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SOUTH DUBLIN INTEGRATED CONSTRUCTED WETLANDS

(DURL PROJECT # LIFE17 ENV/IE/000281)

DODDER VALLEY PARK - Ecological Baseline Report

September 2020

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Comhairle Contae Átha Cliath Theas
South Dublin County Council

Life

South Dublin Integrated Constructed Wetlands
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DODDER VALLEY PARK
Ecological Baseline Report

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EXECUTIVE SUMMARY

Roughan & O'Donovan (ROD) was appointed by South Dublin County Council (SDCC) to undertake ecological surveys of four proposed Integrated Constructed Wetland (ICW) sites in three urban park locations in south County Dublin as part of the Dublin Urban Rivers LIFE Project (DURL) to address the issue of pollution in urban rivers. The DURL Project (Agreement number: LIFE17 ENV/IE/000281) has received funding from the Union.

SDCC are proposing to construct four ICWs in Dodder Valley Park, Griffeen Valley Park and an amenity area in Kilnamanagh; this report provides information on the baseline ecological conditions at the two ICW locations within **Dodder Valley Park**, and proposes some recommendations for the protection and enhancement of the biodiversity at each ICW site.

The information from this report will inform the Part 8 planning application process and the Environmental Impact Assessment/"Article 120" Screening (EIA) and Appropriate Assessment (AA) Screening Reports for each of the proposed ICW developments.

The ecological surveys of ICW sites were undertaken in June and July 2020 and the survey methodology was based on the TII/NRA *Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes* (TII/NRA, 2009) and the *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* Version 1.1 (CIEEM,2019).

The ecological surveys were designed to provide information on the habitats (classified to Fossitt level 3, including a detailed botanical survey in Dodder Park), breeding and aquatic birds, bats, invasive species, large mammals (especially badgers and otters), key invertebrate species and amphibian habitat suitability within a 150 m buffer zone of each of the ICW locations.

SDCC propose to construct two ICWs in the Dodder Park area, one of which will be located in an area dominated by amenity grassland bordered by a narrow section of scattered trees and parkland habitat. The second ICW will be located in an area of dry meadow with grassy verges which is being encroached by bramble scrub habitat. No mature trees, treelines, hedgerows or riparian habitats will be impacted by the ICWs construction in this area.

A small stand of Japanese knotweed was observed growing on the banks of the Dodder River and near one of the ICW locations, but it was outside the footprint of the ICW and the 150 m buffer zone, and will not be impacted by any construction works.

Both of the proposed ICW locations within the Dodder Valley Park are dominated by improved grasslands and/or managed habitat features which can be classified as being of low ecological value.

1. INTRODUCTION

1.1 Background

Roughan & O'Donovan (ROD) was appointed by South Dublin County Council (SDCC) to undertake ecological surveys of four proposed Integrated Constructed Wetland (ICW) sites.

The creation of integrated constructed wetlands at three strategic locations in South Dublin County is a key action of the Dublin Urban Rivers LIFE Project (DURL Project Agreement number: LIFE17 ENV/IE/000281). The Dublin Urban Rivers Life (DURL) Project is a collaboration between South Dublin County Council and Dún Laoghaire-Rathdown County Council. The DURL Project aims to address the issue of pollution in urban rivers using techniques with proven results relating to domestic misconnection sources and Integrated Constructed Wetland (ICW) development and which will ultimately improve water quality in South Dublin County.

ICWs are natural water retention measures which will improve the quality of receiving river water, provide flood alleviation, bioretention of particulates and nutrients, improve habitat conditions and biodiversity, and promote the relationship between green infrastructure and public wellbeing. The project will also develop a decision-support tool for water managers, planners, project developers and policymakers to use when deciding on river water quality improvement options in urban areas.

The ICW sites surveyed for this project are situated at the following locations (see Appendix A for site locations):

- **Dodder Valley Park – two ICWs**
- Griffeen Valley Park – one ICW
- Kilnamanagh – one ICW

This report provides the baseline ecological conditions at each of the ICW locations within the **Dodder Valley Park** and will inform the Part 8 planning application process and the Environmental Impact Assessment/"Article 120" Screening (EIA) and Appropriate Assessment (AA) Screening Reports for each of the proposed ICW developments. The report also proposes some recommendations for the protection and enhancement of the biodiversity at each ICW site.

The ecological surveys and reporting for this report were carried out by Michael Bailey MSc BSc (Hons) MCIEEM, Owen O'Keefe BSc (Hons) MCIEEM, Kate Moore BSc (Hons) GradCIEEM and Kalvin Townsend-Smyth BSc (Hons) GradCIEEM. All ROD ecologists are members of the Chartered Institute of Ecology & Environmental Management (CIEEM).

2. ESTABLISHING THE BASELINE

This section describes the methodologies followed in undertaking the field surveys and in the compilation of this report.

2.1 Establishing the Study Area

This is informed by the findings of desk study (presence/absence of protected habitats, flora or fauna within the receiving environment) and relevant best practice methodology for assessing impacts on those ecological features. The study area in this case included a 150 m buffer around the perimeter of each proposed ICW site.

2.2 Desk Study

A desktop study was carried out to collate information on the ecology of the study area. Information on species listed on Annex II and V to the Habitats Directive; the Wildlife Act; the Flora (Protection) Order; Annex I to the Birds Directive; and, the Third Schedule to the European Communities (Birds and Natural Habitats) Regulations were sourced from the statutory consultee, the NPWS, and the National Biodiversity Data Centre (NBDC). The NPWS online interactive map-viewer provided information relating to designated sites of conservation importance within or connected to the study area. A spatial query of the study area was undertaken using data provided by NBDC. The desk study undertaken for this report also included a review of available ecological data including from the following sources:

- Records from the NPWS *Map Viewer*;
- Review of the NBDC *Biodiversity Maps*; and,
- Review of *EPA Maps*.

