

Limerick City and County Council
New Junction at Plassey Road
Environmental Impact Assessment
Screening

Ref/1

Issue 1 | 13 July 2020

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1 Introduction

Arup has prepared this Environmental Impact Assessment (EIA) screening report on behalf of Limerick City and County Council for proposed upgrade works at Plassey Road/Plassey Park Road/Troy Studios Road in Castletroy, County Limerick (hereafter referred to as ‘the proposed development’).

This document sets out the information necessary for the competent authority, Limerick City and County Council, to undertake the EIA screening assessment in respect of the proposed development and to make an EIA Screening determination.

The proposed development will include:

- The provision of a new signalised junction at Plassey Park Rd / Plassey Rd.
- Upgrading Troy Studios Road to reduce car delays.
- Provision of new pedestrian and cycle facilities to provide safer routes and crossing points.
- Provision of additional bus lanes on the Plassey Park Road and Plassey Road to allow buses to move more freely. New bus stops are to be provided; others are to be reconstructed.

A detailed description of the proposed development is provided in **Section 3** of this report

The location of the proposed development is indicated in **Figure 1.1**, with the existing road layout illustrated in **Figure 1.2**



Figure 1.1: Location of the Proposed Development

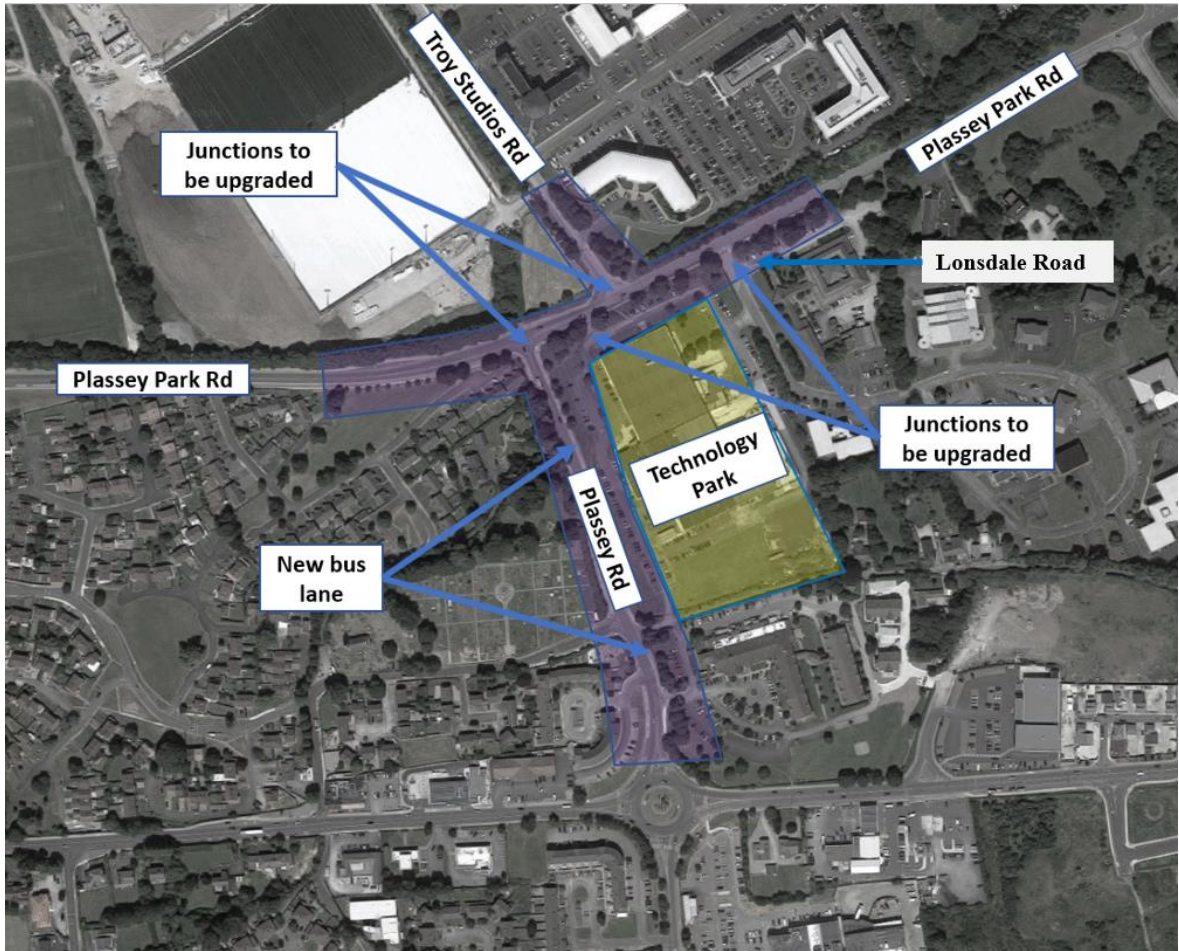


Figure 1.2: Location of the Proposed Development- Road Layout

2 EIA Screening: Legislative Context and Guidance

2.1 Overview

This section outlines the relevant legislation and guidance reviewed in the compilation of this EIA Screening Report. This section also compares the proposed development against the list of projects which legally require EIA and compares it against their mandatory trigger thresholds. The requirement for screening of sub-threshold developments is also outlined in this section.

2.2 Legislation

The following legislation has been considered during the preparation of this EIA Screening Report:

- Directive 2011/92/EU¹ on the Assessment of the Effects of Certain Public and Private Projects on the Environment, as amended by Directive 2014/52/EU²;
- Roads Act 1993 (S.I. No 14 of 1993), as amended;
- Roads Regulations, 1994 (S.I. No. 119 of 1994) (as amended);
- European Union (Roads Act 1993) Environmental Impact Assessment (Amendment) Regulations 2019 (SI 279 of 2019).
- Planning and Development Acts 2000, as amended;
- Planning and Development Regulations 2001, as amended;
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (SI No. 296 of 2018);

2.3 Guidance and Consultation Documents

The following guidance and consultation documents have also been considered during the preparation of this report:

- Department of Housing, Planning, Community and Local Government (2018) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018)*;
- Department of Housing, Planning, Community and Local Government (2017) *Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licencing Systems*;

¹ Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification).

² Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

- Department of Housing, Planning, Community and Local Government (2017) *Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive): Advice on the Administrative Provisions in Advance of Transposition;*
- Department of the Environment, Community and Local Government (2013) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment;*
- Department of the Environment, Heritage and Local Government (2003) *Environmental Effect Assessment (EIA) Guidance for Consent Authorities regarding Sub-threshold Development;*
- Environmental Protection Agency (2017) *Revised Guidelines on the Information to be contained in Environmental Impact Statements (Draft August 2017);*
- Environmental Protection Agency (2015) *Advice Notes for Preparing Environmental Impact Statements Draft September 2015;*
- Environmental Protection Agency (2003) *Advice Notes on Current Practice in the Preparation of Environmental Impact Statements;*
- Environmental Protection Agency (2002) *Guidelines on the Information to be contained in Environmental Impact Statements;* and
- European Commission (2017) *Guidance on EIA Screening.*
- European Commission (2015) *Interpretation of definitions of project categories of annex I and II of the EIA Directive.*
- Transport Infrastructure Ireland (TII) (2008) *Environmental Impact Assessment of National Road Schemes – A Practical Guide*

2.4 EIA Directive 2014/52/EU

Directive (2014/52/EU) sets out the requirements of the EIA process, including screening the need for an EIA. Projects listed in Annex I of the EIA Directive require a mandatory EIA whilst projects listed in Annex II require screening to determine whether an EIA is required. Articles 4(4) and 4(5) of the EIA Directive set out the requirements for EIA screening of Annex II projects as set out below. Annex III of the EIA Directive sets out the criteria to be examined when carrying out EIA screening as set out below.

The Roads Act (1993), has been amended by the European Union (Road Act 1993) (Environmental Impact Assessment) (Amendment) Regulations 2019 (SI 296 of 2019) to take account of the requirements of the EIA Directive (Directive 2014/52/EU). Annex III is specifically referenced in Section 50(1)(e) of the Roads Act (1993), as amended, to be considered when carrying out EIA Screening.

BOX 2 Annex IIA of the EIA Directive**ANNEX IIA INFORMATION REFERRED TO IN ARTICLE 4(4) (INFORMATION TO BE PROVIDED BY THE DEVELOPER ON THE PROJECTS LISTED IN ANNEX II)**

1. *A description of the project, including in particular: (a) a description of the physical characteristics of the whole project and, where relevant, of demolition works; (b) a description of the location of the project, 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 project.*
3. *A description of any likely significant effects, to the extent of the information available on such effects, of the project on the environment resulting from: (a) the expected residues and emissions and the production of waste, where relevant; (b) the use of natural resources, in particular soil, land, water and biodiversity.*
4. *The criteria of Annex III shall be taken into account, where relevant, when compiling the information in accordance with points 1 to 3. ';*

BOX 1**Articles 4(4) and 4(5) of the EIA Directive**

“4(4) Where Member States decide to require a determination for projects listed in Annex II, the developer shall provide information on the characteristics of the project and its likely significant effects on the environment. The detailed list of information to be provided is specified in Annex IIA. The developer shall take into account, where relevant, the available results of other relevant assessments of the effects on the environment carried out pursuant to Union legislation other than this Directive. The developer may also provide a description of any features of the project and/or measures envisaged to avoid or prevent what might otherwise have been significant adverse effects on the environment.

4(5) The competent authority shall make its determination, on the basis of the information provided by the developer in accordance with paragraph 4 taking into account, where relevant, the results of preliminary verifications or assessments of the effects on the environment carried out pursuant to Union legislation other than this Directive. The determination shall be made available to the public and:

- (a) where it is decided that an environmental effect assessment is required, state the main reasons for requiring such assessment with reference to the relevant criteria listed in Annex III; or*
- (b) where it is decided that an environmental effect assessment is not required, state the main reasons for not requiring such assessment with reference to the relevant criteria listed in Annex III, and, where proposed by the developer, state any features of the project and/or measures envisaged to avoid or prevent what might otherwise have been significant adverse effects on the environment.”*

BOX 3 Annex III of the EIA Directive**SELECTION CRITERIA REFERRED TO IN ARTICLE 4(3) (CRITERIA TO DETERMINE WHETHER THE PROJECTS LISTED IN ANNEX II SHOULD BE SUBJECT TO AN ENVIRONMENTAL IMPACT ASSESSMENT)****1. Characteristics of projects**

The characteristics of projects must be considered, with particular regard to: (a) the size and design of the whole project; (b) cumulation with other existing and/or approved projects; (c) the use of natural resources, in particular land, soil, water and biodiversity; (d) the production of waste; (e) pollution and nuisances; (f) 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; (g) the risks to human health (for example due to water contamination or air pollution).

2. Location of projects

The environmental sensitivity of geographical areas likely to be affected by projects must be considered, with particular regard to: (a) the existing and approved land use; (b) the relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground; (c) the absorption capacity of the natural environment, paying particular attention to the following areas: (i) wetlands, riparian areas, river mouths; (ii) coastal zones and the marine environment; (iii) mountain and forest areas; (iv) nature reserves and parks; (v) areas classified or protected under national legislation; Natura 2000 areas designated by Member States pursuant to Directive 92/43/EEC and Directive 2009/147/EC; (vi) areas in which there has already been a failure to meet the environmental quality standards, laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure; (vii) densely populated areas; (viii) landscapes and sites of historical, cultural or archaeological significance.

3. Type and characteristics of the potential impact

The likely significant effects of projects on the environment must be considered in relation to criteria set out in points 1 and 2 of this Annex, with regard to the impact of the project on the factors specified in Article 3(1), taking into account: (a) the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected); (b) the nature of the impact; (c) the transboundary nature of the impact; (d) the intensity and complexity of the impact; (e) the probability of the impact; (f) the expected onset, duration, frequency and reversibility of the impact; (g) the cumulation of the impact with the impact of other existing and/or approved projects; (h) the possibility of effectively reducing the impact.

2.5 The Roads Act (1993) (as Amended)**2.5.1 Relevant definitions under Section 2 of Roads Act, 1993 as amended**

A “road” is defined under Section 2 of Roads Act (1993), as amended as:

- “(a) any street, lane, footpath, square, court, alley or passage,
- (b) any bridge, viaduct, underpass, subway, tunnel, overpass, overbridge, flyover, carriageway (whether single or multiple), pavement or footway,

- (c) *any weighbridge or other facility for the weighing or inspection of vehicles, toll plaza or other facility for the collection of tolls, service area, emergency telephone, first aid post, culvert, arch, gully, railing, fence, wall, barrier, guardrail, margin, kerb, lay-by, hard shoulder, island, pedestrian refuge, median, central reserve, channeliser, roundabout, gantry, pole, ramp, bollard, pipe, wire, cable, sign, signal or lighting forming part of the road, and*
- (d) *any other structure or thing forming part of the road and*
- (i) *necessary for the safety, convenience or amenity of road users or for the construction, maintenance, operation or management of the road or for the protection of the environment, or (ii) prescribed by the Minister”;*

A road authority is defined under Section 2 of Roads Act (1993), as amended as:

“road authority”, except in Part V, means the council of a county, the corporation of a county or other borough, or the council of an urban district”;

A “public road” is defined under Section 2 of Roads Act (1993), as amended as:

“public road” means a road over which a public right of way exists and the responsibility for the maintenance of which lies on a road authority.

The proposed development is interpreted to be a “road” development as defined under Section 2 (a) of Roads Act (1993), as amended. Similarly, Limerick and City Council (GCC) is interpreted to be a “road authority” and the proposed development is interpreted as works to a “public road” as defined under Section 2 of Roads Act (1993).

2.5.2 Requirement for mandatory EIA under the Roads Act 1993 (as amended)

Section 50 (1) of the Roads Act (1993) (as amended by S.I No. 279 of 2019) relates to road developments subject to Environmental Impact Assessment. The thresholds for mandatory EIA of a road development are set out in Section 50(1)(a) which states:

50(1)(a) *‘A road development that is proposed that comprises any of the following shall be subject to an environmental impact assessment:*

- (i) *the construction of a motorway;*
- (ii) *the construction of a busway;*
- (iii) *the construction of a service area;*
- (iv) *any prescribed type of road development consisting of the construction of a proposed public road or the improvement of an existing public road’.*

The proposed development does not include the construction of a motorway, busway nor service area as per (i), (ii) and (iii) as defined in the Roads Act (1993), as amended.

The ‘prescribed types of road development’ under Section 50(1)(a)(iv) of the Roads Act 1993, as amended, are set out in Part V Environmental Impact Assessment of the Road Regulations 1994 (S.I. No. 119 of 1994), as amended, which states the following:

‘(8). *The prescribed types of proposed road development for the purpose of subsection (1)(a)(iv) of section 50 of the Act shall be -*

- (a) *the construction of a new road of four or more lanes, or the realignment or widening of an existing road so as to provide four or more lanes, where such new, realigned or widened road would be eight kilometres or more in length in a rural area, or 500 meters or more in length in an urban area;*
- (b) *the construction of a new bridge or tunnel which would be 100 meters or more in length’.*

The proposed development does not involve the “*the construction of a new road of four or more lanes*”, nor the “*realignment or widening of an existing road so as to provide four or more lanes, where such new, realigned or widened road 500 metres or more in length in an urban area;*”. Widening of sections of existing roads are proposed but the length of widening is under the 500m threshold (see table 2.1 below).

The proposed development does not involve the construction of a new bridge or tunnel.

The proposed development involves upgrade works to three existing roads: Troy Studios Road, Plassey Park Road and Plassey Road, which were assessed as follows with regards Part V(8)(a) of the Environmental Impact Assessment of the Road Regulations 1994, as amended (Refer to **Table 2.1**):

Table 2.1: Requirement for Mandatory EIA Screening

	Troy Studios Road	Plassey Park Road	Plassey Road
Existing Layout	2 traffic lanes	2-3 traffic lanes and 2 cycle lanes	2 traffic lanes and 2 cycle lanes
Proposed Works	addition of 2 cycle lanes and left turn pocket lane	addition of 2 bus lanes, signalisation of 2 No. junction	addition of back-to-back bus lanes
Length of proposed works	~99m	~313m	~314m
Proposed Widening	No	Yes	No
Proposed Layout	2 traffic lanes and 2 cycle lanes	2-3 traffic lanes and 2 cycle lanes and 2 bus lanes	2 traffic lanes and 2 cycle lanes and back-to-back bus lanes
Requirement for EIA	No. Below threshold as not considered widening to provide four or more lanes*, and less than 500m in length	No. Below threshold as less than 500m in length	No. Below threshold as not considered widening to provide four or more lanes*, and less than 500m in length

*It is assumed that cycle lanes and footpaths do not constitute ‘lanes’ under subsection (1)(a)(iv) of section 50 of the Roads Act or Part V of the Road Regulations.

The proposed development does not meet the mandatory thresholds detailed in Section 50 (1) of the Roads Act (1993), as amended, nor the Roads Regulations 1994 (8a) or (8b) above. Therefore, a mandatory EIA is not required.

2.5.1 EIA Screening of Road Developments under the Roads Act 1993, as amended

The proposed development is, considered to be ‘sub-threshold’ with regards the ‘*prescribed types of road development*’ set out in Part V Environmental Impact Assessment of the Road Regulations 1994, as amended, and an EIA Screening assessment is therefore required to determine if the proposed development has the potential to give rise to significant environmental effects.

Section 50(1)(e) of the Environmental Impact Assessment of the Road Regulations 1994, as amended, states that the road authority shall take into account the relevant selection criteria specified in Annex III (of the EIA Directive) in making its EIA Screening determination (see Box 3 above).

The following sections provide the information required as per the criteria set out in Annex III to enable Limerick City and County Council to make an EIA Screening Determination as to whether an EIA is required for the proposed development. The characteristics and location of the proposed development are discussed in **Section 3** and **4** and the type and characteristics of the potential impacts are discussed in **Section 5**

This EIA Screening Report meets the requirements of the EIA Directive Annex III, as identified in **Table 2.2**.

Table 2.2: Content of EIA Screening Report

EIA Directive Annex III	Relevant Section
<p>1) <i>Characteristics of projects</i></p> <p><i>The characteristics of projects must be considered, with particular regard to:</i></p> <ul style="list-style-type: none"> (a) <i>the size and design of the whole project;</i> (b) <i>cumulation with other existing and/or approved projects;</i> (c) <i>the use of natural resources, in particular land, soil, water and biodiversity;</i> (d) <i>the production of waste;</i> (e) <i>pollution and nuisances;</i> (f) <i>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;</i> (g) <i>the risks to human health (for example due to water contamination or air pollution).</i> 	<p>Section 4 - Characteristics of the Proposed Development</p>
<p>2) <i>Location of projects</i></p> <p><i>The environmental sensitivity of geographical areas likely to be affected by projects must be considered, with particular regard to:</i></p> <ul style="list-style-type: none"> (a) <i>the existing and approved land use;</i> (b) <i>the relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground;</i> (c) <i>the absorption capacity of the natural environment, paying particular attention to the following areas:</i> 	<p>Section 3- Location of the Proposed Development</p>

EIA Directive Annex III	Relevant Section
<ul style="list-style-type: none"> (i) wetlands, riparian areas, river mouths; (ii) coastal zones and the marine environment; (iii) mountain and forest areas; (iv) nature reserves and parks; (v) areas classified or protected under national legislation; Natura 2000 areas designated by Member States pursuant to Directive 92/43/EEC and Directive 2009/147/EC; (vi) areas in which there has already been a failure to meet the environmental quality standards, laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure; (vii) densely populated areas; (viii) landscapes and sites of historical, cultural or archaeological significance. 	
<p>3) <i>Type and characteristics of the potential impact</i></p> <p><i>The likely significant effects of projects on the environment must be considered in relation to criteria set out in points 1 and 2 of this Annex, with regard to the impact of the project on the factors specified in Article 3(1), taking into account:</i></p> <ul style="list-style-type: none"> (a) <i>the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);</i> (b) <i>the nature of the impact;</i> (c) <i>the transboundary nature of the impact</i> (d) <i>the intensity and complexity of the impact;</i> (e) <i>the probability of the impact;</i> (f) <i>the expected onset, duration, frequency and reversibility of the impact;</i> (g) <i>the cumulation of the impact with the impact of other existing and/or approved projects;</i> (h) <i>the possibility of effectively reducing the impact’.</i> 	<p>Section 5- Type and Characteristics of Potential Effects</p>

3 Location of the Proposed Development

3.1 Location of the Proposed Development

The proposed development is located at Troy Studios Road, Plassey Park Road and Plassey Road in Castletroy, County Limerick, and makes up an area of approximately 1.61 Ha. The location of the proposed development is illustrated in **Figure 1**, in **Section 1**.

