

# Rochestown Avenue Active Travel Improvements

Ecological Impact Assessment

Dún Laoighaire-Rathdown County Council

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## Quality information

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# 1. Introduction

## 1.1 Background

AECOM Ireland Limited ('AECOM') was commissioned by Dún Laoghaire-Rathdown County Council (DLRCC) (herein the 'Client') to conduct an Ecological Impact Assessment (EclA) in relation to the Rochestown Avenue Active Travel Improvement (herein referred to as the 'Proposed Scheme') in Dun Laoghaire, Co. Dublin. The extent of the Proposed Scheme is herein referred to as 'Site' and the area surveyed for the Proposed Scheme is herein referred to as the 'Survey Area' as shown in Figure 1, Appendix A.

The Site is highly urbanised and is dominated by existing roads and buildings. The Proposed Scheme is located along an existing road in Dún Laoghaire and is surrounded by a mosaic of habitats typical of the urban environment, including buildings and artificial surfaces, and areas of open space with amenity grassland and scattered trees.

An EclA aims to assess whether there may be significant adverse or beneficial effects on ecological features (e.g. designated nature conservation sites, habitats or protected or notable species) as a result of the impacts associated with the implementation of the Proposed Scheme.

## 1.2 Proposed Scheme description

The Proposed Scheme seeks to improve the current facilities along a busy cycling and walking route to provide an enhanced environment to cater for the increasing cycling and walking demand, and to provide improved connections to other key cycling routes. This will be achieved by providing a new cycle track along the sections of existing road listed below, and other improvements such as cycle protected junctions. The Proposed Scheme will also incorporate lighting along a new path in Pearse Park and may also incorporate lighting along the new footpaths, although no specific lighting design is available at the time of writing.

The Proposed Scheme is located along approximately 2.17 km of roadway in Dún Laoghaire, encompassing (Figure 1):

- Rochestown Avenue; and,
- Pottery Road.

A small section (approximately 70 m in length) of existing vegetation clearance is proposed along the north-east side of Rochestown Avenue beside Sefton Road during the pre-construction phase of the Proposed Scheme to allow surveyor access (herein referred to as the 'Proposed Clearance'). The approximate centre point of the Proposed Clearance is ITM 723314, 726645. Both the Proposed Scheme and Proposed Clearance will be assessed in this Report.

## 1.3 Purpose of this Report

This Report details the results of the desk study and field survey completed to inform the EclA. The predicted impacts and effects arising from the Proposed Scheme on identified ecological features are described and, where necessary, appropriate and proportionate mitigation measures are prescribed. In line with national and local planning policy (see Section 2.2), opportunities for enhancement are identified.

This Report has been prepared as part of an application for planning permission for the Proposed Scheme. Other documents submitted with the planning application support this EclA Report and should be read in conjunction with it, in particular the Appropriate Assessment (AA) Screening Report (AECOM, 2023a) and the Preliminary Ecological Appraisal (PEA) Report (AECOM, 2023b). The AA Screening assesses the potential impacts of the Proposed Scheme on European sites (comprising Special Areas of Conservation (SAC) and Special Protection Areas (SPA)), and the PEA Report sets out the survey methods, results, potential ecological constraints associated with the Proposed Scheme and recommendations for further survey work and / or mitigation, where these are deemed necessary.

## 1.4 Quality assurance

This Report, and the desk study and field survey described within it, has been completed in accordance with the AECOM Integrated Management System (IMS). Our IMS places emphasis on professionalism, technical excellence, quality, as well as covering health, safety, environment, and sustainability management. All AECOM

staff members are committed to maintaining our accreditation to those parts of BS EN ISO 9001:2015 and 14001:2015, as well as BS OHSAS 18001:2007 that are relevant to a consultancy service.

The field surveys were led by trained and experienced AECOM ecologists. All are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) at the appropriate grade and adhered to their strict Code of Professional Conduct.

## 2. Relevant legislation, planning policy, and guidance

### 2.1 Legislative context

This EclA Report has been carried out with cognisance to the following relevant legislation:

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive');
- Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive');
- Directive 2000/60/EC establishing a framework for Community action in the field of water policy (the 'Water Framework Directive');
- Regulation 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (the 'Invasive Alien Species Regulations');
- Convention on Wetlands of International Importance ('Ramsar Convention');
- The Planning & Development Act 2000 S.I. No. 30 of 2000 as amended; the Planning and Development (Amendment) Act 2010 S.I. No. 30 of 2010 as amended; The Planning & Development (Amendment) Act 2010 S.I. No. 16 of 2018 as amended (collectively known as the 'Planning Acts');
- European Communities (Bird and Natural Habitats) Regulations 2011 and 2015 (the 'Habitats Regulations');
- The Wildlife Act 1976 and the Wildlife (Amendment) Act 2000 (together known as the 'Wildlife Acts');
- Flora (Protection) Order 2015 S.I. No. 356 of 2015 (the 'Flora Protection Order' (FPO)); and
- EC Environmental Objectives (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009).

### 2.2 Relevant planning policy and guidance

#### 2.2.1 Project Ireland 2040: National Planning Framework

The *Project Ireland 2040: National Planning Framework* (NPF) (Government of Ireland, 2019) sets out the Government's planning policies for Ireland and how these should be applied. The NPF sets out that to achieve sustainable development, that the planning system must incorporate an environmental objective, which should include:

- integrated planning for green infrastructure and ecosystem services;
- enhancing the conservation status and improve the management of protected areas and protected species;
- use of natural resources prudently;
- minimising waste and pollution; and
- mitigating and adapt to climate change, including moving to a low carbon economy.

#### 2.2.2 National Biodiversity Action Plan 2017-2021

The National Biodiversity Plan 2017-2021 (Department of Culture, Heritage and the Gaeltacht, 2017) for Ireland outlines six main objectives to meet commitments under the Convention on Biological Diversity (CBD) and EU Biodiversity Strategy. These objectives include:

- mainstreaming biodiversity into decision-making across all sectors;
- strengthening the knowledge base for conservation, management and sustainable use of biodiversity;
- increasing awareness and appreciation of biodiversity and ecosystem services;
- conserving and restore biodiversity and ecosystem services in the wider countryside;
- conserving and restore biodiversity and ecosystem services in the marine environment;
- expanding and improve management of protected areas and species; and
- strengthening international governance for biodiversity and ecosystem services.

## **2.2.3 Regional and local planning policy**

### **2.2.3.1 Dún Laoghaire-Rathdown Biodiversity Plan 2021-2025**

The local biodiversity action plan is the Dún Laoghaire-Rathdown Biodiversity Plan 2021-2025 (Dún Laoghaire Rathdown County Council, 2021). The purpose of this Plan is to ensure the protection and appreciation of biodiversity at the county (local) level. The Plan aims to restore and recover their county's biodiversity in the face of the Climate Crisis and Biodiversity Emergency.

### **2.2.4 Other guidance**

Additional guidance relevant to the EclA of the Proposed Scheme includes Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2019).

## 3. Methods

### 3.1 Target ecological features

For the purposes of all desk study and field survey, the target ecological features, where identified as relevant, of this EclA comprised:

- designated or proposed nature conservation sites at international, national, and local levels;
- habitats and species listed on Annexes I and II, respectively, of the Habitats Directive, which listing indicates importance in a European context and affords protection if designated as Qualifying Interests (QI) of SAC;
- species listed on Annex IV of the Habitats Directive, which are known as European Protected Species (EPS), and are subject to strict protection anywhere they occur;
- species listed on Annex I of the Birds Directive, which listing indicates importance in a European context and affords protection where designated as Special Conservation Interest (SCI) of SPA;
- protected species listed on the Wildlife Acts;
- Red-listed birds in the Birds of Conservation Concern in Ireland (BoCCI) (Gilbert *et al.*, 2021);
- plant species listed on the FPO;
- species and habitats listed on the National Biodiversity Action Plan 2017-2021;
- species that are Nationally Rare, Nationally Scarce or listed in Red Data Lists, which are published by the National Parks and Wildlife Service (NPWS) in collaboration with relevant Northern Irish agencies (e.g., Marnell *et al.*, 2019; Regan *et al.*, 2010, King *et al.*, 2011, Lockhart *et al.*, 2012, Nelson *et al.*, 2011; Wyse-Jackson *et al.*, 2016); and
- invasive non-native species of plants and animals listed on the Third Schedule of the Habitats Regulations (hereafter referred to as 'scheduled invasive species'), those of EU concern under the EU Invasive Alien Species Regulation, and those listed by the National Biodiversity Data Centre (NBDC) as high impact, medium impact and low impact in Ireland.

Other species or habitats, that may be rare, scarce, or otherwise notable, were included where deemed appropriate through available information and / or professional judgement.

Throughout this EclA Report, species are given their scientific name on first mention and common name only thereafter. Nomenclature for plant species follows that of Stace (2019). Distances quoted are cited as the shortest boundary to boundary distance 'as the crow flies', unless otherwise specified.

### 3.2 Zone of influence

The 'zone of influence' (Zoi) of the Proposed Scheme is the area over which ecological features may be subject to significant effects as a result of its construction, operation, and / or associated activities. The Zoi can extend beyond the boundary of the Site of the Proposed Scheme, for example where there are hydrological links extending beyond the Site.