As with all desk studies, the data considered was only as good as the data supplied by the recorders and recording schemes. The recording schemes provide disclaimers in relation to the quality and quantity of the data they provide, and these were considered when examining outputs of the desk study.

2.3 Ecological Survey Methodologies

The ecological surveys of ICW sites were undertaken in June and July 2020.The survey methodology is based on the TII/NRA *Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes* (TII/NRA, 2009) and the *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* Version 1.1 (CIEEM,2019). The following sections outline the specific ecological survey methodologies followed.

2.3.1 Habitat Surveys

Habitats were identified in accordance with Fossitt (2000). Habitat mapping was undertaken with regard to guidance set out in Smith *et al*. (2011). Habitats were assessed for correspondence to those listed in Annex I of the Habitats Directive during the walkover survey.

2.3.2 Botanical Survey

A detailed botanical survey was undertaken at Dodder Park only and involved recording the species and percentage species cover of each habitat in each ICW area, including a 150 m buffer. This was done using three 1m x 1m quadrats in each habitat type in each ICW area.

2.3.3 Protected Mammal Surveys

Summary details of the methodologies utilised in the various detailed protected mammal surveys undertaken are presented below.

2.3.3.1 Otter (Lutra lutra)

The function of the Otter survey was to identify any sensitive features within the study area potentially of use to breeding, resting, foraging or commuting and to establish presence or absence of Otter activity.

Otter are listed under Annex II and Annex IV of the Habitats Directive and protected under the Wildlife Acts, 1976–2012. Otter is evaluated as being Near Threatened in the most recent Red Data list for mammals (Kingston, 2012). This species is distributed throughout Ireland and can have a home range of up to 10 or 20 km (NPWS, 2013). As per the NPWS Article 17 Reporting, the range, population, habitat and future prospects for this species in Ireland have been assessed as Favourable.

The Otter survey was conducted adhering to best practice guidance (TII, 2008b; 2008c) and involved a search of watercourses for physical evidence of Otter, *e.g*. spraints, prints, slides, trails, couches and holts. TII (2008b; 2008c) does not specify an extent or scope for an Otter survey other than an expectation that the derogation limit of 150 m is sufficiently covered. The survey methodology was cognisant of the recommendations in the Otter Threat Response Plan 2009–2011 (NPWS, 2009), which recognises the importance of the riparian buffer (10 m on both banks) for Otter and these areas were included in the survey corridor.

2.3.3.2 Badger (Meles meles)

The Badger survey was conducted in order to determine the presence or absence of Badger within the study area. Badgers occur throughout the island of Ireland and are afforded protection under the Wildlife Acts, 1976 to 2012. The proposed development may directly or indirectly impact on Badgers. Construction may result in death or injury to Badgers within setts, as well as the destruction of the setts themselves and the loss of foraging habitat. Construction works close to breeding setts can cause serious disturbance to Badgers and mortality of cubs.

The Badger survey was based on best practice guidance (TII, 2006b; 2008c) and involved a systematic search of all fence lines, woodland and scrub habitats for physical evidence of Badger, *e.g*. setts, latrines, badger paths. The optimal period for Badger surveys is during seasonal peaks in territorial activity and when vegetation cover is at a minimum (February to April, and a less pronounced peak in October). Badger setts were classified as main, annex, subsidiary and outlier, as per the convention set out in TII (2006b) and levels of current usage were noted.

2.3.3.3 Bat Activity Surveys

Two activity transects were undertaken which involved walking a predetermined route around each of the three locations for 2 hours from sunset with full-spectrum bat detectors. The surveys focused on high quality habitat for foraging bats such as woodland edges and watercourses to maximise the chances of picking up less common species. For safety, two surveyors were on site for each survey. The results of the bat survey were displayed on maps using ArcGIS.

2.3.4 Birds Surveys

The breeding bird survey followed the Countryside Bird Survey (CBS) methodology. A predetermined transect route was walked early in the morning at a slow pace, and birds within the surveyor's field of vision and hearing were recorded. The surveyor also

used x10 binoculars to aid the identification of birds at distance. All bird species were recorded using standard British Trust for Ornithology (BTO) species codes. Evidence of breeding for each bird species was also collected, noting 'possible', 'probable' and 'confirmed' breeding as outlined in Bird Atlas 2007-11 (BTO, 2011). Two breeding bird surveys were undertaken at each location.

2.3.5 Amphibian Habitat Survey

The amphibian habitat suitability assessment took place alongside the habitat survey. All pools, ponds and ditches within 150m of the ICW locations were assessed for their suitability to support breeding common frog and smooth newt. Characteristics such as the presence of aquatic plants, disturbance, pollution and drying out were recorded. Habitat surrounding the ponds was also recorded and used in the overall suitability assessment.

2.3.6 Key Invertebrate Survey

A list of invertebrates including butterflies, bees and bumblebees, damselflies, dragonflies etc was recorded during the habitat survey and mammal surveys. These surveys were undertaken in sunny, calm weather only, ideal for flying insects.

2.3.7 Invasive Alien Plant Species

During the walkover surveys, the locations of invasive species was noted and recorded using high-definition GPS. The focus was on identifying species subject to restrictions under Section 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended). Target notes were taken of any invasive species identified. Information recorded included the area of infestation, plant condition and height. Site features that could affect control measures such as adjacent land use, structures and services were also recorded.

3. DODDER VALLEY PARK

Two ICWs are proposed north of the River Dodder in the western side of the Dodder Valley Park. The locations of the proposed ICWs are displayed in Appendix B.

3.1 Location

Dodder Valley Park is an amenity park bounded by Old Bawn Road to the west, Millbrook Lawns residential estate to the north, the M50 to the east and the Firhouse Road to the south. The River Dodder flows in an easterly direction through the park. A location map is provided in Appendix A.

