



Cork  
County Council  
Comhairle Contae Chorcaí

# **L2471 Clarke's Hill Road Improvement Scheme Part 8 Planning Pack Volume 4**

Preliminary Ecological Appraisal Report

January 2018





# **L2471 Clarke's Hill Road Improvement Scheme**

Preliminary Ecological Appraisal

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# 1 Introduction

## 1.1 Background to the Project

Mott MacDonald has been commissioned by Cork County Council to provide consultancy services for the L2471 Clarkes Hill Road Improvement Scheme in Rochestown, County Cork.

The road improvement scheme is an extension to the previous road improvement schemes to the L2471 and L2472 (between Maryborough Hill and the upper entrance to Mount Oval), and will involve road improvement works to Clarke's Hill from the Mount Oval entrance to the junction with the R610 Rochestown Road and will further include for upgrading a section of the R610 as part of the scheme. A brief description of the proposed development is given in the Appropriate Assessment Screening Report (ref: 369641-RP-3000-0001 P2).

It is proposed, in the current scheme to upgrade the existing L2471 Clarkes Hill Road (approximately 1km in length) and associated junction with the R610 to the required standard for a "Local Collector Road" with accommodation for vulnerable road users and local bus services.

An Extended Phase 1 Walkover Survey of the Clarkes Hill Road was carried out on 09<sup>th</sup> November 2016 by Mott MacDonald ecologist Maurice O Connor.

## 1.2 Objectives

Annex IV and Annex II(b) of the Habitats Directive provides legal protection to specified species (whether they occur within or outside of a SAC). Similarly, the Wildlife Act provides protection to animals of National importance. It is an offence to intentionally or deliberately kill, injure, disturb, or capture such animals or damage, destroy, or obstruct access to their breeding or resting habitat.

All wild birds, their nests and eggs are protected under the Birds Directive. It is an offence to take, damage, or destroy the nest of any wild bird while it is in use or being built.

It is an offence to wilfully cut, pick, uproot, damage or take plant species set out in the Flora (Protection) Order, (FPO), 2015. Note there were no records of FPO species during the survey.

Works which would cause an offence under the Wildlife Act/Birds or Habitat Directives is a notifiable action under the Wildlife Acts 1976 – 2014 and a derogation licence is required to be obtained from the Department of Arts, Heritage and Gaeltacht for the purpose carrying out such works.

The objective of the survey was to:

- Identify all habitats along the road improvement scheme route.
- Identify any designated sites for natural conservation and habitats on, near and adjacent to the road improvement scheme route.
- Identify any notable and/or protected plant or animal species of conservation value, which occur on, near and adjacent to the road improvement scheme route.
- Provide a habitat map with target notes of ecological features as identified above.

- Undertake a preliminary assessment of the potential impacts on any ecological receptors of conservation value identified on, near and adjacent to the road improvement scheme route.
- Recommend further surveys, mitigation, and enhancement measures as appropriate.

## 2 Methodology

### 2.1 Desktop Study

A desk based assessment of available records of protected species and habitats was carried out in advance of the field survey. Published records of plants and animals protected under law, and invasive species listed in the Third Schedule of the Birds and Habitats Regulations were searched for relative to the proposed road improvement scheme route. Data sources included National Biodiversity Data Centre (NBDC) species records for 1km Grid Squares W7268, W7269 and W7169 and National Parks and Wildlife Services datasets.

- Conservation Status Assessment Reports<sup>1</sup> (CSARs), Backing Documents and Maps prepared in accordance with Article 17 of the Habitats Directive.
- Published and unpublished NPWS reports on protected habitats and species including Irish Wildlife Manual reports, Species Action Plans, and Conservation Management Plans.
- Existing relevant mapping and databases e.g. species and habitat distribution etc. (sourced from the Environmental Protection Agency - <http://gis.epa.ie/>, the National Biodiversity Data Centre - <http://maps.biodiversityireland.ie> and the National Parks and Wildlife Services - <http://www.npws.ie/mapsanddata/>).

### 2.2 Field Study

Field survey was carried out on 9<sup>th</sup> November 2016 by Mott MacDonald ecologist, Maurice O Connor. Weather conditions were showery with a cold north-easterly breeze. Temperature was 6<sup>o</sup> Celsius. The survey area encompassed the entire length of the Clarkes Hill Road, (approximately 1.5km), and a distance of 150m on both sides of the junctions at both the northern and the southern ends of the Clarkes Hill Road to ensure any mammal activity within 150m of the road improvement scheme was identified. All woodland habitats were fully surveyed up to the adjoining urban habitats along the Clarkes Hill Road. The widest part of the woodland habitat was approximately 30m.

Ecological survey was carried out with regard to Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA 2009).