The proposed development site is located approximately 4.7Km to the north-east of Limerick City Centre and approximately 650m south-east of the River Shannon. The site is located directly adjacent to lands belonging to the University of Limerick, and the Mid-West National Technology Park. **Section 3.3** provides a detailed description of the existing land-use of the proposed development site, and adjacent lands.

Figure 3.1 below provides an aerial view of the proposed development site.



Figure 3.1: Aerial View of the Proposed Development Site (not to scale. Source: Google Maps, 2020)

3.2 Existing Road Layout

The road network through and in the immediate vicinity of the study area is presented in **Figure 3.2**.



Figure 3.2: Existing road network around the site

Plassey Park Road starts at Groody Roundabout, runs through Milford Grange and passes University of Limerick providing a route to the Castletroy area before it joins back to the Dublin Road (R445) at Annacotty Roundabout.

The roadway generally consists of a single lane of traffic in each direction, with footpaths and cycle lanes provided on both sides of the road as far as the Plassey Road Junction. The footpath on the North terminates at the junction of Troy Studios Road.

Plassey Road (L1118) [often referred to as Milford Road] is a local road that provides a connection between Kilmurry Roundabout on the Dublin Road (R445) and Plassey Park Road. The roadway consists of a single lane of traffic in each direction, with footpaths and cycle lanes provided on both sides of the road. The cycle lane on the East terminates approximately 110m North of Kilmurry Roundabout.

The Troy Studios Road consists of a single lane of traffic in both directions. Footpaths are provided on both sides for approximately 40m before the Western footpath terminates at an uncontrolled zebra crossing. The footpath on the East continues for the length of the road, only ceasing at the access to the National Technological Park.

Existing junctions within the proposed development site are as follows:

- **Plassey Park Rd / Plassey Rd:** This is a three arm unsignalized junction, with two arms on the Plassey Park Road and one on the Plassey Road. There are no pedestrian or cyclist crossings at either arm of the junction.

- **Plassey Park Rd / Troy Studios Rd:** This is also a three arm unsignalized junction, with two arms on the Plassey Park Road and one on the Troy Studios Road. There is only one uncontrolled zebra crossing on the Troy Studios Road.
- **Plassey Park Rd /Northern Entrance to the Enterprise Park:** This is a minor side road access/egress offering a secondary entrance to the Enterprise Park to the south-east of Plassey Park Road/Plassey Road, in conjunction with the main entrance to the park via Lonsdale Road.
- **Plassey Rd / Dun an Oir Rd / Kilmurry Church Rd:** This is a staggered four arm unsignalized junction, with two arms on the Plassey Rd, one on the Dun an Oir Rd and one leading to the Kilmurry Church. There are no pedestrian or cyclist crossings at either arm of the junction.
- **Plassey Rd / The Orchard Rd:** This is a three arm unsignalized junction, with two arms on the Plassey Park Road and one which leads into a number of shops and a housing estate called The Orchard. There are no pedestrian or cyclist crossings at either arm of the junction.
- **Plassey Rd / Kilmurry Lodge Hotel:** This is also a three arm unsignalized junction with two arms on the Plassey Park Road and one which leads into the Kilmurry Hotel. There are no pedestrian or cyclist crossings at either arm of the junction.

There are a number of issues in relation to the current road network operation along Plassey Park Road, including:

- Poor provision for pedestrians and cyclists crossing each of the arms;
- Variable and unpredictable delays to traffic at peak times, especially due to the priority operation of the junctions;
- Substandard dedicated cycling facilities along Plassey Park Road;
- Junction delays for cars accessing and egressing from Troy Studios Road; and
- There are currently no dedicated bus lanes, leading to buses currently travelling along Plassey Park Road past the subject site, and turning at the roundabout approximately 850m to the east, and returning to turn left onto Plassey Road.

Existing Public Transport Infrastructure

Public transport in the area consists of Dublin Coach (307 & 308) and Bus Eireann (304 & 304a) buses. All of the buses pass through Plassey Park road and turn right on the Plassey Road. Bus 304 drives through the junction and continues on the Plassey Park Road during certain times of the day. The Dublin Coach M7 Express Service and Bus Eireann X12 service also pass through the site route.

There are two bus stops within the site, one on Plassey Park Road, close to the junction, and the other on Plassey Road, in front of the Kilmurry Lodge Hotel. The aforementioned buses, with the expectation of M7 Express, stop at these stops.

Existing Pedestrian and Cyclist Facilities

On the Plassey Park Road, footpaths and cycle lanes provided on both sides of the road as far as the Plassey Road Junction. The footpath on the North terminates at the junction of Troy Studios Road.

Footpaths and cycle lanes are provided on both sides of the Plassey Road. The cycle lane on the East terminates approximately 110m North of Kilmurry Roundabout, with the cycle lane on the west terminating at approximately 90m.

On the northern arm of the Kilmurray roundabout there are shared walking and cycle facilities on both sides of the road. These facilities are off road on the pavement. There is an uncontrolled zebra crossing at the roundabout with an island bisecting it.

On the Troy Studios Road, footpaths are provided on both sides for approximately 40m before the Western footpath terminates at an uncontrolled zebra crossing. The footpath on the East continues for the length of the road, only ceasing at the access to the National Technological Park.

Current Road Safety

A review of the available road safety collision record history on www.rsa.ie (from the years 2005 - 2016) demonstrates the collision history, with some incidents recorded along the Plassey Park Rd and the Plassey Rd.

The number of incidents recorded along the Plassey Park Road and Plassey Road from 2005 - 2016 is quite low. There are however a number of incidents which occurred at Kilmurry Roundabout, but these are outside the proposed development boundary. In total there has three incidents within the development boundary, with all three being described as 'minor'. Two of these involved cars and the other involved both a car and a pedestrian. Although there are no significant clusters that would warrant a further detailed investigation, these incidents may indicate that the functionality of the route is not providing sufficient priority to pedestrians.

3.3 Existing Land-Use and Natural Resources

The Castletroy Local Area Plan was reviewed in order to gain an understanding of the existing land-use at, and adjacent to the proposed development site. As illustrated in **Figure 3.3**, the land use adjacent to the proposed development site includes; Enterprise and Employment and Retail to the east, and University, Education and Community Facilities and Existing Residential to the west. In addition, there are some areas of Open Space and Recreation adjacent to the proposed development site.

The site of the proposed development is surrounded by various amenities and buildings. The University of Limerick sports grounds are located to the north-west of the proposed development site. Roselawn House Office Services, E-Net and various other commercial buildings are located within the National Technological Park, which extends from the north east to the south east of the proposed development site. Commercial buildings such as ACI Worldwide and Casa Communications the closest to the subject area.

In addition to the above-mentioned commercial areas there are two residential estates to the south-west, in close proximity to the proposed development site, accessed via Plassey Park Road (Oaklawns and Chestnut Close respectively).

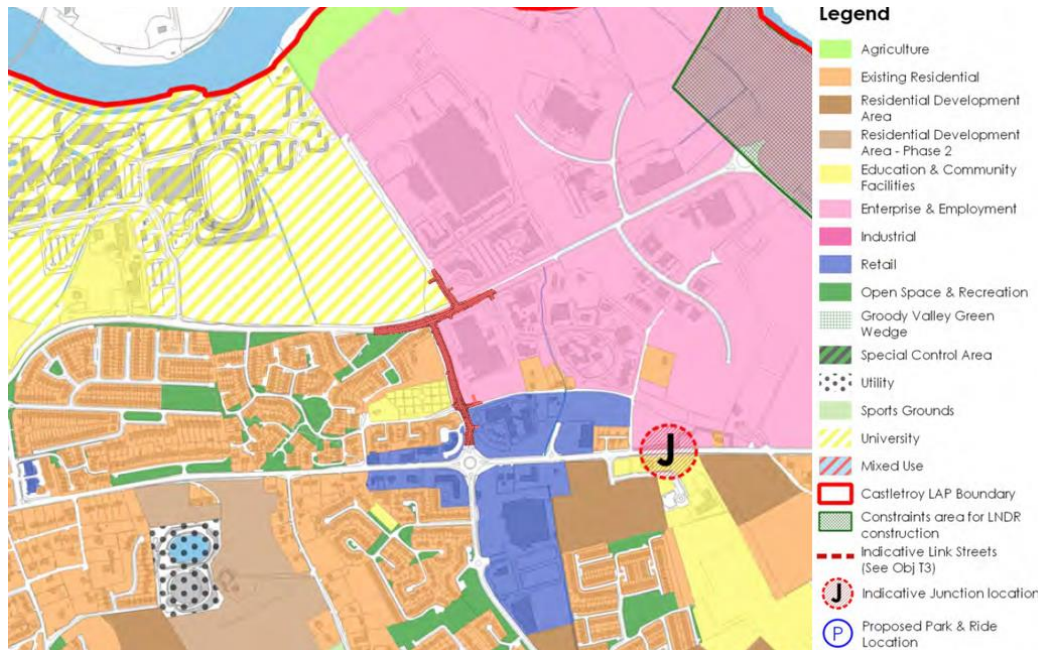


Figure 3.3: Existing land-use (Source: Castletroy Local Area Plan 2019 - 2025)

The Castletroy area performs an important trade/market and service function for the resident population and for the surrounding hinterland. This is evident by the diverse range of services and businesses operating in the area. These include; doctor and dentist practices, Shopping Centre, Restaurants, Pharmacies, Hotels, Childcare facilities etc. The area is also highly attractive as a place to live given its proximity to the City Centre, the large number of employment centres and the University campus. There is also a wide range of sporting and amenity facilities in the area serving the local population and further afield. In recent times, the recreational value of the River Shannon has been developed through the provision of walkway/cycleway and potential exists to further develop this amenity.

4 Characteristics of the Proposed Development

4.1 Introduction

This section describes the physical characteristics of the proposed development in accordance with Annex III of the EIA Directive, as amended.

The proposed development will involve signalling an unsignalized junction at Plassey Road/Plassey Park Road and adding dedicated pedestrian and cycle crossing facilities. It also includes an additional bus lane along the Plassey Road, two additional bus lanes along Plassey Park Road and two additional cycle lanes along Troy Studios Road. Additionally, two smaller junctions along the Plassey Park Road will also be upgraded, one at the northern entrance of the National Technology Park and another at Lonsdale Road.

The purpose of the proposed upgrade works is to:

- Improve the road arrangement to accommodate existing and future pedestrian, cycle, public transport and vehicular traffic accessing the area through the consideration of a new signalised junction layout.
- Reduce the delays for cars accessing and exiting the Troy Studios Road.
- Provide safe crossing points for pedestrians.
- Upgrade of existing footways and creation of new pedestrian and cycle links.
- Assess bus stop locations and adequacy and amend as necessary.
- Provision of bus lanes on the Plassey Park Rd and the Plassey Road.
- Be compatible with existing road network operation.
- Be compatible with other projects underway in the vicinity (i.e. new layout proposed for Plassey Park Road to the east of the scheme, which is currently going through planning).
- Minimise impact on the existing services.

An overview of the proposed development is illustrated in **Figure 4.1**. A detailed description of the proposed works is included hereafter, in **Section 4.2**.

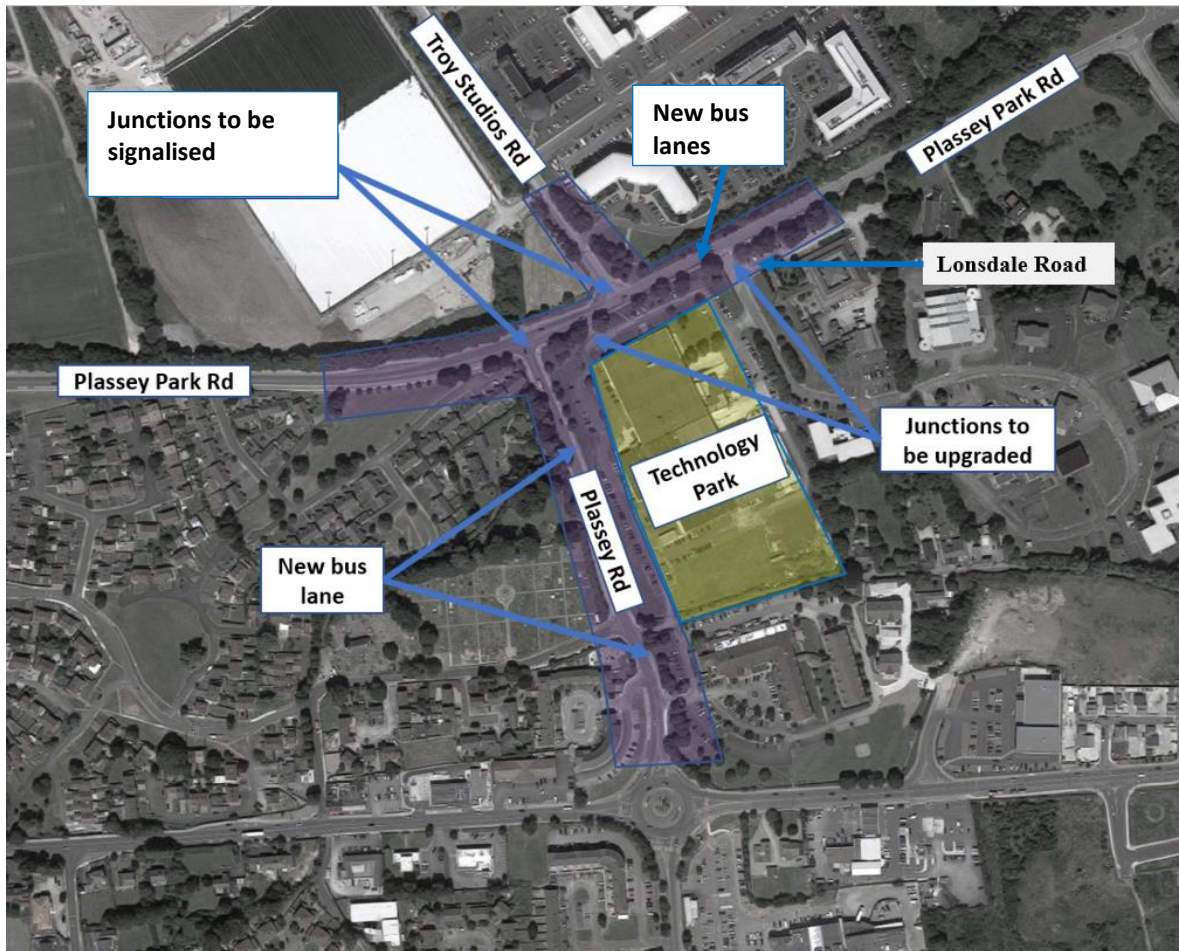


Figure 4.1: Overview of the Proposed Development (Not to scale)

4.2 Size and design of the whole project

As previously stated, the proposed development will involve works on Troy Studios Road, Plassey Park Road and Plassey Road in Castletroy, Limerick. The details of the proposed development are shown in drawings T0100-01 and T0100-02 which accompany the planning package.

The respective lengths of the roads to be upgraded are; Troy Studios Road (~99m), Plassey Park Road (~313m) and Plassey Road (~314m). The total area of the proposed development is 1.61 Ha.

The red-line boundary of the proposed development is illustrated in **Figure 4.2**.

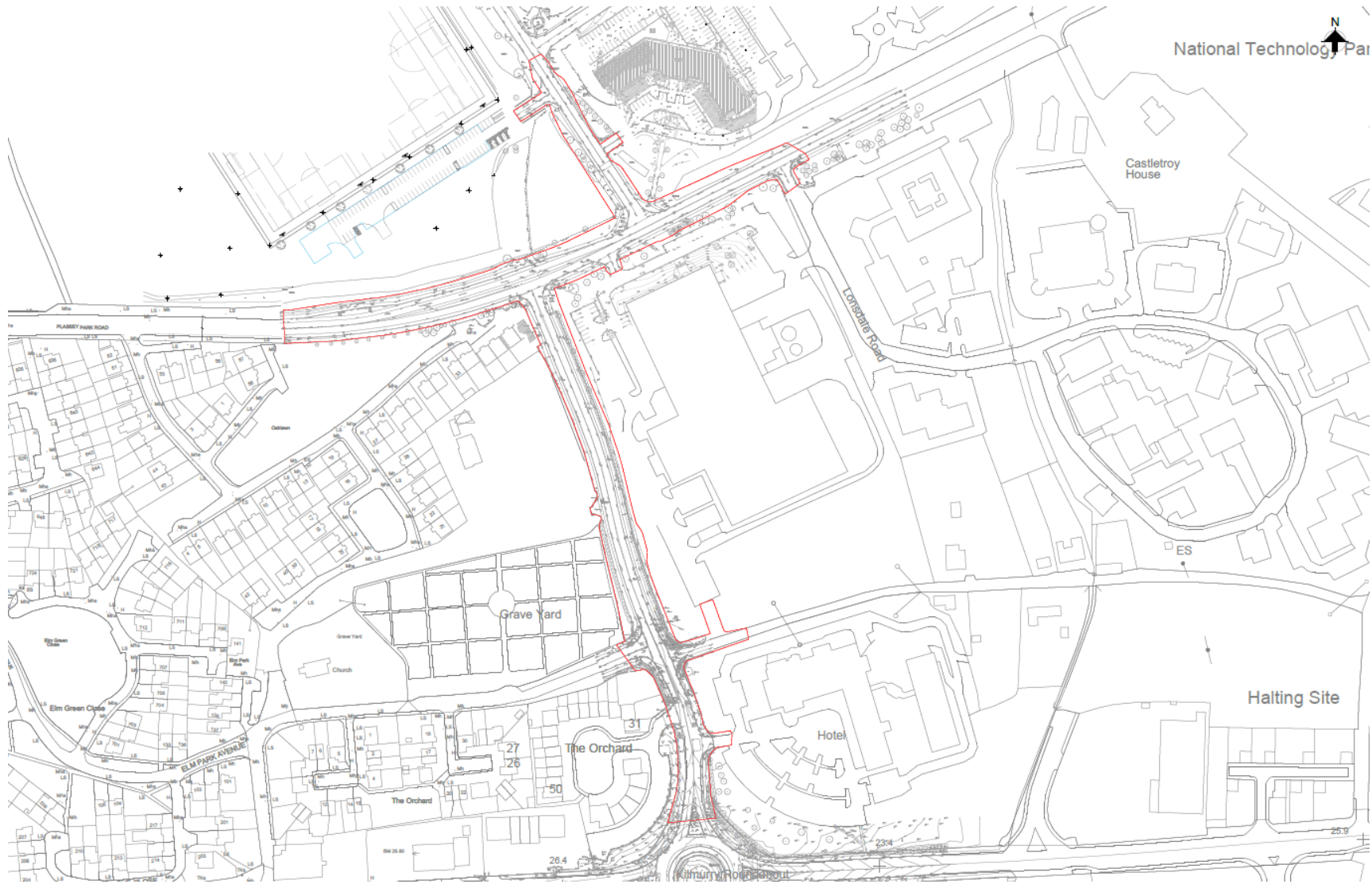


Figure 4.2: Red Line Boundary of Proposed Development (Not to scale)

4.2.1 Operational Phase

The main features of the proposed scheme are listed below and are shown in **Figure 4.3** and **Figure 4.4** below:

- On the Troy Studios Road (over approximately 99m of total length):
 - On road cycle lane to be constructed on both sides of the road.
 - Footpath to be constructed on both sides of the road.
 - Additional left-turn pocket to be constructed on Troy Studios Road to separate vehicles turning right and left.
- On Plassey Park Road (over approximately 313m of total length):
 - Convert the existing kneeling bus stop (approximately 90m west of the Plassey Road junction) to an in-line bus stop, and to extend the existing east-bound right-turn lane on Plassey Park Road to allow buses to enter the right-turn lane directly from the bus stop.
 - Additional bus lanes to be introduced on both sides of the Plassey Park Road.
 - Extension and realignment of cycle facilities to be carried out on both sides of the road. These will vary between on road cycle lanes and raised cycle lanes.
 - Off-line waiting area for right-turning cyclists to cross at toucan crossing to be installed at both junctions.
 - Both the Plassey Park Road / Plassey Road junction and the Plassey Park Road / Troy Studios Road are to be operated as signalised junctions.
 - Bus Priority Traffic signal on Cantilever for advanced signalling is to be put in place at the Plassey Park Road/Troy Studios Road junction.
 - An additional west-bound right-turn lane is to be constructed on the Plassey Park Road to turn right onto the Troy Studios Road.
 - Widening of the existing road/footpath into existing roadside grassed areas/vegetation in the order of 0.5m to 2m past back of existing footpath on the northern side of the road.
 - Proposed scheme to tie-in with future bus lane provision on Plassey Park Road.
- On Plassey Road (over approximately 314m of total length):
 - A new bus stop to be constructed on the west side of the Plassey Road. A north-bound bus lane is also to be constructed on the west side of the road ending at the Plassey Park Road / Plassey Road junction and starting approximately 130m south of the junction.
 - On the east side of the road a south-bound bus lane which is approximately 170m in length is to be constructed, commencing north of Dun an Oir junction and ending at the Kilmurry Roundabout.
 - Improved pedestrian / cycle facilities are to be constructed on both sides of the Plassey Road.
 - A new bus stop to be constructed on the east side of the Plassey Road just north of the Dun an Oir junction.
 - Junctions are to be upgraded to allow safer crossing of pedestrians and cyclists.

