



Kildare County Council

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**GREEN LANE CYCLE TRACK SCHEME,  
LEIXLIP**

Environmental Impact Assessment (EIA)  
Screening Report



**Kildare County Council**

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# **GREEN LANE CYCLE TRACK SCHEME, LEIXLIP**

**EIA Screening Report**



**Comhairle Contae Chill Dara  
Kildare County Council**



**Údarás Náisiúnta Iompair  
National Transport Authority**

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**Kildare County Council**

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**GREEN LANE CYCLE TRACK SCHEME,  
LEIXLIP**

Environmental Impact Assessment (EIA) Screening Report

**WSP**

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# QUALITY CONTROL

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# CONTENTS

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<b>1.</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1.	BACKGROUND	1
1.2.	REQUIREMENT FOR EIA	1
1.3.	PLANNING CONTEXT	2
1.4.	PLANNING DEVELOPMENTS	3
1.5.	PURPOSE OF THE REPORT	4
1.6.	OVERVIEW OF THE PROJECT	5
<b>2.</b>	<b>DESCRIPTION OF THE PROPOSED PROJECT</b>	<b>6</b>
2.1.	NEED FOR THE PROJECT	6
2.2.	PROJECT OBJECTIVES	6
2.3.	PROJECT LOCATION	6
2.4.	CONSTRUCTION METHODOLOGY	7
<b>3.</b>	<b>ASPECTS OF THE ENVIRONMENT LIKELY TO BE SIGNIFICANTLY AFFECTED</b>	<b>11</b>
<b>4.</b>	<b>SUMMARY</b>	<b>26</b>

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## **TABLES**

Table 1-1 – List of Potential Major Planning Development	4
Table 1-2 - Information Required to Accompany a Request for a Screening Opinion (Schedule 7A)	5
Table 2-1 – Construction Sequence	8
Table 2-2 - Key Materials likely Required for Activities	9
Table 2-3 Key Waste likely Arising from Activities	9
Table 3-1 – Aspects of the Environment Likely to be Significantly Affected	13

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*APPENDICES*

APPENDIX A

PROJECT LOCATION PLAN

APPENDIX B

PROJECT LAYOUT PLAN

APPENDIX C .1/2

TREE SURVEY

APPENDIX D

CONSTRAINTS PLAN



# EXECUTIVE SUMMARY

This Environmental Impact Assessment (EIA) Screening Report has been prepared by WSP on behalf of Kildare County Council (KCC) (the Sponsoring Agency) in respect of the development project within the town of Leixlip, County Kildare, Ireland.

The Report is submitted to KCC Planning Department to request for a screening opinion under the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (as amended). In accordance with Schedule 5 of the Regulations, this report contains a description of the nature and purpose of the development and potential environmental effects. In addition, it outlines best practice and mitigation measures to reduce the potential environmental impact primarily associated with construction.

No significant effects are anticipated as a result of the Project. The Project is not deemed EIA development.

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# 1. INTRODUCTION

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## 1.1. BACKGROUND

- 1.1.1. Kildare County Council (KCC) (the Sponsoring Agency) has commissioned WSP to prepare and complete the design of improved cycleway infrastructure within the town of Leixlip, County Kildare, Ireland. The provision of the cycleway (hereby known as 'the Project') will consist of the segregation of cycle infrastructure and upgrade of existing cycle lanes on Easton Road / Green Lane, over a distance of approximately 700 metres (m).
- 1.1.2. Construction of the Project is anticipated to commence in Summer of 2022 for a duration of one year, aiming for the operational date of Summer 2023. The life of the project is estimated between 15 to 20 years.

## 1.2. REQUIREMENT FOR EIA

- 1.2.1. The term 'Environmental Impact Assessment' ('EIA') describes a procedure that must be followed for certain types of project before it can be given 'consent'. The procedure is a means of drawing together, in a systematic way, an assessment of a project's likely significant environmental effects. This helps to ensure that the importance of the predicted effects and the scope for avoiding, preventing, reducing or, if possible, offsetting them are properly understood by the public and the authority granting consent (the 'determining authority') before it makes its decision.
- 1.2.2. The first stage of the procedure is to determine whether or not the development in question constitutes 'EIA development'. In accordance with European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018) (as amended)<sup>1</sup> (herby referred to as the EIA Regulations 2018), 'EIA development' means development which falls under Schedule 5 of the Planning and Development Regulations (as amended).
- 1.2.3. In accordance with the Regulations 2018 (as amended), "Schedule 5 development" means development, where Part 1 projects require EIA if the stated threshold set therein has been met or exceeded or where no thresholds are set. Schedule 5 Part 2 projects meeting or exceeding national thresholds set out therein, or where no thresholds are set, also require EIA. Sub-threshold projects in Schedule 5 Part 2 require screening for EIA, except in cases where the likelihood of significant effects can be readily excluded.
- 1.2.4. Where developments fall below the relevant EIA threshold, planning authorities are required under Article 103 of the 2018 Regulations, as amended, to request an Environmental Impact Statement (EIS) where it considers the proposed development is likely to have a significant effect on the environment. In these cases, the significant effects of the project are assessed relative to the criteria contained in Schedule 7a of the Regulations 2018 principally:

- 1. A description of the proposed development, including in particular:
- 

<sup>1</sup> European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018. [Online] [Available at]: <http://www.irishstatutebook.ie/eli/2018/si/296/made/en/pdf>. [Accessed 28/09/2021].

- a) a description of the physical characteristics of the whole proposed development and, where relevant, of demolition works,
  - b) a description of the physical characteristics of the whole proposed development and, where relevant, of demolition works,
  - c) a description of the location of the proposed development, with particular regard to the environmental sensitivity of geographical areas likely to be affected.
2. A description of the aspects of the environment likely to be significantly affected by the proposed development.
  3. A description of any likely significant effects, to the extent of the information available on such effects, of the proposed development on the environment resulting from:
    - a) the expected residues and emissions and the production of waste, where relevant, and
    - b) the use of natural resources, in particular soil, land, water and biodiversity.
  4. The compilation of the information at paragraphs 1 to 3 shall take into account, where relevant, the criteria set out in Schedule 7.

1.2.5. The Project also falls under the EIA requirements of the Roads Act 1993 as amended, where Cycleway is referred to in Section 68<sup>2</sup>

(1) - as public road or proposed public road reserved for the exclusive use of pedal cyclists or pedal cyclists and pedestrians;

(2) (a) - A road authority may construct (or otherwise provide) and maintain a cycleway;

(b) - Where a road authority constructs or otherwise provides a cycleway, it shall by order declare either:

- (i) that the cycleway is for the exclusive use of pedal cyclists, or
- (ii) that the cycleway is for the exclusive use of pedal cyclists and pedestrians

(c) Any person who uses a cycleway in contravention of an order under paragraph (b) shall be guilty of an offence.

### 1.3. PLANNING CONTEXT

#### Project Ireland 2040 National Planning Framework

1.3.1. Project Ireland 2040 National Planning Framework (NPF), published in February 2018, acts as a guide for a high-level strategic planning and development for Ireland over the next 20 years. The vision set out under this Framework is based on a set of values that will ensure Ireland's long term economic, environmental and social progress for all parts of our country<sup>3</sup>. The NPF sets 10 National Strategic Outcomes and 75 National Policy Objectives, a number of which promote the development of recreational places and enhanced transport connectivity. These are set out in the form of policies / strategic outcomes which include:

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<sup>2</sup> European Union (Roads Act 1993) (Environmental Impact Assessment) (Amendment) Regulations 1993.

<sup>3</sup> Government of Ireland. 2018. Project Ireland 2040 National Planning Framework.

- National Policy Objective 46: In co-operation with relevant Departments in Northern Ireland, enhanced transport connectivity between Ireland and Northern Ireland, to include cross-border road and rail, cycling and walking routes, as well as blueways, greenways and peatway;
- National Strategic Outcome 3: Strengthened Rural Economies and Communities; and
- National Strategic Outcome 7: Enhanced Amenity and Heritage.

#### National Development Plan

- 1.3.2. The National Development Plan (NDP) 2021 to 2030 was launched to support the NPF. The National Development Plan sets out the investment priorities that will underpin the successful implementation of the new National Planning Framework (NPF). This will guide national, regional and local planning and investment decisions in Ireland over the next 10 years. The NDP promotes and encourages the development of walking and cycling facilities, as a means of sustainable travel<sup>4</sup>.

#### Kildare County Development Plan

- 1.3.3. The Kildare County Development Plan 2017 – 2023 supports the NPF and sets out the application of the NPF objectives through regional policies at the local level<sup>5</sup>. These include:
- WC1: Prioritise sustainable modes of travel by the development of high quality walking and cycling facilities within a safe street environment;
  - WC2: Promote the development of safe and convenient walking and cycling routes;
  - WC3: Ensure that connectivity for pedestrians and cyclists is maximised in new communities and improved within the existing areas in order to maximise access to town centres, local shops, schools, public transport services and other amenities;
  - WC7: Provide for safer routes to schools within the county and promote walking and cycling as suitable modes of transport as part of the Green Schools Programme and other local traffic management improvements;
  - WC10: Support the implementation of the Greater Dublin Area Cycle Network Plan, NTA (2015), in a balanced way in County Kildare; and
  - RAO1: Facilitate the provision of a variety of amenities within the county, including natural amenities, walking routes, cycling routes, and sports facilities.

## **1.4. PLANNING DEVELOPMENTS**

- 1.4.1. Table 1-1 lists potential developments deemed as major that are sited within 2km of the Project, between October 2020 and 20<sup>th</sup> October 2021. These developments have been selected with date received excluding all planning applications which have been declined by the local authority within the selected time period.

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<sup>4</sup> Project Ireland 2040 National Development Plan 20121– 2030. Government of Ireland.

<sup>5</sup> Kildare County Development Plan 2017 – 2023. Kildare County Council.

**Table 1-1 – List of Potential Major Planning Development<sup>6</sup>**

Reference	Description	Approx. Distance from Project	Status	Date Received
211470	Extension of Duration of Planning Ref. No. 16/848 - solar PV panel array with an export capacity of 10MW comprising approximately 38, 600 photovoltaic panels on ground mounted frames within a site area of 16.91 hectares.  Estimated date of completion 2025.	970m	New Application	15/10/2021
211471	Extension of duration of Planning Ref. No. 16/777 - the development of a solar PV panel array with an export capacity of 7.8MW comprising approximately 30,100 photovoltaic panels on ground mounted frames within a site area of 12.10 hectares.	1.4km	New Application	12/10/2021
21655	A residential development of 57 dwellings. 1.267ha in size.	Immediately south of Green Lane Road	Further information	13/05/2021

## 1.5. PURPOSE OF THE REPORT

- 1.5.1. WSP has prepared this EIA Screening Report on behalf of KCC to support a request for a Screening Opinion from KCC Planning Department, under the EIA Regulations 2018).
- 1.5.2. Under Section 176A of the EIA Regulations 2018, a person who is minded to carry out development may request the relevant planning authority to adopt a screening opinion, to determine whether or not the development in question constitutes 'EIA development'.
- 1.5.3. The purpose of this report is to provide KCC with the information it requires to adopt a screening opinion. Table 1-2 below sets out what information the EIA Regulations 2018 state that a request for a screening opinion must include and where this information can be found in this report.

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<sup>6</sup> Kildare County Council, Planning Applications. October 2020 to October 2021. Accessed 20/10/2020

**Table 1-2 - Information Required to Accompany a Request for a Screening Opinion (Schedule 7A)**

Information Required	Location within this Report
<p><b>A description of the proposed development, including in particular:</b></p> <p>a) a description of the physical characteristics of the whole proposed development and, where relevant, of demolition works,</p> <p>b) a description of the location of the proposed development, with particular regard to the environmental sensitivity of geographical areas likely to be affected; and</p>	<p>Section 1.5</p> <p>Section 2.3</p> <p>Section 2.4</p> <p>Section 2.5</p> <p>Appendix A –Project Location Plan</p> <p>Appendix B –Project Layout Plan.</p> <p>Appendix C.1 / C.2 – Treey Survey</p> <p>Appendix D – Constraints Plan</p>
<p><b>A description of the aspects of the environment likely to be significantly affected by the proposed development.</b></p>	<p>Section 3</p>
<p><b>A description of any likely significant effects, to the extent of the information available on such effects, of the proposed development on the environment resulting from:</b></p> <p>a) the expected residues and emissions and the production of waste, where relevant, and</p> <p>b) the use of natural resources, in particular soil, land, water and biodiversity.</p>	<p>Section 2.5</p> <p>Section 3 Table 3-1</p>
<p><b>The compilation of the information of the above shall take into account, where relevant, the criteria set out in Schedule 7.</b></p>	<p>See above.</p>

## 1.6. OVERVIEW OF THE PROJECT

- 1.6.1. As outline above, the Project is to provide segregated cycle infrastructure and to upgrade existing cycle lanes on Easton Road/Green Lane in Leixlip. The Project falls within an urbanised environment and is estimated to extend over a distance of approximately 700m along Green Lane. In addition, ancillary items such as bus stop improvements / signs will also form part of the Project.
- 1.6.2. The Project is located in Leixlip, County Kildare, Ireland (see Appendix A Project Location Plan). The Project will consist of a 2m wide cycle track and 2m footway along the existing road Green Lane – refer to Appendix B for a Project Layout Plan.

## 2. DESCRIPTION OF THE PROPOSED PROJECT

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### 2.1. NEED FOR THE PROJECT

- 2.1.1. The Project extents form part of a feeder route improving access to several schools' recreational facilities and a dense urbanised residential area as identified within the National Transport Authority (NTA) Cycle Network Plan maps for the cycle network of Leixlip.

### 2.2. PROJECT OBJECTIVES

- 2.2.1. The objectives of the Project are as follows:
- To improve accesses to various amenities including community facilities;
  - To aid towards the easing of potential congestion along this route; and
  - To promote and encourage the use of cycling and walking.

### 2.3. PROJECT LOCATION

- 2.3.1. The Project is located within the urbanised setting of Leixlip, approximately 14km west of Dublin, Ireland and as of 2016 had a population of 15,504<sup>7</sup>. The Project runs through the centre of Leixlip, providing connectivity to north and south of the town. Refer to Appendix A for the Project Location Plan.
- 2.3.2. The surrounding area predominately consists of residential properties, with community facilities found intermittently adjacent to Green Lane. A number of these properties and facilities can only be accessed via Green Lane. There are multiple bus stops located adjacent to both sides of the road.
- 2.3.3. An existing walkway / cycleway flanked by trees and grass verges lie either side of Easton Road / Green Lane. A number of road crossings and access to local roads exist within the boundary of the Project.
- 2.3.4. The Project does not fall within any statutory or non-statutory environmental designations. However, the closest watercourse, Rye Water, flows approximately 480m north of the Project at its closest point and Royal Canal flows approximately 600m west of the Project are considered as designated sites

#### Constraints Plan

- 2.3.5. Constraints Plan have been produced identifying areas of constraints within 2km of the Project, including 15km for Biodiversity. These maps have been produced to provide a graphical depiction of the environmental and land use constraints that may limit the desirable area for development at the site.

The following constraint maps (appended) have been produced for the Project:

- Figure 1 Flood Risk;

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<sup>7</sup> ONS (2016) 2016 Census Data. [Online]. Available at: [http://census.cso.ie/sapmap2016/Results.aspx?Geog\\_Type=ST2016&Geog\\_Code=73F6F9F7-B82C-4112-9964-BD214D09DE7E](http://census.cso.ie/sapmap2016/Results.aspx?Geog_Type=ST2016&Geog_Code=73F6F9F7-B82C-4112-9964-BD214D09DE7E) [Accessed September 2021].

- Figure 2a Ecological Designations;
- Figure 2b Ecological Designations;
- Figure 3 Heritage;
- Figure 4.1 Geology Soils;
- Figure 4.1 Geology Land Use;
- Figure 5 Air Quality;
- Figure 6 Noise and Vibrations; and
- Figure 7 Community Facilities.

2.3.6. The constraints mapping confirmed that the environmental receptors would not be deemed as having a significantly adverse impact as a result of the Project. See Appendix D Constraints Plan.

#### Tree Survey Report

2.3.7. A qualified Arboriculturist was appointed to carry out a tree survey in accordance with recognised Standards (BS 5837 2005 or as amended)<sup>8</sup> covering all trees in the vicinity of the Project. The survey included information on tree locations, species, size, age and condition.

2.3.8. A total of 113 individual trees were tagged and assessed as part of the survey, with two trees identified to have fungal fructifications indicating advanced decay with recommendation for these to be removed. Five trees were classed as high value, 79 classed as moderate, 23 classed as low value and 6 unsuitable for retention and recommended for removal. No mature trees are proposed to be removed as part of the Project.

2.3.9. The survey report further details safe and appropriate removal methods of trees which should be adopted if removal is required.

2.3.10. The Tree Survey is Appended in Appendix C.1 / C.2.

## **2.4. CONSTRUCTION METHODOLOGY**

2.4.1. The construction activities will likely involve the following main activities in the following sequence:

- Site clearance;
- Earthworks;
- Levelling;
- Installation of foundations;
- Installation of street furniture; and
- Landscape works.

2.4.2. The above activities are further described in Table 2-1, with key material requirements listed in Table 2-2 and key waste arisings in Table 2-3.

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<sup>8</sup> BS 5837:2005 Trees in relation to construction. Recommendation / BS 5837:2012 Trees in relation to design, demolition and construction. Recommendation

**Table 2-1 – Construction Sequence**

Site Clearance	Earthworks	Levelling	Installation of foundations	Installation of street furniture	Landscape works
Vegetation to be cleared and/or distributed on site (if safe and appropriate to do so) where required. Hand digging will be applied where working within the close proximity of prohibited and precautionary tree zones.	Minor earth works will be required to accommodate the new features (using mini excavator).	Removal and transition of kerbs in order to connect to the existing path (using a mini digger).	Surface course to be benched into existing footway.	Replacement of new cycling and pedestrian signs / posts.	Using available topsoil and turf from excavations (where appropriate) to landscape verges. Landscape verges and edges should be finished level with path surface.
Siding out of existing pavement to expose its full width.		Embankment to be re-profiled to accommodate extension (using a mini excavator).	Laying of asphalt. Provision of a 2m wide cycle track and 2m footway within the verge area behind the existing road.  Likely using a roller to compact to required level.	Construction of proposed bus stop shelters.	
Removal of existing cycling and pedestrian signs / posts.			Application of road markings for cyclists and pedestrians.	Excavated holes for the purpose of posts to be filled with concrete and allowed to set and/or use excavated soils where appropriate.	
*No lighting or ducting works is proposed under the current Project*					

**Table 2-2 - Key Materials likely Required for Activities**

Activity	Material Required	Origin / Content
Site Construction	<ul style="list-style-type: none"> <li>Asphalt surfacing</li> <li>Inert granular material</li> <li>Signs and posts</li> <li>Fixings</li> <li>Road paint</li> <li>Concrete</li> <li>Grass seed</li> </ul>	Guardrails and signs may contain a percentage of recycled metal

**Table 2-3 Key Waste likely Arising from Activities**

Activity	Waste Arising	Disposal / Regulation
Site Construction	Concrete kerbing	Sent to a licenced waste facility
Site Remediation / Preparation Earthworks.	Cleared vegetation / soils	<p>Very limited quantities of solid waste may be produced during construction.</p> <p>Either removed from site and sent to a licenced waste facility or where safe to do so (and soils uncontaminated), evenly distributed on site.</p>

\*No demolition is proposed. \*

\*There are no known contaminated points or historic landfill sites within Leixlip<sup>9</sup>. \*

### Access Routes

- 2.4.1. Access to the cycle path shall be gained via all existing regional and local road access points along the length of the route and are indicated on supporting drawings for this application.

