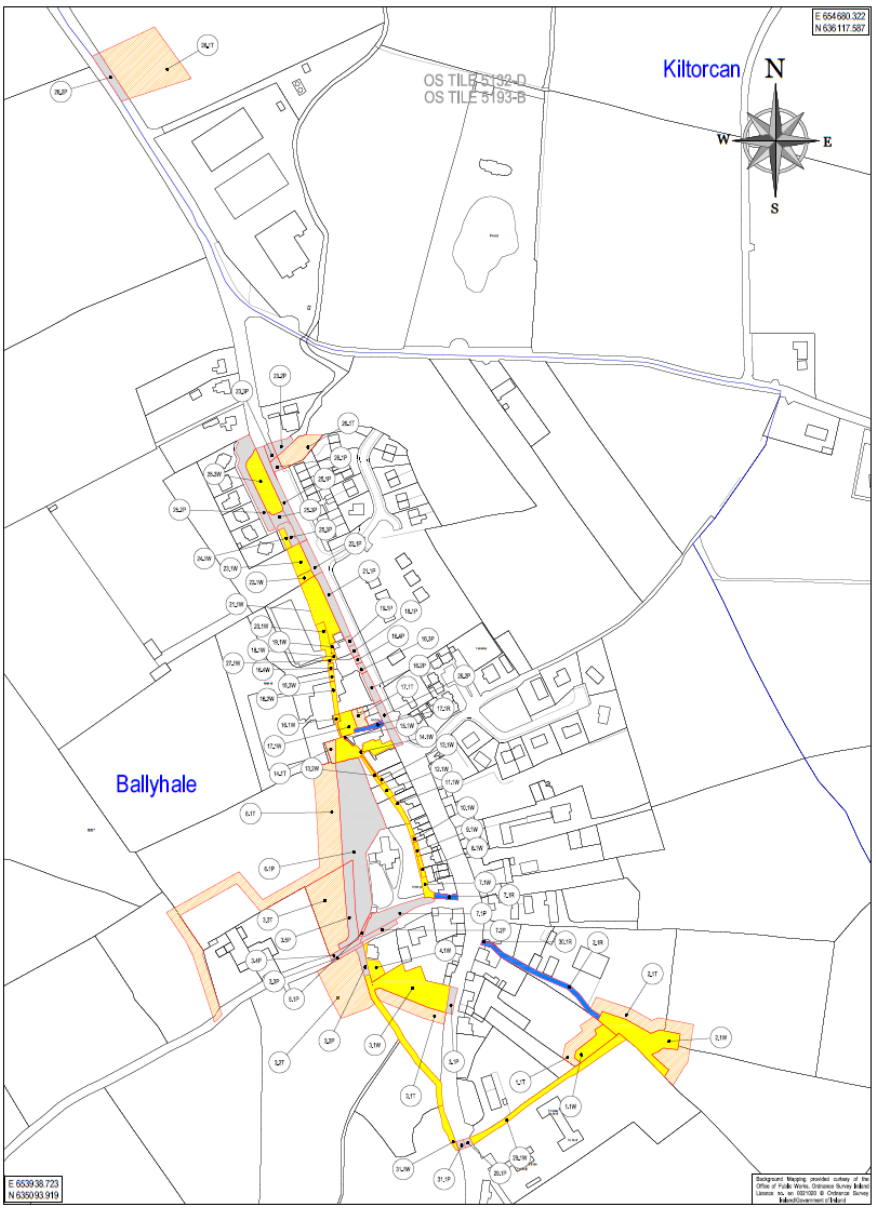

Figure 14-9 – CPO Map

14.6.1 Construction Phase

This section identifies a list of likely and significant effects to Land and Property caused by the construction of the proposed development in the absence of mitigation measures.

General effects that may arise during the construction phase affecting land and property include:

- Temporary severance of land parcels or effects to existing access routes
- Loss of the usage of a portion of land from temporary or permanent land take

- Local businesses may experience temporary nuisances during the construction phase.

It is noted that other construction stage effects such as disturbance due to Air & Noise, utility interruptions etc are assessed separately.