- Formalised access/egress from the National Technology Park with widening and formalisation of Dun an Oir junction to Plassey Road.
- New block wall / fenceline constructed to tie in with existing and to form new boundary on the east side of the Plassey Road.

A full lighting design will be completed as part of detailed design and agreed, as required, by Limerick City and County Council.

The lighting design will cater for new lighting of the roadway if the existing provision is deemed insufficient for the proposed uses, in addition to lighting being provided to ensure a continuity of illumination along footpaths and within public areas.

Columns shall be rooted type and shall be manufactured to European standard EN40–Lighting Columns. Light fittings will be in keeping with the existing provision.

4.2.1.1 Surface Water Drainage

Surface water from the site currently drains as follows:

Troy Studios Road

Surface water enters a number of gullies on both sides of this road and discharges to the River Shannon.

Plassey Park Road

Surface water on Plassey Park Road, east of Plassey Road, is collected in various gullies along the road before travelling east through 150mm uPVC collector pipes. On-site inspection confirmed that much of this network continues east via a collector drain along Plassey Park Road. However, there are several gullies on the northern side of the road which are connected to the Troy Studios Road network which appears to flow into the River Shannon.

Along Plassey Park Road, west of Plassey Park, the surface water is collected and drains into a 450mm concrete pipe travelling west.

Plassey Road

Surface water on Plassey Road is collected by gullies along the road, connecting to the existing network which then follows the road north until it reaches the Plassey Park Road network. The system then travels east and continues east along Plassey Park Road as described above.

Construction Compound

The outfall from the business park in which the construction compound will be located appears to drain east along Plassey Park Road.

Ultimately all surface water from within the redline boundary currently enters the River Shannon. Once construction is complete, the surface water drainage system will revert back to the existing scenario.

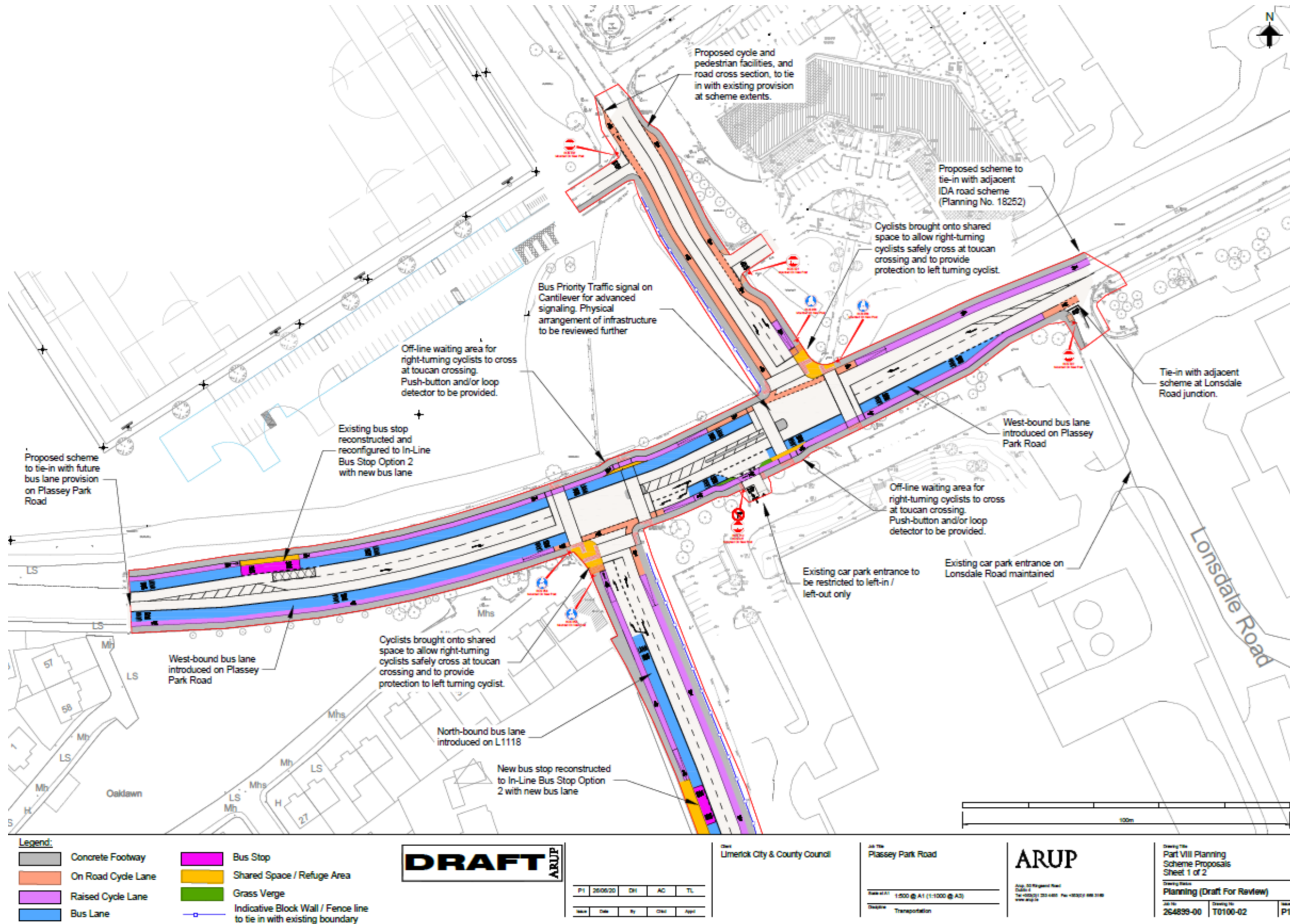


Figure 4.3: Main features of the proposed development

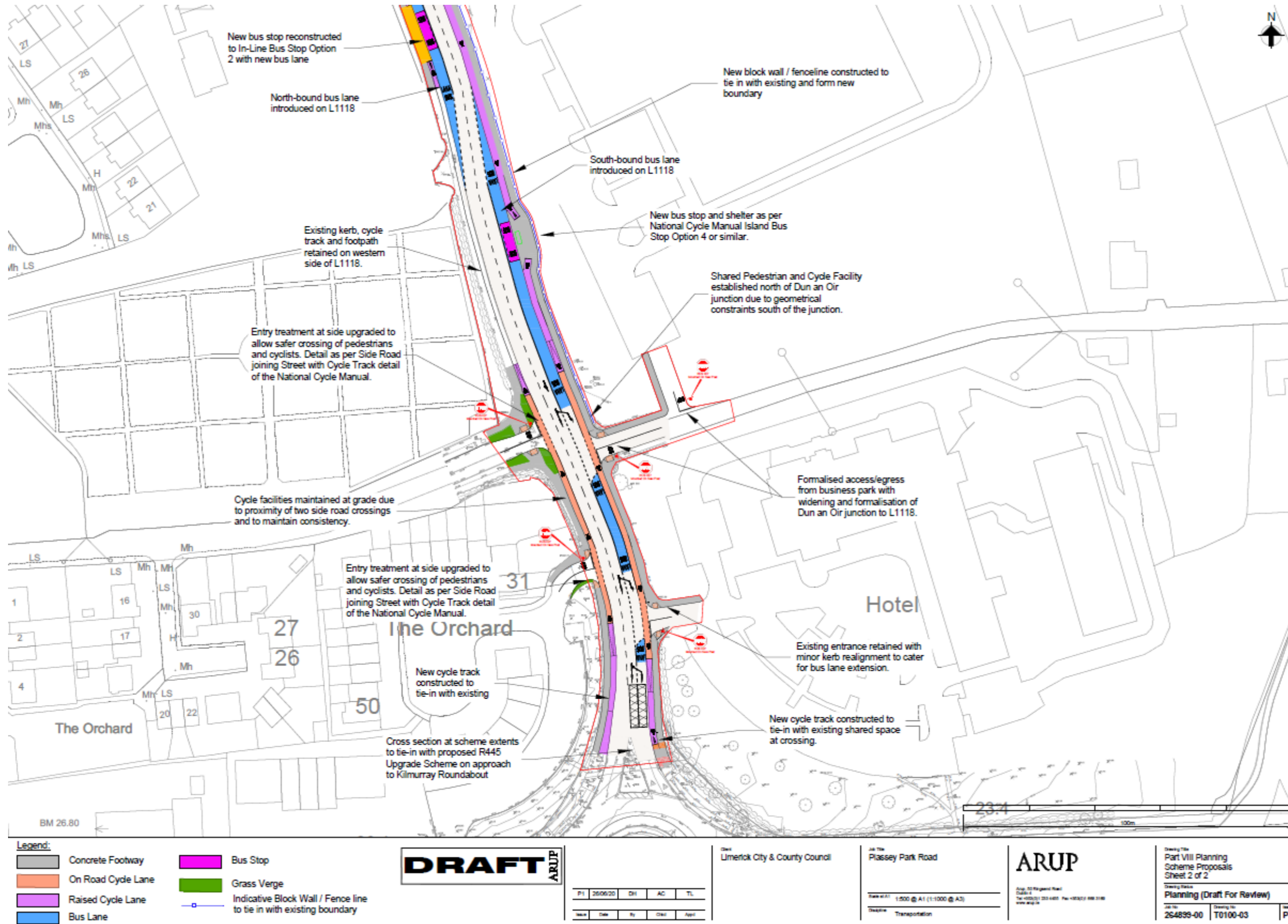


Figure 4.4: Main features of the proposed development

4.2.2 Construction Phase

4.2.2.1 Indicative Construction Programme

The proposed development is anticipated to be constructed over a four-month period. The development is proposed to be constructed on the following basis:

- Set up site compound (Refer to **Figure 4.5**)
- Establish temporary traffic management zones on Troy Studios Road and Plassey Park Road
- Carry out works on the Troy Studios Road
- Carry out works on northern side of Plassey Park Road initially then focussing on the southern side
- Establish new footpaths and road alignments with traffic signals installed but not operational until instruction is given
- Establish temporary traffic management zones on Plassey Road
- Works then to be carried out on Plassey Road to construct new bus lane with appropriate temporary traffic management zones established
- Final snagging and completion

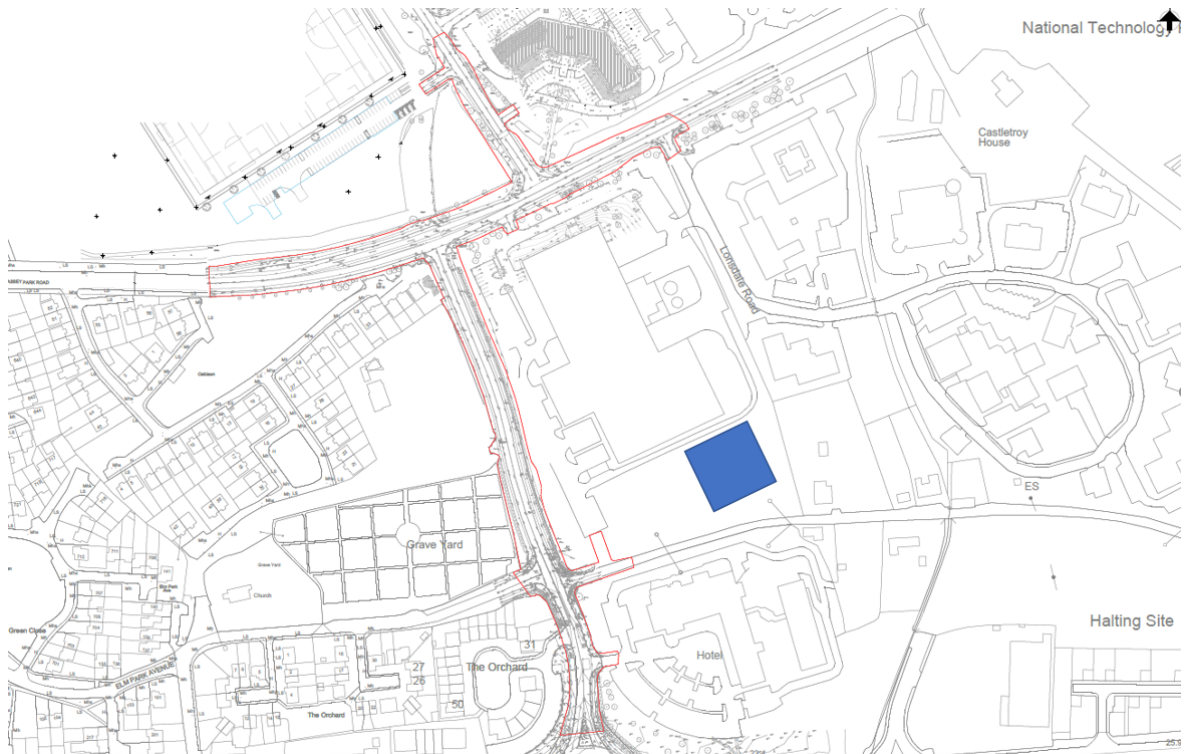


Figure 4.5: Proposed construction compound location (indicated in blue)

4.2.2.2 Typical Construction Methodology

The following is the typical construction methodology expected for the road widening works. This is the envisaged sequencing however the Main Contractor may propose an alternative, to be approved. **Figure 4.6 - Figure 4.9** illustrates the main stages of construction.

Phase 1

Initially the Contractor shall set up the site extents for off-line work, leaving existing kerb and road-side gullies in place. The works area shall generally be to back of proposed footpath or existing boundary. The Contractor shall carry out required excavations for the proposed footpath, proposed cycle lanes/tracks, road widening, and any off-line utilities.

The expected excavation depths would be c. 500mm for footpaths, and c. 800mm for cycleways and roadways.

The total predicted volume of excavated material expected to be c. 3,600m³ based on this.

Dewatering may be required for minor local excavations, such as road widening locations. Water will be removed off site or may be reinjected to the subsurface through a number of wells or injection points within the site compound on agreement with the Local Authority. Local dewatering is likely to be necessary for only a portion of the construction programme, approximately 5 weeks.

Appropriate traffic management will be required in this period to ensure pedestrian and cyclist route through and around the works are maintained which may require reduction of roadway widths to provide temporary routes.

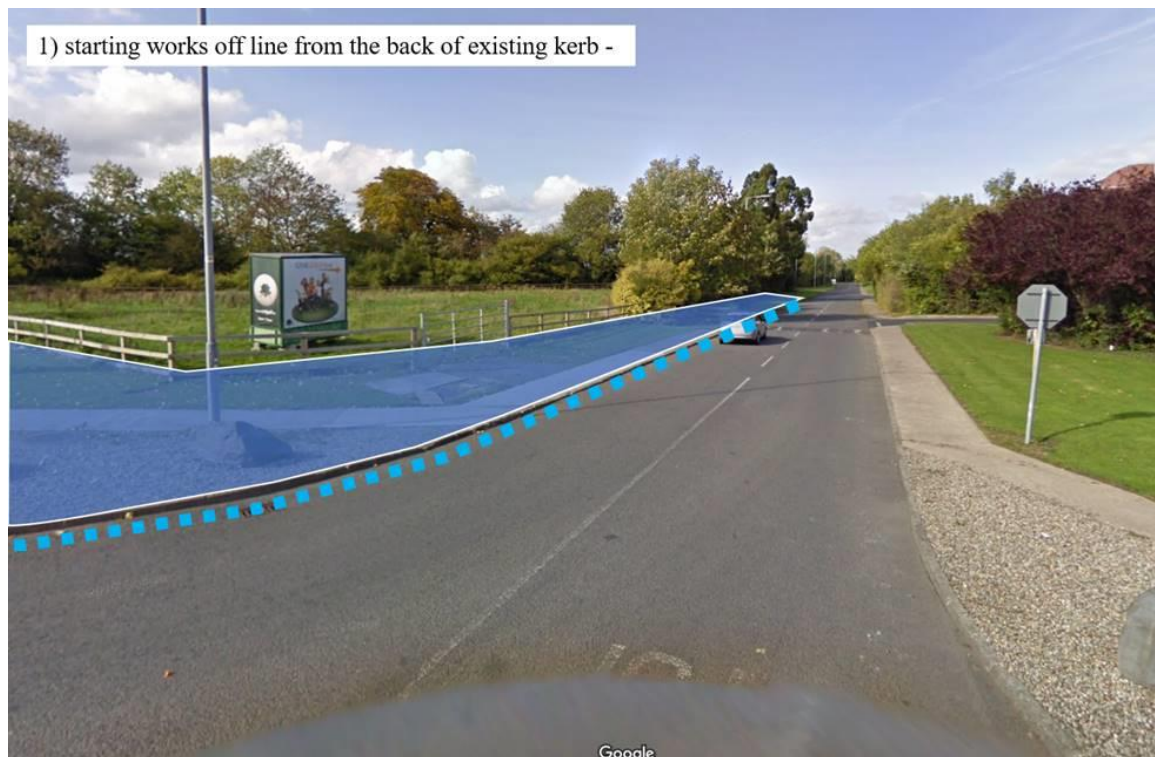


Figure 4.6: Construction Phase 1 © Google 2020

Phase 2

The Contractor shall then construct the proposed footpaths and cycle lanes up to back of proposed road edge. The remaining excavation shall be left for future tie-in with existing pavement and for future installation of new gullies.

Pedestrian and cyclist temporary routes to be maintained until such time that the proposed footpaths and cycle lanes are clear from works and suitable for use.

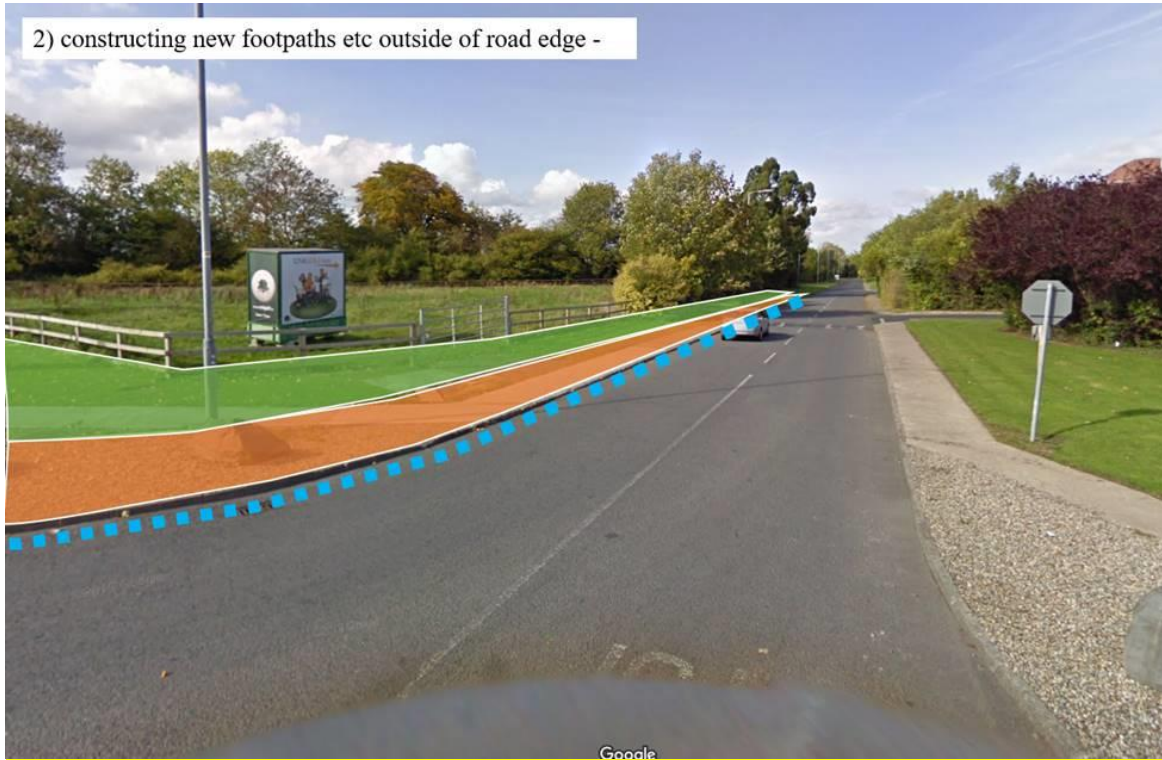


Figure 4.7: Construction Phase 2 © Google 2020

Phase 3

The Contractor shall then move on-line and break out existing kerbs and gullies and begin excavating existing pavement in order to carry out the tie-in to new pavement and prepare for any recambering and/or resurfacing works required to the existing pavement.

