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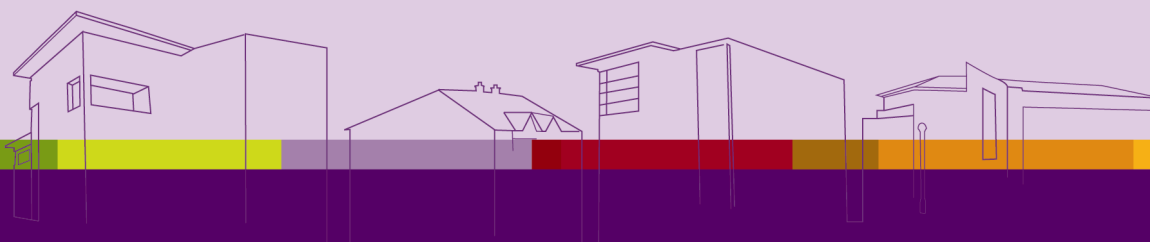
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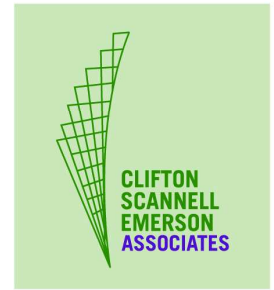


Tallaght to Ballyboden Cycle Route Scheme Environmental Report



Comhairle Contae
Átha Cliath Theas
South Dublin County Council

5th September 2012
Job Ref.: 12_098



Control Sheet

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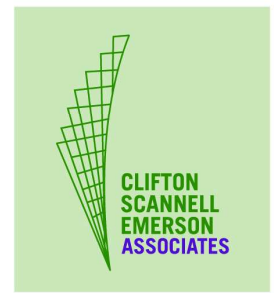
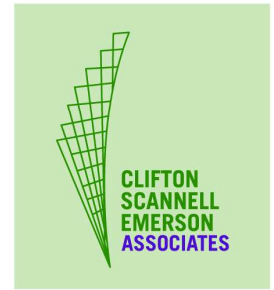
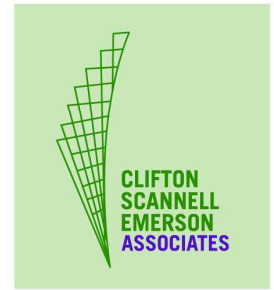


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1 Introduction

1.1 Project Description

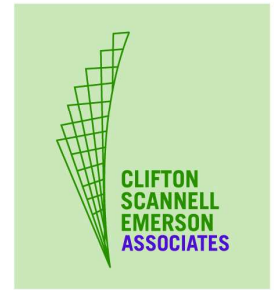
Clifton Scannell Emerson Associates (CSEA) have been appointed by South Dublin County Council (SDCC) as Consulting Engineers for the preparation of documentation for public display for the Tallaght to Ballyboden Cycle Route Scheme in accordance with the Planning and Development Act 2000 and Part 8 of the Planning and Development Regulations 2001.

A preliminary design has been prepared for the Scheme incorporating the construction of new cycle tracks, upgrading existing cycle tracks, improving existing cycle tracks, improving the existing Knocklyon Road alignment, improvements to existing junctions along the scheme from the N81 – Old Bawn junction in Tallaght to the Ballyboden roundabout in Ballyboden. The scheme will include the construction of a bridge over the Dodder River and a bridge in the Dodder Valley Park. The scheme is located within the townlands of Tallaght, Old Bawn, Killinenny, Ballycragh, Tymon South, Knocklyon, Scholarstown, Ballyroan, Ballyboden.

1.2 Need for the Scheme

The proposed scheme will involve the delivery of a cycle route that provides high quality linkage between residential areas and the key trip attractors (e.g. Schools/College, Sports Clubs, Tallaght Town Centre). This will improve the cycling offer and encourage modal shift among the local population to cycle as a safe and convenient means of making local trips (work, school/college, recreation trip).

As there are currently no dedicated cycle tracks on a large section of the scheme i.e. the Old Bawn Road and Dodder Valley Parks, and limited public lighting through the parkland areas, the proposed works will substantially improve safety for pedestrians and cyclists, and will provide proper public lighting along the entire route.



The finished scheme will provide a safe, coherent and attractive route with a high Quality of Service that will form part of the wider strategic cycle network in the South Dublin area.

The level of take up will ultimately judge the success of the scheme (i.e. the number of cycle trips along the route). The route must provide a high Quality of Service and address the five needs of the cyclist (directness, safety, coherence, comfort and attractiveness). The route will aim to serve the broadest range of possible users (e.g. commuters, leisure cyclists, children).

It is the policy of the Council to support the implementation of the National Cycle Policy Framework 2009-2020 and the DTO Cycle Policy.

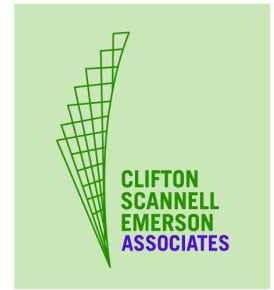
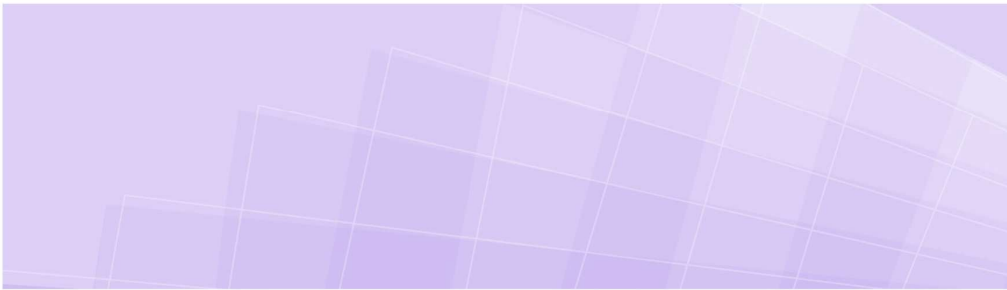
The implementation of the proposed scheme is identified in the South Dublin County Development Plan (2010 – 2016) where it is an objective of the Council to establish the cycle route network listed in Table 2.2.2 of the Plan within the time period of the Plan.

The proposed Scheme will support the objectives embodied in the National Transport Authority's Greater Dublin Area Transport Strategy in respect of improving safety for all road users, and facilitating increased cycle usage and walking.

1.3 Purpose of this Report

The Environmental Report has been prepared to support the Part 8 Planning Procedure and to provide details of the proposed scheme and improvement works.

The Environmental Report describes the Scheme, and its interaction with its surrounding environment. Predicted environmental aspects, associated impacts, together with proposed mitigation measures are given. In particular attention has been given to how the scheme will potentially impact on the proposed Natural Heritage Area which forms part of Dodder Valley Park through which the route is proposed and mitigation measures incorporated into the Scheme.



Specialist reports have been commissioned including a Bat Survey, a Survey of Large Mammal Activity– Otters and Badgers for the area within Dodder Valley Park and an Arborist's Report on the trees along the route to ensure that all environmental aspects of the Scheme are fully assessed and appropriate mitigation measures identified. All relevant objectives contained in the County Development Plan in so far as they apply to the proposed scheme will be complied with, including those relating to:

- (i) Landscape, Natural Heritage and Amenities;
 - 4.3.7.vi Policy LHA8 – Special Areas of Conservation and proposed Natural Heritage Areas
 - 4.3.7.vii Policy LHA9 – Impacts on Natura 2000 Sites
 - 4.3.7.xvii LHA19 – Flora and Fauna
- (ii) Cycle Policy Framework;
 - Policy T13; National Policy Cycle Framework
 - Policy T14; Pedestrian and Cyclist Movement
 - Policy T16; Roundabout Design for Cyclists and Pedestrians

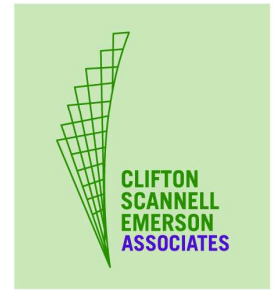
1.4 Planning Context

The proposed Road Improvement Scheme is a Prescribed Development as set out in Part 8 of the Planning and Development Regulations 2001 to 2012. Article 80 (1) (b), (c) and (k) defines Prescribed Development as follows:

Article 80 (1) (b); The construction of a new road or the widening or realignment of an existing road, where the length of the new road or of the widened or realigned portion of the existing road, as the case may be, would be –

(i) in the case of a road in an urban area, 100 metres or more,

or



(ii) in the case of a road in any other area, 1 kilometre or more,

Article 80 (1) (c); the construction of a bridge or tunnel.

Article 80 (1) (k); any development other than those specified in paragraphs (a) to (j), the estimated cost of which exceeds €126,000, not being development consisting of the laying underground of sewers, mains, pipes or other apparatus.

As the proposed scheme consists of the realignment of approximately 0.5km of existing road, the construction of 2 bridges and other works in excess of €126,000, it constitutes a Prescribed Development in accordance with Articles 80 (1) (b) (i), 80 (1) (c) and 80 (1) (k).