### Timing of Works

- 2.4.2. Construction is anticipated to start in Summer of 2022 for a duration of one year, aiming for the operational date of Summer 2023. Working hours will be between 08:00 to 18:00 Mondays to Fridays, 0800 to 13:00 Saturdays and no works on Sundays or bank holidays.

<sup>9</sup> Republic of Ireland 2021, EPA Maps. [Online]. Available at: <https://gis.epa.ie/EPAMaps/>. Accessed 04/10/2021

### Traffic Management Arrangements

- 2.4.3. Traffic management will likely involve a single lane closure facilitated with two-way traffic light system. Appropriate diversion routes will be established to minimise road disturbance.

### Best Practice Approach

The following guidance's can be rereferred for best practice approach:

Ciria Guidance's:

- Environmental good practice on site guide (C741);
- Control of water pollution from linear construction projects. Site guide (C649D);
- Control of water pollution from linear construction projects. Technical guidance (C648D);

And,

- British Standard (BS)5228-1: 2009+A1:2014: Code of practice for noise and vibration control on construction and open sites.

### 3. ASPECTS OF THE ENVIRONMENT LIKELY TO BE SIGNIFICANTLY AFFECTED

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3.1.1. Table 3-1 below sets out the aspects of the environment likely to be significantly affected by the construction and/or operation of the Project, together with a description of any likely significant effects of the Project on the environment and any measures envisaged to avoid, prevent or reduce and, if possible, offset what might otherwise have been significant adverse effects on the environment. In accordance with Schedule 7 of the EIA Regulations 2018 the consideration of likely significant effects of the Project on the environment has taken into account:

- The extent of the impact (geographical area and size of the affected population);
- The transfrontier nature of the impact;
- The magnitude and complexity of the impact;
- The probability of the impact; and
- The duration, frequency and reversibility of the impact.

The aspects of the environment are reported in accordance with the environmental factors listed within Article 3(1) of European Directive 2014/52/E, on the assessment of the effects of certain public and private project on the environment as follows:

- Population and Human Health;
- Biodiversity;
- Land;
- Soil;
- Water;
- Air;
- Climate;
- Cultural Heritage;
- Material Assets; and
- Landscape.

3.1.2. EU Directive 2014/52/EU also requires the consideration of the vulnerability of the project to risks of major accidents and/or disasters, and any consequential changes in the predicted effects of that project on environmental factors.

3.1.3. It is not anticipated that the Project will give rise to risks of major accidents and/or disasters and this aspect is therefore screened out. The Project will involve the upgrade of cycleway which will likely be like-for-like (materials) and a slight widening of footway and cycle track. Best construction practices will be followed throughout construction, which will include but not limited to proper site management, maintenance, and operation of all machinery, this will be presented and form part of the Contractor Construction Environmental Management Plan (CEMP).

- 3.1.4. EU Directive 2014/52/EU also requires consideration of the likely significant effects of the project on the environment resulting from heat and radiation.
- 3.1.5. It is anticipated that an assessment of heat and radiation is unlikely to be relevant to the scope of the Project, and is therefore screened out

3.1.6. Table 3-1 details each relevant element (receptor) and potential effects.

**Table 3-1 – Aspects of the Environment Likely to be Significantly Affected**

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
Population and Human Health	<p>The Project falls within an urban environment. Multiple residential properties, including a pharmacy, leisure centre and two primary Schools flank the west and eastbound road within the Project boundary – See Appendix B. Many of these properties can only be accessed via Easton Road / Green Lane.</p> <p>Existing residents and the local community have the potential to be impacted during construction.</p>	Construction	<p>Disturbance associated with noise, vibration, dust, particulate matter and light pollution, generated by temporary on-site activities and construction traffic.</p> <p>Activities may involve a variety of temporary equipment. As such there is some potential for disturbance associated with noise and vibration, an increase in dust and particulate matter, as well as the potential for light spill and glare (during night-time / winter months) experienced by residential receptors. Resulting effects would be temporary in nature and reversible.</p> <p>Post construction, the Project will afford a beneficial – permanent long-term impact associated with increased accessibility of the area for walkers and cyclists.</p>	<p>It is not anticipated that night-time working will be required.</p> <p>Where appropriate, it is assumed that a Construction Environmental Management Plan (CEMP) or other pollution prevention measure would be in place and best practice measures adhered to during construction.</p> <p>In the event of a full road closure, road closures/restrictions will be widely publicised within the local and wider area, in an effort to minimise disturbance to vehicular travellers.</p> <p>Any accesses temporarily blocked will need to be manned to allow entry to and from the property.</p> <p>As construction activities will be temporary, it considered that the Project will not have significant effects.</p>	Not significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
	Bus stops, crossings, footway / cycleway and accesses exist within the Project boundary. Bus operators may be impacted during construction.	Construction	Disturbance / delays to public transport.	<p>Any bus stop closures falling within the Project boundary will be advertised prior to commencement of works, to minimise disruption to local users.</p> <p>Alternative pedestrian / cyclist routes should be established in the event of the temporary closure of footway / cycleway. This should be clearly visible and fit for all abilities.</p> <p>As construction activities will be temporary, it considered that the Project will not have significant effects.</p>	Not significant
Noise and vibration	<p>The Project falls within an urban environment with extensive noise and vibration sensitive receptors in its vicinity.</p> <p>Receptors include residential dwellings, a fitness centre, two primary schools, Little Harvard Creche &amp; Montessori and Green Lane Montessori (childcare facilities) and Leixlip G.A.A. Many of these receptors are in close proximity to the Project.</p> <p>The nature of the prevailing local noise environment is expected to be typical of an</p>	Operation (noise)	<p>The key existing noise source is road traffic on Green Lane. No substantial changes are proposed to the alignment of road traffic lanes on this, or any other nearby road traffic route.</p> <p>The introduction of the scheme proposals has the potential to reduce traffic movements on Green Lane by making the route more attractive to cycle use, leading to a potential reduction in operational noise levels (assuming that traffic flow would reduce, whilst traffic speed and composition (% Heavy Duty Vehicles) would remain otherwise unchanged).</p> <p>Cycle use is not considered to be a significant noise source, so increased</p>	N/A	Not significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
	<p>urban area, with key contributors being road traffic noise from nearby routes including Green Lane, the R146 Station Road to the north, and other local side streets in close proximity to the Project. The urban nature of the prevailing noise environment will serve to limit the potential for significant noise impacts to arise as a result of the scheme.</p>		<p>use of the route by cycles would not lead to an increase in operational noise levels.</p> <p>As such, no adverse noise impacts are expected as a result of the operation of the Project.</p>		
		Operation (vibration)	<p>The scheme is not expected to introduce an increased potential for groundborne vibration, as it would not introduce any new mechanisms for its generation (e.g. speed humps / bumps or uneven ground surfaces). As such no adverse impacts from groundborne vibration are expected as a result of the operation of the Project.</p>	N/A	Not significant
		Construction (noise)	<p>The construction period for the Project is 1 year, but construction working hours would be limited to daytime periods only, eliminating the potential for any night-time impacts.</p> <p>A number of the expected construction operations have the potential to give rise to localised noise when undertaken, such as the use of mobile plant (excavators and mini diggers etc.), sign installation works, ground preparation works and the laying of asphalt etc. Such works would necessarily be undertaken in close</p>	<p>A number of measures are available to control construction noise, including the adoption of Best Practicable Means (BPM) as defined in the Control of Pollution Act 1974, and the guidance on noise reduction presented within BS5228-1: 2009+A1:2014: Code of practice for noise and vibration control on construction and open sites.</p> <p>A Construction Environmental Management Plan (CEMP), or similar, will be required as part of a conditional planning consent and used to ensure that such best practice measures are</p>	Potentially significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
			proximity to noise sensitive receptors. However, any resulting impacts would be short term and temporary as the necessary works progresses along the route.	deployed in practice to avoid or minimised impacts.	
		Construction (vibration)	Highly vibration generative works such as impact piling or the use of vibratory rollers over sustained periods (for ground compaction) are not expected to be required. As such, no adverse groundborne vibration impacts are expected as a result of the construction of the Project.	N/A	Not significant
Biodiversity	Sites designated for biodiversity are present within 2km of the proposed Project including Rye Water Valley/Cartron Special Area of Conservation (SAC) and proposed Natural Heritage Area (pNHA), Royal Canal pNHA and Liffey Valley pNHA.  Green Lane is in an urban setting dominated by houses and gardens and the grounds of a primary school. Hard standing (roads, pavements and buildings) with managed amenity grassland, scattered immature and semi-mature	Construction	<p>Pollution of watercourses leading to designated sites.</p> <p>Loss or degradation of semi-natural habitats (primarily trees and hedgerows).</p> <p>Risk of nesting birds being harmed or disturbed as a result of damage to hedgerows and trees during nesting season.</p> <p>Harm or disturbance to protected species.</p> <p>Spread of invasive non-native species into the wild.</p> <p>It should be noted that the Project is largely restricted to existing</p>	<p>The Project will be undertaken in accordance with best practice such that pollution incidents will be controlled at-source or treated within the existing drainage network with no impact on downstream protected sites. There is no hydrological connectivity between Project site and designated sites.</p> <p>Minor earthworks on grassland areas will be localised and will be micro-sited to avoid tree roots where possible (see also landscape/ arboriculture mitigation measures). Hedges and trees will be retained where possible to safeguard habitat for nesting birds.</p>	Not significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
	<p>broadleaved trees, species-poor hedgerows, ornamental shrubs and a small unmown area of grassland at the junction with R148 Station Road, which is managed for wildlife, are present along the Project route.</p> <p>There is potential for nesting birds to use hedgerows, trees and shrubs during the breeding season; protected species and invasive non-native species may also be present.</p> <p>A tree survey has identified a number of trees on municipal greens/school grounds including six which are classified as unsuitable for retention. Trees have high amenity value locally. See Appendix C.1 / C.2 – Treey Survey.</p>		<p>road/pavement and amenity areas which are already subject to human disturbance and road maintenance operations.</p> <p>The arboricultural report recommends felling at least 6 trees and severance of dense ivy on one further tree. The features which contribute to tree decay and ivy growth can be used by roosting bats and nesting birds for shelter or protection and there is a risk of these species being killed or injured or their resting places being disturbed or damaged.</p>	<p>Prior to any arboricultural work being carried out a nesting bird survey (only required if works would take place between March – August inclusive) and potential roost assessment survey for bats (any time) must be undertaken. A search for other protected species or invasive non-native species should be undertaken at the same time, to identify any species-specific mitigation or biosecurity management which may be required. The Contractor will be responsible for undertaking the necessary ecological surveys.</p>	
Land	The Project will require third-party land take on either side of the existing road Green Lane.	Design and Construction	<p>Private accesses may be temporarily and partially restricted due to traffic management arrangements.</p> <p>The Project may see the permanent up take of third-party land to</p>	Consultation with relevant landowners will be required during design and construction. Consultation will detail the nature of the works including any storage space required on third-party land.	Not significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
	The existing land use consists of discontinuous urban fabric. Land take will likely consist of roadside verge / hedgerows and trees. A small boundary wall exist which may require pushed back from the road.		accommodate the cycleway / pedestrian route.	<p>During construction communications will be maintained with landowners, ensuring that they remain fully informed of the works progress and any potential disruptions.</p> <p>Best practice will be followed to ensure land is left clean and tidy post construction. Removal of trees will be avoided and/or removed where absolute necessary to accommodate the works.</p> <p>If the boundary wall requires displacement, then the fabric of this must be fully reinstated in its new location.</p>	
Geology and Soils	The geology of the land consists of visian limestone & calcareous shale and land use is described as discontinuous urban fabric. There is no known contamination or historic landfill sites within Leixlip.	Construction	Waste produced will be of limited quantities, likely consisting of soils excavated and general site waste.	Excavated soils will be reused where possible for example backfilling purposes of signposts. Where practicable waste will be recycled, otherwise disposed at a licenced waste facility.	Not significant
Water	<p>Surface water, groundwater, and water supplies.</p> <p>The closest watercourse Rye Water flows approximately 480m north of the Project at its closest point. Royal Canal</p>	Construction and Operation	None	Good design and adoption of standard good construction practice and implementation of a CEMP.	Not significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
	flows approximately 500m northwest of the Project.				
Air Quality	<p>There are numerous sensitive human receptors present immediately adjacent to, and up to 350m from, the Project. There are also human receptors within 50m expected to use Easton / Green Lane Road during construction .</p> <p>There is no air quality monitoring in the area, however air quality is generally considered to be good. Environmental Protection Agency background concentrations for the Dublin area for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> were all under the EU limit values in 2019, and PM<sub>10</sub> and PM<sub>2.5</sub> were under the 2006 WHO guideline values in 2019. WHO guideline values have since become more stringent, meaning that background concentrations are no longer below the WHO guideline values.</p>	Construction and operational	<p>Fugitive dust from pavement and road construction activities that may affect human health and amenity.</p> <p>Operational traffic flows or speeds may change slightly due to minor road realignments and introduction / alteration of pedestrian crossings. However, these changes are expected to be negligible in terms of changes to local air quality.</p>	Construction effects should be mitigated in the CEMP. Given the presence of sensitive receptors the CEMP should be accompanied by a dust risk assessment following guidance issued by the Institute of Air Quality Management. The dust risk assessment can be used to inform the appropriate level of mitigation to be applied.	Not significant
Climate (Resilience)	The Project	Construction	The construction period is anticipated to last approximately 1 year. The		Not Significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
			<p>construction site, workers, materials and construction equipment may be vulnerable to extreme climate events such as heavy rainfall, storms or heatwaves.</p> <p>Risks such as disruption to the delivery (construction) of the Project, flooding of the Project, overheating of machinery or health risks to site operatives could be reasonably expected during the construction stage.</p>	<p>Due to the short timescales of the construction period, it is considered that potential impacts associated with these events will be mitigated as far as possible through inclusion within a CEMP. Measures would include good practice provisions such as adequate shade and Personal Protective Equipment (PPE) for workforce during periods of high temperatures, securing and preventing access to site during strong winds or storms, and construction site drainage provisions able to withstand heavy rainfall events.</p>	
Climate (Resilience)	The Project	Operation	<p>The anticipated life of the Project is 15-20 years, with operation set to commence in 2023.</p> <p>During the operational phase, the Project may be affected by changes in average temperature and precipitation in addition to extreme weather events.</p> <p>A historical flood risk assessment was undertaken and found that no flooding had occurred in the area previously, with the closest flood risk found to be 2km south from the site.</p> <p>The groundwater vulnerability map sourced from the GSI Spatial Resources On-line Viewer (GSI, 2018)</p>	Climate change	Not Significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
			shows groundwater vulnerability over the whole site as Moderate.		
Climate (greenhouse gases)	The Project	Construction	<p>GHG emissions will occur at the construction stage, due to the construction works, the construction materials (embodied manufacturing emissions), and the transport of these materials.</p> <p>Based on professional judgement and the small scale nature of the Project it is anticipated that the effects will be minor and not significant.</p>	Emissions at the construction stage – in accordance with good practice – will be mitigated through measures listed in a CEMP.	Not Significant
Climate (greenhouse gases)	The Project	Operation	The introduction of segregated cycle infrastructure and the upgrade of existing cycle lanes has the potential to reduce greenhouse gases by making cycling more of a favourable mode of transport which potentially reduces the number of car trips being taken and therefore reducing emissions.	None required	Not significant
Cultural Heritage	There are 14 protected structures within 2km of the Project. The closest is the Wonderful Barn Complex (RPS B11-15) located	Construction and Operation	<p>Given the distance from the Project, there will be no direct impacts on protected structures.</p> <p>It is also considered that the Project would have no indirect impact on the</p>	None required	Not significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
	approximately 600m south of the Project.		setting of these heritage assets as they are unlikely to have visibility of the project due to the distances involved and the intervening buildings, vegetation and topography.		
	There are 72 structures noted within the National Inventory of Architectural Heritage (NIAH) within 2km of the Project, the majority of which are located within Leixlip. The closest is the Catholic Church of Our Lady's Nativity (NIAH No. 11804033), located approximately 400m south east of the Project.	Construction and Operation	Given the distance from the Project, there will be no direct impacts on any of these heritage assets.  It is also considered that the Project would have no indirect impact on the setting of these heritage assets as they are unlikely to have visibility of the project due to the distances involved and the intervening buildings, vegetation and topography.	None required	Not significant
	There are 49 Record of Monuments and Places (RMP) sites within 2km of the Project, ranging from prehistoric burnt mounds to post-medieval industrial assets. The closest is a holy well (KD011-007) located approximately 500m north of the project.	Construction and Operation	Given the distance from the Project, there will be no direct impacts on any of these heritage assets.  It is also considered that the Project would have no indirect impact on the setting of these heritage assets as they are unlikely to have visibility of the project due to the distances involved and the intervening buildings, vegetation and topography.	None required	Not significant
Material Assets	N/A	Construction	Use of finite resources	Best practice will be followed for the supply and storage of materials, for	Not significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
				<p>example following the Just in Time method where goods are received from suppliers only as they are needed and appropriate storage of materials on site both supervised and unsupervised.</p> <p>Sustainable materials such as asphalt is said to be a durable product, as it should resist weathering action, chemical attack and stresses and strains in use, while maintaining its desired engineering properties.</p> <p>Metals used for the works will contain a percentage of recycled content. Recycled percentage is dependent on supplier.</p>	
Landscape	The Project will require widening of the street scene, vegetation removal and encroachment onto third party land. This is likely to result in potential landscape impacts on the existing landscape character and visual amenity of residents along Easton Road/Green Lane.	Construction and Operation	<p>Work will be undertaken under the arboricultural method statement including setting up root protection areas and construction exclusion zones around trees being retained. However, the arboricultural report recommends felling at least 6 trees and severance of dense ivy on one further tree. See Appendix C.1 / C.2 – Treey Survey.</p> <p>Tree loss and vegetation removal will likely open up views from residents towards the road corridor as well as diminish the scenic quality of the route along Easton Road/Green Lane.</p>	<p>Where possible existing trees, vegetation and green space should be retained. Where vegetation loss is anticipated it is recommended that replacement planting is specified, particularly within green spaces and where views from residential properties are likely to be impacted as a result of vegetation loss.</p> <p>It is recommended that encroachment onto residential properties be avoided where possible, particularly if encroachment will result in loss of boundary walls and impact on front</p>	Potentially significant locally