In this interim period before new gullies are installed, surface water will run into excavations rather than drainage network. Due to the soil conditions, the water is likely to infiltrate. The excavations will be at a maximum depth of 800mm. During silt trenching site investigations, groundwater was encountered at approximately 1.5m, therefore, any surface water run-off will not enter the groundwater aquifer. If the excavation needs to be cleared of water, the water can be pumped out and removed off site.

Pedestrian and cyclist temporary routes to be maintained until such time that the proposed footpaths and cycle lanes are clear from works and suitable for use.

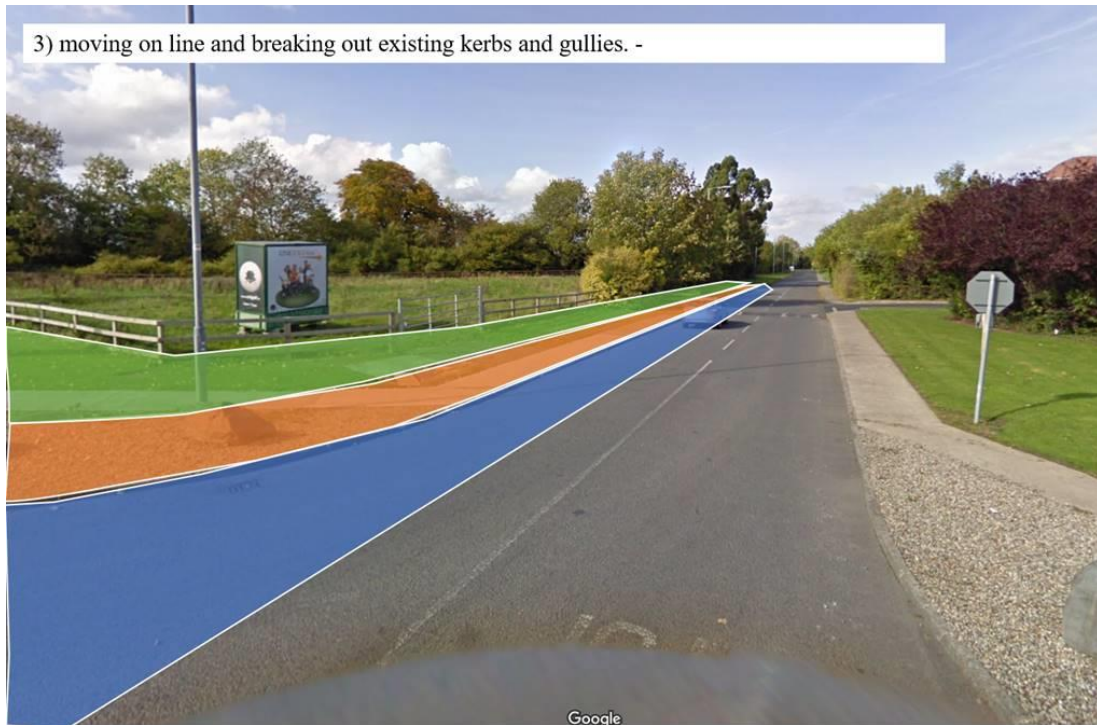


Figure 4.8: Construction Phase 3 © Google 2020

Phase 4

The Contractor shall then construct the new pavement, tying in with existing retained. Final works shall include surface course and installation of new gullies along the road edge.

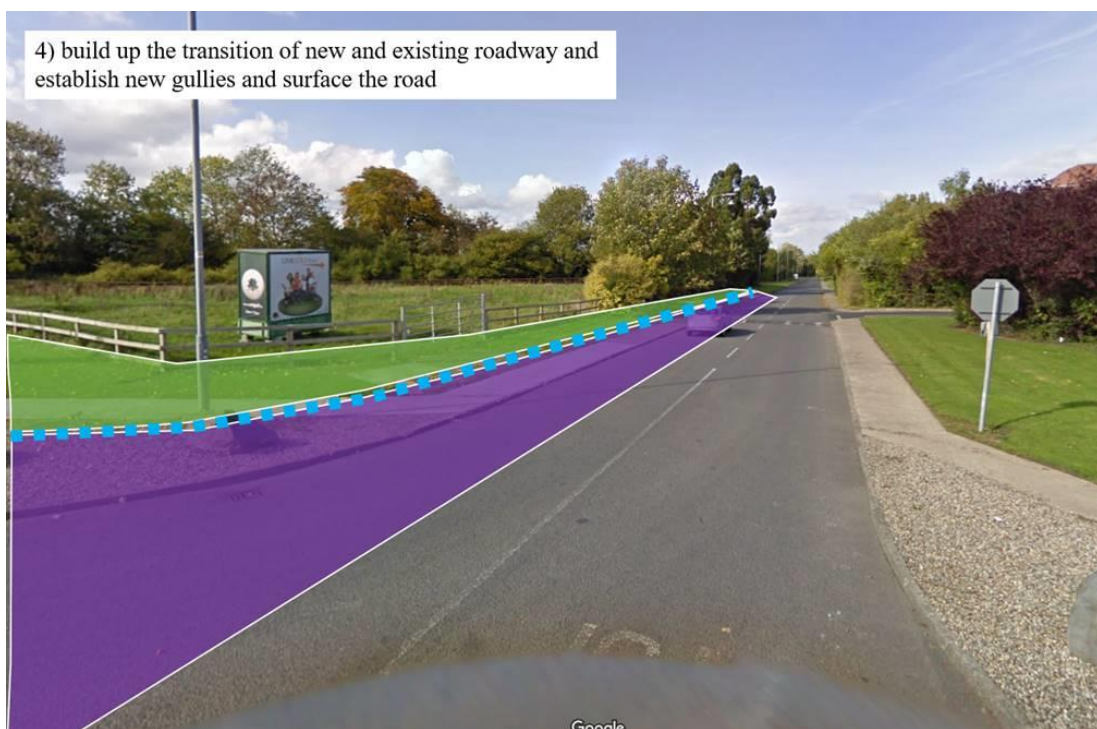


Figure 4.9: Construction Phase 4 © Google 2020

4.2.2.3 Surface Water Drainage

Surface water drainage during construction will be managed as described under Phase 3 above. The construction compound will be located within the business park. The outfall from the business park in which the construction compound is located will drain east along Plassey Park Road and ultimately enter the River Shannon. However, given the temporary and small nature of the works proposed, significant pollution effects are not envisaged.

4.3 Cumulation with other existing and/or approved projects

Having regard to other projects that, in combination, have the potential for significant environmental effects, the following are considered:

Ref. 18252 - Redevelopment of Plassey Park Road, Annacotty Roundabout and R445 Road

In December 2018, LCCC granted permission to the Industrial Development Authority Ireland (IDA) Ireland for the redevelopment of Plassey Park Road, Annacotty roundabout and R445 road at the National Technology Park, Plassey, Co. Limerick. The development, as approved, consists of (a) new left slip lane from Plassey Park road to R445 road. (b) new site entrance opposite the existing Vistakon Ireland entrance, as well as new turning lanes to be incorporated onto Plassey Park road at this location. (c) widening of Plassey Park road for the length within the National Technology Park from the Annacotty roundabout to the vicinity of the junction of Plassey Park road with Milford road. (d) Addition of cycle lanes on Plassey Park road. (e) new boundary fences, footpaths, pedestrian crossings, relocation of affected public lighting columns, landscaping and all associated site works and services.

This project is currently under construction so it is likely that there will be a minor overlap in construction durations.

However, due to minor nature and scale of both developments and the limited overlap in construction durations, it is not envisaged that there will be a significant cumulative effect during construction.

During operation, there will be a positive cumulative effect between this project and the proposed development, as both relate to improving the existing road network for local road users, public transport and cyclists.

Ref. 181263 - Johnson & Johnson Vision Care

This development is located to the east of the National Technology Park, approximately 500m to the north-east of the proposed development site.

In May 2019, LCCC granted permission to Johnson & Johnson Vision Care (Ireland) for (a) an extension to the main building comprising the construction of an extended production hall with mezzanine plant space overhead, a predominantly 2 storey (part 3 storey) production support/utility block, expansion of the existing control room, a single storey loading bay, and roof access stairwell, all on the south side of the existing building (5,005 sqm);

(b) the construction of a new plant and equipment to the rear of the building, including storage tanks, bunds, piperacks, a 15m high stack, and 2 new truck loading bays, (c) the relocation of an existing chemical storage shed (35 sqm), (d) the construction of an additional water retention pond along the southern boundary, and associated site works.

According to planning documents, construction for the proposed development is envisaged to be carried out between May 2020 and June 2021, which will result in an overlap of construction activities.

Cumulative effects primarily relate to construction traffic and surface water management. As outlined in the Environment Report prepared for the development, it is envisaged that there will be no significant traffic queuing or delays at the construction site access during construction and traffic effects would be slight to moderate and temporary to short-term. Construction mitigation measures committed to include construction traffic being restricted to outside of peak working hours. Planning condition 10 (iv) states that all surface water run-off from the development shall be disposed of appropriately. Planning Condition 12 stipulates that the mitigation measures set out in the Environmental Report shall be carried out in full.

Therefore, having regard to the information outlined in the Environmental Report for the Johnson & Johnson project, the planning conditions issued and the minor nature and scale of the proposed development, no cumulative effects are anticipated during either construction or operation.

Ref. 181020 - Edwards Lifesciences Ireland Ltd Development

In March 2019, LCCC granted permission to Edwards Lifesciences Ireland Ltd. for the development of (1) a single storey multi-purpose manufacturing, assembly and warehouse and utility functions and a two storey administration area sized 17,774 sq.m. and 12.5m high including 5 no. boiler stacks 19.5m high and docks and both roof mounted and yard based items of plant and equipment. (2) a fire fighting water storage tank & single storey sprinkler pump house sized 32 sq.m. and 5m high, a single storey electrical substation sized 50 sq. m. and 6m high, a single storey drum store sized 68 sq.m and 6m high and a single storey security building 20 sq.m. and 5m high. (3) Site works include a bicycle shelter for 180 bicycles, e-car parking stations, landscaped carparking for 500 cars, perimeter and local fencing, signage, landscaping, landscaped berms and general site works including 2 no. vehicular entrances off Plassey Park Road and a pedestrian entrance beside adjacent bus stop.

Construction for this development is expected to cease in October 2020. As such, there may be a minimal overlap in construction activities and therefore no construction traffic related cumulative effects envisaged.

An Environmental Impact Assessment Report was prepared in relation to the Edwards Lifesciences development, and mitigation measures proposed in order to reduce or offset any potential effects, were identified. As mentioned above, cumulative effects primarily relate to construction traffic and surface water management. Relevant mitigations committed to include the following:

Traffic

- Programming of deliveries outside of peak periods; and
- Routing of construction vehicles to site via agreed routes only.

Surface Water

- Surface water will be controlled via the provision of an on-site attenuation tank and Class 1 by-pass hydrocarbon interceptor before site surface water drainage joins the National Technology Park drainage system; and
- The use of silt traps/sedimentation ponds.

Therefore, having regard to the mitigation measures committed to by Edward Lifesciences Ireland and the minor nature and scale of the proposed development, no cumulative effects with this development are anticipated during either construction or operation and therefore no construction traffic related cumulative effects envisaged.

Ref. 181259 - IDA Ireland, National Technology Park

In September 2019, IDA received permission for a 3,009 sqm (gross area) part single and part two storey light industrial advanced technology building comprising of: technology research & development floor, ancillary collaboration & administrative spaces, canteen, visitor & staff welfare facilities, internal plant rooms, screened rooftop plant area and reception area. The proposed development also provides for all associated site infrastructure works and services including: single storey electrical sub-station (14 sqm), carparking, sheltered bicycle parking, amenity spaces including pedestrian paths, hard and soft landscaped areas, way finding signage, site planting and boundary treatments, service yard and internal access roads. This development is located approximately 900m to the east of the proposed development.

This development will commence construction in July 2020 and will be carried out over a 12-month period. As such, there will be an overlap of construction activities between these developments.

An EIA Screening report was carried out for the IDA project and mitigation measures proposed in order to reduce or offset any potential effects, were identified. Measures include the implementation of a Construction Traffic Management Plan while surface water management measures include silt traps/sedimentation ponds.

Planning Condition 3 for this development states that all mitigation measures outlined in the EIA Screening Report shall be carried out in full.

Therefore, having regard to the planning conditions for this development and the minor nature and scale of the proposed development, no cumulative effects are anticipated during either construction or operation.

4.4 Use of natural resources

Construction of the proposed development will require the use of natural resources such as soil and land and water.

Having regard to the scale and nature of the proposed development, use of natural resources during construction is predicted to be minimal.

The proposed development will aim to reuse site-won material where possible. However, there will be a need for resources (e.g., aggregate, concrete etc.) for the road widenings etc.

The proposed development will connect to the existing drainage infrastructure, where possible.

4.5 Production of waste

The construction phase of the proposed development will give rise to Construction and Demolition (C&D) waste such as concrete, asphalt and soil. A C&D waste management plan will be prepared during the construction phase of the proposed development. All waste arisings will be transported off site by an approved Waste Contractor holding a current waste collection permit. All waste arisings requiring re-use, recycling, recovery or disposal off site will be brought to facilities holding the appropriate certificate of registration, licence or permit, as required.

Further consideration of the potential impacts is provided in Section 5.

4.6 Pollution and nuisances

Potential effects during construction and operation include effects on water quality, air quality, traffic and nuisances and disruption caused by construction such as noise, vibration and dust. Further consideration of the potential impacts is provided in Section 5.

4.7 Risk of major accidents and/or disasters

The 2014 EIA Directive amendment introduced the requirement to assess the *'expected effects deriving from the vulnerability of the proposed development to risks of major accidents or disasters that are relevant to the proposed development'*. The term major accidents and disasters refers to events both internal and external to a proposed development that have the potential to cause significant harm to the environment, and generally relates to extreme events that would not reasonably be predicted or assessed within the other topic chapters of an EIA.

Construction activities to be undertaken as part of the proposed development will be minor in nature, well understood and are commonly undertaken in the region. No risk of major accidents/disasters are therefore identified. During operation, the development is likely to result in changes in traffic patterns. It is considered unlikely that the proposed development has the potential to increase the risk of major accidents and / or disasters and is therefore not considered further in Section 5.

4.8 Risks to human health

The 2014 EIA Directive has introduced the requirement to consider the '*direct and indirect significant effects of a project on...population and human health*'. The proposed development has the potential to impact on health due to the direct and indirect effects associated with construction activities such as noise, vibration and air quality. Potential operational impacts in the absence of mitigation include direct effects on air quality or noise and indirect impacts on access to public facilities and community services.

Further consideration of the potential impacts to human health are considered in Section 5.

5 Type and Characteristics of Potential Effects

5.1 Overview

This section of the EIA Screening Report provides a description of the potential environmental effects of the proposed development during construction and operation.

It is important to note that any mitigation measures referenced throughout this EIA Screening Report are not relevant nor necessary for the protection of the Natura 2000 sites discussed in the Report for Screening for Appropriate Assessment which is included as part of this planning application package.

5.2 Population and Human Health

As outlined previously, the proposed development site is located in an area rich in commercial, residential, educational and amenity value.

During the construction phase of the proposed development, there will be some disruption to road users and pedestrians (refer to **Section 5.4** for further information), as well as some noise and dust emissions (refer to **Section 5.9** and **Section 5.10**). However, best construction practice will be implemented to ensure that noise and dust emissions will be kept within the required limits and a traffic management plan will be implemented for the duration of the construction works to ensure the maintenance of through traffic and of all site access.

A potential slight negative, temporary effect on Population and Human Health is therefore identified during the construction phase as a result of minor disruption and nuisance.

When completed, the proposed development is expected to result in a positive effect on Population and Human Health through:

- Improved road arrangement to accommodate existing and future pedestrian, cycle, public transport and vehicular traffic accessing the area through the consideration of a new signalised junction layout.
- Reduced the delays for cars accessing and exiting the Troy Studios Road.
- Provision of safe crossing points for pedestrians.
- Provision of new pedestrian and cycle links.
- Provision of bus lanes on the Plassey Park Rd and the Plassey Road.
- Reduced impact on the existing services.

5.3 Biodiversity

A high-level desktop assessment of the proposed development site was carried out in order to determine the baseline ecological environment. The desktop assessment has identified the following likely habitats within the proposed development site, as defined in *A Guide to Habitats in Ireland* (Fossitt, 2000):

- **Amenity grassland (improved) GA2-** This type of grassland habitat is defined as improved, or species-poor, and is managed for purposes other than grass production. It includes amenity, recreational or landscaped grasslands, but excludes farmland. This habitat is present along the roadside grass verges along Troy Studios Road and Plassey Park Road and is of low ecological value.
- **Hedgerows WL1-** This habitat type consists of linear strips of shrubs, often with occasional trees, that typically form field or property boundaries. Most hedgerows originate from planting and many occur on raised banks of earth that are derived from the excavation of associated drainage ditches. This habitat type is present as a hedgerow along Troy Studios Road and Plassey Park road. Depending on species type and condition of the hedgerow, it could be valued as possibly low to medium local ecological value;
- **Treelines WL2-** This type of habitat consists of a narrow row or single line of trees that is greater than 5 m in height and typically occurs along field or property boundaries. This category includes tree-lined roads or avenues, narrow shelter belts with no more than a single line of trees, and overgrown hedgerows that are dominated by trees. This habitat type is present as mature and semi-mature trees scattered along the periphery of Troy Studios Road, Plassey Road and Plassey Park Road. Depending on species type and condition of the treeline, it could be valued as possibly low to medium local ecological value;
- **Buildings and artificial surfaces BL3-** This habitat type is present as roadway and paths within the development area.

The construction phase of the proposed development will require removal of the following habitat types: Dry meadow and grassy verge GS2, Hedgerows WL1, Treelines WL2, in the locations identified in **Figure 5.1** and **Figure 5.2**.

In accordance with the Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009) the following geographic frame of reference have been used when determining value for the habitats being removed:

- International importance
- National importance
- County importance (or vice-county in the case of plant or insect species)
- Local importance (higher value)
- Local importance (lower value)

Table 5.1 below provides an assessment of the value of each of the habitat areas to be removed as part of the proposed development.

None of the vegetation/habitats to be removed are of international, national or county importance. None of the works areas are located within a Natura 2000 site. None of the areas contain any habitats listed in Annex I of the Habitats Directive and are not considered to be of particular conservation value. None of the habitats to be removed are considered to be of value to any QI species from the nearby Lower River Shannon SAC, which are mainly aquatic, and are not of value as nesting/foraging habitat to any other QIs from the River Shannon and River Fergus Estuaries given its location near a busy main road and junction.

All of the vegetation/habitat to be removed as part of the proposed development is common in the Castletroy area, and to County Limerick and considered to be of local importance at either a high or low local level.

Approximately 31 no. trees may need to be removed to facilitate the works at road edge and/or in private lands. Specifically, the tree line along the northern side of Plassey Park Road may be impacted as part of works.

