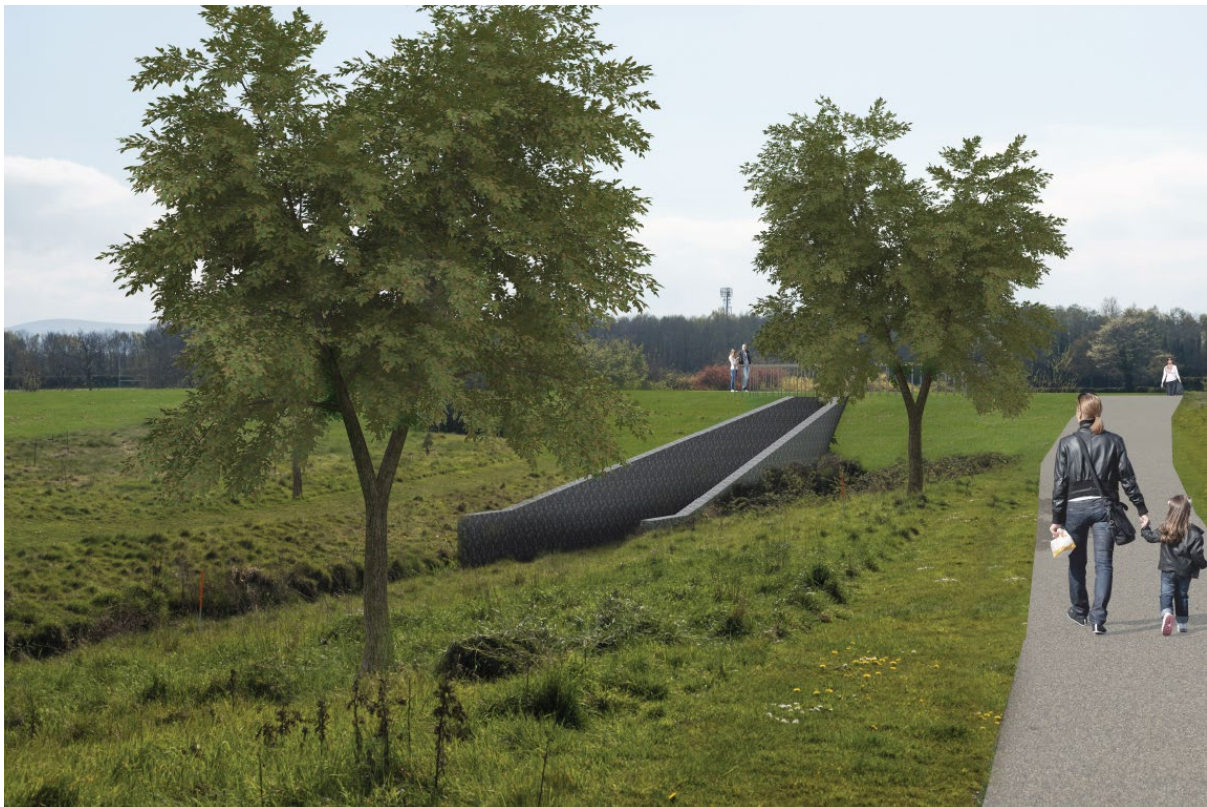

RIVER PODDLE FLOOD ALLEVIATION SCHEME

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

VOLUME 1 – NON-TECHNICAL SUMMARY



FEBRUARY 2020

**South Dublin County Council & Dublin City Council in association with
the Office of Public Works**

RIVER PODDLE FLOOD ALLEVIATION SCHEME

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

VOLUME 1 – NON-TECHNICAL SUMMARY

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FEBRUARY 2020

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River Poddle Catchment

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1 INTRODUCTION

The Environmental Impact Assessment Report (EIAR) for the proposed **River Poddle Flood Alleviation Scheme** has been prepared by Nicholas O'Dwyer Ltd. and a team of specialist competent experts, working on behalf of South Dublin County Council (SDCC) and Dublin City Council (DCC).

Where the proposed development requires the preparation of an Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS), the application for this local authority development will be made jointly by SDCC and DCC to An Bord Pleanála in accordance with Part X, Sections 175 and 177AE of the Planning and Development Act 2000, as amended.

This EIAR documents the assessment of the impacts on the receiving environment of the construction and operation stages of the River Poddle Flood Alleviation Scheme, the recommended mitigation measures, and any residual impacts.

The Flood Alleviation Scheme is designed to provide protection against river flooding in a 100-year flood event (1% annual Exceedance Probability). It aims to minimise the risk of flooding along areas of the Poddle River by introducing flood protection, flood storage and flood prevention measures such as flood walls and flood embankments. Drainage flap valves and culvert screens will be installed in the necessary locations and manholes will be sealed in the required locations to prevent flooding. Flood storage at Tymon Park and Ravensdale Park will act as the main flood storage areas, working in combination with linear defences along the river.

This EIAR addresses all aspects of the environment identified in EU and national legislation and guidance.

2 THE EIAR

The EIAR is presented in four Volumes under separate cover as follows:

Volume 1 – this **Non-Technical Summary** which provides an outline of the proposed development and highlighting the key impacts and mitigation measures in non-technical language.

Volume 2 - Main Report of the EIAR, this Volume, is divided into three parts, with each part having separate chapters.

- **Part I** provides General Information and comprises **Chapters 1 – 5**.
- **Part II** contain **Chapters 6 to 15** present the results of the assessment for each environmental aspect and the interactions between individual aspects. Each of these chapters, which have been prepared by competent experts, is sub-divided into a series of sub-sections *i.e.* introduction, methodology, existing environment, predicted impacts, mitigation measures, and residual impacts. **Chapters 16 and 17** provide an examination of environmental impact interactions and a schedule of mitigation measures, representing the environmental commitments for the project.
- **Part III** comprises two chapters (**Chapters 18 and 19**) containing references, abbreviations and a glossary of terms for the EIAR.

Volume 3 - Figures and Photomontages contains maps, plans and photomontages for the EIAR.

Volume 4 - Appendices provides technical data, survey reports that support the EIAR.

3 COMPETENT EXPERTS

Working closely with the Steering Group and Project Manager, Engineers, Planners, and Environmental specialists from NOD led a team of competent experts in the preparation of the EIAR. **Table 3-1** lists the competent experts involved in the preparation of each of the main chapters in the EIAR.

Table 3-1: EIA Team Competencies

Role / Technical Discipline	Name / Company	Experience (Years)	Professional Qualifications & Affiliations
Project Manager	Barry Dunphy, Associate, Nicholas O'Dwyer Ltd.	20+ years	BE, MSc, DIC, MIEI
EIA Coordinator Non-Technical Summary Population and Human Health Impact Interactions Summary of Environmental Commitments	Laurie McGee, Senior Environmental Consultant and Chartered Town Planner, Nicholas O' Dwyer Ltd.	20+ years	BA, MA, MIPI, MRTPI
Biodiversity	Nick Marchant, NM Ecology Ltd.	12 years	BSc MSc, MCIEEM
Hydrology & Geomorphology	Barry Dunphy, Associate, Nicholas O'Dwyer Ltd.	20+ years	BE, MSc, DIC, MIEI
Soils, Geology and Hydrogeology	Richard Church, formerly Nicholas O'Dwyer Ltd.	20+ years	BSc, MSc
Landscape and Visual (incl LVIA, landscape mitigation plans, tree survey and photomontages)	Evelyn Sikora, Senior Landscape Architect, Cunnane Stratton Reynolds Ltd.	5+ years	BA, MA, MILI
	Declan O'Leary, Managing Director, Cunnane Stratton Reynolds Ltd.	25+ years	MILI
	Keith Mitchell, Director, Cunnane Stratton Reynolds Ltd.	23 years	MILI, CMLI
	Chris Shackleton, Chris Shackleton Consulting	30+ years	BA BAI MIEI FIS
Archaeology and Cultural Heritage	Faith Bailey, Associate Director, Senior Archaeologist & Cultural	15+ years	MA, BA (Hons), MCIFA

Role / Technical Discipline	Name / Company	Experience (Years)	Professional Qualifications & Affiliations
	Heritage Consultant, IAC Ltd.		
Noise and Vibration Air Quality and Climate	Mervyn Keegan, Director, AONA Environmental Consulting Ltd.	20+ years	BSc, MSc
Traffic and Transport Material Assets	Graham Young, Nicholas O'Dwyer Ltd.	23+ years	CEng, Dip. PM, BA BAI

4 SCHEME LOCATION

The River Poddle is approximately 10km in length with a catchment area of approximately 16.4km². The River rises in the Cookstown area, north of Tallaght village flowing east through Tymon North and into Tymon Park where it passes under the M50 motorway. It flows northeast towards Greenhills/Templeogue and continues through Kimmage and the edge of Crumlin and runs through Mount Jerome into Harold's Cross. The River then crosses under the Grand Canal and flows under the city centre in a culverted section, discharging to the River Liffey. The confluence of the Poddle and the Liffey is visible at low tide at a grated opening in the Liffey walls at Wellington Quay. The River Poddle doesn't have any tributaries with most of the flow in the river coming from surface water.

As shown in the River Poddle Catchment map attached to this document, the Poddle is a highly urbanised catchment, particularly in the middle and lower reaches where it is culverted and channelled in sections.