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
			<p>Encroachment onto third party land will also be required at points for route widening, with potentially significant impacts to residents resulting from encroachment into a small section of a boundary wall, alongside the associated vegetation loss.</p> <p>During construction, plant, excavated materials and associated site fencing and signage will likely result in visual impacts for residents and vehicular and pedestrian users of the route forming detracting features along the road corridor. Such impacts are of a temporary nature and as such are unlikely to cause significant long-term impact.</p>	<p>gardens of dwellings. This will be incorporated into design.</p> <p>During construction, site is to be kept clean and tidy so as to minimise visual intrusion.</p>	
Cumulative	Cumulative impact associated with the above elements.	Construction	Cumulative impact is most likely to arise from construction activities, and with loss of habitat being a reoccurring factor. Most likely affecting Population and Human Health, Ecology, Noise and Air Quality.	<p>Strict construction management plans will be provided to ensure as much of the surrounding habitat is retained and only removing trees / shrubs where deemed necessary.</p> <p>The mitigation measures as stated within the above sections and Best Practice Guidelines would apply such as the implantation of a CEMP.</p>	
Cumulative (Planning Developments)	There are three potential developments considered as	Construction	Given the nature of the works required, distance and as works will be restricted to the 700m stretch of Easton Road	In the event, that the residential development is granted and is constructed in the same period of the	Not significant

Factor	Element	Phase	Description of Likely Significant Effect	Mitigation Measures	Significant / Not significant
	<p>major within 2km of the Project boundary.</p> <p>Two Solar PV Panel Developments and Residential Development of 57 Dwellings, immediately south of Green Lane Road – See Table 1-1.</p>		<p>Green Lane, no cumulative impact is predicted during and post construction in regard to the two Solar PV Panel Developments.</p> <p>The development of the 57 residential dwellings, immediately south of Green Lane Road awaits further information before the granting / refusal of the planning application. In the event, that this development is granted and is constructed in the same period of the Project (even though unlikely), adverse impact may arise due to traffic management arrangements and associated environmental effects, such as air quality and noise (disturbance).</p>	Project (even though unlikely), the mitigation measures as stated within the above sections would apply.	
Risks of major accidents and/or disasters	N/A	N/A	N/A	N/A	Not significant
Heat and radiation	N/A	N/A	N/A	N/A	Not significant

## 4. SUMMARY

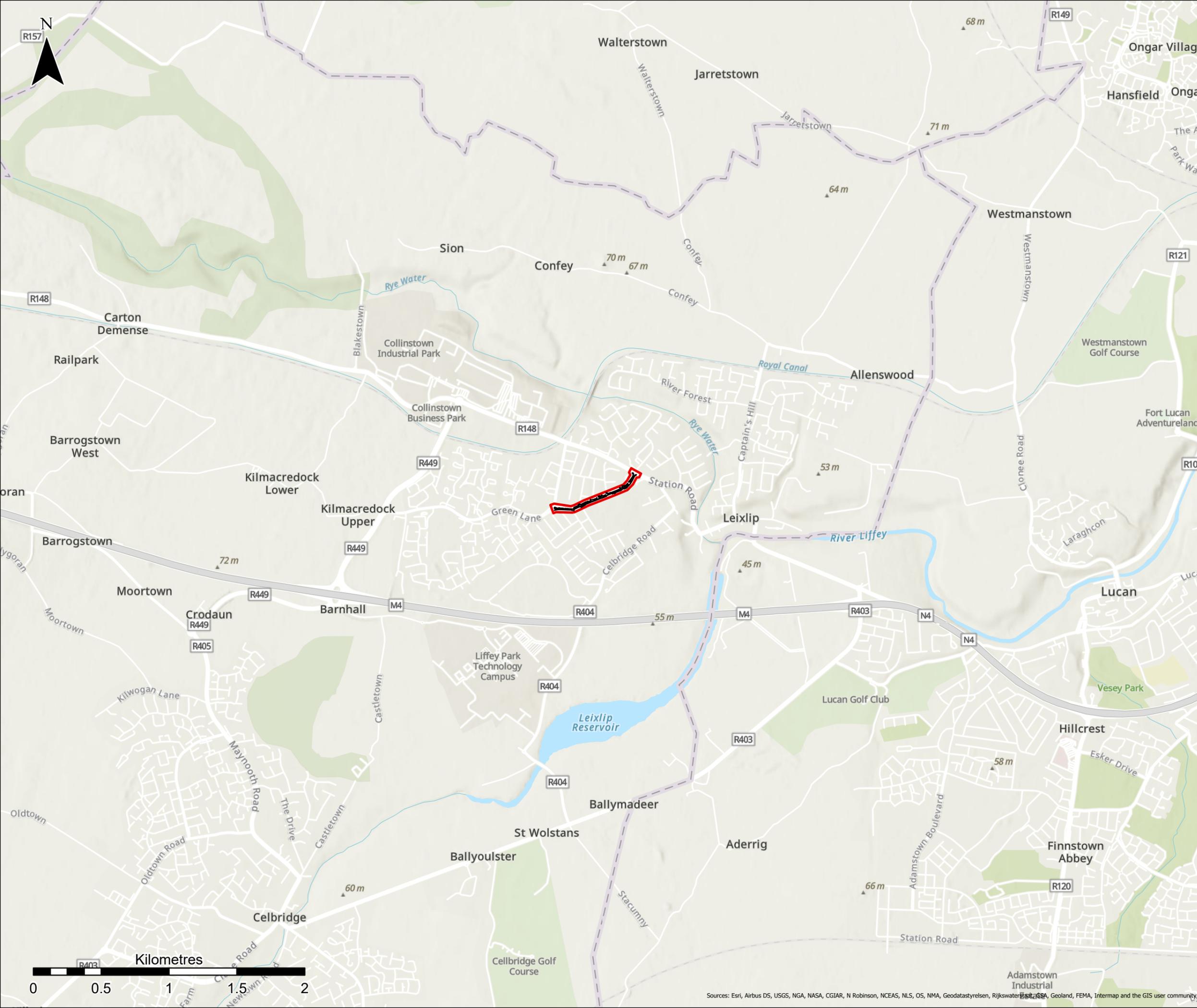
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- 4.1.1. WSP has prepared this EIA Screening Report under the 2018 EIA Regulations to support a request to Kildare County Council (KCC) Planning Department for an EIA Screening Opinion. The report provides the information necessary for KCC to provide a screening opinion in accordance with Schedule 5 of the 2018 Regulations.
- 4.1.2. The information provided in Table 3-1 of this report provides an assessment of likely environmental effects, accompanied with mitigation measures to reduce potential adverse effects primarily associated within the construction phase of the Project. In addition, a CEMP is proposed to be implemented to further reduce adverse impact. The CEMP will take account of the aspects identified in Table 3-1, which may give rise to potential adverse effects as a result of the Project. The appointed Contractor will be responsible for implementing the recommended mitigation measures including application of the CEMP.
- 4.1.3. The Project is not located within any statutory or non-statutory designated area. The Project will be undertaken in accordance with best practice such that pollution incidents will be controlled at-source or treated within the existing drainage network with no impact on downstream protected sites.
- 4.1.4. The Project does not pose any significant effects to the characteristics identified within this report; therefore, it is deemed that the Project does not constitute EIA development.
- 4.1.5. The existence and reuse of the already made structures reduces the need for any additional land take and proposed works are minor in nature being confined to resurfacing when required. Where and if tree removal is required then construction activities will be undertaken in line with the arboriculturist report produced for the Project and further advise will be sought. In addition, prior to any removal of vegetation (including trees), a bird and bat survey will be carried out to capture potential impacts to biodiversity.

# Appendix A

## PROJECT LOCATION PLAN





**Legend**  
 Red Line Boundary  


**DRAWING STATUS:**  
 FOR ISSUE

  
 Shorefield House, 30 Kinnegar Drive, Hollywood  
 County Down, BT18 9JQ, UK  
 T: +44(0) 28 9595 3020  
 www.wsp.com

**CLIENT:**  
 **Comhairle Contae Chill Dara**  
 Kildare County Council

**PROJECT:**  
 Green Lane Cycle Track Scheme

**TITLE:**  
 Proposed Project Location Plan

SCALE @ A3: 1:25,000	CHECKED: VK	APPROVED: GW
PROJECT NO: 70085675	DRAWN: SC	DATE: 02/09/2021
DOCUMENT NO: 70085675-WSP-A-EC-001-00	REV: 00	

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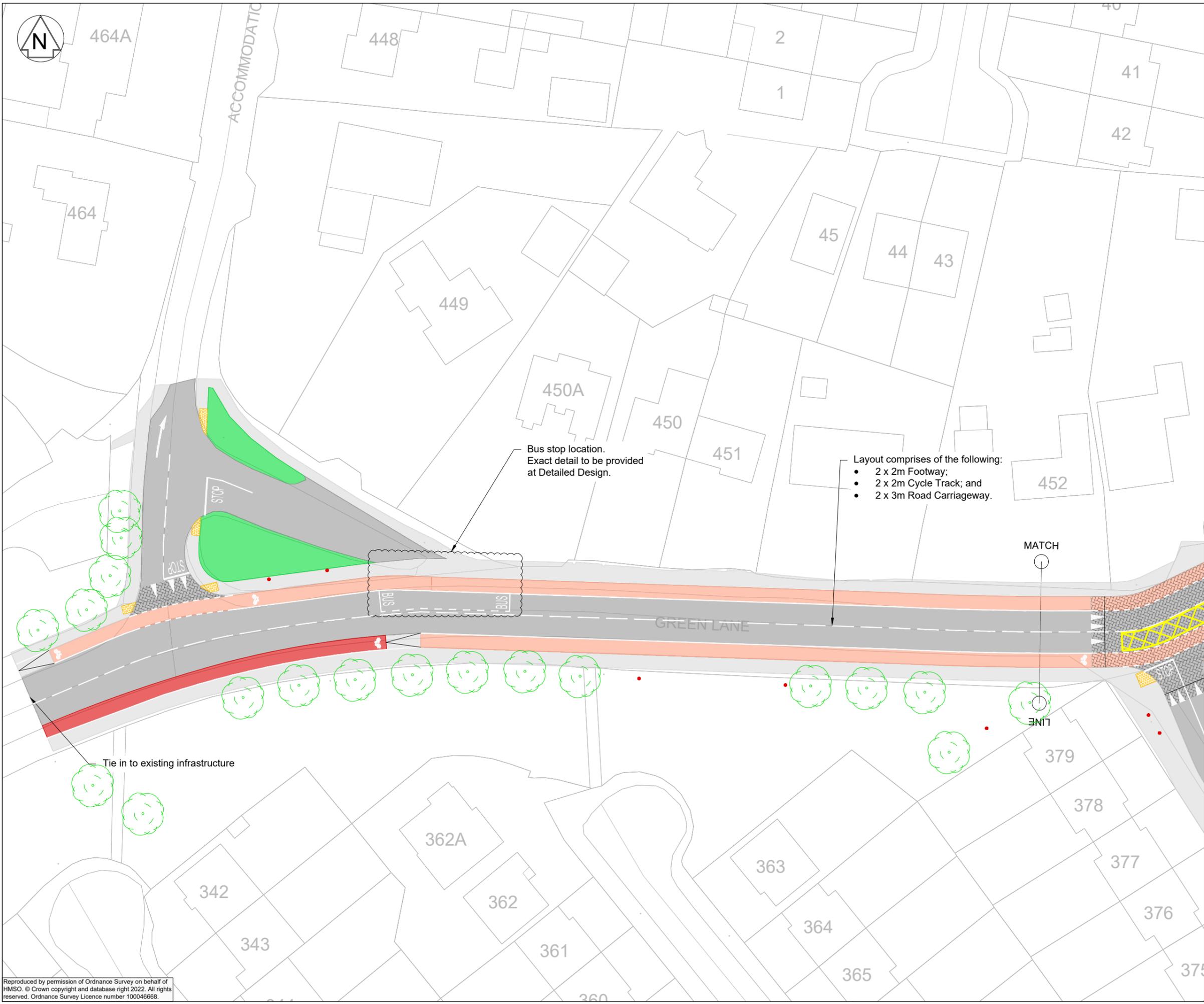
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, CSA, Geoland, FEMA, Intermap and the GIS user community

# Appendix B

## PROJECT LAYOUT PLAN



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DO NOT SCALE



Bus stop location.  
Exact detail to be provided  
at Detailed Design.

Layout comprises of the following:

- 2 x 2m Footway;
- 2 x 2m Cycle Track; and
- 2 x 3m Road Carriageway.

Tie in to existing infrastructure

Information contained in this drawing is indicative only. Details to be confirmed during site survey.

**LEGEND:**

- Carriageway
- Footway
- Cycle Track
- Cycle Lane
- Grassed Area
- Tactile Paving for Uncontrolled Crossing
- Tactile Paving for Controlled Crossing
- Raised Surface
- Black Top - Shared Surface
- Buffer - Shared Surface
- Pavior - Shared Surface
- Existing Tree to be Retained
- Existing Tree to be Removed

A	M.E.	D.K.	C.B.	10/02/2022
Part 8 Planning Issue				
Rev	Drawn / Des	Checked	Approved	Date
Description				
PART 8 PLANNING ISSUE				S0
Client				

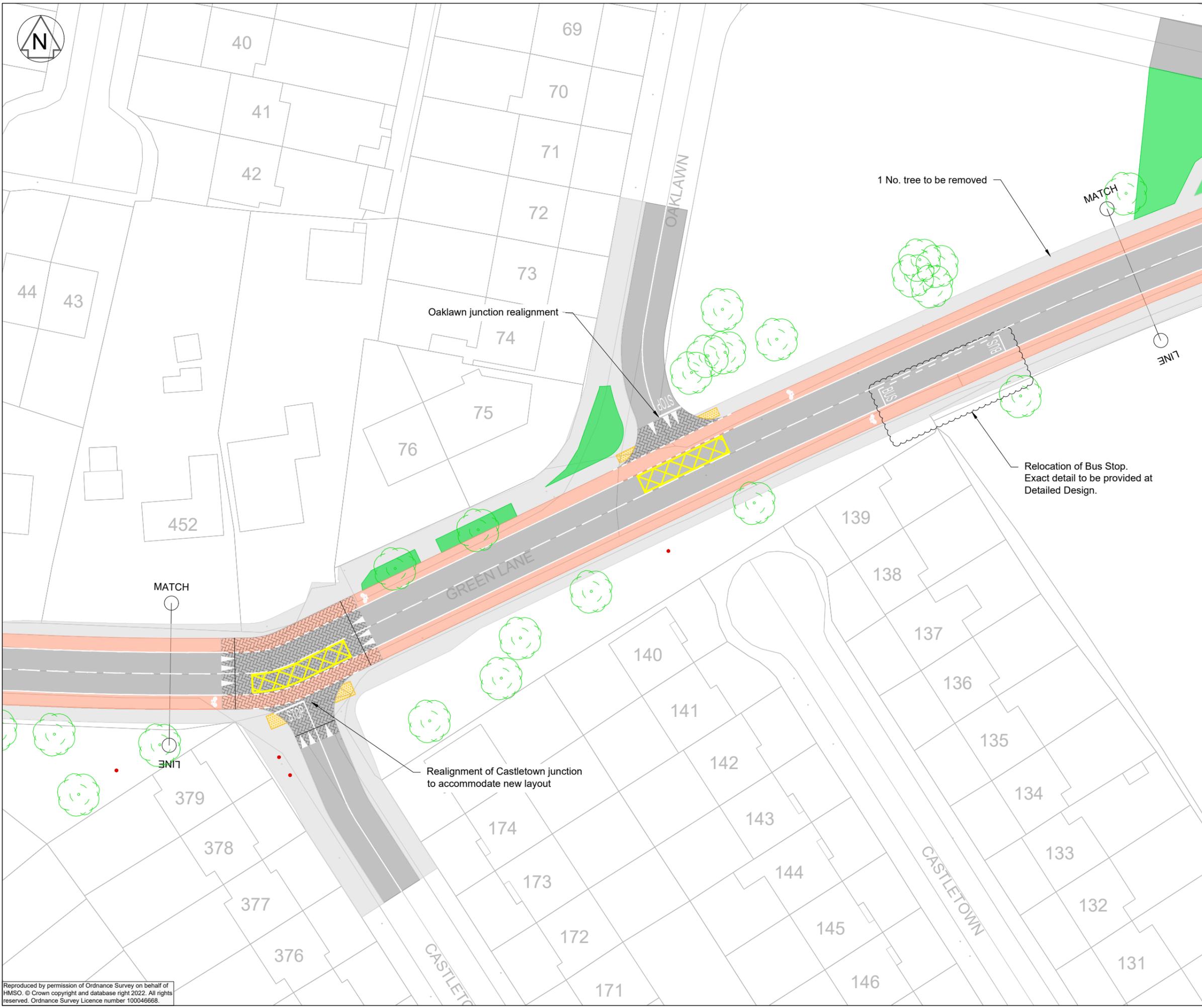


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Part 8 Planning				
Sheet 1 of 5				
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Original Size	Date	Date	Date	Date
A1	21/02/2022	21/02/2022	21/02/2022	21/02/2022
Drawing Number	Project	Originator	Volume	Revision
40000085-WSP-DG-HW-0016-01				A
Location	Type	Role	Number	

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Information contained in this drawing is indicative only. Details to be confirmed during site survey.