The Zoi will vary for different ecological features depending on their sensitivity to an environmental change. It is therefore appropriate to identify different Zoi for different features. The features affected could include designated sites, habitats, species, and the processes on which they depend.

As recommended by CIEEM guidance (2019), professionally accredited or published studies, where available, were used to determine the likely Zoi, as well as professional judgement. However, CIEEM guidance also highlights that establishing the Zoi should be an iterative process and can be informed by further desk study and field survey. Where limited information was available, the Precautionary Principle was applied and a Zoi estimated on that basis.

The study areas used for the desk study and field survey, which are described below in Section 3.4 and in the AA Screening Report (AECOM, 2023a) and the PEA Report (AECOM, 2023b) were designed to allow for sufficient data to be collected to establish the baseline condition of ecological features within the Zoi of the Proposed Scheme. The study areas were therefore generally precautionary.

### 3.3 Consultation

The assessment of impacts from the Proposed Scheme on ecological features has been informed and influenced by consultation held with Dún Laoghaire–Rathdown County Council (DLRCC) ecologist. A summary of the



consultation held, the information / recommendations provided by the DLRCC ecologist, and details of how this EclA has responded to these is provided in Table 1 below.

**Table 1: Summary of consultation**

Date of consultation	Information / Recommendations provided	Action taken by this EclA in response
April – May 2023 inclusive	An Ecological Impact Assessment (EclA) is required.	An Ecological Impact Assessment report has been prepared to accompany this Part 8 application.
	Trail cameras were requested to assess the small areas of scrub and woodland habitat along the scheme.	Trail cameras were placed along the identified woodland areas. No notable species were recorded from the surveys.
	<p>Feedback and queries was also received on the Preliminary Ecological Assessment (PEA) Report, which are summarised below:</p> <p>a. Clarification on areas that were inaccessible to surveyors / potential for protected species in this area;</p> <p>b. Clarification on potential for bats in the zone of influence, and potential mitigation measures;</p> <p>c. Clarification on bird habitats;</p> <p>d. Greater recommendations requested, requirement for an Ecological Impact Assessment.</p>	<p>An updated Preliminary Ecological Assessment report has been provided as part of the Part 8 submission, with a view of addressing the comments received from DLR Biodiversity Department.</p> <p>a. Trail cameras were established and findings presented within the Ecological Impact Assessment report. It is noted that no notable protected species was identified from the further investigation.</p> <p>b. A single tree was identified as having 'Low' bat roost suitability, as defined by the Bat Conservation Trust (BCT). In accordance with industry-standard guidelines published by BCT, no further survey of trees with 'Low' bat roost suitability are required. Where new lighting is required, mitigation will be applied by minimising light spill and / or the use of low level lighting in areas.</p> <p>c. Any clearance works required to the existing shrubland will be undertaken outside of bird nesting season;</p> <p>d. An Ecological Impact Assessment has been prepared to accompany the Part 8 application.</p>

### 3.4 Desk study

A desk study was carried out to identify relevant nature conservation designations, and records of protected and notable habitats and species potentially relevant to the Proposed Scheme. The desk study areas were defined using a stratified approach based on the ZoI of the Proposed Scheme on different ecological features. Accordingly, the desk study sought to identify:

- international / European nature conservation designations (e.g., SACs and SPAs) within the ZoI of the Proposed Scheme in accordance with Office of the Planning Regulator (OPR) guidance (2021), thus if there is a hydrological link / ecological pathway between the Proposed Scheme and any international / European site;
- national statutory nature conservation designations within 2 km of the Site;
- local nature conservation designations within 2 km of the Site; and
- records of protected and notable habitats and species within 2 km of the Site.

### 3.5 Field survey

The scope of survey described in this Report was informed by the guidance contained within published documents referenced in Section 2, and on the results of the desk study and the field survey carried out to establish the baseline ecological conditions.

Based on an initial desk study, including a review of biological records and aerial imagery of the Site, a number of ecological features were excluded from targeted field survey, as set out in Table 2.

**Table 2: Ecological features excluded from field survey**

Ecological feature(s)	Reason(s) for exclusion from field survey
Otter <i>Lutra lutra</i>	According to the EPA Mapper, the nearest watercourse to the Site is Kill-O-The-Grange Stream, which is more than 250 m west of the Site,

Ecological feature(s)	Reason(s) for exclusion from field survey
	with intervening buildings / hardstanding. Therefore, even if otter do occur within this stream, there is no possibility of otter being affected by the Proposed Scheme given the intervening unsuitable habitat and distance.
Bats	It is possible that these species may occur on Site and / or within the surrounding area. Bat roost assessment surveys were undertaken (as detailed in Section 3.5.3.1 below), however bat activity surveys were not undertaken given that the Proposed Scheme is within a highly urbanised area which is dominated by hardstanding and buildings. The Site lacks significant linear habitat commuting corridors and is not connected to high value habitat for foraging and commuting bats, albeit residential gardens may offer limited opportunities.
Irish hare <i>Lepus timidus hibernicus</i> , hedgehog <i>Erinaceus europaeus</i> , pygmy shrew <i>Sorex minutus</i> , Irish stoat <i>Mustela erminea Hibernica</i> , red squirrel <i>Sciurus vulgaris</i>	It is possible that these species may occur on Site and / or within the surrounding area. It can be assumed that they are present, and effects of the Proposed Scheme can be mitigated through standard measures.
Common lizard <i>Zootoca vivipara</i>	The Site has the potential to support this species, which is relatively common and widespread. Common lizard may occur along the hedgerows and road verges. Standard mitigation measures to minimise effects of the Proposed Scheme on this species can be implemented.

A description of the methods adopted for all ecological field surveys is provided under the following sub-headings. All ecological field surveys were carried out by experienced AECOM ecologists. Data was recorded, and habitats were mapped using Esri Field Maps application on a handheld mobile mapping device.

### 3.5.1 Habitat survey

A habitat survey was carried out in accordance with *A Guide to Habitats in Ireland* (Fossitt, 2000) and *Best Practice Guidance for Habitat Survey and Mapping* (Smith *et. al.*, 2011). The survey comprised categorising habitat types and habitat features within the Survey Area (i.e. the Site and a buffer of 50 m around the Site). The information gained from the survey was used to determine the likely ecological value of the Survey Area, and to inform recommendations for further specific baseline survey work which may be required to inform the Proposed Scheme.

The survey was carried out on 4th August 2022 by an AECOM Ecologist under suitable weather conditions. All habitats present within the Survey Area were mapped, along with any observed relevant ecological constraints. Where ecological constraints were present, Target Notes were recorded and the position of these noted on the Fossitt habitat map. Typical and notable plant species were recorded for each key habitat type and reflected the conditions at the time of survey.

### 3.5.2 Invasive non-native species

During the habitat survey, a specific search of the Survey Area was made for scheduled<sup>1</sup> invasive species and species listed as invasive in Ireland by the NBDC<sup>2</sup>. Locations of such species were mapped, and notes were made including species, extent, and maturity.

### 3.5.3 Protected and notable species

The standard habitat survey method was extended to identify the potential of habitats or features (i.e. built features) to support protected and notable species. When encountered, direct sightings and indirect signs (e.g. field signs) of protected species or auditory evidence were recorded.

#### 3.5.3.1 Bat roost assessment

During daylight hours, trees and buildings / structures within the Survey Area were subject to a visual ground-based Preliminary Roost Assessment (PRA). The PRA was carried out to assess the suitability of the trees and structures to support roosting bats and to determine the presence of potential roost features (PRF) in trees, such

<sup>1</sup> Invasive non-native species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011)

<sup>2</sup> Species which are classified as high, medium, or low impact by the NBDC

as knotholes, cavities, or tear-outs, and potential access features in structures. Evidence of the presence of roosting bats was also searched for. External signs that bats are using a tree as a roost include:

- entry points such as suitably sized gaps in tree cracks and crevices;
- bat droppings: black droppings, 5-10 mm long that crumble to a fine dust when crushed and may be located on the ground or stuck to tree trunks or branches;
- staining: secretions from bat fur, which can cause oily brown stains in the vicinity of roost entrances. Urine stains which may be present below the entrance to the roost;
- audible squeaking from within the roost site;
- odour, which may be indicative of a large roost; and,
- flies around the entrance of a roost, attracted by the smell of bat droppings.

Bats can also roost in less obvious places such as under ivy *Hedera* sp. and loose tree bark. Trees and structures were categorised within the Survey Area as having Negligible, Low, Moderate, or High suitability for roosting bats in accordance with Bat Conservation Trust (BCT) guidelines (Collins, 2016).

### 3.5.3.2 Badger survey

A badger survey was carried out within the Survey Area as far as access permitted. The survey followed guidance in Harris *et al.*, (1989) and the National Roads Authority (NRA) (2005). Evidence searched for included setts, spoil heaps, bedding, guard hairs, latrines, footprints, trails, scratch marks and foraging activity.

Badger evidence was mapped with the aid of aerial photography and GPS, with accompanying field notes.