3.2 Desk Study Results

The National Biodiversity Data Centre (NBDC) Database was accessed prior to conducting the surveys. Table 3.1 lists the rare and protected species recorded within the study area. Table 3.2 lists NBDC records of invasive species within the study area.

Table 3.1 NBDC Records within the Study Area

Common Name	Scientific Name	Status
Common Frog	*Rana temporaria*	Annex V, WA
Smooth Newt	*Lissotriton vulgaris*	WA
Barn Owl	*Tyto alba*	Red, WA
Swallow	*Hirundo rustica*	Amber, WA
Black-headed Gull	*Larus ridibundus*	Red, WA
Brent Goose	*Branta bernicla*	Amber, WA
Common Coot	*Fulica atra*	Annex II, III, Amber, WA
Goldeneye	*Bucephala clangula*	Annex II, Red, WA
Grasshopper Warbler	*Locustella naevia*	WA
Greenshank	*Tringa nebularia*	WA
Kestrel	*Falco tinnunculus*	Amber, WA
Kingfisher	*Alcedo atthis*	Annex I, Amber, WA
Linnet	*Carduelis cannabina*	Amber, WA
Pochard	*Aythya ferina*	Red, WA
Redshank	*Tringa totanus*	Red, WA
Sandpiper	*Actitis hypoleucos*	Amber, WA
Snipe	*Gallinago gallinago*	Annex II, III, Amber, WA
Starling	*Sturnus vulgaris*	Amber, WA
Swift	*Apus apus*	Amber, WA
Wood Pigeon	*Columba palumbus*	Annex II, III, WA
Corncrake	*Crex crex*	Annex I, Red, WA
Curlew	*Numenius arquata*	Annex II, WA
Oystercatcher	*Haematopus ostralegus*	Amber, WA
Teal	*Anas crecca*	Amber, WA

Common Name	Scientific Name	Status
Tree Sparrow	*Passer montanus*	Amber, WA
Wigeon	*Anas penelope*	Red, WA
Golden Plover	*Pluvialis apricaria*	Red, WA
Great Black-backed Gull	*Larus marinus*	Amber, WA
Cormorant	*Phalacrocorax carbo*	Amber, WA
Great Crested Grebe	*Podiceps cristatus*	Amber, WA
Grey Partridge	*Perdix perdix*	Red, WA
Greylag Goose	*Anser anser*	Amber, WA
Hen Harrier	*Circus cyaneus*	Amber, WA
Herring Gull	*Larus argentatus*	Red, WA
House Martin	*Delichon urbicum*	Amber, WA
House Sparrow	*Passer domesticus*	Amber, WA
Sand Martin	*Riparia riparia*	Amber, WA
Skylark	*Alauda arvensis*	Amber, WA
Spotted Flycatcher	*Muscicapa striata*	Amber, WA
Stock Pigeon	*Columba oenas*	Amber, WA
Tufted Duck	*Aythya fuligula*	Red, WA
Water Rail	*Rallus aquaticus*	WA
Whinchat	*Saxicola rubetra*	Red, WA
Whooper Swan	*Cygnus cygnus*	Amber, WA
Wood Warbler	*Phylloscopus sibilatrix*	Red, WA
Yellowhammer	*Emberiza citrinella*	Red, WA
Daubenton's Bat	*Myotis daubentonii*	Annex IV
Otter	*Lutra lutra*	Annex II, IV, WA
Badger	*Meles meles*	WA
Pine Marten	*Martes martes*	Annex V, WA
Hedgehog	*Eraceus europaeus*	WA

Status (listing conferring protection or describing conservation status) abbreviations: Annex II/IV/V (non-avian species) = Habitats Directive (HD); Annex I, II, III = Birds Directive (BD); WA = Wildlife Acts and Red/Amber/Green = Birds of Conservation Concern in Ireland, 2014 to 2019 (BOCCI). All bird species in Ireland are protected under the Wildlife Acts 1976 to 2012.

Table 3.2 Invasive Species Recorded within the Study Area

Common Name	Scientific Name
Giant Hogweed	*Heracleum mantegazzianum*
Butterfly Bush	*Buddleja davidii*
Three-cornered Garlic	*Allium triquetrum*
Sika Deer	*Cervus nippon*
Brown Rat	*Rattus norvegicus*

3.3 Habitats

The following section describes the habitats recorded within the study area. A total of 13 habitats, including one habitat which is also classed as an Annex I habitat (Calcareous Springs (FP1) which is equivalent to Petrifying springs with tufa formation (Cratoneurion) (7220), and one mosaic (an area characterised by a mixture of two or more habitat types), were recorded within the study area (see Table 3.3). A habitat map is provided in Appendix B.

Table 3.3 Habitats recoded within the study area (Fossitt Classification0

Habitat	Fossitt Code
Depositing/ Lowland River	FW2
Amenity Grassland	GA2
Dry Meadows and Grassy Verges	GS2
Wet Grassland	GS4
Riparian Woodland	WN5
Mixed Broadleaved Woodland	WD1
Scattered Trees and Parkland	WD5
Scrub	WS1
Hedgerows	WL1
Treelines	WL2
Buildings and Artificial Surfaces	BL3
Buildings and Artificial Surfaces/ Amenity Grassland/ Flower Beds and Borders	BL3/GA2/BC3
Calcareous Springs*	FP1

* Annex I habitat – Petrifying springs with tufa formation (Cratoneurion) (7220)

Depositing/ Lowland River (FW2)

This category includes watercourses, or sections of these, where fine sediments are deposited on the riverbed. This habitat was represented within the study area by the River Dodder which runs in an easterly direction through the park. The river supports spawning Trout and Brook Lamprey, and shady tree-lined banks provide invertebrate prey for fish, and shelter to Otter and Kingfisher. There is considerable shading of the river due the overgrowth of vegetation on the banks resulting in an absence of floating river vegetation (See Plates 3.1 and 3.2 for an example of this habitat type in Dodder Valley Park).

