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# Planning Report

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**OPW** Oifig na nOibreacha Poiblí  
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## Contract

This report describes work commissioned by Dún Laoghaire-Rathdown County Council and the OPW, by a letter dated 16 December 2019. Hannah Chisnall of JBA Consulting carried out this work.

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## Purpose

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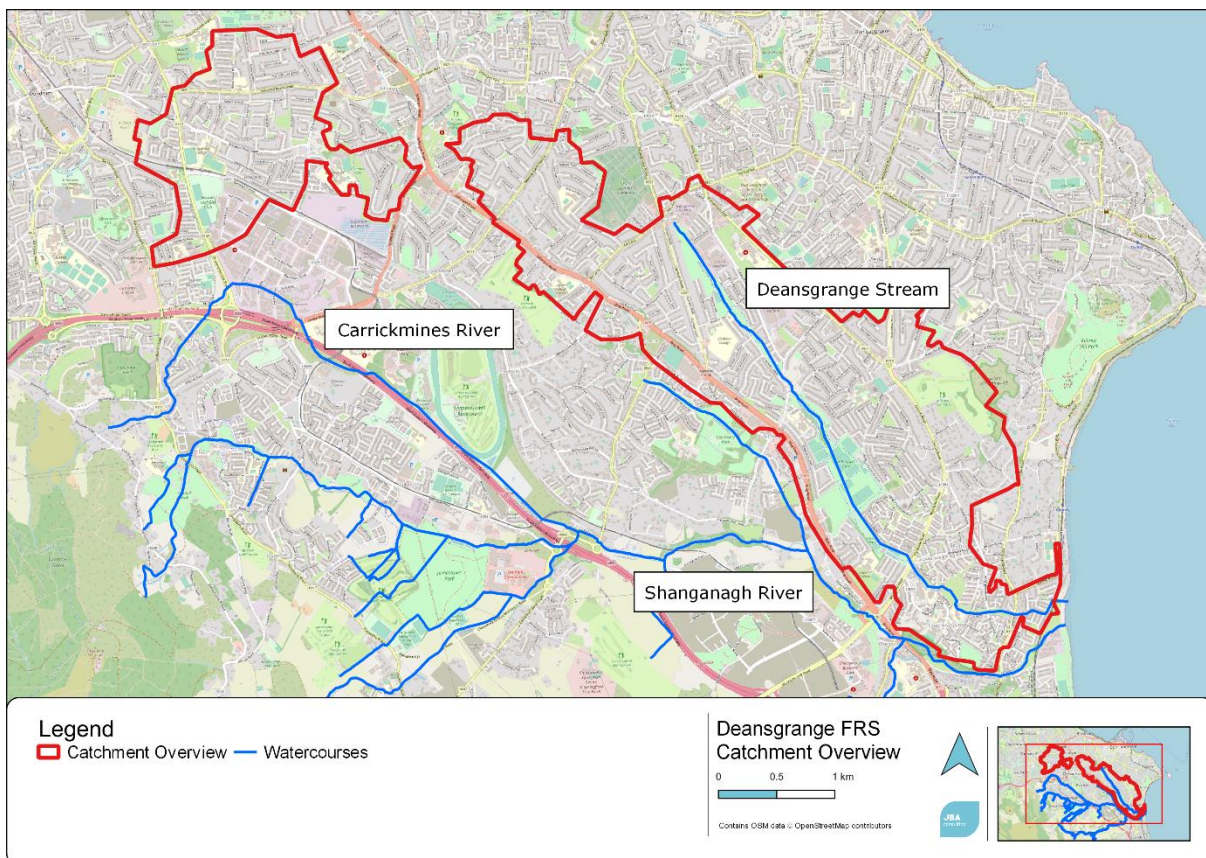
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# 1 Introduction