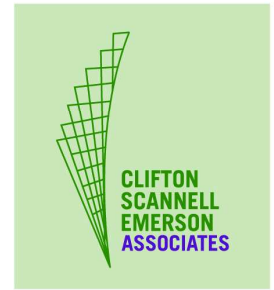
As it is considered that the proposed improvement works are not likely to have significant effects on the environment, and as the proposed improvement works are below the prescribed thresholds as described in the Roads Regulations, a full Environmental Impact Statement (EIS) is not required. (Section 50(1), Roads Act 1993 and Article 8(a) and (b), Roads Regulations 1994 refer).

1.5 Scope

The Environmental Report identifies the likely effects of the scheme on the environment particularly in the vicinity of the Dodder River and Dodder Valley Parks and identifies appropriate mitigation measures.



Figure 1.1 – Location Map of Proposed Scheme



2 Regional Setting of the Proposed Development

2.1 Responsible Authority

The Scheme is approximately 6.5km in length from end to end and extends from the western end of the Tallaght Main Street to the Ballyboden Roundabout. The scheme is generally located up to 1.4km south of Tallaght Main Street, 2.1km west of the M50 Motorway and 2km east of the M50 Motorway between junctions 11 and 12. The centre of the scheme is approximately 12km west of Dublin City centre. The Local Authority responsible for this area is South Dublin County Council.

2.2 Land Zoning and Other Designations

The lands in the vicinity of the proposed scheme are zoned as follows and as shown in Figure 2.1:

A to protect and/or improve Residential Amenity

CT to protect, improve and provide for the future development of the County Town of Tallaght

F To preserve and provide for Open Space and Recreational Amenities.

G To protect and improve High Amenity Areas

LC to protect, provide for and/or improve Town Centre facilities

The Route crosses the Dodder valley which is zoned G in the County Development Plan 2010 – 2016 with an objective ‘to protect and improve High Amenity Areas’

The Dodder Valley area contains the Dodder Valley proposed Natural Heritage Area through which a portion of the route is proposed. The Proposed natural Heritage Area boundary is shown in Figure 2.2

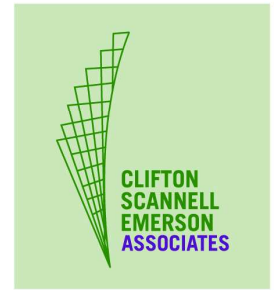


Development Plan Zoning Objectives	
A	To protect and/or improve Residential Amenity
A1	To provide for new Residential Communities in accordance with approved Area Plans
B	To protect and improve Rural Amenity and to provide for the development of Agriculture
CT	To protect, improve and provide for the future development of the County Town of Tallaght
DC	To protect, provide for and/or improve District Centre facilities
EP1	To facilitate opportunities for intensive employment uses complemented by mixed-use development based on a principle of street networks and in accordance with approved plans
EP2	To facilitate opportunities for manufacturing, Research and Development facilities, light industry, and employment and enterprise related uses in industrial areas and business parks
EP3	To provide for distribution, warehouse, and logistics and related industry facilities which require good access to the major road network within a good quality environment
F	To preserve and provide for Open Space and Recreational Amenities
G	To protect and improve High Amenity Areas
GB	To preserve a Green Belt between Development Areas
H	To protect and enhance the outstanding natural character of the Dublin Mountains Area
I	To protect and enhance the outstanding character and amenity of the Liffey Valley and to preserve its strategic importance as a green break between urban settlement areas
LC	To protect, provide for and/or improve Local Centre facilities
TC	To protect, provide for and/or improve Town Centre facilities

Figure 2.1 – Development Plan Zoning Plan



Figure 2.2 – Dodder Valley proposed Natural Heritage Area in the Old Bawn / Tallaght area



3 Description of the Receiving Environment

3.1 Land Use

Old Bawn Road

The northern end of the Old Bawn Road is generally commercial with some domestic properties. The road crosses the N81 Tallaght Bypass where it passes through residential lands with housing on both sides. The road meets with the Firhouse Road at its southern end.

Dodder Valley Park North

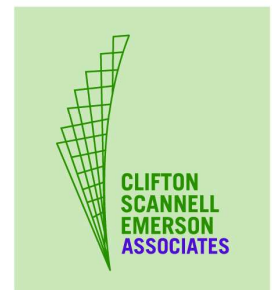
The Dodder Valley Park North shared path is bounded to the north by the Seskin housing estate and to the south by the Dodder River. The shared path traverses the open parklands. A proposed Natural Heritage Area is contained within Dodder Valley Park. (Site Code: 000991). These lands were included in the boundary of the NHA on the basis of the grassland habitats present, the woodlands along the river and a large sand martin colony.

Dodder Valley Park South

The Dodder Valley Park South shared path is bounded to the north by the Dodder River and to the south by the Victory Centre and the Firhouse Road. The shared path traverses the open parklands. A proposed Natural Heritage Area is contained within Dodder Valley Park. (Site Code: 000991). These lands were included in the boundary of the NHA on the basis of the grassland habitats present, the woodlands along the river and a large sand martin colony.

Firhouse Road

The Firhouse Road proposals extend over circa 1.7km of the Road and over this length the road is bounded to the north by a combination of open parklands, residential housing, the Victory Centre, a school and a monastery. The southern side of the road contains a similar mix of residential housing, schools and open parklands.



Both sides of the road reservation are generally enclosed by stone and block walls and steel railings.

Monalea Park

Monalea Park is a residential housing estate, with an open parkland area where a shared path passes through.

Castlefield Avenue

The route extends from Monlea housing estate across the Ballycullen Road and through a portion of the Castlefield Avenue housing estate. This section of the path has open space and residential housing to the north and south.

Knocklyon Road

The Knocklyon Road works extend from the Old Knocklyon Road to Dargle Wood housing estate. This section of the scheme is bounded to the north by residential housing and the Knocklyon Shopping Centre. The road is bounded by residential housing and open space to the south.

Templeroan Road

Templeroan Road is bounded on both sides by open parklands and residential housing.

Taylor's Lane

Taylor's Lane is bounded on both sides by open parklands and residential housing.

3.2 Traffic

A count of pedestrians, cyclists and vehicular traffic was carried out on Thursday 26th April 2012 from 07:00 to 19:00 at the following locations throughout the scheme:

- N81 Tallaght bypass – Old Bawn Road junction



- Old Bawn Road – Seskin View Road junction
- Old Bawn Road – Firhouse Road junction
- Monalea Wood – Ballycullen Road junction
- Templeroan Mews – Scholarstown Road roundabout
- Ballyboden Road – Taylors Lane roundabout

This covers both the AM and PM peaks.

The traffic count data was expanded to obtain an estimate of the Annual Average Daily Traffic (AADT), which gives the information detailed in table 3.2 below:

Road	Location	AADT
N81 Tallaght Bypass	East of N81 Tallaght Bypass Old - Bawn Road junction	44,930
Old Bawn Road	North of N81 Tallaght bypass – Old Bawn Road junction	10,590
Old Bawn Road	South of N81 – Old Bawn Road junction	21,690
Old Bawn Road	South of Old Bawn Road - Seskin View Road	17,000
Seskin View Road	East of Old Bawn Road – Seskin View Road junction	6,160
Old Bawn Road	North of Old Bawn Road - Firhouse Road junction	23,010
Firhouse Road	East of Old Bawn Road - Firhouse Road junction	11,700
Ballycullen Road	North of Ballycullen Road – Monlea Wood junction	9,510
Knocklyon Road	Knocklyon Shopping Centre	6,700
Templeroan Mews	Dargle Wood – Templeroan Mews proposed toucan crossing	6,380
Taylors Lane	West of Taylors Lane –	16,630



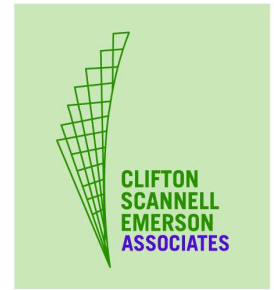
	Ballyboden Road Roundabout	
Ballyboden Road	North of Taylors Lane – Ballyboden Road Roundabout	11,450
Taylors Lane	East of Taylors Lane – Ballyboden Road Roundabout	19,800

Table 3.1 – Schedule of AADT's

3.3 Existing Water Courses

A number of watercourses exist within the extents of the scheme and are located as follows:

- The Tallaght Stream – Passes under the Old Bawn Road located to the south of the N81 Tallaght Bypass – Old Bawn Road junction.
- The Dodder River – Passes under the Old Bawn Road between the Old Bawn Road and Kiltipper Road junction and the Old Bawn Road and Firhouse Road junction. The River runs through the Dodder Valley proposed Natural Heritage Area.
- The Dodder River – A new bridge is to be constructed over the Dodder River linking the Dodder Valley Park North to Dodder Valley Park South. The location of the bridge is to the south of Seskin View Road and west of the Victory Centre. The River runs through the Dodder Valley proposed Natural Heritage Area.
- Unnamed Stream – This stream is also to be bridged as the proposed scheme passes through the Dodder Valley Park South. The stream is culverted to the south of the Knocklyon Road as it passes through the Carriglea housing estate.
- Owendoher River – The Owendoher River runs adjacent to the Edmonstown and Ballyboden Roads and passes under Taylors Lane to the west of the Taylors Lane – Ballyboden Road roundabout.