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A	M.E.	D.K.	C.B.	10/02/2022
Part 8 Planning Issue				
Rev	Drawn / Des	Checked	Approved	Date
Description				
Drawing Status				Suitability
PART 8 PLANNING ISSUE				S0

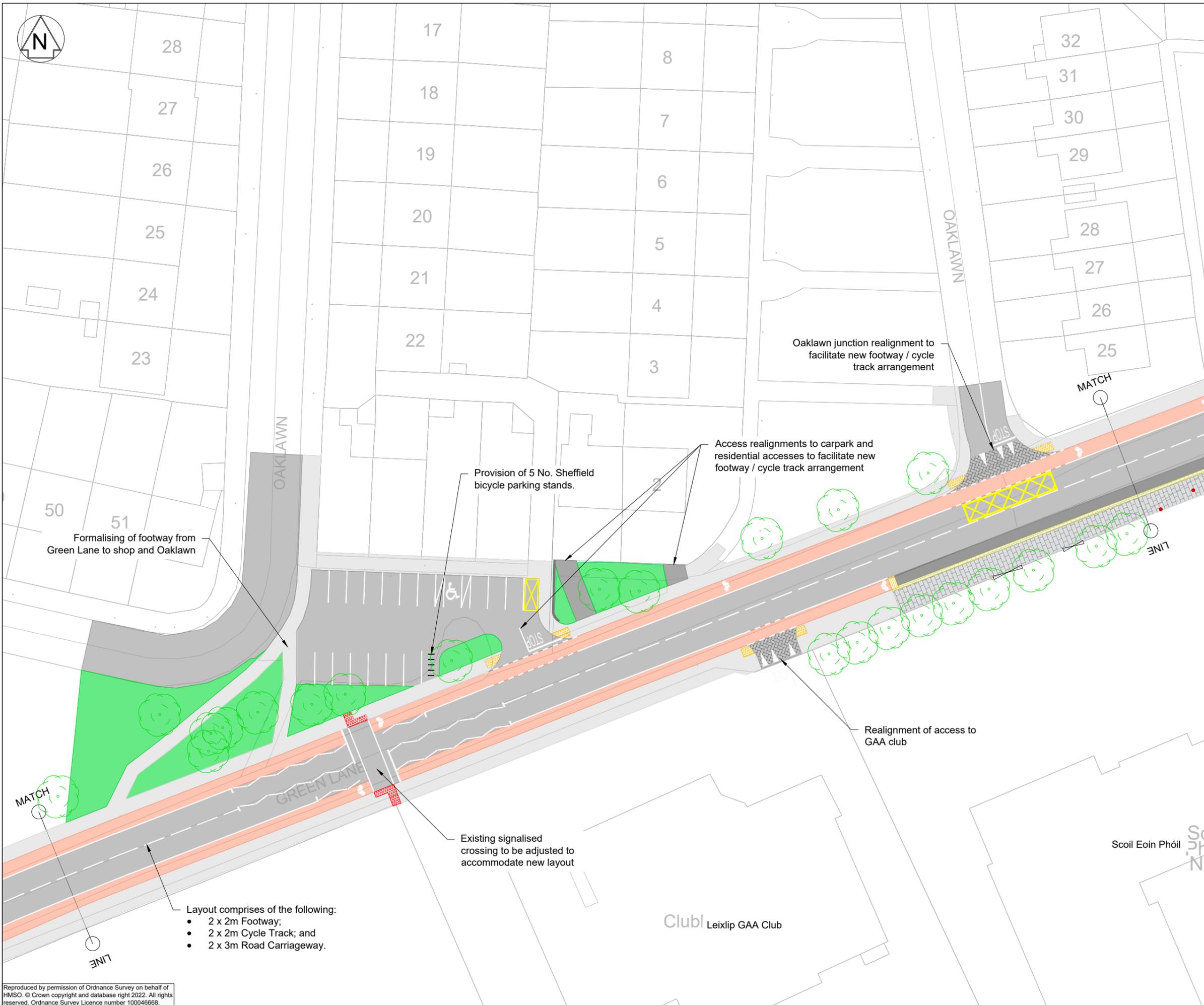


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Sheet 2 of 5				
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Location	Type	Role	Number	

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- Existing Tree to be Retained
- Existing Tree to be Removed

Formalising of footway from Green Lane to shop and Oaklawn

Provision of 5 No. Sheffield bicycle parking stands.

Access realignments to carpark and residential accesses to facilitate new footway / cycle track arrangement

Oaklawn junction realignment to facilitate new footway / cycle track arrangement

Realignment of access to GAA club

Existing signalised crossing to be adjusted to accommodate new layout

- Layout comprises of the following:
- 2 x 2m Footway;
  - 2 x 2m Cycle Track; and
  - 2 x 3m Road Carriageway.

A	M.E.	D.K.	C.B.	10/02/2022
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Part 8 Planning Issue

Rev	Drawn / Des	Checked	Approved	Date

Description

PART 8 PLANNING ISSUE				S0
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Client



Drawing Title  
P82022.05 Green Lane Cycle Track Scheme, Leixlip  
Part 8 Planning  
Sheet 3 of 5

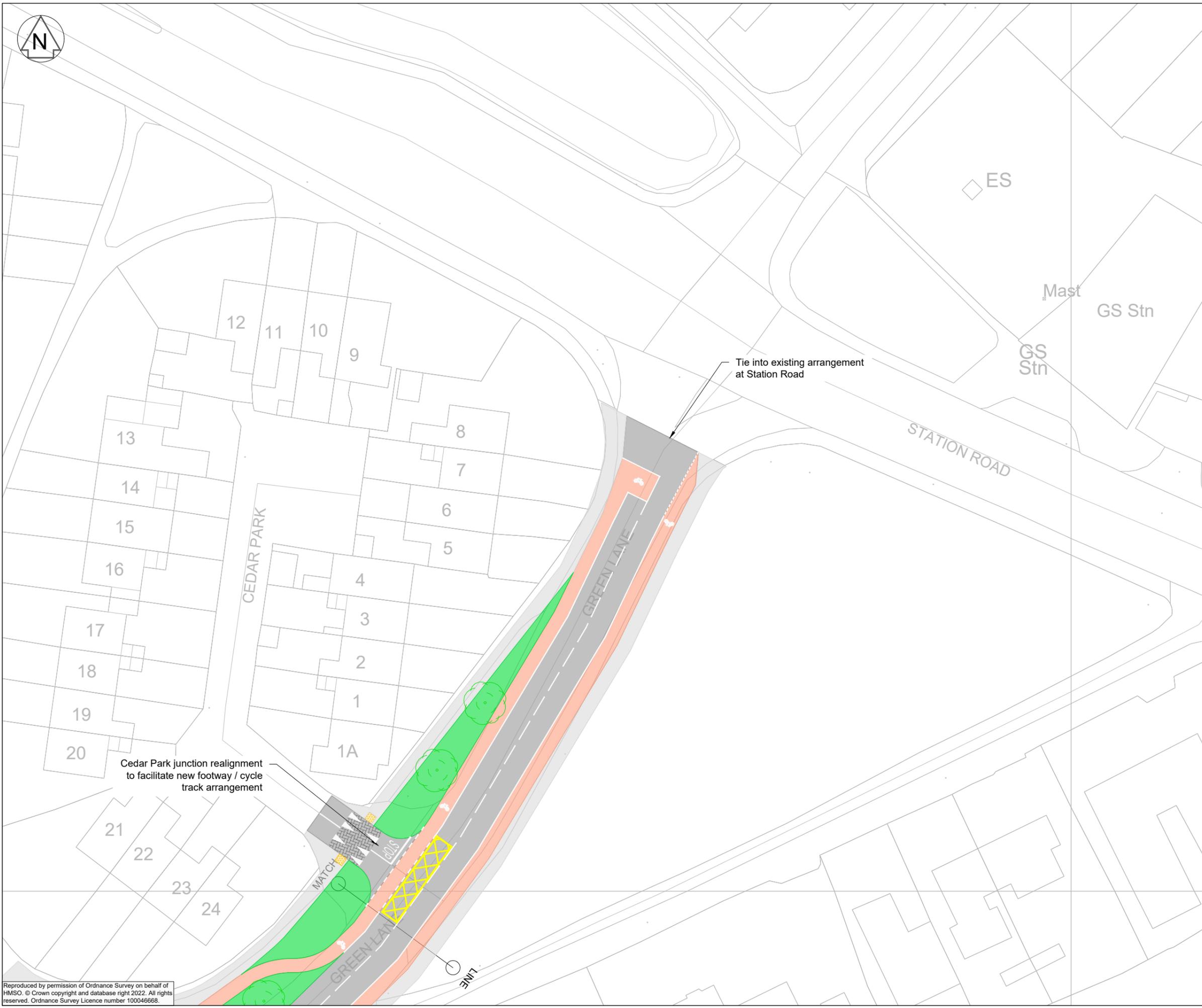
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A	M.E.	D.K.	C.B.	10/02/2022
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Part 8 Planning Issue

Rev	Drawn / Des	Checked	Approved	Date

Description		Suitability
PART 8 PLANNING ISSUE		S0

Client



Comhairle Contae Chill Dara  
Kildare County Council



Údarás  
Náisiúnta Iompair  
National Transport Authority



WSP

Drawing Title  
P82022.05 Green Lane Cycle Track Scheme, Leixlip  
Part 8 Planning  
Sheet 5 of 5

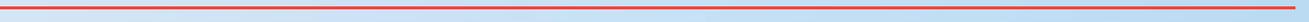
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Drawing Number	Project	Originator	Volume	Revision
40000085-WSP-DG-HW-0016-05				A
Location	Type	Role	Number	

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# Appendix C.1/2

## TREE SURVEY





**NORTHERN  
TREE SERVICES**

Arboricultural Contractors & Consultants

# Tree Survey Report

Easton Road/ Green Lane, Leixlip

Co. Kildare

September 2021



Northern Tree Services  
Horsepark House  
Magheragall  
Lisburn  
BT28 2QU

Tel: 028 92621217

[northerntreeservices.co.uk](http://northerntreeservices.co.uk)

## Contents

Instruction.....	3
Introduction.....	3
Limitations .....	3
Methodology.....	4
Survey Key.....	4
Category .....	5
Site Overview .....	5
Tree Overview .....	7
Conclusions.....	17
Recommendations .....	17
Arboricultural Method Statement.....	18
Glossary of Arboricultural terms.....	24

## Appendices

Appendix A - Tree Constraints Plan ( PDF & DWG attached)

Appendix B - Tree Survey Schedule

## Prepared by



Derek Gault

BSc Arboriculture & Amenity Forestry

Tuesday 12<sup>th</sup> October 2021

Northern Tree Services

Horsepark House

Magheragall

Lisburn

BT28 2QU

Tel: 028 92621 217

[northerntreeservices.co.uk](http://northerntreeservices.co.uk)

## Instruction

*The Consultant shall, in accordance with prevailing Standards British Standards Institute. BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations. London: BSI. (BS 5837:2012), prepare an Arboricultural Impact Report identifying all trees that are potentially impacted by any of the possible project options.*

## Introduction

The Proposed Development is to provide segregated cycle infrastructure and to upgrade existing cycle lanes on Easton Road/Green Lane in Leixlip falling within Kildare County, Ireland over a distance of approximately 700m. This survey has been commissioned to provide opinion upon the condition of existing trees and to ensure measures are employed to protect those trees suitable for retention.

## Limitations

- The survey was carried out from ground level and only those features significant at the time of survey are recorded
- No samples of wood, roots or soils were taken for analysis.
- There is no guarantee either expressed or implied of the internal condition of the wood or rooting system, or that problems or deficiencies may arise in the future.
- The survey is no guarantee that where trees have been identified as suitable for retention, the whole tree, or parts of it will not fail – trees are living organisms whose health and condition can change rapidly and are obviously affected hugely by unquantifiable high winds. Trees should be checked regularly and especially after storm events.
- The topographic plan provided did not include all of the trees surveyed. These trees' positions were estimated and plotted on the plan by the author, using the positions of street furniture that were plotted for reference.

## Methodology

- The significant trees inside the site ( as illustrated in Photo 1) were assessed from ground level using Visual Tree Assessment techniques, and relevant observations and measurements taken in accordance with those specified in the industry standard document BS5837:2012 “Trees in relation to design, demolition and construction – Recommendations”
- Where trees are sufficiently homogenous, they have been assessed collectively and recorded as a group ( prefix G- on the Schedule).
- An audible investigation of the tree using the Thor 710 nylon mallet is used when decay or cavities are suspected in the trees’ boles.
- Survey forms are contained electronically on Ipad Mini which is contained within an all-weather case.
- A Clinometer is used to measure tree heights.
- Where access to trees is restricted by undergrowth/ obstructions/ site boundaries etc estimations are made of required measurements for health and safety reasons.

## Survey Key

### Tree Numbers

Trees have been affixed with orange plastic tags and numbered, with the numbers pertaining to those in the Schedule. The numbers are also plotted on the plan drawing.

### Age Class – recorded as;

JUV= Juvenile(in first 1/3 of life expectancy).

SM= semi-mature(in middle 1/3 of life expectancy).

M = Mature ( in final 1/3 of life expectancy).

OM = Over Mature (becoming decrepit)

Dead

### Dia-

Diameter in metres measured at 1.5 metres above ground level

### RPA Radius –

Root Protection Area Radius is the minimum area around trees to be protected from disturbance during construction, calculated as an area equivalent to a circle with a radius 12 times the stem diameter.

### Existing Height above Ground Level of (in metres)-

First significant branch, and, Canopy

### Observations –

The results of the Visual Tree Assessment, combining experience and knowledge of tree biology and structure to draw conclusions about the tree’s condition. Only significant details are recorded on the schedule.

**Preliminary Recommendations –**

Proposed remedial tree works irrespective of site plans to ensure safety of users and neighbours

**ERC – Estimated Remaining Contribution**

– in years e.g <10, 10+,20+, 30+, 40+

## Category

The tree retention category system according to BS5837:2012 which grades a tree's suitability for retention

**U** – Trees in such a condition that they cannot be realistically be retained in the context of the current land use for longer than 10 years

**A** - Trees of a high quality with an estimated remaining life expectancy of at least 40yrs

**B** – Trees of moderate quality with an estimated remaining life expectancy of at least 20 yrs

**C** - Trees of low quality with an estimated life expectancy of at least 10 yrs, or young trees with a stem diameter below 150mm

**Subcategory –**

1. - Trees with mainly Arboricultural qualities. 2 – Trees with mainly Landscape qualities. 3. Trees with mainly cultural values , including conservation

## Site Overview

The site is approximately 700m in length on Green Lane, running between Station Road at the Eastern end, and Accommodation Road at the Western end.

The site is fairly level with residential housing and small greens to the north of Green Lane, and GAA pitches and schools dominating the southern side of the road.



*Photo 1 – Satellite view of the site*

## Tree Overview

The trees can largely be found on municipal greens or within the schools' grounds. They are comprised mainly of Lime, Acer and Sorbus and are estimated to be less than 40 years old, with the exception of the Horse Chestnuts to the west of the entrance of Oaklawn and the over-mature Cherrys to the west of the Castleton entrance, among others.



*Photo 2 – View to the West of trees 1&2 – some of the larger trees surveyed*

The trees are generally in good health and have been maintained in the past by crown lifting from the highway, footpaths and greens. Two of the trees (nos 69 & 72) have fungal fructifications indicating advanced decay and should be removed.



*Photo 3 – Tree 69, a cherry with a fructification of the decay fungus Ganoderma adspersum on the bottom right of the bole*



*Photo 4 – Tree 72 – Cherry Plum with fructification of the decay fungus Phellinus.*



*Photo 5 – View West of the mature Horse Chestnuts at Oaklawn*



*Photo 6 – View East of the Maples behind the school wall*



*Photo 7 - View East of the Rowan trees between Green Lane and Castletown*



*Photo 8 - View East to the junction of Green Lane and Station Road ( the largest tree is a quite rare Fraxinus augustifolia)*



*Photo 9 – View West of the mature trees at Cedar Park*

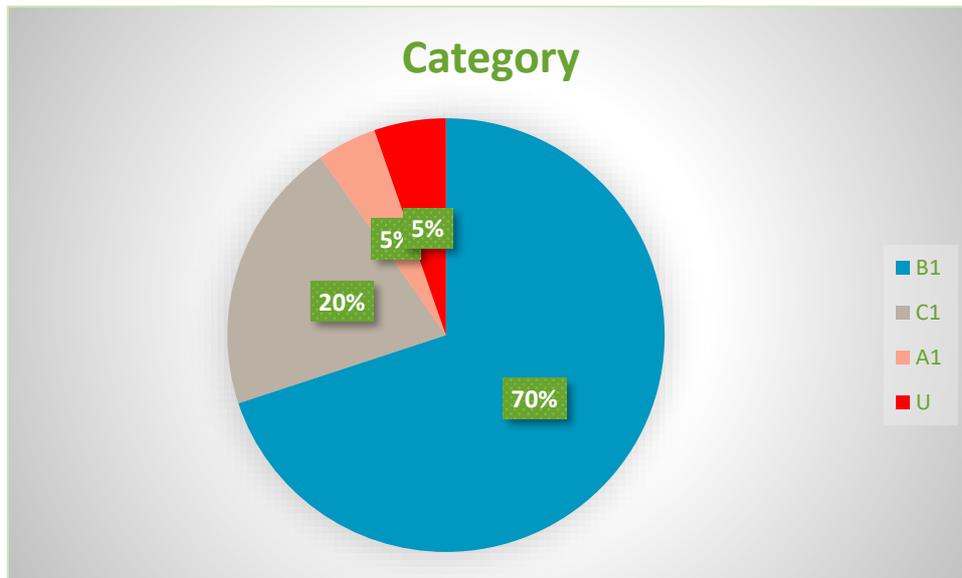


*Photo 10 – View of the Western end of the Survey at Accommodation Road*

## Survey Overview

A total of 113 no. individual trees were tagged and assessed as part of the Survey fieldwork.

Of these 5 no. trees were classed as Category A ( high value), 79 no. trees were classed as Category B ( moderate value), 23 no. were classed as Category C ( low value) and 6 no. were classed as Category U ( unsuitable for retention).



<b>B1</b>	<b>79</b>
<b>C1</b>	<b>23</b>
<b>A1</b>	<b>5</b>
<b>U</b>	<b>6</b>

*Percentage breakdown of the different categories of trees*

## Conclusions

Overall, the trees that were found within the red line boundary are in a fair condition and have an important role to play for any development, both in terms of amenity for existing residents and for the school children who make use of the proposed cycle lanes.

The trees' retention and future health can be easily accommodated during the planning and construction phase by the adoption of linear root protection zones.

It can be reasonably anticipated that the distribution of the trees' roots have been influenced by the existing built structures – the roots are far more likely to explore the soils found under the greens, rather than the hard compacted gravels etc under the footpaths and highway.

If the route of the proposed cycle lane adopts the route of the existing footpaths, the impact of the construction should be minimal.

## Recommendations

Preliminary remedial recommendations for individual trees can be found in the Survey Schedule in the appendices.

## Arboricultural Method Statement

**The Arboricultural Method Statement (AMS)** lays down the methodology for any demolition and/or construction works that may have an effect upon trees on and adjacent to this site. It is essential within the scope of any contracts related to this development, that this AMS is observed and adhered to. It is recommended that this document forms part of the work schedule and that specifications are issued to the building contractor(s) and these must be used to form part of their contract.

### **SEQUENCE OF WORKS (AS PER RECOMMENDATIONS OF BS5837: 2012)**

From commencement of the above development, the following methodology shall be implemented in the manner and sequence described:

1. Pre-contract site meeting
2. Arboricultural pruning and/or removal works: with written Council permission for protected trees
3. Erect *temporary* staked or (where there maybe a risk of root damage) stabilised Tree Protection Barriers (TPB) to establish a fenced-off Construction Exclusion Zone (CEZ): **before** any demolition and/or construction works begin on-site
4. Install *temporary* ground protection (TGP): **before** any demolition and/or construction works begin on-site
5. Route underground services: not within the RPAs of any retained trees
6. Demolition followed by main construction phase
7. Installation of Cellular Confinement Systems (if deemed necessary by the Arboriculturalist)
8. Remove TGP and TPBs
9. Landscape works.