Dún Laoghaire-Rathdown County Council (DLRCC), along with their project partners the Office of Public Works (OPW), appointed the joint venture team of JBA Consulting Engineers and Scientists Ltd. (JBA) and JB Barry & Partners (JBB) (JV) to assess, develop and design a viable, cost-effective and sustainable Flood Relief Scheme (FRS) for the Deansgrange Stream catchment which aims to minimise risk to the community, social amenity, environment and landscape character. The Deansgrange Stream flows from north-west to south-east before discharging into the Irish Sea. The catchment is 8.34km<sup>2</sup> in area and slopes from the highest elevation of 100mOD in the north-west to sea level at the discharge point. The catchment is heavily urbanised with a limited number of large greenspace areas. There are additional flows into the watercourse from the West-Pier area via stormwater connections. The Carrickmines-Shanganagh River flows to the south of the Deansgrange Stream. There is no connection between the two watercourses. Figure 1-1 shows the Deansgrange Stream catchment and study area.



**Figure1-1: Deansgrange FRS Catchment Overview**

Historically the catchment has been subject to fluvial flooding from the Deansgrange Stream at various locations and has been the subject of multiple flood studies. The largest and most important studies being the Greater Dublin Strategic Drainage Study (GSDSD) and the Eastern Catchment Flood Risk Assessment and Management (ECFRAM) Study. The GSDSD and ECFRAM studies examined the catchment from a stormwater drainage capacity and fluvial flooding perspective respectively. As part of the Eastern CFRAM study the area was identified as one where a Flood Relief Scheme (FRS) that would protect properties during the 1% Annual Exceedance Probability (AEP) event would be beneficial.

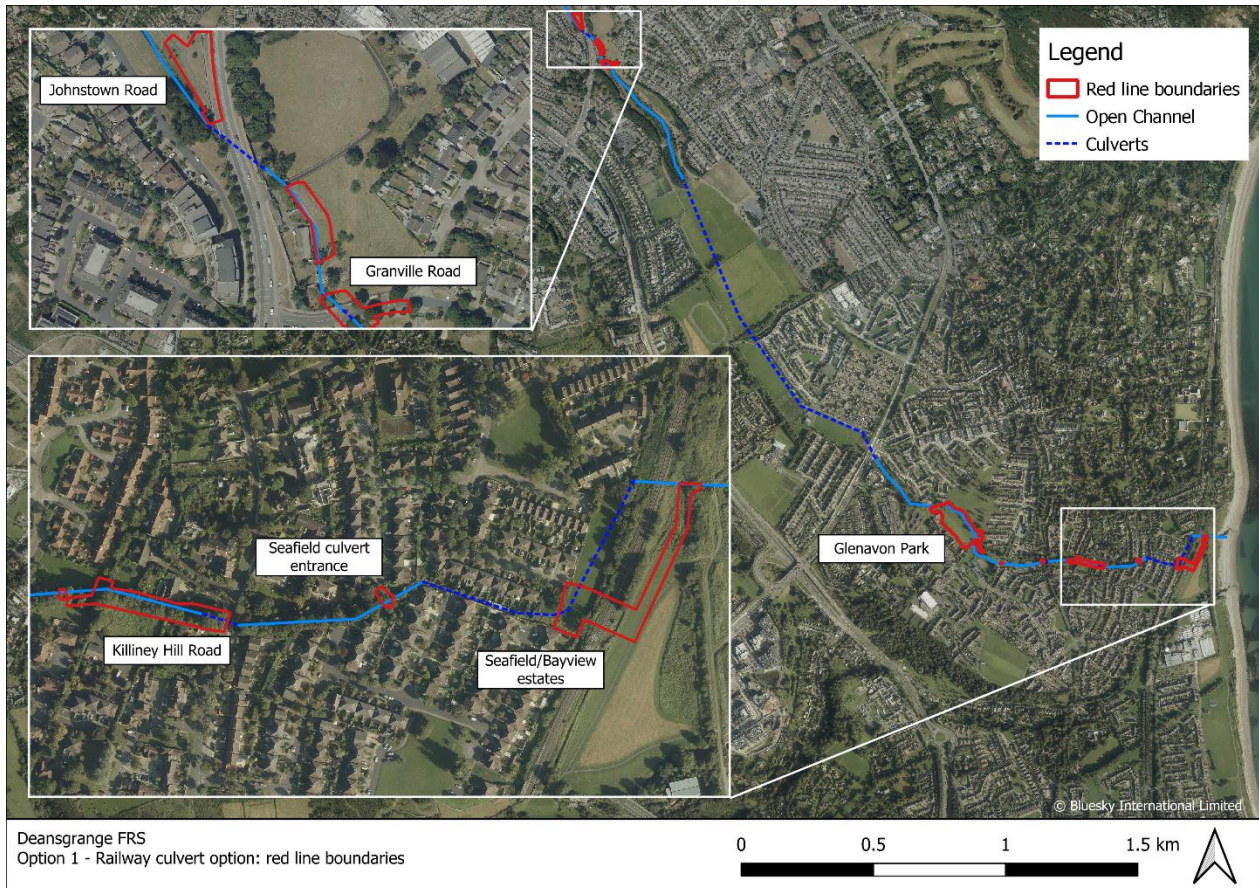
The Deansgrange Flood Relief Scheme (FRS) has built on the work of previous studies. Its overall aim is to develop a flood relief scheme to protect properties during events up to the 1% AEP event that is technically, socially, environmentally and economically acceptable. The FRS consists of five separate stages including option and scheme development, planning, detailed design, construction and handover to the Client. The JV has completed Stage I of the Deansgrange Stream FRS by identifying & a preferred option to alleviate