The National Biodiversity Data Centre (NBDC) website (www.biodiversity.ie) contains a mapping tool that indicates known records of legally protected and invasive species within a selected OS 1km grid square. The site is located within square R6257 and data on this square was downloaded from the website on 18th June 2020. It is noted that this list is not exhaustive, and an absence of records does not imply that they are not present within the given area.

The following protected species have been recorded in this 1km grid square: Common Frog (*Rana temporaria*), Black-headed Gull (*Larus ridibundus*), Common Starling (*Sturnus vulgaris*), House Sparrow (*Passer domesticus*) and West European Hedgehog (*Erinaceus europaeus*).

The following invasive species have been recorded in this 1km grid square: Japanese knotweed (*Fallopia japonica*) and Eastern Grey Squirrel (*Sciurus carolinensis*). A number of Invasive Species are present along the main River Shannon channel close to the University of Limerick, including Balsam Rhododendron, Sycamore and Laurel, which can cause major ecological changes and damage to habitats where they become established.

The site has no suitable habitat for amphibians or reptiles.

Having regard to the location of the proposed development, which is an existing busy road in an urban area, and in considering the level of noise, vibration and dust expected during the construction and operational phases of the proposed development (Refer to Section 5.9 and 5.10), no significant disruption is expected on species in the study area during construction or operation.

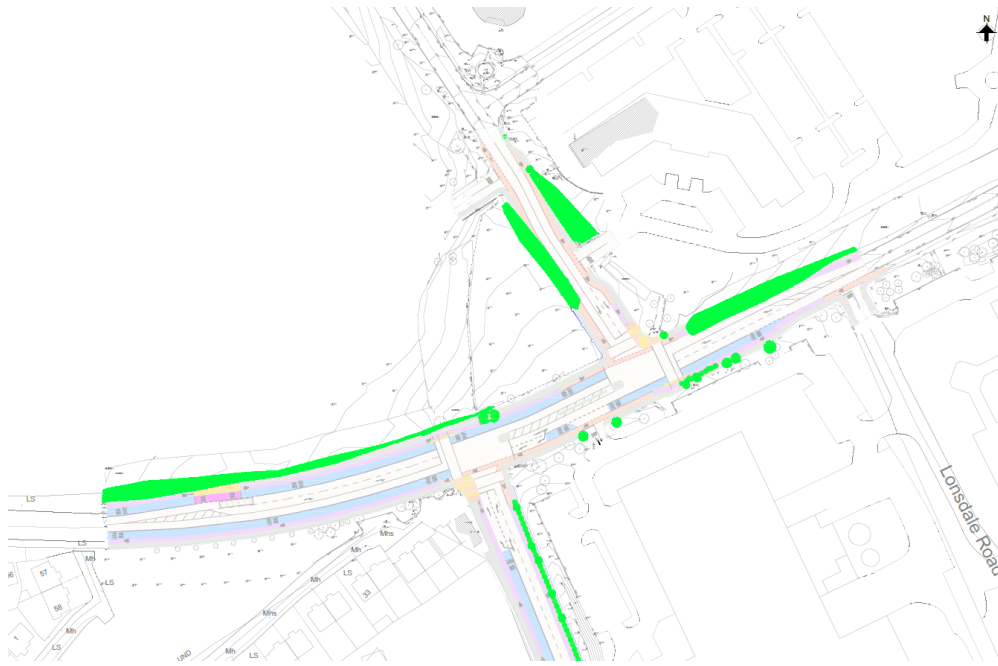


Figure 5.1: Vegetation to be removed (illustrated in green)

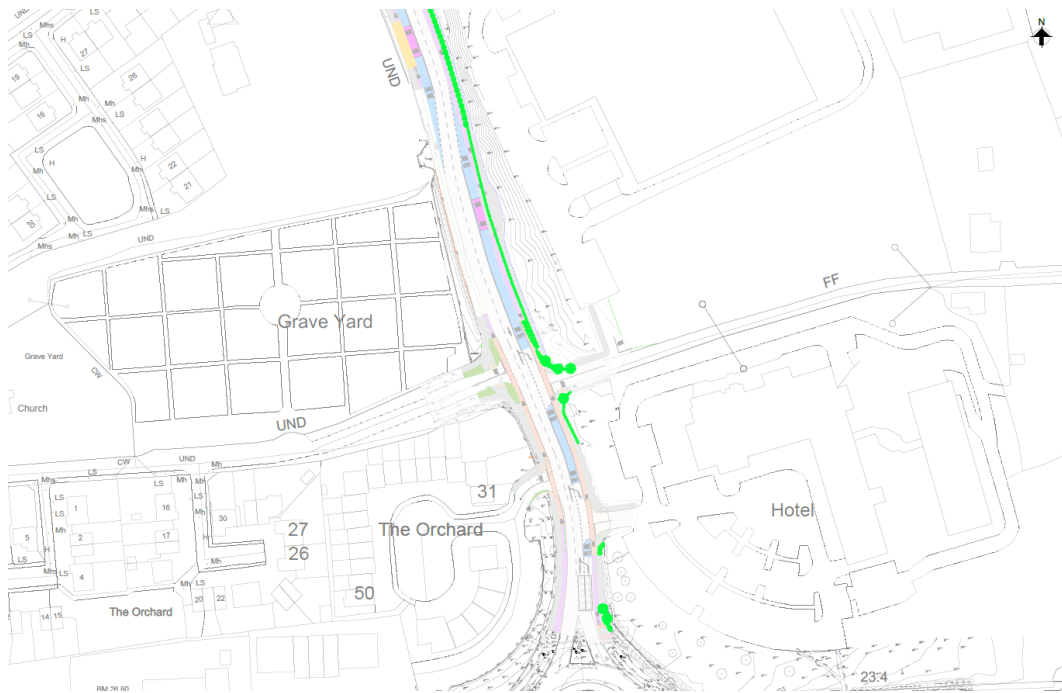


Figure 5.2: Vegetation to be removed (illustrated in green)

Table 5.1: Vegetation to be removed- Analysis of Ecological Importance Value

<p>Troy Studios Road - West Boundary Likely Habitats (Fossitt, 2000): Dry meadow and grassy verge GS2, HedgerowsWL1, Treelines WL2</p>	
<p>This small area is likely to be of some local importance for wildlife. However, the trees present in this area are not particularly mature and, having regard to this and the location of the same to existing busy roadway, the trees are not considered to be of particular value to bird or bats species. The hedgerow in this area is not particularly dense and is therefore limited in its biodiversity value. This site is considered to lack the diversity and other characteristics of a more valuable site and is valued as of Local Importance (lower value).</p>	
<p>Troy Studios Road - East Boundary Likely Habitat (Fossitt, 2000): Dry meadow and grassy verge GS2, HedgerowsWL1.</p>	
<p>This small area of dense hedgerow is likely to be of some local importance for wildlife and is valued as of Local Importance (higher value).</p>	
<p>Corner of Troy Studios Road and Plassey Park Road Likely Habitat (Fossitt, 2000): Dry meadow and grassy verge GS2, Treelines WL2</p>	

The trees in this area are relatively mature and there is therefore potential for the presence of bats and bird species. However, having regard to the proximity of the trees to an existing busy road, the likelihood of the significant presence of bat and bird species is minimal. This small area is likely to be of some local importance for wildlife but lacks the diversity and other characteristics of a more valuable site and is valued as of **Local Importance (higher value)**.



Plassey Park Road East Likely Habitat (Fossitt, 2000): Dry meadow and grassy verge GS2, Hedgerows WL1, Treelines WL2

The trees in this area are relatively mature and there is therefore potential for the presence of bats and bird species. However, having regard to the proximity of the trees to an existing busy road, the likelihood of the significant presence of bat and bird species is minimal. The hedgerow in this location is not particularly dense, and its biodiversity value is therefore limited. This small area is likely to be of some local importance for wildlife but lacks the diversity and other characteristics of a more valuable site and valued as of **Local Importance (higher value)**.



Plassey Park Road East Likely Habitat (Fossitt, 2000): Dry meadow and grassy verge GS2, Hedgerows WL1, Treelines WL2

The trees in this area are relatively mature and there is therefore potential for the presence of bats and bird species. However, having regard to the proximity of the trees to an existing busy road, the likelihood of the significant presence of bat and bird species is minimal. The extent and size of hedgerow in this location is also minimal, and it is regularly maintained. Its biodiversity value is therefore limited. This small area is likely to be of some local importance for wildlife but lacks the diversity and other characteristics of a more valuable site and should be considered and is valued as of **Local Importance (higher value)**.



Plassey Park Road East Likely Habitat (Fossitt, 2000): Dry meadow and grassy verge GS2, Treelines WL2

The trees in this area are relatively mature and there is therefore potential for the presence of bats and bird species. However, having regard to the proximity of the trees to an existing busy road, the likelihood of the significant presence of bat and bird species is minimal. This small area is likely to be of some local importance for wildlife but lacks the diversity and other characteristics of a more valuable site and is valued as of **Local Importance (higher value)**.



Plassey Road Likely Habitat (Fossitt, 2000): Dry meadow and grassy verge GS2, Hedgerows WL1, Treelines WL2

This area consists of some small, maintained hedgerow which is considered to be of limited biodiversity value. The trees in this area are relatively mature and there is therefore potential for the presence of bats and bird species. However, having regard to the proximity of the trees to an existing busy road, the likelihood of the presence of bat and bird species is minimal. This small area is likely to be of some local importance for wildlife but lacks the diversity and other characteristics of a more valuable site and is valued as of **Local Importance (higher value)**.



Plassey Park Road West Likely Habitat (Fossitt, 2000): Dry meadow and grassy verge GS2, Treelines WL2

The trees in this area are mature and there is therefore potential for the presence of bats and bird species. However, having regard to the proximity of the trees to an existing busy road, the likelihood of the presence of bat and bird species is minimal. This small area is likely to be of some local importance for wildlife but lacks the diversity and other characteristics of a more valuable site and is valued as of Local Importance (higher value).



Plassey Road Likely Habitat (Fossitt, 2000): Dry meadow and grassy verge GS2, HedgerowsWL1, Treelines WL2

This area consists of small, maintained hedgerow. This small area is likely to be of some local importance for wildlife but lacks the diversity and other characteristics of a more valuable site and is valued as of **Local Importance (lower value)**.



Plassey Road Likely Habitat (Fossitt, 2000): Dry meadow and grassy verge GS2, HedgerowsWL1, Treelines WL2

This area is consists of some small, maintained hedgerow which is considered to be of limited biodiversity value. The trees in this area are relatively mature and there is therefore potential for the presence of bats and bird species.

However, having regard to the proximity of the trees to an existing busy road, the likelihood of the presence of significant bat and bird species is minimal. This small area is likely to be of some local importance for wildlife but lacks the diversity and other characteristics of a more valuable site and is valued as of **Local Importance (higher value)**.



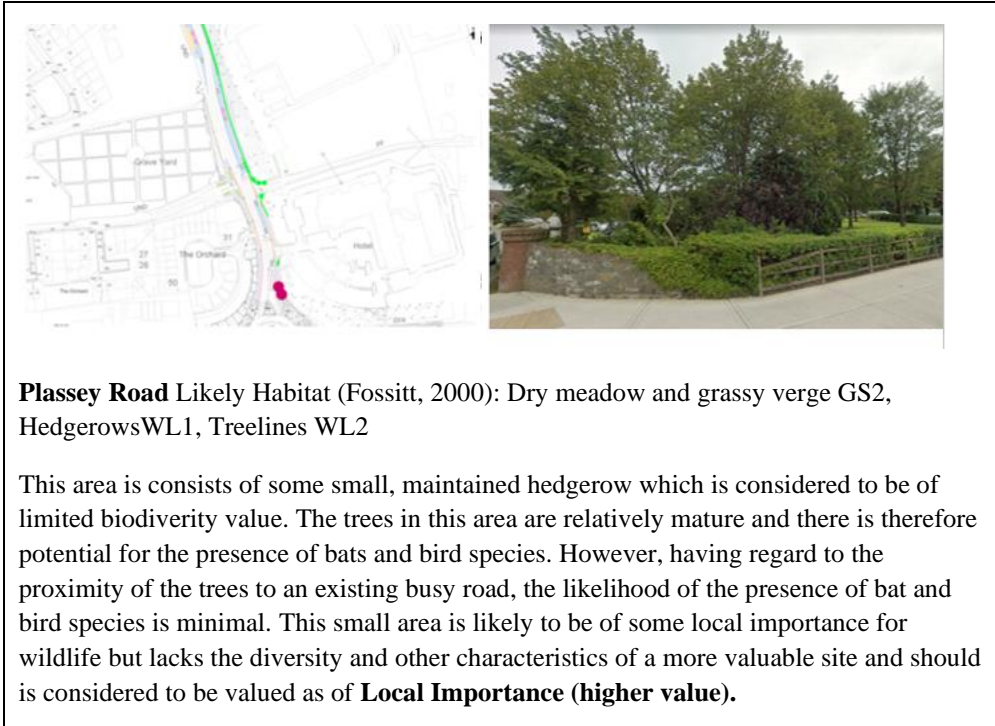
Plassey Road Likely Habitat (Fossitt, 2000): Hedgerows WL1

This site consists of some small, maintained hedgerow which is of limited biodiversity value. This small area is likely to be of some local importance for wildlife but lacks the diversity and other characteristics of a more valuable site and is valued as of **Local Importance (lower value)**.



Plassey Road Likely Habitat (Fossitt, 2000): Dry meadow and grassy verge GS2, Hedgerows WL1, Treelines WL2

This area consists of some small, maintained hedgerow which is considered to be of limited biodiversity value. The trees in this area are relatively mature and there is therefore potential for the presence of bats and bird species. However, having regard to the proximity of the trees to an existing busy road, the likelihood of the presence of bat and bird species is minimal. This small area is likely to be of some local importance for wildlife but lacks the diversity and other characteristics of a more valuable site and should be valued as of **Local Importance (higher value)**.



As outlined in **Table 5.1**, the proposed development will involve the removal of some locally important habitats, some of which may offer the potential for the presence of bird and bat species. Any removal or cutting of hedgerow and felling of trees which will be required to facilitate the proposed development will be carried out in accordance with Section 40 of the Wildlife Act 1976 as amended, which restricts vegetation removal, cutting or felling during nesting and breeding season between the 1st March and the 31st August.

Thus, having regard to the relatively low ecological importance of the vegetation/habitat to be removed to facilitate the proposed development, and the restrictions described above with regards felling and cutting, no significant negative effect on biodiversity is predicted.

The proposed development site is located approximately 650m from the River Shannon. The River Shannon has been designated as a Special Area of Conservation (SAC), and is an excellent wildlife corridor, flanked by alluvial woodlands. The Lower River Shannon SAC is hydrologically linked to the River Shannon and River Fergus Estuaries SPA. The River Shannon flowing through Limerick is predominantly freshwater with some saltwater movements. Over its entire reach, the River Shannon is home to many plant species of conservation significance. In addition, protected fauna is also known to occur along the river system for example Otter (an Annex II species of the E.U. Habitats Directive) is commonly found in addition to five species of Annex II fish. Freshwater Pearl Mussel another Annex II species also occur abundantly in parts of the Cloon River, a tributary of the River Shannon.

A description of the surface water drainage from the site during operation and construction stages is described in section **4.2.1.1**, **4.2.2.2** and **4.2.2.3** respectively. Surface water entering the existing drainage network ultimately enters the River Shannon.

However, given the temporary and small nature of the works proposed and the lack of pathways for pollution to the river, significant effects on water quality and ultimately biodiversity, are not envisaged.

5.4 Traffic and Transport

Section 3.2 of this report provides a detailed description of the existing road network of the proposed development site. The purpose of the proposed development is to improve the existing road network to accommodate existing and future pedestrian, cycle, public transport and vehicular traffic accessing the area.

As indicated in the description of the proposed works outlined in **Section 4.2**, there will be no traffic diversions required during the construction phase of the proposed development. All traffic movements will be maintained during construction along Troy Studios Road, Plassey Park Road and Plassey Road. However, temporary traffic management measures will likely result in reduced number of lanes and/or lane widths and could lead to some traffic disruption.

It is envisaged that no more than 15 construction staff will be on site at any given time through the duration of the works. The total construction traffic volumes per hour are therefore not significant in terms of the overall existing traffic flows.

Construction traffic will be limited to certain routes and times of the day, with the aim of keeping disruption to existing traffic and public transport to a minimum (Refer to **Figure 5.3** for the expected construction traffic route). To minimise disruption to local areas, construction traffic volumes will be managed through a number of measures. During peak hours, ancillary, maintenance and other site vehicles movements will be discouraged. Daily construction programmes will be planned to minimise the number of disruptions to surrounding streets by staggering HGV movements to avoid site queues. No car parking will be provided on site for staff. The contractor will be required to promote travel by sustainable modes of transport.

Thus, while some disruption in traffic is likely during the construction phase of the proposed development, it is not expected that the level of disruption will be significant as a result of the minimal level of construction vehicles expected onsite and the maintenance of existing traffic movements during the works. A temporary-slight negative effect on existing traffic movements is therefore expected during the construction phase of the proposed development.

The operational phase of the proposed development will result in improved road arrangements to accommodate existing and future pedestrian, cycle, public transport and vehicular traffic accessing the area. The proposed works will include reconfiguration of traffic movements which will facilitate improved pedestrian, cyclist and bus accessibility along Plassey Road, Plassey Park Road and Troy Studios Road.

A likely permanent positive effect on traffic and transportation is therefore identified during the operational phase of the proposed development.

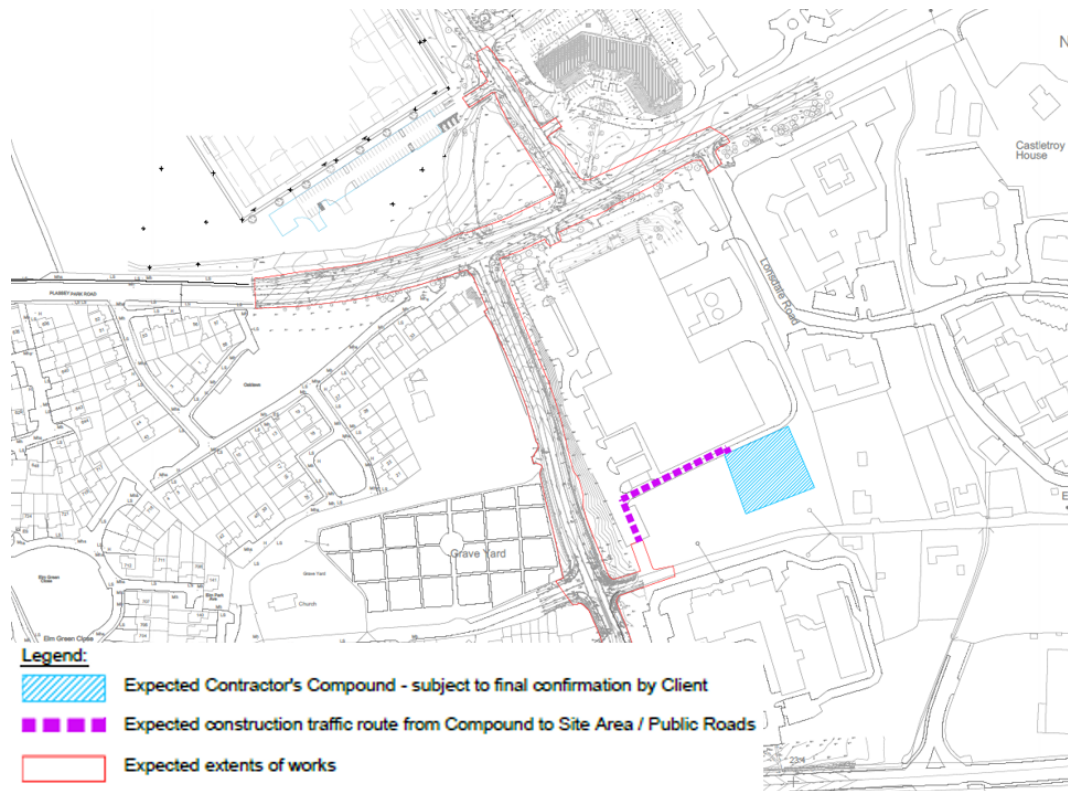


Figure 5.3: Proposed construction traffic movements

5.5 Archaeological, Architectural and Cultural Heritage

Most of the Castletroy area is in the medieval civil parish of Kilmurry. Many of the surviving archaeological monuments are enclosures, which are likely to date from early medieval period.