### **1.0 PRE-CONTRACT SITE MEETING**

To outline on-site working methods in relation to trees prior to any demolition/construction activity, a site meeting of the following shall take place:

- Client
- Architect/Planning Consultant/Structural Engineer
- Main Contractor and his site agent
- Arboriculturist

## 2.0 ARBORICULTURAL PRUNING AND/OR FELLING WORKS

1. Before the erection of the temporary protective barrier, all tree removal shall be implemented in accordance with the Tree Survey Schedules.
2. All possible efforts must be made to prevent damage to retained trees including potential root incursion or compaction caused by vehicle access. Temporary ground protection should be used to achieve the latter.
3. All arboricultural works should conform to the recommendations of BS 3998; 2010 '*Tree Work - Recommendations*'
4. All operatives shall be equipped with and use personal protective equipment (PPE) in accordance with Health & Safety Executive current directives and industry codes of practice.
5. Wound sealants shall not be used on any tree.
6. Performance of all arboricultural operations and use of equipment shall be in accordance with current Health & Safety Executive current directives and industry codes of practice.

### 3.0 ERECT TEMPORARY PROTECTIVE BARRIERS (TPB)

1. Following completion of the tree felling and prior to demolition and construction, the main contractor shall erect the temporary protective barriers as detailed in the 'Tree Protection Specification'.
2. Prior to commencement of any site demolition, construction, preparation, excavation or material deliveries, the Arboriculturist shall inspect the installation of the temporary barriers. Any damage occurring to protective barriers during the demolition or construction phase shall be made good by the main contractor.
3. Excavation shall not occur at a distance of less than 300mm from the temporary protective barriers.

### 4.0 INSTALL TEMPORARY (ANTI SOIL-COMPACTION) GROUND PROTECTION (TGP)

1. For wheeled or track construction traffic within retention tree Root Protection Areas (RPA's), ideally the TGP shall be specified by an engineer to accommodate the likely vehicular loading.
2. We recommend the use of Durabase (<http://terrafirma.gb.com/>), Ground Guards ([www.greentek.org.uk](http://www.greentek.org.uk)) or Eve-Trackway (<http://www.evetrakway.co.uk/>) due to their recognised anti-soil compaction properties (i.e. to protect underlying tree roots). **NB.** It is vital that the TGP is in place before any demolition/construction works begin on site.
3. To prevent leakage into the soil area under the TGP, fuels, oils, chemicals and cement must be carried in a portable bunded bowser and petrol must be stored in a ventilated tool box. There must be no mixing/preparation of noxious substances (e.g. cement) on the ground protection surface.
4. The areas designated for ground protection shall be clearly marked on the Architects plan drawing and/or Tree Protection Plan (TPP).

### 5.0 DEMOLITION OF EXISTING STRUCTURES

1. Where trees stand adjacent to structures to be removed, the demolition should be undertaken inwards within the footprint of the existing building (often referred to as "top down, pull back"). Where there is a significant build-up of dust on the foliage, it might be necessary to hose down the tree(s).

### 6.0 MAIN CONSTRUCTION PHASE

1. There shall be no storage of construction material, site parking, site accommodation or equipment in any area designated as the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) and enclosed by Temporary Protective Barrier.
2. No fires shall be lit within 15m of any tree.
3. The site agent shall supervise deliveries by self-loading crane, with vehicles positioned in such a manner that retained trees are not at risk of damage.

## 7.0 NO-DIG HARD SURFACING - THREE-DIMENSIONAL CELLULAR CONFINEMENT SYSTEMS (CCS)

1. Designed to be installed without the need for soil excavation, therefore eliminating the need for tree root severance and to sustain the vascular function of the woody roots that may extend outwards from beyond the CCS system.
2. Comprised of an expandable cellular mattress that is then in-filled with a clean stone sub-base above a geotextile membrane. The honeycomb-like structure is made of robust high density polythene that is stretched out and filled with clean angular material. The strength of the structure comes from the binding together of the infill, but with a CCS system this is achieved without compaction or a reduction in (rainwater and oxygen) permeability.
3. Perforated cell walls allow the infill to bind with the contents of adjacent cells, but with sufficient space for movement of water and air to nearby underlying tree roots. As the infill contains no fines and the geotextile layers prevent clogging from particles washing into the system, the structure remains permeable and protects tree roots.
4. The *required* permeable surface finish over the CCS ensures aqueous and gaseous exchanges can still occur in the underlying soil.
5. Edging options: Where edging is required for light structures (e.g. footpaths) above-ground pegs and treated timber edging may be acceptable. Where more substantial hard surface areas are required (e.g. access road and driveways) the use of pinned sleepers, gabions or non-invasive haunch kerbing can provide appropriate solutions.
6. Installing a CCS will assist in achieving part of SUDs (Sustainable Urban Drainage) solutions for on-site hard surfacing.
7. Resin Bonded Surface Care and Maintenance: In general, resin bonded surfaces should be regularly swept clean using a hard bristle yard brush, removing leaves and detritus material - this will prevent moss growth and help to maintain the surface's permeability. Periodic Cleaning General: Cleaning of the surface can be carried out by cold pressure washing up to a maximum 150 bar rating to remove dirt and grime. The water should be applied using a fan type lance which should be kept 200mm above the installed resin bonded surface. Care should be taken to prevent damage to the surface with excessive water pressure. Light coloured resin bonded surface blends may show tyre marks and removal by pressure washing as detailed above may be required.



*Photo 11 -Resin Bonded Gravel used across a root-plate of the TROBI Champion Ginkgo at Kew Gardens (London)*

## **8.0 REMOVAL OF TEMPORARY GROUND PROTECTION AND BARRIERS**

Temporary ground protection and protective barriers shall be removed only upon completion of the no-dig hard surface installation works and following written approval of the Council.

## **9.0 LANDSCAPE WORKS**

1. Landscaping works will be implemented in accordance with a scheme approved by the Council.
2. There shall be no rotovation of ground within any area designated as a Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) and enclosed by Temporary Protective Barrier unless agreed with the Council.
3. Sandy topsoil may be spread within the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) to a depth of no more than 150mm to facilitate the establishment of new vegetation. No other addition of soil or other material shall be carried out within any area designated as a Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) without consultation with the Council.
4. No hard landscaping works or excavation for cables or any other service should be installed within the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) without the written consent of the Council.

# Glossary of Arboricultural terms

**Abscission.** The shedding of a leaf or other short-lived part of a woody plant, involving the formation of a corky layer across its base; in some tree species twigs can be shed in this way

**Abiotic.** Pertaining to non-living agents; e.g. environmental factors

**Absorptive roots.** Non-woody, short-lived roots, generally having a diameter of less than one millimetre, the primary function of which is uptake of water and nutrients

**Adaptive growth.** In tree biomechanics, the process whereby the rate of wood formation in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium. This helps to maintain a uniform distribution of mechanical stress

**Adaptive roots.** The adaptive growth of existing roots; or the production of new roots in response to damage, decay or altered mechanical loading

**Adventitious shoots.** Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'

**Aerial Inspection.** A procedure for further inspection carried out by a climbing Arborist

**Anchorage.** The system whereby a tree is fixed within the soil, involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree

**Architecture.** In a tree, a term describing the pattern of branching of the crown or root system

**Attenuated (slender).** Low height/diameter ratio. Fracture-safety may be compromised

**Axil.** The place where a bud is borne between a leaf and its parent shoot

**Bacteria.** Microscopic single-celled organisms, many species of which break down dead organic matter, and some of which cause diseases in other organisms

**Bark.** A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem

**Basidiomycotina (Basidiomycetes).** One of the major taxonomic groups of fungi; their spores are borne on microscopic peg-like structures (basidia), which in many types are in turn borne on or within conspicuous fruit bodies, such as brackets or toadstools. Most of the principal decay fungi in standing trees are basidiomycetes

**Bollig.** A term sometimes used to describe pollard heads

**Bottle-butt.** A broadening of the stem base and buttresses of a tree, in excess of normal and sometimes denoting a growth response to weakening in that region, especially due to decay involving selective delignification

**Bracing.** The use of rods, cables or synthetic fibres to restrain the movement between parts of a tree

**Branch:**

- **Primary.** A first order branch arising from a stem
- **Lateral.** A second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches. Can be used to describe a suppressed branch growing from a stem
- **Sub-lateral.** A third order branch, subordinate to a lateral branch, or stem and usually bearing only either small shoots or twigs

**Branch bark ridge.** The raised arc of bark tissues that forms within the acute angle between a branch and its parent stem

**Branch collar.** A visible swelling formed at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applied also to the pattern of growth of the cells of the parent stem around the branch base

**Brown-rot.** A type of wood decay in which cellulose is degraded, while lignin is only modified

**Buckling.** An irreversible deformation of a structure subjected to a bending load

**Buttress zone.** The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of the junctions

**Cambium.** Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally

**Canker.** A persistent lesion formed by the death of bark and cambium due to colonisation by fungi or bacteria

**Canopy species.** Tree species that mature to form a closed woodland canopy

**Cleaning out.** The removal of dead, crossing, weak, and damaged branches, where this will not damage or spoil the overall appearance of the tree

**Compartmentalisation.** The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region

**Compression strength.** The ability of a material or structure to resist failure when subjected to compressive loading; measurable in trees with special drilling devices

**Compressive loading.** Mechanical loading which exerts a positive pressure; the opposite to tensile loading

**Condition.** An indication of the physiological vitality of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree

**Crown/Canopy.** The main foliage bearing section of the tree

**Crown lifting.** The removal of limbs and small branches to a specified height above ground level

**Crown thinning.** The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage around a wellbalanced

branch structure

**Crown reduction/shaping.** A specified reduction in crown size whilst preserving, as far as possible, the natural tree shape

**Crown reduction/thinning.** Reduction of the canopy volume by thinning to remove dominant branches whilst preserving, as far as possible the natural tree shape

**Deadwood.** Dead branch wood

**Decurrent** In trees, a system of branching in which the crown is borne on a number of major widely-spreading and secondarily branched limbs (cf. excurrent). In fungi with toadstools as fruit bodies, the description of gills which run some distance down the stem, rather than terminating abruptly

**Defect.** In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment

**Delamination.** The separation of wood layers along their length, visible as longitudinal splitting

**Dieback.** The death of parts of a woody plant, starting at shoot-tips or root-tips

**Disease.** A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage; in trees, usually caused by pathogenic microorganisms

**Distal.** In the direction away from the main body of a tree or other living organism (cf. proximal)

**Dominance.** In trees, the tendency for a leading shoot to grow faster or more vigorously than the lateral shoots; also the tendency of a tree to maintain a taller crown than its neighbours

**Dormant bud.** An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments; many such buds persist through the life of a tree and develop only if stimulated to do so

**Dysfunction.** In woody tissues, the loss of physiological function, especially water conduction, in sapwood

**DBH (Diameter at Breast Height).** Stem diameter measured at a height of 1.5m or the nearest measurable point. Where measurement at a height of 1.5 metres is not possible, another height may be specified

**Deadwood.** Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard

**Endophytes.** Micro-organisms which live inside plant tissues without causing overt disease, but in some cases capable of causing disease if the tissues become physiologically stressed, for example by lack of moisture

**Epicormic shoot.** A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot

**Excrescence.** Any abnormal outgrowth on the surface of tree or other organism

**Excurrent.** In trees, a system of branching in which there is a well defined central main stem, bearing branches which are limited in their length, diameter and secondary branching (cf. Excurrent)

**Flush-cut.** A pruning cut which removes part of the branch bark ridge and/or branch-collar

**Formative Prune.** Removal of weak, crossing, rubbing, dead, diseased branches to create a structured framework for inhibited growth development

**Girdling root.** A root, which circles and constricts the stem or roots possibly causing death of phloem and/or cambial tissue

**Guying** a form of artificial support with cables for trees with a temporarily inadequate anchorage

**Habit.** The overall growth characteristics, shape of the tree and branch structure

**Hazard beam.** An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting

**Heartwood/false-heartwood/ripewood.** Sapwood that has become dysfunctional as part of the natural aging processes

**Heave.** A term mainly applicable to a shrinkable clay soil which expands due to rewetting

after the felling of a tree which was previously extracting moisture from the deeper layers; also the lifting of pavements and other structures by root diameter expansion; also the lifting of one side of a wind-rocked root-plate

**High canopy tree species.** Tree species having potential to contribute to the closed canopy of a mature woodland or forest

**Incipient failure.** In wood tissues, a mechanical failure which results only in deformation or cracking and not in the fall or detachment of the affected part

**Included bark (ingrown bark).** Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes), which is in face-to-face contact

**Increment borer.** A hollow auger, which can be used for the extraction of wood cores for counting or measuring wood increments or for inspecting the condition of the wood

**Infection.** The establishment of a parasitic micro-organism in the tissues of a tree or other organism

**Internode.** The part of a stem between two nodes; not to be confused with a length of stem which bear nodes but no branches

**Lever arm.** A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch

**Lignin.** The hard, cement-like constituent of wood cells; deposition of lignin within the matrix of cellulose microfibrils in the cell wall is termed Lignification

**Lions tailing.** A term applied to a branch of a tree that has few if any side-branches except at its end, and is thus liable to snap due to end loading

**Loading.** A mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

**Longitudinal.** Along the length (of a stem, root or branch)

**Lopping.** A term often used to describe the removal of large branches from a tree, but also used to describe other forms of cutting

**Major deadwood.** Deadwood of a diameter likely to cause significant harm or damage upon impact with a target beneath the tree

**Mature Heights (approximate):**

- Low maturing - less than 8 metres high
- Moderately high maturing - 8 - 12 metres high
- High maturing - greater than 12 metres high

**Mass Damping.** The independent movements of leaves, branches and trunk which absorb and dissipate energy delivered in a strong gust of wind, greatly reducing stress on the overall tree canopy

**Microdrill.** An electronic rotating steel probe, which when inserted into woody tissue provides a measure of tissue density

**Minor deadwood.** Deadwood of a diameter less than 25mm and or unlikely to cause significant harm or damage upon impact with a target beneath the tree

**Mulch.** Material laid down over the rooting area of a tree or other plant to help conserve moisture; mulch may consist of organic matter or a sheet of plastic or other artificial material

**Mycelium.** The body of a fungus, consisting of branched filaments (hyphae)

**Occluding tissues.** A general term for the roll of wood, cambium and bark that forms around a wound on a woody plant (cf. woundwood)

**Occlusion.** The process whereby a wound is progressively closed by the formation of new wood and bark around it

**Pathogen.** A micro-organism, which causes disease in another organism

**Photosynthesis.** The process whereby plants use light energy to split hydrogen from water molecules, and combine it with carbon dioxide to form the molecular building blocks for synthesizing carbohydrates and other biochemical products.

**Phytotoxic.** Toxic to plants

**Pollarding.** The removal of the tree canopy, back to the stem or primary branches. Pollarding may involve the removal of the entire canopy in one operation, or may be phased over several years. The period of safe retention of trees having been pollarded varies with species and individuals. It is usually necessary to re-pollard on a regular basis, annually in the case of some species.

**Primary branch.** A major branch, generally having a basal diameter greater than 0.25 x stem diameter

**Priority.** Works may be prioritised, 1. = High, 5. = Low

**Probability.** A statistical measure of the likelihood that a particular event might occur

**Proximal.** In the direction towards the main body of a tree or other living organism (cf. distal)

**Pruning.** The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs

**Radial.** In the plane or direction of the radius of a circular object such as a tree stem

**Rams-horn.** In connection with wounds on trees, a roll of occluding tissues which has a spiral structure as seen in cross-section

**Rays.** strips of radially elongated parenchyma cells within wood and bark. The functions of rays include food storage, radial translocation and contributing to the strength of wood

**Red-rot.** A form of decay in which reddish pigments are present but which is biochemically a white-rot; not to be confused with brown-rots which sometimes also have a reddish-brown colour

**Reactive Growth/Reaction Wood.** Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

**Removal of dead wood.** Unless otherwise specified, this refers to the removal of all accessible dead, dying and diseased branch wood and broken snags

**Removal of large diameter dead wood.** The removal of dead, dying and diseased branch wood above a specified size

**Root-collar.** The transitional area between the stem/s and roots

**Root-collar examination.** Excavation of surfacing and soils around the root-collar to assess the structural integrity of roots and/or stem

**Sapwood.** Living xylem tissues

**Secondary branch.** A branch, generally having a basal diameter of less than 0.25 x stem diameter

**Selective delignification.** A kind of wood decay (white-rot) in which lignin is degraded faster than cellulose

**Shedding.** In woody plants, the normal abscission, rotting off or sloughing of leaves, floral parts, twigs, fine roots and bark scales

**Silvicultural thinning.** Removal of selected trees to favour the development of retained specimens to achieve a management objective

**Simultaneous white-rot.** A kind of wood decay in which lignin and cellulose are degraded at about the same rate

**Snag.** In woody plants, a portion of a cut or broken stem, branch or root which extends beyond any growing-point or dormant bud; a snag usually tends to die back to the nearest growing point

**Soft-rot.** A kind of wood decay in which a fungus degrades cellulose within the cell walls, without any general degradation of the wall as a whole

**Spores.** Propagules of fungi and many other life forms; most spores are **Shrub species.** Woody perennial species forming the lowest level of woody plants in a woodland and not normally considered to be trees

**Sporophore.** The spore bearing structure of fungi

**Sprouts.** Adventitious shoot growth erupting from beneath the bark

**Stem.** The main supporting structure, from ground level up to the first major division into branches. A stem can divide into two or more substantial elements that might be described as co-dominant stems

**Stress.** In plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, for example due to lack of water, inadequate nutrition or extremes of temperature

**Stress.** In mechanics, the application of a force to an object

**Stringy white-rot.** The kind of wood decay produced by selective delignification

**Storm.** A layer of tissue, which supports the fruit bodies of some types of fungi, mainly ascomycetes

**Structural roots.** Roots, generally having a diameter greater than ten millimetres, and contributing significantly to the structural support and stability of the tree

**Subsidence.** In relation to soil or structures resting in or on soil, a sinking due to shrinkage when certain types of clay soil dry out, sometimes due to extraction of moisture by tree roots

**Subsidence.** In relation to branches of trees, a term that can be used to describe a progressive downward bending due to increasing weight

**Taper.** In stems and branches, the degree of change in girth along a given length

**Target canker.** A kind of perennial canker, containing concentric rings of dead occluding tissues

**Targets.** In tree risk assessment (with slight misuse of normal meaning) persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it

**Topping.** In arboriculture, the removal of the crown of a tree, or of a major proportion of it

**Torsional stress.** Mechanical stress applied by a twisting force

**Translocation.** In plant physiology, the movement of water and dissolved materials through the body of the plant

**Transpiration.** The evaporation of moisture from the surface of a plant, especially via the stomata of leaves; it exerts a suction which draws water up from the roots and through the intervening xylem cells

**Understorey.** A layer of vegetation beneath the main canopy of woodland or forest or plants forming this

**Understorey tree species.** Tree species not having potential to attain a size at which they can contribute to the closed high canopy of a woodland

**Vascular wilt.** A type of plant disease in which water-conducting cells become dysfunctional

**Vessels.** Water-conducting cells in plants, usually wide and long for hydraulic efficiency; generally not present in coniferous trees