the risk of flooding for a 1% AEP event which is the required standard of protection. The preferred option, which is hereinafter referred to as the proposed development, consists of a series of measures at different locations throughout the catchment; these are all described further in Section 2 below. The proposed development is being submitted under Part 8 of the Planning and Development Regulations (2001) as amended & is intended to meet the project objectives and recommendations identified by previous studies.

## 2 Proposed Development

### 2.1 Site Locations

The proposed development for the Deansgrange stream FRS includes a series of measures at different locations throughout the catchment. The works will include site locations at Johnstown Road, Granville Road, Glenavon Park, Killiney Hill Road, Seafield – Bayview Estates, Shanganagh Road and Abberley. These site locations are identified in Figure 2-1 below.



**Figure 2-1: Option 1 Railway culvert option: red line boundaries**

### 2.2 Description of Proposed Development

The proposed development to serve the Deansgrange Stream FRS will consist of works at the following:

- The relocation of an existing pedestrian entrance serving the walkway at the southwest of Clonkeen Park. The new entrance will be constructed 47m to the north of the existing entrance and will be installed to match the material finishes of the existing entrance. A new masonry stone wall and decorative railing to match the existing wall features will be installed at the location of the existing entrance. To facilitate the continued circulation of pedestrians throughout the park, a new 4m wide footpath will be installed to integrate Johnstown Road and the existing pedestrian circulation route. The existing public cycle path will be extended north to facilitate continued access for cyclists to Clonkeen Park.
- The replacement of 2 No. existing 1050mm dia. concrete pipes with a new 1.2m high x 3m wide concrete culvert, headwalls and reinstatement works of the road carriageway, grass verges and footpaths at Granville Road.
- A new offline flood storage system with a total storage volume of 9,615m<sup>3</sup> including 2 No. detention basins, wetlands, flood defence embankment, flow control structure, pedestrian bridge, footpaths and landscaping within the existing greenspace at Glenavon Park.

- Construction of 240m of new flood defence walls up to 1.5m in height along the boundaries of the properties upstream of the existing bridge at Killiney Hill Road. At the upstream face of the existing bridge, the existing stone parapet will be upgraded.
- Installation of 166m of new concrete overflow pipe, new flow control structure at the existing culvert at Seafield Court and new outfall headwall to the existing Deansgrange stream. The upstream section of the sewer will be installed underneath the existing DART railway line. The section of pipe further downstream will traverse the amenity area east of the DART railway line before discharging at the riverbank of the Deansgrange Stream adjacent to the existing outfall arch under the railway embankment.
- The demolition and removal of the existing debris screen and adjoining boundary walls at the inlet to culvert between Seafield Court and Bayview housing estates. The construction of new reinforced concrete walls adjoining the culvert and installation of a new prefabricated steel debris screen with working platform for maintenance at the entrance to the existing Seafield culvert.
- A new coarse debris screen to be installed at the pedestrian bridge adjoining the Abberley estate and upstream of Killiney Hill Road.
- The existing debris screens at Shanganagh Road and the Fish Pass in the environs of St. Columbanus National School to be upgraded. The existing screens and associated ancillaries will be demolished and replaced with new foundations, support structures and new prefabricated debris screens.

