

# Flood Risk Assessment

## St. Nicholas Quarter Phase 2

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# 1.0. Executive Summary

This Site-Specific Flood Risk Assessment (SSFRA) has been prepared in support of the proposed St. Nicholas Quarter Phase 2 development located between Linenhall Street and Bridge Street, Dundalk, County Louth.

The proposed development forms part of the wider St. Nicholas Quarter Regeneration Project being delivered by Louth County Council within Dundalk Town Centre. The development comprises public realm space to the grounds of St. Nicholas Church, the construction of multifunctional Cultural and Community Hub with East West pedestrian connection. 6 no. residential units consisting of 4 no. one bedroom units and 2 no. bedroom units. New pedestrian east west connection at Meeting House Lane and the complete rejuvenation of the Peace Park.

The assessment has been prepared in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) together with relevant guidance published by the Office of Public Works (OPW), Geological Survey Ireland (GSI), Uisce Éireann and Louth County Council.

A review of the available OPW Community Flood Mapping has been undertaken to assess potential flood risk affecting the site from a range of sources, including fluvial, coastal, surface water and groundwater flooding.

The reviewed mapping indicates that the proposed building elements (community facility and residential units) lies outside the mapped fluvial flood extents associated with the Castletown River under the Present Day, Mid-Range Future and High-End Future scenarios. Fluvial flooding is therefore not considered to represent a significant source of flood risk affecting the proposed development.

The Peace Park lies within the mapped fluvial flood extents associated with the Castletown River under the Present Day, Mid-Range, Future and High-End Future scenarios no building proposals are associated with the site and the proposed landscape measures will incorporate permeable surfaces, maintain existing flow paths and rain gardens and will be designed to be compatible with the existing floodplain and function of the park and will not result in a significant increase in flood risk to surrounding lands.

Both Meeting House Lane East West Pedestrian connection and the works to St. Nicholas Church grounds lie outside the mapped fluvial area extents associated with the Castletown River

Review of the available coastal flood mapping indicates that the proposed building elements (community facility and residential units) of the proposal outside the mapped Present Day coastal flood extent. The reviewed Mid-Range Future and High-End Future coastal mapping, which incorporate allowances for future sea level rise, similarly indicate that the site remains outside the mapped coastal flood extents.

The Peace Park lies within the mapped coastal flood extents associated with Castletown River. The reviewed Present Day, Mid-Range Future and High-End Future coastal mapping similarly to the Fluvial Flooding no building proposal is proposed for the site and landscaping measures will be designed to be compatible with the existing floodplain and will not result in significant increase in flood risk to the surrounding lands.

Meeting House Lane East West Pedestrian connection and the works to St. Nicholas Church grounds lie outside the reviewed Mid-Range Future and High-End Future coastal mapping, which incorporate allowances for future sea level rise, similarly indicate that the site remains outside the mapped coastal flood extents.

The OPW Community Flood Mapping also includes climate change scenarios which combine increases in sea level rise and rainfall intensity. Review of these scenarios indicates that limited coastal and estuarine flood extents may encroach the eastern boundary of the site under both the Mid-Range Future and High-End Future climate change assessments. The mapped flood extents are largely confined to existing hardstanding areas adjacent to the proposed residential units and do not extend significantly across the wider development site. At the time of writing, detailed flood depth and flood level information was not available for review.

Whilst the OPW Community Flood Mapping is strategic in nature and intended for community-scale assessment rather than assessment of individual properties, the reviewed information indicates a limited potential for future coastal and estuarine flooding affecting the eastern extent of the site under extreme climate change scenarios. Appropriate flood mitigation and resilience measures can be incorporated during detailed design, including the establishment of suitable finished floor levels, raised threshold levels, flood-resilient construction measures and site-specific flood protection measures where required.

Subject to the implementation of appropriate mitigation measures at detailed design stage, flood risk is not considered to represent a significant constraint to the proposed developments.

## 2.0. Introduction

### 2.1. Appointment and Brief

BDP has been commissioned by Louth County Council to prepare a Site-Specific Flood Risk Assessment (SSFRA) in support of the proposed St. Nicholas Quarter Phase 2 Development in Dundalk, County Louth.

The proposed development forms part of the wider St. Nicholas Quarter regeneration initiative and is located on lands between Linenhall Street and Bridge Street within Dundalk Town Centre. The assessment has been prepared to support the planning and design process and to identify existing and future flood risks that may affect the development during its lifetime.

The assessment has been prepared to identify sources of flooding that may affect the site, review historical and recorded flood-risk information, assess the potential implications of climate change, and inform the proposed development layout, finished floor levels and mitigation measures where necessary. It has also been prepared having regard to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (Department of the Environment, Heritage and Local Government and OPW, 2009), including the sequential approach and development management principles relevant to planning applications in Ireland.

### 2.2. Sources of information

This report summarises data supplied or provided from the following external sources listed below.

**Table 1: Existing available information**

| Source of Information                                                                                  | Author                                           | Date                 |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------------|
| Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices | OPW / DoEHLG                                     | 2009                 |
| National CFRAM Programme and Flood Risk Management Plans                                               | OPW                                              | Various              |
| Flood Hazard and Flood Risk Mapping                                                                    | OPW Floodinfo.ie                                 | Current              |
| Topographical Survey (Drawing No. 5036_T_3D_Rev0)                                                      | IO Geomatics                                     | 2026                 |
| Site Layout and Masterplan Drawings                                                                    | BDP                                              | Current Design Stage |
| OPW Data Request Correspondence and Response                                                           | OPW Data Management Team                         | 2026                 |
| Aerial Photography and Mapping                                                                         | Ordnance Survey Ireland / Online Mapping Sources | Current              |

This Flood Risk Assessment has been prepared using information obtained from a range of available sources, including OPW Flood Maps, OPW Community Flood Mapping, Geological Survey Ireland (GSI) mapping, Ordnance Survey mapping, aerial photography, publicly available planning information, site-specific survey information and information provided by the design team.

The assessment has considered available information relating to fluvial, coastal, surface water, groundwater and historical flooding, together with relevant national planning policy and guidance relating to flood risk management.

The information reviewed has been used to establish the flood risk context of the site, identify potential flood mechanisms and assess the suitability of the proposed development from a flood risk perspective.

### **2.3. Policy and Guidance Framework**

This assessment has been prepared in accordance with the requirements of the Irish planning system and current best practice guidance relating to flood risk management. Primary consideration has been given to the Planning System and Flood Risk Management Guidelines for Planning Authorities (2009), published jointly by the Department of the Environment, Heritage and Local Government and the Office of Public Works. These guidelines establish the flood risk management framework for development proposals within Ireland and require planning authorities to ensure that flood risk is appropriately managed through the planning process.

Reference has also been made to the policies and objectives contained within the current Louth County Development Plan, which seeks to minimise flood risk, safeguard floodplains and promote sustainable approaches to surface water management. In addition, the assessment has considered guidance published by the Office of Public Works relating to flood mapping and flood risk management, together with current best practice guidance for Sustainable Drainage Systems and surface water management.

The assessment has been undertaken with due regard to the principles of sustainable development, climate adaptation and the application of SuDS measures where practicable, recognising the importance of integrating flood risk management into the wider regeneration objectives for the St. Nicholas Quarter area.

### **2.4. Limitations**

At the time of writing, detailed hydraulic model outputs and design flood level information for the Castletown River were not available for review. Consequently, the assessment has been undertaken using the best available information currently accessible, including publicly available flood mapping, topographical survey information and site-specific development proposals.

The findings of this assessment should be reviewed as additional information becomes available during the detailed design process. In particular, confirmation of applicable design flood levels, climate change flood levels, proposed finished floor levels and detailed surface water drainage calculations will allow the assessment of residual flood risk to be further refined.

Ground investigation information and infiltration testing results were not available at the time of writing. Whilst these do not materially affect the conclusions of this planning-stage assessment, they should be considered during the detailed design of the drainage strategy and any proposed Sustainable Drainage Systems.

Historic flood records and any site-specific hydraulic modelling information associated with the Castletown River may provide additional context regarding local flood mechanisms and should be reviewed if available.

## 3.0. Site Context

### 3.1. Site Location

The proposed development is located within Dundalk town centre, County Louth, on lands situated between Linenhall Street and Bridge Street. The proposed built development is generally within the St Nicholas Quarter and approximately 250m south of the river corridor, although proposed landscaped elements of the wider regeneration area extend closer to the river.

The site is located within the wider Castletown River catchment and in proximity to Dundalk Bay and the lower Castletown Estuary. Potential future coastal and estuarine flooding associated with climate change represents the principal flood risk consideration for the proposed development.



Figure 1: Proposed Site Location Map

### 3.2. Site Characterisation/ Land-Use

Existing land uses include surface parking, hardstanding, public realm areas hard and soft landscaping and underutilised development plots. No. 2, 3 Bridge Street, 27 Bridge Street, Meeting House Lane and Linenhall Carpark is largely impermeable in its current condition and is served by existing utility and drainage infrastructure within the surrounding road network. The Peace Park, and St. Nicholas Church's garden are more permeable due to a mix of paved and landscaped areas. Its location within Dundalk Town Centre and proximity to Dundalk Bay and the lower Castletown Estuary are key considerations in assessing future flood risk and climate resilience. The proposed development site area is 0.6354 ha total

