APPENDIX 8-1

DETAILED FLOOD RISK ASSESSMENT

The Hodson Bay Waterfront Park Project is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund

CIVIC

Rialtas na hÉireann
Government of Ireland

Arna chomhchistiú ag an Aontas Eorpach
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Tionól Reigiúnach Oirthir agus Lár-Tíre
Eastern and Midland Regional Assembly

Fáilte Ireland

ROSCOMMON
Comhairle Contae Ros Comáin
Roscommon County Council

Waterways Ireland

Hodson Bay

Detailed Flood Risk Assessment Report

JULY 2026

PREPARED FOR

Roscommon County Council

Hodson Bay Waterfront Park Detailed Flood Risk Assessment

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25/02/2026	01	Initial Issue	Shay Graham
15/07/2026	02	Updates from MKO Comments	Shay Graham

CONTENTS

1. Introduction

1.1. Scope and Objectives

Roscommon County Council has appointed Civic to prepare a Detailed Flood Risk Assessment (FRA) to support the planning submission for the Hodson Bay Waterfront Park Project. This report has been prepared to assess the flood risk to the site and adjacent lands.

This FRA investigates the potential of flood risk within the development site boundary from all potential sources including watercourses and groundwater. To guarantee the safety, sustainability, and success of the proposed scheme, recommendations for potential mitigation measure will be reviewed as detailed design begins.

A general location map of the Hodson Bay Waterfront Park project area is shown in **Figure 4**, in section 3.1, complete with the red line boundary.

1.2. Assessment Information

To complete this flood risk assessment, the following items were considered:

- Review of publicly available information
- Review of relevant studies in the area
- Review of previous Flood Risk Assessment for 2021 Baysports planning application
- Review of relevant policies

1.3. Exclusions and Limitations

Civic is not responsible for information supplied by third parties. The information in this FRA is accurate at the time of writing.

OPW Flood Maps are indicative only, as they have been produced using a consistent, nationally applied methodology. The flood maps are primarily used to cover coastal, pluvial and fluvial flooding, and they do not take account of overland flow or sewer flooding that maybe present on site.

1.4. Data Sources

This flood risk assessment has been based on the following sources of information:

- OPW Preliminary Flood Risk Assessment (PFRA) maps consulted.
  - Fluvial, Pluvial and Groundwater flooding examined
- Floodinfo.ie Online Mapping
  - Fluvial, Pluvial, and Groundwater flooding, available flood maps and OPW flood records examined
- GSI Online Mapping
  - GSI Subsoils map consulted to identify alluvial deposits on site that may indicate the presence of a watercourse and flood plain
- OPW Flood Risk Management Plan – Upper and Lower Shannon River Basin
  - Review flood risk assessment and modelled flood levels for Upper Shannon River Basin Area
- Shannon Catchment Flood Risk Assessment and Management Study
  - Relevant CFRAM Predictive Flood Maps Reviewed
- Strategic Flood Risk Assessment of the Roscommon County Development Plan 2022-2028
  - Review strategic flood plan for the Roscommon County area
- Roscommon County Development Plan 2022 – 2028
  - Review objective and policies in relation to flood risk management and strategic infrastructure development.
- Site Drawings
  - Site levels reviewed relative to estimated flood mapping/levels

2. Flood Risk Management Guidelines

2.1. Flood Risk Assessment Process

The Guidelines on the Planning System and Flood Risk Management, jointly published by the Department of the Environment, Heritage and Local Government (DoEHLG) and OPW in 2009, provide the national framework for the management of flood risk in relation to the planning and development process in Ireland. The guidelines seek to ensure that flood risk is properly assessed, managed, and integrated into land use planning decisions to minimise future exposure to flooding.

The Guidelines set out a staged approach to Flood Risk Assessment (FRA), comprising three key stages:

- **Stage 1: Flood Risk Identification** – identify whether there may be any flooding or surface water management issues related to a proposed development site that may warrant further investigation at the appropriate lower level plan or planning application levels.
- **Stage 2: Initial Flood Risk Assessment** – confirm sources of flooding that may affect a plan area or proposed development site, appraise the adequacy of existing information, and scope the extent of the risk of flooding, which may involve preparing indicative flood zone maps. Where hydraulic models exist the potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures can be assessed.
- **Stage 3: Detailed Flood Risk Assessment** – assess flood risk issues in sufficient detail and provide a quantitative appraisal of potential flood risk to a proposed or existing development, its potential impact on flood risk elsewhere, and the effectiveness of any proposed mitigation measures.

The FRA process ensures that decisions regarding land use, development design, and flood mitigation measures are evidence-based and proportionate to the level of risk identified.

2.2. Definition of Flood Risk

The Guidelines define flood risk as a function of three components:

- **Flood Probability (Likelihood):** The statistical chance of a flood occurring within a given period, often expressed as a return period (e.g. 1% Annual Exceedance Probability (AEP) corresponds to a 1 in 100-year event).
- **Flood Consequence (Impact):** The potential adverse outcomes of a flood event, including risks to human health and safety, property damage, economic loss, and environmental degradation.
- **Flood Risk:** The product of flood probability and consequence.

Effective flood risk management involves reducing both the likelihood of flooding and the severity of its potential consequences.

The likelihood of a flood event depends on the characteristics of the water body (source) and the potential routes it may follow (pathways). The consequences of the event are determined by the type and vulnerability of the people and assets affected (receptors). This relationship between the source, pathways and receptors is illustrated in the guidance, which can be seen in Figure 1.

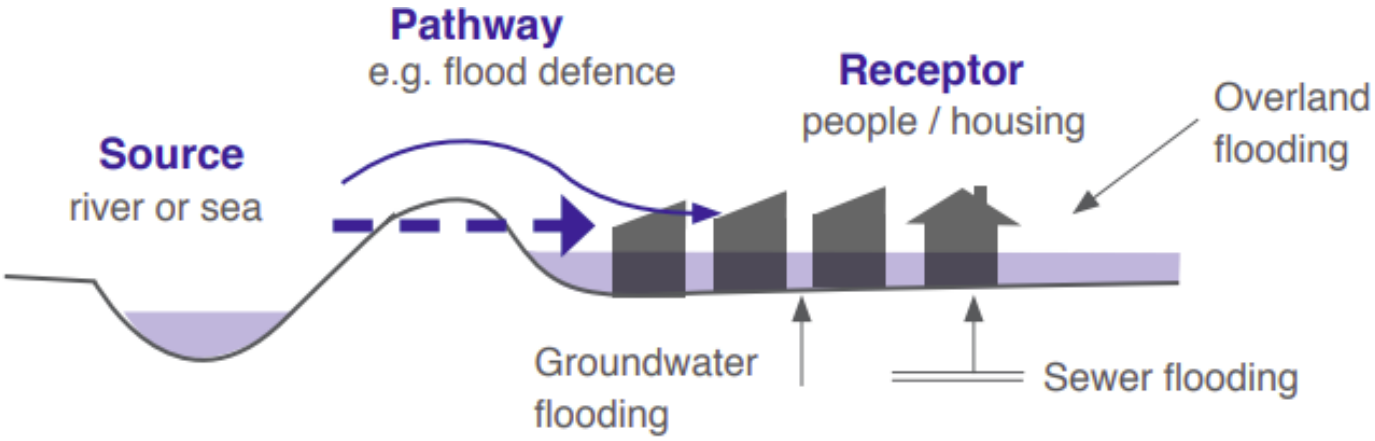


Figure 1: Source-Path-Receptor Model

2.3. Flood Zones

The Guidelines classify lands into three Flood Zones, based on the likelihood of fluvial and tidal flooding:

- **Flood Zone A:** High probability of flooding — lands within the 1% AEP (1 in 100 year) fluvial flood event or 0.5% AEP (1 in 200 year) tidal flood event.
- **Flood Zone B:** Moderate probability of flooding — lands within the 0.1%–1% AEP fluvial event or 0.1%–0.5% AEP tidal event.
- **Flood Zone C:** Low probability of flooding — lands outside the 0.1% AEP flood extents.

Development proposals must consider the relevant Flood Zone classification when assessing site suitability and designing mitigation measures. Figure 2 shows a matrix from the Guidelines which classifies the appropriateness of developments in each flood zone, depending on the vulnerability.

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water-compatible development	Appropriate	Appropriate	Appropriate

Figure 2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

2.4. Objectives and Principles of the Planning Guidelines

The primary objectives of the Guidelines are:

- To avoid inappropriate development in areas at risk of flooding.
- To substitute less vulnerable land uses in areas where avoidance is not possible.
- To mitigate residual flood risks through design, construction, and operational measures.

The guidelines emphasise a precautionary, evidence-based, and plan-led approach to ensure that flood risk is properly integrated into development planning, while protecting people, property, and the environment from future flood hazards.