14.6.2 Operational Phase

General effects that may arise during the operational phase affecting land and property include:

- Severance of land parcels or effects to existing access routes
- Loss of the usage of a portion of land
- Restrictions on future development as a result of wayleaves
- Positive impact via relief from flooding

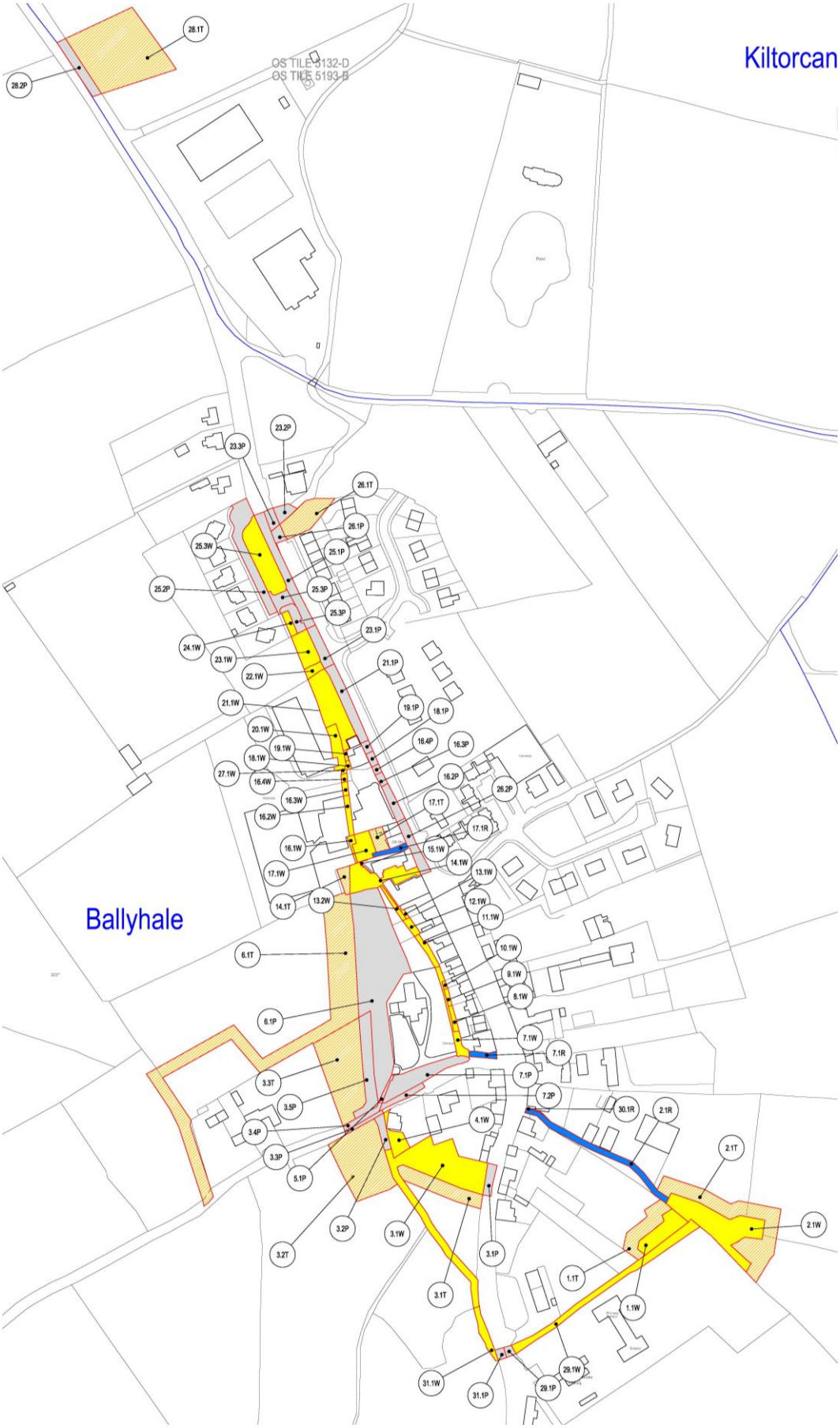

Figure 14-10- CPO Plot Map Extract
[Refer to CPO Documents for Additional Detail]

14.6.3 Do-Nothing Effect

If the proposed Scheme were not to proceed, the opportunity to mitigate against flooding up the to 1% AEP flood event would be lost and, during flood conditions significant damage to land and property would be predicted to occur as detailed within Chapter 5 of the EIAR.

If the "do nothing" option were chosen, the opportunity to protect land and property in Ballyhale Village from flooding up to the 1% AEP flood event would be lost.

14.6.4 Worst Case Scenario

Under a 'worst case' scenario, unintended scheme impacts result in the loss of viability of a residence or commercial enterprise.