**Table 2: Summary of site characteristics**

|                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site</b>                             |            | Proposal no. 2, 3 Bridge Street and Linenhall Street carpark.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Site Description and Current Use</b> |            | <p>The site comprises a brownfield urban regeneration site located within the St. Nicholas Quarter area of Dundalk Town Centre, County Louth. The site is situated between Linenhall Street and Bridge Street within Dundalk Town Centre and forms part of the wider St. Nicholas Quarter regeneration area. Existing features include hardstanding areas, access routes, boundary walls, existing buildings and associated drainage infrastructure.</p> <p>Existing land uses include surface parking, hardstanding, public realm areas and underutilised development plots.</p> |
| <b>Boundaries</b>                       | North      | Existing commercial and mixed-use town centre development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                         | East       | Linenhall Street (R132) and adjoining town centre development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                         | South      | St. Nicholas Church lands and adjoining development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                         | West       | Bridge Street and adjoining commercial development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Access</b>                           | Vehicular  | Existing vehicular access is provided from the surrounding public highway network, including Linenhall Street and Bridge Street.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                         | Pedestrian | Existing pedestrian access is available from Linenhall Street, Bridge Street and surrounding town centre footway networks. The proposed development seeks to improve pedestrian connectivity within the wider St. Nicholas Quarter regeneration area.                                                                                                                                                                                                                                                                                                                             |

|                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site</b>                             |            | St. Nicholas Church Public Realm                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Site Description and Current Use</b> |            | The site comprises a Church Garden located within the St. Nicholas Church in Dundalk Town Centre, County Louth. The site is situated between Linenhall Street and Bridge Street within Dundalk Town Centre and forms part of the wider St. Nicholas Quarter regeneration area. Existing features include hardstanding areas, access routes, boundary walls, existing Church and associated drainage infrastructure.<br><br>Existing land uses include hardstanding and public realm. |
| <b>Boundaries</b>                       | North      | Existing commercial building                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                         | East       | Linenhall Street (R132)                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                         | South      | Existing pedestrian footpath and vehicular carriageway.                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                         | West       | Bridge Street                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Access</b>                           | Vehicular  | Existing vehicular access is provided from the surrounding public highway network, including Linenhall Street and Bridge Street.                                                                                                                                                                                                                                                                                                                                                     |
|                                         | Pedestrian | Existing pedestrian access is available from Linenhall Street, Bridge Street and surrounding town centre footway networks. The proposed development seeks to improve pedestrian connectivity within the wider St. Nicholas Quarter regeneration area.                                                                                                                                                                                                                                |

|                                         |            |                                                                                                                                                                                                                                                                     |
|-----------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site</b>                             |            | Meeting House Lane                                                                                                                                                                                                                                                  |
| <b>Site Description and Current Use</b> |            | The site comprises of an existing commercial unit facing onto Bridge Street and residential units on Meeting House Lane. Existing features include hardstanding areas, access routes, boundary walls and residential units with associated drainage infrastructure. |
| <b>Boundaries</b>                       | North      | Existing commercial building (Bridge Street)<br><br>Residential Units (Meeting House Lane)                                                                                                                                                                          |
|                                         | East       | Linenhall Street (R132)                                                                                                                                                                                                                                             |
|                                         | South      | Existing commercial building (Bridge Street)<br><br>Residential Units (Meeting House Lane)                                                                                                                                                                          |
|                                         | West       | Bridge Street                                                                                                                                                                                                                                                       |
| <b>Access</b>                           | Vehicular  | Existing vehicular access is provided from the surrounding public highway network, including Linenhall Street and Bridge Street.                                                                                                                                    |
|                                         | Pedestrian | Existing pedestrian access is available from Linenhall Street, Bridge Street and surrounding town centre footway networks. The proposed                                                                                                                             |

|  |  |                                                                                                               |
|--|--|---------------------------------------------------------------------------------------------------------------|
|  |  | development seeks to improve pedestrian connectivity within the wider St. Nicholas Quarter regeneration area. |
|--|--|---------------------------------------------------------------------------------------------------------------|

|                                         |            |                                                                                                                                                                                                                          |
|-----------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site</b>                             |            | Peace Park                                                                                                                                                                                                               |
| <b>Site Description and Current Use</b> |            | The site comprises of an existing public park existing features include hardstanding areas, access routes with associated drainage infrastructure                                                                        |
| <b>Boundaries</b>                       | North      | Fairgreen Road (R177)                                                                                                                                                                                                    |
|                                         | East       | Secondary School playing pitches.                                                                                                                                                                                        |
|                                         | South      | Fairgreen Row                                                                                                                                                                                                            |
|                                         | West       | B Linenhall Street (R132)                                                                                                                                                                                                |
| <b>Access</b>                           | Vehicular  | Existing vehicular access is provided from the surrounding public highway network, including Linenhall Street and Bridge Street.                                                                                         |
|                                         | Pedestrian | Existing pedestrian access is available from Linenhall Street, Fairgreen Road , Fairgreen Row The proposed development seeks to improve pedestrian connectivity within the wider St. Nicholas Quarter regeneration area. |

### 3.3. Topography

A detailed topographical survey of the site has been undertaken and is presented on Drawing No. 5036\_T\_3D\_Rev0.

The site comprises a predominantly urban brownfield area located between Linenhall Street and Bridge Street within Dundalk town centre. Existing ground levels generally vary between 2.67mOD and 3.95mOD (Malin Head Datum), with the majority of the site falling within the range of approximately 3.0mOD to 3.7mOD.

The site is relatively level overall, although local variations in ground level are evident across existing hardstanding areas, footways and developed parcels.

The topographical survey identifies a number of existing site features including buildings, boundary walls, access routes, drainage infrastructure and other urban features. These features have been incorporated into the assessment of flood risk and the development of the proposed site layout.

The surveyed levels and site features have been used to inform the assessment of potential flood risk and the development of appropriate mitigation measures where required.

### **3.4. Geology**

According to available geological mapping published by the Geological Survey Ireland (GSI), the site is located within a developed urban area underlain by Quaternary deposits. The superficial deposits within the area are likely to have been influenced by historical development activities and urbanisation.

The underlying bedrock geology within the wider Dundalk area is characterised by sedimentary rock formations beneath the superficial deposits. As is typical of long-established urban areas, local ground conditions may be influenced by previous development, construction activities and ground regrading associated with historical land use.

The geological information reviewed as part of this assessment has been used to inform consideration of potential flood pathways and site drainage characteristics. Further information regarding ground conditions may be obtained through future site investigation works, if required.

### **3.5. Hydrogeology**

The hydrogeological setting of the site has been considered in the context of potential groundwater flood risk and the suitability of sustainable drainage measures. The site is located within a heavily developed urban area of Dundalk and comprises predominantly hardstanding, public realm areas and previously developed land.

At the time of writing, detailed ground investigation data, groundwater monitoring records and infiltration test results have not been made available for review.

### **3.6. Existing Public Sewers, Private Sewers and Water Services**

The site is located within an established urban area of Dundalk Town Centre and is served by existing public water supply and wastewater infrastructure within the surrounding road network. Existing utility services are present within the vicinity of the development and provide connection opportunities for the proposed redevelopment.

A Confirmation of Feasibility assessment undertaken by Uisce Éireann concluded that connections to both the public water supply network and the public wastewater network can be facilitated for the proposed residential and community facility development. The assessment indicated that no strategic network upgrades or reinforcement works are currently required to accommodate the anticipated demand associated with the development.

The availability of existing public utility infrastructure reflects the developed nature of the surrounding town centre environment and supports the suitability of the site for redevelopment. Detailed connection arrangements, service layouts and any site-specific requirements will be developed as part of the subsequent design stages and will be subject to agreement with Uisce Éireann.

Surface water management associated with the proposed development will be addressed through the detailed drainage strategy and associated SuDS measures.

### **3.7. Watercourses, Land Drainage, other Waterbodies and the Dundalk Coastline**

The principal watercourse within the vicinity of the site is the Castletown River, which flows to the north of the proposed development. The site is separated from the river corridor by existing roads, public realm areas and

urban development. No ordinary watercourses, land drains or open channels have been identified within the proposed development site.

Review of available OPW flood mapping indicates that the Castletown River represents the principal source of potential fluvial flood risk within the wider area. However, the reviewed mapping indicates that the proposed development site lies outside the mapped fluvial flood extents associated with the river.

Given the proximity of Dundalk Bay and the lower Castletown Estuary, consideration has also been given to the potential influence of coastal and estuarine flooding. Detailed assessment of coastal flood risk is presented in Section 5.

No lakes, reservoirs, canals or other significant waterbodies have been identified within the immediate vicinity of the site that would be expected to influence flood risk affecting the proposed development.

## **4.0. Policy and Guidance**

This report has been prepared within the Irish planning and flood risk management framework. The primary guidance is The Planning System and Flood Risk Management Guidelines for Planning Authorities and the associated Technical Appendices, published jointly by the Department of the Environment, Heritage and Local Government and the Office of Public Works (OPW). The assessment also has regard to OPW flood mapping and flood risk management information, the National Planning Framework, the Regional Spatial and Economic Strategy, the Louth County Development Plan 2021-2027, and relevant Irish guidance relating to Sustainable Drainage Systems (SuDS), surface water management and climate adaptation.

### **4.1. The Planning System and Flood Risk Management Guidelines**

The Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) provide the framework for the assessment and management of flood risk within the Irish planning system. The Guidelines promote a risk-based approach to development planning, with the objective of avoiding inappropriate development in areas at risk of flooding and ensuring that flood risk is not increased elsewhere as a result of new development.

The Guidelines advocate the application of the Sequential Approach to flood risk management, whereby development should, where possible, be directed towards areas of lower flood risk. Where development is proposed in areas potentially affected by flooding, the nature of the proposed land use, the vulnerability classification of the development and the requirement for mitigation measures should be considered.

In accordance with the Guidelines, this Site-Specific Flood Risk Assessment has been undertaken to identify and assess potential flood risks affecting the proposed development and to determine whether appropriate mitigation measures can be incorporated to ensure the development remains safe and resilient for its lifetime.

### **4.2. Local Planning Policy and Development Plan Context**

The Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) require that all potential sources of flooding are considered when assessing development proposals. The Guidelines promote a risk-based approach to development planning and seek to ensure that flood risk is appropriately considered throughout the planning and design process.

In accordance with the Guidelines, this Flood Risk Assessment has considered a range of potential flood sources that may affect the proposed development, including fluvial, coastal, pluvial, groundwater and infrastructure-related flooding. The assessment has also considered the potential effects of climate change and the implications of future flood risk over the lifetime of the proposed development.

The proposed development has been assessed having regard to the requirements of the Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) and the relevant flood risk management policies contained within the Louth County Development Plan. The assessment methodology has included a review of available flood mapping, historic flood information, site-specific characteristics and other relevant sources of information.

The findings of the flood risk assessment and the identification of any required mitigation measures are presented in Section 5.

### **4.3. OPW Flood Mapping and Flood Risk Management Information**

The Office of Public Works (OPW) is the lead authority responsible for flood risk management in Ireland and provides national flood mapping, historic flood event information and flood risk management data through Floodinfo.ie and associated flood risk management publications.