Construction works for the proposed scheme will take place over a stretch of approximately 5.2km from Tymon Park (west of the M50) in Tallaght to Mount Argus Close in Harold's Cross; with further works to seal manholes in the vicinity of Poddle Park and Ravensdale Park, Kimmage, and in St. Teresa's Gardens and Donore Avenue, and a new manhole access at the National Stadium in Merchant's Quay, Dublin.

There are three areas where more substantial works are proposed in green spaces and parks, including:

- in Tymon Park (east of the M50) where the main flood storage embankment is to be constructed and an Integrated Constructed Wetland (ICW) is also planned;
- at Whitehall Park, east of Templeville Road in Templeogue where a channel re-alignment is proposed; and
- at Ravensdale Park in Kimmage where flood walls are to be constructed to provide flood protection and storage.

5 OUTLINE OF THE PROPOSED SCHEME

The proposed Scheme is designed to alleviate flooding in the River Poddle in a 1% Annual Exceedance Probability (AEP) flood event (also known as the “100-year flood”) with 60% blockage in the major culverts and 40% blockage in all other culverts, with an allowance for freeboard in accordance with the OPW guidance. The Scheme combines flood defences along the River channel with main flood storage in Tymon Park and additional flood storage at Whitehall Park and Ravensdale Park. The proposed works are described generally as follows:

- **Raised earthen flood embankments** along the upper reach of the River in Tymon North (west of the M50) and Tymon Park (east of the M50) to provide flood protection. The embankment at Tymon Lake in Tymon Park will be constructed to provide the main flood storage in the Scheme and a **flow control structure** at Tymon Lake will control flows downstream in a flood event.
- An **integrated constructed wetland** (ICW) in Tymon Park to improve water quality.
- New, replacement or reinforced **flood walls** to provide flood protection in residential areas in the middle reach of the River at Whitehall, Kimmage and Perrystown; at Wainsfort Manor Crescent, Terenure; to the rear of properties on Fortfield Road south of Kimmage Crossroads, Kimmage; at the end of St. Martin’s Drive in Kimmage; and at Mount Argus Close in Harold’s Cross.
- **Channel realignment and regrading** in Whitehall Park to provide clearance between the River and adjacent properties for flood protection.
- **Providing sealed manholes** in the vicinity of Poddle Park and Ravensdale Park, Kimmage, and in St. Teresa’s Gardens and Donore Avenue, and at the National Stadium in Merchant’s Quay, Dublin.

Proposed ancillary works and associated development includes drainage channel clearance and removal of trees where required for the works; rehabilitating or installing culvert screens in locations as required; installing flap valves in all culverts draining to the River; biodiversity enhancements including installation of floating nesting platforms in Tymon Lake, Tymon Park, Tallaght; and landscape mitigation and restoration at Tymon Park,

Tallaght, Whitehall Park, Terenure, and Ravensdale Park and St. Martin’s Drive, Kimmage including public realm improvements, replacement footbridges, biodiversity enhancements, tree planting and landscaping.

Temporary works include establishing a main construction compound in Tymon Park with access off Limekiln Road, which will be in operation for the entire duration of the works. Additional temporary works/ set down areas at Wainsfort Manor Crescent, St. Martin’s Drive and Ravensdale Park, which will be in use for the duration of the works to be carried out in these locations. Other temporary works include temporary stockpiling of excavated earth in Tymon Park; temporary channel crossings at Tymon Park (west and east of the M50) in Tallaght, and channel diversions at Tymon Park, Tallaght and Whitehall Park, Templeogue to enable the works along the River channel to be carried out.

The proposed development is shown in the Works Areas Location Plan attached to this Report with further details provided in **Drawing Nos. 08131 to 08253** of the planning drawings provided in **Part 2** of the Application Documentation in **Chapter 5** of the EIAR.

Other works such as the ICW and the landscape mitigation incorporating landscape restoration, replacement tree planting, public realm improvements and biodiversity enhancements are not essential to the main purpose of flood alleviation. They are proposed to mitigate the landscape changes, habitat changes and tree loss that are an unavoidable impact of the Scheme. These bring added benefits to the community and environment including improved water quality, enhanced biodiversity, and improved public access and enjoyment of the parks and green spaces along the River.

6 NEED FOR THE PROPOSED SCHEME & ALTERNATIVES CONSIDERED

The flooding issues in the River Poddle catchment are well documented in the Eastern Catchment Flood Risk and Management (CFRAM) Flood Risk Review (December 2011) with significant events recorded in 1986, 1993, 2000, 2008 and 2011. The need for the Scheme was most recently highlighted by the severe flooding along the Poddle on the evening of 24th October 2011 when up to 90mm of rain fell within a 6-hour period. This resulted in major flooding after heavy rainfall which exceeded the 1 in 50 year (2% AEP) total and the 1 in 100 year (1% AEP) measured at gauging locations throughout Dublin. During this event, the River Poddle flooded the entrance and basement of Our Lady's Hospice at Harold's Cross and numerous premises in Harold's Cross were severely damaged by the flooding, especially Greenmount Avenue and Boyne Court Apartments. A woman drowned when she was trapped in her flooded basement flat on Parnell Road, Harold's Cross. Crumlin was also badly hit as the river burst its banks at Ravenscourt Park.

The CFRAM Poddle Options Report (July 2014) followed the 2011 flooding event. It looked at existing and potential flood risk in the catchment and the alternatives to address it. It included hydraulic modelling and cost benefit analysis of the flood risk management options as well as a Multi-Criteria Analysis and public consultation. It arrived at two viable options that were taken forward for further detailed analysis in the proposed Flood Alleviation Scheme.

The River Poddle is a highly urbanised catchment where the River has been modified to provide a source of power for mills or drinking water for Dublin and culverted for the expansion of the City. Most of the flows into the River Poddle originate from the surface water network, and, being a highly urbanised catchment, there are few opportunities for natural flood plain management other than in the parks and green spaces in the City. Even with a robust maintenance programme in place, the Flood Alleviation Scheme is still needed to protect property and lives as the natural flood plain for the river is so limited.

The scheme has identified a number of areas in the catchment where the risk of flooding has not been eliminated. The flood risk in these areas is as a result of localised pluvial flooding due to inadequately sized surface water network and connections with undersized combined sewers and are not as a direct result of flooding from the River Poddle. These areas have been identified in Whitehall / Perrystown, Mount Argus and the Coombe. The drainage departments in South Dublin County Council and Dublin City Council are reviewing these areas and planning remedial works which will be carried out separately from this scheme.

The project consultants NOD considered alternative project designs at the three main areas of works at Tymon Park, Whitehall Park / Wainsfort Manor Crescent, Ravensdale Park, and at St. Martin's Drive. The final design for each location was chosen based on factors including:

- Maximising flood storage and flood protection;
- Reducing the need to remove trees or disturb important habitat features;
- Minimising insofar as possible changes to the landscape affecting visual amenity;
- Public uses of the green spaces; and
- Providing safe means of access to flood prevention and protection structures for ease of maintenance.

Refer to **Chapter 4** of the EIAR for a full discussion of the need for the project and the alternatives considered.

7 CONSTRUCTION ACTIVITIES

The proposed Flood Alleviation Scheme consists of a series of physical interventions along and adjacent to the route of the Poddle River from the upper catchment in Tallaght to the lower catchment at Harold's Cross. The construction of the flood alleviation scheme will be undertaken using industry standard construction methodologies.

Flood defence walls are proposed for areas to prevent the river overflowing its banks in the middle reaches. This will involve reinforcing existing walls, constructing new walls in places where there currently are none, and replacing existing walls. Construction of some of the linear defences will require the temporary removal of boundary walls and fences to facilitate construction access (generally parallel with watercourses). There will also be a number of trees and other vegetation which will require removal to facilitate the works throughout the scheme area. Site restoration and landscaping and replanting of trees and other vegetation will be undertaken in accordance with the proposed landscape mitigation plans subject to detailed design and approval by SDCC and DCC.

A traffic management plan will be agreed with the Contractor, local authorities and client's representative to ensure the safety of road users and construction operatives. Temporary road closures and diversions may be required. For the most part, works areas will be accessed from public property or public roads. Access to private property may be required in locations where walls have to be replaced. The preference is to undertake these works from the bank opposite where there is sufficient space and where workers can operate machinery safely.

It is envisaged that construction will commence in Autumn 2020, subject to approvals, for approximately a 24-month duration. Construction will commence in Tymon Park with the construction of the flood storage embankments and move downstream. Works sequencing will be such that each section of flood defence must be in place before the contractor will be permitted to progress works elsewhere. This works sequencing will be written into the contract documents.

Construction activities will take place Monday to Friday between 07:30 and 16:30, and as may be required on Saturdays from 08.00 hours to 13.00 hours. Weekend and night-time work is not expected to take place although it is possible that limited 24 hours working may be required to take place on occasion. This will only take place with the prior agreement of SDCC and DCC. Heavy or noisy construction activities will be avoided outside normal hours and the amount of work outside of normal hours will be strictly controlled. The removal of material off site and deliveries to site will be generally confined to daytime hours outside of peak traffic hours.

It is estimated that the number of base staff will vary between approximately 12 - 30 people per day over the construction period, in addition to a number of consultants and external staff requiring irregular access. Site employees will be sourced locally as far as possible.

An Outline Construction Environmental Management Plan (CEMP) has been prepared for the proposed development and is included as **Appendix 5-1** of the EIAR. A final CEMP will be prepared prior to construction commencing. The CEMP will comprise all of the construction mitigation measures, which are set out in this EIAR, and any additional measures which are required by any conditions attached to the statutory consent which may be forthcoming from An Bord Pleanála. The implementation of and adherence to the CEMP will ensure that disruption and nuisance are kept to a minimum. With proper implementation, phasing and management of construction activities, it is anticipated that the construction of the development will have no significant or long-term impacts on the surrounding environment.