Amenity Grassland (GA2)

This type of grassland is improved, or species-poor, and is managed for purposes other than grass production. Amenity grassland was common throughout study area. This habitat was actively managed and was characterised by a low sward height and low species diversity.

Dry Meadows and Grassy Verges (GS2)

This grassland type is common within the study area and was associated with the sloped embankment leading down from the park to the River Dodder. This habitat has been left uncut. Species recorded within the grassland include Meadow Foxtail (*Alopecurus pratensis*), Red Fescue (*Festuca rubra*) and White Clover (*Trifolium*

repens). There are elements of calcareous grassland within the habitat where species such as Bird's-foot-trefoil appear. Scrub primarily composed of Bramble (*Rubus fruticosus*) is encroaching on this habitat (See Plate 3.1 for an example of this habitat type in Dodder Valley Park).

Plate 3.1 **River Dodder (FW2) with dry meadows and grassy verges (GS2) and wet grassland (GS4) exhibited on the embankment behind.**

Wet Grassland (GS4)

This type of grassland can be found on flat or sloping ground in upland and lowland areas. It occurs on wet or waterlogged mineral or organic soils that are poorly drained or, in some cases, subjected to seasonal or periodic flooding. Wet grassland was recorded within the footprint of the ICW site next to the River Dodder. Common species recorded within the grassland included Field Horsetail (*Equisetum arvense*) and Willowherb species (See Plate 3.1 for an example of this habitat type in Dodder Valley Park).

Riparian Woodland (WN5)

This category includes wet woodlands of river margins (gallery woodland) and low islands that are subject to frequent flooding, or where water levels fluctuate as a result of tidal movement (in the lower reaches of rivers). This habitat is found along more natural section of banks of the River Dodder and on islands within the river. This habitat falls within with the proposed ICW site. Invasive species including Japanese Knotweed were recorded within this habitat (See Plate 3.2 for an example of this habitat type in Dodder Valley Park).

Plate 3.2 River Dodder (FW2) and associated riparian woodland behind (WN5).

Mixed Broadleaved Woodland (WD1)

This general category includes woodland areas with 75-100% cover of broadleaved trees, and 0-25% cover of conifers. It should be used in situations where woodland stands cannot be classified as semi-natural. Trees may include native and non-native species. This habitat has replaced much of the original riparian woodland (WN5) in the along the River Dodder.

Scattered Trees and Parkland (WD5)

This category can be used in situations where scattered trees, standing alone or in small clusters, cover less than 30% of the total area under consideration but are a prominent structural or visual feature of the habitat. This usually occurs in areas of cultivated grassland, particularly amenity areas. This habitat has been created for amenity use along the River Dodder. Within the study area, this habitat included Lime (*Tilia platyphyllos*) trees.

Scrub (WS1)

This broad category includes areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height is generally less than 5m, or 4m in the case of wetland areas. Scrub is encroaching on the grassland habitats within the park and was recorded along the steep embankment between the Dodder Jogging Trail and the river within the footprint of the ICW.

Hedgerows (WL1)

Hedgerows are linear strips of shrubs, often with occasional trees, that typically form field or property boundaries. One hedgerow was recorded to the southeast of the study area. This hedgerow is not located near the proposed ICW sites.

Treelines (WL2)

A treeline was recorded with the study area along the riverbank. Species recorded within the habitat included Alder (*Alnus glutinosa*) and Sycamore (*Acer pseudoplatanus*).

Buildings and Artificial Surfaces (BL3)

The roads, footpaths and buildings within the study area fall under this category. Generally built habitats are not considered of ecological significance.

Buildings and Artificial Surfaces/ Amenity Grassland/ Flower Beds and Borders (BL3/GA2/ BC3)

This habitat is used to represent private dwellings with gardens. This habitat mosaic is not considered of high biodiversity value.

Calcareous Springs (FP1)*

There was a tufa-forming, petrified spring identified in the riparian zone of the Dodder River c. 60 m from the proposed ICW area. This habitat type is classed as an EU Habitats Directive Annex I priority habitat - *Petrifying springs with tufa formation (Cratoneurion)* (*7220*). Other similar springs were also noted further upstream of the proposed ICW area, but these were outside the 150 m buffer zone.

A specialised survey will be conducted to fully characterise and assess the status of the petrifying (tufa-forming) springs or seepages found within the study area.

3.4 Flora

No plants listed on the Flora Protection Order (2015) were recorded during the field surveys. Table 3.4 below lists the species recorded in each during the detailed botanical survey on the 22nd of June 2020.

Table 3.4 Plant Species Recorded During the Surveys

Common Name	Scientific Name
Amenity grassland	
Annual Meadow-grass	*Poa annua*
Creeping Buttercup	*Ranunculus repens*
Dandelion	*Taraxacum majus*
Italian Rye-grass	*Lolium multiflorum*
White Clover	*Trifolium repens*
Scattered Trees and Parkland	
Annual Meadow-grass	*Poa annua*
Common Mallow	*Malva sylvestris*
Dandelion	*Taraxacum majus*
Lime	*Tilia platyphyllos*
Italian Rye-grass	*Lolium multiflorum*
White Clover	*Trifolium repens*
Dry Meadows and Grassy Verges	
Bird's-foot Trefoil	*Lotus corniculatus*