3.4 Material Assets

The proposed route is 6.5km in length. The vast majority of the route is proposed within the curtilage of existing road way; with its accompaniment of carriageway, surface drainage, public lighting, underground utilities, existing footpaths, grass verges, trees etc.

On some sections of the road an existing cycle track or cycle lane exists (e.g. Firhouse Road and Taylor's Lane). Other sections of the proposed route have discontinuous lengths of cycle track (e.g. Old Bawn Road.)

Where the route is proposed through open space at Dargle Wood and Dodder Valley Park it follows the line of the existing footpath where possible. A new shared cycle and pedestrian route is proposed across the Dodder River (with new bridge proposed to span the valley) and also in the existing open space in Monalea Estate.

The bridge at Old Bawn is a Recorded Monument (ref: 021-037 & 022-047). The route remains within the curtilage of the existing roadway at this location.



4 Description of the Proposed Development

4.1 Proposed Improvement Works

The proposed works are detailed as follows:

- 1 Construction of new off-road cycle tracks on Old Bawn Road, Knocklyon Road and Templeroan Road;
- 2 Construction of new shared facilities through the Dodder Valley Parks (north and south of the Dodder River), Monalea Park and Knocklyon Road;
- 3 Upgrade of existing off-road cycle tracks on the Firhouse Road and Scholarstown Road;
- 4 Upgrade of Old Bawn Road in Tallaght Village to incorporate cyclist facilities
- 5 Realignment of the Knocklyon Road from the Old Knocklyon Road junction to the Knocklyon Shopping Centre junction;
- 6 Provision of new advisory cycle lanes through the N81 - Old Bawn Road junction;
- 7 Junction improvements at the Firhouse Road West - Old Bawn Road junction, Old Bawn - Firhouse Road junction, Templeroan Road - Scholarstown Road junction and at the Ballyboden Road - Scholarstown Road junction
- 8 Road safety improvement works, including new Toucan Crossings, at:
 - Old Bawn Road – N81 junction, all arms
 - Old Bawn Road access into the Dodder Valley Park adjacent to Parkwood Road junction;
 - Firhouse Road - at Victory Centre
 - Firhouse Road – Monalea Wood junction
 - Ballycullen Road – Monlea Park junction
 - Knocklyon Road – Old Knocklyon Road junction
 - Knocklyon Road – Knocklyon Shopping Center
 - Knocklyon Road entrance into Dargle Wood Park
 - Templeroan Road – Dargle Wood Park
 - Scholarstown Road at Boden Park



- 9 Public realm upgrade works, including the introduction of a Wide Shared Street through:
 - Avonbeg Road
 - Mountain Park – St. Dominick's Road, The Crescent, St. Dominick's Terrace and Homelawn Road
 - Seskin View – Bawnville Road and Bawnville Park
 - Monalea Wood
- 10 Construction of two Pedestrian and Cycle Bridges over the Dodder River and in Dodder Valley Park.
- 11 Improvements to existing bus stops along the route;
- 12 Provision of bicycle parking and street furniture at locations along the route;
- 13 Replacement of affected trees and other landscaping works throughout the scheme;
- 14 Footpath improvement works throughout the scheme;
- 15 Provision of new road drainage and associated works where required;
- 16 Provision of new public lighting, CCTV surveillance cameras, road markings and signage where required.
- 17 All associated site works as necessary to complete the scheme.

A limited number of properties will be affected by the proposed scheme. As part of the Works a number of entrances into residential and business properties will be realigned and/or re-graded.

4.2 Bridges

There are two bridges to be constructed as part of the works, one over the Dodder River and the other over an unnamed stream leading into the Dodder River.

Bridge No. 1

Bridge No. 1, the Dodder Valley Bridge, joins the northern Dodder Valley Park to the Southern Dodder Valley Park to the south of Seskin View Road and to the west of the Victory Centre.



The bridge is to be constructed predominantly from steel, which will span circa 52m clearing the Dodder River flood plain (in excess of the 1:1,000 year storm in accordance with the CFRAMS report February 2012).

The main structure of the bridge will be a semi arched type truss constructed in tubular steel and aided by a double post pylon on the northern bank. The pylon will be tied to the deck using a cable stay on each side of the deck, which is tied to the top of the pylon. Both ends of the bridge will bear on concrete foundations. The northern bank will be made up with a concrete encased embankment, which will have a patterned concrete finish.

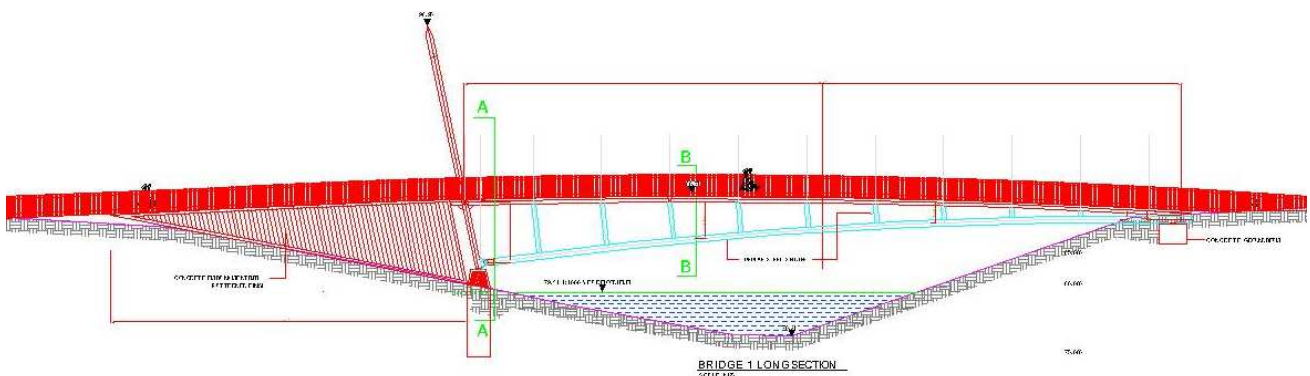


Figure 4.1 – Bridge 1 – Dodder Valley Bridge Proposed Elevation

Bridge No. 2

Bridge No. 2 is located within Dodder Valley Park South. It allows the proposed shared path span over an existing unnamed stream which flows towards the River Dodder.

The bridge is to be constructed predominantly from steel, which will span circa 23m. The main structure of the bridge will be straight I-beam sections inclined at the appropriate angle. Both ends of the bridge will bear on concrete foundations.

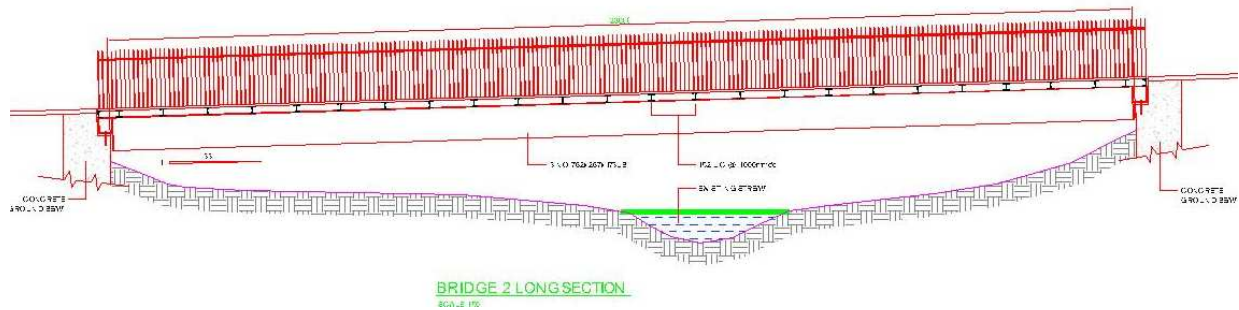
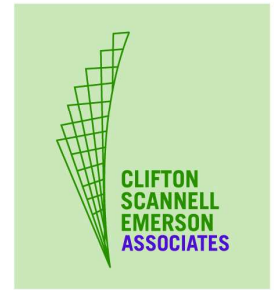


Figure 4.2 – Bridge 2 Proposed Elevation



5 Description of Activities Associated with the Proposed Development

The main elements of the Scheme are described in the Chapter 4. This Chapter briefly describes the main activities, equipment, and materials typical of road and bridge construction.

5.1 Online Sections of Cycle Track / Road Improvement

Where it is proposed to provide cycle tracks on the existing road on its current alignment, the pavement will be removed and re-constructed in accordance with the proposals for "Off-Line Sections of Road Improvement" below (with the exception of the excavation depth to be 600mm).