**Veteran tree.** A loosely defined term for an old and interesting specimen, which has usually lived longer than the typical upper age range for the species concerned

**Vigour.** The expression of carbohydrate expenditure to growth (in trees)

**Vitality.** A measure of physiological condition expressed through the health and growth of foliage, shoots and adaptive woody tissues

**White-rot.** A range of kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded

**Wind exposure.** The degree to which a tree or other object is exposed to wind, both in terms of duration and velocity

**Wind pressure.** The force exerted by a wind on a particular object

**Windthrow.** The blowing over of a tree at its roots

**Wound dressing.** A general term for sealants and other materials used to cover wounds in the hope of protecting them against desiccation and infection; only of proven value against fresh wound parasites

**Woundwood.** Wood with atypical anatomical features, formed in the vicinity of a wound

Incorporating extracts from Lonsdale, D. 1999 *'Principles of Tree Hazard Assessment and Management*

## Northern Tree Services

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[northerntreeservices.co.uk](http://northerntreeservices.co.uk)

# Appendix B



**NORTHERN**  
TREE SERVICES

## Tree Survey Schedule

<b>Client</b>	WSP
<b>Site</b>	Easton Rd/Green Lane, Leixlip

<b>Surveyor</b>	D. Gault
<b>Date</b>	22/9/21

Tree no.	Species	Age Class	Ht. (m)	Dia. (cm)	RPA Radius (m)	Crown Spread (m)				Existing Ht Abv. G. Level		Observations	Preliminary Recommendations	ERC	Category
						N	E	S	W	1 <sup>st</sup> Sig.	Can				
1	Lime	Mature	14	57	6.84	5	5	4	4	2	6	Multistemmed from 2m	None	30+	B1
2	Lime	Mature	12	45	5.4	5	3	5	4	4	7	No gross defects	None	30+	B1
3	Lime	Mature	9	42	5.04	4	3	3	3	3	3	Historic wound at base E.	None	30+	B1
4	Lime	Mature	9	43	5.16	4	3	3	3	3	3	Swelling at 1m	None	30+	B1
5	Lime	Mature	11	55	6.6	5	5	5	5	3	3	No gross defects	None	30+	B1
6	Lime	Mature	11	43	5.16	4	5	4	3	3	3	No gross defects	None	30+	B1
7	Lime	Mature	12	54	6.48	7	3	5	4	3	4	No gross defects	None	30+	B1

### Key to Survey

**Tree No.** - Reference number of tree surveyed - corresponds to number on tag and/or plan

**Age Class** - JUV= Juvenile (in first 1/3 of life expectancy). SM= semi-mature (in middle 1/3 of life expectancy). M = Mature (in final 1/3 of life expectancy). OM= Over Mature (becoming decrepit)

**Dia**- Diameter in cm measured at 1.5 meters above ground level

**RPA Radius** – Root Protection Area Radius is the minimum area around trees to be protected from disturbance during construction

**Crown Spread** – Taken as a minimum at the four cardinal points to derive an accurate representation of the crown

**Existing Height above ground level** (in meters)– of first significant branch and direction of growth. And **Can.** – of the canopy

**ERC – Estimated Remaining Contribution** – in years e.g., <10, 10+,20+, 30+, 40+

**Category** –

**U** – Trees in such a condition that they cannot realistically be retained in the context of the current land use for longer than 10 years

**A** - Trees of a high quality with an estimated remaining life expectancy of at least 40yrs

**B** – Trees of moderate quality with an estimated remaining life expectancy of at least 20 years

**C** - Trees of low quality with an estimated life expectancy of at least 10 years, or young trees with a stem diameter below 15cm

**Subcategory** – **1.** - Trees with mainly Arboricultural qualities. **2** – Trees with mainly Landscape qualities. **3.** Trees with mainly cultural values, including conservation.

Tree no.	Species	Age Class	Ht. (m)	Dia. (cm)	RPA Radius (m)	Crown Spread (m)				Existing Ht. Adv. G. Level		Observations	Preliminary Recommendations	ERC	Category
						N	E	S	W	1 <sup>st</sup> Sig.	Can				
8	Sorbus	Mature	7	15	1.8	2	2	2	2	2	3	Suppressed by neighbours	None	10+	C1
9	Lime	Mature	15	62	7.44	7	7	7	4	4	3	No gross defects	None	30+	B1
10	Lime	Mature	13	52	6.24	5	3	6	3	3	4	No gross defects	None	30+	B1
11	Lime	Mature	13	52	6.24	6	3	5	3	3	4	No gross defects	None	30+	B1
12	Lime	Mature	11	63	7.56	7	3	5	3	3	3	No gross defects	None	30+	B1
13	Lime	Mature	13	71	8.52	8	7	6	5	3	5	No gross defects	None	30+	B1
14	Lime	Mature	14	45	5.4	4	2	5	4	4	3	No gross defects	None	30+	B1
15	Horse Chestnut	Mature	9	58	6.96	6	6	6	6	2	3	No gross defects	None	30+	B1
16	Horse Chestnut	Mature	11	72	8.64	4	5	6	4	2	3	No gross defects	None	30+	B1
17	Horse Chestnut	Mature	12	79	9.48	5	4	7	5	2	2	No gross defects	None	20+	B1
18	Sorbus	Mature	9	38	4.56	3	3	3	3	2	3	No gross defects	None	20+	B1
19	Cherry	Mature	8	58	6.96	4	3	3	4	3	3	No gross defects	None	20+	B1
20	Lime	Semi-mature	6	17	2.04	1	2	2	3	2	2	No gross defects	None	40+	B1
21	Lime	Semi-mature	8	22	2.64	4	3	2	3	3	3	No gross defects	None	40+	B1
22	Lime	Semi-mature	7	22	2.64	3	3	3	3	2	2	Historic wound to 1m W - mostly occluded	None	40+	B1
23	Lime	Semi-mature	8	21	2.52	3	2	3	3	1.5	2	No gross defects	None	40+	B1
24	Lime	Semi-mature	8	23	2.76	4	2	3	3	2	2	No gross defects	None	40+	B1

Tree no.	Species	Age Class	Ht. (m)	Dia. (cm)	RPA Radius (m)	Crown Spread (m)				Existing Ht Abv. G. Level		Observations	Preliminary Recommendations	ERC	Category
						N	E	S	W	1 <sup>st</sup> Sig.	Can				
25	Sorbus	Juv	5	13	1.56	1	1	1	1	2	2	Suffering from drought	None	20+	C1
26	Lime	Semi-mature	10	31	3.72	4	4	4	1	2	2	No gross defects	None	40+	B1
27	Lime	Semi-mature	10	26	3.12	4	1	1	4	2.5	2	No gross defects	None	40+	B1
28	Lime	Semi-mature	8	25	3	1	3	3	4	2	2	No gross defects	None	40+	B1
29	Oak	Mature	13	53	6.36	7	7	7	7	3	3	No gross defects	None	40+	A1
30	Sorbus	Semi-mature	7	23	2.76	2	2	1	2	1.5	3	No gross defects	None	20+	C1
31	Cherry	Semi-mature	8	41	4.92	2	4	5	4	3	3	No gross defects	None	30+	B1
32	Lime	Semi-mature	8	27	3.24	2	3	3	2	1	3	No gross defects	None	40+	B1
33	Cherry	Semi-mature	7	23	2.76	0	0	2	2	2	2	Decay at leader. Weighted to S&W	None	10+	C1
34	Lime	Semi-mature	10	32	3.84	4	5	1	3	1	2	No gross defects	None	40+	B1
35	Lime	Semi-mature	10	32	3.84	2	1	3	3	1	2	No gross defects	None	40+	B1
36	Oak	Mature	9	35	4.2	6	5	5	4	2	2	No gross defects	None	40+	A1
37	Hornbeam	Semi-mature	6	29	3.48	2	3	3	2	0.5	2	No gross defects	None	40+	B1
38	Lime	Semi-mature	8	34	4.08	5	5	1	3	1	2	No gross defects	None	40+	B1
39	Cherry	Juv	7	18	2.16	1	1	2	2	1.5	2	Suppressed- poor specimen	None	20+	C1
40	Cherry	Juv	5	19	2.28	1	0	1	1	0.5	2	Suppressed- poor specimen	None	20+	C1
41	Sorbus	Semi-mature	6	27	3.24	1	2	2	2	1	2	Slight loss of vitality	None	20+	C1

## Northern Tree Services

Horsepark House  
Magheragall  
Lisburn  
BT28 2QU

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Tree no.	Species	Age Class	Ht. (m)	Dia. (cm)	RPA Radius (m)	Crown Spread (m)				Existing Ht. Abv. G. Level		Observations	Preliminary Recommendations	ERC	Category
						N	E	S	W	1 <sup>st</sup> Sig.	Can				
42	Apple	Juv	4	13	1.56	1	2	1	2	1	1.5	No gross defects	None	40+	A1
43	Apple	Juv	4	14	1.68	1	1	1	2	1	1.5	No gross defects	None	40+	A1
44	Sorbus	Juv	4	14	1.68	2	2	2	2	1.5	1.5	Suffering from drought	None	20+	B1
45	Sorbus	Juv	5	18	2.16	2	2	1	2	1.5	1.5	Suffering from drought	None	20+	B1
46	Acer	Mature	14	52	6.24	5	7	5	6	2	4	Group of approximately 6no. stems from ground, sharing crown	None	40+	C1
47	Lime	Semi-mature	5	18	2.16	2	2	2	2	2	2	No gross defects	None	40+	B1
48	Pine (Scots)	Juv	4	10	1.2	1	1	1	0	1	1	No gross defects	None	40+	B1
49	Lime	Mature	10	34	4.08	4	4	4	4	3	2	No gross defects	None	40+	B1
50	Sorbus	Mature	7	32	3.84	3	3	3	2	2	2	No gross defects	None	20+	B1
51	Sorbus	Mature	7	29	3.48	4	4	3	2	3	3	No gross defects	None	20+	B1
52	Sorbus	Mature	4	13	1.56	2	1	2	1	2	2	Poor specimen	None	10+	C1
53	Sorbus	Over-mature	6	24	2.88	1	3	3	2	3	3	Poor specimen. Suffering from drought	None	<10	C1
54	Sorbus	Semi-mature	5	13	1.56	2	2	1	1	2	2	No gross defects	None	20+	B1
55	Sorbus	Semi-mature	5	14	1.68	2	2	2	2	2	2	No gross defects	None	20+	B1
56	Sorbus	Semi-mature	5	13	1.56	2	3	2	1	2	2	No gross defects	None	20+	B1
57	Sorbus	Over-mature	7	26	3.12	3	3	3	2	2	2	No gross defects	None	20+	B1
58	Sorbus	Semi-mature	6	15	1.8	2	3	2	2	2	3	Suffering from drought	None	20+	B1

Tree no.	Species	Age Class	Ht. (m)	Dia. (cm)	RPA Radius (m)	Crown Spread (m)				Existing Ht Adv. G. Level		Observations	Preliminary Recommendations	ERC	Category
						N	E	S	W	1 <sup>st</sup> Sig.	Can				
59	Lime	Mature	12	40	4.8	5	4	4	3	3	2	No gross defects	None	40+	B1
60	Acer	Mature	11	40	4.8	2	4	4	3	3	3	No gross defects	None	40+	B1
61	Acer	Mature	11	39	4.68	4	3	3	2	3	3	No gross defects	None	40+	B1
62	Sorbus	Semi-mature	6	14	1.68	2	2	1	2	2	2	Dead leader	Remove	<10	U
63	Sorbus	Juv	3	3	0.36	0	0	0	0	2	2	Recently planted. Almost dead	Remove	<10	U
64	Sorbus	Mature	5	14	1.68	2	2	2	2	2	2	Suffering from drought. Probable decay at base from strimmer damage	None	<10	C1
65	Sorbus	Mature	6	16	1.92	3	3	3	3	3	3	Probable decay at base from strimmer damage	None	10+	C1
66	Sorbus	Mature	5	11	1.32	1	1	1	1	3	3	Decay from strimmer damage at base	None	<10	C1
67	Cherry	Over-mature	10	53	6.36	8	6	7	3	2	2	Sprawling crown with decay in limbs	None	10+	C1
68	Cherry	Over-mature	10	58	6.96	6	4	4	5	4	2	Large historic wound at 1m N	None	10+	C1
69	Cherry	Over-mature	10	68	8.16	6	6	3	4	2	2	Ganoderma at 1m E.	Remove	<10	U
70	Sorbus	Mature	8	28	3.36	6	5	3	3	3	2	No gross defects	None	20+	B1
71	Cherry	Over-mature	6	21	2.52	2	3	3	3	3	3	Crooked bole	None	10+	C1
72	Cherry Plum	Over-mature	6	29	3.48	2	3	4	4	3	3	Decay fungus Phellinus pomaceus from 2-3m N & W	Remove	<10	U
73	Acer	Mature	9	43	5.16	4	4	4	4	3	3	OH neighbours roof	None	30+	B1
74	Sorbus	Mature	9	40	4.8	4	4	4	3	3	2	No gross defects	None	20+	B1
75	Sorbus	Mature	8	32	3.84	3	3	4	3	3	3	Decay at base from strimmer damage	None	<10	C1

Tree no.	Species	Age Class	Ht. (m)	Dia. (cm)	RPA Radius (m)	Crown Spread (m)				Existing Ht Abv. G. Level		Observations	Preliminary Recommendations	ERC	Category
						N	E	S	W	1 <sup>st</sup> Sig.	Can				
76	Birch (Himalayan)	Mature	12	39	4.68	6	6	6	5	3	2	No gross defects	None	30+	B1
77	Sorbus	Mature	6	13	1.56	1	1	1	1	2	2	Dead	Remove	<10	U
78	Sorbus	Mature	5	17	2.04	2	3	3	2	3	2	No gross defects	None	20+	B1
79	Acer	Mature	8	33	3.96	4	3	3	2	2	2	No gross defects	None	40+	B1
80	Acer	Juv	7	14	1.68	1	2	2	3	3	3	Poor specimen	None	30+	C1
81	Acer	Mature	11	28	3.36	4	3	3	2	3	3	No gross defects	None	40+	B1
82	Acer	Mature	10	29	3.48	4	3	4	3	3	3	No gross defects	None	40+	B1
83	Acer	Mature	10	30	3.6	5	3	5	3	4	2	No gross defects	None	40+	B1
84	Acer	Mature	10	27	3.24	5	3	5	2	2	3	No gross defects	None	40+	B1
85	Acer	Mature	9	31	3.72	5	4	5	3	3	3	No gross defects	None	40+	B1
86	Acer	Mature	10	30	3.6	5	6	5	4	3	3	No gross defects	None	40+	B1
87	Acer	Mature	10	28	3.36	4	4	5	3	3	3	No gross defects	None	40+	B1
88	Acer	Mature	9	28	3.36	4	3	5	2	3	3	No gross defects	None	40+	B1
89	Acer	Mature	12	32	3.84	5	2	3	2	4	4	Occluded seam of decay to 1.5m S	None	40+	C1
90	Acer	Mature	14	48	5.76	6	3	7	4	2	3	No gross defects	None	40+	B1
91	Acer	Mature	16	63	7.56	8	7	7	3	3	2	No gross defects	None	40+	B1
92	Acer	Mature	10	42	5.04	4	5	4	4	1.5	2	No gross defects	None	40+	B1
93	Sweet Chestnut	Semi-mature	9	36	4.32	4	5	4	4	1.5	1	No gross defects	None	40+	A1
94	Acer	Mature	10	34	4.08	5	4	3	3	2	2	No gross defects	None	40+	B1
95	Sweet Chestnut	Semi-mature	6	34	4.08	3	3	2	3	2	1.5	Seam of decay to 1.5m S	None	40+	B1
96	Horse Chestnut	Mature	7	37	4.44	4	4	3	2	1.5	1.5	Probable decay at base from strimmer damage. Low vitality	None	20+	C1

## Northern Tree Services

Horsepark House  
Magheragall  
Lisburn  
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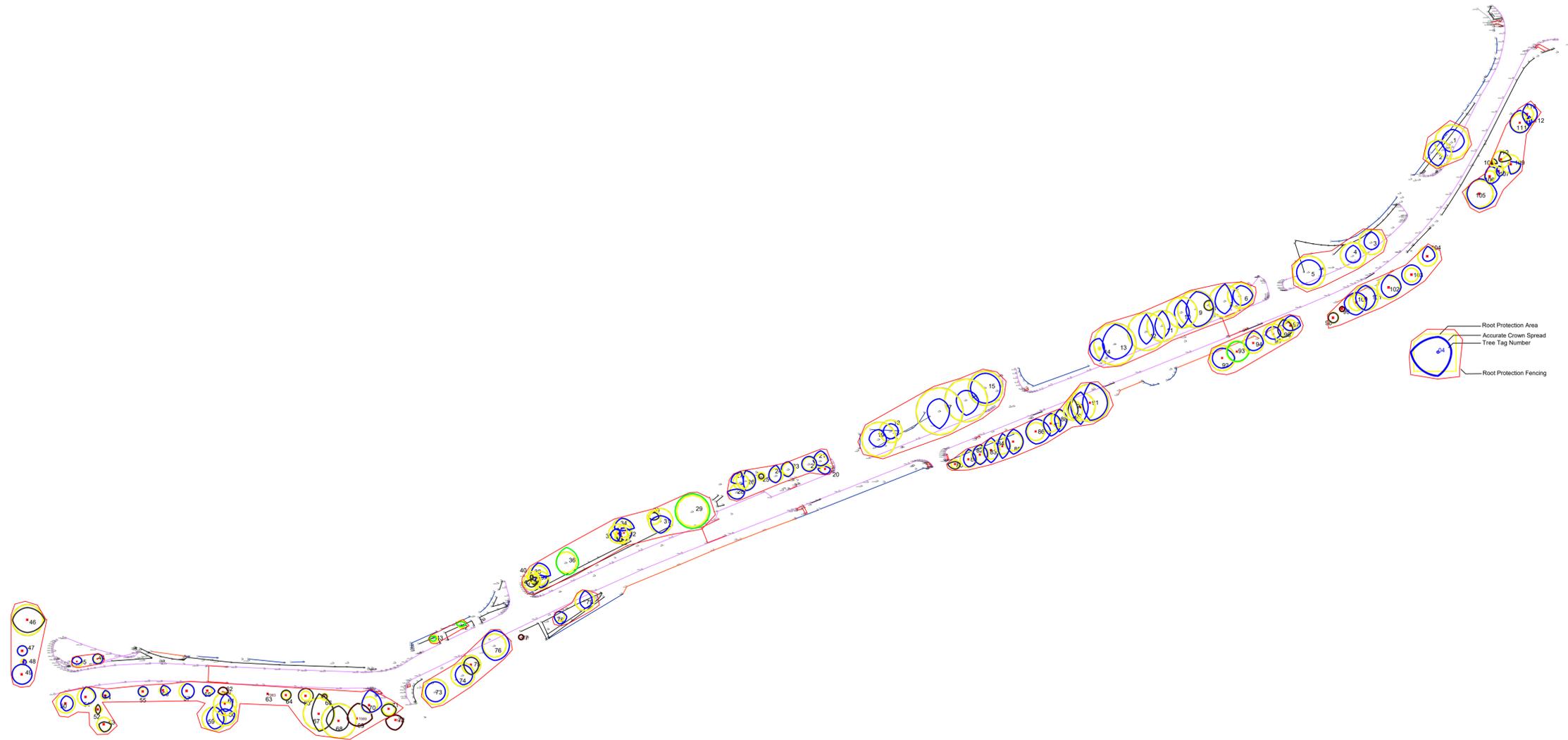
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Tree no.	Species	Age Class	Ht. (m)	Dia. (cm)	RPA Radius (m)	Crown Spread (m)				Existing Ht Abv. G. Level		Observations	Preliminary Recommendations	ERC	Category
						N	E	S	W	1 <sup>st</sup> Sig.	Can				
97	Cherry	Mature	6	20	2.4	4	4	2	3	1	1.5	Massed ivy	Sever ivy	20+	B1
98	Apple	Mature	6	18	2.16	2	2	2	2	1.5	2	Low vitality	None	10+	C1
99	Elm	Over-mature	7	11	1.32	1	1	1	1	1	1	Dead	Remove	<10	U
100	Sweet Chestnut	Semi-mature	8	27	3.24	4	4	5	5	3	2	No gross defects	None	40+	B1
101	Acer	Mature	10	42	5.04	5	4	5	4	2	3	No gross defects	None	40+	B1
102	Lime	Mature	12	39	4.68	5	5	4	3	2	3	No gross defects	None	40+	B1
103	Sweet Chestnut	Semi-mature	7	23	2.76	4	4	4	4	3	1	No gross defects	None	40+	B1
104	Hornbeam	Mature	8	33	3.96	4	3	2	2	2	2	No gross defects	None	40+	B1
105	Ash	Mature	17	46	5.52	6	7	6	5	3	2	No gross defects	None	30+	B1
106	Birch (Silver)	Mature	9	19	2.28	4	4	3	2	2	2	No gross defects	None	30+	B1
107	Sorbus	Mature	7	14	1.68	2	2	2	1	2	2	No gross defects	None	20+	B1
108	Alder	Juv	4	9	1.08	2	2	0	0	1.5	2	Suppressed	None	10+	C1
109	Alder	Mature	11	31	3.72	1	4	4	1	3	2	No gross defects	None	40+	B1
110	Alder	Mature	8	29	3.48	3	4	1	1	2	3	Forked from 0.5 m - bark inclusion	None	30+	C1
111	Birch (Silver)	Mature	15	31	3.72	5	4	4	4	0.5	2	Large limbs at 0.5m	None	30+	B1
112	Strawberry Tree	Mature	4	15	1.8	2	1	2	1	0.5	2	No gross defects	None	30+	B1
113	Acer	Semi-mature	7	20	2.4	4	4	4	2	1	2	No gross defects	None	40+	B1