The medieval past of the Castletroy area is represented through such buildings as New Castle and Castle Troy, which gives its name to the area. In the 18th and 19th centuries the rolling farmland of the area formed the parkland for the houses of landed gentry and merchant families. Rivers and streams running through the terrain provided power for various milling industries. Other aspects of life, such as religious practice, saw expression in buildings such as Kilmurry Church of Ireland and the Roman Catholic Church dedicated to Mary Magdalene and places such as the Jewish Burial Ground. In the 20th century many innovations in the practice of architecture found expression here with Modern Movement and some of the earliest timber frame houses built in Ireland in modern times were constructed here in the 1970's.

The National Monuments Service 'Historic Environment Viewer' was utilised as part of this desk-based study to identify features of archaeological, architectural or cultural heritage in proximity to the proposed development site.

There are no recorded monuments within the proposed development site. As outlined in **Figure 5.4**, there two recorded monuments in proximity to the proposed development site which are recorded by the National Monuments Service: a graveyard (LI005-026002) and Church (LI005-026001). Both of these monuments are located approximately 200m from the proposed development site. Refer to **Table 5.2** for information on the recorded monuments in proximity to the proposed development site.

In considering that the proposed works will take place entirely within the red line boundary, the monuments are located some 200m away from the works and that the vibration associated with the proposed development works is not expected to be significant, , no potential effects on recorded monuments are identified during the construction phase of the proposed development.

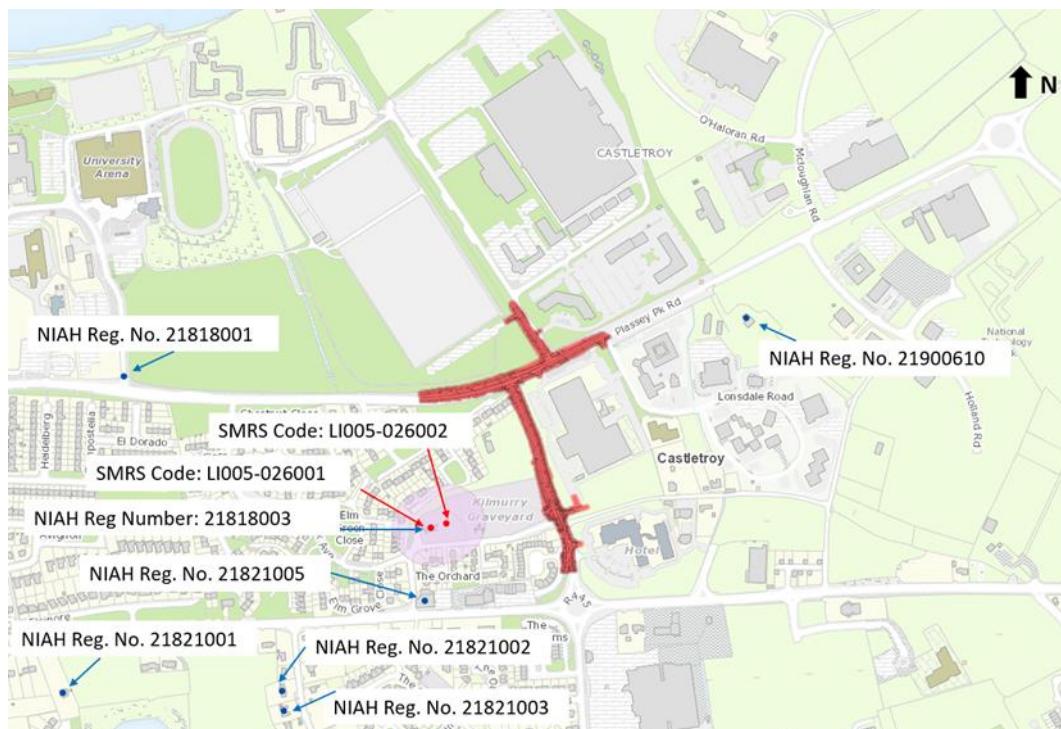


Figure 5.4: Heritage features in proximity to the proposed development

Table 5.2: Recorded Monuments in proximity to the proposed development site

LI005-026002-
Class: Graveyard
Townland: NEWCASTLE
Scheduled for inclusion in the next revision of the RMP: Yes
Description: 19th century Kilmurry C. of I. church standing on site of medieval church (LI005-026001-) in W quadrant of graveyard which has been extended to the E. On the 1840 ed. OS 6-inch map the graveyard consisted of a roughly rectangular shaped area (approx. dims. 52m N-S x 68m E-W) enclosed by post-1700 stone wall with entrance gate at W. The E boundary of the old graveyard forms the townland boundary with Castletroy.
LI005-026001-
Class: Church
Townland: NEWCASTLE





<p>Scheduled for inclusion in the next revision of the RMP: Yes</p> <p>Description: In 1840 the Ordnance Survey Letters recorded that 'The site of the original church of Kilmurry which is in the glebe is occupied by the protestant church which was built about 40 years ago. There is an old graveyard attached which is still much used' (OSL Vol. 1, 23). Westropp gives the following details on Kilmurry Church; 'A parish in Clanwilliam. Kilmehurrok, 1291, 1302. In 1325 Ade de Gouly and Bichard Perpoint had a suit about Kilmoroke, which Gouly's great-grandfather, Begin Le Flemyng, held (Plea B. 148 of xviii Ed. II.). Kilmurray dedicated to St. Mary Magdalen, 1410; Kilmohurk, alias Kilmurry, held by the Prior of Athissell, 1418. Temple Moyrry, 1586 (Peyton). Kilmeremagdalyng granted to Bart. Cusack, 1551 (Fiant, 744) ; Killingally, alias Kilmahallock, held by Bishop of Killaloe, 1633 ; Kilmury, D. S. (A) 1 and 4. Site - The modern I. C. church occupies the old site since 1810' (Westropp 1904-5, 365).</p>
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There are no protected structures within the site of the proposed development. However, as also identified in **Figure 5.4**, there are some 7 No. protected structures in the proximity to the proposed development site. Refer to **Table 5.3** for information on the protected structures in proximity to the proposed development site. The structure in closest proximity to the proposed development site is the Church of Kilmurry which is also a recorded monument, as described in **Table 5.2**. It is located approximately 200m from the site of the proposed development.

In considering that the proposed works will take place entirely within the red line boundary, the protected structures are located 200m and further from the works and that the vibration associated with the proposed development works is not expected to be significant, , no potential effects on protected structures are identified during the construction phase of the proposed development.

Table 5.3: Protected structures in proximity to the proposed development

<p>Yoma - Reg. No. 21821001</p> <p>Date: 1935 - 1940</p> <p>Original Use: house</p> <p>In Use as: house</p>	
<p>Cooleen - Reg. No. 21821002</p> <p>Date: 1920 - 1940</p> <p>Original Use: house</p> <p>In Use as: house</p>	

<p>Sunninghill - Reg. No. 21821003</p> <p>Date: 1920 - 1940</p> <p>Original Use: house</p> <p>In Use as: house</p>	
<p>The Hurlers - Reg. No. 21821005</p> <p>Date: 1820 - 1850</p> <p>Original Use: house</p> <p>In Use as: public house</p>	
<p>- Reg. No. 21818003</p> <p>Date: 1800 - 1815</p> <p>Original Use: church/chapel</p> <p>In Use as: community centre</p>	
<p>- Reg. No. 21900610</p> <p>Date: 1820 - 1840</p> <p>Original Use: house</p> <p>In Use as: office</p>	

Plassey House - Reg. No. 21818001	
Date: 1880 - 1900	
Original Use: demesne walls/gates/railings	
In Use as: gates/railings/walls	

An Archaeological Conservation Area (ACA) is located within the site of the proposed development, as illustrated in **Figure 5.5**. The collective arrangement of buildings within the University of Limerick complex is considered of significance to the built heritage of the area and contributes to the character of the area.

An Architectural Conservation Area (ACA) is a place, area, group of structures or townscape that is of special architectural, historical, archaeological, technical, social, cultural, or scientific, interest, or that contributes to the appreciation of a Protected Structure. It is a mechanism, which aims to identify and protect areas of special significance and promote an awareness of this significance.

Buildings falling within the boundaries of an ACA can be both protected structures and non-protected structures. There are certain implications for development within an ACA - protection generally relates to the external appearance of structures and features of the streetscape. It does not prevent internal changes or rearrangements provided that these changes do not impact on the external appearance of the structure.

As the proposed development relates to road upgrade works, there is no potential implications regarding the location of the ACA.

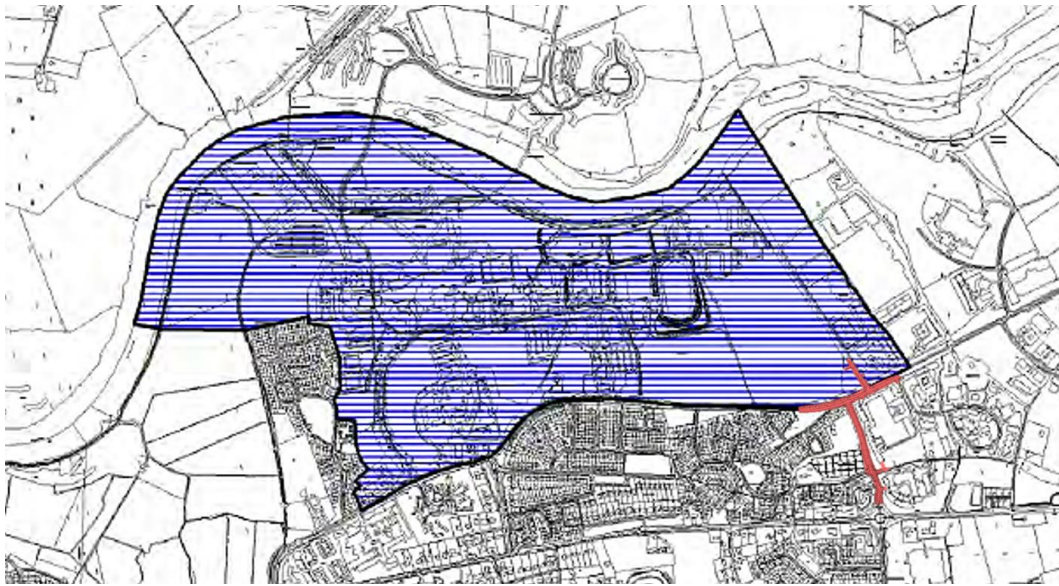


Figure 5.5: Castle Troy ACA

5.6 Landscape and Visual

County Limerick possesses a very varied landscape which is important not just for its intrinsic value and beauty but also because it provides for local residents and visitors both in terms of a place to live and also for recreational and tourism purposes.

Castle Troy is set within the Shannon Integrated Coastal Zone Management landscape character area as designated by the Limerick County Development Plan 2010-2016 (as extended). This zone comprises a large area of northern County Limerick and is bounded on one side by the Shannon Estuary while its southern boundary is defined by the gradually rising ground, which leads onto the agricultural zone and the western hills to the south west. The presence of the estuary is the defining characteristic of the region. The landscape itself is generally that of an enclosed farm type, essentially that of a hedgerow dominant landscape. This differs from the other agricultural landscapes of the County in that the field patterns, particularly close to the estuary, tend to be less regular than those elsewhere in the County.

The site of the proposed development is described in **Section 3**. The landscape is low-lying and well developed and is therefore not considered to be sensitive in nature. There are no protected views or prospects in proximity to the site of the proposed development.

It is likely that there will be temporary negative effects on the surrounding landscape during the construction phase of the proposed development. Physical effects to Troy Studios Road, Plassey Park Road and Plassey Road are predicted and will involve the excavation of the street and removal of existing surface materials, repaving the street, installation of new street lighting etc. During the construction phase, the presence of construction vehicles, signage, machinery etc. will likely result in a minor temporary negative effect to the landscape and visual setting.

Once operational, the proposed development is expected to result in a neutral effect on Landscape and Visual in that the affected roads will return to their previous states, albeit some minor changes to the street layouts. There will be some vegetation loss along the perimeter of the roadways (refer to **Figure 5.1 and 5.2**), which may result in a slight negative effect on the visual setting of the roadways- however the level of vegetation loss is not expected to be significant, having regard to the current land-use.

5.7 Land and Soils

The proposed development site falls within the Limerick City East Ground Water Body (GWB). The GWB underlying the site of the proposed development is classified as a “Locally Important Aquifer” which is “generally moderately productive”. Groundwater flows into the River Shannon as direct baseflow.

Silt trenching has been carried out on site in advance of the proposed works and no groundwater was encountered to depths of 1.5m.

Dinantian Pure Bedded Limestone is the major rock unit group in the GWB and is the underlying bedrock of the proposed development site. There are no features of geological significance in proximity to the proposed development site.

The underlying soils are classified as “TLs” (till derived chiefly from limestone) to the north of the junction of Plassey Park Road and Troy Studios Road, and “made ground” throughout the remainder of the development site. TLs is deep well drained mineral soil (BminDW). As part of the S.I for the proposed development, some soil samples were collected and tested. No evidence of contamination was recorded in these samples.

The construction phase of the proposed development will involve local excavations of the existing roadways. Excavations will be required throughout the site to facilitate the formation to foundations and underground utilities. The total excavation volume is expected to be c. 3,600m³ and proposed depth of excavations are 0.2m- 0.8m. Refer to **Figure 5.6** for the approximate depth and locations of proposed excavations.

As no groundwater was encountered to a depth of 1.5m during silt trenching, and excavations are only expected to a maximum depth of 0.8m, no dewatering is anticipated during construction. However, should dewatering be required for minor local excavations, water will be removed off site or may be reinjected to the subsurface through a number of wells or injection points within the site compound on agreement with the Local Authority. Local dewatering is likely to be necessary for only a portion of the construction programme, approximately 5 weeks.

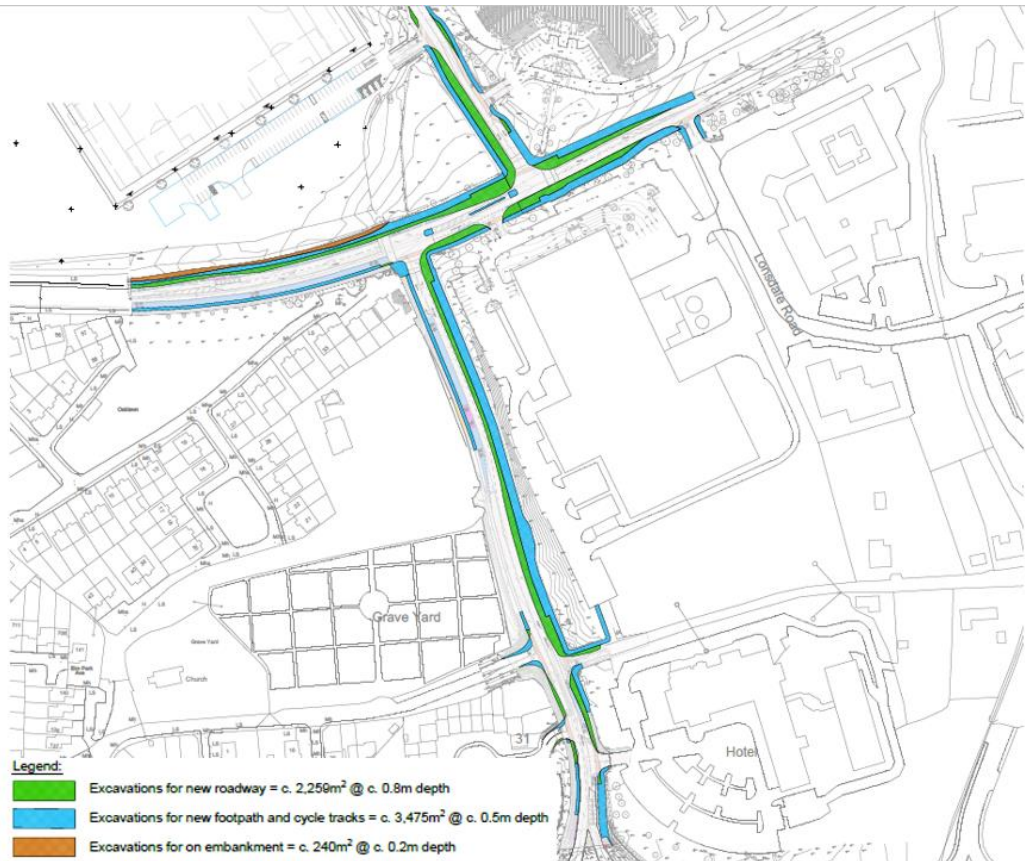


Figure 5.6: Approximate Depths of Excavation

All excavated material will be transported off site by an approved Waste Contractor holding a current waste collection permit and brought to an appropriate waste disposal facility holding the appropriate certificate of registration, licence or permit, as required.

Detailed sampling and testing of the made ground material have been undertaken and a watching brief and discovery procedure for contaminated material should be prepared and adopted by the Main Contractor prior to excavation works commencing on site. These documents should detail how potentially contaminated material will be dealt with during the excavation phase. All potentially contaminated material to be excavated is to be segregated and temporarily stockpiled in a contained manner and characterised by a competent professional through laboratory testing.

Thus, no significant negative effects on land and soil are expected during construction due to:

- Minimal depth of excavations (0.2-0.8m) will be required during construction, which are not likely to reach the groundwater table
- Minimal volumes of excavated material will be generated, and all material will be removed from site and disposed of accordingly, where it cannot be reused;
- There is no evidence of contamination on site and contaminated soils are not expected to be encountered; *and*

- No geological features will be impacted.

The operational phase of the proposed development is predicted to have an overall neutral long-term effect on the land and soils within the study area.

5.8 Water

The proposed development site is located approximately 650m from the River Shannon. Under the Water Framework Directive, biological surveys are carried out to provide a river-by-river breakdown of ecological status.

Biotic indices ("Q Values") reflect average water quality at any location. These Values are based primarily on the relative proportions of pollution sensitive to tolerant macroinvertebrates (the young stages of insects primarily but also snails, worms, shrimps etc.) resident at a river site.

The closest National Water Monitoring Station (Station code: RS25M040600) to the proposed development site is located immediately to the west of University Bridge, approximately 1.3km from the proposed development site. The Water Framework Directive Waterbody code relating to the station is IE_SH_25S012600.

As outlined in **Figure 5.7**, according to the 2018 monitoring results, the River Shannon, at the site of the proposed development had a 'Q' Value of 3-4, indicating a 'Moderate' river quality status, which is 'slightly polluted (**Figure 5.8**)

SHANNON (LOWER)

Date Surveyed (last survey year only): 08/08/18

Biological Quality Rating (Q Values)

Station Code	1972	1976	1984	1987	1990	1993	1996	1999	2002	2008	2011	2012	2014	2015	2017	2018
RS25S011960			4-5													
RS25S012010			4-5													
RS25S012030		4-5	4													
RS25S012050			4													
RS25S012060										3-4	4		4		3-4	
RS25S012110			4													
RS25S012300			4													
RS25S012500	4-5		4	4	4	3-4	3-4	3-4	4	3-4		3-4		3-4		3-4
RS25S012600			4	4	4	3-4	3-4	3-4	3-4							

Most Recent Assessment:

Moderate ecological conditions persist in the Shannon at World's End, Castleconnell in August 2018.

Figure 5.7: Shannon Lower Q Rating

Biotic indices ("Q Values") reflect average water quality at any location as follows:

Q Value*	WFD Status	Pollution Status	Condition **
Q5, Q4-5	High	Unpolluted	Satisfactory
Q4	Good	Unpolluted	Satisfactory
Q3-4	Moderate	Slightly polluted	Unsatisfactory
Q3, Q2-3	Poor	Moderately polluted	Unsatisfactory
Q2, Q1-2,	Bad	Seriously polluted	Unsatisfactory

Figure 5. 8: Q Values Key

Fluvial flood extents and historical flood events were also examined in order to inform this assessment. As can be seen in **Figure 5.9**, the proposed development site is not at risk from flooding (10-year, 100-year or 1000-year flood events), nor has it been subject to flooding in the past.