5.2 Offline Sections of Cycle Track provision

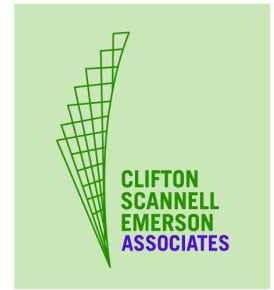
Where the proposed cycle works require sections of track to be constructed outside of the existing road footprint, topsoil and subsoil will be stripped by excavator to a depth of approximately 300mm-600mm below the proposed surface level depending on the nature of ground conditions. The topsoil will be stored for reuse for landscaping purposes. The exposed cycle track formation will be compacted with rollers before being covered with crushed stone material. It is not envisaged that rock will be encountered on this Scheme.

5.3 Bridge Construction

The proposed bridge will be constructed predominantly of steel with a GRP anti-slip deck surface. The steel structure will be crane lifted into position from the Dodder Valley Park. The bridge will be supported on concrete foundations, which will bear onto rock. The northern embankment will be built up to match the levels on the southern embankment, which will be encased in a concrete retaining wall.

5.4 Contractors Site Facilities

Contractors site facilities will be located as close to the works as possible and include toilets, office(s), materials store(s) and a basic workshop to carry out minor maintenance of construction equipment. For security purposes the site facilities will be fenced and illumination will be provided.



5.5 Salient Equipment and Materials Used During Construction

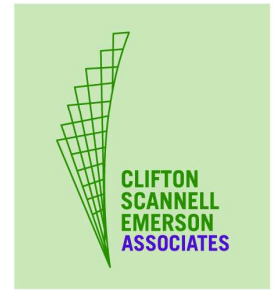
A list of salient equipment and material used during the construction and upgrading of roads and junctions is given in Table 5.1.

Equipment	Materials
<i>Road construction and Upgrading</i> Pneumatic tools (e.g. hammers, compactors) Generators Compressors Trucks Earth moving equipment (e.g. graders, front loaders)	Wood Signs Stone, Gravel, Bitumen Concrete, precast concrete elements
<i>Contractors Site Facilities</i> Fencing Portable toilets Pre-fabricated office(s) Diesel, oil and grease store(s)	Stone, Gravel, chippings, ducting, drainage pipes Stocks of ducting, drainage pipes, precast manhole rings etc. Traffic management material (cones, signs etc) Fencing Oil, grease, diesel drums Spare parts

Table 5.1. Equipment and materials used during roadwork construction activities

5.6 Working Times during Construction

Generally construction activities will be confined to 8.00am to 7.00pm Monday to Friday and 8.00am to 4.30pm on Saturdays.



6 The Proposed Development's Environmental Aspects, Impacts and Mitigation Measures

6.1 Methodology

This Chapter describes how activities may interact with the environment during the construction and operation phases. This interaction is termed “environmental aspect”.

Each aspect directly or indirectly causes one or more environmental impacts under planned or unforeseen conditions. An unforeseen condition occurs as a result of an accidental event outside the scope of normal operation, which results in damage to material assets and direct or indirect impacts on human and physical environments (e.g. motor vehicle collisions). For the purposes of this assessment short term impacts are three years or less.

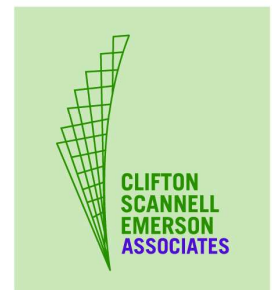
Environmental impacts have been predicted using a desktop study and a site scan. Impacts are rated under unmitigated circumstances, however numerous mitigation measures proposed in this Chapter will avoid, reduce or remedy most impacts.

6.2 Construction Phase

Predicted environmental aspects, impacts and mitigation measures associated with constructing the Scheme's main elements are given in this section.

6.2.1 Human Beings

Predicted impacts on human beings include travel/access, employment, vehicular and pedestrian traffic and community severance.



a) Employment

Aspect:	People will be employed to build the Scheme.
Impact:	Income will be generated for local businesses causing multiplier effects on the local economy. This will be a slight positive impact of short-term duration.
Proposed Mitigation Measure(s):	No mitigation measures required.

b) Community Severance

Aspect:	<p>The construction activities, and in particular those activities relating to the works on the 2 roundabouts on Taylors Lane, may result in occasional short-term community severance.</p> <p>Long term effects of the Scheme will be positive in terms of linking communities and providing alternative modes of transport</p>
Impact:	In the short term; Increased difficulty for local residents/businesses to travel between each other's homes/premises. Long term impact post construction will be strongly positive.
Proposed Mitigation Measure(s):	<ul style="list-style-type: none"> • Where necessary temporary pedestrian measures will be included into the traffic management arrangements • Temporary pedestrian crossings will be provided, if necessary, at locations agreed with local representatives following consultation; • Road users and local residents will be forewarned of possible road closures with liaison, signage and other appropriate media and methods.

6.2.2 Traffic

Aspect:	Some restrictions to vehicular, cyclist and pedestrian traffic movements are likely during the construction of the scheme, particularly at junctions and areas where the carriageway widths are being narrowed. In addition increased numbers of Works-related traffic, including material supply and removal and transportation of
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	<p>equipment and workers, will temporarily increase traffic demand on the approaches.</p> <p>Post construction; the route will result in a direct, continuous and upgraded route for pedestrians and cyclists with increased cycle and pedestrian safety particularly at junctions.</p>
Impact:	<p>Pedestrians, cyclists and vehicular traffic will be affected by the construction of the new cycle tracks, roads and junctions in the short term. The effects are likely to consist, primarily, of delays and associated queuing in particular areas. These effects may result in some drivers choosing alternate routes during construction.</p> <p>Temporary diversions and delays to traffic may be an inconvenience to road users, particularly during the peak hours in the mornings and late afternoons. These negative impacts are predicted to be moderate. Deliveries to and from local businesses may also be similarly affected. Long term impact once route is constructed is overall positive.</p>
Proposed Mitigation Measure(s):	<ul style="list-style-type: none"> • Two-way traffic flow will be maintained along sections of the Scheme during peak times for the duration of construction; • Restrictions on traffic flow will be limited to hours outside of the morning and evening peak; • Alternative routing will be provided where possible; • Temporary traffic management arrangements will be required to include for pedestrians & cyclists; • Road users and local residents will be forewarned of possible road closures with liaison, signage and other appropriate media and methods.

6.2.3 Third-Party Access Requirements during Construction

Aspect:	Construction activities may inhibit access to properties, educational and business premises and recreational parkland areas.
Impact:	Vehicular access to properties on the Old Bawn Road may be temporarily closed during construction.



Proposed Mitigation Measure(s):	The Contractor will liaise with property owners in order to ensure that access is maintained as required to each individual property / residence. Works that temporarily impact with accesses will be undertaken at times agreed with each individual property owner so that that access is maintained as required to each individual property / residence.
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6.2.4 Flora and Fauna

Aspect:	Construction of new cycle tracks, footpaths and roads and bridges within public lands and road reservation corridors including disturbance by contractor's site facilities.
Existing Environment:	<p>The route travels from Tallaght to Ballyboden mostly along roadways with limited potential impact on flora and fauna with the exception of existing road side trees. Where roadside trees are proposed for removal it is proposed to replace the trees in other locations adjacent where possible. A landscape plan is being prepared for the route which will include proposed large scale tree replacement and new tree planting as appropriate.</p> <p>Off-road sections of the route pass through open space at Dodder Valley Park, and at Dargle Wood.</p> <p>Dargle Wood is an existing open space of mainly grass land with some mature trees belts within a residential estate. It is bounded by residential estates to the north and south and roadways to the east and west. There is no impact to flora and fauna in Dargle Wood</p> <p>The stretch of the River Dodder under consideration extends for about 2 kilometres between Firhouse bridge and Oldbawn bridge in the south-west of Dublin city.</p> <p>The vegetation consists of woodland scrub mainly of Willow (<i>Salix</i> spp.), but up to 13 species of tree have been recorded. Understorey</p>



vegetation contains Early Purple Orchid (*Orchis mascula*) and Bugle (*Ajuga reptans*). Along the banks there are wild flower meadows with a good diversity of plant species. There is also a pond in the river bed at Firville which has flourished greatly since the floods of 1986.

Forty-eight species of bird have been recorded recently in the area including Little Grebe, Kingfisher, Dipper and Grey Wagtail. Part of the river bank supports a Sand Martin colony of up to 100 pairs.

This site represents the last remaining stretch of natural river bank vegetation of the Dodder in the built up Greater Dublin Area.

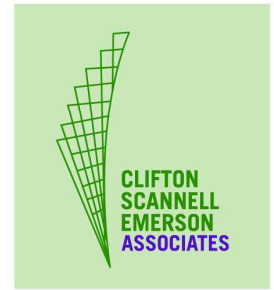
Dodder Valley Park contains a proposed Natural Heritage Area. The Dodder River runs within a deep valley area. At the particular section under consideration; to the north east of Old Bawn Bridge the valley sides are tree lined and steep. The park contains existing footpaths but these are located back from the valley sides. The remainder of the parkland is mainly grass land with tree planting.

A bat survey was carried out within the Dodder Valley area in May 2012 by an ecological consultant.

The presence of three species of bats was confirmed from the Dodder River during the survey carried out in 2012 and additional species and potentially another few are also known from the park from previous surveys.