Common Name	Scientific Name
Dandelion	*Taraxacum majus*
Meadow Foxtail	*Alopecurus pratensis*
Red Fescue	*Festuca rubra*
Knapweed	*Centaurea nigra*
Lady's Bedstraw	*Galium verum*
Meadow Buttercup	*Ranunculus acris*
Various Moss species (Bryophytes)	-
Oxeye Daisy	*Leucanthemum vulgare*
Poa grasses	*Poa spp.*
White Clover	*Trifolium repens*
Yarrow	*Achillea millefolium*
Riparian Woodland	
Alder	*Alnus glutinosa*
Ash	*Fraxinus excelsior*
Bramble	*Rubus fructicosus*
Goosegrass	*Galium aparine*
Hedge Bindweed	*Calystegia sepium*
Herb Robert	*Geranium robertianum*
Hogweed	*Heracleum sphondylium*
Japanese Knotweed	*Fallopia japonica*
Ivy	*Hedera helix*
Meadow Buttercup	*Ranunculus acris*
Sycamore	*Acer pseudoplatanus*
Wood Horsetail	*Equisetum sylvaticum*
Wet Grassland	
Bramble	*Rubus fructicosus*
Bush Vetch	*Vicia sepium*
Creeping Cinqfoil	*Potentilla reptans*
Creeping Thistle	*Cirsium arvense*
Field Horsetail	*Equisetum arvense*
Meadow Foxtail	*Alopecurus pratensis*
Red Fescue	*Festuca rubra*
Hogweed	*Heracleum sphondylium*
Meadow Buttercup	*Ranunculus acris*
Poa grasses	*Poa spp*
Silverweed	*Potentilla anserina*
Willowherb species	*Willowherb spp*

3.5 Birds

The following section describes the bird species that were recorded within the study area. A total of 24 birds, including 5 amber listed species were recorded.

3.5.1 Breeding Birds

Two breeding bird surveys were carried out on the 23rd and 30th June 2020 to record the species that were using the area to breed. The activity and behaviour of the birds was also recorded and used to assess the likelihood of these individuals to be breeding within the site. Based on these findings, the species were divided between four groups based on their likelihood to be breeding within the area. It was determined that 8 species were confirmed to be breeding within the site, one of which is amber listed, 3 were probable, 10 were possible including two amber listed species and 3 were non-breeding, including two amber listed species. See table 3.5 for details on the species and their breeding potential which were recorded during the breeding bird surveys.

Table 3.5 Breeding Bird Survey Results

Common Name	Species Name	Breeding Status
Dipper	*Cinclus cinclus*	Confirmed breeding
Hooded Crow	*Corvus cornix*	
Jackdaw	*Corvus monedula*	
Magpie	*Pica pica*	
Mallard	*Anas platyrhynchos*	
Robin	*Erithacus rubecula*	
Wood Pigeon	*Columba palumbus*	
Wren	*Troglodytes troglodytes*	
Bullfinch	*Pyrrhula pyrrhula*	Probable breeding
Song Thrush	*Turdus philomelos*	
Starling	*Sturnus vulgaris*	
Blackbird	*Turdus merula*	Possible breeder
Blue Tit	*Cyanistes caeruleus*	
Chaffinch	*Fringilla coelebs*	
Chiffchaff	*Phylloscopus collybita*	
Coal Tit	*Periparus ater*	
Goldfinch	*Carduelis carduelis*	
Grey Heron	*Ardea cinerea*	
House Sparrow	*Passer domesticus*	
Kingfisher	*Alcedo atthis*	
Long-tailed Tit	*Aegithalos caudatus*	
Common Gull	*Larus canus*	Non-breeding
Lesser Black-backed Gull	*Larus fuscus*	
Rook	*Corvus frugilegus*	

3.5.2 Aquatic Birds

One Kingfisher (*Alcedo atthis*) was recorded flying upstream along the River Dodder during the survey. In addition to this, Dipper (*Cinclus cinclus*), Grey Heron (*Ardea cinereal*) and Mallard (*Anas platyrhynchos*) were also observed making use of the riverine habitat provided by the River Dodder. Birds species associated with the riverine habitat are especially sensitive to disturbance as a result of construction activities.

3.6 Mammals

3.6.1 Badger

No evidence or signs of badger or their resting places were found during the field survey. Badger habitat has previously been recorded along the River Dodder downstream of the ICW sites (ROD, 2019)

3.6.2 Otter

No evidence or signs of Otter or their resting places were found during the field survey. However, it is likely that Otter commute and hunt along this section of the River Dodder.

3.6.3 Bats

Bat activity surveys were undertaken on the 24th and 30th June 2020 in suitable weather conditions. Three bat species were recorded during the surveys including Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Leisler's bat (*Nyctalus leisleri*). Bats were seen commuting and foraging along treelines and hedgerows, and within the open spaces above the amenity grasslands. Table 3.6 below shows the number of calls recorded for each species over both surveys.

Table 3.6 Bat Survey Results

Common Name	Species Name	Number of Calls Recorded
Leisler's Bat	*Nyctalus leisleri*	121
Common Pipistrelle	*Pipistrellus pipistrellus*	65
Soprano Pipistrelle	*Pipistrellus pygmaeus*	37

3.7 Invertebrates

A number of key invertebrate species were recorded during the survey (See Table 3.7. Red-tailed Bumblebee (*Bombus lapidarius*), which was recorded during the survey is assessed as Near Threatened on the latest Red List assessment of Irish bees (Fitzpatrick et al., 2006).

Table 3.7 Key invertebrate species recorded during field survey.

Common Name	Scientific Name
Bees	
Honeybee	*Apis mellifera*
Bumblebees	
Red-tailed Bumblebee	*Bombus lapidarius*
Garden Bumblebee	*Bombus hortorum*
Butterflies	

Small White	*Pieris rapae*
Speckled Wood	*Pararge aegeria*

3.8 Amphibians

No evidence of Smooth Newt (*Lissotriton vulgaris*) was recorded at Dodder Valley Park, although the riparian habitat along the River Dodder is suitable to support Common Frog.

3.9 Invasive Species

Japanese Knotweed (*Fallopia japonica*), which is subject to restrictions as listed on the Third Schedule of the Birds and Natural Habitats Regulations was recorded within the study area. Infestations were recorded along the banks of the River Dodder. Plants growing on the riverbanks have formed mature stands measuring up to 4m tall. Table 3.8 details the location of Japanese Knotweed stand within the study area and the location of the stand is displayed in Appendix C.