8 REQUIREMENT FOR AN EIAR

With reference to Schedule 5 of the Planning and Development Regulations, the project consultants determined that the proposed development requires the preparation of an EIAR since it involves the *“Canalisation and **flood relief works**, where the immediate contributing sub-catchment of the proposed works (i.e. the difference between the contributing catchments at the upper and lower extent of the works) would exceed 100 hectares or where more than 2 hectares of wetland would be affected or **where the length of river channel on which works are proposed would be greater than 2 kilometres.**”* The length of the river channel for the proposed Flood Alleviation Scheme is approximately 5.2km. This exceeds the 2km threshold above. Therefore, an EIA is required.

9 NATURA IMPACT STATEMENT

The Habitats Directive (Council Directive 92/43/EEC) requires that plans and projects must be screened for the likelihood of significant effects on European Sites *i.e.* Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). There are four European sites within Dublin Bay and surrounding estuaries that have distant hydrological connections to the proposed development site, namely the North Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA and North Bull Island SPA.

NM Ecology Ltd. prepared an Appropriate Assessment (AA) Screening Report for the project to determine the likely significant effects, if any, of the proposed development on European Sites. The screening process concluded that it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on the European sites. Accordingly, it was concluded that an AA of the proposed development was required.

A Natura Impact Statement (NIS) of the proposed Poddle River Flood Alleviation Scheme was subsequently prepared by NM Ecology Ltd. The NIS provides information to assist the competent authority, An Bord Pleanála, in undertaking an AA of the proposed development. The NIS is the key resource in relation to AA for the proposal.

In a worst-case scenario there is a risk of adverse effects on the integrity of one or more of these European sites. In response, a series of hydrological mitigation measures have been recommended, which will be effective in avoiding and/or removing risks of adverse

effects on the integrity of the European sites. The NIS concludes that the proposed development will not adversely affect the integrity of any European site, either alone or in-combination with other plans or projects, once the mitigation as detailed in the NIS are implemented in full, and the competent authority will not need to proceed past Stage 2 of the AA process. Refer to **Part 4** of the Planning Documentation for a copy of the NIS.

10 PLANNING CONTEXT

The proposed Flood Alleviation Scheme is consistent with the overall objectives of national, regional and local planning policy and guidance as follows:

- The Scheme is recognised in the CFRAM, which delivers the **National Flood Risk Policy**, through inclusion of the Poddle River in the Areas for Action and the further work that was undertaken for the River Poddle Flood Alleviation Scheme.
- The Scheme is included in the **Climate Change Action Plans** for SDCC and DCC, which have been adopted by Dublin area Councils to implement the **National Adaptation Framework**.
- The **National Flood Risk Appraisal**, prepared for the National Planning Framework, recognises the challenge facing Dublin, which is targeted for growth but is constrained by a lack of flood free land to expand in. Providing flood alleviation such as in the River Poddle Flood Alleviation Scheme, will facilitate future sustainable development in Dublin.
- The River Poddle as listed as a strategic green infrastructure asset in the Region for the ecosystem services it can provide, including flood protection and water quality in the **Eastern & Midland Regional Spatial and Economic Strategy**; and the Scheme is mentioned in the **Regional Flood Risk Appraisal** as a project which will continue to be progressed.
- The Scheme is mentioned in the **Strategic Flood Risk Assessments** of the **Development Plans** of **South County Dublin** and **Dublin City Council** of the highly vulnerable areas in the Poddle catchment, and the need to limit development in certain areas until the planned flood alleviation works are completed.
- The River Poddle Flood Alleviation Scheme is listed in Appendix 11 of the **Dublin City Development Plan**, with reference to the Core Strategy Policy of addressing climate change and flood risk, and the commitment to working with neighbouring local authorities on cross boundary flood management programmes in **Sustainable Environmental Infrastructure Objective SIO11**.
- The commitment contained in objectives related to **Infrastructure & Environmental Quality (IE) Policy 3 Flood Risk** of the **South Dublin County Council Development Plan** to support and facilitate the delivery of flood alleviation schemes, including the Poddle Scheme (**IE3 Objective 1**); and to support and co-operate with the OPW in delivering the CFRAM Programme (**IE3 Objective 4**).

Chapter 2 of the EIAR provides greater detail on the planning policy context for the proposed development.

11 SCOPING AND CONSULTATIONS

Consultation is an important element of the design process. The objective of consultation is to ensure that the views and concerns of all stakeholders are taken into account and that information relevant to the project is made known and available. A full account of the EIA scoping and consultations with the communities, public representatives, and local officials is provided in **Chapter 3** of the EIAR.

On 4th February 2019, Nicholas O' Dwyer Ltd., on behalf of SDCC and DCC, circulated the EIA Scoping Report with a request for any relevant information and an opinion from statutory consultees and other agencies and organisations on the scope of the EIAR. Copies of all correspondence received from agencies and organisations are contained in **Appendix 3-1** of the EIAR. A summary of the comments and recommendations received from the agencies and organisations and how they have been taken into account in the EIA and design of the project are described in **Table 3-1, Chapter 3** of the EIAR.

The applicant Councils held a series of public information events in December 2018 and January 2020. At each of the consultation events a presentation was made, maps and plans were on display and members of the Project Team were on hand to answer questions and receive further information on the project.

Feedback from the events was that overall sentiment was positive for the Scheme. Concerns centred on current development (Mount Argus), planned development (Templeogue Badminton Club), maintenance of channels, weir control at Tymon, and surface water drainage issues (Mount Argus Road), defence extents at Grosvenor/Wainsfort Manor, changes in access, and the loss of trees and impact on habitats. Noted feedback was that more information should be provided on the Scheme, the alternatives considered, and the benefits, and that more notice of such events would be welcome.

In mid-December 2019, SDCC sent letters to properties that will be directly affected by the proposed Scheme, as well as to those properties in the vicinity of the works which may experience potential disruption and disturbance. Letters were also circulated to Tymon Park user groups informing them of the proposals and possible disruptions to use of the Park whilst construction is ongoing. Specific details on the proposals were provided with the letters to the properties directly affected by the proposed Scheme and in all cases the recipients were invited to contact the SDCC Resident Engineer for further information. Samples of the letters sent are provided in **EIAR Volume 4, Appendix 3.2**.

SDCC's Project Resident Engineer and the consultants met with individual property owners and resident's associations in the areas directly affected by the Scheme and attended other information events arranged by local councilors in local communities.

As indicated on the site location plan drawings, site notices will be erected at key points along the proposed Scheme. Plans and documents in relation to the planning application will be published on the project website www.poddlefas.ie. Plans and documents will also be on public display in each of the Council offices and at main libraries once the application is lodged. The Councils will provide regular progress updates on the project website. The Councils will also distribute an information sheet to the local communities in the vicinity of the Scheme, and will hold information events at venues in both Council areas once the application is lodged with An Bord Pleanála.

It is the intention of the Councils to keep property owners, residents, park users and the wider communities informed of the progress of the Scheme through key stages via regular updates on the project website www.poddlefas.ie.

12 SUMMARY OF ENVIRONMENTAL ASPECTS

12.1 Population and Human Health

Chapter 6 of the EIAR describes the potential for short term negative impacts on people and their health during the construction phase arising from construction activities. The construction phase of the proposed scheme will last approximately 24 months. Potential impacts include general nuisance (air, dust, noise and vibration), and impacts on the amenity and enjoyment of public and green spaces including landscape changes and visual effects, and possible delays or diversions for vehicular traffic and pedestrians in the public roads and footpaths, as well as the parks and green spaces in residential areas. These may result in short-term, negative impacts on the population and human health in the area.

Implementation of a CEMP will ensure that disruption and nuisance are kept to a minimum and that the proposed scheme will not have a significant negative impact during the construction phase. The impact on local economic and community activity will be reduced by ensuring access to local businesses and recreational areas is maintained. A construction traffic management plan will also be prepared and implemented. Traffic restrictions will be limited to ensure that impacts are only felt for the shortest possible period of time.

Overall the positive benefits of the flood alleviation scheme to provide protection in the case of a 1 in 100 year storm event to 921 properties in the Poddle catchment should outweigh any negative impacts, especially during the construction phase. The residual impacts of the proposed scheme will be permanent and positive as the risk of flooding of homes and businesses will be reduced once the Scheme is completed.

12.2 Biodiversity

12.2.1 Introduction

The Ecological Impact Assessment (EclA) contained in **Chapter 7** of the EIAR considered the potential impacts of the proposed development on ecosystems and their components, including designated sites, habitats and resident flora and fauna. The assessment has been prepared in accordance with the *Guidelines for Ecological Impact Assessment in the UK and Ireland* (2018), which is the primary resource used by members of the Chartered Institute of Ecology and Environmental Management (CIEEM).

The assessment involved a desktop study and consultation with various bodies such as Inland Fisheries Ireland (IFI) and the South Dublin County Council Heritage Officer, and the Parks departments of both Councils. More detailed baseline ecological walkover surveys were undertaken to identify any habitats or species that were present within the zone of influence. The assessment identified the evaluation of all ecological receptors taking into consideration legal protection, conservation status and local abundance. The assessment was conducted to ascertain the potential impacts of the construction and operation of the proposed scheme on ecological features of interest in the study area.