Worst case scenarios envisioned are extreme occurrences of the potential effects identified above in conjunction with failure of mitigation measures including:

- Adherence to the Construction & Environmental Management Plan.

Given the scale and nature of the works and relatively standard nature of the works involved the likelihood of a "worst case" event is extremely low.

14.7 Mitigation Measures (Utilities)

14.7.1 Construction Stage Mitigation

The Contractor will comply with the conditions of the EIAR and will produce a Construction & Environmental Management Plan (CEMP) to detail how the project is to be executed in accordance with all project, statutory and environmental requirements. This includes a range of site-specific measures which will include the following mitigation measures in relation infrastructure, services and public utilities:

- The construction compound will include adequate staff welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a temporary connection to the public foul drainage network has been established (subject to connection agreement with Irish Water).
- The construction compound's potable water supply shall be located where it is protected from contamination by any construction activities or materials.
- The Contractor will be obliged to put measures in place during the construction phase to ensure that there are no interruptions to existing services and all services and utilities are maintained unless this has been agreed in advance with the

relevant service provider and local authority. All works in the vicinity of utilities infrastructure will be carried out in ongoing consultation with the relevant utility company and/or local authority and will be in compliance with any requirements or guidelines they may have.

- The contractor will obtain updated utility service maps from the relevant service provider to ensure accurate service information is available.
- The contractor will be obliged to put in measures in place from the 'Safe Construction With Electricity' guidance document.
- The contractor will check the route and location of any utilities prior to any excavation works by reviewing the relevant service providers maps and scanning for services.
- The contractor will follow the Irish Water Code of Practice when working near and around the watermain located on the main street bridge. The developer will issue work method statements to Irish Water prior to work commencing near the watermain.

Table 14-3 – Mitigated Significance – Construction Stage

Receptor	Receptor Sensitivity	Nature of Impact	Impact Magnitude	Duration of effect	Impact Significance
Storm Water Infrastructure	Low	Negative	Negligible	Short-term	Imperceptible
Foul Water Infrastructure	Low	Negative	Negligible	Short-term	Imperceptible
Water	Low	Negative	Negligible	Short-term	Imperceptible
ESB / Electricity	High	Negative	Negligible	Short-term	Imperceptible
Gas	High	Negative	Negligible	Short-term	Imperceptible
Telecoms	Low	Negative	Negligible	Short-term	Imperceptible

14.7.2 Operational Stage Mitigation

Following construction of the scheme there will be extremely limited impact on existing utilities. Any maintenance works in the vicinity of utilities infrastructure will be carried out in ongoing consultation with the relevant utility company and/or local authority and will be in compliance with any requirements or guidelines they may have.

14.8 Mitigation Measures (Land and Property)

This section describes measures which will be taken to mitigate against significant impacts on land and property assets. The assessment does not take account of aspects such as compensation for land acquisition and other impacts. These matters will be agreed with affected landowners or their agents following approval of the scheme. A property arbitrator will be utilised where mutual agreement cannot be achieved. The TII "Guide to Process and Code of Practice for National Road Project Planning and Acquisition of Property for National Roads" will be used with respect to lands potentially impacted by the scheme.

The following general mitigation measures are proposed for the proposed development:

- Mitigation by design has been an integral part of the scheme design whereby design development and the design of individual scheme elements has sought to minimise unnecessary disturbance to land and property.
- Access will be maintained to all affected property both during construction and operational stage.
- Where part of the curtilage of a property is to be permanently acquired, the acquiring authority will hold discussions with the property owner and generally agree to replace boundaries on a like for like basis, subject to safety considerations.
- Prior to construction and subject to written agreement of the relevant property owners, property condition surveys will be undertaken in relation to all buildings / structures which could be affected by the works.
- Any drainage or services that are interfered with as a result of the road development will be repaired / replaced without unreasonable delay.
- All rights of way shall be either maintained or amended to suit the post scheme layout.

Further mitigation specific to individual properties for other impacts are detailed and described in Chapter 5 Description of the Scheme and within other supporting chapters of this EIAR.