The principal actions when considering flood risk management in the planning system are:

1) Flood hazard and potential flood risk from all sources should be identified and considered at the earliest stage in the planning process and as part of an overall hierarchy of national responses coupled to regional appraisal and local and site-specific assessments of flood risk.
2) Development should preferentially be located in areas with little or no flood hazard thereby avoiding or minimising the risk. Development in the context of these Guidelines includes all construction, such as transport and utility infrastructure as well as residential and other buildings.
3) Development should only be permitted in areas at risk of flooding when there are no alternative, reasonable sites available in areas at lower risk that also meet the objectives of proper planning and sustainable development.
4) Where development is necessary in areas at risk of flooding an appropriate land use should be selected.
5) A precautionary approach should be applied, where necessary, to reflect uncertainties in flooding datasets and risk assessment techniques and the ability to predict the future climate and performance of existing flood defences. Development should be designed with careful consideration to possible future changes in flood risk, including the effects of climate change and / or coastal erosion so that future occupants are not subject to unacceptable risks.
6) Decisions on the location of development may be required before development plans have been fully reviewed in accordance with these Guidelines and prior to the availability of appropriate flood risk mapping. In such circumstances a planning authority may choose to:
    a) Vary the development plan to facilitate appropriate development provided that the variation is accompanied by a rigorous assessment of flood risk in accordance with these Guidelines and the application of the Justification Test where necessary;
    b) Assess the proposal in accordance with the approach outlined in chapter 5 (5.27); and/or,
    c) Await the review of the development plan in accordance with these Guidelines, where such as review is imminent.
7) Land required for current and future flood management, e.g. conveyance and storage of flood water and flood protection schemes, should be proactively identified on development plan and LAP maps and safeguarded from development.
8) Flood risk to, and arising from, new development should be managed through location, layout and design incorporating Sustainable Drainage Systems and compensation for any loss of floodplain as a precautionary response to the potential incremental impacts in the catchment.
9) Strategic environmental assessment (SEA) of regional planning guidelines, development plans and local area plans should include flood risk as one of the key environmental criteria against which such plans are assessed where flood risk has been identified. The SEA process provides an opportunity to assess and consider flood risk with respect to other planning and environmental considerations and should be used to show how the sequential approach to managing flood risks has been executed.

2.5. The Sequential Approach and Justification Test

The Sequential Approach is central to the planning process under the Guidelines and seeks to direct new development to areas with the lowest flood risk, applying the following hierarchy:

1. **Avoid** development in areas at risk of flooding where possible.
2. **Substitute** more vulnerable uses with less vulnerable uses where avoidance is not achievable.
3. **Mitigate** the remaining risk by incorporating flood-resilient design and protection measures.

Where development within Flood Zones A or B is unavoidable due to wider sustainable planning considerations, a Justification Test must be satisfied. The Justification Test requires demonstration that:

- **Justification Test for development plans:** The development is consistent with the objectives of proper planning and sustainable development.
- **Justification Test for development management:** The flood risk to the development and surrounding area can be managed to an acceptable level and will not increase flood risk elsewhere.

A successful application of the Justification Test ensures that development proceeds only where robust flood risk management measures are in place.

Figure 3 shows an illustration of the sequential approach principles from the Guidelines.

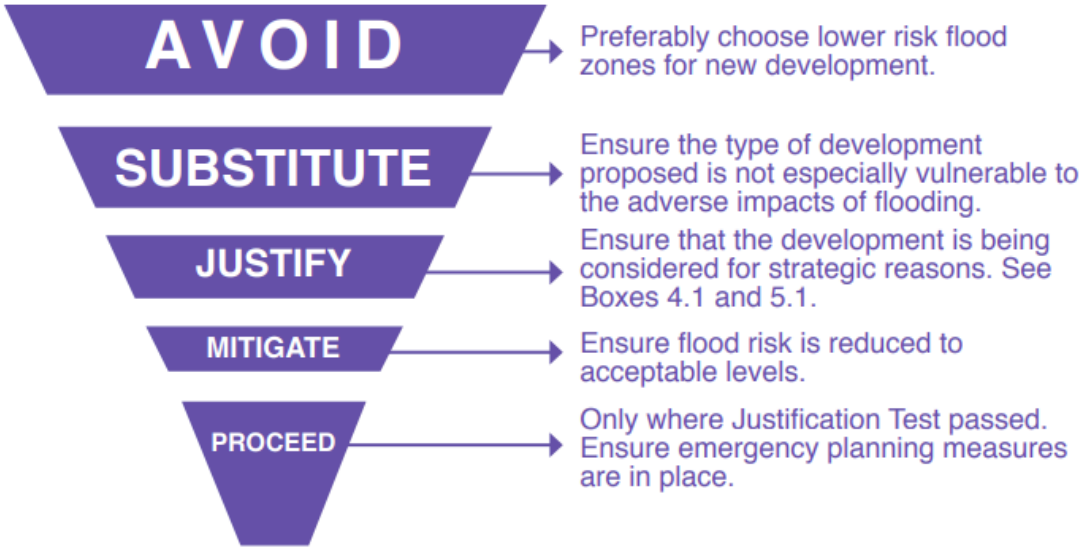


Figure 3: Sequential approach principles in flood risk management

3. Development Site

3.1. Site Location

The site is situated along the waterfront of Hodson Bay, Lough Ree, as well as along the connecting road (L2020) between Hodson Bay and the N61.

The Hodson Bay waterfront is currently utilised by several facilities such as the Hodson Bay Marina and Bay Sports. Hodson Bay Hotel is adjacent to the project area at Hodson Bay. The Hodson Bay Golf Course is located to the West of the northern half of the project area and is access through Athlone Golf Club.

The approximate centre of the site is located at Irish National Grid Reference N 00849 46361.

The project area can be seen in the red line boundary on Figure 4, which illustrates the existing site context, including surrounding features and internal land use.

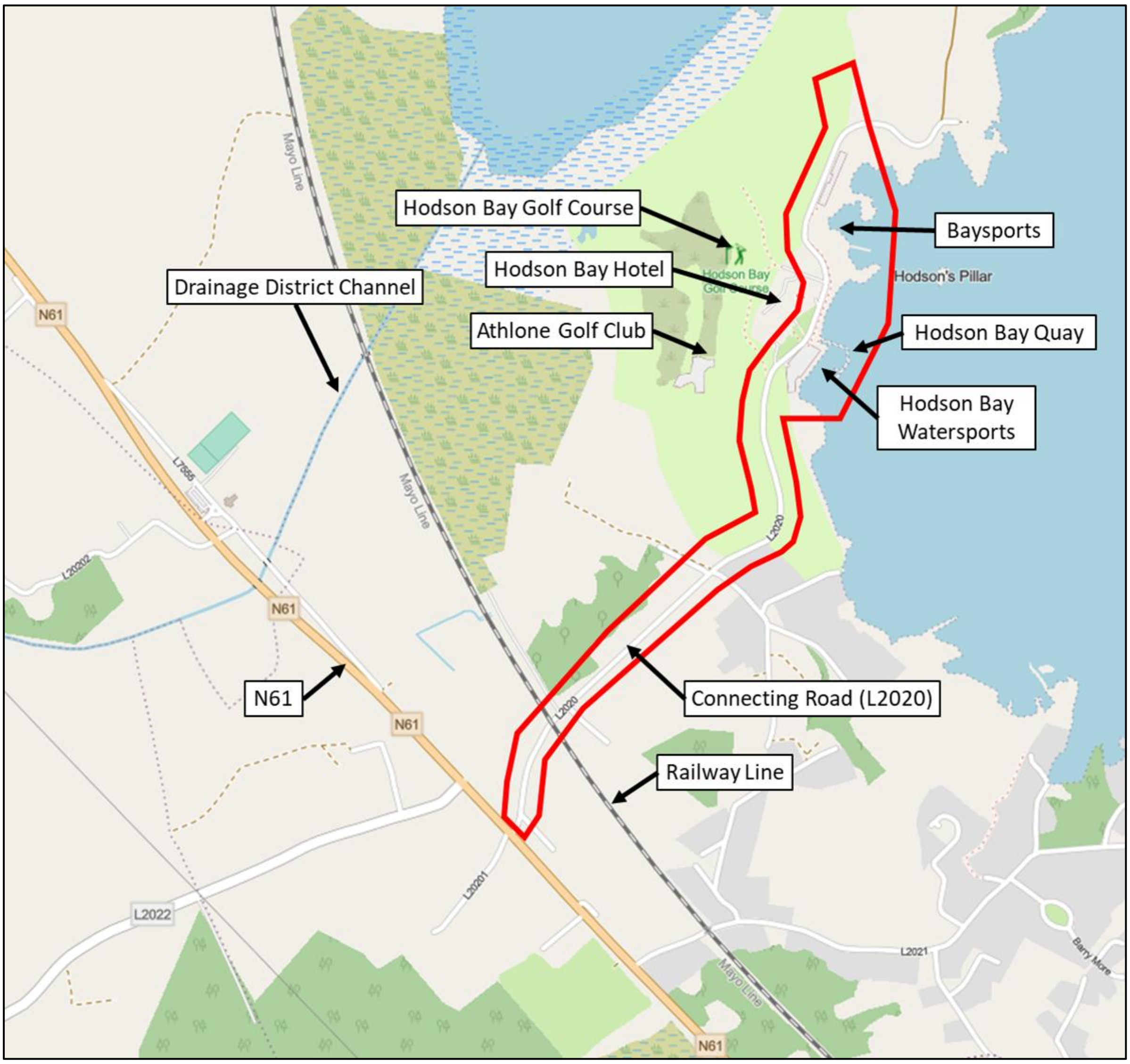


Figure 4: Site Layout

3.2. Topography

A detailed topographical survey of the site was undertaken by TST Engineering in September 2025. The survey indicates that ground levels within the project area at Hodson Bay range from approximately 35.0m OD along the shoreline of Lough Ree to approximately 40.0m OD to the north of the Hodson Bay Hotel. The L2020 road corridor linking Hodson Bay to the N61 rises gradually inland and is relatively uniform in profile, reaching a maximum level of approximately 45.0m OD. South of Hodson Bay, the carriageway increases steadily in elevation from approximately 38.0m OD to 45.0m OD over a distance of circa 350m.

Ground levels adjacent to the Hodson Bay Hotel indicate a finished floor level (FFL) of approximately 38.0m OD. At the existing Baysports building, surrounding ground levels range between approximately 35.9m OD and 36.6m OD, suggesting finished floor levels within this range. The carriageway and promenade area in front of the hotel extending toward Baysports generally lie between 36.5m OD and 37.5m OD, with the promenade itself predominantly at approximately 36.5m OD.The full topographical survey and existing ground level drawings are included in Appendix A.