# Appendix C.2/2

## TREE SURVEY





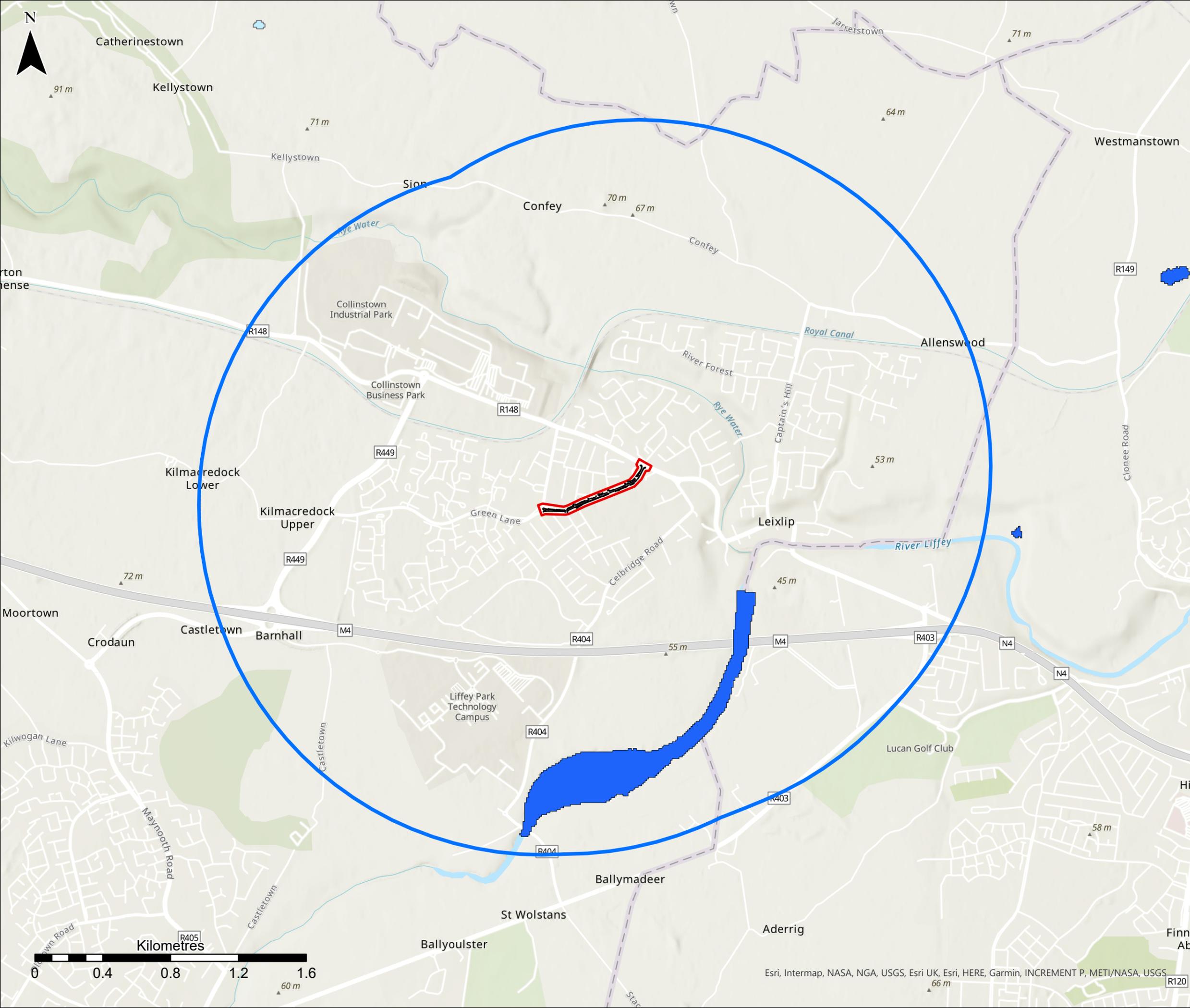
Root Protection Area  
Accurate Crown Spread  
Tree Tag Number  
Root Protection Fencing

Tree Constraints and Protection Plan
By Derek Gault
Northern Tree Services
30th September 2021
Tree constraints and protection Plan V1

# Appendix D

## CONSTRAINTS PLAN





**Legend**

- Red Line Boundary
- 2 Km Buffer
- Maximum Historic Groundwater flooding [GSI]
- 2015/2016 Surface Water Flood Map

DRAWING STATUS:  
**FOR ISSUE**



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County Down, BT18 9JQ, UK  
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www.wsp.com

CLIENT:



**Comhairle Contae Chill Dara**  
Kildare County Council

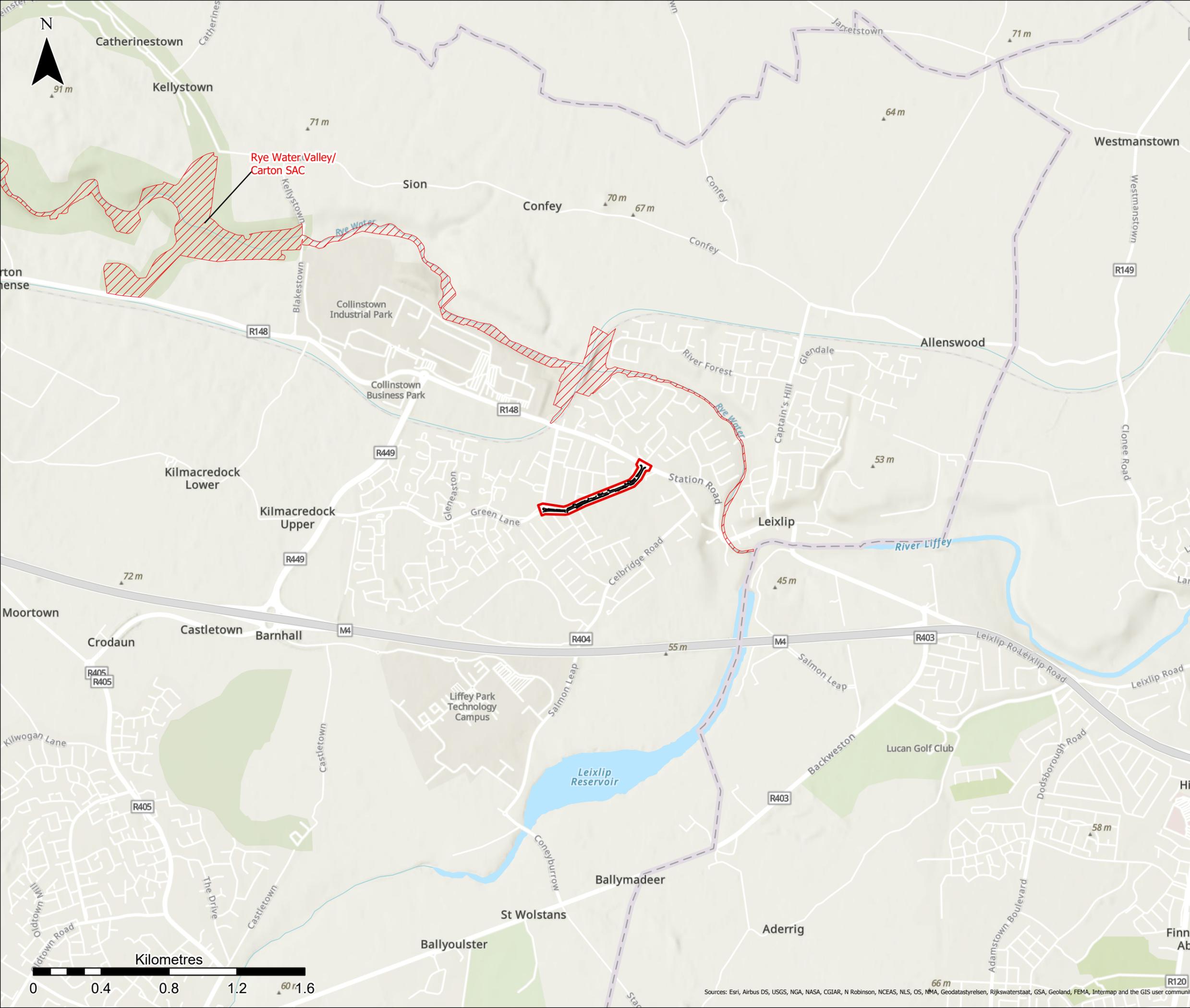
PROJECT:  
**Green Lane Cycle Track Scheme**

TITLE:  
**Figure 1:  
Flood Risk**

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PROJECT NO: 70085675	DRAWN: HT	DATE: 01/09/2021
DOCUMENT NO: 70085675-WSP-U-WA-001-00		REV: 00

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**Legend**

Red Line Boundary

Red Line Boundary

Special Area of Conservation

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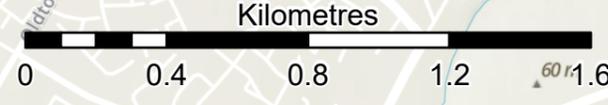
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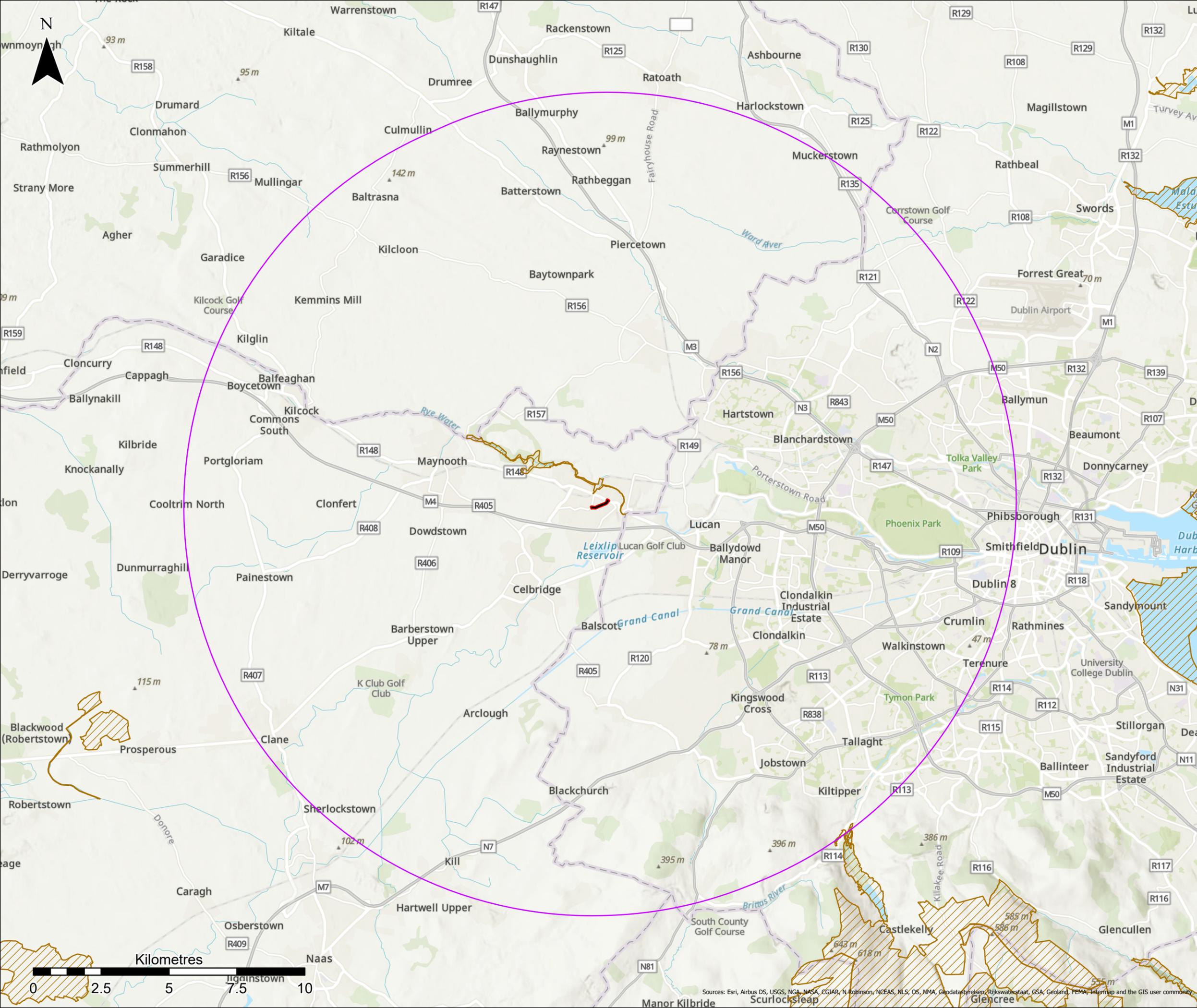
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**Figure 2a:  
Ecological Designation**

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PROJECT NO: 70085675	DRAWN: HT	DATE: 02/09/2021
DOCUMENT NO: 70085675-WSP-A-EC-001-00	REV: 00	

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Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community



- Legend**
- Red Line Boundary
  - Special Area of Conservation
  - 15km Buffer

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PROJECT:  
**Green Lane Cycle Track Scheme**

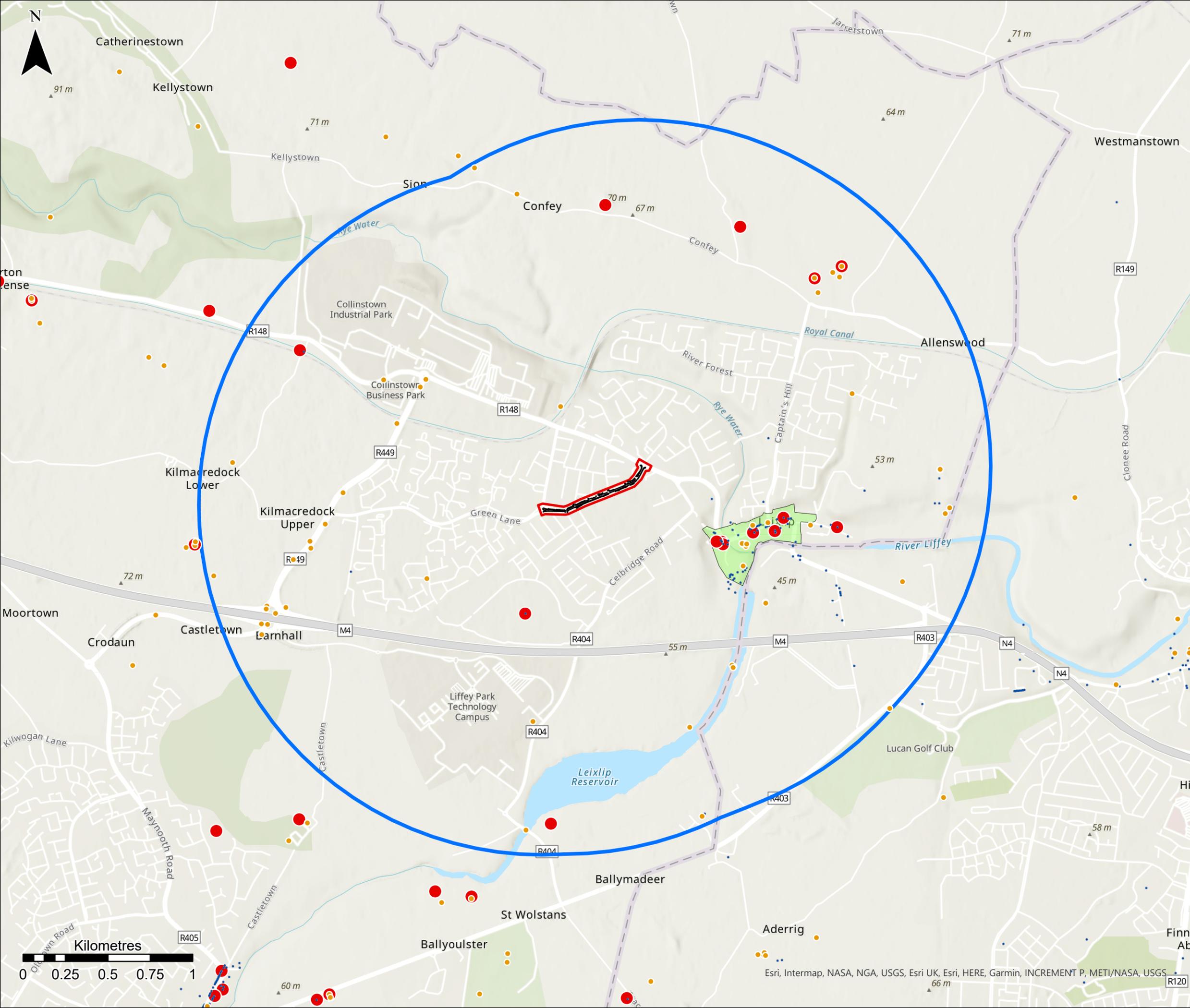
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**Figure 2b:  
Ecological Designation**