Invasive plant species not subject to restrictions, recorded during the field survey include Butterfly Bush (*Buddleja davidii*), Snowberry (*Symphoricarpos albus*) and Winter Heliotrope (*Petasites fragrans*). Invasive species pose a threat to the native biodiversity in the area.

Table 3.8 Japanese Knotweed recorded during field survey.

Stand ID	Location (ITM)	Notes
JK01	0710235 0727018	A single stem measuring approximately 0.5m tall next to riverbank on the northern side.

3.10 Recommendations

The following sections provide recommended measures for the protection and enhancement of biodiversity within and around the site of the proposed ICWs.

3.10.1 Wetland Construction

The construction of the ICWs should be carried out with regard to guidance set out in the *Guidance on good practice in the management and creation of small waterbodies in Scotland* (SEPA, 2000) in order to maximise their biodiversity potential. If fencing is required, it should include gaps to allow amphibians and small mammals to move in and out of the area. Consideration should be given to the creation of terrestrial refugia next to the constructed wetlands which may consist of either log piles or clean, inert material covered with topsoil.

3.10.2 Protection of Mammals

Badger

Although there are no active badger setts in the vicinity of the proposed works, badger activity may still be impacted by construction activities. To reduce the impacts on badger, the following measures should be included in any future Construction Management Plan:

- Any excavations greater than 1 m deep should be securely covered at night or a ramp provided to enable animals to escape should they fall in.
- Usage of artificial lighting during the construction phase will be limited to the works areas

Otter

It is likely that Otter commute along the River Dodder within the park. To reduce the impacts on Otter, the following measures should be included in any future Construction Management Plan:

- Any excavations greater than 1 m deep should be securely covered at night or a ramp provided to enable animals to escape should they fall in.
- Similarly, any temporarily exposed open pipe system will be capped to prevent species Otter from gaining access when contractors are off site.
- Usage of artificial lighting during the construction phase will be limited to the works areas.

Bats

Bats were recorded foraging along the within the study area.

- During the construction phase the use of artificial lighting will be limited to the works area. Light spill outside this area will be prevented, as much as possible.

3.10.3 Natural Colonisation

The creation of the ICWs will involve the loss of areas of rough grassland/scrub. Existing grassland outside these sites should be retained. Areas of bare ground should be allowed to re-seed naturally throughout the site, and no commercial/new seed mixes should be utilised.

3.10.4 Management of Scrub

Scrub is growing adjacent to grassland habitats within the park including within the footprint of one the proposed ICWs. Scrub is an important nesting and foraging habitat for birds and sheltering habitat for mammals. Scrub should be protected except in areas where it is encroaching on species-rich grassland (i.e. covering more than 20% of grassland). Cutting of scrub should only be carried out between early September and the end of February to avoid the bird-breeding season, while cutting at the end of winter allows birds and mammals time to eat any berries. Cutting will be carried out with special hedge trimmers that do not damage small fauna.

3.10.5 Vegetation Removal

The protection of bird breeding habitats during the nesting season (1st March to 31st August, inclusive), is set out in the Wildlife Act. Any removal of vegetation within this period will require the supervision of a suitably qualified and experienced ecologist to ensure that no nesting birds are present.

3.10.6 Landscaping

Planting should consist of locally sourced native species only. Planting should be undertaken in accordance with the Pollinator Friendly Planting Code in the All Ireland Pollinator Plan 2015-2020. If soil/substrate needs to be imported to the site for the purposes of development, the Contractor should ensure that the imported soil/substrate is free from invasive species.

3.10.7 Invasive Species

Japanese Knotweed was recorded within the 150 m buffer zone for this ICW but not within the footprint of the ICW (Appendix C). An Invasive Species Management Plan should be prepared in tandem with any future development in the ICW.

It is recommended that South Dublin County Council prepare a coordinated plan for the eradication of Japanese Knotweed along the entire River Dodder catchment. Any

actions short of a catchment-wide management plan will be temporary and re-infestation from plants upstream will be inevitable.

3.11 Summary of Ecological Assessment

The locations for these ICWs locations are dominated by improved grasslands and/or managed habitat features which can be classified as being of low ecological value. There were no species listed in the FPO nor any rare/protected faunal species found in the footprint of any of the proposed ICW sites.

There is a small stand of Japanese knotweed and one Annex I habitat found within the 150 m buffer zone for the eastern ICW, but neither fall directly within the footprint of the ICW itself. A specialised survey will be conducted to assess the impact of the ICW construction on the Annex I habitat.