3.3. Geology, Soils, and Groundwater

A review of mapping from the Geological Survey Ireland (GSI) Spatial Resources indicates that the northern and southern extents of the site are mapped as till derived from limestone, the central area is gravels derived from limestone and a section of the road corridor is identified as cutover raised peat, as shown in **Figure 5**. The gravel deposits are likely to exhibit variable permeability depending on composition, while limestone-derived till is generally less permeable. The presence of peat indicates potentially compressible and water-retentive soils, with a tendency toward shallow groundwater and seasonal saturation.

Figure 5: Quaternary Sediment Type - GSI Maps

The absence of mapped alluvium suggests that the site is not located within a defined fluvial floodplain associated with a river channel. Flood risk in this location is therefore more likely to be associated with lake level exceedance from Lough Ree rather than flooding from a local watercourse.

The bedrock geology across the site comprises visean limestones. The underlying bedrock aquifer is classified as regionally important aquifer - karstified (conduit). The overlying subsoils may locally limit vertical groundwater movement. Groundwater vulnerability mapping classifies the site as having moderate and high vulnerability, indicating that the subsoil provides a reasonable degree of protection to the underlying aquifer in moderate areas.

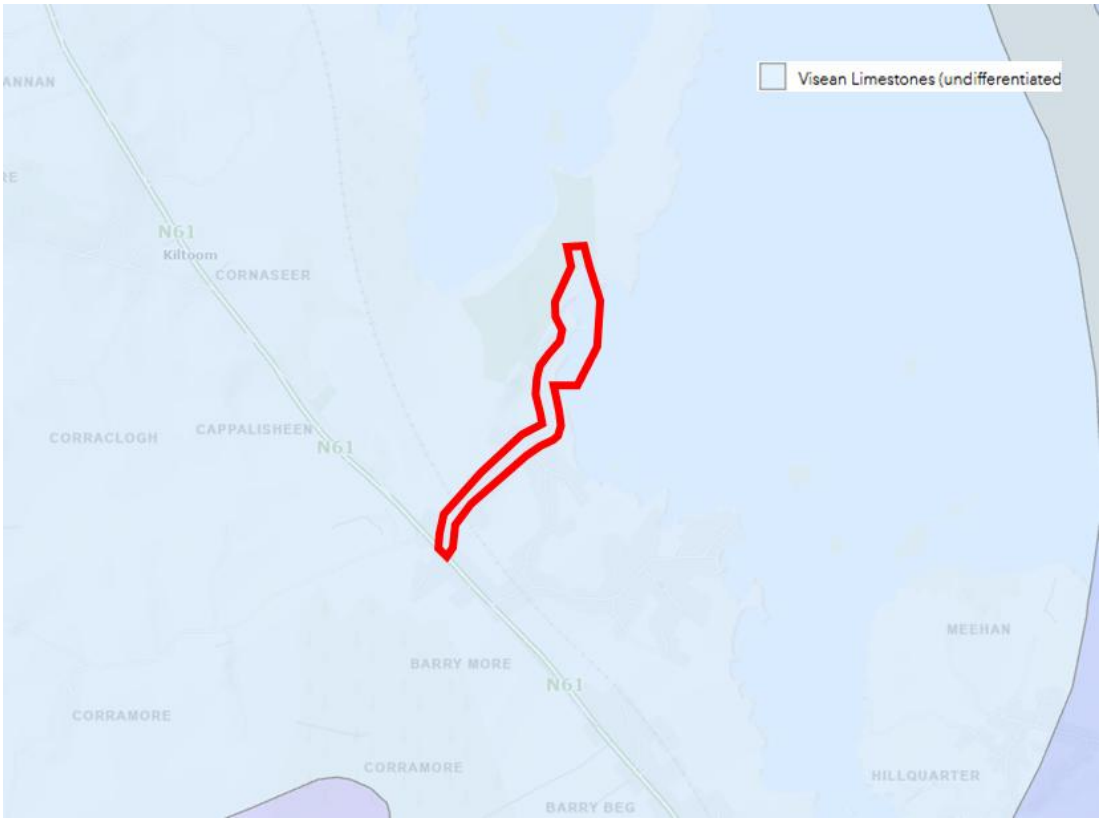


Figure 6: Bedrock Geology 100k - GSI Maps

Figure 7: Groundwater Vulnerability - GSI Maps

Given the site's proximity to Lough Ree, groundwater levels are likely to be influenced by lake levels, particularly during prolonged high-water conditions. While no specific groundwater flood risk features are identified in the GSI mapping, shallow groundwater and localised ponding may occur in peat or low-lying areas.

3.4. Existing Watercourses

3.4.1. Lough Ree

Lough Ree is a large freshwater lake forming part of the River Shannon system, located in the central midlands of Ireland. The lake extends approximately 29 km in length and up to 11 km in width, covering a surface area of approximately 105 km². Lough Ree is primarily fed by inflows from the River Shannon and numerous smaller tributaries, with its water levels influenced by both upstream discharges and downstream controls at Athlone Weir and Parteen Weir further south. The lake's levels are subject to seasonal variations, with highest water levels typically occurring in late winter and early spring due to increased rainfall and runoff from the extensive catchment area.

At Hodson Bay, flood risk is influenced by several factors including sustained high rainfall, elevated upstream inflows, wind-driven wave action (which can exacerbate localised overtopping), and capacity constraints downstream at Athlone. Historical flood events in the area have been linked to prolonged periods of wet weather combined with high Shannon River system levels.

Historical flood events, such as those experienced during the winters of 2009/2010 and 2015/2016, have demonstrated the potential for prolonged high-water levels on Lough Ree, contributing to flooding of adjacent low-lying lands including parts of Hodson Bay. The Office of Public Works (OPW) monitors and manages water levels within the Shannon system, with ongoing development of flood relief schemes to mitigate flood risk in critical locations, including Athlone and surrounding areas.

Climate change projections indicate potential future increases in extreme rainfall events and rising water levels, which may increase the frequency or severity of flooding in vulnerable low-lying shoreline areas such as parts of Hodson Bay.

Given the proximity of the project area to Lough Ree, consideration must be given to fluvial, pluvial and potential groundwater flooding mechanisms, as well as wave action during extreme weather events. Any development proposals will need to demonstrate appropriate mitigation measures in accordance with relevant flood risk management guidelines.

3.4.2. Additional Watercourses

Outside of Lough Ree there are no established watercourses near the project area. The closest watercourse is a Drainage District Channel to the west of the project area which connects to Lough Ree through Bally Bay, as can be seen in the image from floodinfo.ie in Figure 8.

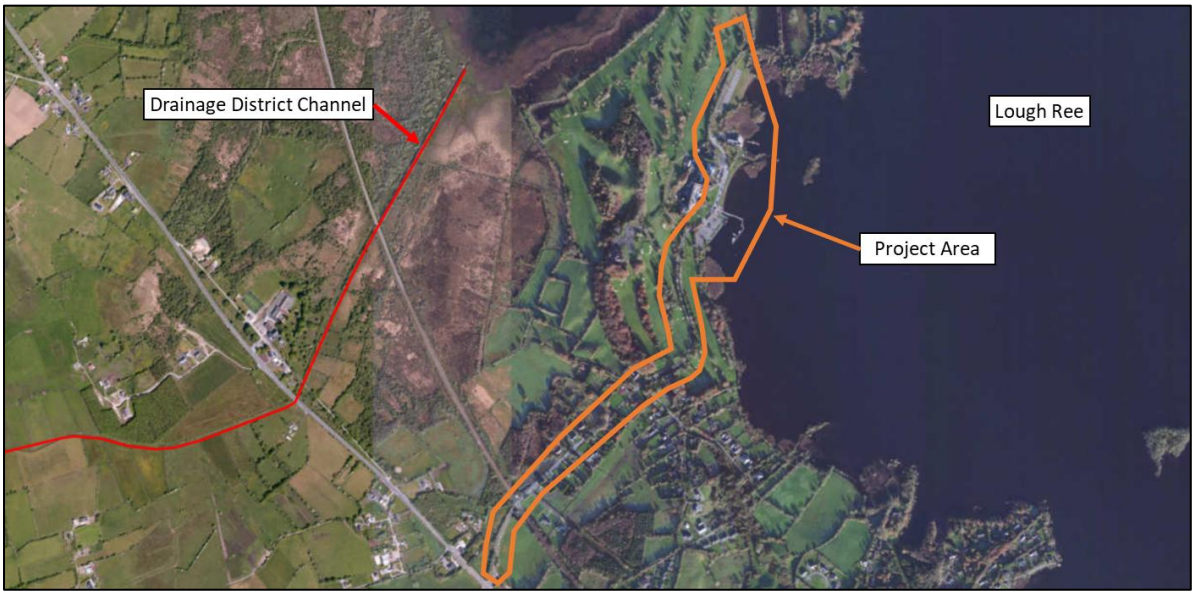


Figure 8: Defined Watercourses

3.5. Proposed Development

The Hodson Bay Waterfront Project is a multi-disciplinary project aimed at enhancing the Hodson Bay area into a flagship tourism facility. The project's key objectives include improving the visitor experience, developing a continuous promenade, extending the marina, reimagining the water play experience, and creating a sustainable access, parking, and transport strategy.

The project is funded by Roscommon County Council and Waterways Ireland, with support from Failte Ireland under the EU Just Transition Fund.

The primary goals of the Hodson Bay Waterfront Project are to:

- Enhance the visitor experience and increase dwell time.
- Improve physical and visual connectivity with the River Shannon and Lough Ree.
- Enhance the functionality and attractiveness of the waterfront area.
- Improve access arrangements through sustainable transport measures and parking solutions.

The project scope comprises the following key elements:

- **Promenade Development:** Development of a continuous promenade along the shoreline, including a sun deck and marina square with gardens.
- **Marina Development:** Extension and improvement of the existing marina, including new berths, boat servicing facilities, and improved access to the water.
- **Reimagined Water Play Experience:** Redevelopment of the water sports facility, including amenities such as toilets, showers, and a café.
- **Access, Parking & Transport Strategy:** Implementation of a revised access strategy, including a transport mobility hub, active travel hubs, improved pedestrian and cycle access, and a revised parking strategy.