This assessment has utilised the most recent publicly available OPW flood mapping information together with other available datasets relevant to flood risk assessment. The information reviewed includes OPW Community Flood Mapping, historic flood event information and available flood hazard mapping for the Present Day, Mid-Range Future and High-End Future climate change scenarios.

The reviewed information has been used to inform the assessment of flood risk affecting the proposed development site, including consideration of fluvial, coastal, surface water, groundwater and other potential flood mechanisms. The findings of the assessment are presented in Section 5.

### **4.4. Strategic Flood Risk Assessment**

Relevant Strategic Flood Risk Assessment information prepared in support of county and local planning policy has been reviewed where available to identify known flood risk constraints affecting the site and the surrounding area.

The strategic assessment information provides an important evidence base for understanding flood risk within Dundalk and assists in identifying areas potentially affected by fluvial, pluvial and other sources of flooding. However, strategic flood risk mapping is intended to inform planning policy and cannot replace site-specific assessment.

Accordingly, this Site-Specific Flood Risk Assessment has been prepared to consider local topography, the proximity of the Castletown River, available flood mapping information and the characteristics of the proposed development. The findings presented herein should therefore be read alongside the wider strategic flood risk evidence base.

### **4.5. Sustainable Drainage and Nature-based Surface Water Management**

Irish surface water drainage policy increasingly promotes Sustainable Drainage Systems and nature-based solutions that manage rainfall close to where it falls, reduce runoff volume and peak flow, improve water quality, and provide amenity and biodiversity benefits.

The drainage strategy should therefore prioritise blue-green infrastructure and demonstrate, through supporting calculations and design information, how surface water runoff will be managed for the relevant design storm events, including an appropriate climate change allowance adopted within the detailed drainage design.

## 5.0. Sources of Flood Risk

### 5.1. Fluvial Flood Risk

The proposed development site is located within the wider Castletown River catchment. OPW Community Flood Mapping has been reviewed to assess the potential risk of fluvial flooding associated with the Castletown River.

Review of the available mapping indicates that the proposed residential and community facility is located outside the mapped Present Day fluvial flood extent. The Mid-Range Future Scenario and High-End Future Scenario mapping were also reviewed and similarly indicate that the mapped fluvial flood extents do not affect the proposed development site. The reviewed mapping therefore indicates that the site remains outside the mapped fluvial flood extents under all reviewed scenarios.

Whilst fluvial flooding may occur within other parts of the wider catchment, no direct interaction between the mapped fluvial flood extents and the proposed built development at Linenhall Carpark site and the landscaped elements at Meeting House Lane and St. Nicholas Church has been identified. The reviewed information therefore indicates that fluvial flooding does not represent a significant source of flood risk to the proposed development.

At the Peace Park where the site is affected by fluvial flooding. The detailed landscape design will maintain existing overland flood flow routes and will avoid the creation of features that could obstruct or divert floodwater towards neighbouring properties, roads or other sensitive receptors.

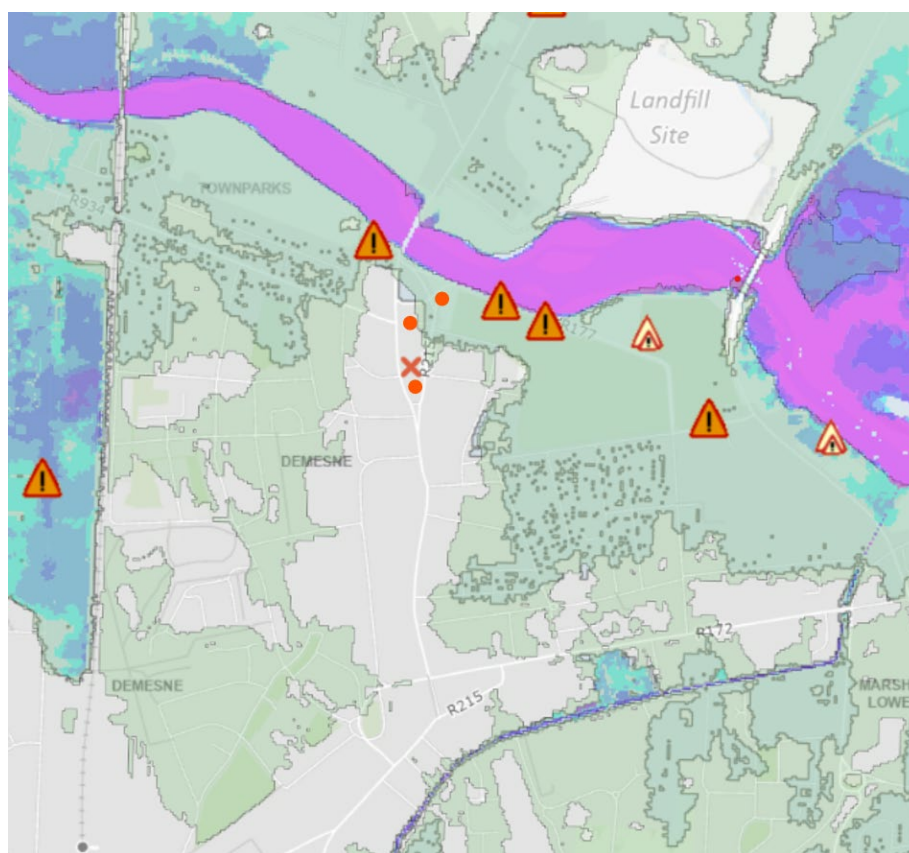


Figure 2: OPW Community Flood Extents – High End Future Scenario – Low Probability event (River Only)  
([www.floodinfo.ie/map/floodmaps](http://www.floodinfo.ie/map/floodmaps))

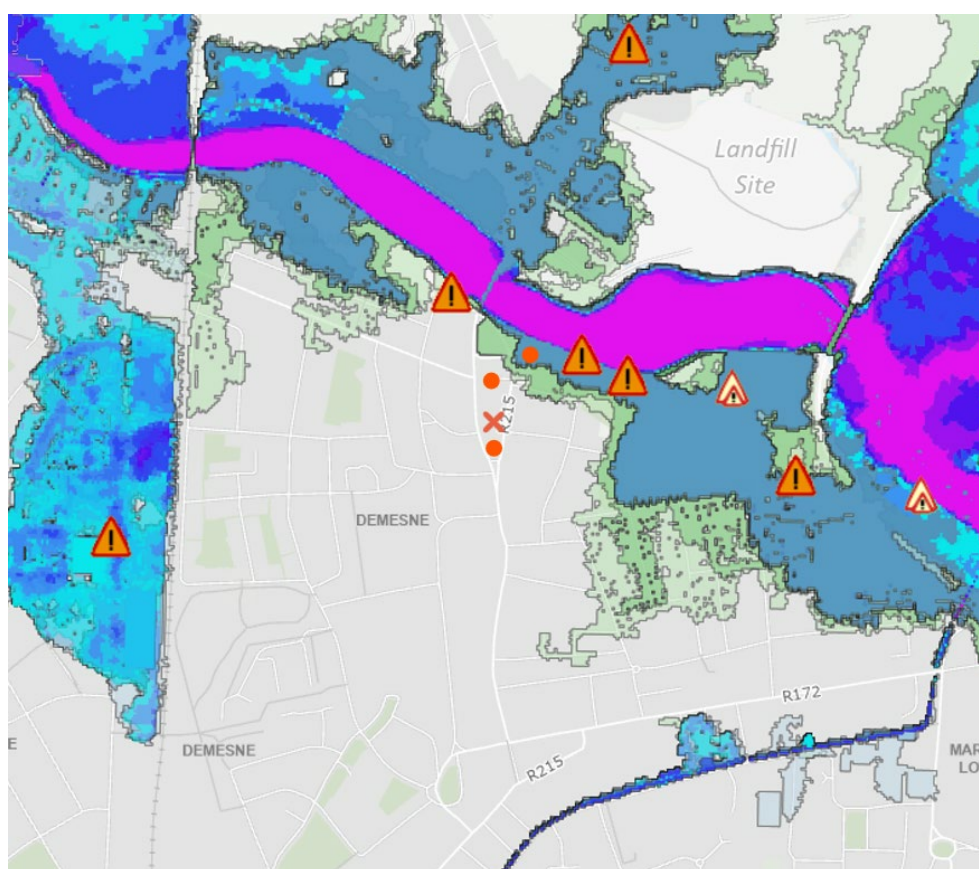
**X indicates proposed buildings (Community Facility and Residential Dwellings) • Indicates Landscaping proposals**

## 5.2. Coastal and Estuarine Flood Risk

Given the site's proximity to Dundalk Bay and the lower Castletown Estuary, OPW Coastal Flood Mapping has been reviewed to assess the potential risk of coastal and estuarine flooding.

### Present Day Scenario

Review of the available OPW mapping indicates that the site lies outside the mapped Present Day coastal flood extent. Accordingly, coastal and estuarine flooding is not considered to affect the proposed community facility and residential site under existing conditions though the Peace Park will be subject to flooding.