12.2.2 Baseline environment

The study area for the assessment consisted of all land within the footprint of the proposed development, with a buffer zone of up to 20m in relevant areas. All desktop and field data related to the Scheme was collected between January 2018 and August 2019, and is summarised in **Table 7-1** of **Chapter 7**.

The proposed development site is not located within or adjacent to any Natura 2000 sites, so there is no risk of direct impacts (e.g. habitat loss or fragmentation) on any sites. The River Poddle is a tributary of the River Liffey, which provides a hydrological pathway to four Natura 2000 sites in Dublin Bay. There is a considerable distance between the proposed development site and the nearest downstream Natura 2000 site, with approximately 10km of intervening watercourse from the nearest point of the proposed development (at Merchant's Quay), and approximately 15km from the farthest point (Tymon North). Considering the dilution effect of the intervening rivers and coastal waters, it is considered highly unlikely that any pollutants generated by the proposed development could reach the Natura 2000 sites in high-enough concentrations to affect the qualifying interests of any site. However, it is possible in a worst-case scenario that a large-scale pollution event could cause adverse effects on the conservation status of the qualifying interests of European sites. Therefore, in accordance with best practice, the Ecologist recommended that appropriate mitigation measures are employed during construction in order to avoid or reduce the potential impacts of pollution incidents. Further details are provided in the NIS that accompanies this application.

The field surveys identified the presence of common mammal species including, bats and badgers, common terrestrial birds which typically occur in urban / suburban landscapes, more specialised bird species associated with aquatic habitats, and bat populations along the river corridor and Tymon lake. Habitats and Fauna that were observed include lowland watercourse, artificial lakes, dry meadow (grasslands that are mowed), amenity grasslands / scattered trees and parkland, mixed broadleaved woodland, wet willow-alder-ash woodland, treeline, hedgerow, scrub. Relatively rare fauna such as flowering rush, Galingale and a small patch of broad-leaved helleborine were recorded. Three invasive plant species, giant-rhubarb, Japanese knotweed and Nuttall's waterweed, were also recorded in the study area.

The River Poddle has limited fisheries value, with no recent records of salmonids or other fish listed on Annex II of the Habitats Directive. Common species such as three-spined stickleback may be present, but no larger fisheries are known to occur. This is likely to be because of the extensive culverting and re-alignment of the river through Dublin City, which has made the lower sections of the river impassable to migratory fish.

12.2.3 Impacts

The proposed development will have permanent impacts on species-rich dry meadow, broadleaved woodland and treeline habitats, all of which are of Local value. There will also be temporary impacts on species-rich dry meadow, treeline, and recolonising bare ground along the River Poddle, which are also of Local value. In all cases, the extent of impacts will affect only a small proportion of habitats within the study area. All other habitats in the footprint of the proposed development are of Negligible value. There will be no loss of the County value habitats around Tymon Lake.

The overall majority of ecological impacts will arise during the construction phase as a result of the disturbances to bats, other terrestrial mammals (hedgehogs and stoats) and

birds, damage to and loss of small areas of habitats, including treelines and hedgerows, sediment mobilisation and potential water pollution incidents. There is potential for impacts on aquatic habitats and species during the Scheme's operational stage due to fluctuating water levels. The reedbed and tall-herb swamp habitats around Tymon Lake are adapted to fluctuations in water levels, and can easily survive periods of temporary inundation, and it is considered unlikely that flood waters would fluctuate to such an extent that they would inundate nests, but it may occur in some years. If this was the case, it is possible that single broods of mute swan, mallard, coot and moorhen may be lost. This could have slight impacts on local populations of breeding waterfowl, but would not have a significant effect on local populations.

The Integrated Constructed Wetland has been designed to remove nutrients and pollutants. The improvement of water quality will have a significant positive effect on the aquatic ecology downstream in the waterbody, including fish, vegetation and aquatic invertebrates.

12.2.4 Mitigation measures

A range of mitigation measures have been proposed in this EIA to offset potential negative impacts, including appropriate replacement planting, timing of the works, pollution prevention measures, protection of rare flora, control of spread of invasive species, installation of nesting platforms in Tymon lake and habitat enhancement measures. The contractor will employ an Ecological Clerk of Works as some of the mitigation measures require specialist skills.

The mitigation measures outlined above will avoid, minimise or compensate any impacts on important ecological features. It is concluded that the proposed scheme will not cause any significant negative impacts on designated sites, protected species, habitats, or any other feature of ecological importance.

12.2.5 Residual Impacts

Table 7-8 in **Chapter 7** provides a summary of potential impacts to biodiversity as a result of the proposed development, along with the mitigation measures that are proposed, and any residual impacts. After the application of mitigation measures, there will be slight negative impact on local status of woodland, treeline and meadow habitats in the short term, but with a neutral impact in the medium term once habitats have been re-established. There will be no residual impacts on designated European sites, birds and terrestrial mammals, winter/non-breeding birds, smooth newts and common frogs, and invertebrates. The residual impacts on rare flora, bats, and waterfowl would be imperceptible. The Integrated Constructed Wetland will have a significant positive effect on water quality and aquatic ecology.

12.3 Hydrology and Hydromorphology

Chapter 8 of the EIA addresses the baseline environment and impact assessment for hydrology and hydromorphology of the study area. Water quality data from OPW and EPA sources are used to carry out a desktop study of the River Poddle. The Poddle River has a history of flooding over the past 50 years with flood events occurring in 1986, 1993, 2000, 2008 and 2011. The most recent flood event occurred in 2011 when Our Lady's Hospice in Harold's Cross was flooded.

There is potential for the contamination of groundwater and surface water as a result of construction activities. Sources of contamination include, the release of sediments into the water column from stockpiles or works within the channel, diesel/hydraulic oil from machinery during foundation works and the pouring or spillage of concrete. However, the implementation of a CEMP and pollution prevention control measures will minimise the risk of pollution of groundwater or surface water during construction. The proposed scheme will significantly reduce the risk of fluvial (river) flooding in many areas of the River Poddle catchment area in the future. During the operation phase of the Tymon Park flood embankments, there is potential for the reservoir to accumulate nutrients (nitrogen and phosphorus) from the soil during a heavy rainfall event.

A wide range of mitigation measures have been specified for the construction and operational phases of the project. These mitigation measures seek to ensure that construction and operational discharges are controlled to prevent potential pollution impacts to all receiving surface water systems, groundwater bodies and their downstream catchment areas. The mitigation measures also seek to ensure the risk of flooding from all sources is not exacerbated during the construction and operational phases.

In summary, following adherence to the mitigation measures and best practice site management guidelines set out in the EIAR, the impacts of the construction and operation of the scheme will be localised and short term.

12.4 Soils, Geology and Hydrogeology

A desk-based study was undertaken to establish the baseline soils, geology and hydrogeology information within the immediate environs of the proposed scheme works, followed by an assessment of potential impacts from the proposed development. This is reported in **Chapter 9** of the EIAR.

The geology of the area within the Poddle catchment generally comprises rocks of Lower Dinantian age Limestones (also known as 'calp'). This formation comprises of dark-grey to black rocks that weather paler, usually to pale grey. Structural geology indicate that there is no regional faults mapped within the catchment. Two groundwater wells are reported within catchment close to the Kimmage Cross Roads. These were dug in 1992 to a depth of 150m and were described reported as being moderate to excellent well yields. Natural soils and subsoils are limited due to the culverted nature of the River. Therefore, much of the soil cover is classified by Teagasc as Made Ground.

Overall, construction phase activities will result in temporary impacts which, without the implementation of mitigation measures, would result in a significant impact on the receiving environment. In some cases, bedrock may be partially or permanently removed but impact associated with this is considered to be a neutral permanent minor impact. The operational phase activities will result in permanent impacts which, without the implementation of mitigation measures, would result in a moderate impact on the receiving environment.

The need for materials such as soil or concrete in the construction of the development are unavoidable. Where possible, soils will be reused if they are uncontaminated. All soils imported to site will be subject to assessment to identify invasive alien species present by a suitably qualified ecologist. Where material is brought to site it will be used immediately or will be stored within the site boundary. Spill kits will be stored at the machinery refuelling area and all potentially polluting substances will be stored in bunded areas. The washing of plant equipment will be carried out in designated areas to prevent potentially polluting material from entering the surface water or groundwater networks. Any

excavations will be backfilled as soon as possible to prevent infiltration of potentially polluting compounds to the subsurface or aquifer.

If the mitigation measures mentioned above are implemented it is expected that there will be no significant adverse direct or indirect impacts to groundwater, and the underlying geology as a result of the construction or operation of the proposed development.

12.5 Landscape and Visual

12.5.1 Introduction

The proposed flood alleviation works are limited to certain areas, as shown in the planning drawings. There are several areas where more substantial works relevant to landscape and visual effects are proposed including Tymon North and Tymon Park in Tallaght, Whitehall/Wainsfort Manor Crescent in Terenure, and Ravensdale Park and St. Martin's Drive in Kimmage.

The proposed works include flood defence walls, grass embankments, and re-grading of ground and paths, to facilitate attenuation areas. A flow control structure is proposed at Tymon Lake. The river is to be realigned in one location, in the vicinity of Whitehall Park. These works will result in tree and vegetation loss in some locations.

A full description of the proposed works is included in EIAR **Chapter 10** Landscape and Visual, and in **Chapter 5**.

12.5.2 Methodology

Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity.