The proposed development is described in further by the associated planning drawings, listed in Section 3.8.

## 3 Supporting Work

### 3.1 Topographic Survey

Topographical survey information was gathered during Stage I of the project and has been used to progress the planning level design of the proposed development. The main objective of the topographical survey was to collate more detailed information about the existing catchment topography. This information was then utilised as part of the hydraulic assessments to pinpoint flood risk areas, assess flood damages, test various measures and identify a preferred scheme. The information was also adopted into the development of preliminary and planning level designs for the FRS. The survey data included spot levels, building thresholds, cross sectional data of the stream and other features (fences, walls, street furniture, footpaths, road and other defining topographic information).

### 3.2 Site Investigation Survey

A Site Investigation (SI) contract was designed, procured and undertaken during Stage 1 of the FRS project. The objective of the investigation works was to ascertain all the necessary ground data required to inform the preliminary design assess and identify any limitations or risks associated with the existing ground conditions. The SI design included boreholes (cable percussion, rotary and combined), trial pits, dynamic probes, inspection pits and slit trenches at Granville Rd, Glenavon Park, and the Seafield/ Bayview estates.

### 3.3 Planning Documents

The following reports and drawings were carried out and are included within the planning application:

- Planning Summary (this report)
- Site Location Maps
- Engineering Drawings
- Landscape Drawings
- Appropriate Assessment Screening
- Ecological Impact Assessment
- Environmental Impact Assessment Screening
- Arboricultural Impact Assessment

### 3.4 Arboricultural Impact Assessment

Arbor-Care Ltd has prepared an Arboricultural Impact Assessment (AIA) for the proposed works at Killiney Hill Road Bridge as part of the scheme. The works here were identified as an area with potential for significant impacts on trees.

The banks of the Deansgrange Stream in the area of proposed works are lined with mature deciduous trees. The tree survey categorised the trees in terms of their quality in accordance with BS 5837 2012. Following the survey, the proposed design of the defences in this area was altered in order to minimise the potential impact on trees. 3 no. trees are likely to require removal to facilitate the proposed defences. An arborist will be on site during works to ensure every effort is made to retain these trees.

### 3.5 Appropriate Assessment Screening

JBA Consulting has prepared an Appropriate Assessment (AA) Screening Report for the proposed Flood Relief Scheme, to determine whether the proposed development is likely to have a significant adverse effect on a European designated site, either individually or in combination with other plans or projects. European designated sites, or Natura 2000 sites, include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).



Natura 2000 sites within a 5km range of the development, and an extended 15km range for sites with a downstream hydrological connection, were assessed as being within the zone of influence of the FRS. These sites are:

- South Dublin Bay and River Tolka Estuary SPA
- South Dublin Bay SAC
- Dalkey Islands SPA
- Rockabill to Dalkey Island SAC
- Ballyman Glen SAC

All other Natura 2000 sites are not anticipated to be impacted due to either distance or absence of a pathway between the development site and the receiving environment.

The Qualifying Interests and potential threats and their impacts and sources in relation to the Natura 2000 sites were examined. Following initial screening and based upon best scientific judgement, it was concluded that there will be no likely significant effects from the project on Natura 2000 sites either alone or in combination with any other plans or projects.