**Figure 3: OPW Community Scale Flood Extents - Present Day Scenario (River & Coastal) ([www.floodinfo.ie/map/floodmaps](http://www.floodinfo.ie/map/floodmaps))**  
**X indicates proposed buildings (Community Facility and Residential Dwellings) • Indicates Landscaping proposals**

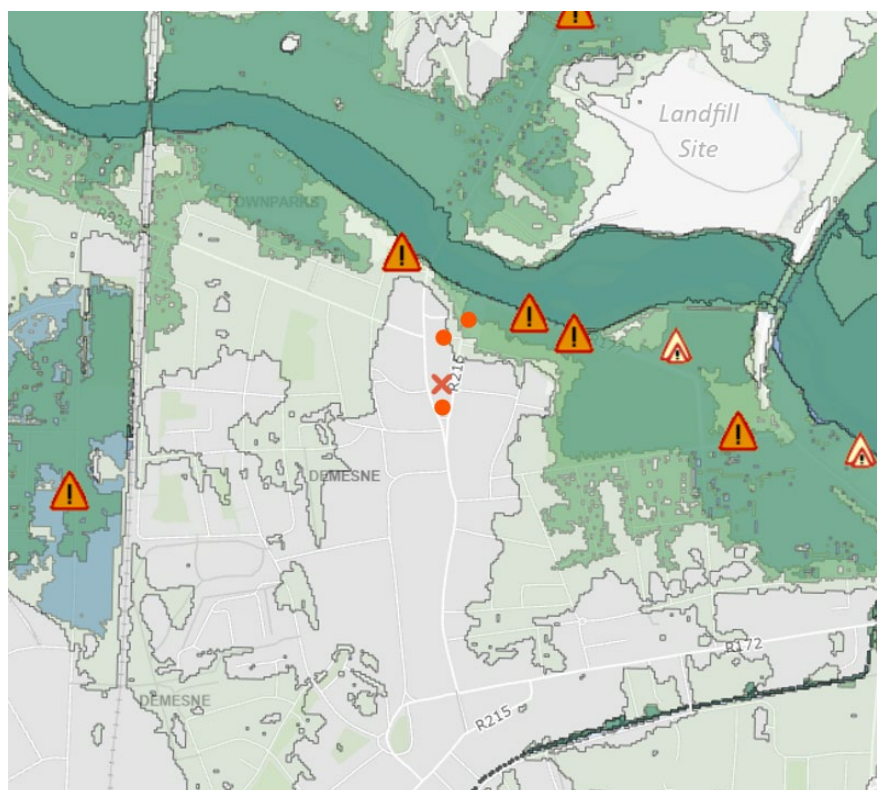
### National Indicative Climate Change Mapping

The OPW National Indicative Climate Change Mapping has been reviewed to assess the potential effects of future sea level rise on coastal flood risk affecting the site.

The National Indicative Mid-Range Future Scenario incorporates an allowance of approximately 500mm sea level rise, whilst the National Indicative High-End Future Scenario incorporates an allowance of approximately 1000mm sea level rise.

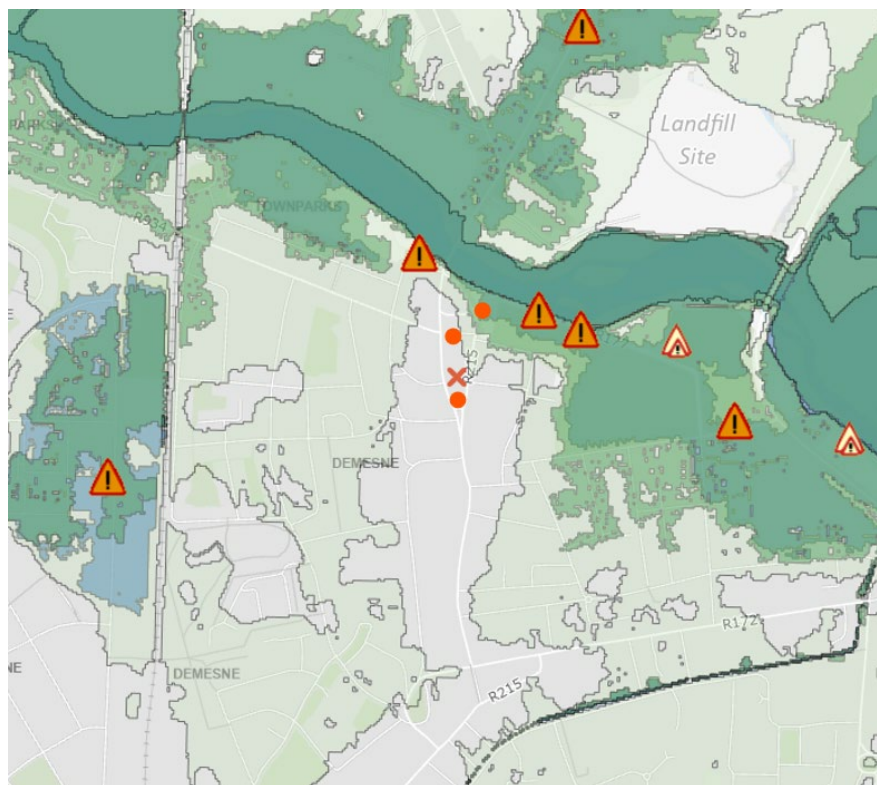
Review of the available mapping indicates that the proposed built elements (Community spaces and residential dwellings) of the project remain outside the mapped coastal flood extents under both scenarios and across all mapped probability events. The reviewed information therefore indicates that sea level rise alone is not expected to result in coastal flooding affecting the Community spaces and residential dwellings, though the Peace park will be subject to flooding.

At the Peace Park which is affected by coastal flooding the design will be resilient to periodic tidal inundation and will seek to minimise additional surface- water runoff.



**Figure 4: National Indicative Flood Mapping – Mid Range Future Scenario – Low Probability (River & Coastal)**  
([www.floodinfo.ie/map/floodmaps](http://www.floodinfo.ie/map/floodmaps))

**X indicates proposed buildings (Community Facility and Residential Dwellings) • Indicates Landscaping proposals**



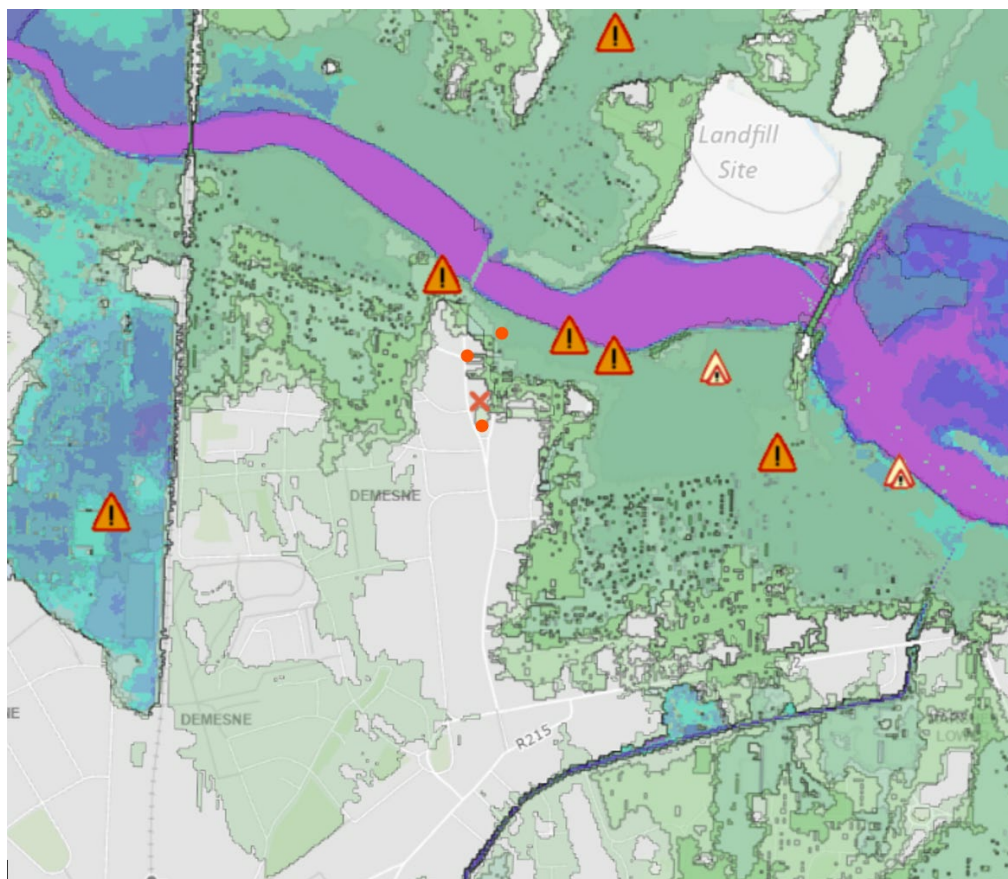
**Figure 5: National Indicative Flood Mapping – High Range Scenario – Low Probability (River & Coastal)**  
([www.floodinfo.ie/map/floodmaps](http://www.floodinfo.ie/map/floodmaps))

**X indicates proposed buildings (Community Facility and Residential Dwellings) • Indicates Landscaping proposals**

### Community Scale Mid-Range Future Climate Change Scenario

The OPW Community Scale Mid-Range Future Climate Change Scenario incorporates allowances for future climate change, including an increase in rainfall intensity of approximately 20% and sea level rise of approximately 500mm.

Review of the available mapping indicates that the built elements (Community spaces and residential dwellings) of the project site remains unaffected during the high probability event. Limited encroachment occurs along the northern boundary of the site during the low probability event only. The encroachment is minimal and remains largely confined to existing hardstanding areas located to the east of the proposed residential units. The mapped flooding does not significantly affect the wider built elements on the development site.