The methodology for assessment of the landscape and visual effects is informed by the following key guidance documents, namely:

- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition 2013, published by the UK Landscape Institute and the Institute of Environmental Management and Assessment (hereafter referred to as the GLVIA).
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Draft August 2017)

The assessment of landscape and visual effects included a desktop study, review of the proposed development drawings and visualisations, and a number of site visits which were carried out in February and March 2019.

12.5.3 Receiving Environment – Policy

Relevant policies from South Dublin County Council Development Plan (SDCC Plan) and Dublin City Council Plan (DCC Plan) includes policies which are summarised as follows:

- The need for a Flood Alleviation Scheme for the River Poddle is specifically referred to in the SDCC Plan as well as the Dublin City Development Plan. The Dublin City Plan recognises the need for flood alleviation and notes specific locations - Mount Argus, St

Martin's Drive, Poddle Park and Ravensdale Park as well as storage in South Dublin County Council to provide estimated flood protection to the hundred-year flood level.

- Land Use Zoning along the River Poddle corridor in South Dublin includes primarily residential areas, open space and a smaller area zoned as District Centre in the Tallaght area. Tymon Park is the largest open space and a Regional Park. Land Use zoning in Dublin City along to the River Poddle from Ravensdale Park to Mount Argus includes mainly zoning for residential amenity, and Recreational amenity, open space and green networks.
- The importance of rivers and watercourses in the Green Infrastructure network is recognised in both Development Plans.
- The SDCC Plan recognises the importance of floodplains and promotes strategic measures to accommodate flooding in appropriate locations, while DCC policy aims to ensure that flood defence infrastructure has regard also to nature conservation, open space and amenity issues.
- The importance of trees, tree groups is recognised in the SDCC Plan, and the policies and objectives aim to prevent the loss of woodlands, hedgerow and aquatic habitats. Dublin City Council note that tree surveys must be submitted where there are trees within a proposed planning application site.
- Views within the study area are not identified on the zoning maps in the South Dublin County Council Development Plan, however some Prospects are available, primarily from Tymon Park, where there are views from certain areas, to several hills and mountains listed as prospects. No views are identified along the river corridor within Dublin City Council boundary.

12.5.4 Receiving Environment – Landscape and Visual Receptors

The river Poddle is a relatively narrow watercourse which runs through several areas of differing character, from the urban edge at Tallaght, through suburban and urban areas, which can be broadly described as follows:

- Industrial/commercial areas
- Large scale parks on the urban edge
- A variety of smaller open spaces and parks including linear open spaces along the river corridor, and larger spaces which are overlooked by dwellings
- Institutional open spaces

The proposed works fall mainly within the large scale parks and open spaces including open spaces near residential areas, with minor or no works proposed in the industrial/commercial or institutional areas.

A series of large open spaces (Bancroft Park, Tymon Park) are found at the edge of the city. The river, though not large, is a key element in parts of Tymon Park, where it runs through a series of lakes which are a distinctive feature of the area and increase the visual amenity of the park. The areas around the lakes and woodlands create some sense of naturalness, and the river is accessible and easily visible.

There are a number of smaller open spaces in the primarily residential areas, including a number of smaller green spaces (at Whitehall, Wilmington Close, and from Wellington Road to the Templeville Road area). These include narrow, linear open spaces which connect streets or housing estates, such as those between Wellington Road and Templeville Road, and also larger green spaces many of which are overlooked or partly overlooked by dwellings such as the open spaces off Templeville Road, (Whitehall Park), Wainsfort Manor Drive, Ravensdale Park, St Martin's Drive and Mount Argus.

The river is an attractive element of many open spaces. The natural qualities of the river are evident in a number of open spaces and should be retained where possible. Bankside vegetation removal should be minimised and where trees are removed, replanting should be carried out where possible. However, the character of certain parts of the river corridor, is degraded where the river is walled by high walls and gives it an industrial character and in these areas, opening up access or views may be regarded as a positive feature.

12.5.5 Potential Visual Receptors

As the river itself is narrow, and often not visible from outside its immediate surroundings, views to the river are limited to areas where it is easily accessed, mainly in parks and open spaces as outlined above. In addition, walls and vegetation do restrict views even from some of these open spaces. Many of the views towards the river (and the proposed works) will therefore be visible only in close proximity. However, where the removal of vegetation or larger trees is proposed, these will be more noticeable from outside the immediate vicinity of the river corridor.

A number of viewpoint locations were chosen to represent the range of viewers which will experience the proposed works, from the larger Tymon park at the city's edge, to the many residential open spaces and streets where viewers may have views from the houses and immediate vicinity. Specialist illustrations called photomontages have been prepared to illustrate existing and proposed views from 11 no. vantage points. These photomontages are contained in EIA **Volume 3**. The photomontage proposed views in represent a variety of proposed works, including walls of varying heights, embankments and removal of vegetation.

12.5.6 Landscape Effects

The landscape character of the river corridor where works are proposed varies between the large scale parks on the edge of the city, through the more densely built up suburban and urban areas.

- Large scale regional parks
- A variety of smaller open spaces including linear open spaces along the river corridor, and larger spaces which are overlooked by dwellings. These include Whitehall Park, Wainsfort Manor and St. Martin's Drive area.
- Formal parks such as Ravensdale Park are also included

Landscape Sensitivity

Landscape Sensitivity, referred to in Table 10-1 refers to the susceptibility of the receptor to change, and also to the value of the landscape.

The landscape sensitivity of the river corridor itself varies throughout the study area. As a watercourse, the river is valued as a component of green infrastructure. The landscape sensitivity for each of the areas identified above is discussed below and ranges from Low to High. Certain areas including the residential areas and open spaces would be considered Medium sensitivity while the regional parks are considered High sensitivity.

There are no specific landscape designations along the river corridor.

Construction Phase:

Construction Phase Landscape Effects include setting up of construction compounds removal of trees and vegetation, and movement of machinery and earthworks in the vicinity of the river and associated open spaces and parks.

Significance of Effect:

The construction phase is likely to last for 24 months in total but the expected timescale for parts of the scheme will vary (see Table 5.1). Areas such as Tymon Park will experience works for up to the 24 month period with much shorter periods of works in other areas. This will and is considered to have a **Temporary, Slight to Moderate adverse** landscape effect. Effects are expected to be Not Significant to Slight, and adverse in the majority of areas and Moderate, adverse in Tymon Park.

Operational Phase Effects:

Magnitude of Change

The magnitude of change varies throughout the river corridor. There are certain areas which will undergo a greater degree of change, including areas such as Ravensdale Park, and St Martin's Drive, and parts of Tymon Park, and other areas where there is a lesser magnitude of change, such as at Mount Argus Close, Fortfield Road, and areas where works consist of manhole replacements, which will not result in changes to the landscape or visual baseline.

The proposed development will result in both the removal of landscape elements and the addition of other elements:

- Removal of bankside vegetation and trees in the vicinity of the river
- Construction of flood defence walls and embankments
- Location of flood attenuation areas
- Realignment of the river with embankments at Whitehall Park

As with landscape sensitivity, the magnitude of change varies for each area, and the landscape effects vary also. These are set out in **Table 10-6** of **Chapter 10** of the EIAR.

12.5.7 Visual Effects

Visual Receptor Sensitivity

Visual receptors along the River Poddle includes those of high sensitivity as well as those and those of medium and low sensitivity are outlined in Section 10.4.2 of the EIAR **Chapter 10**.

*Construction Phase Effects:**Significance of Effect*

The visual effects during construction are considered to be Temporary, but Significant adverse visual effects in the vicinity of Tymon Lake (Viewpoints 9,10 and 11 represent Tymon Park).

Visual effects further along the river at Whitehall Park (Viewpoint 8) and Wainsfort and at Ravensdale Park and St. Martin's Drive are considered to be temporary, Moderate, adverse effects during the construction period. Visual effects at Fortfield Road and Mount Argus Close are considered to be Slight, adverse effects.

Operational Phase Visual Effects:

Table 10-8 of Chapter 10 of the EIAR summarises the visual effects for each viewpoint.

Sensitive visual Receptors at Tymon Park will experience a Slight to Moderate, neutral to adverse visual effect, but these are restricted to certain locations within the park, mainly around Tymon Lake, and the changes are not considered widespread. The proposed spillway and embankments around the lake are likely to have the most pronounced visual effect. Other visual effects will result in the park, south of the M50, but these are considered very localised effects and will not have a widespread effect on the park as a whole.

Sensitive visual receptors overlooking and using residential open spaces at Ravensdale Park and Poddle Park/St Martin's Drive are also likely to experience visual effects. In Ravensdale Park, the visual effects range from Slight to Moderate visual effects, though these are considered neutral in quality.

Visual receptors in St. Martin's Drive are likely to experience short term Moderate to Moderate/Significant, adverse visual effects as a result of considerable tree removal. The trees are to be replaced, by relatively mature and fast growing species, however, as shown in the Tree Replacement Planting Plan (Drawing 19110-1-120) in Volume 3. Once the planting establishes it will reduce the visual effect, and the trees will, over time, contribute to screening the views (as shown in Viewpoints 2 and 3).

Visual receptors using other open spaces including the green space at Whitehall Park are likely to experience Slight, neutral effects.