### 3.5.3.3 Trail camera surveys

Two trail cameras were deployed at locations in Figure 2 to determine if the habitat is used by protected and / or notable species. The cameras were deployed for five days and the footage was later analysed by suitably experienced ecologists. Trail camera 1 was located at grid reference O 23359 26640 (ITM 723299 726665) and Trail camera 2 was located at grid reference O 23700 26306 (ITM 323700 226306).

Trail camera 1 was placed within scrub habitat. It overlooked mainly ground flora and scrub comprising bramble *Rubus fruticosus* agg., common nettle *Urtica dioica*, ivy *Hedera hibernica*, cleavers *Galium aparine* and butterfly-bush *Buddleja davidii*.

Trail camera 2 was placed on a small wych elm *Ulmus glabra* plant located in a treeline adjacent to stone wall in Pearse Park. It overlooked a well-used bare path between the treeline and stone wall. The treeline comprised lime *Tilia × europaea*, conifers, oak *Quercus* sp., hawthorn *Crataegus monogyna* and wych elm.

## 3.6 Ecological impact assessment

The method employed for assessment of impacts on ecological features followed that recommended by CIEEM in the *Guidelines for Ecological Impact Assessment in the UK and Ireland* (2019). CIEEM is the leading professional membership body for ecologists in both the UK and Ireland. It provides advice to government, upholds standards in professional conduct, and promotes best practice.

The principal steps involved in the CIEEM approach can be summarised as follows:

- baseline conditions are determined through targeted desk study and field survey to identify ecological features that are both present and might be affected by the Proposed Scheme (both those likely to be present at the time works begin, and for comparison, those predicted to be present at a set time in the future);
- the importance of identified ecological features is evaluated to place their relative biodiversity and nature conservation value into a geographic context, determining those that need to be considered further within the impact assessment;
- the potential impacts of the Proposed Scheme on relevant ecological features are described, considering established best practice, legislative requirements and embedded design measures;
- the likely effects (adverse or beneficial) on relevant ecological features are assessed and, where possible, quantified;

- measures to avoid or reduce (or, if necessary, compensate for) any predicted significant effects, if possible, are developed in conjunction with other elements of the design (including mitigation for other environmental disciplines);
- any residual effects of the Proposed Scheme and their significance are reported; and
- scope for enhancement measures is identified.

Only those ecological features that are ‘important’ and that could be significantly affected by the Proposed Scheme require detailed assessment – *“it is not necessary to carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable”* (CIEEM, 2019). This is consistent with the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) which requires investigation of likely significant effects, as accordingly emphasised by the EPA guidelines (2022).

Existing data and criteria are considered when determining the importance of ecological features. Where these are lacking, it is necessary to apply professional judgement. Factors considered include:

- rarity, endemism, mobility and geographic range (particularly if this changing);
- size / extent, rate of decline and vulnerability;
- typicalness, species-richness, habitat structure and connectivity / fragmentation;
- function / value to other features (e.g., habitats of notable species or buffers against impacts); and
- restoration potential.

Compliance with legislation is relevant but, along with priority listing, does not necessarily translate to importance. For example, a transitory roost of a single bat would not be afforded the same importance as a regularly occurring maternity roost, although legal obligations must still be met, and areas of priority habitat could be unfavourably small or in poor condition and not practically restorable.

The importance of ecological features is described using a geographic scale. Examples of the types of ecological features which may fall into each category are given in Table 3 which is adapted from CIEEM guidelines (2019). For the purposes of this assessment ‘Local’ is defined as the area within 5 km of the Site.

**Table 3: Examples of ecological importance**

Importance	Examples
International	<p>Internationally designated nature conservation site (or candidate/proposed international site), or site satisfying criteria for such designation, or feature essential to maintaining such sites.</p> <p>Sustainable area (or part of a larger sustainable area) of best examples of Annex I habitat (Habitats Directive).</p> <p>A regularly occurring internationally significant population (e.g. 1% of the national population, or potentially less for critical parts of wider populations or those at a critical life-cycle stage) of internationally important species listed on Annex I of the Birds Directive or Annex II of the Habitats Directive.</p>
National	<p>Nationally designated nature conservation site (or proposed such site), or site satisfying criteria for such designation.</p> <p>Sustainable area of good quality Annex I habitat not deemed to be of international importance, or of national priority habitat, which is a significant proportion of the resource.</p> <p>Regularly occurring nationally significant population (e.g. 1% of the national population, or potentially less for critical parts of wider populations or those at a critical life-cycle stage) of species listed or protected under the Wildlife Acts or Red Data lists, or site supporting one.</p>
County	<p>County designated nature conservation site (or proposed such site).</p> <p>Sustainable area of Annex I habitat or national priority habitat not deemed to be of higher importance (e.g., lower quality, highly fragmented, small and / or low restoration potential), or priority habitat under a Local Biodiversity Action Plan if this exists and applies at county level.</p> <p>Regularly occurring county significant population (e.g., 1% of county resource, or potentially less for critical parts of wider populations or those at a critical life-cycle stage) of species listed or protected under the Habitats/Birds Directives, Wildlife Acts, Red Data lists or Local Biodiversity Action Plan (if this exists and applies at county level), or site supporting one.</p>
Local	<p>Priority habitat of insufficient size or quality for higher importance or degraded with low restoration potential.</p>

Importance	Examples
	Habitat providing significant biodiversity or important ecological corridors in a local context. Small sustainable population of notable species not qualifying for higher importance or uncommon locally.
Site	Common, heavily-managed or modified habitat, and common and widespread species.

Under CIEEM guidance (2019), there is a clear distinction between ‘impact’ and ‘effect’. An impact is an action on an ecological feature (e.g., hedgerow removal; loss of a bat roost). An effect is the outcome of that impact on an ecological feature (e.g., effect of hedgerow loss on breeding birds; effect of bat roost loss on the conservation status of the bat species).

Impacts may occur during the construction and operational phases of a development. They may be direct or indirect (also termed ‘secondary’). Direct impacts are attributable to an action associated with a development. Indirect impacts are often produced away from a development or as a result of other initial impacts.

Likely impacts / effects are characterised using those parameters below that are necessary to understand them:

- **direction / quality** – whether the impact will have a beneficial, neutral or adverse effect;
- **magnitude** – the ‘size’, ‘amount’ or ‘intensity’ of an impact, described in quantitative terms as far possible;
- **extent** – the spatial or geographical area or distance over which the impact or effect occurs;
- **duration** – the time over which an impact/effect is expected to last prior to recovery or replacement (if possible) of the feature. Where appropriate, ecological aspects such as lifecycles are considered. The duration of an effect may be longer than the duration of an activity or impact;
- **timing and frequency** – timing is important since an effect might not occur if critical seasons or life stages are avoided. Frequency considers repetition of an activity, which may result in a greater effect; and
- **reversibility** – whether the effect is temporary or permanent. A temporary impact / effect is one from which recovery is possible or for which effective mitigation is possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).

Consideration is given to conservation objectives, whether processes within sites will be altered, effects on habitats and species population size / viability, and whether these will have an effect on conservation status. Conservation status is determined by the abundance and distribution of species, and the extent, structure and function, and typical supported species of habitats.

Consideration is also given to cumulative effects, since impacts acting in-combination may have a cumulative effect exceeding that of the separate impacts. Cumulative effects may arise from a combination of impacts from the Proposed Scheme itself (e.g., impacts at the construction and operation stages), or the combined impacts from different developments in the vicinity of the Proposed Scheme.

An effect (positive or negative) is significant at a specified geographical level if it affects the ecological integrity of a site or ecosystem or the conservation status of a species or habitat. If not significant at the level it was considered important, an effect could be significant at a lower geographic level (for example, an effect on a nationally important species may not be significant to the national population). These assessments are based on quantitative evidence where possible, and as necessary through professional judgement.

Initially, the effect significance does not consider mitigation or compensation unless it is part of the embedded approach. The residual effect significance takes such measures into account, with the aim that, wherever possible, residual effects are not significant or are significant at a lower geographic level.

The CIEEM guidelines (2019) advises that where there is reasonable doubt and a conclusion of no significant effect cannot be robustly reached, this uncertainty should be acknowledged and a significant effect assumed, in line with the precautionary principle.

### 3.7 Approach to mitigation

Where impacts on relevant ecological features are predicted, the approach to mitigation engages the following hierarchy:

1. Avoid features where possible.
2. Minimise impact by design, method of working or other measures, for example by enhancing existing features.
3. Compensate for significant residual impacts (e.g., by providing suitable habitats elsewhere).

This hierarchy requires the highest level to be applied where possible. Only where this cannot reasonably be adopted are lower levels considered, giving rationale including sufficient detail to show that the measures are feasible and would be provided.

The NPF supports the protection and promotion of natural assets and biodiversity via green infrastructure.

### **3.8 Assessment assumptions and limitations**

The aim of a desk study is to help characterise the baseline context of the Site and provide valuable background information that would not be captured by a single site survey alone. Desk study information is dependent on records having been submitted for the area of interest. As such, a lack of records for particular habitats or species does not necessarily mean they are absent from the area of interest. Similarly, the presence of records for habitats and species does not automatically mean they still occur within the area of interest or are relevant in the context of the Proposed Scheme.