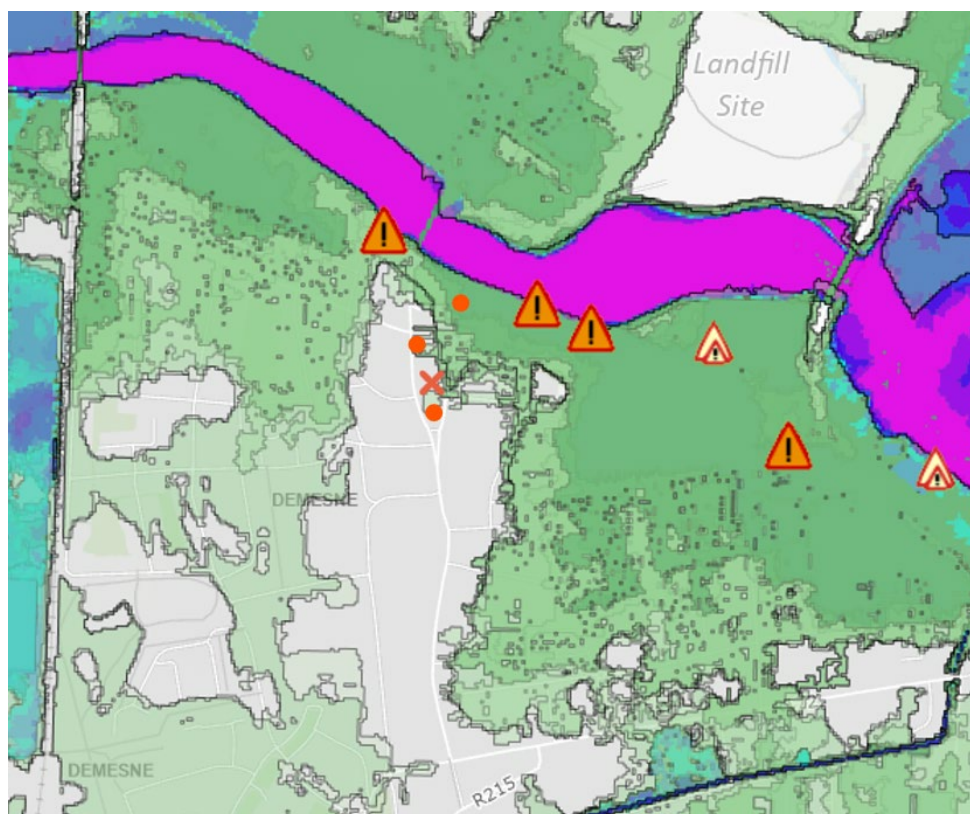
**Figure 6: OPW Community Flood Extents – Mid Range Future Scenario (River & Coastal)**  
([www.floodinfo.ie/map/floodmaps](http://www.floodinfo.ie/map/floodmaps))

X indicates proposed buildings (Community Facility and Residential Dwellings) • Indicates Landscaping proposals

### Community Scale High-Range Future Scenario

The OPW Community Scale High-End Future Climate Change Scenario incorporates a greater allowance for future climate change, including an increase in rainfall intensity of approximately 30% and sea level rise of approximately 1000mm.

Review of the available mapping indicates that the Community spaces and residential dwellings remain unaffected during the high probability event, the Peace Park will be subject to potential flooding. Limited encroachment occurs along the eastern boundary of the site during the medium and low probability events. The mapped flooding remains largely confined to existing hardstanding areas located to the east of the proposed residential units, with only limited encroachment into the wider site area. Whilst flood depth and flood level information were not available for review, the mapping indicates a limited increase in potential coastal and estuarine flood risk under extreme future climate change conditions



**Figure 7: OPW Community Flood Extents – High End Future Scenario (River & Coastal)**  
([www.floodinfo.ie/map/floodmaps](http://www.floodinfo.ie/map/floodmaps))

**X indicates proposed buildings (Community Facility and Residential Dwellings) • Indicates Landscaping proposals**

The reviewed OPW mapping indicates that the site is not affected by present-day coastal flooding or by the National Indicative Mid-Range Future and High-End Future climate change scenarios.

Limited coastal flood extents are shown to affect part of the eastern boundary of the site only under the more extreme Community Scale Climate Change Scenarios which combine increased rainfall intensity and sea level rise.

Under the Community Scale Mid-Range Future Climate Change Scenario, limited encroachment occurs along the eastern boundary during the low probability event only. Under the Community Scale High-End Future Climate Change Scenario, limited encroachment occurs along the eastern boundary during the medium and low probability events.

The encroachment is minimal and remains largely confined to existing hardstanding areas located to the east of the proposed residential units and does not significantly affect the wider development site.

Overall, the site is considered to be at low risk of tidal flooding. In the event of extreme climate change occurring during the lifetime of the development, part of the eastern boundary of the site could be affected by flooding. It is therefore recommended that the flood mitigation and resilience measures outlined in Section 5.9 are incorporated into the detailed design of the proposed development.

### **5.3. Other Sources of Flooding**

Review of the available datasets has not identified any significant groundwater flood risk affecting the site.

Similarly, flooding associated with the failure of drainage infrastructure, water supply infrastructure or other utilities is considered low and consistent with the level of risk generally associated with urban development.

Surface water runoff generated by the development will be managed through the proposed drainage strategy and associated surface water management measures.

Accordingly, these flood sources are not considered to represent significant constraints to the proposed development.

### **5.4. Historic Flooding**

A review of available historic flood records identified a limited number of flooding incidents within the wider Dundalk area. However, no evidence was identified to indicate that flooding has historically occurred within the proposed no. 2 & 3 Bridge Street and Linenhall Carpark development site.

While historic flood records provide useful information regarding flooding mechanisms affecting the surrounding area, they do not indicate a history of flooding affecting the site itself.

The Peace Park has been historically subject to flooding and any proposed works to the park will not increase the flood risk elsewhere or obstruct existing infrastructure.

### **5.5. Pluvial Flood Risk**

Pluvial flooding occurs when rainfall intensity exceeds the capacity of local drainage systems, resulting in temporary ponding or overland surface water flow.

The site is located within a highly urbanised area of Dundalk comprising existing buildings, roads, footpaths and other areas of hardstanding. As with any urban environment, there remains the potential for localised surface water ponding during extreme rainfall events where runoff temporarily exceeds the capacity of local drainage infrastructure.

A review of available flood mapping and published flood risk information has not identified significant surface water flood risk affecting the proposed Linenhall Carpark development site. Although isolated areas of localised ponding may occur during severe rainfall events, no evidence has been identified to indicate that pluvial flooding represents a significant constraint to the proposed development.

Accordingly, pluvial flood risk is considered to be low and does not preclude redevelopment of the site.

### **5.6. Sewer Flood Risk**

The potential for flooding arising from surcharge or exceedance of the public sewer network has been considered as part of this assessment. The site is located within an established urban area served by existing water and wastewater infrastructure operated by Uisce Éireann.

A Confirmation of Feasibility assessment undertaken by Uisce Éireann confirmed that connections to the public water supply and wastewater networks can be facilitated for the proposed development without the need for strategic upgrades to the existing network. Whilst confirmation of connection feasibility does not eliminate the possibility of localised sewer surcharge during exceptionally severe storm events, it indicates that adequate network capacity is available to accommodate the proposed development.

No evidence has been identified to indicate a history of sewer flooding affecting the site. On the basis of the available information, sewer flood risk is considered to be low and is not expected to represent a significant constraint to the proposed development.

## **5.7. Groundwater Flood Risk**

Groundwater flooding occurs when groundwater levels rise above ground level or emerge through superficial deposits and geological formations.

Review of available Geological Survey Ireland mapping indicates that groundwater vulnerability within the area may range from moderate to high. However, no evidence has been identified to indicate a history of groundwater flooding affecting the site.

The site has been developed for many years and forms part of the established urban environment of Dundalk Town Centre. No evidence of groundwater emergence, groundwater flooding or groundwater-related constraints has been identified during the preparation of this assessment.

Based on the information currently available, groundwater flood risk is considered to be low and is not expected to represent a significant limitation to the proposed redevelopment of the site. This assessment should be reviewed following the completion of any future ground investigation works and receipt of additional hydrogeological information, where available.

Groundwater flood risk is therefore not considered to represent a significant constraint to the proposed development.

## **5.8. Flooding from Other Sources/Infrastructure Failure**

Flooding may occur as a result of failure of infrastructure designed to store, convey or control water. Such infrastructure includes culverts, pumping stations, retaining structures, drainage systems, reservoirs and other engineered assets.

There are no known reservoirs immediately upstream of the site that are considered likely to pose a significant flood risk to the proposed development. Similarly, no significant flood risk associated with canals or other major artificial water bodies has been identified.

Whilst the possibility of infrastructure failure can never be entirely eliminated, the probability of flooding from such sources is considered to be low.

## **5.9. Flood Risk Mitigation**

The reviewed flood mapping demonstrates that the no. 2 and 3 Bridge Street and the Linenhall Carpark site is not affected by mapped fluvial flooding. Furthermore, the National Indicative Mid-Range Future and High-End

Future coastal flood mapping indicates that the site remains outside the mapped coastal flood extents. However, the more extreme Community Scale climate change scenarios, which incorporate the combined effects of increased rainfall and sea level rise, indicate limited coastal and estuarine flood extents extending into the eastern boundary of the site. The mapped encroachment is minimal and remains largely confined to existing hardstanding areas located to the east of the proposed residential units. Whilst the wider development site is not significantly affected, part of the eastern boundary of the site could be impacted by flooding under these extreme climate change scenarios.

To ensure the development remains resilient throughout its lifetime, appropriate flood mitigation and resilience measures should be incorporated during detailed design.

As a minimum, finished floor levels and threshold levels should be set above adjacent external ground levels. A minimum threshold upstand of 150mm above surrounding finished ground levels is recommended to provide resilience against residual flood risk, exceedance flows and localised ponding. Detailed design should also consider the latest available flood mapping and flood risk information available at the time of construction.

Where appropriate, detailed design may incorporate flood-resistant and flood-resilient construction techniques, together with localised flood protection measures such as demountable flood barriers to vulnerable entrances, openings and access points.

External levels should be designed to direct overland flow away from buildings and to prevent the uncontrolled ponding of flood waters adjacent to entrances and critical infrastructure.

Given that the identified flood risk is associated with future climate change scenarios, consideration may also be given to increasing finished floor levels above predicted design flood levels where appropriate and practical to do so.

The provision of a Site Flood Management Plan together with temporary flood protection measures, including proprietary flood barriers, temporary flood defence systems or sandbags during extreme forecast coastal flood events, may also be considered where required.

Accordingly, the mitigation measures outlined within this section should be incorporated into the detailed design of the proposed development to provide resilience against future climate change impacts and any residual flood risk.

Subject to the implementation of suitable mitigation measures during detailed design, including the establishment of appropriate floor levels and provision of flood resilience measures where necessary, flood risk is not considered to represent a significant constraint to the proposed development.

Where flooding has historically occurred in the Peace Park proposed landscaping and hardscaping works will be designed to not increase flood risk to the existing surrounding infrastructure. Landscape features, paths, seating, planting areas and other proposed elements will, where appropriate, comprise flood-resilient and flood-compatible materials and construction. Vulnerable infrastructure and equipment will be located outside areas of significant flood risk where practicable.

The landscaping proposals will seek to minimise the introduction of additional impermeable surfaces. Where hard surfacing is required, permeable or otherwise appropriate surfacing will be considered. Sustainable drainage measures will be incorporated, where feasible and appropriate to ground conditions, to manage surface-water runoff and prevent the proposals from increasing peak runoff rates or volumes.