Soprano pipistrelle *Pipistrellus pygmaeus*

The soprano pipistrelle's echolocation calls peak at 55 kHz, which distinguishes it readily from the common pipistrelle on detector. The pipistrelles are the smallest and most often seen of our bats, flying at head height and taking small prey such as midges and small moths. Summer roost sites are usually in buildings but tree holes and heavy



	<p>ivy are also used. Roost numbers can exceed 1,500 animals in mid-summer.</p> <p><u>Leisler's bat <i>Nyctalus leisleri</i></u></p> <p>This species is Ireland's largest bat, with a wingspan of up to 320mm; it is also the third most common bat, preferring to roost in buildings, although it is sometimes found in trees and bat boxes. It is the earliest bat to emerge in the evening, flying fast and high with occasional steep dives to ground level, feeding on moths, caddis-flies and beetles. The echolocation calls are sometimes audible to the human ear being around 15 kHz at their lowest. The audible chatter from their roost on hot summer days is sometimes an aid to location. This species is uncommon in Europe and as Ireland holds the largest national population the species is considered as Near Threatened here.</p> <p><u>Daubenton's bat <i>Myotis daubentonii</i></u></p> <p>This species is associated with riparian areas in Ireland. It forages over open water, trawling emerging insects off the water surface. It is very widespread; roosting in bridges, buildings and trees.</p> <p>The presence of badgers (<i>Meles meles</i>) within the Park was confirmed during the site visit. Foraging signs of badger were also observed in this general area.</p> <p>The presence of otter (<i>Lutra lutra</i>) was confirmed at a number of locations along the Dodder River. The Dodder River obviously forms a natural corridor for the movement of otters between the Wicklow Mountains SAC (for which otter is a qualifying interest) and the River Liffey and hence is of conservation importance. No otter holts were recorded.</p>
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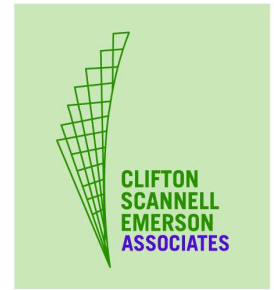
	<p>The River Dodder supported several pairs of mallard duck (<i>Anas platyrhynchos</i>), and several grey heron (<i>Ardea cinerea</i>) while kingfisher (<i>Alcedo atthis</i>) has also been recorded on the River Dodder but was not observed during the current survey. The kingfisher is a species listed under Annex I of the EU Birds Directive, which states that species mentioned in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution. Dipper (<i>Cinclus cinclus</i>) is also frequent on the river. The sand martins appear to have abandoned their traditional nesting site which was in the vicinity of O 103 269 in recent years. This is probably as a result of the growth of willows and other vegetation below the bank which have obscured direct access to the bank.</p> <p>A good variety of common bird species were recorded during the survey. These include blackbird (<i>Turdus merula</i>), wren (<i>Troglodytes troglodytes</i>), robin (<i>Erithacus rubecula</i>), dunnock (<i>Prunella modularis</i>), song thrush (<i>Turdus philomelos</i>) and mistle thrush (<i>Turdus viscivorus</i>).</p> <p>Other species recorded include; rook (<i>Corvus frugilegus</i>), jackdaw (<i>Corvus monedula</i>), hooded crow (<i>Corvus cornix</i>) and magpie (<i>Pica pica</i>). Both feral pigeon (<i>Columba columba domest.</i>) and woodpigeon (<i>Columba palumbus</i>) were frequently encountered and several flocks of starlings (<i>Sturnus vulgaris</i>) were recorded.</p> <p>A number of butterflies were encountered during the survey. These included; holly blue (<i>Celastrina argiolus</i>), common blue (<i>Polyommatus icarus</i>), tortoiseshell (<i>Aglais urticae</i>), peacock (<i>Inachis io</i>) and speckled wood (<i>Pararge aegeria</i>).</p> <p>There are a number of rare and protected plant species recorded</p>
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	<p>from the 10km squares in which Dodder Valley Park is located (O 02 and O 12) (NPWS databases).</p> <p>These include:</p> <ul style="list-style-type: none"> • <i>Viola hirta</i> (Hairy violet); a rare species of sand dunes and calcareous grassland, historically known from Greenhills. • <i>Hammarbya paludosa</i> (Bog orchid); an orchid species recorded from wet flushes and bogs upstream in the Dodder Valley near Glenasmole. • <i>Galeopsis angustifolia</i> (Red hemp-nettle); a species of river gravel exposures, a colonist of corn fields and waste ground, reduced through use of weed killers, historically recorded from Old Bawn, Bohernabreena, Dundrum and Two and Three Rock Mountain. • <i>Cephalanthera longifolia</i> (Narrow-leaved helleborine); an orchid species of wet woods on calcareous soils, historically known from Glenasmole. • <i>Sanguisorba officinalis</i> (Great burnet), historically known from Templeogue, • <i>Pseudorchis albida</i> (Small white orchid); historically known from Three Rock Mountain. • <i>Misopates orontium</i> (Lesser snapdragon); historically known from Belalley Park. <p>None of these species were recorded during the 2012 site survey, but rare plant searches were not the focus of the site visit.</p> <p>Inland Fisheries Ireland report that the River Dodder supports breeding populations of both brown and sea trout (<i>Salmo trutta</i>).</p> <p>Two species of lamprey, the brook lamprey (<i>Lampetra planeri</i>) and river lamprey (<i>Lampetra fluviatilis</i>) are known from the 10km square</p>
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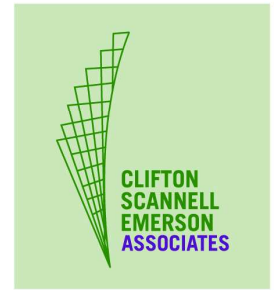
	<p>in which the Dodder Valley Park is located (Kurz & Costello (1999) and NPWS (2007)).</p> <p>There are a series of calcareous springs along the banks of the River Dodder within the park. Some of these have been damaged by bankside stabilisation works (boulder reinforcements) but others are tufa forming and have deposits of tufa and iron rich staining. These correspond to the habitat Petrifying springs with tufa formation (Cratoneurion) which is a habitat type listed under Annex I of the EU Habitats Directive. In some sections of the river there have been recent slumping/landslips of the bank.</p> <p>There are some excellent examples of calcareous grassland on the south-east facing slopes on the northern side of the River Dodder. These slopes appear to be managed by the parks department in South Dublin and have good elements of calcareous grassland such as bulbous buttercup (<i>Ranunculus bulbosus</i>), oxeye daisy (<i>Leucanthemum vulgare</i>), cowslip (<i>Primula veris</i>), doves-foot cranes-bill (<i>Geranium molle</i>), ribwort plantain (<i>Plantago lanceolata</i>), tufted vetch (<i>Vicia cracca</i>), wild carrot (<i>Daucus carota</i>), glaucous sedge (<i>Carex flacca</i>), yarrow (<i>Achillea millefolium</i>), bird's-foot trefoil (<i>Lotus corniculatus</i>), fairy flax (<i>Linum catharticum</i>), field wood rush (<i>Luzula campestris</i>), St. John's-Wort (<i>Hypericum</i> sp.), wild marjoram (<i>Origanum vulgare</i>), restharrow (<i>Ononis repens</i>), creeping cinquefoil (<i>Potentilla reptans</i>), bush vetch (<i>Vicia sepium</i>), salad burnet (<i>Sanguisorba minor</i>), hogweed (<i>Heracleum sphondylium</i>), red clover (<i>Trifolium pratense</i>), coltsfoot (<i>Tussilago farfara</i>), red fescue (<i>Festuca rubra</i>), dandelion (<i>Taraxacum</i> agg.), knapweed (<i>Centaurea nigra</i>), self heal (<i>Prunella vulgaris</i>), yellow rattle (<i>Rhinanthus minor</i>) and yellow clover (<i>Trifolium dubium</i>).</p> <p>No orchids were recorded during the site visit but it was early in the season and they would be expected particularly in the grassland on</p>
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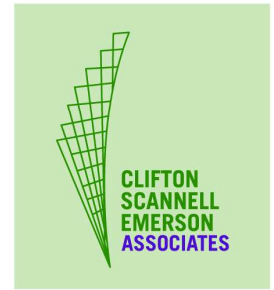
	<p>the northern side of the river. A good variety of orchids have been recorded further downstream along the River Dodder at Templeogue by Dr Peter Foss as part of the Orchid Ireland project – these include pyramidal orchid (<i>Anacamptis pyramidalis</i>), common spotted orchid (<i>Dactylorhiza fuchsii</i>) and heath spotted orchid (<i>Dactylorhiza maculata</i> subsp. <i>ericetorum</i>). Early purple orchid (<i>Orchis mascula</i>) was previously known from the Dodder Valley Park (NPWS files).</p> <p>Areas of grassland on the southern side of the river were coarser and less species rich – perhaps they are not mown as frequently/or at all. Some of these areas on the southern side had undergone recent disturbance such as burning (in the vicinity of O 102 267) while in other areas there had been removal of turves of vegetation which had reduced soil fertility and allowed a greater diversity of species to occur (in the vicinity of O 161 266). A review of the aerial photography for the site on the Ordnance Survey Ireland website http://maps.osi.ie/publicviewer/#V1,710083,726827,5,9 shows the southern banks of the park were also burnt in 2000. An appropriate mowing regime would restore the diversity of the calcareous grassland on this side of the river.</p>
Impact:	<p>There is no impact to flora and fauna in Dargle Wood</p> <p>The route is proposed through the parkland area of Dodder Valley by widening some existing footpaths to a shared walking and cycling route. These will have limited impact as the existing pathways run through grass land and are located away from the valley area. A pedestrian and cycle bridge is proposed over the Dodder River and the proposed Natural Heritage Area, where there is a potential impact on trees, the river bank and the flora and fauna therein. A new shared walking and cycling route from the bridge through the Dodder Valley Park on the south eastern river bank is proposed to link to the Firhouse Road. A bridge is required to cross a smaller tributary of the</p>