Where habitat boundaries coincide with discernible boundaries on recent aerial photography (where available) the resolution is as determined by the accuracy and clarity of the aerial photography. Otherwise, habitat mapping is as estimated in the field. Where areas of habitat are given, they are approximate and should be verified by measurement to the Proposed Scheme where required for design or construction.

Private dwellings and premises (including gardens) were inaccessible during the survey. As such, private dwellings / structures were not subject to bat PRA. This is not considered to pose a significant constraint, as private premises are outwith the scope of works for the Proposed Scheme and are unsuitable for protected / notable species given their level of disturbance and urban environment. The Proposed Scheme is largely along existing roads with existing artificial lighting along most of the proposed route, and thus it is unlikely that the construction or operation of the Proposed Scheme could have any significant effect on bat roosts in private residences (if present), therefore this is not a significant constraint

Baseline conditions are increasingly liable to change with increased elapsed time since the surveys informing the EclA were completed. For example, protected species may establish new refuges, and invasive non-native plant species may spread where suitable habitat exists. This assessment is based on the information collected during the desk study and field surveys.



## 4. Baseline environment

### 4.1 Nature conservation designations

#### 4.1.1 Statutory designations

There are four statutory designated sites located within the ZOI of the Site, comprising one SPA, one SAC, and two proposed National Heritage Areas (pNHA). These sites are detailed in Table 4. Sites are listed by distance from the Site, with those closest described first.

**Table 4: Statutory designations within the ZOI of the Proposed Scheme**

Designated site [site reference]	Reasons for designation	Distance from Proposed Scheme
Dalkey Coastal Zone and Killiney Hill pNHA [001206]	The pNHA is a fine example of a coastal system with habitats ranging from sub-littoral to coastal heath. The flora is well developed and includes some scarce species. The islands are also important for bird species. Especially noteworthy for the assemblage of invertebrates.	0.75 km northeast. No hydrological or other ecological connection.
South Dublin Bay and River Tolka Estuary SPA [0040240]	Designated for: <ul style="list-style-type: none"> <li>• Arctic tern <i>Sterna paradisaea</i>;</li> <li>• Bar-tailed godwit <i>Limosa lapponica</i>;</li> <li>• Black-headed gull <i>Chroicocephalus ridibundus</i>;</li> <li>• Common tern <i>Sterna hirundo</i>;</li> <li>• Dunlin <i>Calidris alpina</i>;</li> <li>• Grey plover <i>Pluvialis squatarola</i>;</li> <li>• Knot <i>Calidris canutus</i>;</li> <li>• Light-bellied brent goose <i>Branta bernicla hrota</i>;</li> <li>• Oystercatcher <i>Haematopus ostralegus</i>;</li> <li>• Redshank <i>Tringa tetanus</i>;</li> <li>• Ringed plover <i>Charadrius hiaticula</i>;</li> <li>• Roseate tern <i>Sterna dougallii</i>; and</li> <li>• Sanderling <i>Calidris alba</i>.</li> </ul>	1.7 km north. No hydrological links / ecological pathways or habitats for use by SPA designated birds within the Survey Area.
South Dublin Bay SAC [000210]	Designated for: <ul style="list-style-type: none"> <li>• Mudflats and sandflats not covered by seawater at low tide;</li> <li>• Annual vegetation of drift lines;</li> <li>• <i>Salicornia</i> and other annuals colonising mud and sand; and</li> <li>• Embryonic shifting dunes</li> </ul>	1.7 km northwest. No hydrological or other ecological connection.
South Dublin Bay pNHA [000210]	Coincident with South Dublin Bay SAC. Reasons for designation as described above for South Dublin Bay SAC.	1.7 km north. No hydrological or other ecological connection.

#### 4.1.2 Non-statutory designations

There are no non-statutory designations for nature conservation within 2 km of the Site of the Proposed Scheme.

## 4.2 Habitats

### 4.2.1 Within the Survey Area

The Site is highly urbanised and is dominated by existing roads and buildings. Areas of open space are scattered throughout the Survey Area and comprise amenity grassland, scattered trees and parkland, treelines, and ornamental shrubs and flower beds. Other habitats present in the Survey Area include mixed broadleaved woodland. No protected or notable habitats or species of plants were identified during the field survey. Broad habitats identified within the Survey Area are detailed in the following paragraphs and shown in Figure 2.

### **BL3 Buildings and artificial surfaces**

Buildings and artificial surfaces dominate the Survey Area, and include paved roads, footpaths, and residential, commercial, and industrial premises. Buildings and artificial surfaces are frequently associated with small areas of amenity grassland, scrub, and ornamental shrubs and flower beds. Buildings and artificial surfaces are of negligible ecological value.

### **BC4 Flower beds and borders**

Formal flower beds are present in the Survey Area, typically bordering footpaths and roads. Flower beds are planted with ornamental, non-native species such as hydrangea *Hydrangea* sp..

### **ED1 Exposed sand, gravel, or till**

A single small parcel of exposed sand and gravel is present within the Survey Area. This parcel is located in the centre of the Proposed Scheme next to an improved agricultural grassland containing horses and is likely used as an outdoor riding paddock. No vegetation was noted within the parcel.

### **ED3 Recolonising bare ground**

There is a small parcel which is consistent with recolonising bare ground located within the Survey Area. This parcel is dominated by willowherb *Epilobium* spp., ragwort *Senecio* sp., and the medium impact invasive non-native species butterfly-bush. There is also a small area of ornamental species present.

### **GA1 Improved agricultural grassland**

A single improved grassland parcel is present within the Survey Area. This improved agricultural grassland field is currently grazed by livestock with a species-poor, short sward composed of perennial ryegrass *Lolium perenne* with other frequent grass species including Yorkshire-fog *Holcus lanatus*. Occasional herb species include broad-leaved dock *Rumex obtusifolius*, ragwort and willowherbs.

### **GA2 Amenity grassland (improved)**

Areas of amenity grassland are present within the Survey Area and are typically associated with areas of public open space, verges along the existing roads, and private dwellings. Amenity grassland was recorded to form a short sward height, managed by mowing. Dominant grassland species include perennial ryegrass, with infrequent herbs such as red clover *Trifolium pratense* noted.

### **WD1 (Mixed) broadleaved woodland**

Three small parcels of broadleaved woodland are present in the centre of the Survey Area. The westernmost parcel (located also with the Proposed Clearance area, Figure 2) and central parcel are associated with private premises, and the easternmost parcel is located within a public park. Woodland parcels located within private premises were largely inaccessible due to walls and a lack of access to private dwellings. However, they were assessed from the boundary as far as possible.

Canopy trees within the westernmost and central parcel are uniform in age, indicative of planting, and vary in height from approximately 8-10 m. Canopy trees are dominated by mature ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus*. The understorey and ground flora in these two parcels could not be fully accessed, however, they were noted to support bramble and ivy. A single stand of a low impact invasive non-native species snowberry *Symphoricarpos albus* was also noted growing behind the fence adjacent to the footpath.

The easternmost woodland parcel was uniform in age, indicative of planting and comprised mature trees approximately 20 m in height. Canopy trees are dominated by beech *Fagus sylvatica*, oak, and horse-chestnut *Aesculus hippocastanum*. The understorey was typically limited, and where present included perennial ryegrass, thistle *Cirsium* sp. and willowherb.

### **WD3 (Mixed) conifer woodland**

One small parcel of mixed conifer woodland is located within private land in the centre of the Survey Area. The canopy of this conifer woodland is uniform in age and is approximately 15 m in height. Canopy trees are dominated by cypress species *Cupressus* spp.. The understorey and ground flora could not be fully accessed, however, the trunks of trees were noted to support ivy.



#### **WD5 Scattered trees and parkland**

Scattered trees and parkland occur throughout the Survey Area, comprising both individual and parkland trees. The majority of the scattered individual trees are young, with species present including cherry *Prunus* sp., lime and sycamore.

Parkland occurs in amenity areas along the existing Grangewood Road. Parkland trees were typically immature with species present including immature ash and beech and a single mature oak. Parkland ground was limited but the ground layer consisted of short, grass-dominated sward managed by frequent mowing. Species present are Yorkshire-fog, *Taraxacum officinale* agg., and broadleaved dock *Rumex obtusifolius*. The low impact invasive non-native species winter heliotrope *Petasites fragrans* was also noted.

#### **WL1 Hedgerows**

Hedgerows are infrequently present in the Survey Area, forming the curtilages of residential properties and commercial premises. Hedgerows are typically short, species-poor, uniform structures and well managed. Hedgerows typically lack a distinct ground flora. The low impact invasive non-native species snowberry was noted in a hedgerow adjacent to Ruby Hall Road.

#### **WL2 Treelines**

Treelines are found throughout the Survey Area. Treelines typically comprise lines of planted street trees, although are occasionally found in parkland or bordering residential dwellings. Treelines in residential dwellings and streets were generally noted to be immature, whilst in parkland were more mature. Treelines bounding residential dwellings are frequently composed of conifer species (e.g. cypress species), whilst parkland treelines are predominantly broadleaved species. Treeline species recorded include beech, rowan *Sorbus aucuparia*, field maple *Acer campestre*, silver birch *Betula pendula*, horse-chestnut and cherry.

#### **WS1 Scrub**

Scattered scrub is present within the Survey Area. Species recorded include bramble, common nettle and elder *Sambucus nigra*. The medium impact invasive non-native species butterfly-bush and low impact non-native species winter heliotrope were also noted in scrub.