### 3.6 Ecological Impact Assessment

JBA Consulting has prepared an Ecological Impact Assessment (EclA) in relation to the FRS. The aims of the EclA are to:

- Establish baseline ecological conditions to enable identification of potentially important ecological features within the zone of influence of the project
- Determine the ecological value of identified ecological features
- Assess the significance of impacts of the proposed project on ecological features of value
- Identify avoidance, mitigation or compensatory measures
- Identify residual impacts after mitigation and the significance of their effects
- Identify opportunities for ecological enhancement

Baseline conditions present information gathered from existing desk-based sources and site visits as detailed in the report. The report concludes that the construction and operation of the proposed FRS has the potential to impact a number of different habitats with high local to international importance and faunal groups whose ecological importance ranges from high local to county level in the context of this site. To combat this, mitigation measures are outlined in the EclA that, when implemented fully, will ensure potential impacts are reduced to negligible or slight significance. These include:

- Recommendation that a Construction Environmental Management Plan (CEMP) be prepared and implemented by the appointed contractor.
- Measures for the setup and operation of the site compounds. The site compounds will be located at least 50m away from watercourses at all times.
- Pollution (silt, dust and noise) control measures during construction.
- A detailed methodology and mitigation measures regime for the instream works.
- Trees will be retained wherever possible, with root protection zones established around mature trees if works are in close proximity to them. If mature trees (+6m in height or with old growth) are to be removed, they will require examination by a qualified arborist prior to removal.
- Works should be avoided during key breeding periods for birds and amphibians, set out in full in the EclA. In particular, the Granville Rd Culvert is next to a frog spawning area, and trees should not be removed during the bird nesting season.
- The shingle beach onto which the Deansgrange Stream has its outfall is an Annex I habitat and part of a pNHA. Any works taking place in this area will require an Ecological Clerk of Works (ECoW) to be present.

With mitigation measures in place, there will be no significant impacts alone or in-combination with other projects and plans, as result of the development and associated works on the ecology and local species of the area and on any designated conservation sites.

## 3.7 Environmental Impact Assessment Screening

JBA Consulting has prepared an Environmental Impact Assessment (EIA) Screening Report for the proposed Flood Relief Scheme, to determine whether an EIAR is required. The EIA Screening Report first examines Schedule 5, Parts 1 and 2 of the Planning and Development Regulations 2001 as amended, to determine if the project is subject to Mandatory EIAR. Following that, it considers whether the proposed development could be considered a sub-threshold development, requiring an EIAR due to its potential for significant impacts on the environment.

### 3.7.1 Mandatory EIAR

Schedule 5 of the 2001 Regulations as amended lists types of projects which, by their nature, are expected to have significant impacts on the environment and so are subject to a Mandatory EIAR. The proposed development did not fall under any of the categories of project in Part 1 of Schedule 5.

Schedule 5 Part 2(10)(f)(ii) of the 2001 Regulations as amended sets out the criteria for mandatory EIAR of flood relief schemes. This category contains three thresholds;

1. “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”
2. “where more than 20 hectares of wetland would be affected”
3. “where the length of river channel on which works are proposed would be greater than 2 kilometres”

The proposed development details were examined with regard to these thresholds. It was found that the immediate contributing sub-catchment of the proposed works is 92 hectares, that no wetland habitat would be affected by the proposed works, and that the total length of river channel on which works are proposed is 1.37km. The scheme is therefore below the thresholds, and is not subject to Mandatory EIAR.

### 3.7.2 Sub-threshold EIAR

In order to examine whether the proposed development should undergo a sub-threshold EIAR, an assessment of the potential environmental impacts of the development was undertaken.

During construction, typical impacts such as noise, dust, general disruption and the generation of small amounts of waste are to be expected. These are typical construction phase impacts, and will be mitigated against by environmental operating plans to be put in place by the appointed contractor. These impacts will not be significant.

The AA Screening (Section 3.5 above) found no potential impacts on Natura 2000 sites, either during construction or operation. The EclA (Section 3.6 above) found potential for impacts on ecology and outlined mitigation measures to combat these. With mitigation measures in place, impacts on ecology are expected to be of slight significance during construction and operation. Impacts to biodiversity are therefore not significant.