Signs of Badger were searched for including snuffle holes, mammal paths, latrines, and setts.

Signs of Red Squirrel was searched for including feeding remains and dreys within the woodland habitat.

Habitat survey was carried out with regard to '*Best Practice Guidance for Habitat Survey and Mapping*' (Heritage Council, 2011). Habitats were classified in accordance with '*A Guide to Habitats in Ireland*' (Fossitt, 2000) and species composition noted using the DAFOR scale.

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<sup>1</sup> Every six years, Member States of the European Union are required to report on the conservation status of all habitats and species listed on the annexes of the Habitats Directive as required under Article 17 of the Directive. Ireland submitted our conservation status report to the European Commission in June 2013. The assessment documents may be viewed on the NPWS website: <http://www.npws.ie/publications/article17assessments/article172013assessmentdocuments/>

The area was searched for evidence of invasive plant species listed in Part 1 of the Third Schedule of S.I No. 477 of 2011, European Communities (Birds and Natural Habitats) Regulations 2011.

Species protected under Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) were also searched for.

Fisheries assessment was carried out with reference to 'The Evaluation of Habitat for Salmon and Trout. Department of Agriculture for Northern Ireland. Fisheries Division. EU Salmonid Enhancement Programme'.

Bat roost potential was assessed with reference to Andrews *et.al*, (2013) and Collins (2016). Trees were examined for potential roost features which included:

- Horizontal / vertical cracks along tree limbs / trunk;
- Knot holes and cankers in the trees;
- Voids in the trees;
- Crevices including lifting bark, thick ivy growth (stems should be a minimum of 50mm diameter).

Equipment used for survey included base maps and template target notes, digital camera, binoculars, and vegetative keys.

## 3 Results

### 3.1 Desktop Study

Desktop survey methods are presented in Section 2 of this report.

A search of the NPWS database identified Cork Harbour SPA (Site Code 004030) located 150m from the northern end of the Clarkes Hill Road. Cork Harbour SPA is designated for 20 wetland bird species (Table 1).

**Table 1: Qualifying Interests of Cork Harbour SPA 004030**

**Qualifying Interest (\* indicates priory habitat)**

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• A028 Grey Heron <i>Ardea cinerea</i>	•
• A048 Shelduck <i>Tadorna tadorna</i>	
• A050 Wigeon <i>Anas penelope</i>	
• A052 Teal <i>Anas crecca</i>	
• A054 Pintail <i>Anas acuta</i>	
• A056 Shoveler <i>Anas clypeata</i>	
• A069 Red-breasted Merganser <i>Mergus serrator</i>	
• A130 Oystercatcher <i>Haematopus ostralegus</i>	
• A140 Golden Plover <i>Pluvialis apricaria</i>	
• A141 Grey Plover <i>Pluvialis squatarola</i>	
• A142 Lapwing <i>Vanellus vanellus</i>	
• A149 Dunlin <i>Calidris alpina alpina</i>	
• A156 Black-tailed Godwit <i>Limosa limosa</i>	
• A157 Bar-tailed Godwit <i>Limosa lapponica</i>	
• A160 Curlew <i>Numenius arquata</i>	
• A162 Redshank <i>Tringa totanus</i>	
• A179 Black-headed Gull <i>Chroicocephalus ridibundus</i>	
• A182 Common Gull <i>Larus canus</i>	
• A183 Lesser Black-backed Gull <i>Larus fuscus</i>	
• A193 Common Tern <i>Sterna hirundo</i>	

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Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poul nabibe inlets.

Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nephtys hombergi*, *Nereis diversicolor* and *Corophium volutator*. Green algae species occur on the flats, especially *Ulva lactuca* and *Enteromorpha* spp. Salt marshes are scattered through the site and these provide high tide roosts for the birds.

The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest

for Wetland & Waterbirds and it is amongst the top five sites in the country. Of particular note is that the site supports internationally important populations of Black-tailed Godwit and Redshank and at least 18 other species have populations of national importance. Cork Harbour has a nationally important breeding colony of Common Tern.

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Golden Plover, Bar-tailed Godwit, Ruff and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it (Site Synopsis Report SY004030).

A search of NBDC 1km Grids W7268 and W7269, which covers the footprint of the proposed road improvement scheme works, recovered five species records for protected flora and fauna. Recorded data is presented in Table 2 hereunder.