The new water sports facilities and café are proposed to have Finish Floor Levels at 38.0m OD inline with site specific flood risk analysis. Carriageway levels throughout Hodson Bay are proposed to be retained at their existing levels. All new landscaping and infrastructure below 38.0m OD will be designed to be flood resilient in scenarios of extreme flood conditions.

The proposed masterplan layout can be seen in Appendix B.

4. Flood Risk Identification

4.1. General

This chapter identifies and describes the potential sources of flooding that may affect the proposed development site and its surrounding area. The purpose of this assessment is to establish the baseline flood risk context, determine the likelihood and mechanisms of flooding, and inform the need for mitigation, management measures, or further detailed analysis as part of this FRA.

Information is drawn from publicly available flood mapping, historical flood records, and topographical data. The assessment also considers the potential influence of climate change on future flood risk.

The findings of this chapter provide the foundation for subsequent sections of the FRA, including the assessment of flood risk to and from the development, evaluation of vulnerability, and identification of appropriate mitigation and sustainable drainage measures.

4.1. Roscommon County Development Plan

The Roscommon County Council County Development Plan 2022-2028 provides the overarching land-use strategy and planning policy framework for the proper planning and sustainable development of County Roscommon, including provisions related to flood risk management. The Plan has been prepared in accordance with the Planning and Development Act 2000 (as amended) and reflects national policy on flooding, including the requirements of the EU Floods Directive and The Planning System and Flood Risk Management – Guidelines for Planning Authorities (OPW/DECLG, 2009) and Circular PL2/2014.

Relevant policy objectives within the Plan aim to ensure that flood risk considerations are integrated into development decision-making. The Plan requires that flood risk assessments are carried out in accordance with the Guidelines for Planning Authorities for all proposals that impact on lands where flood risk has been identified and that the Sequential Approach be applied in the siting and design of development. It also promotes protection and enhancement of floodplains, turloughs, lakes and wetlands as strategic green infrastructure, recognising their role in storing and conveying floodwater, and supports implementation of actions identified through the national Catchment Flood Risk Assessment and Management Programme. Development that would be subject to an inappropriate risk of flooding or that would exacerbate flood risk elsewhere is not normally permitted.

Within the Plan, development proposals in areas where there is an identified or potential risk of flooding must be accompanied by a detailed site-specific Flood Risk Assessment. Where appropriate, a Justification Test in accordance with the Guidelines must be applied to demonstrate that flood risk can be managed to an acceptable level without increasing risk elsewhere and that there are wider sustainable development grounds for the proposed development.

The County Development Plan also emphasises that all flood risk management activities should consider natural and cultural heritage, protect watercourses and riparian corridors, and contribute to climate change adaptation measures.

The Development Plan Policies regarding Flood Risk are as follows:

- ITC 7.51 – Have regard to the EU Flood Risk Directive, the Flood Risk Regulations (S.I. No. 122 of 2010) and the Guidelines for Planning Authorities on the Planning System and Flood Risk Management and Circular PL2/2014, through the use of the sequential approach and application of the Justification Tests in Development Management.
- ITC 7.52 – Ensure that a flood risk assessment is carried out for development proposals impacting on flood risk areas, in accordance with the Guidelines for Planning Authorities on the Planning System and Flood Risk Management. This assessment shall be appropriate to the scale and nature of risk to the potential development.
- ITC 7.53 – Protect and enhance the county's turloughs, lake/river floodplains and wetlands as strategically important green infrastructure which provides space for storage and conveyance of floodwater and enables flood risk to be more effectively managed, subject to normal planning and environmental criteria.
- TC 7.54 – Ensure that where flood risk management works take place that the natural and cultural heritage, rivers, streams and watercourses are protected and enhanced.
- ITC 7.55 – Support the implementation of recommendations in the CFRAM Programme to ensure that flood risk management policies and infrastructure are progressively implemented.
- ITC 7.56 – Ensure each flood risk management activity is examined to determine actions required to embed and provide for effective climate change adaptation as set out in the OPW Climate Change Sectoral Adaptation Plan for Flood Risk Management applicable at the time.

The Development Plan Policies regarding Tourism are as follows:

- ED 6.22 – Promote tourism as an integral part of County Roscommon's economic profile, supporting urban and rural enterprise, and recognising the key strategic location of the county and access to tourist sites and attractions.
- ED 6.23 – Continue to support the implementation of the Roscommon Tourism Strategy 2017-2020 (and subsequent revisions) in line with national and regional policy, tourism trends and identified challenges, in collaboration with Fáilte Ireland, Waterways Ireland, tourism businesses and communities and other supporting agencies.
- ED 6.24 – Support the preparation and implementation of Regional Tourism Plans in the County Development Plan, to support the continued collaboration with Fáilte Ireland and tourism stakeholders to ensure successful implementation and delivery of these tourism plans.
- ED 6.25 – Promote the development of sustainable tourism as part of our economy, that recognises our landscapes, our cultural heritage and our environment.
- ED 6.26 – Facilitate small scale enterprises, such as renovation of barns, outhouses or other existing structures for short term rental associated with an existing permanent residence or active farm/agri-tourism enterprise. Proposals to reinstate, conserve and/or renovate existing, vacant, derelict or disused buildings for holiday accommodation will also be given favourable consideration subject to normal planning criteria.
- ED 6.27 – Collaborate with relevant state bodies, neighbouring Local Authorities and local communities in delivering a UNESCO accredited, Biosphere for Lough Ree and the Mid- Shannon Wilderness Park.
- ED 6.28 – Encourage walking and cycling as sustainable transport modes and healthy recreational activities by ensuring that a network of safe, well-marked and maintained rights-of-way, walking and cycle routes, and footpaths are provided throughout the county.
- ED 6.29 – Facilitate the creation of a network of cycling/ walking routes (including existing footpaths and walking routes, off road routes, local walks, tourist walks, medium and long distance walking routes) within the county.
- ED 6.30 – Develop linkages between existing and new trails, particularly those with a historic association in adjoining counties, in cooperation with Inland Waterways, Fáilte Ireland and with other relevant stakeholders to provide linkages with trails in adjoining counties in partnership with their Councils.

4.2. Strategic Flood Risk Assessment of the Roscommon County Development Plan

A Strategic Flood Risk Assessment (SFRA) was prepared to inform the Roscommon County Development Plan 2022-2028, consistent with the requirements of the Planning System and Flood Risk Management Guidelines for Planning Authorities and associated Departmental Circulars. The SFRA assesses the likelihood and extent of flood risk across the Plan area and supports the identification of Flood Zones A and B, together with associated risk indicators derived from national-level data, local knowledge and site verification.

The SFRA forms part of the evidence base for the County Development Plan and its core recommendation is to avoid, reduce and/or mitigate flood risk within the flood risk areas identified. The recommendations of the SFRA are integrated into the written policies and objectives of the Plan, reinforcing the application of the Sequential Approach and ensuring that flood risk is a key consideration in land-use zoning and development management decisions.

The SFRA also underpins the Plan's requirement for detailed site-specific Flood Risk Assessments for development proposals within or adjoining flood-risk areas. This ensures that residual risks are fully quantified and that mitigation measures, including consideration of climate change, are appropriately addressed. Development that is likely to increase flood risk elsewhere, obstruct flow paths, impede access to watercourses or compromise flood protection infrastructure is restricted.

Overall, the SFRA ensures that identified flood risk areas are appropriately reflected in the County Development Plan's strategy and that flood risk is managed in a manner consistent with national policy and best practice.

4.3. Shannon Flood Risk (State Agency Co-ordination Working Group)

Water levels within the River Shannon system are influenced by control structures at the outlets of the major lakes and at several locations along the river. However, due to the very shallow gradient of the Shannon and natural hydraulic constraints along its course, water levels cannot be fully controlled during flood events. River and lake levels are primarily determined by the volume and duration of rainfall across the wider catchment.

Levels in Lough Ree are regulated by the Electricity Supply Board (ESB) through sluices at Athlone, with operational assistance from Waterways Ireland. During significant flood events, most flows pass uncontrolled over the adjacent

weir, limiting the effectiveness of operational intervention. As inflows to the lake increase during prolonged rainfall, outflows can only increase as lake levels rise, and a hydraulic balance is eventually reached at elevated levels. Studies have shown that, for large flood events, the initial lake level has negligible influence on the eventual peak level[1].

At Hodson Bay, this indicates that flood risk is primarily driven by catchment-scale hydrological conditions and prolonged high inflows within the Shannon system rather than operational management of sluices.

4.4. Shannon Catchment Flood Risk Assessment and Management Study

The Shannon Catchment Flood Risk Assessment and Management (CFRAM) Study was undertaken by OPW as part of Ireland's implementation of the EU Floods Directive. The study provides detailed hydraulic modelling and predictive flood mapping for the entire Shannon River Basin, including the lakes and main channel of the River Shannon and its major waterbodies such as Lough Ree.

4.4.1. Preliminary Flood Risk Assessment

The Preliminary Flood Risk Assessment (PFRA) was a nationwide, high-level, desk-based screening exercise conducted to identify areas where the risks associated with flooding are potentially significant. As the first step of the EU Floods Directive, it was not a detailed study, but rather a preliminary assessment to identify where more detailed, in-depth analysis was necessary.

The OPW used historical flood data, predictive analysis (including climate change projections), and consultation with local authorities to assess risk from various sources (rivers, sea, groundwater, and infrastructure failure). The PFRA is reviewed on a six-year cycle to account for new information or changed risks.