The scheme is likely to have a negative impact on hydrology and hydrogeology during construction. Instream works have the potential to cause significant impacts if not properly carried out and managed. Mitigation measures outlined in the EclA will ensure that, once properly implemented, impacts on surface and groundwater will not be significant, and will generally be intermittent and temporary, during the construction stage.

Impacts on cultural heritage are not expected to be significant during construction or operation. During construction, underground archaeology could be uncovered during excavations; an archaeologist will be

present on site during any excavations. Once operational, the defences will not have a negative impact on any recorded archaeology or architecture.

During operation, the proposed development will be low in environmental impact, and will have positive impacts on population and human health due to the improved level of flood protection provided.

An EIAR is not required for the proposed development.

### 3.8 Engineering and Landscape Drawings

The JV have prepared engineering and landscape proposals and drawings as part of the planning documents to present the works visually. The following drawings are submitted as part of the Part 8 application:

Drawing No.	Drawing Title:
▪ 19110-JBB-00-XX-DR-Z-02800	Key Location Plan
▪ 19110-JBB-00-XX-DR-Z-02801	Site Location Plan Sheet 1 of 3
▪ 19110-JBB-00-XX-DR-Z-02802	Site Location Plan Sheet 2 of 3
▪ 19110-JBB-00-XX-DR-Z-02803	Site Location Plan Sheet 3 of 3
<u>Granville Road:</u>	
▪ 19110-JBB-00-XX-DR-C-02810	Site Layout & Section A-A
▪ 19110-JBB-00-XX-DR-C-02811	Culvert Elevations & Cross Sections
▪ 19110-JBB-00-XX-DR-C-02812	Channel Widening Cross Sections
<u>Glenavon Park:</u>	
▪ 19110-JBB-00-XX-DR-C-02813	Site Layout Sheet 1 of 2
▪ 19110-JBB-00-XX-DR-C-02828	Site Layout Sheet 2 of 2
▪ 19110-JBB-00-XX-DR-C-02814	Proposed Section A-A
▪ 19110-JBB-00-XX-DR-C-02815	Proposed Sections B-B, C-C & D-D
<u>Killiney Hill Road:</u>	
▪ 19110-JBB-00-XX-DR-C-02816	Site Layout
▪ 19110-JBB-00-XX-DR-C-02817	Proposed Wall Elevations 1 & 2
▪ 19110-JBB-00-XX-DR-C-02818	Proposed Wall Cross Sections
<u>Seafield Culvert Overflow:</u>	
▪ 19110-JBB-00-XX-DR-C-02819	Site Layout
▪ 19110-JBB-00-XX-DR-C-02820	Proposed Sections A-A & B-B
<u>Debris Screens:</u>	
▪ 19110-JBB-00-XX-DR-C-02822	Debris Screens: Key Plan
▪ 19110-JBB-00-XX-DR-C-02823	Fish Pass Screen: Site Layout & Sections
▪ 19110-JBB-00-XX-DR-C-02824	Shanganagh Road Screen: Site Layout & Sections
▪ 19110-JBB-00-XX-DR-C-02825	Abberley Screen: Site Layout & Sections
▪ 19110-JBB-00-XX-DR-C-02826	Seafield Culvert Screen: Site Layout & Sections
<u>Johnstown Road:</u>	
▪ 19110-JBB-00-XX-DR-C-02827	Plan and Elevations

## 4 Consultation

Consultation and discussion with key stakeholders, third parties and landowners was carried out throughout Stage I of the project to allow feedback to be incorporated into the scheme. This section details the consultations recorded during the options development stage.