12.5.8 Mitigation and Avoidance Measures

Mitigation and avoidance measure were incorporated into the project design, and some of the measures taken and incorporated into the design are as follows:

Tree Surveys were carried out in the following locations where works are proposed (See Volume 3 for Drawings and Volume 4, Appendix 5-2, for accompanying Report:

- Tymon Park (both North and South of M50)
- Whitehall Park/ Wainsfort Manor Crescent
- Fortfield Road
- Ravensdale Park
- St. Martin's Drive

Landscape mitigation plans were prepared for the following areas:

- Tymon Park in the vicinity of Tymon Lake
- Ravensdale Park

A tree planting plan was prepared for the green area in the vicinity of St. Martin's Drive to address tree replacement in this area. The drawings are included in Appendix 3 of the EIAR.

Specific measures contained in these drawings and in the design approach are as follows:

- Minimal tree removal: One of the project aims is to minimise tree removal. Consideration of alternative construction methods in all locations where walls proposed to minimise vegetation loss, and to ensure retention of trees. Where this is deemed necessary as a result of the proposed works, compensatory planting is proposed as required by the relevant Council's trees policies. Replacement tree planting is proposed where trees are to be removed. Ravensdale Park: Consideration of alternative design solutions in Ravensdale Park including retention of the current river alignment, and retention of path alignment from Kimmage Lower entrance to minimise disruption to trees.
- Earlier design proposals would have necessitated extensive tree removal and the design was modified to greatly reduce tree removal with the result that very few trees will be removed. Walls are predominantly low enough to and allow for views into and out of the park, though these are restricted in some areas. The proposals for the park can be seen in the Landscape Mitigation Plan (Drawing 19110-1-111) in Volume 3).
- St. Martin's Drive: A tree planting plan (Drawing 19110-1-120 in Appendix 3) is proposed to reduce the effects of tree removal by proposing semi mature tree planting. Species include fast growing species to provide some screening, which will be reduced by tree removal. The proposed trees will, over time, reduce the adverse visual effects and contribute to the retention of the character and visual quality of the area.
- Tymon Park: The design process for this area included consideration of alternative pathways in Tymon Park to maintain connectivity as a result of the re-grading of certain areas. Tree removal in Tymon Park was minimised. Proposed grass embankments and path re-grading are tied into the contours where possible. Embankments to be seeded with species rich grassland where necessary. Trees which are to be removed will be replaced.
- An Integrated Constructed Wetland (ICW) is proposed as an enhancement measure for Tymon Park. This is located northeast of Tymon Lake and includes marginal planting and is expected to enhance the area and assist in improving water quality.
- The proposed ICW is expected to enhance the visual amenity of the area.
- Throughout the scheme, consideration was given to alternative wall materials and wall design including to allow visual permeability and passive surveillance

12.6 Archaeological, Architectural and Cultural Heritage

A description of the receiving environment in relation to the archaeological, architectural and cultural heritage resources and assessment of the potential impacts on these resources from the proposed development along with recommended mitigation measures is provided in **Chapter 11** of the EIA.

The assessment involved detailed interrogation of the archaeological and historical background of the scheme. This included information from the Record of Monuments and Places of County Dublin, the County and City Development Plans, the topographical files of the National Museum of Ireland, the National Inventory of Architectural Heritage, and cartographic and documentary records. Aerial photographs of the assessment area held by Ordnance Survey Ireland were also consulted. A field inspection was carried out on 27 March 2019 in an attempt to identify any known cultural heritage sites and previously unrecorded features, structures and portable finds within the study area.

There are a number of recorded monuments located along the course of the river, an unclassified mill north of Saint Martin's Park and a weir south of Mount Argus Way. From the northern end of the scheme to Templeville Road, the River Poddle also flows along the zone of notification for the City Watercourse which supplied the city of Dublin with fresh water from at least the 13th century. There have been a total of 18 archaeological investigations located within 250m of the proposed scheme (1970 – 2018). All recorded monuments are listed in the Appendix to the chapter.

A review of cartographic sources has indicated that further post-medieval mills and associated structures and infrastructure were located along the course of the Poddle and, although above ground evidence for these has not been found, there is potential for features associated with the milling industry to survive below ground.

There is one protected structure along the course of the Poddle, BH13 at Kimmage is recorded as a mill, weir, mill-race and possible mound. There is, however, no evidence for these features on historic mapping or on the ground at this location. A further 39 structures are located within 250m, 13 of which are Protected Structures and the remaining are listed on the National Inventory of Architectural Heritage.

There are two recorded monuments that are located along the course of the river. The proposed works will have no direct impact to the weir located to the south of Mount Argus way. The proposed works within the zone of notification of the Mill at St. Martin's Park are considered to not have a significant impact on the archaeological site.

There are nine cultural heritage sites along the route of the proposed scheme, five of which relate to post-medieval mills and mill features, one historic boundary wall and three designed landscapes. There will be no significant impact on the Mill race associated with Loader's Park Mills and the impact on the former demesne landscapes is not considered to be significant.

Archaeological monitoring should be practiced during the construction phase works. If any features of archaeological potential are discovered during the course of the works, further archaeological mitigation may be required, such as preservation in-situ or by record, along with archaeological monitoring. Any further mitigation will require approval from the National Monuments Service of the Department of Culture, Heritage and Gaeltacht.

Where it is proposed to divert the watercourse, a wade survey should be carried out along the existing stretch of the Poddle prior to commencement of construction activities. This

should be carried out under licence from the National Monuments Service of the Department of Culture, Heritage and Gaeltacht.

There will be no residual impacts to the archaeological, architectural or cultural heritage resulting from the proposed development.

12.7 Noise and Vibration

The impacts of the predicted noise and vibration from the proposed development were appraised and is reported in **Chapter 12** of the EIAR. Potential impacts during both the construction phase and the operational phase were considered. During the construction phase, the potential noise and vibration impacts will be associated with site preparation works, construction activities, and construction vehicle movements. All noise emissions and vibration are predicted to be in compliance with the relevant standards/thresholds. Ambient noise levels for the locality of the proposed development have been determined through a baseline noise survey.

It is expected that the proposed scheme will have no operational noise impact. The background noise levels recorded were dominated by road traffic noise. Relatively high background noise levels were recorded at Limekiln Road, Castletymon Road and in proximity to Ravensdale Park due to the relatively constant flow of traffic. In relation to the EPA guidance for noise none of the locations measured in the survey were described as 'Areas of Low Background Noise'.

Construction related noise and vibration will only occur during daytime hours and will only be short-term at each area along the River Poddle. Not all construction noise and vibration sources will operate at once and noise levels are likely to vary throughout the typical working day.

To facilitate the instream works, it will be necessary to install impermeable barrier in the river i.e. piling activity. It is considered that although the level of noise from piling activity will be high, these works are transient in nature and the maximum level of noise drops off appreciably as distance from any particular sensitive receptor increases, the overall potential impact will be slight to moderate.

Working hours during site construction operations will be restricted to daytime hours from 08:00 hours to 18.00 hours (Monday to Friday) and 08.00 hours to 13.00 hours (Saturdays). No heavy construction activities will be permitted on Saturday, before 09:00 on any day and during state examinations.

The contractor on site will have responsibility for the management to ensure that the noise and vibration levels set out in Best Practice Guidance do not significantly impact on sensitive receptors and will be carried out. It is also recommended that a comprehensive noise and vibration monitoring protocol will be set out within the Noise and Vibration Construction Management Plan. Construction noise and vibration levels shall be monitored and assessed.

The assessment of construction noise impacts from the proposed development has indicated that the Transport Infrastructure Ireland noise limit criteria may be exceeded at the nearest residential properties during daytime. This may occur on occasions when heavy construction activity occurs in close proximity to noise sensitive receivers. However, detailed construction noise mitigation measures have been outlined. Also, while the overall construction activities for the River Poddle Flood Alleviation scheme will occur over 24 months, the linear nature of the works will mean that noise sensitive receivers will not be exposed to continuous construction noise impact during this 24-month period.

The proposed River Poddle Flood Alleviation Scheme will not result in an operational noise impact. Therefore, the residual impacts from the development will not be significant.

12.8 Air Quality and Climate

This assessment, which is contained in **Chapter 13** of the EIAR, included the potential air quality and climate impacts associated with the construction and operational phases of the proposed scheme. Construction activities such as demolition, excavation, earth moving and backfilling may generate quantities of dust, particularly in dry and windy weather conditions. The construction activities have been examined to identify those that have the potential to give rise to dust and air pollutant emissions.

The EPA has divided the country into zones for the assessment and management of air quality. The zones adopted in Ireland are Zone A, the Dublin conurbation; Zone B, the Cork conurbation; Zone C, comprising 21 large towns in Ireland with a population >15,000; and Zone D, the remaining area of Ireland. The site is located in 'Zone A' as denoted by the EPA.

Based on the reported nitrogen oxides (NO_x, NO and NO₂) and particulate (PM₁₀) background concentrations from the Rathmines and Tallaght EPA air quality monitoring stations, the background air quality in the area of the proposed development is of good quality.

During the construction phase the primary air quality issue will derive from dust generation as a result of site activities including excavations, embankment works, construction activities and construction vehicle movements. Construction dust has the potential to cause local impacts through dust nuisance at nearby sensitive receptors. The potential impacts associated with the construction phase of the proposed scheme are temporary in nature, however, they will require careful implementation of the recommended dust mitigation measures. The results of the assessment are used to determine the appropriate level of dust mitigation required during the construction phase. Un-cleaned vehicles leaving the site also have the potential to deposit mud and dirt along the public roads. This has the potential to generate fugitive dust, which will be mitigated by containment and / or wet suppression in close proximity to the works areas and the site compound.