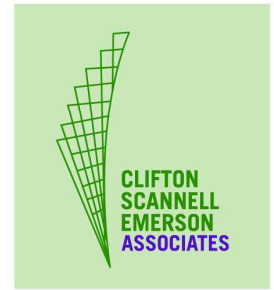
	<p>Dodder. This open space area is mainly grass land with some trees which will the route will avoid.</p> <p>Bat species:</p> <p>The proposed cycle and pedestrian route does not impact on any known bat roosts in the area and thus a bat derogation licence is not required for disturbance/works to any bat roost. The scheme has the potential to cause disturbance to bats through the installation of inappropriate lighting and the loss of foraging habitat. Mitigation measures to offset these impacts are outlined below:</p>
Proposed Mitigation Measure(s):	<p>The main route through the north west of the Dodder Valley is proposed along the line of existing footpaths away from the valley edge. The route proposes to cross the valley and the Dodder River at the narrowest section of the proposed Natural Heritage Area, thus decreasing the potential for impacts on protected areas and ensuring as much as possible that required foundations remain outside the boundary of the proposed Natural Heritage Area. The area chosen also represents the least wooded portion of the river bank within this area of the park and provides an opportunity to bridge the river with the least impact on existing trees and vegetation. The bridge is proposed to span the valley at a high level to prevent possible disturbance of the river edges and potential impact on flood conditions etc.</p> <p><i>Protection of riparian corridor</i></p> <p>The existing natural riparian vegetation cover along the River Dodder will be retained and enhanced to ensure that the river valley may continue as contiguous natural habitat for bats which use it for both commuting and foraging purposes.</p> <p><i>Reduction of light disturbance</i></p>



	<p>Design recommendations from the BCT (2010) for wildlife-friendly lighting will be implemented along the route through the sensitive parkland areas and along the proposed bridges:</p> <p>In general any lighting used on the bridge should only illuminate the bridge and should not overspill into the river below or onto adjoining vegetation thereby ensuring that a dark corridor for foraging and commuting bats is maintained.</p> <p>A detailed specification for lighting used on other cycle paths in the city such as between the 3rd Lock at Inchicore and the 12th lock at Newcastle Road on the Grand Canal in Dublin is available online at: http://eleceng.dit.ie/sdar/IrishLighter/il_2011/AlexNaper.pdf. This specified an illuminance level on the Grand Canal of no greater than 0.25 lux and on the path/cycle track of a minimum of 1.5 lux and an average of 7.5 lux. Similar light levels should be adhered to on the proposed bridge crossing of the River Dodder.</p> <p>The presence of otters was confirmed from the Dodder River and their signs (spraints) were recorded. The proposed cycle and pedestrian route does not impact on any otter holts currently known from the area but suitable habitat does exist in a number of areas along the river.</p> <p>Depending on the length of time which has elapsed before construction of the proposed bridge for the cycle and pedestrian route a pre-construction survey may be required to check for any new otter holts, which may have been constructed in areas close to the proposed route. If there is a risk that the resting or breeding place of an otter may be damaged or destroyed the applicant must seek a <u>derogation licence</u> from the Minister for the Environment, Heritage and Local Government under Regulation 25 of the Habitats</p>
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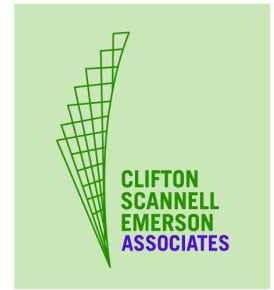
	<p>Regulations.</p> <p>The existing natural riparian vegetation cover along the River Dodder should be retained and enhanced to ensure that the river valley may continue as contiguous natural habitat for Otter. Unrestricted access to the banks and channel of the River Dodder will be maintained for otter.</p> <p>The main potential impact of the proposed cycling route on otter is disturbance as a result of increased use by people, dogs, etc. of the southern side of the river – this area is currently less used than the northern banks.</p> <p>The bridge piers/abutments will be set back from the River Dodder and existing natural vegetation allowed to grow and develop undisturbed along the watercourse. This will reduce human disturbance and hence impacts on otter.</p> <p>Park visitors will be encouraged to keep their dogs on a lead when using Dodder Valley Park – this would also prevent disturbance of other fauna within the park such as waterfowl.</p> <p>Consideration will be given to the provision of long lengths of large diameter tree trunks lying on the ground close to water (Forestry Commission Scotland (2007)). These can also be stacked to not only provide otters with cover, but also made into an artificial otter holt.</p> <p>Small piles near the water edge will likely be actively used by otters in territory marking with spraints.</p> <p>The presence of badgers within the Dodder Valley Park was confirmed and a series of mitigation measures is recommended.</p> <p>During the construction phase of the development activities may pose</p>
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	<p>a temporary threat to badgers or disturbance. This will be mitigated against by adopting some of the following practices.</p> <ul style="list-style-type: none">• An ecologist will set out a proposed exclusion zone in collaboration with the site engineer in advance of works commencing.• There will be no use of heavy machinery within 30m of any entrance to an active sett.• Access to foraging areas will be maintained. Any fencing demarking the site/temporary working areas, including access roads/track, will have a raised Herras fence ~ 150mm above ground at 75m intervals. These will allow mammals (otters and badgers etc) free access across, and a means of escape from, these working areas.• The use of noisy plant and machinery in the vicinity of the protection zone will cease at least two hours before sunset.• Any security lighting will be directed away from setts and woodlands.• Chemicals will be stored as far away from the setts and badger paths as possible.• If trenches are constructed as part of the proposed works they will be covered at the end of each working day, or include a means of escape for any animal falling in.• Any temporarily exposed open pipe system will be capped in such a way as to prevent badgers gaining access as may happen when contractors are off site.• Badger gates may need to be installed in perimeter fencing. If so, specialist advice should be sought.• Access to the river (as a water source for the badgers) must be maintained and safeguarded.• Should vegetation removal be required both scrub and trees will be felled away from setts and must not block
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	<p>badger paths.</p> <ul style="list-style-type: none"> • The losses of primary and secondary badger foraging habitat will be minimised by avoidance of loss of woodland and grassland. • Habitat fragmentation will be minimised through the retention of existing landscape features used as movement corridors (hedges, tree-lines, riparian strips). <p>The presence of several invasive terrestrial vascular plants was noted during the site survey. These include winter heliotrope (<i>Petasites fragrans</i>) notably at O 10260 26702 - Japanese knotweed (<i>Fallopia japonica</i>) was also present at this location, Japanese knotweed was also recorded at O 09808 26301 and Buddleia (<i>Buddleia davidii</i>) was present at O 10244 26771, O 10224 26748 and O 09925 26460. Japanese knotweed is listed on the Invasive Species Ireland website under the most unwanted terrestrial invasive species category and information on how to remove it is detailed on the website (http://www.invasivespeciesireland.com/mostunwanted). Winter heliotrope and buddleia is listed as a non-native invasive species in the NRA <i>Guidelines on the Management of Noxious Weeds and Non-native Invasive Species on National Roads</i> (NRA (2009)) and guidelines for both the physical removal and chemical control of these species are provided in this document which is available for download at http://www.nra.ie. Specific care will be taken to ensure that the current distribution of these species within the park is not further exacerbated through careless soil movement or other construction activities.</p> <p>The location of the proposed bridge crossing is set out to avoid impacting on species rich grassland habitats. The bridge option proposed is preferred in this regard as it can be aligned to avoid both the best areas of calcareous grassland on the northern bank as well</p>
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	<p>as the areas of badger activity.</p> <p><u>Nesting season</u></p> <p>There will be no removal of scrub or other vegetation during the breeding bird season (March – August inclusive).</p> <p><u>Sand Martin colony</u></p> <p>The sand martin colony which was formerly present in the general vicinity of O 103 269 has been abandoned in recent years due to the growth of heavy vegetation in the area. This has resulted in the loss of one of the main biodiversity features in the site. This traditional nesting area could either be reinstated through judicious pruning and removal of vegetation or alternatively consideration could be given to the inclusion of a sand martin/kingfisher bank as part of the bridge construction.</p> <p><u>Kingfisher bank</u></p> <p>Similarly consideration will be given to the incorporation of a kingfisher nesting bank below the proposed bridge crossing as part of the works. Further details are provided in the Environment Agency document 'Best Practice Guidelines - Artificial Bank Creation for Sand Martins and Kingfishers' which is available online from http://www.lbp.org.uk/downloads/Publications/Management/artificial_bank_creation.pdf</p> <p>Given that the Dodder River is a known salmonid watercourse, which supports a run of brown and sea trout no works which may give rise to siltation or other pollution in the river should be allowed during the annual close season for salmonids which is typically from October to March inclusive although these dates can vary from watercourse to watercourse. The guidelines presented in the Eastern Regional Fisheries Board 'Requirements for the Protection of Fisheries Habitat</p>
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	during Construction and Development Works at River Sites' should be followed.