**Table 2: Records of Protected Flora and Fauna**

Species group	Scientific name	Common name	Count	Date of last record	Title of dataset	Designation
bird	<i>Anas crecca</i>	Eurasian Teal	1	25/03/2016	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Anas platyrhynchos</i>	Mallard	2	25/03/2016	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
flowering plant	<i>Fallopia japonica</i>	Japanese Knotweed	1	10/05/2013	Online Atlas of vascular plants 2012-2020	Invasive Species: Invasive Species >> High Impact Invasive Species
terrestrial mammal	<i>Sciurus vulgaris</i>	Eurasian Red Squirrel	1	24/11/2014	Atlas of Mammals in Ireland 2010-2015	Protected Species: Wildlife Acts
amphibian	<i>Rana temporaria</i>	Common Frog	1	31/12/1979	Irish National Frog Database	Protected Species: EU Habitats Directive >> Annex V    Protected Species: Wildlife Acts

Source: NBDC Datasets

## 3.2 Field Study

Survey methods are presented in Section 2 of this report. Field survey results are presented hereunder.

### 3.2.1 Site Description

The Clarkes Hill Road runs for approximately 1km from the top of Clarkes Hill/L2472 junction in a south-easterly direction to the bottom of the Clarkes Hill/R610 junction. Elevation is 65m at the top of the road to 10m at the bottom of the road (NBDC OSi Discovery Layer Mapping). There is

a footpath approximately 1.5m wide on the right-hand side going down Clarkes Hill. The carriageway is approximately 5.5m wide. Several habitats were identified during the survey and discussed hereunder. There are a number of historical and new housing estates along the road and there are also approximately 20 private dwellings along the road. Habitats identified are described hereunder;

- Mixed Broadleaf Woodland WD1 – There is a section of mixed broadleaf woodland approximately 7m wide and 300m long on the left hand side of the road beginning at the entrance to the Dewberry estate at the top of Clarkes Hill. The canopy height is approximately 10m with understory of bramble, ground ivy and ferns. Tree species are dominated by Beech (*Fagus sylvatica*), with Sessile Oak (*Quercus petraea*), Holly (*Ilex aquifolium*), Ash (*Fraxinus excelsior*), Silver Birch (*Betula pendula*) and Sycamore (*Acer pseudoplatanus*) occasional throughout. There is a high level of human activity within the woodland with wide paths throughout to facilitate recreational activity. The majority of the trees show evidence of historical pruning or cutting. There is evidence of fly tipping within the woodland.

There is a strip of WD1 woodland approximately 7m wide and 150m long beginning at the entrance to Clarkes Wood Estate. The woodland is dominated by Ash with Sycamore and Beech occasional throughout. There is a dense understory of bramble with occasional Harts Tongue fern.

There is a small strip of WD1 opposite the Clarkes Wood Estate entrance dominated by Horse Chestnut (*Aesculus hippocastanum*), with Laurel, Sycamore and Ash occasional throughout. There is a second smaller patch separated by a private dwelling house north of this woodland dominated by Sycamore with Ash and Beech occasional throughout. The understory in this patch is dense bramble and stunted Laurel.

At the bottom of Clarkes Hill there is a strip of WD1 approximately 100m long and 10m wide, at its widest point, within the grounds of a private dwelling bordered by a stone wall approximately 2m high. There is a mature Beech tree and a mature Sycamore tree immediately inside the wall adjacent to the road. These trees have small metal plates attached with the numbers 1592 (Sycamore) and 1592 (Beech) engraved on them. The woodland is dominated by Beech with Ash and Sycamore occasional throughout. Other species present were Willow (*Salix spp.*), Hazel (*Corylus avellana*), Holly, and Rhododendron. Ground layer was dominated by Bramble, with Polypoda fern, Harts Tongue Fern, Ground Ivy and Wood Sedge (*Carex sylvatica*), occasional throughout. There was a small area at the south-eastern corner overgrown with dense bramble and bindweed.

South of the entrance to the Mount Oval estate there is a small area of mixed woodland comprising Holly, Laurel, Ash, Sycamore, Beech, and Rhododendron. Understory is bramble and fern. There is another small area of mixed woodland north of the entrance however permission to access this site has not been granted.

- Treelines WL2 – There is a strip of mature Cypress trees, approximately 100m long, at the western side of the road at the bottom of Clarkes Hill. The trees are bounded by a stone wall approximately 2m high.

At the top of Clarkes Hill there is a treeline of Oak, Ash, Beech, and Cypress approximately 50m long on the right hand side of the road going down Clarkes Hill from the L2472 junction. The treeline is located within private property.

Approximately 80m down Clarkes Hill from this treeline there is a mature treeline of Scots Pine (*Pinus sylvestris*), approximately 100m long, along a private driveway on the right hand side of the road.

Immediately opposite the old entrance to the Mount Oval estate there is a Sycamore/Ash treeline approximately 15m long. The treeline is bounded by a stone wall approximately 3m high.