## 6.0. Conclusion

This Flood Risk Assessment has considered the potential flood risks associated with the proposed St. Nicholas Quarter Phase 2 development in Dundalk, County Louth. The assessment has reviewed the characteristics of the site, the surrounding environment, available flood mapping, historic flood records and the proposed redevelopment of the site as part of the wider regeneration programme being undertaken by Louth County Council.

The proposed development comprises a mixture of residential accommodation, community and cultural facilities, public realm improvements and associated infrastructure works. In accordance with the Planning System and Flood Risk Management Guidelines for Planning Authorities, the development therefore incorporates both highly vulnerable and less vulnerable development uses.

Review of the available OPW Community Flood Mapping indicates that the proposals apart from the Peace Park site lies outside the mapped fluvial flood extents associated with the Castletown River under the Present Day, Mid-Range Future and High-End Future scenarios. Fluvial flooding is therefore not considered to represent a significant source of flood risk affecting the proposed building elements of the development.

Review of the available coastal flood mapping indicates that the site lies outside the mapped Present Day coastal flood extent. The National Indicative Mid-Range Future and High-End Future climate change scenarios, which incorporate allowances for sea level rise only, similarly indicate that the sites apart from the Peace Park remains outside the mapped coastal flood extents.

Review of the OPW Community Scale Flood Mapping indicates that limited coastal and estuarine flood extents may encroach the eastern boundary of the site under the more extreme climate change scenarios, which combine increases in rainfall intensity and sea level rise. Under the Community Scale Mid-Range Future Climate Change Scenario, limited encroachment is shown during the low probability event. Under the Community Scale High-End Future Climate Change Scenario, limited encroachment is shown during both the medium and low probability events, reflecting the increased influence of extreme climate change projections. The mapped flooding remains largely confined to existing hardstanding areas located to the east of the proposed residential units and does not significantly affect the wider development site.

Overall, the Linenhall Carpark is considered to be at low risk of tidal flooding. In the event of extreme climate change scenarios occurring during the lifetime of the development, part of the eastern boundary of the site could be affected by flooding. However, the mapped flooding is limited in extent and appears to remain largely within existing hardstanding areas.

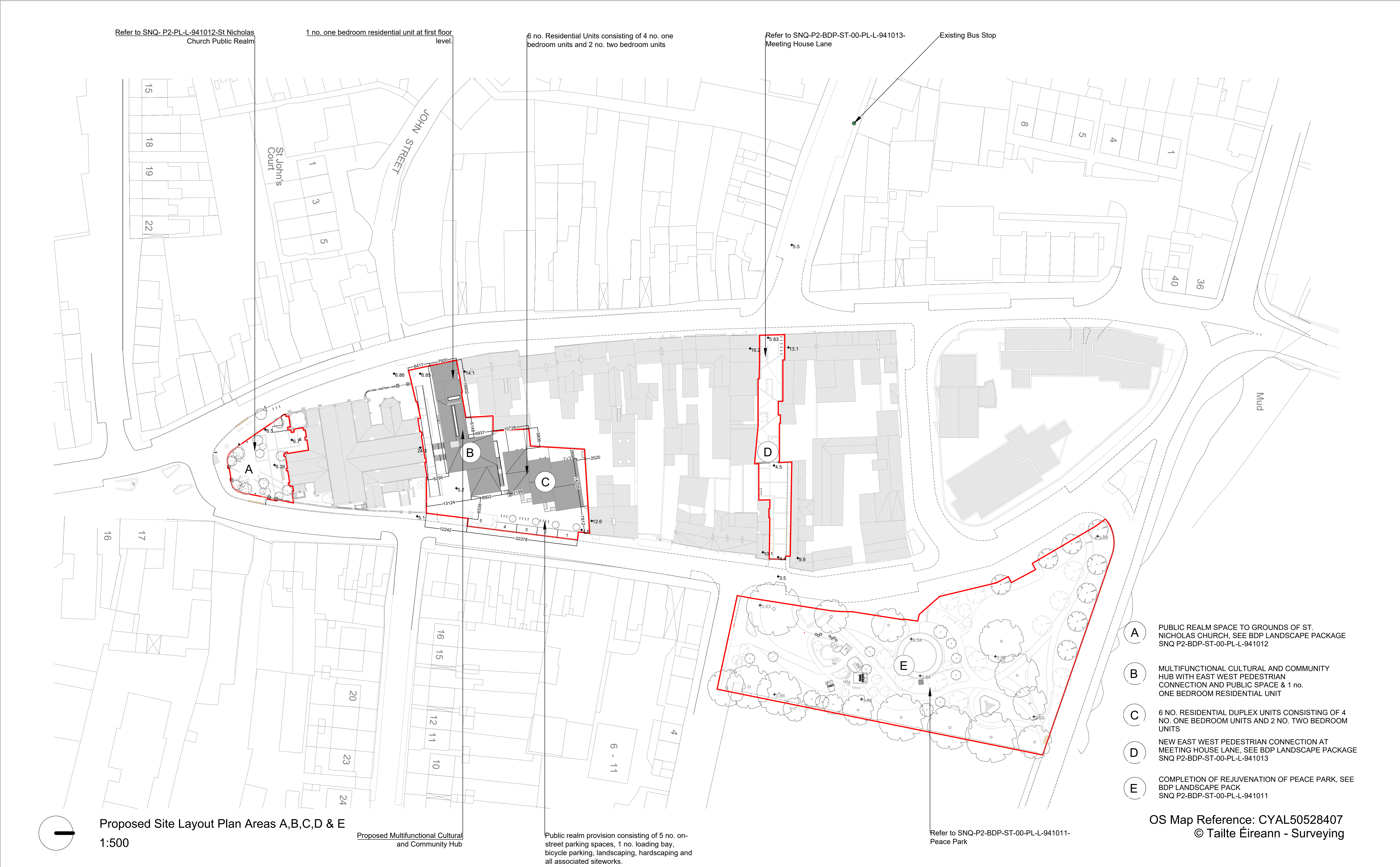
No evidence has been identified to indicate a history of flooding affecting the site. Furthermore, review of the available information has not identified significant constraints associated with groundwater flooding, infrastructure

failure or other flood mechanisms. Surface water runoff generated by the development will be managed through the proposed drainage strategy and associated surface water management measures.

Appropriate flood mitigation and resilience measures can be incorporated during detailed design, including the establishment of suitable finished floor levels and raised threshold levels particularly in the building proposals, positive drainage away from buildings and, where required, flood-resistant or flood-resilient construction measures in the landscaping proposals. The mitigation measures outlined in Section 5.9 should be incorporated into the detailed design of the development to provide resilience against future climate change impacts and residual flood risk.

Subject to the implementation of appropriate mitigation measures during detailed design, flood risk is not considered to represent a significant constraint to the proposed development. The proposed redevelopment is therefore considered capable of being delivered in accordance with national and local flood risk management policy.

# Appendix A: Site Layout Plan



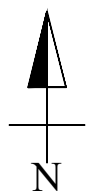
- A** PUBLIC REALM SPACE TO GROUNDS OF ST. NICHOLAS CHURCH, SEE BDP LANDSCAPE PACKAGE SNQ P2-BDP-ST-00-PL-L-941012
- B** MULTIFUNCTIONAL CULTURAL AND COMMUNITY HUB WITH EAST WEST PEDESTRIAN CONNECTION AND PUBLIC SPACE & 1 no. ONE BEDROOM RESIDENTIAL UNIT
- C** 6 NO. RESIDENTIAL DUPLEX UNITS CONSISTING OF 4 NO. ONE BEDROOM UNITS AND 2 NO. TWO BEDROOM UNITS
- D** NEW EAST WEST PEDESTRIAN CONNECTION AT MEETING HOUSE LANE, SEE BDP LANDSCAPE PACKAGE SNQ P2-BDP-ST-00-PL-L-941013
- E** COMPLETION OF REJUVENATION OF PEACE PARK, SEE BDP LANDSCAPE PACK SNQ P2-BDP-ST-00-PL-L-941011

OS Map Reference: CYAL50528407  
© Tailte Éireann - Surveying

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                              |                                                                                                                         | NO.                                            | DESCRIPTION                                                                                       | DRAWN                                                    | CHECKED                                          | DATE                                                     |                                                      |                                                                                                                    |                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                              |                                                                                                                         | <div>REF. JOB NUMBER</div> <div>P3003469</div> | <div>DRAWING TITLE</div> <div>Proposed Site Layout Plan</div> <div>Areas A, B, C, D &amp; E</div> | <div>SCALE</div> <div>@ A1</div> <div>As indicated</div> | <div>DATE FIRST ISSUED</div> <div>28.04.26</div> |                                                          |                                                      |                                                                                                                    |                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                              |                                                                                                                         |                                                |                                                                                                   |                                                          |                                                  | <div>DRAWING(S)</div> <div>SNQ-BDP-ST-XX-DR-A-0010</div> |                                                      |                                                                                                                    |                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                              |                                                                                                                         |                                                |                                                                                                   |                                                          |                                                  |                                                          |                                                      |                                                                                                                    |                                                                  |

## **Appendix B: Topographical Survey**

BRIDGE STREET



Legend - Drainage

- Ditch - bed level
- Ditch - top of bank
- Ditch - water level
- Lake/pond - bed level
- Lake/pond - top of bank
- Lake/pond - water level
- River - bed level
- River - top of bank
- ACO Drain
- Long gully
- Culley
- Manhole Cover (Square)
- Manhole Cover (Round)
- Wall

Legend - Ground Features

- Gate
- Fences
- Pillar/ Columns
- Walls large
- Walls small
- Walls up
- Contours (Prominent)
- Contours (Regular)
- Embankments Top
- Embankments Bottom
- Branch State
- Survey Station

Legend - Vegetation

- Grass partitions
- Tree bed
- Flowerbed
- Tree Line
- Bush
- Tree - Mature
- Tree - Young Sapling

Legend - Roads - Rail

- Bus Stop
- Carriageway
- Crustline
- Culvert
- Cycleway
- Ditch
- Embankment
- Hand Shoulder
- Kerb Top
- Kerb Bottom
- Pedestrian Crossing
- Pedestrian Guard Rail
- Road Markings
- Speed Humps
- Footpath, Tracks
- Verge
- Rail Track
- Ballast