#### **WS3 Ornamental / non-native shrub**

Small parcels of ornamental and non-native shrubs are found in the Survey Area, typically planted along footpaths and in residential gardens. Invasive non-native species were frequently noted amongst ornamental planting, including the low-impact invasive non-native species montbretia *Crocsmia x crocosmiiflora*.

#### **BL3 / GA2 / WS3 / WD5 mosaic (Buildings and artificial surfaces / Amenity grassland (improved) / Ornamental / non-native scrub / Scattered trees and parkland)**

There are also several gardens of private residences outside of the Site within the Survey Area that comprise a mosaic of BL3/GA2/WS3 /WD5 habitats similar to the individually described habitats above.

### **4.2.2 Within the Proposed Clearance area**

The Proposed Clearance area comprises a small area of scrub and woodland habitat as described below and shown on Figure 2.

#### **WD1 (Mixed) broadleaved woodland**

A small parcel of broadleaved woodland was identified in the Proposed Clearance area (this particular parcel is referred to as the westernmost parcel in WD1 (Mixed) broadleaved woodland habitat description. As mentioned above, the canopy trees within this parcel are uniform in age, indicative of planting, and vary in height from approximately 8-10 m. Canopy trees are dominated by ash and sycamore. The understorey and ground flora in these two parcels could not be fully accessed, however, they were noted to support ivy and bramble and are of limited ecological value.

#### **WS1 Scrub**

A small parcel of scrub was noted along the north-western side of the Proposed Clearance. The medium impact invasive non-native species butterfly-bush was the dominant species in this scrub parcel. Other species recorded include bramble, common nettle, and low impact non-native species winter heliotrope.

### 4.3 Invasive non-native species

The NBDC database search returned no records of invasive non-native plant species within 2 km of the Site. Records of four invasive animal species within 2 km of the Site were provided from the NBDC database: grey squirrel *Sciurus carolinensis* (Third Schedule), house mouse *Mus musculus* (high impact species), Jenkins' spire snail *Potamopyrgus antipodarum* (medium impact species), raccoon *Procyon lotor* (high impact species), rabbit *Oryctolagus cuniculus* (medium impact species) and yellow-bellied slider *Trachemys scripta scripta* (high impact species).

No invasive non-native faunal species were observed during the field survey.

Indicative locations and extents of invasive non-native plant species present within and adjacent to the Survey Area are displayed in Figure 3. Note, sycamore (medium impact species) is present typically as mature trees and is widespread throughout the Survey Area and is therefore not displayed on Figure 3.

#### 4.3.1.1 Within the Survey Area

Eight invasive non-native species were identified scattered throughout the Survey Area. No scheduled invasive species were identified. The non-scheduled invasive non-native species (according to the NBDC) identified were:

- cherry laurel *Prunus laurocerasus* (high impact invasive non-native species);
- butterfly-bush (medium impact invasive non-native species);
- sycamore (medium impact invasive non-native species);
- traveller's joy *Clematis vitalba* (medium impact invasive non-native species);
- cotoneaster *Cotoneaster* sp. (low impact invasive non-native species);
- snowberry (low impact invasive non-native species);
- montbretia (low impact invasive non-native species); and,
- winter heliotrope (low impact invasive non-native species).

Invasive non-native species are typically located amongst non-native ornamental shrub planting along roadsides, but are also found in amenity grassland, scrub, parcels of woodland and parkland.

#### 4.3.1.2 Within the Proposed Clearance area

Two invasive non-native species were identified within the Proposed Clearance area. The non-scheduled invasive non-native species identified were butterfly-bush (medium impact invasive non-native species) and winter heliotrope (low impact invasive non-native species). These species were located within the scrub habitat with butterfly-bush dominating this habitat. No scheduled invasive species were identified within the Proposed Clearance area.

### 4.4 Protected and notable species

The baseline conditions with respect of protected and notable flora and fauna species are provided under the following sub-headings. Where relevant, records of the species identified by the desk study are referred to under the species sub-headings.

#### 4.4.1 Trail camera footage

The trail cameras were collected on 8<sup>th</sup> May 2023 and the data was reviewed. Various passerine birds were recorded and several sightings of fox passing through both trail camera areas.

#### 4.4.2 Bats

The NBDC returned records of brown long-eared bat *Plecotus auratus*, Daubenton's bat *Myotis daubentonii*, Leisler's bat *Nyctalus leisleri*, common pipistrelle *Pipistrellus pipistrellus*, and soprano pipistrelle *Pipistrellus pygmaeus* within 2 km of the Site.



##### 4.4.2.1 Within the Survey Area

A PRA of suitable trees and buildings / structures located within the Survey Area identified one tree with Low suitability to support roosting bats (according to the definition provided by the BCT (Collins, 2016)) as summarised in Table 5. The tree is an oak located within an area of parkland to the corner of the junction between Rochestown Avenue and Grangewood Road as shown in Figure 4. As discussed in Section 3.8, private residences were not surveyed however it has been determined that they are unsuitable for roosting bats to be disturbed by the Proposed Scheme given the existing level of disturbance and urban environment. Due to the

absence of potential roost features within any surveyed buildings / structures, or that surveyed trees were too immature / unsuitable, all other trees and buildings / structures in the Survey Area were assigned Negligible roost suitability.

The Survey Area is highly urbanised and dominated by hardstanding and buildings. Where habitats are present which offer opportunities for foraging bats such as scrub and woodland, their value is limited by their small extent and illumination by existing street lighting. The Survey Area lacks significant linear habitat commuting corridors and is not connected to high value habitat for foraging and commuting bats, albeit residential gardens may offer limited opportunities.

**Table 5: Trees with bat roost suitability within the Survey Area**

Reference	Species	PRF(s)	Photograph of tree	Photograph(s) of PRF	Suitability
T1	Oak	Knothole, at c. 5 m (facing south-east), tear-out 10 m (facing south-east)			Low

#### 4.4.2.2 Within the Proposed Clearance area

A PRA of trees within the Proposed Clearance area did not identify any trees with PRFs or suitability to support roosting bats. Therefore, there is no constraint from roosting bats to the Proposed Clearance. The Proposed Clearance area does not offer any different habitat suitability than was mentioned within the Survey Area in Section 4.4.1.1.

While the scrub and woodland habitats present within the Proposed Clearance area offer opportunities for foraging bats, their value is limited by their small extent and illumination by street lighting. The Proposed Clearance area lacks commuting corridors and is not connected to high value habitat for foraging and commuting bats, albeit residential gardens may offer limited opportunities.

#### 4.4.3 Badger

The NBDC returned one record of badger within 2 km of the Site.

No evidence of badger was identified in the Survey Area, including within the Proposed Clearance area. The Survey Area offers limited suitable habitat for foraging badger given its small extent and isolated nature as it is surrounded by the built environment with limited habitat connectivity. No badger setts were recorded during the survey, and potential for setts is Low to Negligible given the lack of suitable habitat and urban environment.

#### 4.4.4 Other terrestrial mammals

The NBDC database search returned records of pygmy shrew *Sorex minutus*, red squirrel *Sciurus vulgaris*, and hedgehog *Erinaceus europaeus* within 2 km of the Site.

##### 4.4.4.1 Within the Survey Area and Proposed Clearance area

No evidence of hedgehog was noted during the survey however, field signs are less frequently observed for this species than for other mammals. Habitats within the Survey Area, including parkland, woodland and residential gardens provide some limited foraging and sheltering opportunities for hedgehog. It is therefore considered likely that hedgehog could occur in small numbers within the Survey Area.

No evidence of or suitable habitat for any other protected terrestrial mammals (e.g. otter, red squirrel, pine marten *Martes martes*, Irish hare and pygmy shrew) was noted during the survey.

#### 4.4.5 Birds

Records of barn owl *Tyto alba*, greater scaup *Aythya marila*, grey wagtail *Motacilla cinerea*, kingfisher *Alcedo atthis*, meadow pipit *Anthus pratensis*, oystercatcher *Haematopus ostralegus*, peregrine falcon *Falco peregrinus* and redwing *Turdus iliacus* were returned by the NBDC database within 2 km of the Site. No information was provided on whether records were of breeding birds, since the records mostly do not state whether nests or territorial behaviour were observed. However, redwing is a wintering species, and there is no suitable breeding habitat for the other species mentioned above (no barns etc. suitable for barn owl, no open meadows/moorland suitable for meadow pipit, no very tall buildings that might be suitable for peregrine nests, and no water bodies suitable for the other species).

Common passerine bird species were recorded by the trail cameras. They were not recorded nesting within these immediate areas, but appeared to be visiting (most likely for foraging).

##### 4.4.5.1 Within the Survey Area

Habitats in the Survey Area are largely unsuitable for breeding bird and non-breeding species, other than a few common species (such as potentially house sparrow *Passer domesticus* and house martin *Delichon urbicum*) that may nest in or on man-made structures, as the Survey Area is dominated by hardstanding and buildings. However, some suitable habitat for other species is present, particularly parkland and treelines which are likely to provide nesting, shelter, and foraging opportunities for a variety of common terrestrial bird species.