All practical measures will be taken to ensure that the dust emissions associated with the proposed River Poddle Flood Alleviation Scheme do not cause an unacceptable significant adverse impact upon local residents and road users or in the case of Tymon North and Tymon Park, upon park users. The dust management plan as set out in the EIAR should be implemented by contractors in order to mitigate the spreading of dust. Regular attention shall be paid to cleaning dust material from all roadways, hard surfaced areas and working areas of the construction site. A water bowser should be used to suppress dust during periods of dry and warm weather conditions. It is also recommended that dust deposition monitoring be put in place to ensure dust mitigation measures are adequately controlling emissions. The scheme will not result in any operational air quality and/or dust impact.

The potential for nuisance dust impacts is considered to be negligible provided that the appropriate construction mitigation measures are adhered to. No significant air quality impacts are expected in an area of Dublin city that currently experiences good air quality, with reference to the EPA air quality monitoring data from the Rathmines and Tallaght EPA air quality monitoring stations. There will be no air quality and dust impacts from the operation of the proposed River Poddle Flood Alleviation Scheme. Once the above

mitigation measures have been implemented, the residual impacts from the development will not be significant.

12.9 Traffic and Transport

Chapter 14 of the EiAR examines the potential impacts of the proposed Flood Alleviation Scheme on the receiving environment with respect to traffic conditions, transport routes, general traffic and safety. The dominant traffic impact will be during construction stage. The operational stage will have minimal traffic movements associated with small numbers of staff who will work at the site to conduct checks and carry out periodic maintenance approximating the existing site traffic.

The more substantial works proposed as part of the Scheme will be in parks and green spaces along the River Poddle at Tymon Park (west and east of the M50), at Whitehall Park / Wainsfort Manor Grove, and Ravensdale Park and will involve the movement of Heavy Construction Vehicles in the public roads for the removal of earth material, trees and vegetation, and rubble from the works areas, and importation of earth material, concrete, blocks, stones, and trees. **Table 14-2** in **Chapter 14** of the EiAR provides an estimate of the number of vehicle movements, the duration and peak loads for each works area in the Scheme.

The main impacts from construction of the Scheme will be from disruption impacting the flow of traffic and pedestrians; during large vehicle movements on local roads and the wider area; due to vehicles queued at accesses to works areas; due to the parking of vehicles by workers in residential streets; and lane closures for manhole works within the public roads. The most significant impacts during the construction stage will arise from vehicles queueing at the site access or nearby when turning into the works areas, and where lane closures are required for the manhole works.

The impacts are temporary and cannot be eliminated. They can be managed, and their impact reduced by the implementation of appropriate traffic management by the contractor. The contractor will be required to design and implement a specific Traffic Management Plan, which will include advance signage (Traffic Signs Manual Chapter 8), permitted delivery times and control measures.

12.10 Material Assets

Chapter 15 of the EiAR describes and assesses the potential impacts of the proposed River Poddle Flood Alleviation Scheme on material assets, proposing mitigation measures where required.

The Scheme will impact on the boundaries and boundary walls of 45 no. residential properties (31 no. in Whitehall Close/ Grovesnor Court / Whitehall Park/Whitehall Rd, Glendale Park, Wainsfort Manor and 12 no. in Fortfield Road, 1 no. in St Martin's Drive and 1 no. in Mount Argus Close), 1 no. building Providers in Ravensdale Drive, and 1 no. Sports Club in Templeogue, Tymon North Public Park, Tymon Park, and Ravensdale Park. The Scheme will also impact the road network in mainly residential areas during manhole works. **Section 15.5** of Chapter 15 describes the impact on material assets for each of the works areas in the proposed Scheme.

The impact of the Scheme during the construction stage has been carefully considered in the design of the defences and for construction of the project. Vehicular and pedestrian access to all properties will be maintained throughout the construction of the Scheme. In

some cases, pedestrian access to public parks and green spaces has to be restricted for health and safety reasons.

The following mitigation measures are proposed in the main works areas:

- In Tymon Park, the proposed works are limited to the area in the vicinity of the Lake and ICW. This will require the closure of the walkways closest to the Lake and parallel to Limekiln Road, but the existing footpath / cycle track running through the remainder of the Park will be open throughout the construction period. Works areas will be set off from the footpaths / cycle tracks to ensure safety of Park users.

To mitigate the impact of construction of the Scheme on the existing walkways around Tymon Lake in the Park due to the flow control structure and construction of the flood defence embankment, the walkway and river crossing will be realigned to the top of the proposed embankment and connecting pathways re-aligned to join with the new path. Likewise, a new path will be made adjacent to the ICW.

Information and signage will be provided at the car parks and access points from residential areas adjacent to the Parks.

- In Ravensdale Park the access to the southern section of the Park along Kimmage Road West will remain open, but the remainder of the Park will be closed to the public for health and safety reasons. Footbridges from Kimmage Road West and Ravensdale Drive will be closed for the duration of works.

To mitigate the impact of the wall in Ravensdale Park an open seating area will be constructed and to accommodate the new pedestrian bridge access to Ravensdale Drive and the connecting footpath will be realigned in the Park.

During the construction of the Scheme there will be a number of conflicts with existing utilities. These impacts may require the relaying and/or realignment of the utilities local to the proposed works. Relaying the utilities is anticipated to be required where the existing utilities are located immediately adjacent to the proposed defence and ICW works.

- In Tymon Park two surface water pipes from Limekiln avenue outfall to the river Poddle at the proposed location of the ICW. These pipe outfalls will be altered to outfall directly into the ICW area.
- All surface water outfalls along the length of the Poddle channel will have flap valves installed. Surface water drains at the rear of properties in Whitehall Close, Whitehall Park, Whitehall Road, Wainsfort, and Fortfield Avenue where defence walls and embankments are being constructed will have these outfalls included in the new defences.
- The embankment works in Tymon North adjacent to the ESB sub-station clash with cables running directly underneath. These cables will be diverted to allow construction of the embankment.

13 MITIGATION MEASURES

Chapter 17 of the EIAR is a summary of mitigation measures from each environmental aspect, with reference to the specific pages containing the mitigation measures in each chapter. The mitigation measures are the environmental commitments for construction and implementation of the project. The final CEMP must take into account all of the mitigation measures and any conditions of a planning consent which may be forthcoming.

14 MORE INFORMATION

Copies of the planning application documentation, including the EIAR, are available for examination at the locations detailed in the published notices, and at the project website www.poddlefas.ie. Paper copies of the documentation can be provided on request from the consultant Project Manager at the below address, on payment of a specified fee which shall not exceed the reasonable costs of making such copies.

Barry Dunphy, Project Manager

Nicholas O'Dwyer

Unit E4

Nutgrove Office Park

Nutgrove Avenue

Dublin 14

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15 WHAT HAPPENS NEXT?

Submissions or observations may be made in writing to An Bord Pleanála, 64 Marlborough Street, Dublin 1, relating to:

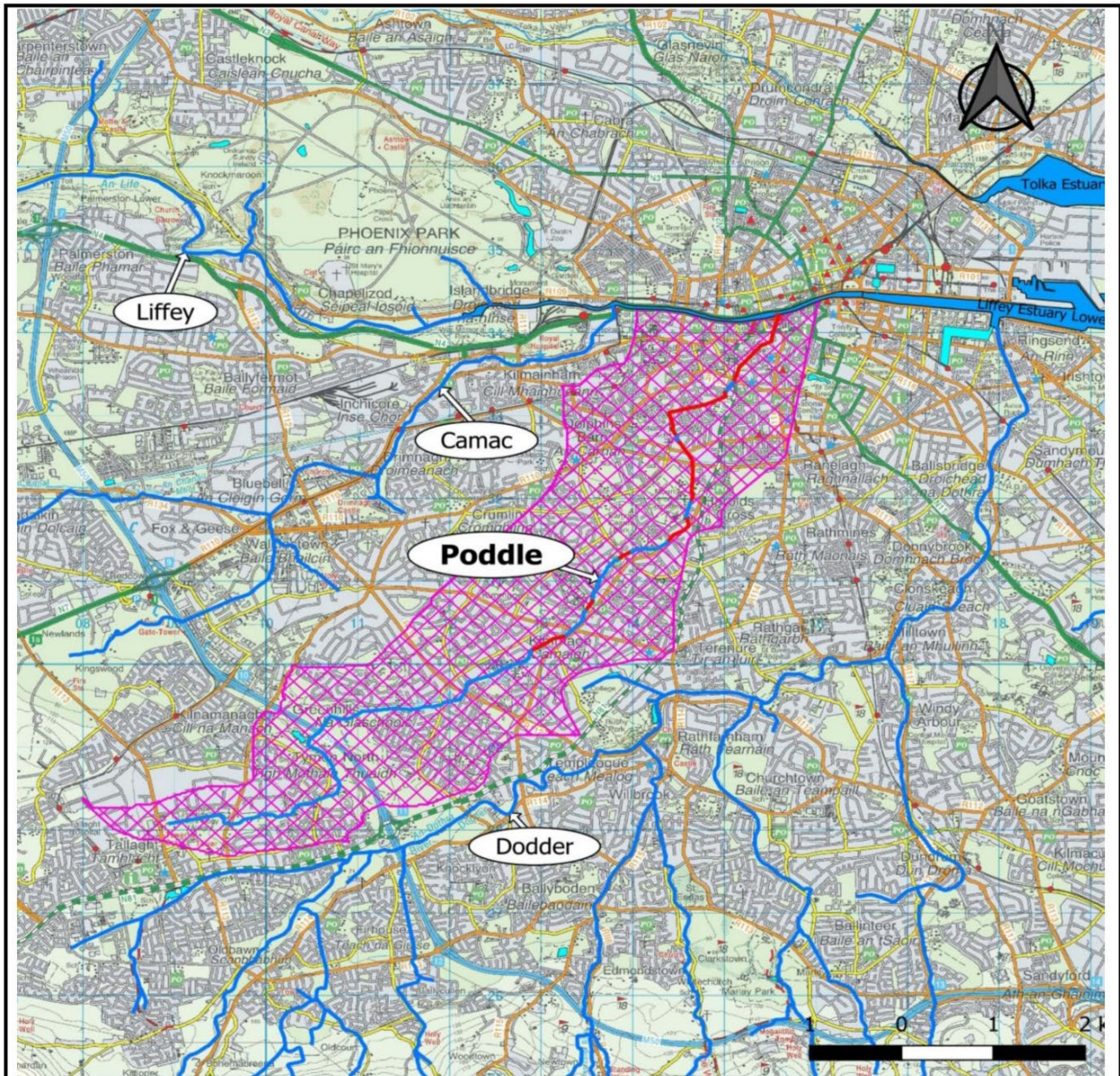
- the implications of the proposed development, if carried out, for proper planning and sustainable development in the area or areas concerned;
- the likely effects on the environment, if carried out; and
- the likely significant effects of the proposed development on a European site.