Under the CFRAM Programme, approximately 300 communities nationally were assessed covering roughly two-thirds of the population and 80% of properties potentially at risk from rivers and sea in Ireland, and flood maps were prepared for those designated as Areas for Further Assessment (AFAs), also referred to as Areas of Potentially Significant Risk (APSFRs). Structural measures were then developed for communities where flood risk was determined to be significant and economically justifiable.

For each AFA, the CFRAM programme involved developing detailed flood maps, assessing risk and developing Flood Risk Management Plans (FRMPs) to manage and reduce the flood risk.

4.4.2. OPW Flood Risk Management Plan – River Basin (25/26) Shannon Upper and Lower

The FRMP for the Shannon Upper & Lower River Basin, prepared by the OPW, sets out the strategy and measures for the long-term, sustainable and cost-effective management of flood risk within the Shannon catchment. The Plan forms part of a national suite of 29 river basin plans and implements Government flood policy (following the 2004 Flood Policy Review Group Report) as well as Ireland's obligations under the EU Floods Directive (2007).

The Plan identifies both non-structural measures (e.g. planning policy, flood forecasting, emergency response, public awareness and preparedness) and structural flood relief schemes for communities identified as being at potentially significant flood risk through the PFRA and subsequently examined in detail under the CFRAM Programme.

Hodson Bay and the surrounding area was not identified as an AFA under the Shannon CFRAM process and therefore, no detailed hydraulic flood modelling was undertaken specifically for Hodson Bay, and no site-specific structural flood relief measures were proposed for Hodson Bay under the FRMP.

This indicates that, at a strategic catchment level, Hodson Bay was not considered to be at potentially significant flood risk relative to larger urban centres within the Shannon basin. However, absence of AFA designation does not imply absence of flood risk. As a lakeshore location influenced by water levels within the River Shannon system, flood risk at Hodson Bay remains primarily associated with lake level exceedance and prolonged high water events. Accordingly, site-specific assessment using available CFRAM flood levels at Hodson Bay and topographic survey data can be used to determine localised risk and appropriate mitigation measures.

4.4.3. CFRAM Predictive Flood Maps

The CFRAM outputs at AFAs include mapped flood extents, depths and levels for a range of AEP events (including 10%, 1% and 0.1% AEP events), together with climate change scenarios. These maps form the primary basis for identifying Flood Zones A and B under the Planning System and Flood Risk Management Guidelines.

In the context of Hodson Bay, the Shannon CFRAM mapping is particularly relevant as flood risk is predominantly associated with lake level exceedance and prolonged high water levels within Lough Ree, rather than confined channel flooding. The CFRAM hydraulic model accounts for the storage and attenuation effects of Lough Ree within the wider

[1] https://esb.ie/news---insights/inside-esb/our-role-on-the-river-shannon

Shannon system and therefore provides the most robust predictive assessment of potential flood levels affecting low-lying shoreline lands at Hodson Bay.

As Hodson Bay is in proximity to AFAs with detailed flood modelling on Lough Ree, and as Lough Ree water levels are the primary indicator of flood risk at Hodson Bay, data can be extrapolated to find predicted flood levels as follows:

- The nearest available CFRAM Map downstream of Hodson Bay is at Athlone, Node Label 07MSH03613, which is 3km south of Hodson Bay. The modelled fluvial flood levels at the node shows a 10% AEP Water Level of 36.37m OD, 1% AEP Water Level of 36.95m OD, and 0.1% AEP Water Level of 37.41m OD.
- The nearest available CFRAM Map upstream of Hodson Bay is at Lanesborough, Node Label 08MSH00355, which is 23km north of Hodson Bay. The modelled fluvial flood levels at the node shows a 10% AEP Water Level of 36.45m OD, 1% AEP Water Level of 37.08m OD, and 0.1% AEP Water Level of 37.61m OD.
- Extrapolating between the two data points at Lanesborough and Athlone, provides a 10% AEP Water Level of 36.37m OD, 1% AEP Water Level of 37.09m OD, and 0.1% AEP Flood Water Level of 37.44m OD at Hodson Bay.

The CFRAM Maps and flood levels for Athlone and Lanesborough described above are shown in Appendix C.

Furthermore, the highest flood water level on record (7th January 2016) was 36.961m OD at Athlone, and 36.993m OD at Hodson Bay, representing a difference of 0.032m OD difference at peak flood levels. Adding this difference to the 0.1% AEP CFRAM modelled flood levels at Athlone (37.41 m OD), also provides a 0.1% AEP Flood Level of 37.44m OD at Hodson Bay.

4.5. OPW Records

All publicly available OPW Flood Maps were reviewed on floodinfo.ie and the results are as follows:

- Only fluvial flooding from Lough Ree was identified to be in the project area. The fluvial flood zones are described in the following sections.
- No OPW Flood Relief Scheme Benefiting Areas shown in project area
- No Arterial Drainage Schemes shown in project area
- No records of Pluvial Flooding shown in project area
- No records of Groundwater Flooding shown in project area

4.5.1. Fluvial Flood Maps

High Probability flood events have approximately a 1-in-a-10 chance of occurring or being exceeded in any given year. This is also referred to as an AEP of 10%. The flood extents for high probability flooding are show in Figure 9.

Figure 9: CFRAM River Flood Extents - High Probability

Medium Probability flood events have approximately a 1-in-a-100 chance of occurring or being exceeded in any given year. This is also referred to as an AEP of 1%. The flood extents for medium probability flooding are show in Figure 10.

Figure 10: CFRAM River Flood Extents - Medium Probability

Low Probability flood events have approximately a 1-in-a-1000 chance of occurring or being exceeded in any given year. This is also referred to as an AEP of 0.1%. The flood extents for low probability flooding are show in Figure 11.

Figure 11: CFRAM River Flood Extents - Low Probability

Historical flood maps have been reviewed and can be seen in Figure 12 below.

Figure 12: CFRAM Historic Flood Maps

4.5.2. OPW Water Level Stations Data

Water level data for the Shannon system has been reviewed using hydrometric records published by the OPW. Of relevance to this assessment are the monitoring stations at Hodson Bay Gauge Station and Athlone Gauge Station, which record lake and river levels within and immediately downstream of Lough Ree. These stations provide long-term observed water level data that assists in understanding historical lake level behaviour, seasonal fluctuations, and peak levels recorded during significant flood events. Review of this empirical data supports verification of predictive flood mapping and provides important context for assessing flood risk at Hodson Bay. The data for Hodson Bay can be seen below in Figure 13.

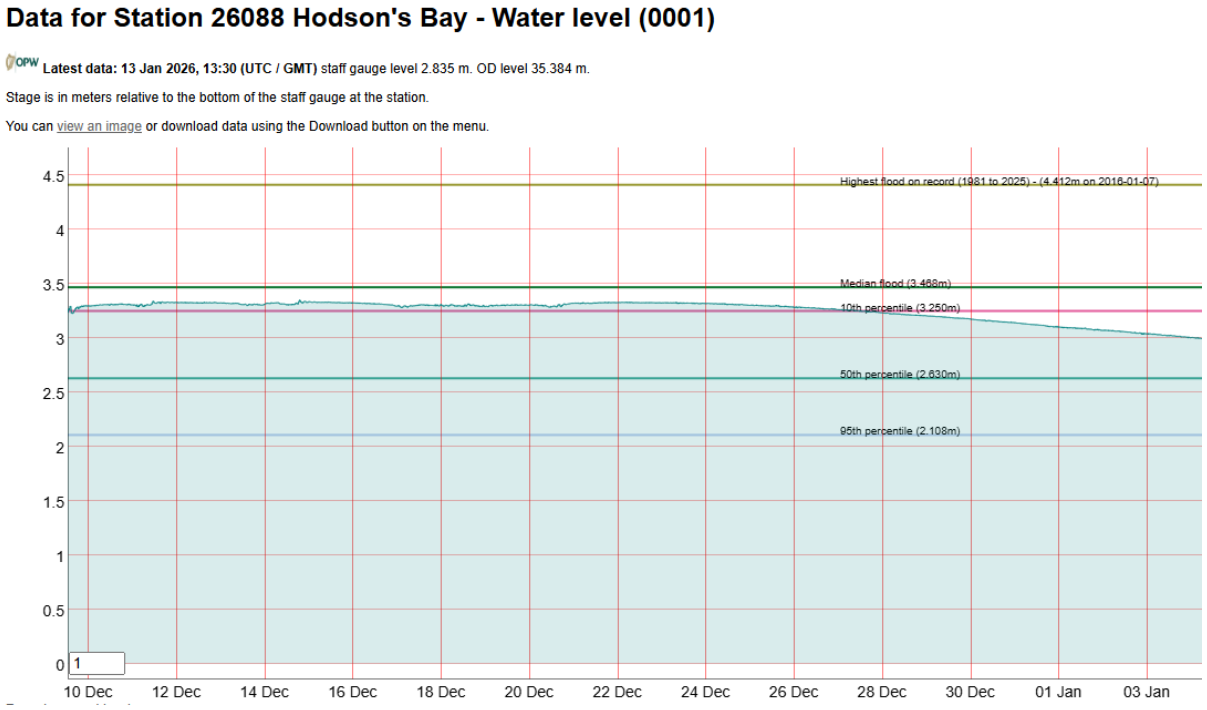


Figure 13: Hodson Bay Water Level Guage Data

Water level analysis has been undertaken using recorded stage data from the OPW gauge at Hodson Bay Gauge Station. Water stage readings at this station are recorded relative to the base of the staff gauge.

The staff gauge zero level corresponds to 35.384m OD, with the bottom of the gauge calculated at 32.549m OD (35.384m – 2.835m). All recorded stage values have therefore been converted to Ordnance Datum (Malin Head) levels using this reference.

Recorded water stage statistics for the period 1981–2024 indicate the following corresponding OD levels:

- 95th percentile water level: 34.657m OD
- 50th percentile water level: 35.179m OD
- 10th percentile water level: 35.799m OD
- Median flood level: 36.017m OD
- Highest recorded flood level (07/01/2016): 36.961m OD

The highest recorded water level of 36.961m OD represents the peak observed lake level during the period of record.