Legend - Services

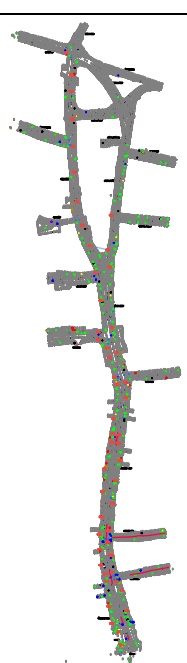
- ESB Overhead Cables
- Telecom Overhead Cables
- Duct
- Air Valve
- Road Signs
- ESB Cover
- ESB Pole
- ESB Box (Pylon)
- Fire Hydrant
- Flow box
- Gas Valve
- Lamp Post
- Litter Bin
- Post Box
- Telecom Control Panel (Pillar)
- Telecom Cover
- Telecom Pole
- Traffic Lights
- Telephone box
- Cable TV Inspection Cover
- Water Valve
- Water Meter
- Armstrong Junction

Legend - Buildings and Bridges

- Building
- Apex
- Eaves
- Soffit levels
- Foundations
- Container
- Overhead features, canopies
- Mobile buildings
- Ramps, loading bays
- Rails
- Retaining wall - base
- Retaining wall - top
- Garden sheds, greenhouses
- Shops
- Temporary buildings
- Archway, underpasses
- Wing walls
- Bridge Abutment
- Bridge Bearing Shelf Levels
- Bridge Deck
- Bridge parapet and upstand

KEY PLAN

SCALE: NTS



Co-ordinate system is Irish Transverse Mercator (ITM)  
Levels are related to Malin Head Datum

Revisions

| REVISION | DESCRIPTION                                    | DATE     |
|----------|------------------------------------------------|----------|
| REV 1    | Include contours, Tactile and missed utilities | 29-03-18 |
| REV 2    | Destroyed control reinstated and traversed     | 23-04-18 |

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Ireland

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Client: Louth County Council

Location: Clanbrassil Street, Dundalk, Co Louth

Job: Clanbrassil Street Dundalk Topographic Survey

Drawing Number: 818D-17-006T

Scale: 1:100 / A1

Surveyed By: RB

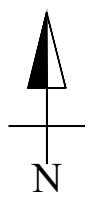
Drawn By: RB

Date: Surveyed 31/01/2018  
Issued 29/03/2018

Checked By: JH

# LINENHALL STREET

MHS



## Legend - Drainage

- Ditches - bed level
- Ditches - top of bank
- Ditches - water level
- Lakepond - bed level
- Lakepond - top of bank
- Lakepond - water level
- River - bed level
- River - top of bank
- Acco Drain
- Long gully
- Gully
- Manhole Cover (Square)
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- Wall

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- Gate
- Fences
- Pillars/ Columns
- Walls large
- Walls small
- Walls top
- Contours (Prominent)
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- Embankment Top
- Embankment Bottom
- Branch Sides
- Survey Station

## Legend - Roads - Rail

- Bus Stop
- Carriageway
- Comedene
- Culvert
- Cycleway
- Ditch
- Gardens
- Hard Shoulder
- Kerb Top
- Kerb Sides
- Pedestrian Crossing
- Pedestrian Guard Rail
- Road Markings
- Speed Humps
- Footpath, Tracks
- Verge
- Rail Track
- Ballast

## Legend - Vegetation

- Grass partitions
- Tree bed
- Flowerbox
- Tree Line
- Bush
- Tree - Mature
- Tree - Young Sapling

## Legend - Buildings and Bridges

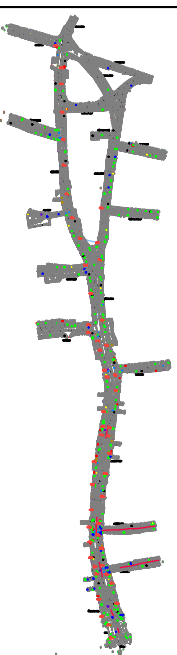
- Building
- Apex
- Eaves
- Soffit levels
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- Overhead features, canopies
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- Bridge Bearing Shelf Levels
- Bridge Deck
- Bridge pier and upstand

## Legend - Services

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- Telecom Overhead Cables
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- Air Valve
- Road Sign
- ESB Cover
- ESB Pole
- ESB Box (Pylon)
- Fire Hydrant
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- Telecom Cover
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- Cable TV Inspection Cover
- Water Valve
- Water Meter
- Armstrong Junction

## KEY PLAN

SCALE: NTS



Co-ordinate system is Irish Transverse Mercator (ITM)  
Levels are related to Malin Head Datum

## Revisions

| REVISION | DESCRIPTION                                     | DATE     |
|----------|-------------------------------------------------|----------|
| REV 1    | Include contours, Tactile and .missed utilities | 29-03-18 |
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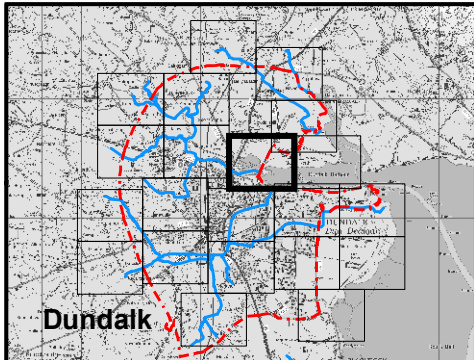
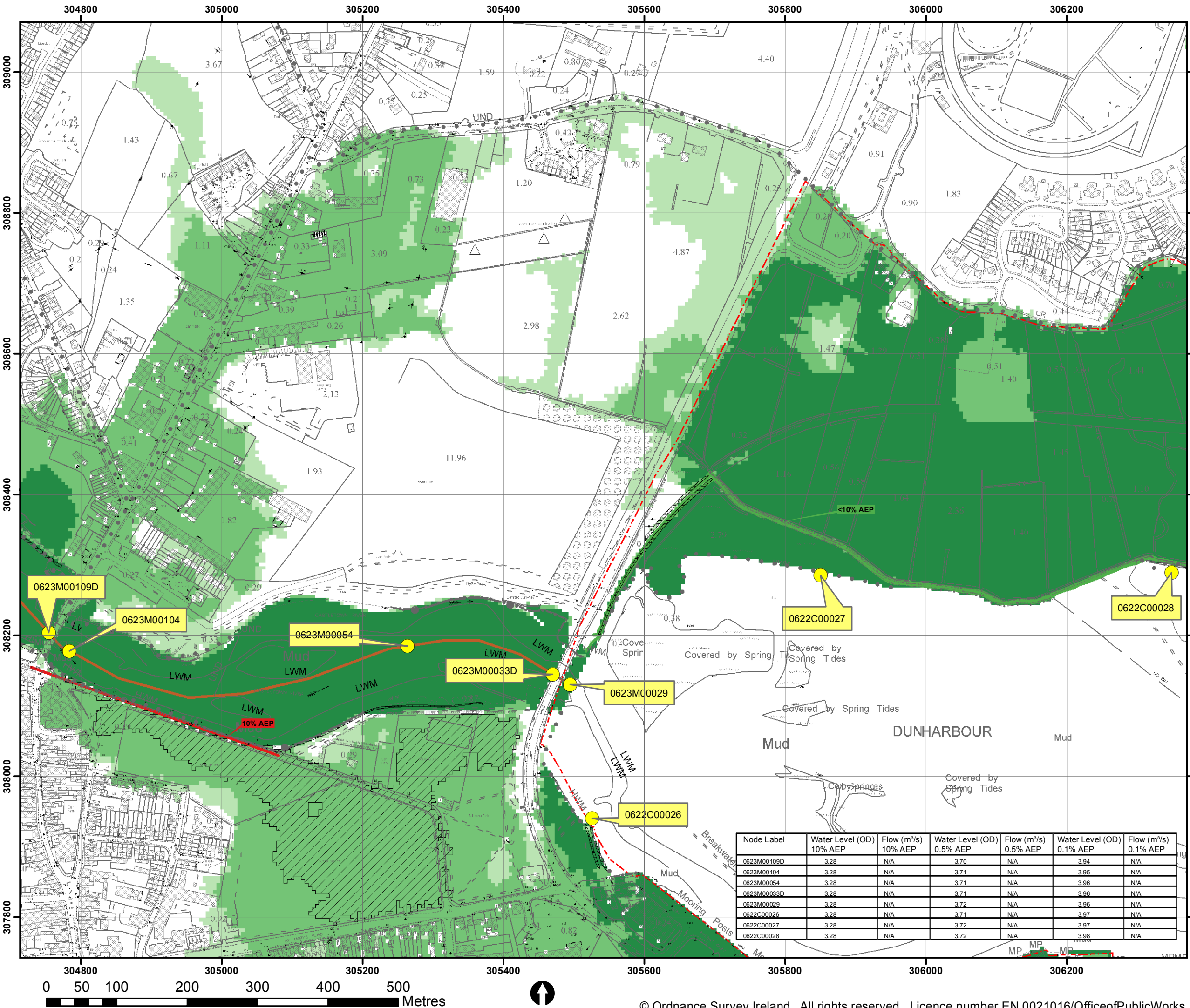
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|                 |                                               |             |            |
|-----------------|-----------------------------------------------|-------------|------------|
| Client:         | Louth County Council                          |             |            |
| Location:       | Clanbrassil Street, Dundalk, Co Louth         |             |            |
| Job:            | Clanbrassil Street Dundalk Topographic Survey |             |            |
| Drawing Number: | 818D-17-006AE                                 | Scale:      | 1:100 / A1 |
| Surveyed By:    | RB                                            | Drawn By:   | RB         |
| Date:           | Surveyed 31/01/2018<br>Issued 29/03/2018      | Checked By: | JH         |

## **Appendix C: Flood Mapping**



IMPORTANT USER NOTE:  
THE VIEWER OF THIS MAP SHOULD REFER  
TO THE DISCLAIMER, GUIDANCE NOTES  
AND CONDITIONS OF USE THAT  
ACCOMPANY THIS MAP.