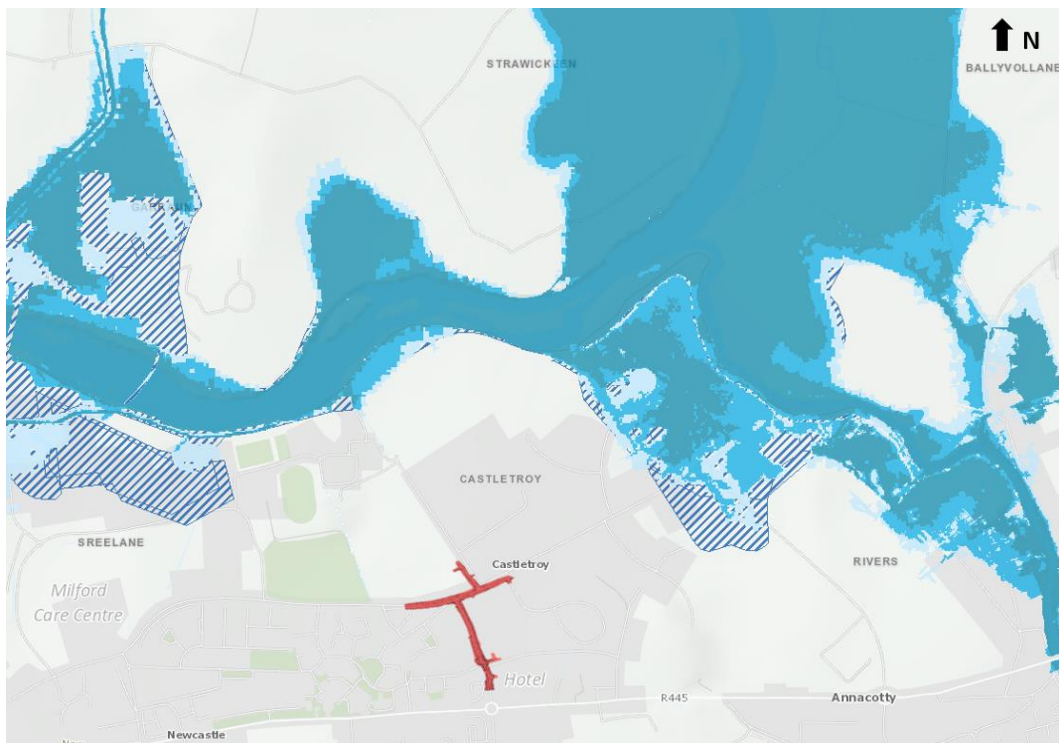


Figure 5.9: Flood Risk (shaded blue) and historical flood events (hatched blue) in proposed development area

As noted previously, the proposed construction works will involve excavation (max depths of 800mm) which will be carried out prior to the installation of new gullies, therefore surface water will run into excavations rather than the drainage network. However, due to the soil conditions, the water is likely to infiltrate into the soil. Groundwater was encountered at approximately 1.5m during slit trenching investigations, therefore, any surface water run-off from within the redline boundary will not enter the groundwater aquifer and ultimately will not enter a Natura 2000 site. If the excavation needs to be cleared of water, the water can be pumped out and removed off site.

The construction compound will be located within the business park. The outfall from the business park in which the construction compound is located will drain east along Plassey Park Road and ultimately enter the River Shannon. However, given the temporary and small nature of the works proposed and low levels of construction staff and vehicles, significant pollution effects are not envisaged. Any spillages that may arise would be minor in nature and would be considerably diluted and dispersed within the surface water drainage network before entering the River Shannon. As such, the construction phase of the proposed development is not predicted to result in a significant negative effect on surface water quality.

During the operational phase, new gullies will be installed which will revert surface water drainage to the River Shannon, as per the current scenario. Thus, a neutral effect on water quality is predicted during the operational phase of the proposed development.

5.9 Air Quality and Climate

Limerick City and County Council currently has air quality monitors operating at three locations in the metropolitan area of Limerick to provide live indicative air quality data to the public. These monitors are located in Mungret, Castletroy and O'Connell St, and measure particulate matter and gases, including nitrogen dioxide (NO₂), sulphur dioxide (SO₂), carbon monoxide (CO) and ozone. The most recent air quality monitoring data for Limerick (April 2020) was reviewed. At the sites, the results for particulate matter and gases (NO₂, SO₂, CO and ozone) indicated generally good air quality throughout April.

During the construction phase, the potential for some dust emissions in the immediate vicinity of the works may arise in dry weather and during such activities the levels of dust are likely to be minima, however stockpiling of materials may be source of dust. Stockpiling of excavated material on site will be minimised with immediate removal of excavated materials envisaged for the majority of the works.

Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary. Additional monitoring and mitigation such as damping down of earth mounds on site would be undertaken if the prevailing weather conditions are dry and windy. Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind.

Air emissions from the exhausts of construction plant, machinery and haulage trucks will also be elevated in the immediate vicinity during construction but are not expected to be significant. No odour emissions are envisaged from the proposed construction works.

Thus, no significant negative effect on air quality or climate is predicted during the construction phase of the proposed development.

During the operational phase, there will be no significant air emissions from the proposed development. The main objective of the proposed development is to signalise the junction and control traffic taking cognisance of potential increases in traffic due to external factors.

The proposed upgrade works will not give rise to increased operational traffic numbers. The signalisation should lead to reduced queuing due to management of flows. A neutral to slight-positive effect on air quality and climate is therefore predicted.

5.10 Noise and Vibration

Day time noise levels at the proposed development site are expected to be relatively high, due to the existing busy road network, and proximity to industrial, amenity and educational land-uses. The Round 2 Noise Mapping for Roads as carried out by Limerick City and County Council showed noise levels on the nearby Dublin Road reaching 55dB- 59dB at the south of the proposed development site (Refer to **Figure 5.10**). This measurement excludes noise emanating from Plassey Road, Plassey Park Road and Troy Studios Road, as well as neighbouring land-uses.

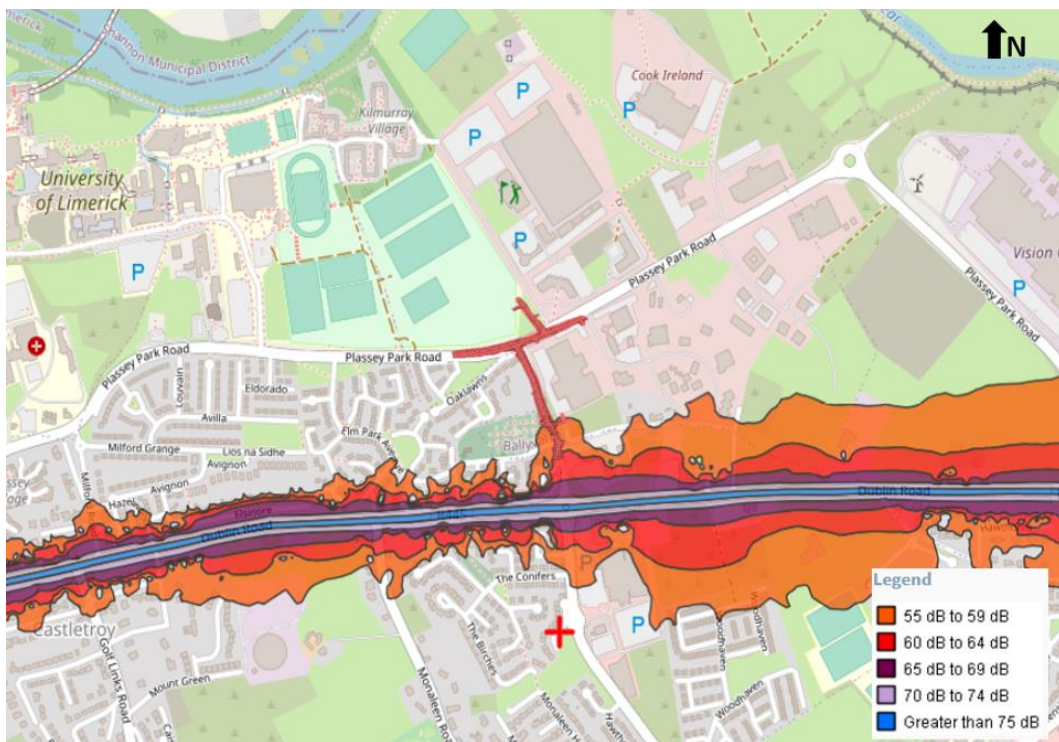


Figure 5.10: Noise Levels of Major Roads

During the construction phase of the proposed development, noise will be generated in the immediate vicinity of the works as a result of construction traffic, construction machinery etc. A variety of potential vibration-causing items of plant are likely to be used such as excavators, lifting equipment and dumper trucks. Rock breaking will be required as part of the works due to the shallow nature of the rock in the proposed development area but will be short-term in duration. The main source of noise is likely to be plant required for excavations and breaking out of existing concrete footpaths.

The effect of construction noise on sensitive receptors (residential dwellings) in the immediate vicinity of the site will be temporary due to the short duration of the construction works, and not expected to be significant, due to the baseline noise environment.

Noise emissions that are experienced in the vicinity of the works can be controlled by the implementation of best construction practice. Examples of measures to be employed include the selection of quiet plant, not leaving plant idling and maintenance of plant to minimise noise generation.

Construction hours will be limited to 08.00-18:00 Monday to Friday and Saturday morning. Some night-time works or works on bank holidays are envisaged, to facilitate resurfacing of the streets without causing excessive delays to traffic and public transport services. Any works which are required to be carried out during these times will be agreed with Limerick City and County Council in advance.

The Main Contractor will take specific noise abatement measures and comply with the recommendations of BS 5228 and the European Communities (*Noise Emission by Equipment for Use Outdoors*) Regulations, 2001.

BS 5228 includes guidance on several aspects of construction site practices, including, but not limited to:

- Selection of quiet plant and the control of noise sources – the use of proprietary acoustic enclosures and the quietest plant, where possible;
- Selection of the method of excavation to ensure there is no likelihood of structural or cosmetic damage to neighbouring buildings;
- Screening – the effectiveness of screening is based on the location, height and length of the barrier;
- Liaison with the public – a designated liaison officer will be appointed to deal with any complaints relating to noise.

The main source of vibration during the construction phase of the proposed development is likely to be movement of plant on public roads and works relating to breaking out of existing concrete footpaths. The expected levels of vibration are not expected to be significant and will be temporary in nature.

The operational phase of the proposed development will not result in any additional noise or vibration on Troy Studio Road, Plassey Park Road or Plassey Road than is experienced currently. There is therefore likely to be a neutral effect on noise and vibration during the operational phase of the proposed development.

5.11 Resource and Waste Management

Given the nature of the proposed development, it is anticipated that demolition waste materials will comprise mainly of pavements, concrete kerbs, asphalt roadway and soil.

As is common and best practice, pre-demolition surveys will be undertaken which will consider waste streams from demolition activities.

In order to maximise the materials suitable for reuse/recovery/recycling, a selective demolition methodology involving a comprehensive ‘soft strip’ operation will be adopted. This methodology complies with the objectives of the National Construction Demolition Waste Council to promote construction and demolition waste prevention, reduction, re-use of materials, recovery and recycling, which has been adopted as construction best practice and ensures minimum disposal to landfill.

This methodology also ensures minimum impact on the environment, in that it ensures that all waste streams are properly segregated at source and avoids cross-contamination of materials to be recovered from structural demolition at a later stage of the demolition sequence.

Excavations will be required throughout the site to facilitate the formation to foundations and underground utilities. The total excavation volume is expected to be c. 3,600 m³, and proposed depth of excavations are 0.2m- 0.8m.

Detailed sampling and testing of the made ground material has been undertaken and a watching brief and discovery procedure for contaminated material will be prepared and adopted by the Main Contractor prior to excavation works commencing on site. These documents should detail how potentially contaminated material will be dealt with during the excavation phase. All potentially contaminated material to be excavated is to be segregated and temporarily stockpiled in a contained manner and characterised by a competent professional through laboratory testing.

All waste materials arising during the construction phase of the proposed development will be segregated at source and placed in dedicated skips such as general waste, wood, mixed ferrous and concrete rubble on site to maximise the opportunity for reuse/recycling/recovery of materials.

All waste arisings will be transported off site by an approved Waste Contractor holding a current waste collection permit. Materials to be removed off site in skips or using haulage trucks and using the construction traffic egress points. All waste arisings requiring re-use, recycling, recovery or disposal off site will be brought to facilities holding the appropriate certificate of registration, licence or permit, as required.

A minor, negative and temporary effect on resource and waste is predicted during the construction phase of the proposed development.

No wastes will be produced during the operational phase of the proposed development.

5.12 Material Assets

During the construction phase of the proposed development, some permanent land-acquisition will be required to facilitate the proposed development, as illustrated in green in **Figure 5.11- Figure 5.14**. There is a requirement for the acquisition of approximately 537m² of land from the western side of the University of Limerick owned roadway (Troy Studios Road). It is also proposed to widen Plassey Park Road, which will require approximately 62m² of

University of Limerick owned lands from the northern side of the road. The majority of this land consists of existing grass verge, vegetation and footpath.

There is also a requirement to widen Plassey Park Road and Troy Studios Road into privately owned lands to the north-east; ~192m² and 552m² respectively.

There is widening on the southern side of Plassey Park Road into privately owned lands to the south [approximately 568m²]. Along with the requirement to widen Plassey Road into privately owned lands to the east - between Plassey Park Road and Dun an Oir [~429m²] and just south of Dun an Oir [~17.6m²].

An additional area of land will also be acquired, on a temporary basis, from a local landowner in order to facilitate the construction compound as indicated in **Figure 4.5**. This land will be utilised for an approximate four-month period to facilitate construction, following which it will be reinstated to its previous condition and ownership returned to the current land-owner.

An overall slight negative effect on landownership is therefore identified during both construction and operation.

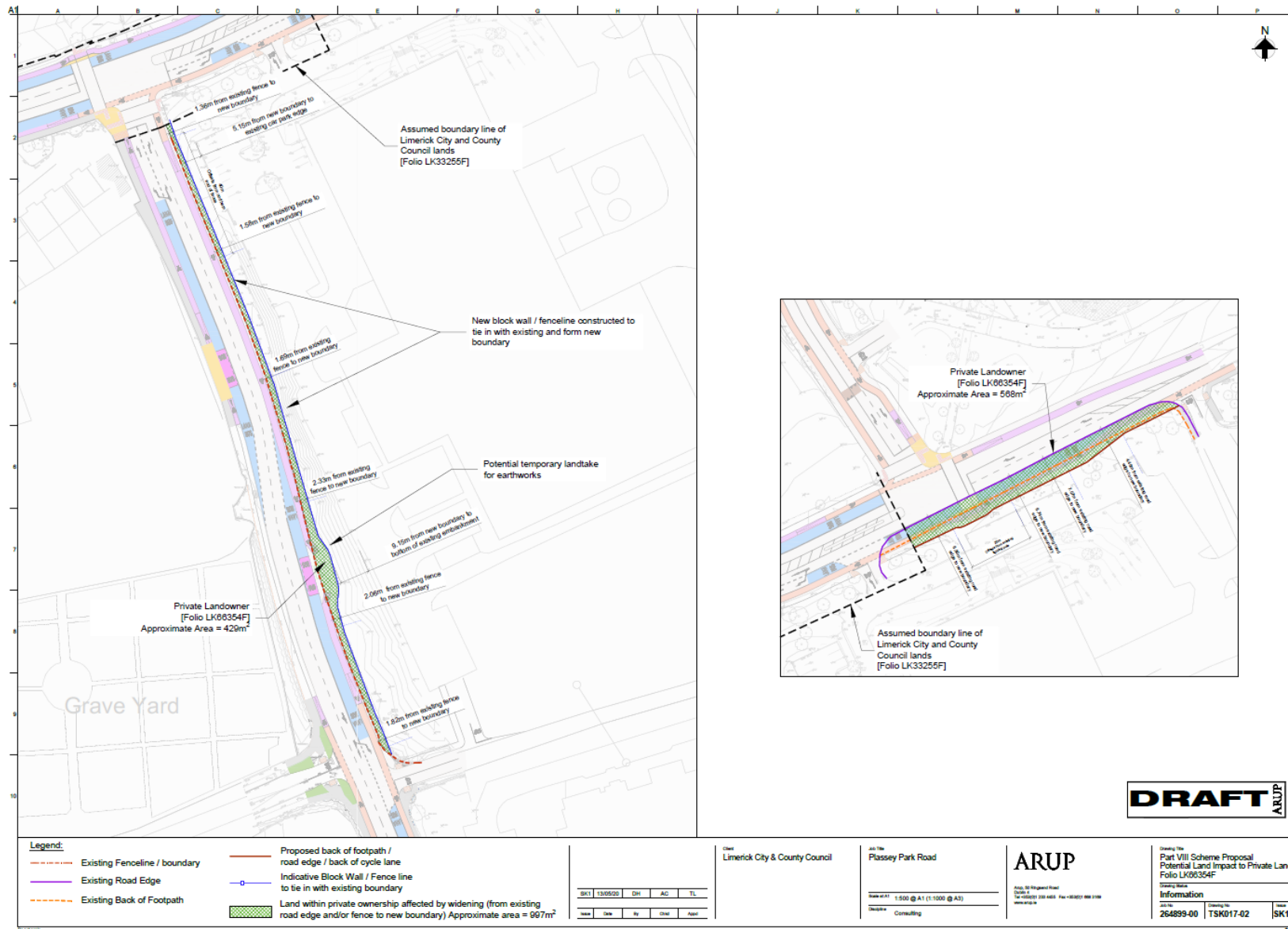


Figure 5.11: Proposed Land Acquisition (indicated in green)

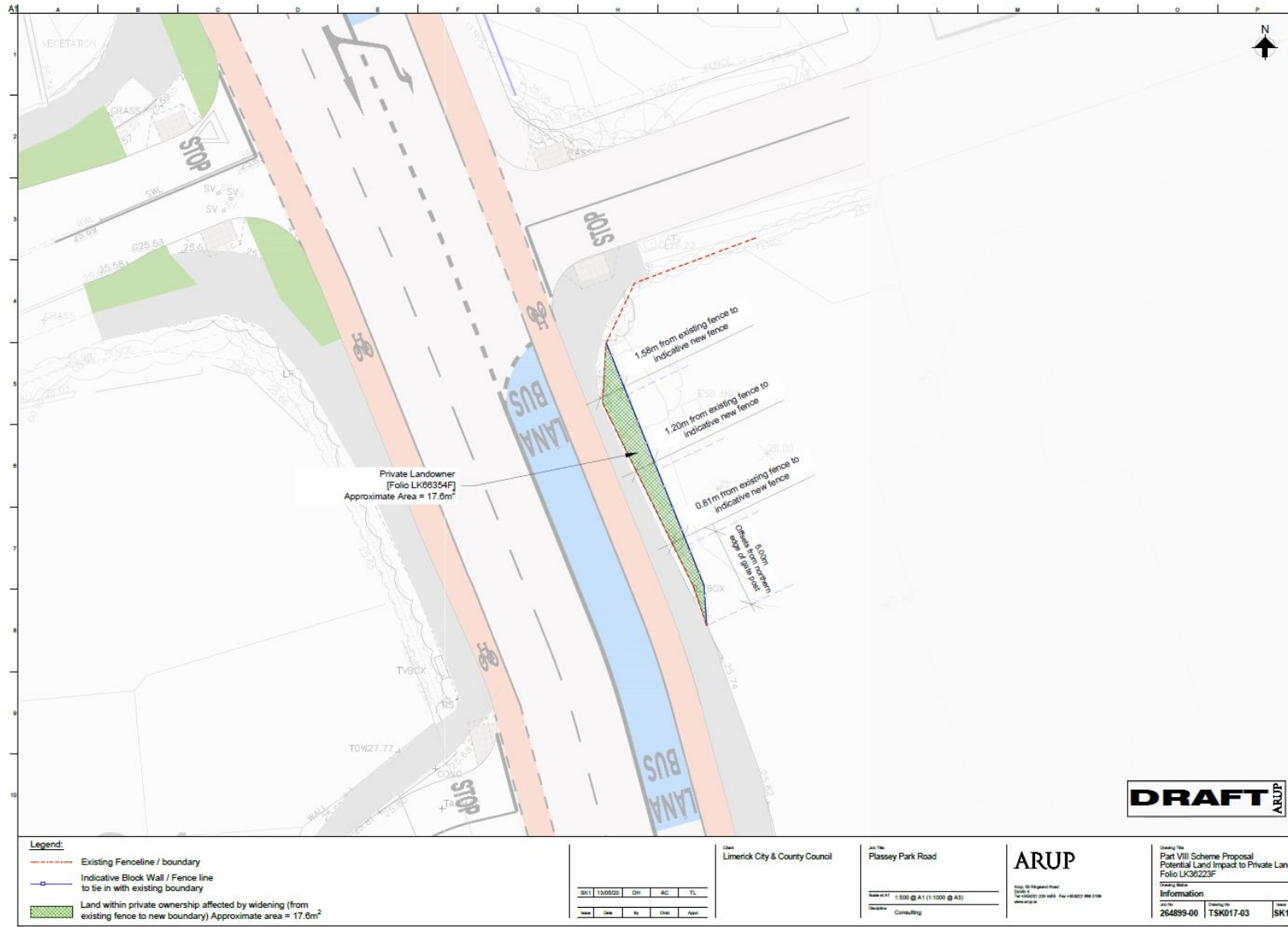


Figure 5.12: Proposed Land Acquisition (cntd.) (indicated in green)