- Amenity Grassland GA2- There are several areas of amenity grassland within the various housing estates along the road. At the R610/Clarke's Hill junction there is an area of amenity grassland behind the Cypress treeline on private property. This area comprises private gardens and there are ornamental shrubs and scattered apple trees present in this area.
- Eroding Upland River FW1 – There is a small stream running between the woodland and the road along the existing western boundary of the road. It is approximately 1m wide and 0.5m deep. The stream flows adjacent to the road through the woodland area in the Mount Oval housing estate before it crosses the entrance to the Mount Oval estate via a culvert where it continues to flow northward. The stream is modified at the northern corner of the Mount Oval housing estate and flows over a small constructed weir. It continues to flow northward before it crosses under the Clarke's Hill Road close by the Mount Oval housing estate where it flows to the northern boundary of the scheme. The stream flows under the R610 and eventually into Cork Harbour. The stream is modified along its course with small weirs and culverts and has a pebble/silt substrate. The stream has barriers to fish migration, notably a piped culvert at the Mount Oval housing estate. South of this point, the stream does not provide suitable spawning, nursery or holding habitat to support the life cycle of salmon, trout, or lamprey species.
- Stone Walls BL1 – There are mortared stone walls running from the bottom of Clarke's Hill along both sides of the road. The walls range in height between 2m – 3m. From the R610 junction the wall on the left hand side runs the length of the Clarke's Hill Road to the entrance of the Monswood Estate at the top of the road. The wall is heavily vegetated in places with ivy and bramble. Sections of the wall have been cleaned and repointed where masonry had become loose.  
The wall on the right hand side from the R610 junction runs for approximately 100m to the Mount Oval estate entrance. The wall is vegetated with ivy and bramble and mortar has become loose in places.
- Hedgerows WL1 – There is a maintained Beech hedgerow approximately 50m in length on both sides of the entrance to the Monfieldstown estate.

**Figure 1: Stream at Mount Oval**



**Figure 2: Stream Substrate**



**Figure 3: Ash Dominated WD1**



**Figure 4: Stone Walls at end of Clarkes Hill**



**Figure 5: Mixed Broadleaf Woodland**



**Figure 6: Polypoda Fern**



**Figure 7: Mature Beech and Sycamore Tree**



**Figure 8: Weir preventing fish passage**



**Figure 9: Fly tipping in WD1**



**Figure 10: Beech Hedgerow**



**Figure 11: Beech/Oak Treeline**



**Figure 12: Rhododendron**



**Figure 13: Winter Heliotrope along road**



**Figure 14: Scots Pine Treeline**



### 3.2.2 Mammals

- Survey methodology is given in Section 2 of this report. There was no definitive sign of mammal activity along the road or in the surrounding habitats. There were some small mammal paths noted but this is probably due to small domestic animals or rodents. No badger or red squirrel signs were identified.

### 3.2.3 Bats

- No potential bat roosts were identified during the survey. The mixed woodland and treeline habitat provide optimum route corridor and foraging habitat for bats.

### 3.2.4 Fish

- The small stream running along the Clarkes Hill Road does not support the habitat requirements to provide suitable spawning, nursery or holding habitat to support the life cycle of salmon, trout, or lamprey species south of the Mount Ovel housing estate. The stream is heavily modified in places and has small weirs and culverts on at the northern end of the Clarkes Hill Road and approximately 150m south of the R610 that prevents fish migration. However, anecdotal evidence from a property owner suggests that sea lamprey (*Petromyzon marinus*), was present in the watercourse within their property. The substrate in this section of the watercourse is gravel and silt and the gradient is less than other sections along the proposed road improvements work area. The remaining stream substrate is small pebble and silt and there are no pool or glide areas. Clarkes Hill has 1m/16m gradient (Mott MacDonald Engineering Calculation), and it is likely that during heavy rainfall periods there is a cascade type effect on stream flow.

### 3.2.5 Invasive Species

Winter Heliotrope (*Petasites fragrans*), has been recorded within the footprint of the road improvement scheme during the site survey. Winter Heliotrope is not listed on the Third Schedule however it is considered an alien invasive species by Transport Infrastructure Ireland. There is potential for translocation of Winter Heliotrope in waste material removed from the site.

*Rhododendron ponticum* was identified in several areas throughout the study. There are three large bushes planted in the private garden of Beechvale Lawn at the Clarkes Hill Road/R610 junction. These plants have spread to the woodland at the western side of the property. *Rhododendron* is spread sporadically throughout the woodland areas along the Clarkes Hill Road.

## 4 Recommendations

The following measures are recommended;

- Retain all mature trees where feasible;
- Rebuild old stone wall at the end of Clarkes Hill along the new boundary if feasible;
- Retain hedgerows and treelines where feasible;
- Any excavated material that is to be moved off site must be disposed of to a licensed waste facility to prevent the spread of Winter Heliotrope.
- Further surveys to determine the presence of lamprey species.

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