##### 4.4.5.2 Within the Proposed Clearance area

The small area of scrub and woodland habitat within the Proposed Clearance area may provide nesting, shelter, and foraging opportunities for a limited number of common terrestrial bird species. However, no signs of nesting birds were noted in the Proposed Clearance area during the field survey.

Given the small size of the Proposed Clearance area and the habitats present (i.e. dense scrub and woodland), the Proposed Clearance area does not provide suitable foraging or roosting habitat for any SCI birds.

#### 4.4.6 Reptiles

The NBDC returned one record of common lizard *Zootoca vivipara* within 2 km of the Site.

Common lizard was not observed during field surveys and it was determined that there is no suitable habitat for this species within the Site and wider Survey Area given the urban environment and large amounts of existing amenity grassland within the Site.

#### 4.4.7 Invertebrates

Marsh fritillary *Euphydryas aurinia* and wall brown *Lasiommata megera* were the only notable invertebrate species returned by the NBDC database search within 2 km of the Site. Marsh fritillary is an Annex II species thus is protected under the Habitats Directive. Marsh fritillary favours a wide variety of habitats including sand dunes, calcareous grassland, fens, bogs and upland heaths and grasslands<sup>3</sup>. The presence of its foodplant, devil's-bit scabious *Succisa pratensis*, is an essential habitat component. Wall brown does not have legal protection in Ireland but is listed as endangered (Regan *et al.*, (2010)). The species is generally found on open grasslands, coastal habitats disturbed lands such as quarries, derelict land, and field edges<sup>4</sup>.

No evidence of any notable invertebrates was noted during the survey. Devil's-bit scabious was also not recorded within the Survey Area, and there is no habitat suitability for either of the above butterflies in the Site or Survey Area.

#### 4.4.8 Amphibians

The NBDC returned records of common frog *Rana temporaria* and smooth newt *Lissotriton vulgaris* within 2 km of the Site.

There was no evidence of or suitable habitat for these species during the survey.

### 4.5 Future baseline

The clearance of the Proposed Clearance area and the construction phase of the Proposed Scheme will be approximately 15 months and is proposed to commence in Q4 2024. Therefore, the baseline for most of the Site

<sup>3</sup> NBDC. Available at: <https://species.biodiversityireland.ie/profile.php?taxonId=77487>.

<sup>4</sup> NBDC. Available at: <https://species.biodiversityireland.ie/profile.php?taxonId=77291>.

at the time of the Proposed Clearance and construction is expected to be similar to that described in the baseline above.

There are no other known or likely land use changes, or changes to the terrestrial, coastal or marine environment within the ZOI of the Proposed Scheme, that have the potential to significantly change the baseline ecological conditions at the time of construction of the Proposed Scheme.

Minor changes in the distribution of some species (e.g., nesting birds) may occur due to small-scale changes in habitat structure as a result of ecological succession or other natural processes, or human interventions. Any such changes are very likely to be within the range of normal inter-annual variation in the distribution and abundance of local species populations.

It is therefore expected that the current baseline conditions will remain largely unchanged by the time of construction of the Proposed Scheme.

## **4.6 Baseline in the absence of the Proposed Scheme**

The future baseline in the absence of the Proposed Scheme (the 'do nothing scenario'), taken for these purposes to be the situation 30 years from the time of writing, would likely be very similar to the current baseline. Given the habitats and species found to be present in the current baseline conditions, the ecological effects of any future development within the Site would likely be limited.

## 5. Impact assessment

### 5.1 Embedded mitigation

Embedded mitigation measures are incorporated into the design of a development and aim to avoid or reduce adverse effects, including those on ecological features. Embedded mitigation is considered at the initial impact assessment stage, whereas mitigation that is not part of the design and is developed after the initial impact assessment is considered at the residual effects stage.

A range of measures that are standard best practice for development of this type, including those required to comply with environmental protection and nature conservation legislation will also be implemented. A range of measures that are standard good practice for development of this type, and which are required to comply with environmental protection legislation, will also be implemented. These are well-developed and have been successfully implemented on infrastructure projects across the country and there is a high degree of confidence in their success. They can therefore be treated as embedded mitigation. These will include:

- all personnel involved in the construction of the Proposed Scheme will be made aware of the ecological features within the ZoI of the Proposed Scheme and the mitigation measures and working procedures that must be adopted. This will be achieved as part of the induction process and through the delivery of Toolbox Talks, where required;
- an Ecological / Environmental Clerk of Works (ECoW) will be employed for the duration of the construction of the Proposed Scheme. The ECoW will advise on and monitor implementation of ecological mitigation measures and compliance with legislative requirements in relation to ecological features. The ECoW will also carry out pre-works checks for protected and / or notable species and provide other ecological advice as necessary;
- a Construction Environmental Management Plan (CEMP) will be prepared by the appointed Contractor prior to commencement of construction. The CEMP will set out all environmental management measures and the roles and responsibilities of construction personnel;
- during all phases of the Proposed Scheme (construction and operation), pollution prevention measures will be adopted and included within the CEMP. Measures will include the following:
  - controls and contingency measures will be provided to manage run-off from construction areas and to manage sediment;
  - all oils, lubricants or other chemicals will be stored in an appropriate secure container in a suitable storage area, with spill kits provided at the storage location and at places across the Site;
  - in order to avoid pollution impacts to soils and vegetation during construction, all refuelling and servicing of vehicles and plant will be carried out in a designated area which is bunded and has an impermeable base;
- as far as possible, works that will directly impact upon areas of vegetation that could be used by nesting birds will be undertaken outside of the breeding season, which is taken to be between March and August, inclusive. Should vegetation clearance works be required during the breeding season, a pre-works check for active nests will be carried out by the ECoW or other suitably experienced ecologist / ornithologist. Such checks will be completed no more than 72 hours in advance of clearance works taking place as nests can be quickly established. Where any active nests are identified, suitable species-specific exclusion zones will be implemented and maintained until the breeding attempt has concluded;
- sightings of protected or notable species within the Site during the construction phase will be recorded. If any evidence or sightings of protected species is found within 30 m of works, then works in that area will stop immediately and the ECoW will be contacted for further advice;
- any excavations will be left with a method of escape for any animals that may enter overnight, and will be checked at the start of each working day to ensure no animals are trapped within them;
- any pipes will be capped or otherwise blocked at the end of each working day, or if left for extended periods of time, to ensure no animals become trapped;
- as far as possible, works will be carried out in daylight to minimise the risk of disturbing nocturnal or diurnal protected species such as foraging / commuting bats; and



- any artificial lighting required during the construction phase and operational phase will be low level lighting and will be directional in ecologically sensitive locations to avoid or minimise light spill to avoid the disturbance of nocturnal or diurnal protected species such as foraging / commuting bats.

## 5.2 Features excluded from further assessment

Relevant ecological features are those that are considered to be ‘important’ and have the potential to be affected by the Proposed Scheme (CIEEM, 2019). In view of the baseline data obtained through the desk study and field survey, the following features have been excluded from further assessment because there is considered to be no possible effect on them, through absence of the feature or clear absence of an impact pathway:

- **non-statutory sites** - there are no non-statutory sites within the Zol of the Proposed Scheme.
- **protected or notable native plants** – there are no known protected or notable native plant species within or adjacent to the Site.
- **habitats other than woodland / scrub and scattered parkland and trees** – the Site is highly urbanised and is dominated by buildings and hardstanding. Where other habitats are present, these comprise a low diversity of common and widespread species typical of the urban environment. Therefore, the habitats within the Site and the wider Survey Area are generally not considered to be high-quality or ecologically important habitats. In addition, invasive non-native species are frequently found in habitats throughout the Survey Area which further reduces the botanical value of the habitats present. These habitats have limited ecological value and are readily replaceable through landscaping and routine maintenance.
- **badger** – the substrate across much of the Survey Area (i.e. hardstanding) is unsuitable for badger sett creation, and whilst gardens are theoretically viable, the highly urbanised nature of the Site and surrounding area, coupled with the lack of good habitat for both sett creation and foraging, likely precludes badger from the Survey Area and Proposed Clearance area.
- **otter** – there are no streams or other waterbodies within the Site or the Survey Area, or within 250 m, and thus there is no potential for otter to occur within the Site;
- **amphibians** – there are no freshwater ponds, streams, or other waterbodies within the Site or the Survey Area;
- **reptiles** - the Site is of limited importance for common lizard due to the buildings / hardstanding across most of the Site limiting the availability of suitable habitat;
- **breeding birds** - Although the habitats within the Site and wider Survey Area are largely unsuitable for breeding birds, some suitable habitat such as hedgerows, scrub and trees are present, some of which are proposed to be removed to facilitate the Proposed Scheme. However, most of these trees are immature and the majority of suitable habitat including mature parkland trees will be retained and will ensure foraging and nesting opportunities remain for breeding birds at the Site;
- **wintering birds** - Areas of amenity grassland within the Survey Area such as Pearse Park and open amenity grassland located south of Sallynoggin Park could theoretically be used for foraging by SCI birds. However, there are also many alternative larger and likely less disturbed parks and areas of suitable grassland habitat for SCI species in the wider area;
- **invertebrates** – the Site is of limited importance for notable butterflies and bees due to the buildings / hardstanding across most of the Site limiting the occurrence of flowers; and
- **invasive non-native faunal species** – invasive non-native faunal species recorded within 2 km of the Site comprise grey squirrel, house mouse, Jenkin’s spire snail, raccoon, rabbit, and yellow-bellied slider. However, there is no mechanism by which the Proposed Scheme could cause a significant increase in these species and more importantly no realistic means by which the Proposed Scheme could spread them elsewhere.