To provide a sensitivity test for potential climate change impacts, an allowance of 30% has been applied to the difference between the highest recorded flood level (36.961m OD) and the median (50th percentile) water level (35.179m OD). The difference between these levels is 1.782m. Applying a 30% increase to this differential results in an additional 0.535m. When added to the highest recorded flood level, this provides an indicative future design flood level of approximately 37.496m OD, which aligns with CFRAM predictive 0.1% AEP Flood Level described in Section 4.4.3. Historic flood levels recorded at Hodson Bay are illustrated in Figure 14.

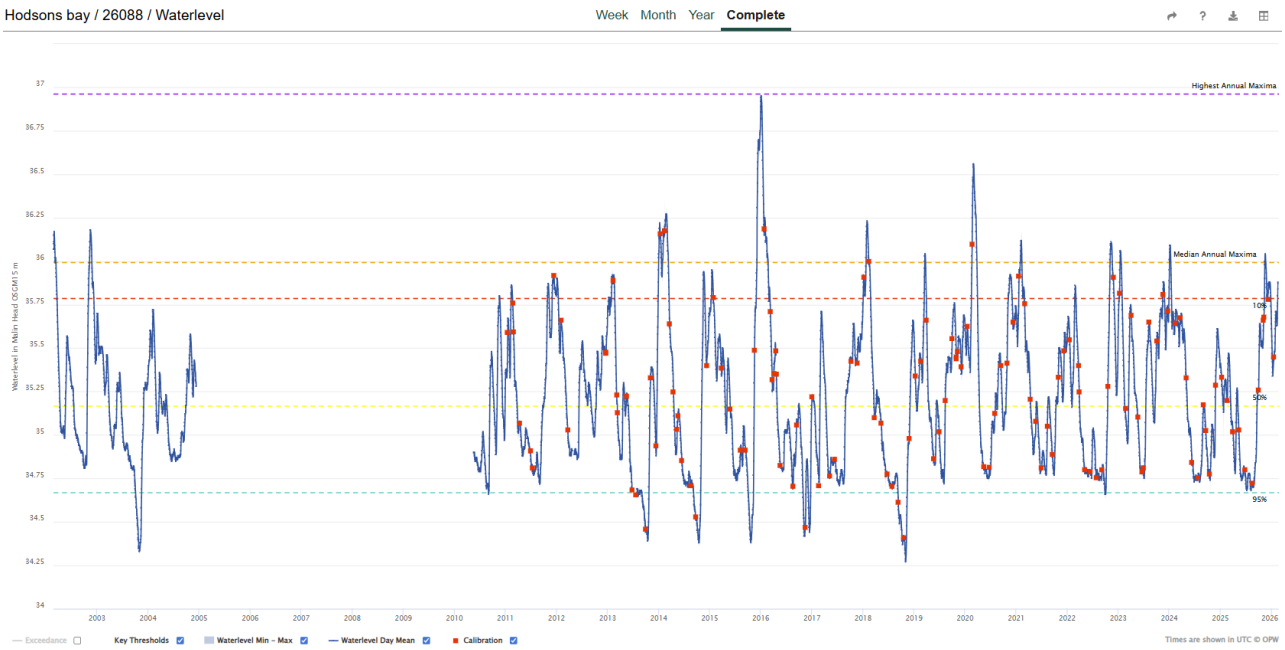


Figure 14: Hodson Bay Historic Water Level Data

4.6. Site Survey and Drawings

A detailed topographical survey of the site was reviewed and compared against the OPW predictive flood mapping (Flood Zones A and B), as presented in Appendix A. The survey data is referenced to Ordnance Datum and provides accurate existing ground levels across the waterfront and adjoining lands.

Comparison of surveyed levels with the mapped flood extents indicates issues with resolution in the OPW flood zone boundaries along the Hodson Bay waterfront. For example, the mapped 0.1% AEP (1 in 1000 year) flood extent intersects ground levels ranging between approximately 36.0m OD and 38.0m OD over around 600m along the shoreline. This variation suggests that the mapped flood edge does not consistently align with a uniform design water level expected with flooding from Lough Ree and reflects the indicative nature of the national-scale mapping.

Notwithstanding these discrepancies, review of the mapping indicates that most of the 0.1% AEP flood extents generally correspond with surveyed contour levels between approximately 37.0m OD and 37.5m OD. This range provides a more consistent indication of extreme lake level exceedance in the vicinity of Hodson Bay.

The analysis confirms that OPW flood mapping is strategic and indicative in nature and should not be relied upon in isolation to determine precise flood levels at a site-specific scale. Accordingly, interpretation of site-specific predictive mapping has been informed by detailed topographic survey data, review of flood level information from adjacent areas, and available historic water level records. This combined approach provides a more robust basis for establishing an appropriate 0.1% AEP design flood level at Hodson Bay.

5. Flood Risk Interventions

5.1. Flood Vulnerability Classification – Watersports/Café Use

In accordance with the OPW Flood Risk Management Guidelines for Planning Authorities (2009), the proposed watersports facility and café use are classified as “Less Vulnerable Developments”, as they are a commercial, non-residential use that does not include overnight accommodation or permanent residential occupancy.

However, it is also acknowledged that the development is publicly accessible, occupied for extended periods, and located directly on the shoreline in an area with a documented history of flooding. As such, while the vulnerability classification is less vulnerable, the consequences of flooding include risks to public safety, operational continuity and emergency access.

5.2. Proposed Finished Floor Levels

The proposed development comprises a publicly accessible café and associated watersports facility located on the shoreline at Hodson Bay adjacent to Lough Ree. Flood risk at this location is primarily associated with prolonged elevated lake levels within the Shannon system during extreme catchment-scale rainfall events.

Review of CFRAM predictive flood mapping for nearby AFAs at Athlone and Lanesborough indicates a modelled 0.1% AEP (1 in 1000-year) flood level of approximately 37.44m OD at Hodson Bay, based on interpolation between nodes and correlation with recorded peak flood levels. The highest recorded flood level at Hodson Bay (7 January 2016) was 36.993m OD, closely aligning with the Athlone peak of 36.961m OD, confirming consistency of lake levels along this reach.

Independent analysis of long-term hydrometric records (1981–2024) at the OPW Hodson Bay gauge station, incorporating a 30% climate change uplift to the historic flood differential, also provides an indicative future extreme 0.1% AEP flood level of approximately 37.496m OD. Therefore, a conservative design flood level of 37.5m OD has been adopted for this assessment.

To provide an appropriate factor of safety, a freeboard allowance of 0.5m has been applied above the design flood level as a mitigation measure. Accordingly, the proposed minimum Finished Floor Level (FFL) is set at 38.0m OD. This approach accords with the precautionary principle set out in the OPW Flood Risk Management Guidelines for Planning Authorities and reflects best practice for development located immediately adjacent to a large inland water body with a long design life.

The proposed floor levels ensure that the building remains resilient to the 0.1% AEP flood event, inclusive of climate change, and provides additional allowance for uncertainty, wave action and residual risk.

6. Justification Test

6.1. Step 1: Strategic Planning Context and Need for the Development

The proposed development comprises a non-residential water sports facility and café located on the Hodson Bay shoreline, within an established lakeside tourism and recreational area. The development supports the strategic objectives of the Roscommon County Development Plan to strengthen tourism, recreation and amenity provision along Lough Ree and within designated lakeside settlements.

The RCC Development Plan promotes the consolidation and enhancement of existing waterfront and amenity areas, particularly where development is directly related to tourism, leisure and recreational activity. The proposed watersports facilities and café are intrinsically linked to the waterfront setting and are intended to serve users of Hodson Bay, including visitors to the marina, public open spaces and lakeside recreational facilities. Due to its functional reliance on direct access to the lake, the development cannot be reasonably relocated to an alternative site away from the shoreline without undermining its intended use and strategic planning purpose.

The Council (under Vol II of the RCC DP) recognise the potential of this area as an important amenity and tourism asset. Therefore, the DP seeks to support the further development of this area to accommodate appropriate forms of additional leisure, tourism and amenity related development, subject to satisfying all environmental considerations and normal siting and development criteria, including in respect of all environmental and flood related policy objectives. This has been considered throughout the design process and in carrying out this Flood Risk Assessment. The proposal therefore accords with Development Plan objectives and policies supporting tourism-related development, waterfront amenity uses and the sustainable economic development of Hodson Bay, while respecting the site’s environmental and physical constraints.

6.2. Step 2: Flood Risk Assessment and Development Management Response

A site-specific Flood Risk Assessment has been undertaken in accordance with:

- The OPW Flood Risk Management Guidelines for Planning Authorities (2009)
- CFRAM predictive flood mapping for the Shannon Catchment
- Historic hydrometric records from the OPW gauge stations at Hodson Bay and Athlone
- Topographical survey data (September 2025)

Flood risk at the site is fluvial in origin and results from elevated water levels within Lough Ree during prolonged rainfall events across the wider Shannon catchment. Due to the large storage capacity and very shallow hydraulic gradient of the Shannon lake system, flooding at Hodson Bay develops gradually as lake levels rise over prolonged periods of sustained catchment rainfall, rather than as a rapid-onset or high-velocity flood event. Consequently, flooding is characterised by slowly rising water levels, providing time for monitoring, response and implementation of management measures where required.

Assessment of CFRAM outputs for nearby Areas for Further Assessment, together with analysis of long-term recorded lake levels, indicates a 0.1% AEP flood level in the order of 37.4m to 37.5m OD at Hodson Bay when climate change allowances are considered. Independent extrapolation of historic peak differentials, including a 30% uplift to account for projected climate change impacts, supports adoption of a conservative design flood level of 37.5m OD. This level exceeds the highest recorded historic flood level at Hodson Bay in January 2016 and aligns with the upper range of CFRAM predictive 0.1% AEP modelling for Lough Ree. The adopted level is therefore considered robust and precautionary, accounting for modelling uncertainty and long-term climatic variability.