Any submissions or observations must be accompanied by a fee of €50 (except in the case of certain prescribed bodies) and must be received by the Board no later than 5:30 pm on the 16th April 2020. Such submissions or observations must also include the following information:

- the name of the person, authority or body making the submission or observation, the name of the person, if any, acting on behalf of that person, authority or body, and the address to which any correspondence relating to the application should be sent;
- the subject matter of the submission or observation; and
- the reasons, considerations and arguments on which the submission or observation is or are based.

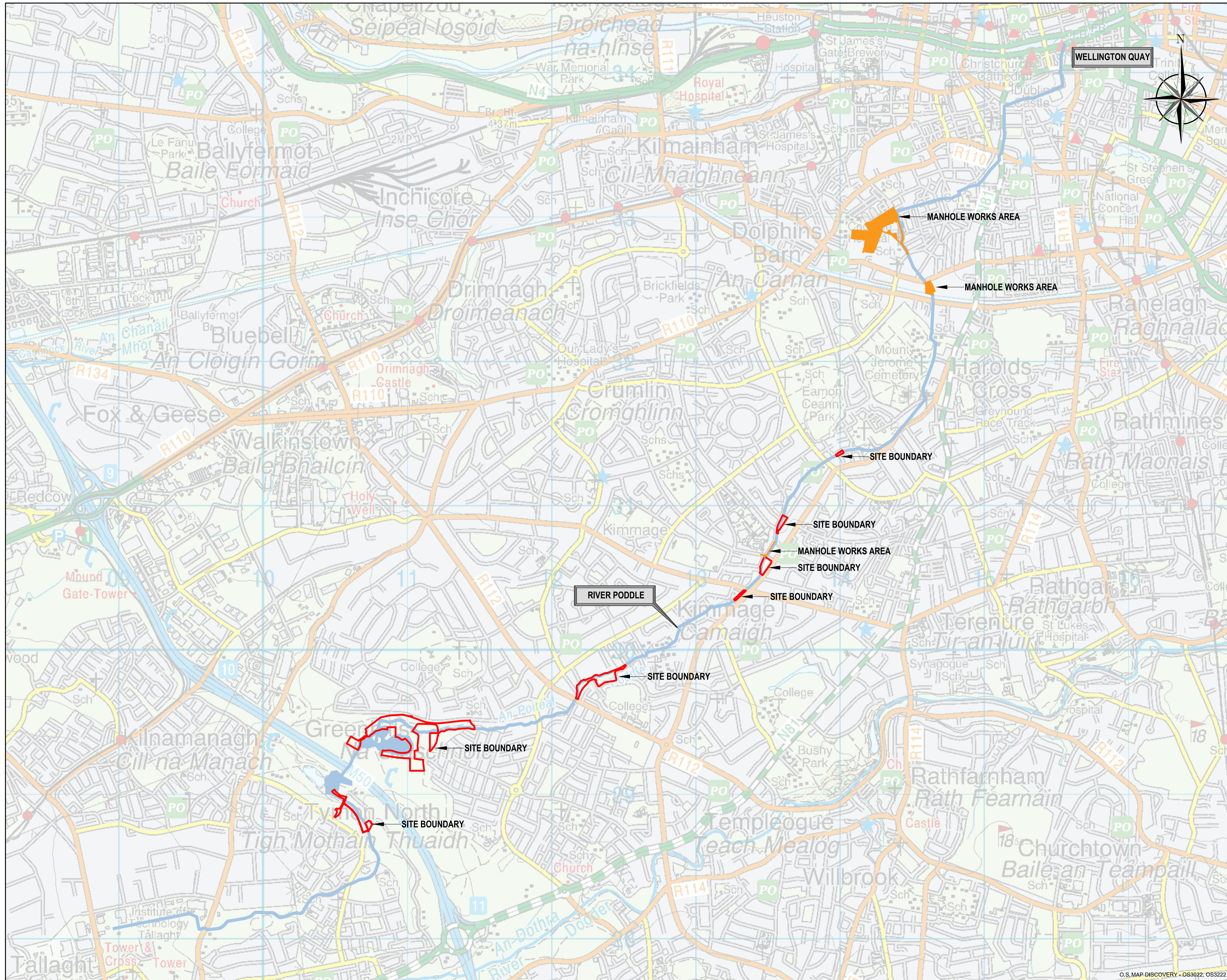
Written submissions received, together with any representations made at any oral hearing, will be considered by the Board in making their decision on whether or not to approve the development, with or without modifications. The Board's decision, including where appropriate, particulars of any modification to the Scheme, will be notified and published in accordance with the requirements of the Planning and Development Act, 2000 as amended.

Construction of the River Poddle Flood Alleviation Scheme is expected to commence in Autumn 2020 pending approval from An Bord Pleanála. The applicants SDCC and DCC will provide regular updates on the project website www.poddlefas.ie throughout the course of the planning application and, in due course, construction.



<p>LEGEND</p> <ul style="list-style-type: none">  Rivers  Poddle Culverted  Poddle Catchment  Transitional Waterbodies  Lakes 	<p> NICHOLAS O'DWYER</p> <p>Unit E4, Nutgrove Office Park, Nutgrove Avenue, Dublin 14 T +353 1 2969000 F +353 1 2969001 E dublin@nodwyer.com W www.nodwyer.com</p>	<p>Project</p> <p>River Poddle Flood Alleviation Scheme</p>
	<p>Client</p> <p> Comhairle Contae Átha Cliath Theas South Dublin County Council</p>	<p>Title</p> <p>River Poddle Catchment Area</p>
	<p> OPW <small>Óifig na hOibreacha Poblaithe</small> Office of Public Works</p> <p> Dublin City Council Comhairle Cathrach Éirinn Átha Cliath</p>	<p>Date: 13/11/19 Drawn by: Robbie Clarke Checked by: Laurie McGee</p>

Map of River Poddle Catchment



NOTES

- All Dimensions are in metres (m) unless noted otherwise.
- All levels are in metres and relate to the Ordnance Survey Datum Mean Head.
- Includes Ordnance Survey Ireland data reproduced under O.S.I. licence number: 2019/23/CCMA/SOUTH DUBLIN COUNTY COUNCIL & 2010/22/CCMA/DUBLIN CITY COUNCIL
- Do not scale from Drawings.
- Proposed works geometry and extents are subject to Detail Design.
- This drawing should be read in conjunction with other River Poddle Alleviation Scheme Planning Drawings.

LEGEND

	PODDLE RIVER
	SITE BOUNDARY
	MANHOLE WORKS AREA

REV	DATE	DESCRIPTION	D	C	A
P01	FEB 2020	ISSUED FOR PLANNING	M.C.	B.T.	B.D.
PROJECT No.	STATUS	PURPOSE OF USE			
20662	A1	PLANNING			

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CLIENT

 Comhairle Contae
 Átha Cliath Theas
 South Dublin County Council

Dublin City Council
 Comhairle Cathrach Bhaile Átha Cliath

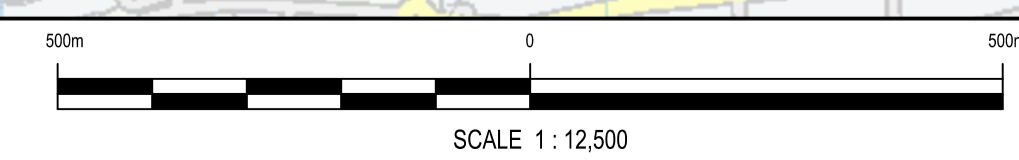
OPW
 Oifig na h-Obairleathas
 Office of Public Works

PROJECT
 RIVER PODDLE
 FLOOD ALLEVIATION SCHEME

TITLE
 RIVER PODDLE MAP

SCALES	DRAWN	CHECKED	APPROVED
1:12,500 @ A1	M. Cheevers	B. Twomey	B. Dunphy
	DATE	DATE	DATE
	18.07.2019	18.07.2019	18.07.2019

DRAWING No.	REVISION
RPFS-NOD-01-XX-DR-C-08100	P01



O.S. MAP DISCOVERY - OS3022, OS3222