## 5.3 Importance of Ecological Features

Ecological features identified in the baseline conditions and not scoped out of detailed assessment (see Section 5.1), i.e., those that are considered ‘important’ (following CIEEM guidelines (2019)), are set out in Table 6 below, together with the rationale. Ecological importance has been assessed on a geographic scale following CIEEM guidelines (2019).

For the purposes of defining geographical scale in this EclA, ‘County’ is defined as Co. Dublin, ‘Local’ as the area within 5 km of the Proposed Scheme, and ‘Site’ as the Site and Survey Area.

**Table 6: Importance of ecological features**

Ecological feature [Site Code]	Importance	Rationale
South Dublin Bay and River Tolka Estuary SPA [0040240]	International	International nature conservation designation.
South Dublin Bay SAC [000210]	International	International nature conservation designation.
South Dublin Bay pNHA [000210]	National	National nature conservation designation.
Dalkey Coastal Zone and Killiney Hill pNHA [001206]	National	National nature conservation designation.
Habitats – woodland / scrub and scattered parkland and trees	Site	Areas of open space are scattered throughout the Survey Area and comprise amenity grassland, scattered trees and parkland, treelines, and ornamental shrubs and flower beds. There are also some patches of mixed broadleaved woodland within the Survey Area. Within The Proposed Clearance area there is a small section of scrub and mixed broadleaved woodland proposed to be cleared to allow access for surveyors. The area of habitat to be removed is not considered to be high quality or particularly ecologically significant therefore is of Site importance.
Bats	Site	<p>A single tree (T1) with Low bat roosting suitability was identified within the Site. However, this tree will be retained and with embedded mitigation, and therefore no additional light spill directly at the tree, no impacts are anticipated to roosting bats.</p> <p>The Survey Area is highly urbanised and dominated by hardstanding and buildings. Where habitats are present which offer opportunities for foraging bats such as scrub and woodland, their value is limited by their small extent and illumination by street lighting. The Survey Area lacks significant linear habitat commuting corridors and is not connected to high value habitat for foraging and commuting bats, albeit residential gardens may offer limited opportunities.</p> <p>The habitat within the Site is considered to be of less than Local importance as it provides a very limited foraging and commuting resource to bats in the local area, and is not sufficiently good quality or extensive to be valuable in a Local context. For these reasons bat usage of the Site and immediate surroundings is assumed to be limited, and Site importance only has been assigned.</p>
Other protected mammals – red squirrel, hedgehog, Irish stoat, Irish hare, pygmy shrew	Local	Pygmy shrew, hedgehog, Irish stoat, and Irish hare were not recorded during field survey but could occur within the Site (and records of red squirrel, pygmy shrew and hedgehog exist within 2 km of the Site). These species are all common and widespread, so any populations within the Site would be of Local importance, at most.
Invasive non-native plant species – sycamore, cherry laurel, butterfly-bush, montbretia, snowberry, travellers joy, cotoneaster and winter heliotrope	Local	These species are not important through ecological value but for their negative effects on biodiversity. The main risk is the potential for the spread of non-native species during construction. None of the floral species recorded are scheduled or of EU concern. These non-native invasive species can impact the local populations of native species.

## 5.4 Assessment of impacts and effects

The predicted impacts and effects of the construction / operational phases of the Proposed Scheme are set out in Table 7, with further more detailed mitigation (beyond the embedded mitigation in Section 5.1) proposed where necessary. The scale of residual effects, accounting for any such further mitigation, is provided in the final column. There is no expectation of a decommissioning phase so this potential impact source is not included in Table 7.



**Table 7: Assessment of impacts and effects on ecological features**

Ecological feature (Importance)	Impacts and effects	Scale of initial effect	Specific mitigation	Scale of residual effect
South Dublin Bay and River Tolka Estuary SPA [0040240] (International)	<p>The AA Screening Report for the Proposed Scheme (AECOM, 2022a) concluded no likely significant effects on the qualifying interests of South Dublin Bay and River Tolka Estuary SPA.</p> <p>The AA Screening Report considered the potential for non-breeding birds which are the SCI of the SPA to occur within the Site or surrounding area. Areas of amenity grassland within the Survey Area such as Pearse Park and open amenity grassland located south of Sallynoggin Park could theoretically be used by SCI birds. However, the AA Screening Report concluded given that a) the works for this Proposed Scheme will be minor and b) the amenity grassland in Pearse Park and small amenity grassland area by south of Sallynoggin Park will be subject to a high degree of existing disturbance by recreational users and already have existing levels of artificial lighting, SCI birds would most likely not occur near the Proposed Scheme, and if they did, they would be already habituated to significant disturbance. There are also many alternative larger and likely less disturbed parks and areas of suitable grassland habitat for SCI species in the wider area.</p> <p>This effectively equates to <u>no effect</u> in EclA terms. There is no possibility of a different EclA conclusion (e.g. by a beneficial effect on the SPA, which will not be the case).</p>	None	None needed.	None
South Dublin Bay SAC [000210] (International)	<p>The AA Screening Report (AECOM, 2022a) concluded no likely significant effects on the qualifying interests of the South Dublin Bay SAC.</p> <p>There is a very low risk of construction pollution reaching the nearest watercourse (Kill-O-The-Grange Stream), which is indirectly linked to South Dublin Bay SAC as the stream is more than 250 m south-west of the Site thus no potential given the distance and intervening habitats. However, on the very unlikely basis that pollution should enter Kill-O-Grange Stream which is hydrologically linked to South Dublin Bay SAC, there is no potential for an adverse effect, significant or otherwise, given the marine environment and the large degree of dilution by emerging major rivers, tidal flushing and the volume of sea itself, combined with the minor nature of any such pollution (considering the minor nature of the works).</p> <p>This effectively equates to <u>no effect</u> in EclA terms. There is no possibility of a different EclA conclusion (e.g. by a beneficial effect on the SAC, which will not be the case).</p>	None	None needed.	None
Dalkey Coastal Zone and Killiney Hill pNHA [001206] (National)	<p>The AA Screening Report (AECOM, 2022a) concluded no likely significant effects on European sites. By inference, therefore, there will also be no likely significant effects on the relevant pNHA sites given that the ecological interests are the same as those of the European site.</p> <p>This effectively equates to <u>no effect</u> in EclA terms.</p>	None	None needed.	None
South Dublin Bay pNHA [000210]	<p>The AA Screening Report (AECOM, 2022a) concluded no likely significant effects on European sites. By inference, therefore, there will also be no likely significant</p>	None	None needed.	None

Ecological feature (Importance)	Impacts and effects	Scale of initial effect	Specific mitigation	Scale of residual effect
(National)	effects on the relevant pNHA sites given that the ecological interests are the same as those of the European site. This effectively equates to <u>no effect</u> in EclA terms.			
Habitats - woodland / scrub and scattered parkland and trees (Site)	The woodland / scrub and scattered parkland and trees habitat are not particularly notable, and comprises an assemblage of tree / plant species which are common and typical of the nature of the Site and surrounding environs. There are no very mature trees which would be of greater biodiversity value by virtue of their age.	Negligible	Trees and scrub planting will be undertaken within the Site. This planting will compensate for the minor tree and scrub habitat lost as a result of the Proposed Scheme.	Negligible
Bats (Site)	<b>Loss of potential roost sites</b> A single tree (T1) with Low bat roosting suitability was identified within the Survey Area (not within the Site). However, this tree will be retained and through embedded mitigation, there will be no light spill directly at the tree. However, if the tree was adversely by permanent additional light spill, the loss of single low suitability roosting feature would have negligible effect on the local bat population.	Negligible	Ideally, there should not be significant light spill directly at T1. It is recommended that directional lighting be used such that light level is no more than one lux at the potential roost feature.	Negligible
	<b>General disturbance of bats</b> The possible extent of construction lighting would be very limited, and during operation lighting would be much the same as current levels to which bats are habituated. The lighting design will be cognisant of minimising light spill and where required, low level lighting can be applied. Additionally, pipistrelles (the most common bats in Ireland) are tolerant of artificial light whilst foraging/commuting. Therefore no significant disturbance impacts on general bat activity are anticipated.	Negligible	None needed.	Negligible
	<b>Loss of foraging / commuting habitat</b> The Survey Area lacks significant linear habitat commuting corridors and is not connected to high value habitat for foraging and commuting bats, albeit residential gardens may offer limited opportunities.	None	None needed.	None
Other protected mammals – red squirrel, hedgehog, Irish stoat, Irish hare, pygmy shrew (Local)	There is very limited suitable habitat within the Survey Area for other protected mammals to be present within the Survey Area. However, there is the potential for them to use habitats within the Survey Area.	Negligible	Embedded standard mammal protection measures sufficient, i.e. means of escape from or covering excavations overnight, and capping of pipes overnight.	Negligible
Invasive non-native plant species – sycamore, cherry laurel, butterfly-bush, montbretia, snowberry, travellers joy, cotoneaster, and winter heliotrope (Local)	No scheduled invasive species were identified within the Site or wider Survey Area. However, eight species of non-scheduled invasive species including butterfly-bush and winter heliotrope were identified within the Site. As construction works are required at or adjacent to the locations of these species then there would be potential for seeds / propagules of these species to be disturbed and transferred to new sites because of construction activities. For example, seeds / propagules could be moved with soils or carried on vehicles and machinery to new locations where the plant species concerned could then grow and establish and out-complete other plants.	Negligible	As good practice, it is recommended that biosecurity measures are implemented as practicable to prevent the further spread of these species. These measures must be clearly set out in a Method Statement for the works.	Negligible

## 6. Cumulative assessment

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location (CIEEM, 2019).