In response to the identified risk, the proposed Finished Floor Level has been set at 38.0m OD, providing a conservative freeboard allowance of 0.5m above the adopted design flood level. This freeboard accounts for potential wave action, residual uncertainty and extreme event variability. Flood risk mitigation is achieved through passive design measures, specifically elevation of the structure above predicted extreme flood levels, rather than reliance on engineered flood barriers or mechanical systems.

The proposed watersports facility will involve raising an area of approximately 300 m². In comparison, Lough Ree has a surface area of approximately 105 km² (105,000,000 m²), meaning the raised area represents less than 0.0003% of the lake surface area. Consequently, any displacement of flood storage would be negligible and would not result in a measurable increase in flood levels or flood risk elsewhere. Furthermore, the development does not obstruct established flood flow paths or materially alter the flood storage characteristics of the surrounding floodplain,

It is noted that the existing carriageway and promenade levels, which provide vehicular and pedestrian access to the proposed building, are to be retained as part of the development. Along the waterfront promenade, levels are as low as approximately 36.5m OD, which is below the adopted 0.1% AEP design flood level of 37.5m OD. While this indicates that access routes may become inundated during extreme flood events, this is considered acceptable in the context of a non-residential development. Flooding associated with Lough Ree is characterised by gradual lake level rise over an extended duration, with significant advance warning available through OPW hydrometric monitoring and forecasting systems. The nature of the Shannon system provides substantial lead-in time prior to peak flood levels being reached, thereby allowing for appropriate management responses, temporary closure if required, and safe evacuation. As the building itself is set at 38.0m OD, above the design flood level including freeboard, the residual risk associated with temporary inundation of access routes during extreme events is considered low and manageable.

6.3. Step 3: Flood Risk, Vulnerability and Compliance with County Development Plan Policies

In accordance with the OPW Flood Risk Management Guidelines, the proposed café and watersports facility are classified as Less Vulnerable Development, as the use is commercial in nature and does not include residential accommodation, overnight occupancy or critical infrastructure. While the site is located adjacent to Lough Ree, the vulnerability classification permits such development in areas of flood risk where appropriate mitigation measures are implemented and the Justification Test is satisfied.

The proposal aligns with the flood risk management objectives of the Roscommon County Council County Development Plan 2022–2028, which require avoidance of inappropriate development in flood-prone areas, submission of site-specific Flood Risk Assessments, integration of climate adaptation measures, protection of natural floodplain function, and increase flood risk elsewhere. The assessment demonstrates that flood risk has been comprehensively evaluated using both predictive modelling and empirical hydrometric data, and that a conservative design approach has been adopted. The application of a 0.5m freeboard above the 0.1% AEP design flood level ensures a precautionary margin that reflects both climate change projections and modelling uncertainty.

The development is also functionally water-dependent, requiring direct access to the shoreline to operate as a watersports facility. Relocation away from the lakeside context would undermine its operational purpose and its integration within the established tourism and recreational cluster at Hodson Bay. The mitigation strategy is embedded

within site levels and does not depend on external flood defence infrastructure, ensuring long-term resilience and sustainability over the lifetime of the development. The proposal does not increase flood risk upstream or downstream and does not adversely affect floodplain storage or conveyance.

6.4. Justification Test Verdict

Having regard to the detailed site-specific Flood Risk Assessment and the precautionary design approach adopted, it is concluded that the requirements of the Justification Test have been satisfied. Flood risk at Hodson Bay arises from gradual increases in lake levels within Lough Ree during extreme catchment-wide rainfall events. A conservative 0.1% AEP design flood level of 37.5m OD has been established based on CFRAM modelling and long-term gauge analysis. The proposed Finished Floor Level of 38.0m OD incorporates a 0.5m freeboard allowance and ensures resilience to extreme flood events inclusive of climate change.

The development is classified as Less Vulnerable, is functionally water-dependent, and forms part of an established lakeside tourism and recreation area. Flood risk has been mitigated through passive elevation measures that do not displace significant flood storage or increase risk elsewhere. The proposal complies with national flood risk guidance and the objectives of the Roscommon County Development Plan.

The proposed buildings at Hodson Bay demonstrates full compliance with the flood risk management, climate change adaptation, and tourism/amenity policies of the Roscommon County Development Plan 2022–2028 and the OPW Flood Risk Management Guidelines, as shown in **Table 1**. The development incorporates robust and precautionary flood mitigation measures and is considered appropriate in principle within this lakeside setting

On this basis, the development is considered acceptable in flood risk terms and consistent with the proper planning and sustainable development of the area.

Table 1: Justification Test Policy Compliance

Policy / Objective	Policy Requirement	Proposed Development Response	Compliance
RCDP 2022–2028 – ITC 7.51	Apply the requirements of the Planning System and Flood Risk Management Guidelines through the sequential approach and, where required, the Justification Test.	A site-specific Flood Risk Assessment has been prepared in accordance with the OPW Guidelines. The sequential approach has been applied and appropriate flood mitigation measures incorporated into the design.	Compliant
RCDP 2022–2028 – ITC 7.52	Require Flood Risk Assessments for developments in areas of potential flood risk, proportionate to the scale and nature of the proposal.	A detailed Flood Risk Assessment has been completed using CFRAM mapping, OPW hydrometric data, historic flood records and topographical survey information.	Compliant
RCDP 2022–2028 – ITC 7.53	Protect floodplains, wetlands and natural flood risk management areas from inappropriate development and ensure that flood risk is not increased elsewhere.	The proposed development does not encroach into functional floodplain storage nor obstruct flood conveyance routes associated with Lough Ree. The building is elevated above the adopted 0.1% AEP design flood level of 37.5m OD and will not increase flood risk upstream or downstream.	Compliant
RCDP 2022–2028 – ITC 7.54	Ensure that development proposals in areas of potential flood risk are subject to an appropriate Flood Risk Assessment in accordance with the OPW Flood Risk Management Guidelines.	A detailed site-specific Flood Risk Assessment has been undertaken using CFRAM modelling outputs, long-term OPW hydrometric data for Hodson Bay, historic flood records and topographical survey data.	Compliant
RCDP 2022–2028 – ITC 7.55	Implement the recommendations of the OPW CFRAM Programme and ensure a precautionary approach to flood risk management.	The assessment adopts a precautionary design flood level of 37.5m OD based on CFRAM predictive modelling and historic lake level analysis. A 0.5m freeboard has been applied to establish a minimum Finished Floor Level of 38.0m OD.	Compliant
RCDP 2022–2028 – ITC 7.56	Incorporate climate change adaptation measures into flood risk management and development design.	Climate change has been explicitly addressed through uplift of historic flood differentials and alignment with upper-bound CFRAM outputs, ensuring resilience over the lifetime of the development.	Compliant

Policy / Objective	Policy Requirement	Proposed Development Response	Compliance
RCDP 2022–2028 – Strategic Flood Risk Assessment (SFRA)	Require that flood risk is managed in accordance with the sequential approach and Justification Test, where applicable, and that development is resilient to future flood conditions.	The development satisfies the Justification Test for Less Vulnerable Development. The adopted floor levels exceed the design flood level inclusive of climate change and provide a robust margin of safety.	Compliant
RCDP 2022–2028 – Tourism & Amenity Objectives	Support sustainable tourism and amenity development, particularly where proposals enhance existing recreational assets and waterfront areas.	The proposed café and watersports facility strengthen the established recreational and tourism function of Hodson Bay and are intrinsically linked to the lakeside setting.	Compliant
OPW Flood Risk Management Guidelines for Planning Authorities (2009)	Apply the sequential approach, vulnerability classification, Justification Test and appropriate mitigation where development is proposed in areas of flood risk.	The development is classified as Less Vulnerable. A Justification Test has been completed and mitigation is achieved through passive elevation, adoption of a 38.0m OD Finished Floor Level and provision of 0.5m freeboard above the 0.1% AEP design flood level.	Compliant
National Planning Policy – Climate Adaptation	Ensure development is adaptable and resilient to future climate conditions.	Conservative flood design levels and climate allowances ensure long-term resilience to projected increases in flood risk associated with climate change within the Shannon catchment.	Compliant
Roscommon SFRA – Development Management Standards	Finished floor levels and site layout must be designed to reduce flood risk and ensure resilience.	The minimum Finished Floor Level of 38.0m OD exceeds the adopted design flood level of 37.5m OD and incorporates 0.5m freeboard, ensuring resilience to present-day and future extreme events.	Compliant
Roscommon SFRA – Emergency Access & Safety	Development should ensure safe access, egress and public safety during flood events.	Although sections of the existing promenade carriageway are as low as 36.5m OD and may be temporarily inundated during extreme events, flooding of Lough Ree is gradual with significant advance warning available through OPW monitoring systems. The non-residential nature of the development allows safe operational management and closure procedures.	Compliant
Roscommon SFRA – Long-Term Sustainability	Development should not require future flood defence works or exacerbate flood risk over time.	The mitigation strategy is passive and level-based, avoiding reliance on structural flood defences. The design is inherently flood resilient and does not necessitate future intervention.	Compliant

7. Conclusion

The Flood Risk Assessment confirms that the proposed café and watersports facility at Hodson Bay has been designed in accordance with national and local flood risk management policy. Flood risk at the site arises from elevated lake levels within Lough Ree during extreme, catchment-wide rainfall events. A conservative 0.1% AEP design flood level of 37.5m OD has been adopted based on CFRAM predictive modelling and long-term OPW hydrometric analysis.