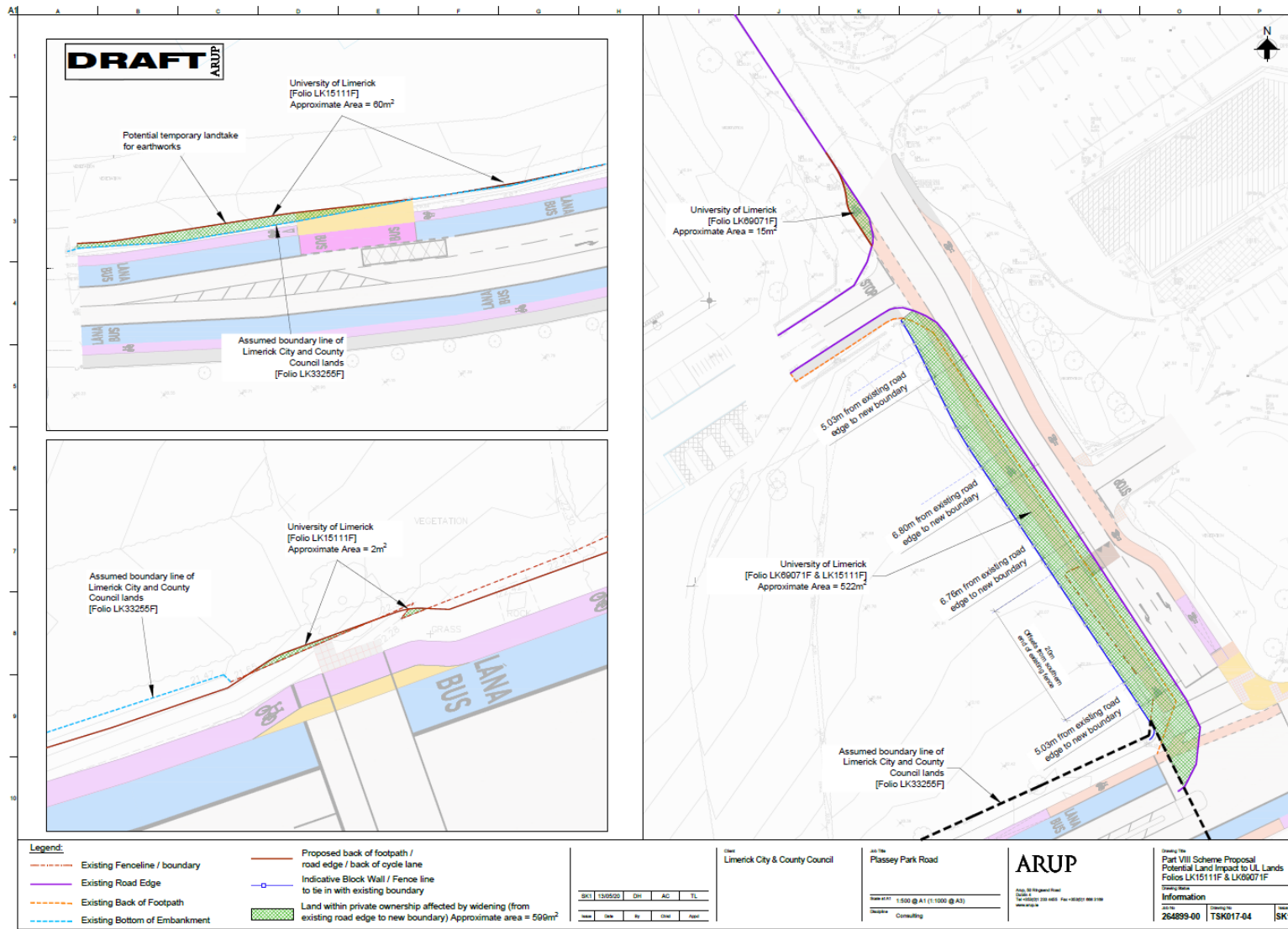


Figure 5.13: Proposed Land Acquisition (cntd.) (indicated in green)

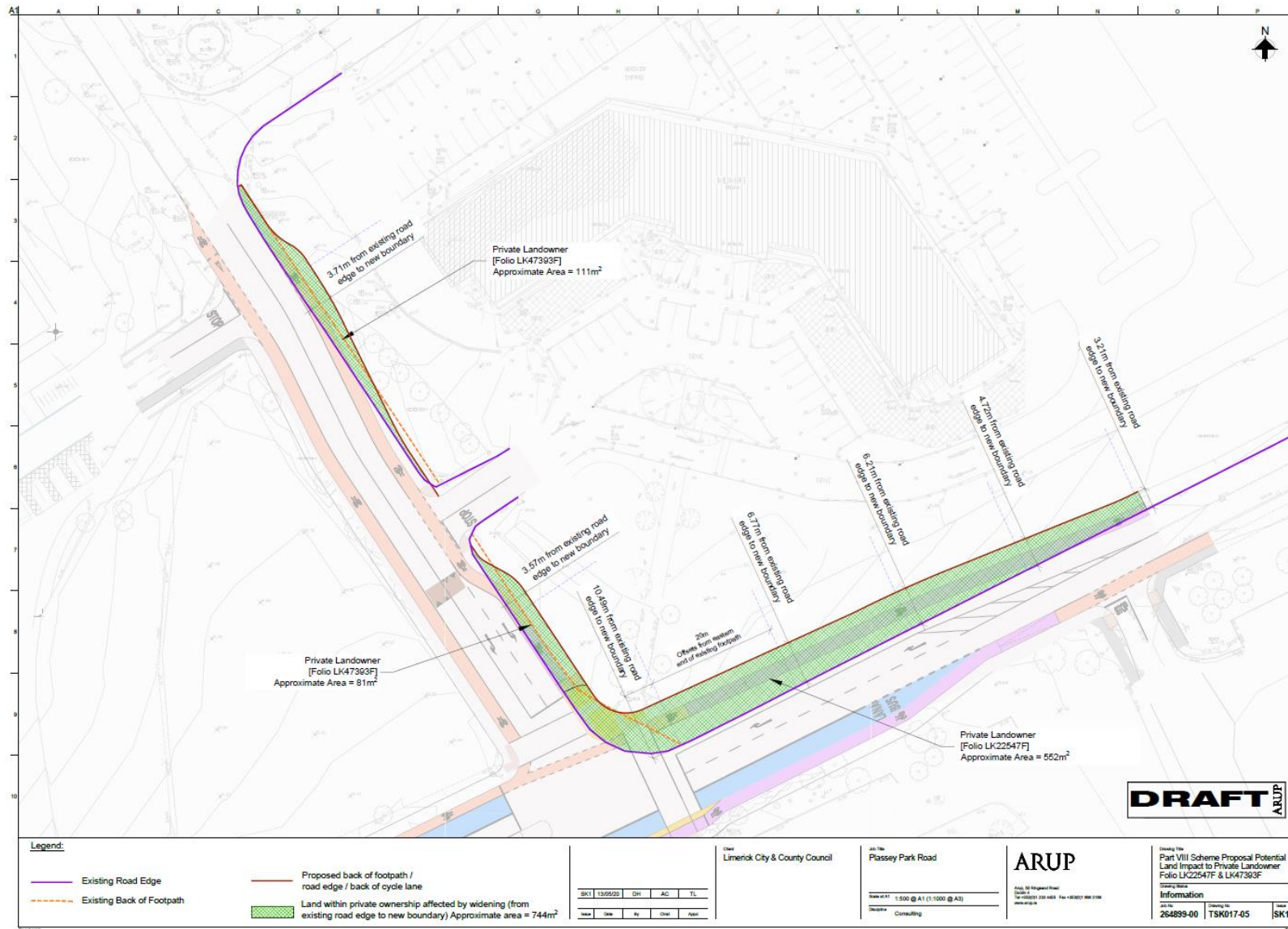


Figure 5.14 Proposed Land Acquisition (cntd.) (indicated in green)

The following existing utilities have been identified in the site of the proposed development:

- There is an existing watermain network running along Plassey Park Road at depths in the order of 1m which will need to be protected during works if excavating to that level.
- There are also existing watermains running along Plassey Road which are generally at a depth between 0.5-1.0m. There is one location however where the watermain is at a depth of 0.35m.
- There is an existing ESB power cable which lies under the proposed bus lane and path on the south side of the Plassey Park Road. This cable is also under the east side of the Plassey Road.
- There are existing gas lines which lie under the Plassey Park Road. There is also a gas line which runs down the Troy Studio road. A gas line also lies along the section of road near the Dun an Oir junction.
- There are a series of electric cables which run along the Plassey Park Road. These are at a depth of 0.25-0.5m. There are also Eircom cables which run along the Plassey Road and the Troy Studios road which are at a deeper depth ranging from 0.4 – 0.8m. A number of Eircom covers are found along the proposed development including a major Eir exchange at the northern side of Plassey Park Road.
- Telecoms cables are found in many places around the development. These cables vary in depth as they run along the road from a depth of 0.2 - 1m. There are also cables along the Plassey road at a depth of 0.2 – 0.5m. There are also a number of chambers for these telecoms cables found along the development. There are also Telecoms cables near the Plassey Park Road Troy Studio road junction.
- There are a number of public lighting posts along the proposed development which have cables connecting these together.
- An underground storm water system lies beneath the proposed development.

The existing drainage regime within the site extents has been assessed through reviews of existing record drawings, on-site GPR (ground penetrating radar) survey results, and on-site manhole inspections and confirmation.

There are a number of gullies on both sides of Troy Studios Road. A 450mm concrete pipe travels north before appearing to discharge to the River Shannon.

Surface water on Plassey Park Road, east of Plassey Road, is collected in various gullies along the road before travelling east through 150mm uPVC collector pipes. Although the record drawings initially indicated this network drained towards Troy Studios Road, on-site inspection confirmed that much of this network continues east via a collector drain along Plassey Park Road. However, there are several gullies on the northern side of the road which are connected to the Troy Studios Road network which appears to flow into the River Shannon.

Surface water on Plassey Road is collected by gullies along the road, connecting to the existing network which then follows the road north until it reaches the Plassey Park Road network. The system then travels east and continues east along Plassey Park Road as described above.

Along Plassey Park Road, west of Plassey Park, the surface water is collected and drains into a 450mm concrete pipe travelling west.

During the construction phase of the proposed development, some temporary disruption to local services and utilities may be experienced. As described in **Section 5.8**, the existing gullies, which currently drain to the River Shannon will be removed prior to any excavation of existing pavement. In this interim period before new gullies are installed, surface water will run into excavations rather than drainage network. This is discussed in further detail in Section 4.2.2.

A slight negative temporary effect on utilities is therefore predicted during the construction phase.

During the operational phase, new gullies will be installed which will revert surface water drainage to the River Shannon, as per the current scenario. No disruption to additional services is expected during operation. Thus, a neutral effect on utilities is predicted during the operational phase of the proposed development.

6 Screening Checklist

The potential environmental effects associated with the proposed development have been outlined in the previous sections of this report.

The EC Guidance on EIA Screening (EC, 2017) provides a checklist to help users decide whether EIA is required based on the characteristics of a project and its environment. This screening checklist is included in **Table 6.1** below.

Table 6.1: Screening Checklist to determine if EIA is required based on the characteristics of a project and its environment

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
1. Will construction, operation or decommissioning of the project involve actions which will cause physical changes in the locality (topography, land use, changes in waterbodies, etc.)?	Yes	The proposed development will result in minor land-take (c599m ²) of previously undeveloped land along the perimeter of roadway in order to facilitate road widening. This physical change is not considered to be significant.
2. Will construction or operation of the project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or in short supply?	Yes	No. Services such as power and water will be required during the construction phase. Construction materials will include paving sets, asphalt, stone fill, pipework, gullies, kerbing, cabling, ducting, traffic signal equipment etc. It is not considered that there will be significant use of these resources as part of the development. A Report for Screening for Appropriate Assessment was prepared by Arup. It is the opinion of Arup that it is possible to rule out any significant effects on Natura 2000 sites.
3. Will the project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?	Yes	No. Standard construction materials will be used and will not be harmful to human health or the environment. The contractor will ensure that the proposed works are carried out in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No.291 of 2013). It is envisaged that the risk of accidents having regard to substances or technologies is very low and therefore will not result in significant effects.
4. Will the project produce solid wastes during construction or operation or decommissioning?	Yes	No. The proposed volume of excavated material is not expected to be significant.

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
		Inert construction waste generated will be removed from the site areas and disposed of at a suitable licenced facility. The production of waste will be managed in accordance with the relevant waste legislation.
5. Will the project release pollutants or any hazardous, toxic or noxious substances to air or lead to exceeding Ambient Air Quality standards in Directives 2008/50/EC and 2004/107/EC?	No	No It is expected that some dust will be emitted during the construction works but this will not be significant. Emissions from construction plant and vehicles will arise during the construction phase but these will be minimal.
6. Will the project cause noise and vibration or release of light, heat energy or electromagnetic radiation?	Yes.	No. Standard construction noise is expected during construction activities. Rock breaking will be required as part of the works but will be short-term in duration.
7. Will the project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?	Yes.	No. The extent of the works on land (in a highly urbanised area) is relatively small and excavation works are not significant. During excavation works some water may be encountered and this will be allowed to percolate naturally through the existing soils, or removed from site by dewatering.
8. Will there be any risk of accidents during construction or operation of the project which could affect human health or the environment?	No	No. Construction activities to be undertaken as part of the proposed development will be minor in nature, well understood and are commonly undertaken in the region. No risk of major accidents/disasters are therefore identified. During operation, the development is likely to result in changes in traffic patterns. It is considered unlikely that the proposed development has the potential to increase the risk of major accidents and / or disasters and is therefore not considered further in Section 5.
9. Will the Project result in social changes, for example, in demography, traditional lifestyles, employment?	Yes	Yes The proposed development will improve the existing road arrangement to accommodate existing and future pedestrian, cycle, public transport and will improve existing traffic arrangements and reduce waiting times at junctions.

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
10. Are there any other factors which should be considered such as consequential development which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality?	Yes.	No. An assessment of other relevant developments in the area was carried out. No potential cumulative effects are predicted.
11. Is the project located within or close to any areas which are protected under international, EU, or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the project?	Yes.	No. The proposed development is located approximately 650m from the Lower River Shannon SAC, and the existing surface water drainage system ultimately drains into the River Shannon. No potential for effects on the Lower River Shannon SAC are predicted.
12. Are there any other areas on or around the location which are important or sensitive for reasons of their ecology e.g. wetlands, watercourses or other waterbodies, the coastal zone, mountains, forests or woodlands, which could be affected by the project?	No.	No. There are no additional areas of importance.
13. Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the project?	Yes.	No. The River Shannon hosts a variety of flora and fauna but significant impacts as described previously will not arise. Some mature trees and hedgerow are required to be removed in order to facilitate the proposed development. These are considered to be of local biodiversity importance. No trees or hedgerows will be removed during breeding birds season, in accordance with the Wildlife Act, as amended.
14. Are there any inland, coastal, marine or underground waters (or features of the marine environment) on or around the location that could be affected by the project?	Yes.	No. As described above in relation to item (11), the River Shannon will not be affected by the works.
15. Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the project?	No.	No. The area is highly developed, and the proposed works are only to footpaths and streets and will not affect the landscape.
16. Are there any routes or facilities on or around the location which are used by	Yes.	No.

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
the public for access to recreation or other facilities, which could be affected by the project?		A Construction Traffic Management Plan will be implemented for the duration of the construction works in order to minimise any disruption to traffic flow on the road network at and surrounding the proposed development areas.
17. Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the project?	Yes.	No. As outlined in Section 5.4, construction traffic will be minimal, and all existing traffic movements will be maintained throughout the construction period, albeit with some minor disruptions. The operational phase of the proposed development will result in improved traffic movements and road alignments.
18. Is the project in a location where it is likely to be highly visible to many people?	Yes.	No. The proposed development is concerned with improvements to roads, footpaths and cycle lanes and therefore there will be no structures of significant height.
19. Are there any areas or features of historic or cultural importance on or around the location which could be affected by the project?	Yes.	No The closest feature of heritage significance is located some 200m from the proposed development and will not be impacted by the works
20. Is the project located in a previously undeveloped area where there will be loss of greenfield land?	Yes	No. A minimal amount of previously undeveloped land along the perimeter of the roadways will be acquired to facilitate road widening. The total area of greenfield land to be acquired is c.599m ² . This is not expected to be significant.
21. Are there existing land uses on or around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying which could be affected by the project?	Yes.	No. The proposed development is located in direct proximity to University of Limerick, Troy Studios, the National Technology Park etc. Access to these will be maintained during the construction phase. Significant impacts will not arise.
22. Are there any plans for future land uses on or around the location which could be affected by the project?	No.	No. There are no plans for future land uses which could be negatively affected by the project.
23. Are there any areas on or around the location which are densely populated or	Yes.	No. There are many businesses and residential dwelling within close proximity to the

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
built-up, which could be affected by the project?		proposed development. Access to these will be maintained throughout the construction phase. Significant impacts will not arise.
24. Are there any areas on or around the location which are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities, which could be affected by the project?	Yes.	No. There are a number of sensitive receptors in close proximity to the proposed development such as, residential dwellings, churches, schools and colleges etc. The proposed development is located in an already busy environment. Any disturbance caused by the proposed development will be short term and temporary and will not have any long term significant effects.
25. Are there any areas on or around the location which contain important, high quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, which could be affected by the project?	Yes.	No. As discussed, the proposed development is located approximately 650m from the River Shannon. There are no instream works and there will be no significant negative effects on water quality due to the nature and extent of the works to be carried out.
26. Are there any areas on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected by the project?	No.	No. There are no areas around the proposed development which are already subject to pollution or environmental damage.
27. Is the project location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the project to present environmental problems?	No	No. The site of the proposed development is not susceptible to natural disasters.

7 Conclusions

The proposed development is considered to be a ‘road development’ under the definitions provided by Section 2 of the Roads Act, as amended.

However, the proposed development is not considered to be a type of road development which requires mandatory EIA under the provisions of the Roads Act 1993, as amended, and Environmental Impact Assessment of the Road Regulations, as amended.

The proposed development is instead considered to be ‘sub-threshold’ with regards the ‘prescribed types of road development’ set out in Environmental Impact Assessment of the Road Regulations, as amended, and an EIA Screening assessment was therefore carried out to determine if the proposed development is likely to give rise to significant environmental effects.

Section 50(1)(e) of the Roads Act, as amended, states that the road authority shall take into account the relevant selection criteria specified in Annex III (of the EIA Directive) in making its EIA Screening determination:

Arup has prepared this EIA Screening Report on behalf of Limerick City and County Council in accordance with the criteria outlined in Annex III of the EIA Directive (2014/52/EU).

The information provided in this report provides details on the characteristics of the proposed development and its likely significant effects (if any) on the environment. It also provides the relevant details under each of the criteria set out in Annex III of the EIA Directive.

This information will assist the competent authority, Limerick City and County Council to undertake the EIA screening and to make an EIA Screening determination.

Based on the information provided in this report, it is the opinion of Arup that there is no real likelihood of significant effects on the environment arising from the proposed development and that an EIA is not required.

The final determination on EIA screening will be made by Limerick City and County Council.