Projects that have the potential to impact cumulatively with the Proposed Scheme to cause significant environmental effects were assessed. Consideration has been given in this EclA only to those identified projects that may be under construction at approximately the same time as the Proposed Scheme, which involve a permanent loss of habitat which is similar to that within the Site (and which may therefore support the same species), and / or which are of a sufficient scale that any impacts they may generate could realistically be expected to act cumulatively with the Proposed Scheme.

In terms of other developments along Rochestown Avenue, the interactive map for the National Planning Application Database<sup>5</sup> indicates that there are no developments that might be constructed at the same time as the Proposed Scheme.

It is concluded that there will be no adverse cumulative ecological effects involving the Proposed Scheme.

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<sup>5</sup> <https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de> Accessed May 2023.

## 7. Mitigation measures

Specific mitigation measures (further to the embedded mitigation as described in Section 5.1) will be implemented to minimise adverse effects on ecological features identified above. Mitigation is not necessarily required where the effects on an ecological feature are considered to be none (which in this Report is taken to be all effects of Local or Site significance). However, in some cases readily achievable measures will be implemented to ameliorate such effects and / or provide ecological enhancement.

The implementation of mitigation does not replace or negate the requirement for legislative compliance.

### 7.1 Protected species licensing

No licensing is currently considered necessary as there will be no impacts on the resting sites of protected species. However, if the ECoW should subsequently find new resting places of protected species (such as bat roosts) during pre-construction surveys, that will be damaged, destroyed or disturbed by works, then derogation licence(s) may be required for those works to proceed. The ECoW shall advise accordingly if this situation arises.

### 7.2 Species habitat enhancements

The following enhancement measures have been recommended for the benefit of species within the Site:

- A number of bird and bat boxes to be installed on suitable retained trees;
- Hedgehog box / hibernation features to be created in areas of retained vegetation (e.g. scrub habitat). The hedgehog hibernation feature(s) can be created using brash and other material generated during any tree felling / scrub clearance. Then if possible, any log and/or brush piles accumulated from the site clearance works are to be left intact within the parkland to be used for foraging and/or hibernating hedgehogs. These log piles would also provide an biodiversity opportunity for terrestrial invertebrates;
- Insect refugia features to be installed along linear features (e.g. treelines). Ideally near wildflower meadows and scrub habitat.

### 7.3 Replanting

As detailed in the drawings 60661468\_SHT\_ROCH\_141.1\_A, 60661468\_SHT\_ROCH\_141.2\_A, 60661468\_SHT\_ROCH\_141.3\_A and 60661468\_SHT\_ROCH\_141.4\_A, native tree and hedgerow planting, and ornamental street planting is proposed for the scheme. They will be planted with appropriate setbacks from the road, cycleway and footpath to allow for successful establishment and growth. The native trees and hedgerows will comprise species such as silver birch *Betula pendula*, rowan *Sorbus aucuparia*, sweet cherry *Prunus avium*, European hornbeam *Carpinus betulus* and European beech *Fagus sylvatica*. The ornamental street planting species will comprise species such as small-leaved lime *Tilia cordata* 'Greenspire', European hornbeam 'Fastigiata', field maple *Acer campestre* 'Elsrijk', callery pear *Pyrus calleryana* 'Chanticleer' and Turkish hazel *Corylus colurna*.

There will be wildflower planting to the majority of the soft verges being proposed, with ornamental groundcover shrub planting proposed at key road and pedestrian junctions e.g. park entrances. The wildflowers will be cut twice a year, once in Spring and once in Summer. Wildflower species will be determined by DLRCC, as it is understood they have a seed collection project to ensure wildflowers of local provenance will be used on developments. DLRCC will need to advise on the species of wildflowers to be used.

A Landscape Maintenance Plan (LMP) will be prepared prior to construction for the construction and operational phases. The Landscape Maintenance Plan should be prepared by a suitable qualified landscape architect.

### 7.4 Monitoring

The proposed landscape enhancement and all other landscaping works will require monitoring to ensure that the desired species establish successfully and that target habitats are created. Where necessary, remedial action will be taken should monitoring identify issues relating to the establishment of target vegetation / habitats (for example death or injury of planted trees, growth of invasive plants etc.).

On-going monitoring for protected species will be carried out by the ECoW, as required, for the duration of the construction phase. If this identifies a need for additional avoidance or mitigation measures, these will be

communicated to the construction contractor and will be implemented with ECoW guidance as necessary, to ensure legislative and planning policy compliance on protected species and biodiversity preservation.

## 8. Residual impacts

Even in the absence of mitigation there are not expected to be any Significant effects on important ecological features from the construction and operation of the Proposed Scheme. There are not predicted to be any residual adverse ecological effects, on designated sites, notable habitats or other protected or notable species. In most cases there is no effect or a negligible effect. For hedgehogs, insects, bats and general breeding bird habitats, there are predicted to be slight beneficial effects (of Site significance only, but nevertheless beneficial), which result from the proposed landscape measures.

## 9. Conclusion

There are not predicted to be any residual adverse ecological effects, on designated sites, notable habitats, or other protected or notable species. In most cases there is no effect or a negligible effect. For general breeding bird, insects and hedgehogs, there are predicted to be slight beneficial effects (of Site significance only, but nevertheless beneficial), which result from the proposed species habitat enhancement measures.

The measures outlined in Section 7 will incorporate small biodiversity enhancements proportionate to the small scale of the Proposed Scheme, including installation of bird and bat boxes on local trees, replanting or trees and hedgerows and seeding of local wildflower seed mix at locations around the Proposed Scheme.

Thus, there will be no significant effect to biodiversity and nature conservation as a result of the Proposed Scheme.

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## Appendix A Figures

Figure 1 – Site location

Figure 2 – Habitats

Figure 3 – Invasive non-native species

Figure 4 – Trees with bat roost suitability





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**LEGEND**

- Site
- Proposed Clearance
- Survey Area (50m Buffer)
- Trail Cameras
- Habitat Type (Fossitt)**
- X BC4 Flower beds and borders
- BL3 Buildings and artificial surfaces
- ED1 Exposed sand, gravel or till
- ED3 Recolonising bare ground
- | | GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- WD1 (Mixed) broadleaved woodland
- WD3 (Mixed) conifer woodland
- WD5 Scattered trees and parkland
- | | WS1 Scrub
- WS3 Ornamental/non-native shrub
- / / Mosaic of BL3 / GA2 / BC4 / WS3 / WD5
- WL1 Hedgerows
- WL2 Treelines
- WD5 Scattered trees and parkland

**NOTES**  
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**ISSUE PURPOSE**

FINAL

**PROJECT NUMBER**

60661468

**FIGURE TITLE**

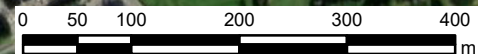
Habitats

**FIGURE NUMBER**

Figure 2



1:7,000 @ A3



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**PROJECT**  
 Rochestown Avenue Active  
 Travel Improvements

**CLIENT**  
 Dún Laoghaire-Rathdown  
 County Council

**CONSULTANT**  
 AECOM Limited  
 Adelphi Plaza  
 George's Street Upper  
 Dublin, Ireland  
 www.aecom.com

**LEGEND**

- Site
- Proposed Clearance
- Survey Area (50m Buffer)
- Invasive Species**
- Butterfly-bush (non-scheduled, medium-impact)
- Cherry laurel (non-scheduled, high-impact)
- Montbretia (non-scheduled, low-impact)
- Snowberry (non-scheduled, low-impact)
- Traveller's joy (non-scheduled, medium-impact)
- Winter heliotrope (non-scheduled, low-impact)
- Cotoneaster (non-scheduled, low-impact)

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**FIGURE TITLE**

Invasive Non-native Species

**FIGURE NUMBER**

Figure 3



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**PROJECT**  
Rochestown Avenue Active  
Travel Improvements

**CLIENT**  
Dún Laoghaire-Rathdown  
County Council

**CONSULTANT**  
AECOM Limited  
Adelphi Plaza  
George's Street Upper  
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- LEGEND**
- Site
  - Proposed Clearance
  - Survey Area (50m Buffer)
  - ◆ Trees with low bat roost suitability (T1)

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**ISSUE PURPOSE**  
FINAL

**PROJECT NUMBER**  
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**FIGURE TITLE**  
Trees with Bat Roost Suitability

**FIGURE NUMBER**  
Figure 4

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