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DOCUMENT NO: 70085675-WSP-A-EC-001-00	REV: 00	

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Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, MMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community



**Legend**

- Red Line Boundary
- 2 Km Buffer
- Sites and Monuments Records
- NIAH Sites
- Protected Structures
- Kildare Architectural Conservation Areas

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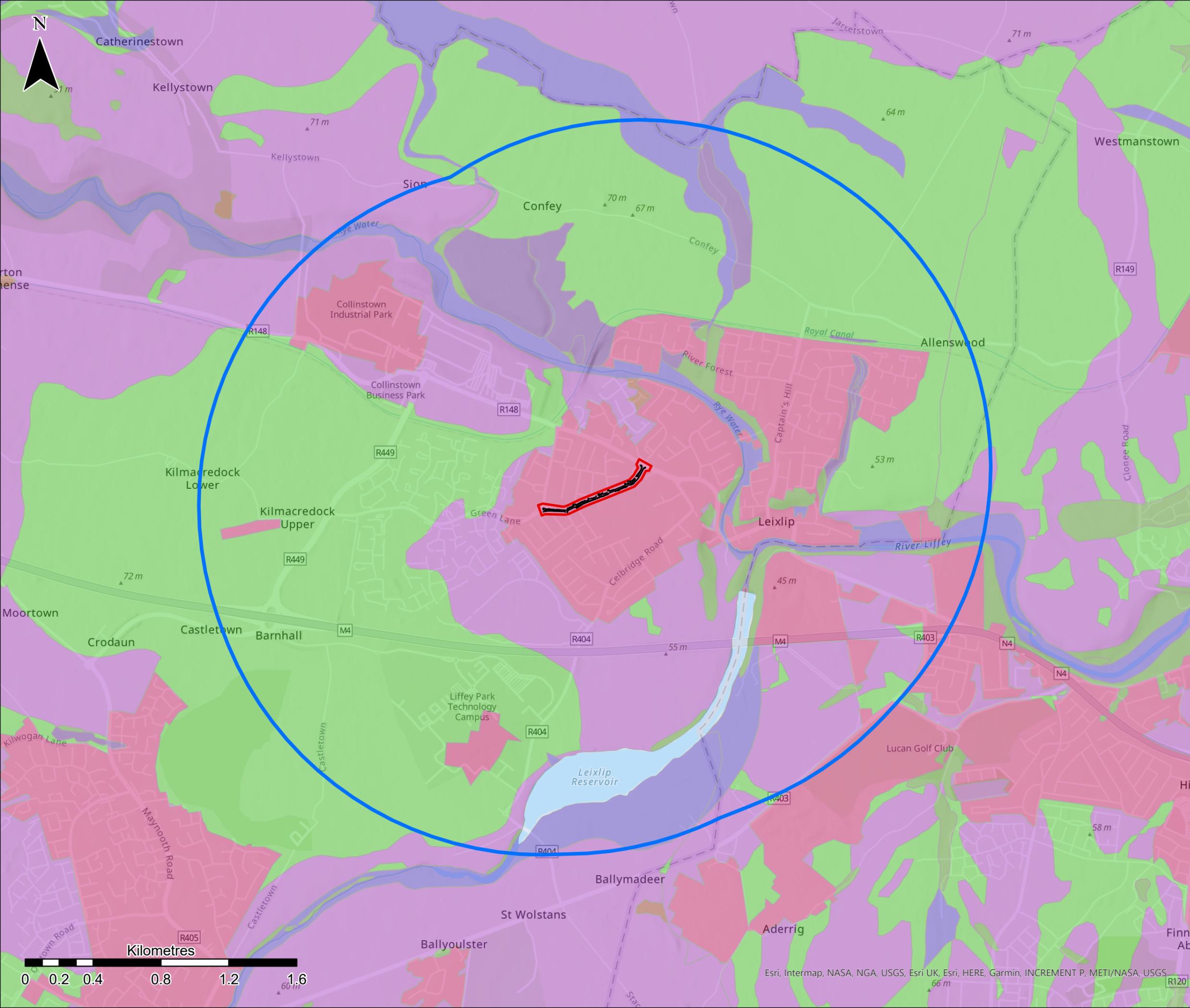
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Kildare County Council

PROJECT:  
**Green Lane Cycle Track Scheme**

TITLE:  
**Figure 3:  
Heritage**

SCALE @ A3: 1:20,000	CHECKED: SR	APPROVED: GW
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DOCUMENT NO: 70085675-WSP-S-HE-001-00		REV: 00

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**Legend**

Red Line Boundary		BminPD
2 Km Buffer		BminPDPT
Soil Types		BminSP
		BminSW
		Made
		Water
		BminDW

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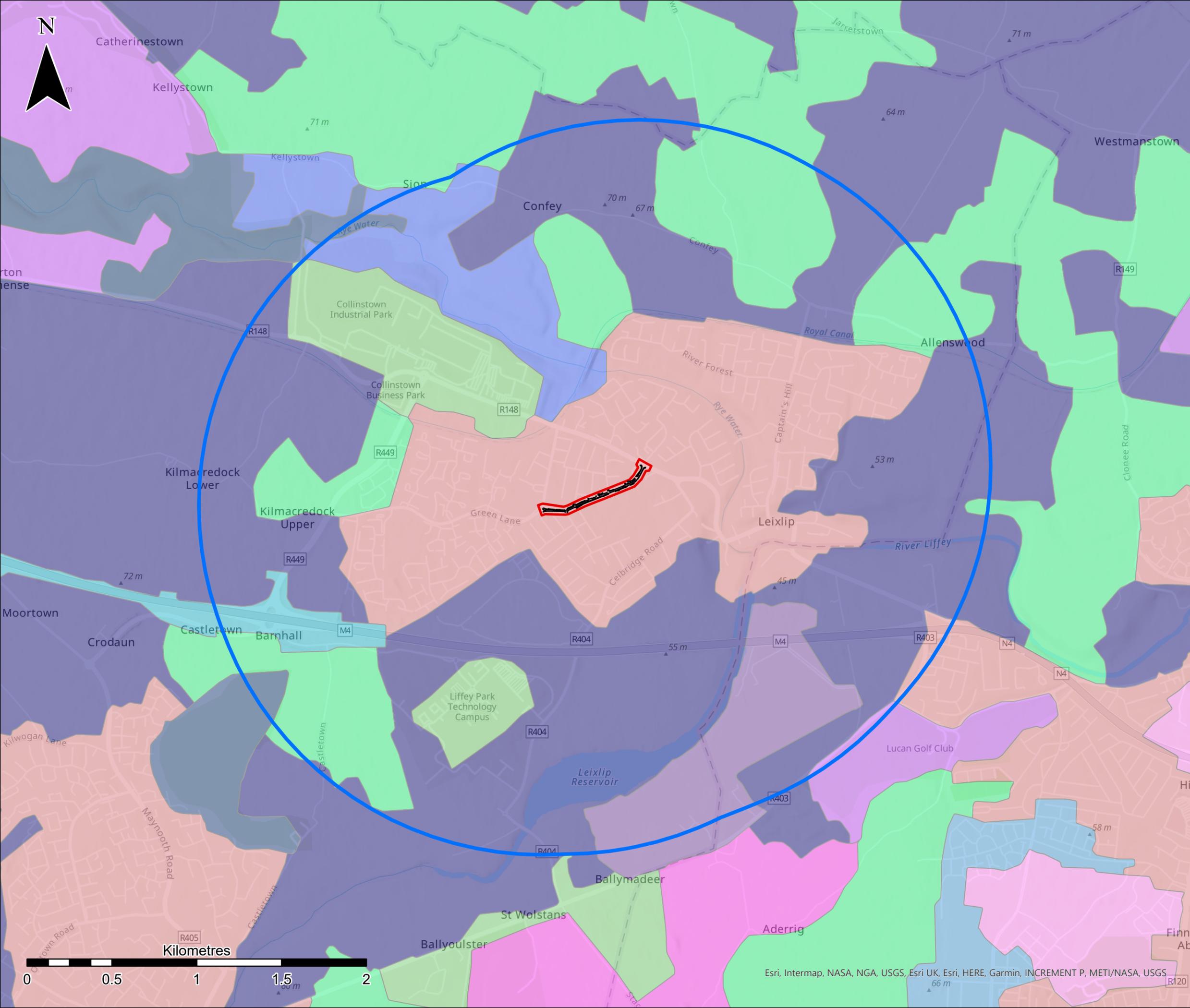
PROJECT:  
**Green Lane Cycle Track Scheme**

TITLE:  
**Figure 4.1:  
Geology - Soils**

SCALE @ A3: 1:20,000	CHECKED: SR	APPROVED: GW
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**Legend**

Red Line Boundary

2 Km Buffer

**Class\_Desc**

- Airports
- Complex cultivation patterns
- Construction sites
- Discontinuous urban fabric
- Green urban areas
- Industrial or commercial units

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Kildare County Council

PROJECT:  
**Green Lane Cycle Track Scheme**

TITLE:  
**Figure 4.2:  
Geology - Land Use**

SCALE @ A3: 1:20,000	CHECKED: SR	APPROVED: GW
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**Legend**

Red Line Boundary  


2 Km Buffer  


**Air Quality Index Regions**

-  1 - Good
-  2 - Good
-  3 - Good
-  4 - Fair
-  5 - Fair
-  6 - Fair
-  7 - Poor
-  8 - Poor
-  9 - Poor
-  10 - Very Poor

**Air Monitoring Sites**

-  Current Monitoring Site
-  Current Indicative Monitoring Site
-  Past Monitoring Site

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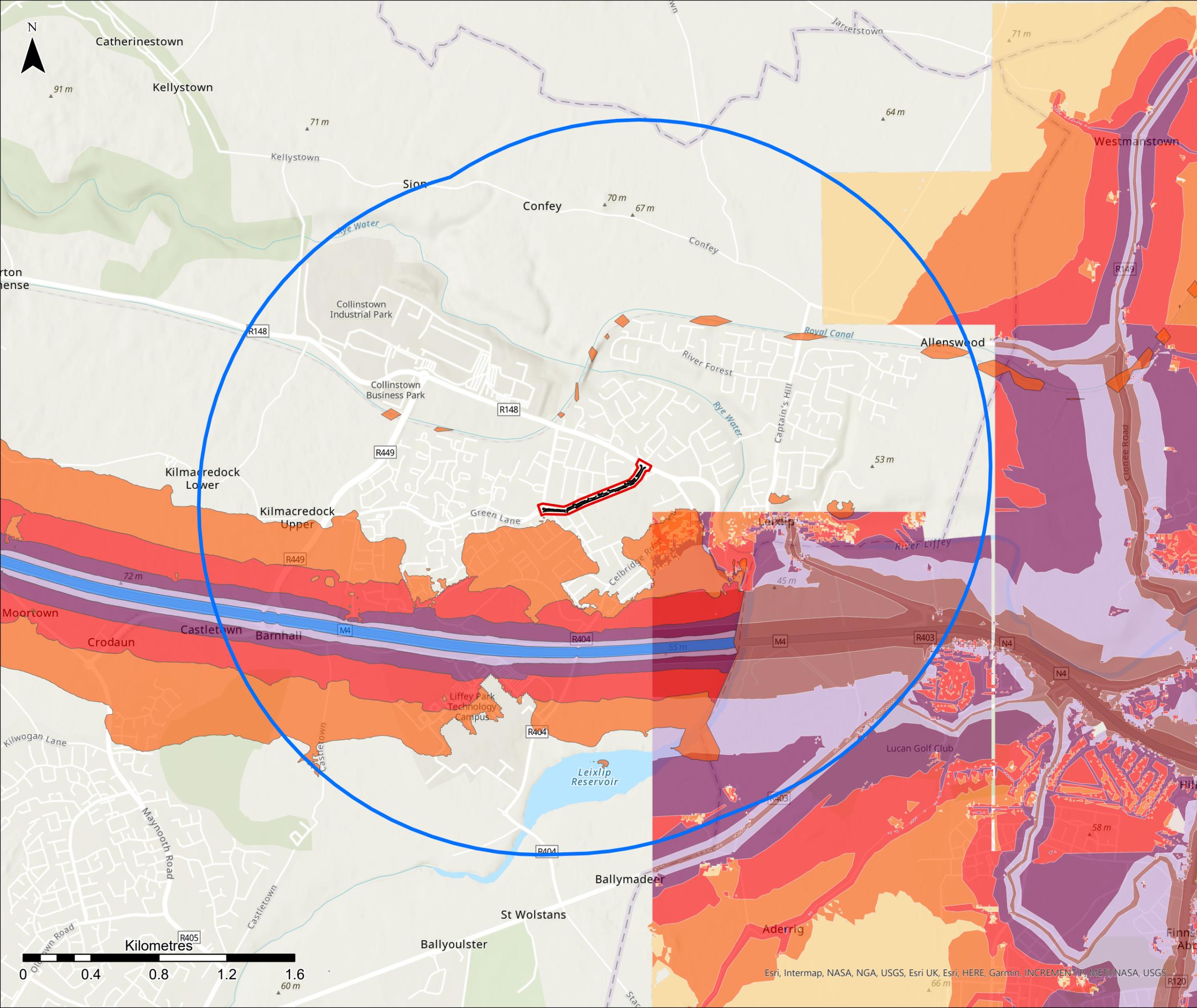
**PROJECT:**  
**Green Lane Cycle Track Scheme**

**TITLE:**  
**Figure 5:  
 Air Quality**

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**Legend**

Red Line Boundary	Noise Round 1 - NRA less than 55 dB
2 Km Buffer	55 - 59 dB
Noise Round 1 - Airport less than 55 dB	60 - 64 dB
55 - 59 dB	65 - 69 dB
60 - 64 dB	70 - 74 dB
65 - 69 dB	greater than 75 dB
70 - 74 dB	Noise Round 1 - Rail Greater than 55 dB
greater than 75 dB	Greater than 65 dB
Noise Round 1 - Dublin Agglomeration less than 50 dB	Greater than 75 dB
50 - 54	
55 - 59	
60 - 64	
65 - 69	
70 - 75	
greater than 75 dB	

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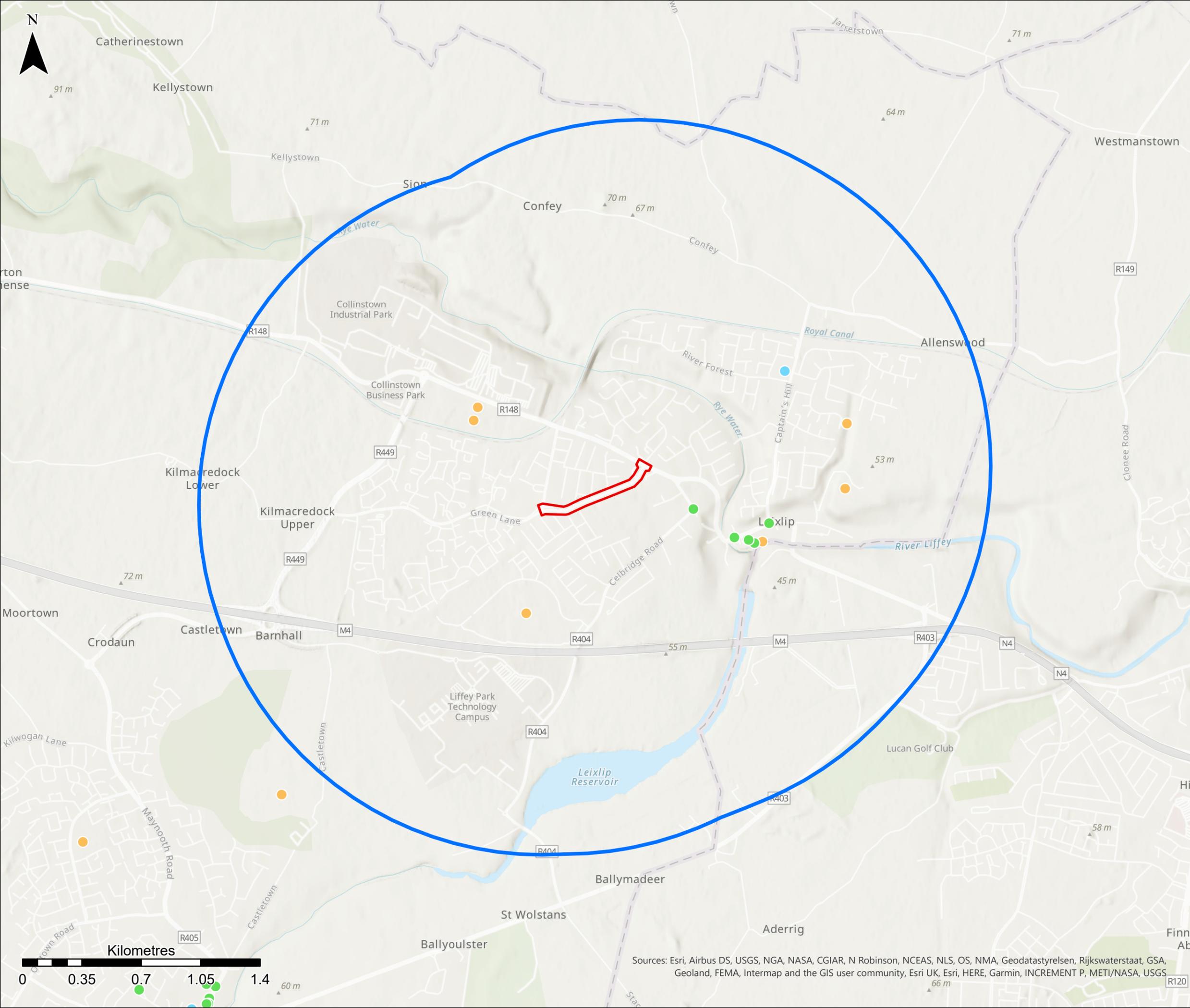
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Green Lane Cycle Track Scheme

**TITLE:**  
Figure 6:  
Noise and Vibrations

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**Legend**

- 2 Km Buffer
- Red Line Boundary

**Types of Community Facilities**

- Accessible Parking
- Library
- Recreational Area

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Green Lane Cycle Track Scheme

**TITLE:**  
Figure 7:  
Community Facilities

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Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri UK, Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS



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