A detailed Land and Property Impact Assessment is presented is Appendix 14.1 which sets out the impact on each land parcel affected by the scheme CPO. This assessment is summarised in Table 14-4

Table 14-4 – Mitigated Significance – Land and Property

Plot Ref	Existing Land Use	Specific Mitigation Measures	Mitigated Significance
1	Agricultural Land		Slight Adverse
2	Agricultural Land / Existing Farm Track	New fencing & gates. Where the embankment is along the existing	Neutral

Plot Ref	Existing Land Use	Specific Mitigation Measures	Mitigated Significance
		access track, a gravel surface layer will be provided to reinstate its function as an access track and it will be topsoiled and seeded elsewhere	
3	Agricultural Land / Existing Stream		Slight Adverse
4	Domestic Property (not within dwelling footprint)	Flood defence to be glass at existing windows	Slight Positive
5	Church Grounds		Slight Adverse
6	Agricultural Lands	Agricultural water trough to mitigate loss of livestock access to stream	Moderate Adverse
7	Church Grounds	New access to be provided to replace access affected by works	Moderate Positive
8	Existing Stream Channel		Moderate Positive
9	Existing Stream Channel		Moderate Positive
10	Existing Stream Channel		Moderate Positive
11	Existing Stream Channel		Moderate Positive
12	Existing Stream Channel		Moderate Positive
13	Existing Stream Channel		Moderate Positive
14	Open space to rear of public house/residential property		Slight Positive
15	Existing Stream Channel		Moderate Positive.
16	Existing Stream Channel/culvert, Public Road		Moderate Positive.
17	Open space to rear of OPW Garda Station Building		Slight Positive

Plot Ref	Existing Land Use	Specific Mitigation Measures	Mitigated Significance
18	Public Road, Existing Stream Channel		Moderate Positive
19	Public Road, Existing Stream Channel		Moderate Positive
20	Existing Stream Channel		Moderate Positive
21	Existing Stream Channel, Existing Public Road	New access to be provided to replace access affected by works	Slight Positive
22	Existing Stream Channel		Slight Positive
23	Existing Stream Channel, Existing Public Road, Tyre Shop Parking		Slight Adverse
24	Domestic Garden		Moderate Positive
25	Taken in Charge road, Taken in Charge open space		Slight Positive
26	Taken in Charge road, Taken in Charge open space		Slight Positive
27	Existing Stream		Slight Positive
28	Agricultural Lands		Slight Adverse
29	Existing Stream		Slight Adverse
30	Domestic/Agricultural access		Slight Positive
31	Existing Stream, Existing Public Road		Slight Adverse
32	Existing Stream, Existing Public Road		Moderate Positive
33	Existing Stream, Existing Public Road		Slight Adverse

14.9 In-combination Effects

No cumulative impacts on Material Assets are envisaged during the construction, operational or decommissioning stage.

14.10 Cumulative Effects

In relation to the in-combination construction and/or operational impact of the proposed Ballyhale Flood Relief Scheme, with other proposed schemes planned in the area, the list of schemes noted from the planning chapter have been reviewed. None of these schemes will result in any significant additional construction and/or operational Material Assets Impact within Ballyhale.

14.11 Residual Impacts

Implementation of the measures outlined in this chapter and supporting chapters will ensure that the proposed development does not result in any significant adverse effects on material assets.

14.12 Difficulties Encountered in Assessment

No significant difficulties were encountered during the assessment.

14.13 References

- Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (NRA, 2009);
- Environmental Impact Assessment of National Road Schemes – A Practical Guide (NRA, 2008);
- Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan (TII);
- The Management Of Waste From National Road Construction Projects (TII);
- Design of Earthworks Drainage, Network Drainage, Attenuation & Pollution Control (DN-DNG-03066) (TII);
- Guidelines On The Information To Be Contained In Environmental Impact Assessment Reports (2022) (EPA);
- EPA Advice Notes on Current Practice (in the preparation of Environmental Impact Statements) Sept. 2003;
- Geo Portal (https://gis.epa.ie/EPAMaps/) (EPA);
- The SUDS Manual (CIRIA C753) (CIRIA);
- Control of Water Pollution from Construction Sites. Guidance for Consultants and Contractors (CIRIA C532);
- Control of Water Pollution from Linear Construction Sites (CIRIA C648);
- Environmental Good Practice on Site (C692) (2010) (CIRIA);
- Guidelines for Preparation of Soils, Geology & Hydrogeology Chapters in Environmental Impact Statements. (2013) Institute of Geologists of Ireland (IGI);
- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, Dept of the Environment Heritage and Local Government;
- Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, Department for Environment, Food and Rural Affairs (UK); and
- Geological Survey Ireland Spatial Resources https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228

APPENDIX 14-1

Land Impact Assessment