Legend

- 10% Tidal AEP Event
- 0.5% Tidal AEP Event
- 0.1% Tidal AEP Event
- Modelled River Centreline
- AFA Extents
- Embankment
- Wall
- Defended Area
- 1% AEP Standard of Protection of Flood Defence (Walls / Embankments)
- 1% AEP
- Node Point
- Node ID

FINAL

|      |       |       |
|------|-------|-------|
| REV: | NOTE: | DATE: |
|------|-------|-------|



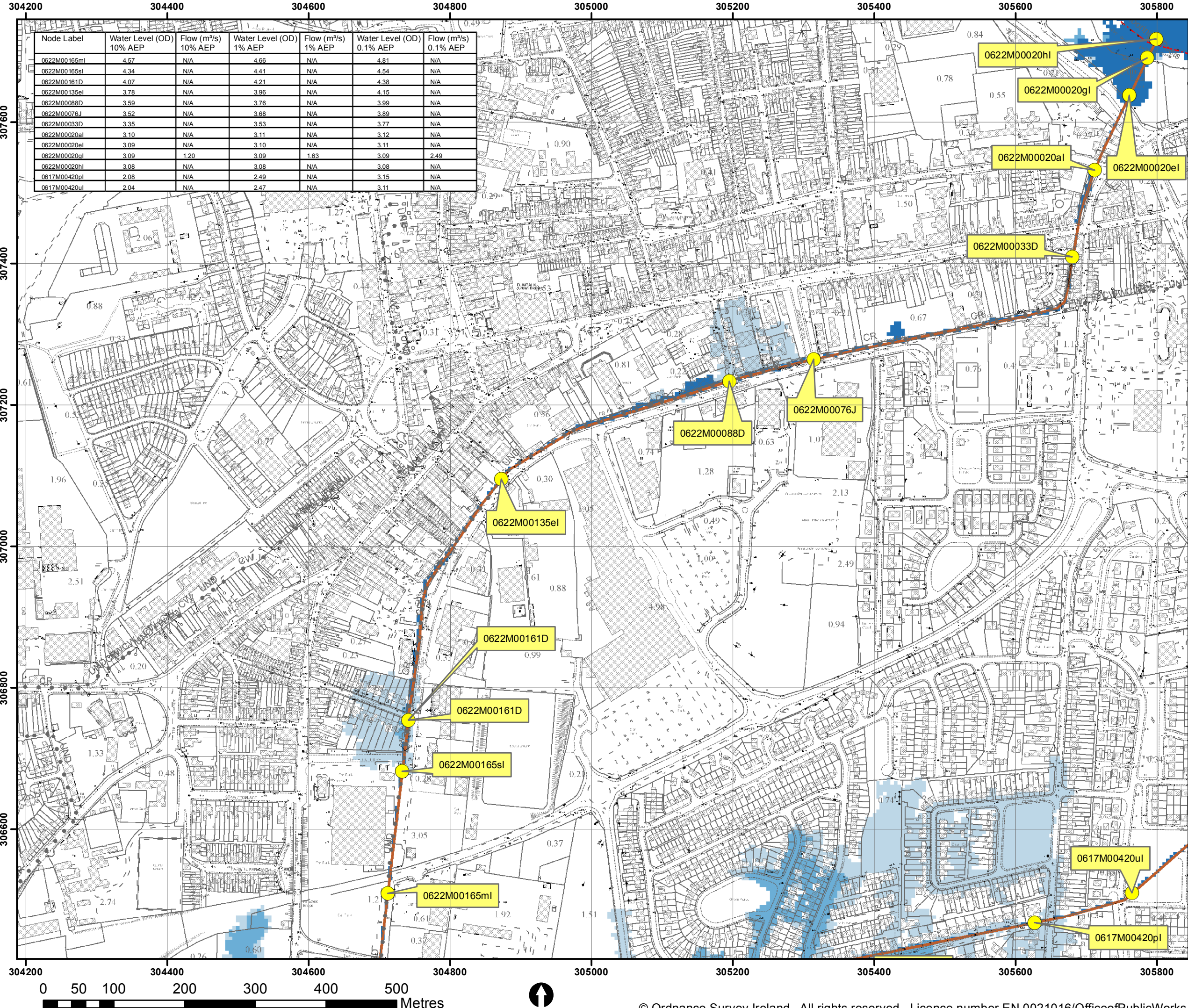
The Office of Public Works  
Jonathan Swift Street  
Trim  
Co Meath

Elmwood House  
74 Boucher Road  
Belfast  
BT12 6RZ

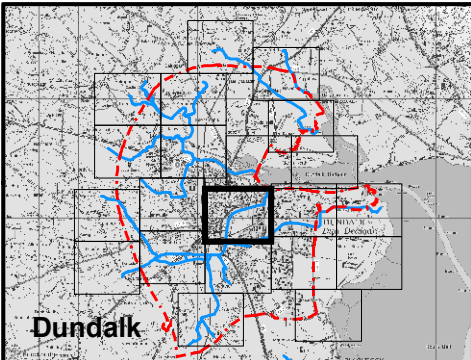
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F +44(0) 28 90 668286  
W www.rpsgroup.com  
E ireland@rpsgroup.com

|                             |                           |
|-----------------------------|---------------------------|
| Map:                        |                           |
| Dundalk Tidal Flood Extents |                           |
| Map Type:                   | EXTENT                    |
| Source:                     | TIDAL                     |
| Map Area:                   | COASTAL                   |
| Scenario:                   | CURRENT                   |
| Drawn By :                  | C.C. Date : 4 August 2016 |
| Checked By :                | E.H. Date : 4 August 2016 |
| Approved By :               | S.P. Date : 4 August 2016 |
| Drawing No. :               |                           |
| N06DDK_EXCCD_F0_09          |                           |
| Map Series : Page 09 of 21  |                           |
| Drawing Scale : 1:5,000 @A3 |                           |

| Node Label  | Water Level (OD)<br>10% AEP | Flow (m³/s)<br>10% AEP | Water Level (OD)<br>0.5% AEP | Flow (m³/s)<br>0.5% AEP | Water Level (OD)<br>0.1% AEP | Flow (m³/s)<br>0.1% AEP |
|-------------|-----------------------------|------------------------|------------------------------|-------------------------|------------------------------|-------------------------|
| 0623M00109D | 3.28                        | N/A                    | 3.70                         | N/A                     | 3.94                         | N/A                     |
| 0623M00104  | 3.28                        | N/A                    | 3.71                         | N/A                     | 3.95                         | N/A                     |
| 0623M00054  | 3.28                        | N/A                    | 3.71                         | N/A                     | 3.96                         | N/A                     |
| 0623M00033D | 3.28                        | N/A                    | 3.71                         | N/A                     | 3.96                         | N/A                     |
| 0623M00029  | 3.28                        | N/A                    | 3.72                         | N/A                     | 3.96                         | N/A                     |
| 0622C00026  | 3.28                        | N/A                    | 3.71                         | N/A                     | 3.97                         | N/A                     |
| 0622C00027  | 3.28                        | N/A                    | 3.72                         | N/A                     | 3.97                         | N/A                     |
| 0622C00028  | 3.28                        | N/A                    | 3.72                         | N/A                     | 3.98                         | N/A                     |



| Node Label   | Water Level (OD)<br>10% AEP | Flow (m³/s)<br>10% AEP | Water Level (OD)<br>1% AEP | Flow (m³/s)<br>1% AEP | Water Level (OD)<br>0.1% AEP | Flow (m³/s)<br>0.1% AEP |
|--------------|-----------------------------|------------------------|----------------------------|-----------------------|------------------------------|-------------------------|
| 0622M00165ml | 4.57                        | N/A                    | 4.66                       | N/A                   | 4.81                         | N/A                     |
| 0622M00165sl | 4.34                        | N/A                    | 4.41                       | N/A                   | 4.54                         | N/A                     |
| 0622M00161D  | 4.07                        | N/A                    | 4.21                       | N/A                   | 4.38                         | N/A                     |
| 0622M00135el | 3.78                        | N/A                    | 3.96                       | N/A                   | 4.15                         | N/A                     |
| 0622M00088D  | 3.59                        | N/A                    | 3.76                       | N/A                   | 3.99                         | N/A                     |
| 0622M00076J  | 3.52                        | N/A                    | 3.68                       | N/A                   | 3.89                         | N/A                     |
| 0622M00033D  | 3.35                        | N/A                    | 3.53                       | N/A                   | 3.77                         | N/A                     |
| 0622M00020al | 3.10                        | N/A                    | 3.11                       | N/A                   | 3.12                         | N/A                     |
| 0622M00020el | 3.09                        | N/A                    | 3.10                       | N/A                   | 3.11                         | N/A                     |
| 0622M00020gl | 3.09                        | 1.20                   | 3.09                       | 1.63                  | 3.09                         | 2.49                    |
| 0622M00020hl | 3.08                        | N/A                    | 3.08                       | N/A                   | 3.08                         | N/A                     |
| 0617M00420pl | 2.08                        | N/A                    | 2.49                       | N/A                   | 3.15                         | N/A                     |
| 0617M00420ul | 2.04                        | N/A                    | 2.47                       | N/A                   | 3.11                         | N/A                     |



IMPORTANT USER NOTE:  
THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.

- Legend**
- 10% Fluvial AEP Event
  - 1% Fluvial AEP Event
  - 0.1% Fluvial AEP Event
  - Modelled River Centreline
  - AFA Extents
  - Embankment
  - Wall
  - Defended Area
  - Standard of Protection of Flood Defence (Walls / Embankments)
  - Node Point
  - Node ID

**FINAL**

|      |       |       |
|------|-------|-------|
| REV: | NOTE: | DATE: |
|------|-------|-------|



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|                |                               |
|----------------|-------------------------------|
| Map:           | Dundalk Fluvial Flood Extents |
| Map Type:      | EXTENT                        |
| Source:        | Fluvial                       |
| Map Area:      | HPW                           |
| Scenario:      | CURRENT                       |
| Drawn By:      | C.C. Date: 4 August 2016      |
| Checked By:    | E.H. Date: 4 August 2016      |
| Approved By:   | S.P. Date: 4 August 2016      |
| Drawing No.:   | N06DDK_EXFCD_F0_14            |
| Map Series:    | Page 14 of 21                 |
| Drawing Scale: | 1:5,000 @A3                   |