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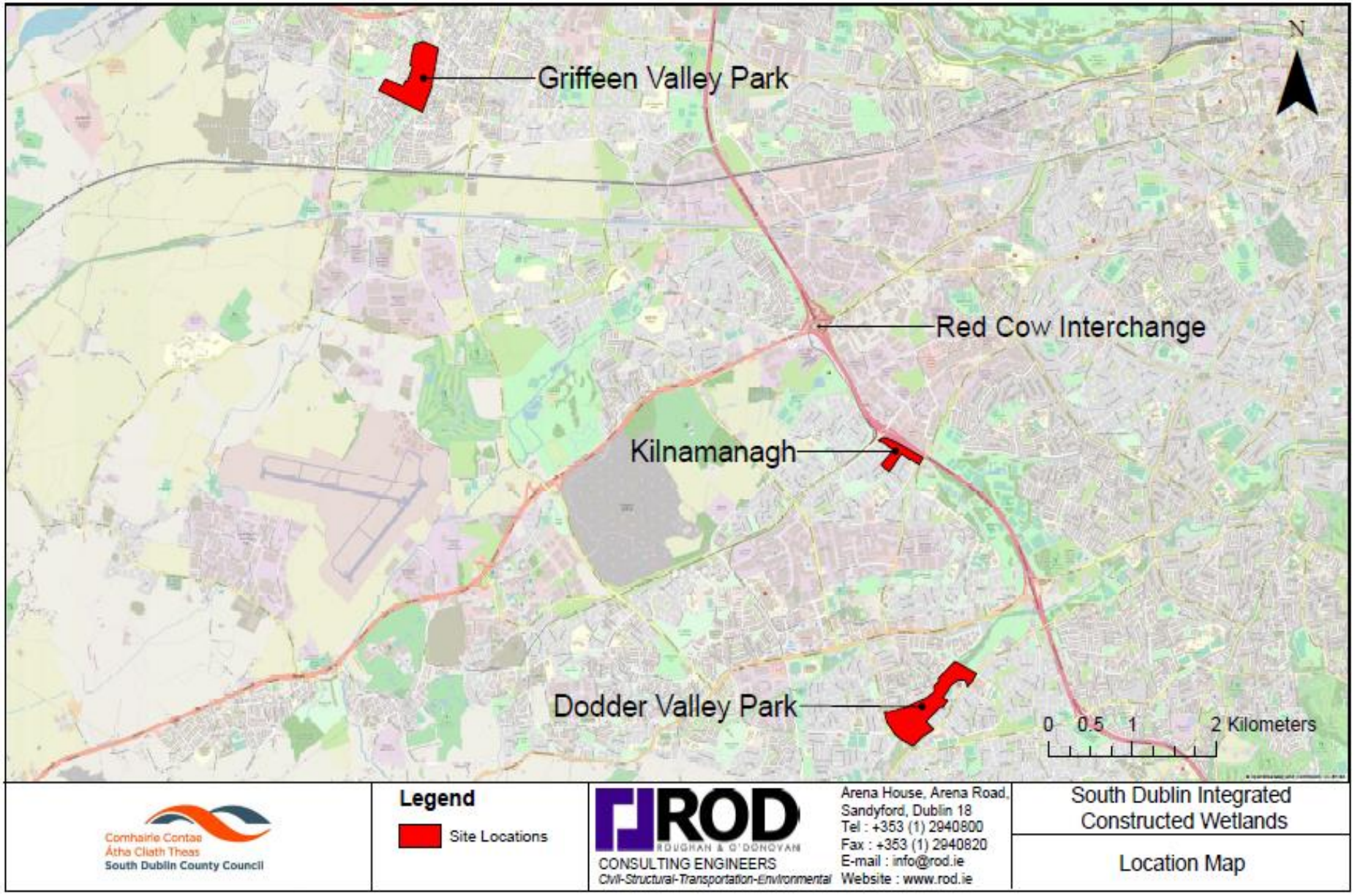
APPENDIX A

LOCATION MAP


Griffeen Valley Park
Red Cow Interchange
Kilnamanagh
Dodder Valley Park
N
0 0.5 1 2 Kilometers
Comhairle Contae Átha Cliath Theas
South Dublin County Council
Legend
Site Locations
ROD
ROUGHAN & O'DONOVAN
CONSULTING ENGINEERS
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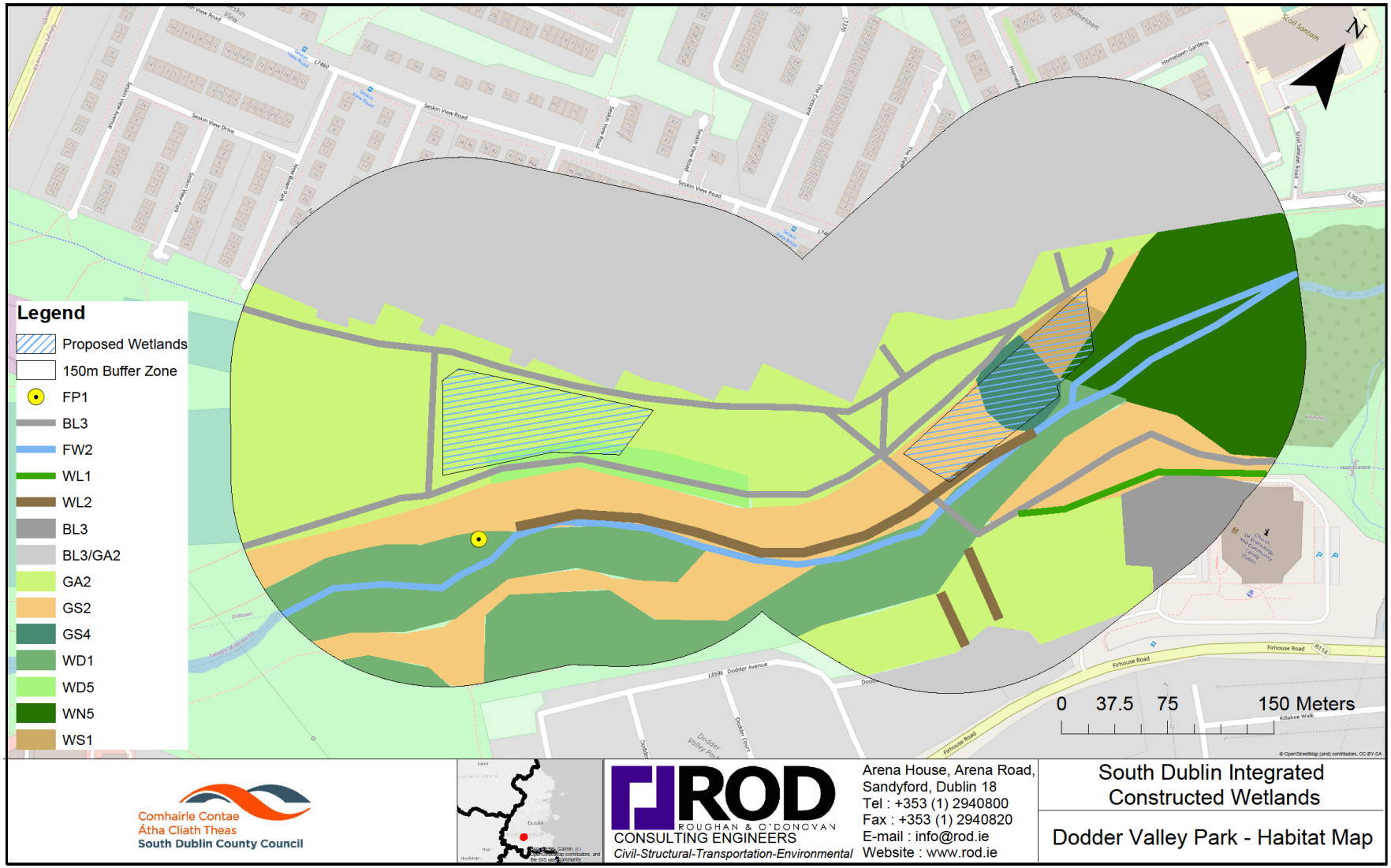
Website : www.rod.ie
South Dublin Integrated Constructed Wetlands
Location Map