6.2.5 Soil & Groundwater

Aspect:	Spillage and/or leakage of petrochemicals from petrochemical storage facilities, construction vehicles etc. onto soils.
Impact:	<p>Site investigations show the presence of limestone bedrock beneath the site to at least 12m below ground level, the maximum depth of the investigation. Site investigation works were carried out on the northern and southern banks of the proposed Dodder Valley Bridge only.</p> <p>The site investigation results indicate that topsoils cover approximately 300mm of the top section of ground. Subsoils consist of stiff brown black slightly sandy gravelly silt CLAY with medium cobble content. It has been indicated that this has possibly been made ground, which would back up the Osi history maps. Further down the sub soil turns to a firm grey slightly sandy gravelly silty CLAY with medium cobble content.</p>
Impacts:	<ul style="list-style-type: none"> • The underlying soils and aquifer may be at risk from accidental spillages of oils and chemicals that could contaminate soils and groundwater. • Suspended solids from earthwork activities could enter receiving waters causing pollution.
Proposed Mitigation Measure(s):	<p>The impact to the soil and underlying groundwater is predicted to be neutral provided the following mitigation measures are implemented.</p> <ul style="list-style-type: none"> • Topsoil excavated, as part of the works shall be reused in reinstatement and landscaping. • A Pollution Control Plan shall be in place for the construction stage. The plan shall incorporate measures such as: <ul style="list-style-type: none"> - Minimisation of the area and period of time that soil



	<p>will be exposed;</p> <ul style="list-style-type: none"> - Designating appropriate locations and methods for storing soils/aggregates and for any oils/lubricants and other potentially polluting substances involved in the construction process; - Inspection/certification to ensure that vehicles are leak free prior to access to site; - Use of temporary sediment trapping/settling devices; - Re-vegetating/stabilising exposed areas as soon as practicable - An emergency plan to deal with accidental spillages.
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6.2.6 Water

Aspect:	<p>Surface water drainage exists on all roads involved in the scheme. The scheme crosses a number of significant water courses, mainly:</p> <ul style="list-style-type: none"> • The Tallaght Stream • The Dodder River • An unnamed Stream in the Dodder Valley Park South • Owendoher Inland Fisheries Ireland report that the River Dodder supports breeding populations of both brown and sea trout (<i>Salmo trutta</i>).
Impact:	<ul style="list-style-type: none"> • Interference with, or cutting off of, existing land drains and ditches where they are crossed. • Scheme works in the vicinity of the Dodder River may negatively impact on the existing river environment. • Inland Fisheries Ireland report that the River Dodder supports breeding populations of both brown and sea trout (<i>Salmo trutta</i>).
Proposed Mitigation Measure(s):	<ul style="list-style-type: none"> • All construction works adjacent or over existing watercourses will require the use of shielding to avoid any contamination from construction activities. A Pollution Control Plan shall be in place for the construction stage as described in 6.2.5. • Given that the Dodder River is a known salmonid watercourse,



	<p>which supports a run of brown and sea trout no works which may give rise to siltation or other pollution in the river will be allowed during the annual close season for salmonids which is typically from October to March inclusive although these dates can vary from watercourse to watercourse. The guidelines presented in the Eastern Regional Fisheries Board 'Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites' will be followed.</p>
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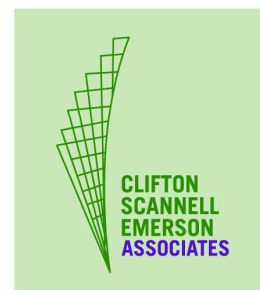
6.2.7 Air & Noise

a) Noise

Aspect:	Generation of noise near residential and commercial premises during working hours by the operation of construction vehicles and equipment and by trucks travelling from construction sites.
Impact:	There may be noise nuisance impact to residences in the vicinity of the Scheme. These negative impacts will be of short-term duration
Proposed Mitigation Measure(s):	<ul style="list-style-type: none"> • Construction activities taking place outside the period between 8.00am and 7.00pm must receive written permission from the Employers Representative and South Dublin County Council. This excludes the pumping out of excavations, security and emergency works; • Construction vehicles and equipment will be properly maintained; • Equipment used intermittently will be shut down or throttled back to a minimum during periods when not in use; • All vehicles and equipment will where appropriate, be fitted with exhaust silencers.

b) Vibration

No perceptible impacts caused by vibration are predicted during the construction phase.



c) Lighting

Aspect:	Nighttime security lighting at the contractor's site facilities may be provided near residences.
Impact:	If contractor's site facilities are located in close proximity to residences there may be a slight short-term light disturbance.
Proposed Mitigation Measure(s):	<ul style="list-style-type: none"> • Light impact from the contractor's site facilities will be minimised. • Lighting will be directed onto the contractor's site facilities and work surfaces and away from adjacent residences to minimise any potential impact. • The mitigation of light has been designed into the bridge and lighting standards to protect bats in valley as outlined under 6.2.4 Flora and Fauna above.

6.2.8 Climate\Air Quality

Aspect:	<p>The prevailing wind in Ireland is from a quadrant centred on west-southwest. These are relatively warm winds from the Atlantic and frequently bring rain. Easterly winds are weaker and less frequent and tend to bring cooler weather from the northeast in spring and warmer weather from the southeast in summer.</p> <p>The prevailing wind direction for the area in the proximity of the route is between south and west. Wind characteristics vary between a gentle to moderate breeze throughout the year. Annual average wind speeds range between 8.7 and 14.1 knots with highest wind speeds occurring during winter months. Lowest wind speeds occur in the June, July and August period. On average there are approximately 20.3 days per year with gales. The mean yearly precipitation level is 711.4mm.</p> <p>The mean yearly temperature for the area is 9.3° C. The month showing the highest average temperature is July with a temperature of 15.2° C. The lowest average monthly temperature of 4.6° C occurs in February.</p> <p>The greatest threat to the existing climate conditions in Ireland is</p>
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	from greenhouse gas emissions and global warming. According to the National Climate Change Strategy the Republic of Ireland emissions of greenhouse gases in 1990 were equivalent to 55.6 million tonnes (Mt) of CO ₂ . Actual figures from 2004 indicate that emissions of greenhouses gases in Ireland were 23% above the 1990 levels. It is predicted that without the measures outlined in the National Climate Change Strategy this figure could rise to 37% by 2010.
Impact:	There are no perceptible impacts on climate during the construction phase. There may be a dust impact on nearby residences, however this impact may be a slight nuisance or imperceptible.
Proposed Mitigation Measure(s):	<ul style="list-style-type: none"> • Frequent dust suppression will take place on exposed soil surfaces; • Stored materials emitting dust will be covered when not in use; • Dust monitoring will take place at sensitive industries whose activities and/or products may be negatively impacted on.

6.2.9 Landscape

Aspect:	<p>Change of landscape due to construction activities during the building of new cycle tracks, roads and bridges.</p> <p>The scheme has predominantly been routed through an existing urban environment, save for the bridge and shared path construction, which have been brought through the Dodder Valley Park and over the Dodder River. The Dodder Valley Parks are wide open green areas with some sharp inclines into the Dodder River. The river is lined with large mature trees of various species. The parklands have some individual trees and clusters of trees located throughout. The roads on the main route of the scheme are lined with various individual trees and grass verges.</p>
Impact:	The construction phase of the project in general will have a moderate negative impact on the nearby receptors, as this will result in the addition of construction machinery, intermittent road diversions, an



	increase in dust, and other temporary structures being added to the landscape and viewed throughout the process. The removal of existing vegetation is also an impact undertaken during construction.
Proposed Mitigation Measure(s):	<ul style="list-style-type: none"> • In the landscape design, the re-instatement of tree lines will be introduced where necessary. New structured landscaping will be introduced in feature locations. • The mitigation of light has been designed into the bridge and lighting standards to protect bats in valley as outlined under 6.2.4 Flora and Fauna above.