### 4.1 Public Consultation

As part of the options development the JV has undertaken the following Public Consultation Days (PCD):

#### 4.1.1 Opening PCD

Due to the COVID-19 pandemic & in the interest of public safety, no in person public consultation was held for the project. Instead, a virtual PCD was organised and undertaken within the project website by the JV from the 5<sup>th</sup> to 25<sup>th</sup> of October 2020. The purpose of the event was to gather initial views from the public and stakeholders the constraints study, the different options to manage flooding, highlight points of local importance and collate information on recent flood events. As part of the PCD, a narrated presentation giving an overview of the project and the work undertaken to date was uploaded to the project website. The presentation slides were also made available to download by the general public. Further to this a questionnaire was made available, both fillable online and downloadable, for interested parties to complete and send in observations and feedback. The feedback was compiled in an event summary report and considered by the project team in advance of the optioneering stage.

#### 4.1.2 Preferred Option PCD

A public consultation event on the preferred FRS for the Deansgrange Stream was held on the 13th December 2022 at Loughlinstown Leisure Centre. The purpose of the event was to present and inform all interested public parties on the preferred option for managing flooding within the catchment. The intention of the PCD was to engage with interested parties on the project and elicit viewpoints and feedback from the public on the preferred option. Project team members from the OPW, DLRCC and the JV were in attendance at the PCD and were available to present the exhibited posters, provide explanations of information presented and answer questions from attendees. All information (posters) presented on the day by the project team was made available on the website after the event. An online version of the questionnaire was also made available after the event to allow public feedback after the event day. Other queries after the event were submitted via the project email address ([info@deansgrangefrs.ie](mailto:info@deansgrangefrs.ie)). Each of these queries has been considered as part of the consultation on the preferred scheme option. The feedback received during the event was considered in advance of this planning application.

### 4.2 Other consultation:

#### 4.2.1 Irish Rail

As part of the initial development of measures, it was identified in November 2020 that an additional flood relief culvert was required to increase the conveyance of the existing Seafield – Bayview Culvert to alleviate flood risks. This became an essential measure for the FRS. Once identified as an essential measure of the FRS, initial discussions with Irish Rail were prioritised to ensure confidence in the proposals before seeking the necessary planning consents to construct the overflow culvert beneath the existing DART line. Consultation between the parties on the initial designs, construction requirements and risks began in December 2020. In July 2022, the proposal was agreed in principle to allow a Part 8 planning application to be submitted however the more formalised consent agreement will be sought at the next project stage.

#### 4.2.2 Killiney Hill Road property owners

The residents immediately upstream of Killiney Hill Road Bridge and adjoining the existing culvert debris screen at Seafield were consulted on the proposed development during the latter parts of the Stage I works & in advance of the PCD.

## 5 Conclusion

This application seeks approval for the proposed Deansgrange Stream Flood Relief Scheme.

The Deansgrange Stream has a history of flooding, with significant impacts to residential properties in areas such as Bayview and Seaford Estates, Killiney Hill Road and Granville Road. The flood risk in these areas and others along the Stream may increase in the future, due to climate change, additional development in the area, and changes in land use and drainage. Without intervention, significant damages to people and property are possible in the future.

The proposed scheme will provide flood defence measures to protect key areas along the Deansgrange Stream from a 1% AEP flood event. This will help to support the social and economic development of the area.

The proposed scheme has been assessed in detail and is considered to be appropriate for its location, with regard to National, Regional, and Local Planning Policy and Land Use Zoning Objectives. In addition, the form, nature, and extent of the proposed flood defence measures have been informed and guided by detailed pre-application consultation with members of the public, council members, local businesses, and individuals representing organisations and statutory bodies.

The FRS Steering Group, which consists of Dún Laoghaire-Rathdown County Council, the Office of Public Works, JB Barry & Partners Limited, and JBA Consulting, are satisfied that the proposed Flood Relief Scheme has undergone rigorous assessment and consideration of all necessary requirements, constraints, objectives and opportunities, and that it represents a high-quality design which is the optimum solution to the flooding risk presented by the Deansgrange Stream Catchment. The proposed FRS has been subject to detailed environmental assessment in the form of EIA Screening, Screening for Appropriate Assessment, and Ecological Impact Assessment.

For the reasons highlighted above, and in the planning drawings, EIA Screening Report, AA Screening Report, EclA and other supporting plans and particulars forming part of this application, approval for the proposed scheme is now sought.



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