APPENDIX B

DODDER PARK HABITAT MAP


Legend
Proposed Wetlands
150m Buffer Zone
FP1
BL3
FW2
WL1
WL2
BL3
BL3/GA2
GA2
GS2
GS4
WD1
WD5
WN5
WS1
N
0 37.5 75 150 Meters
Seskin View Road
Dodder Avenue
Firhouse Road
Comhairle Contae
Átha Cliath Theas
South Dublin County Council
ROD
ROUGHAN & O'DONOVAN
CONSULTING ENGINEERS
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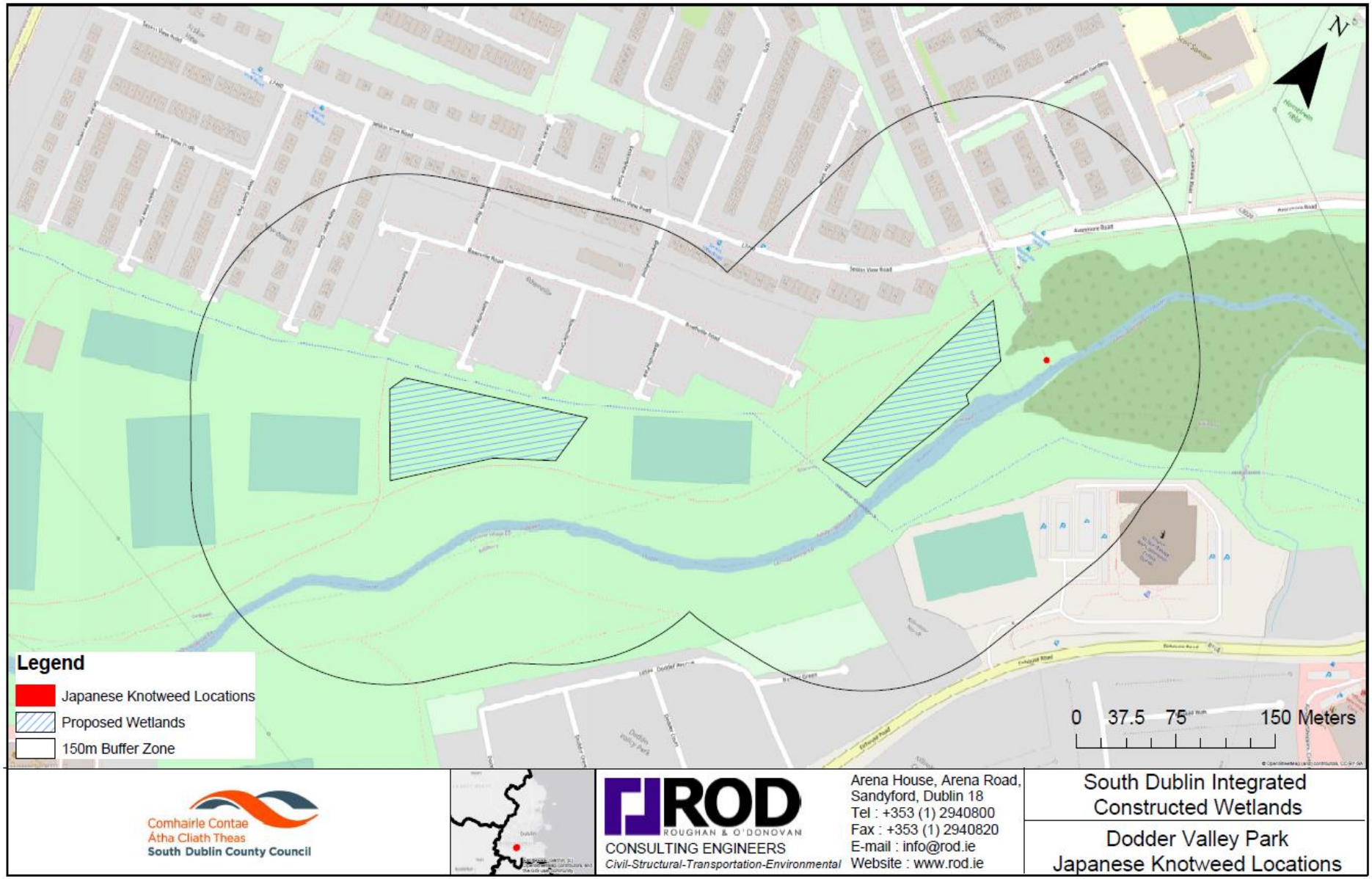
South Dublin Integrated
Constructed Wetlands
Dodder Valley Park - Habitat Map

APPENDIX C

DODDER VALLEY PARK INVASIVE SPECIES MAP


N
Legend
Japanese Knotweed Locations
Proposed Wetlands
150m Buffer Zone
0 37.5 75 150 Meters
Comhairle Contae
Átha Cliath Theas
South Dublin County Council
ROD
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