6.2.10 Material Assets

These impacts include public utilities (gas, water, drainage, electricity, telecommunications etc.) and property.

a) Public Utilities

Aspect:	Potential disruption of electricity, water, gas or water services to residential and commercial premises under planned and unforeseen conditions.
Impact:	The impact may be an inconvenience to residential and commercial premises.
Proposed Mitigation Measure(s):	<ul style="list-style-type: none"> • Excavation works will be carried out by contractors working under the supervision of the relevant utility company to ensure conformity to technical specifications and standards as well as to minimise the interruption of service; • When disruption is planned, affected residences and industries will be forewarned of disruptions to services using signage in public places and other appropriate media; • When disruption is unplanned, the disrupted service will be repaired as soon as practicably possible.



b) Property

Aspect:	Proposed road works may have a negative impact on property.
Impact:	Removal of the existing footpath access into the Knocklyon Shopping Centre. There will be an impact on the existing retaining walls and landscapes areas.
Proposed Mitigation Measure(s):	It is proposed to widen the existing path in this area to a 4m wide shared path. This will require a new retaining wall and some repair works to the existing car park area.

6.2.11 Cultural Heritage

Aspect:	The route runs along the road on the bridge at Old Bawn, which is a recorded monument ref 021-037 & 022-047. Tallaght village is a designated Architectural Conservation Area.
Impact:	As the route remains within the existing road curtilage at these locations there is low potential for impact during the course of construction.
Proposed Mitigation Measure(s):	None

6.3 Operational Phase

Predicted environmental aspects, impacts and mitigation measures associated with the operation of the Scheme are given in this section.

6.3.1 Human Beings

No perceptible negative impacts on employment are predicted during the operational phase.

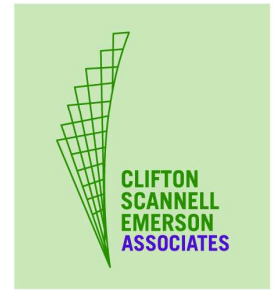


6.3.2 Vehicular and Pedestrian Traffic and Community Severance

Aspect:	Alteration of traffic flow patterns as a result of the operation of the Scheme and impact on pedestrian and cycle movements in the vicinity of the Scheme.
Impact:	<p>There will be no change to traffic flow patterns as a result of the Scheme. Traffic queuing may increase on the approaches to remodelled junctions. The following junctions have been redesigned:</p> <ul style="list-style-type: none"> • Old Bawn Road – N81 junction • Old Bawn Road – Seskin View Road • Old Bawn Road – Firhouse Road • Ballycullen Road – Monlea Park junction • Knocklyon Road – Old Knocklyon Road junction • Knocklyon Road – Knocklyon Shopping Center • Templeroan Road – Taylors Lane • Taylors Lane – Ballycullen Road <p>There will be new pedestrian and cycle facilities included throughout the Scheme. The pedestrian crossing facilities and new footpath and cycletracks will provide greatly improved and safer conditions for road users, cyclists and pedestrians. The proposed scheme will therefore have a positive effect in meeting the travel and access needs of those living and working in the wider area.</p>
Proposed Mitigation Measure(s):	None.

6.3.3 Flora and Fauna

No perceptible impacts on flora and fauna are predicted during the operational phase. Mitigation measures implemented during construction phase and maintained as relevant to protect flora and fauna in particular bat, badger, and otter species identified in the Dodder Valley Park and the protection of calcareous grassland and calcareous springs will be maintained as relevant. (e.g. control of dogs, mowing regimes, encouragement of kingfisher and sand martin species, lighting control,



retention and enhancement of riparian and ecological corridor along the dodder valley).

6.3.4 Soil

No perceptible impacts on soil and groundwater are predicted during the operational phase.

6.3.5 Soil

Aspect:	A description of the existing environment can be seen in section 6.2.
Impact:	The proposed works will result in a slightly increased run-off but this is carried in a closed drainage system to the outfall.
Proposed Mitigation Measure(s):	Drainage will be assessed locally and dealt with through a form of existing and proposed drainage layouts. Attenuation areas, swales and soakpits will be introduced as necessary.

6.3.6 Air & Noise

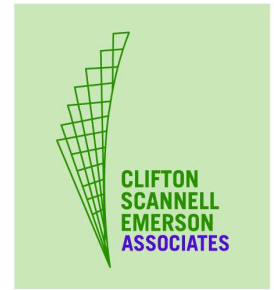
A description of the existing environment can be seen in section 6.2

a) Noise

Aspect:	Noise will be generated by the introduction of a signalised junction at the Templeroan Road – Taylors Lane junction and the introduction of the fully segregated roundabout at Taylors Lane – Ballyboden Roundabout
Impact:	Traffic noise will be generated by traffic stopping and starting at these locations, including increased engine noise etc.
Proposed Mitigation Measure(s):	None.

b) Vibration

No perceptible impacts caused by vibration are predicted during the operational phase.



6.3.7 Climate\Air Quality

No perceptible impacts on climate or air quality are predicted during the operational phase.

6.3.8 Landscape

Aspect:	The existing landscape will change due to the introduction of cycle tracks through grass verges and parklands.
Impact:	The proposed scheme predominantly involves the introduction of a cycle track or shared surface over its length. The works are primarily on the line of the existing road so the only change to the landscape will be to existing grass verges and tree lines.
Proposed Mitigation Measure(s):	A landscape design has been carried out which includes replacing trees and planted areas, which have been removed as part of the construction with new planting indigenous to the surroundings.

6.3.9 Material Assets

No perceptible impacts on material assets are predicted during the operational phase.

6.3.10 Cultural Heritage

No impacts on Cultural Heritage are predicted during the operational phase.

6.4 Summary of Predicted Environmental Impacts

Predicted environmental impacts during the construction and operation phase are summarised in Table 6.1 below. The significance of impacts is assessed under unmitigated and mitigated circumstances.



Environment	Abbreviated Aspect \ Impact	Positive/ Negative/ Neutral	Duration	Significance (unmitigated)	Significance (mitigated)
Construction Phase					
Human Beings	Job creation and generation of income	Positive	Short term	Slight	Slight
	Road and pedestrian footpath closure causing delays and nuisance	Negative	Short term	Slight	Slight
Flora & Fauna	Disturbance of ecology in the path of new tracks and bridges	Negative	Permanent	Little	Little
Soil	Spillage of petrochemicals and resultant soil contamination	Negative	Short term	Slight	Slight
	Incorrect storage and disposal of hazardous waste; resultant soil contamination	Negative	Short term	Slight	Slight
Water	Contamination of runoff by petrochemical spillage	Negative	Short term	Slight	Slight
	Contamination of runoff by hazardous waste	Negative	Short term	Slight	Slight
Air	Noise disturbance to residential and business premises	Negative	Short term	Nuisance	Slight
	Light disturbance to residential and business premises	Negative	Short term	Slight	Slight
Landscape	Visual change of road corridor and parklands due to construction activities	Negative	Short term	Moderate	Moderate
	Visual change of existing roads and parklands due to construction activities	Negative	Short term	Slight	Slight
Material Assets	Disruption of public utilities (electricity, water etc.)	Negative	Short term	Moderate	Slight
	Road works infringe onto private land resulting in severance	Neutral and negative	None	None	None

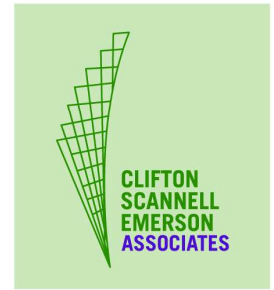


Cultural heritage	Impact on archaeological and cultural remains both recorded and unrecorded	Negative	Permanent	Moderate	Slight
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Table 6.1 – Summary of predicted environmental impacts – Construction Phase

Environment	Abbreviated Aspect \ Impact	Positive/ Negative/ Neutral	Duration	Significance (unmitigated)	Significance (mitigated)
Operational Phase					
Human Beings	Alteration of traffic flow patterns	Positive	Permanent	Improvement	Improvement
Flora & Fauna	No perceptible impacts				
Soil	Drainage of dirty water runoff from new road surfaces into soils	Negative	Permanent	Moderate	Slight
Water	Drainage of dirty water runoff from new road into water resources	Negative	Permanent	Moderate	Slight
Air	Road noise disturbance to nearby residential and business premises	Positive	Permanent	None	None
	Road light disturbance to nearby residential and business premises	Negative	Permanent	Slight nuisance	Slight nuisance
Climate/air quality	No perceptible impacts				
Landscape	Visual change of parklands and road verges due to new planting	Neutral and Positive	Permanent	Slight	Slight
Material Assets	No perceptible impacts				
Cultural heritage	No perceptible impacts				

Table 6.2 – Summary of predicted environmental impacts – Operational Phase



7 Conclusion

The proposed Tallaght to Ballyboden Cycle Scheme takes place predominantly on the line of the existing roads. Where it deviates from the existing road it travels within open space including through Dodder Valley Park, which contains a proposed Natural Heritage Area.

If impacts are mitigated, then there will likely be no significant reduction in quality of life for human beings or the environment as a consequence of construction and operation of the proposed Tallaght to Ballyboden Cycle Scheme. There will be no impact on Natura 2000 sites within 15km of the scheme or on Natura 2000 sites in Dublin Bay.

The proposed bridge over the Dodder River and the tributary of the Dodder River within Dodder Valley Park and the mitigation measures, which will be in place, will ensure that there is no impact to the Dodder Valley pNHA.