The proposed Finished Floor Level of 38.0m OD incorporates a 0.5m freeboard allowance above the design flood level, providing resilience to extreme flood events inclusive of climate change and residual uncertainty. The development does not encroach upon functional floodplain storage, does not obstruct flood conveyance and will not increase flood risk elsewhere. While sections of the retained promenade access may be inundated during extreme events, the gradual nature of lake flooding and the non-residential use of the building ensure that residual risk is low and manageable.

The proposal satisfies the requirements of the OPW Flood Risk Management Guidelines, the Roscommon County Development Plan 2022–2028 and its Strategic Flood Risk Assessment. It is therefore concluded that the development is acceptable in flood risk terms and consistent with the proper planning and sustainable development of the area.

Appendix A – Flood Zones and Topographical Survey

NORTHERN CAR PARK
AND ACCESS ROUTE IN
FLOOD ZONE

WATER SPORTS FACILITY
IN FLOOD ZONE

ACCESS ROAD
AND PROMENADE
IN FLOOD ZONE

FLOOD ZONE A (RED)

FLOOD ZONE B (YELLOW)

MARINA CAR PARK
IN FLOOD ZONE

NO RIVER FLOODING IN
AREA SOUTH OF HODSON
BAY WATERFRONT

Cornaseer

Bearaidh Mhór
Barry More

Lough
Ree
Loch Ri

Pond

Athlone
Golf Club

Clubhouse

Pier Open

Hotel

Closed Well

FILE LOCATION PATH: P:\CIVIC IRELAND\PROJECTS HOT\31022 HODSON BAY\004 BIM\CIVIL\SCIVIL 2D\31022-CIV-XX-XX-D-C-00002&3 - FLOOD EXTENTS.DWG

STANDARD NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS AND THE SPECIFICATIONS.
2. THIS DRAWING SHOULD NOT BE SCALED.
3. ALL DIMENSIONS ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE.
4. ALL DISCREPANCIES SHOULD BE REPORTED TO C.A./E.A. PRIOR TO THE COMMENCEMENT OF WORKS.

SITE BOUNDARY

FLOOD ZONE A - 100 YEAR FLOOD EXTENTS (1% AEP)

FLOOD ZONE B - 1000 YEAR FLOOD EXTENTS (0.1% AEP)

DATE	REV	DESCRIPTION	DRAWN	CHKD
19.02.26	P01	INFORMATION	SG	AM

PROJECT
HODSON BAY WATERFRONT PARK

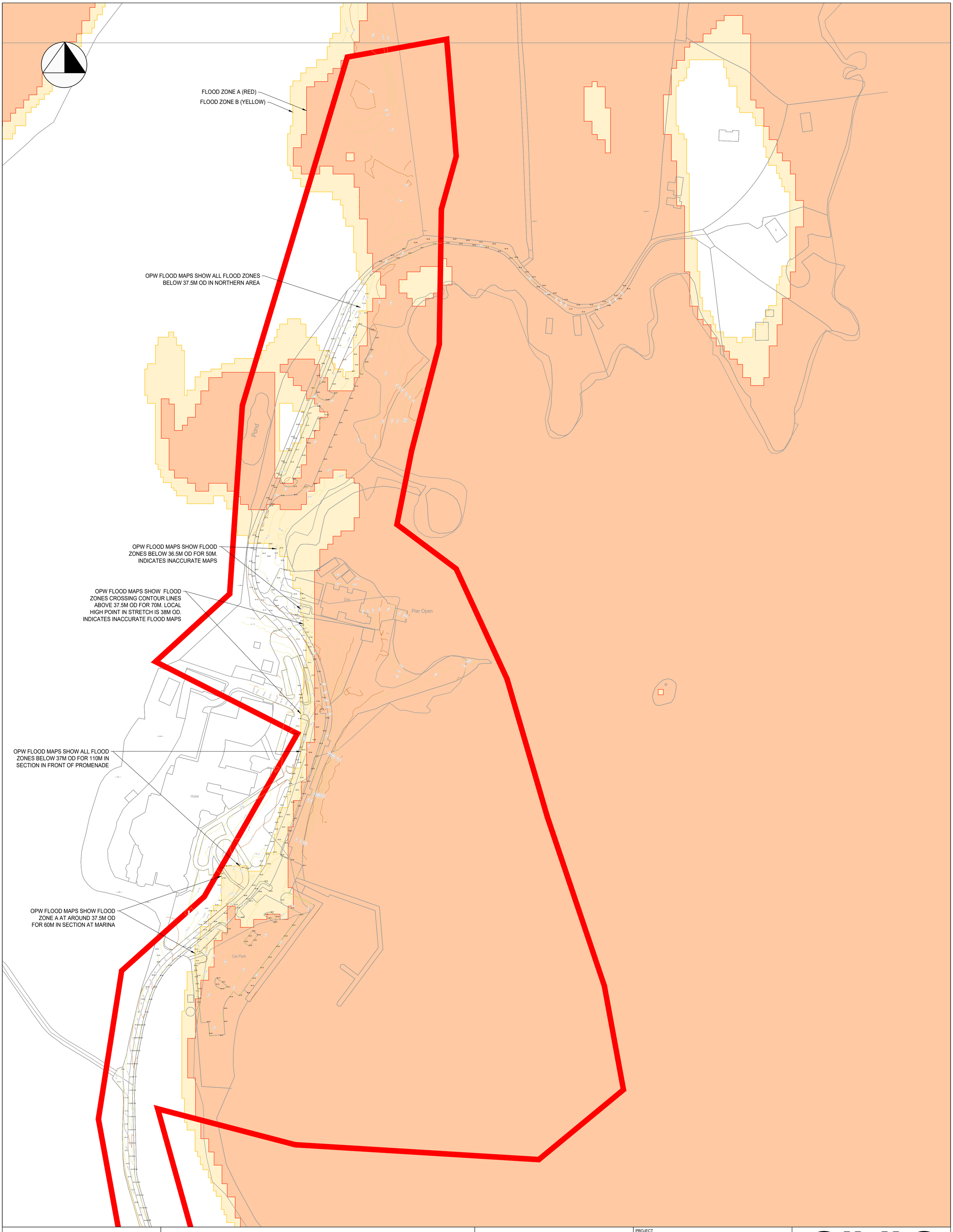
TITLE
RIVER FLOOD EXTENTS PLAN

CIVIC ENGINEERS
civicengineers.com

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED
31022	1:2500	FEB' 26	SG	AM

DRAWING STATUS	STATUS CODE
INFORMATION	S2

DRAWING No.	REV
31022-CIV-XX-XX-D-C-00002	P01



STANDARD NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS AND THE SPECIFICATIONS.
2. THIS DRAWING SHOULD NOT BE SCALED.
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4. ALL DISCREPANCIES SHOULD BE REPORTED TO C.A./E.A. PRIOR TO THE COMMENCEMENT OF WORKS.

- SITE BOUNDARY
- FLOOD ZONE A - 100 YEAR FLOOD EXTENTS (1% AEP)
- FLOOD ZONE B - 1000 YEAR FLOOD EXTENTS (0.1% AEP)

DATE	REV	DESCRIPTION	DRAWN	CHKD
19.02.26	P01	INFORMATION	SG	AM

PROJECT
HODSON BAY WATERFRONT LEVELS

TITLE
FLOOD EXTENTS PLAN
HODSON BAY FLOOD LEVELS

CIVIC ENGINEERS
civicengineers.com

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED
31022	1:1250	FEB' 26	SG	AM

DRAWING STATUS: INFORMATION
STATUS CODE: S0
DRAWING No.: 31022-CIV-XX-XX-D-C-00003
REV: P01

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Appendix B – Hodson Bay Waterfront Masterplan

KEYPLAN

Legend

GENERAL

- Project area
- Height points
- Dimensions in meters
- Existing property fence
- Existing pontoon
- Water

PAVING

- **Concrete paving with exposed aggregate** Water Promenade
- **Resin bound paving** Playground, Nature Pathway
- **Permeable soft paving** Playground
- **Self bound gravel** Small plaza
- **Concrete tiles paving** Footpaths
- **Timber decking** Quay promenade
- **Permeable paving** Parking stalls
- **Asphalt** Parking lots and carriageway
- **Pedestrian crossings**
- **Tactile paving** Crossings and steps

SITE FIXTURES

- **Built-in high-quality concrete bench** Water Promenade
- **Double-sided bench** Quay Promenade
- **Bench** Nature area
- **Picnic tables** Nature Area
- **Nature play equipment** Playground
- **Bike stands**
- **Lighting** refer to lighting specialist drawings
- **Custom planter with bench** Baysport courtyard
- **High quality concrete steps** with integrated planters Baysport terrace
- **Fence and gates** Baysport

PLANTING BEDS

- **Shrubs and Perennials** Raingardens
- **Shrubs and Perennials** Public Realm
- **Shrubs and Perennials** Baysport terrace and Courtyard
- **Cut Grass** Open Lawn
- **Ornamental grass** Woodland Understorey Grass
- **Exsiting reedbeds**
- **Exsiting grass**

TREES&SHRUBS

- **Proposed large trees** Height: >10 m Refer to Trees planting plan
- **Proposed medium trees** Height: 6-10 m Refer to Trees planting plan
- **Proposed small trees & multi-stem** Height: 3-6 m Refer to Trees planting plan
- **Proposed Hedge** Height: 1-1.5 m Refer to Trees planting plan
- **Existing trees**

DRAFT

N

VERSION	MODIFICATION	DATE
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

CLIENT
ROSCOMMON CITY COUNCIL

Client address:
IRELAND

LOCATION:
HODSON BAY
WATERSPORT AND PUBLIC REALM

HODSON BAY CO. ROSCOMMON IRELAND

DOCUMENT NAME
LANDSCAPE LAYOUT (GA)

DATE
03-07-26

DOCUMENT CODE	STATUS	VERSION	DRAWN BY
001100	-	DRAFT	AF

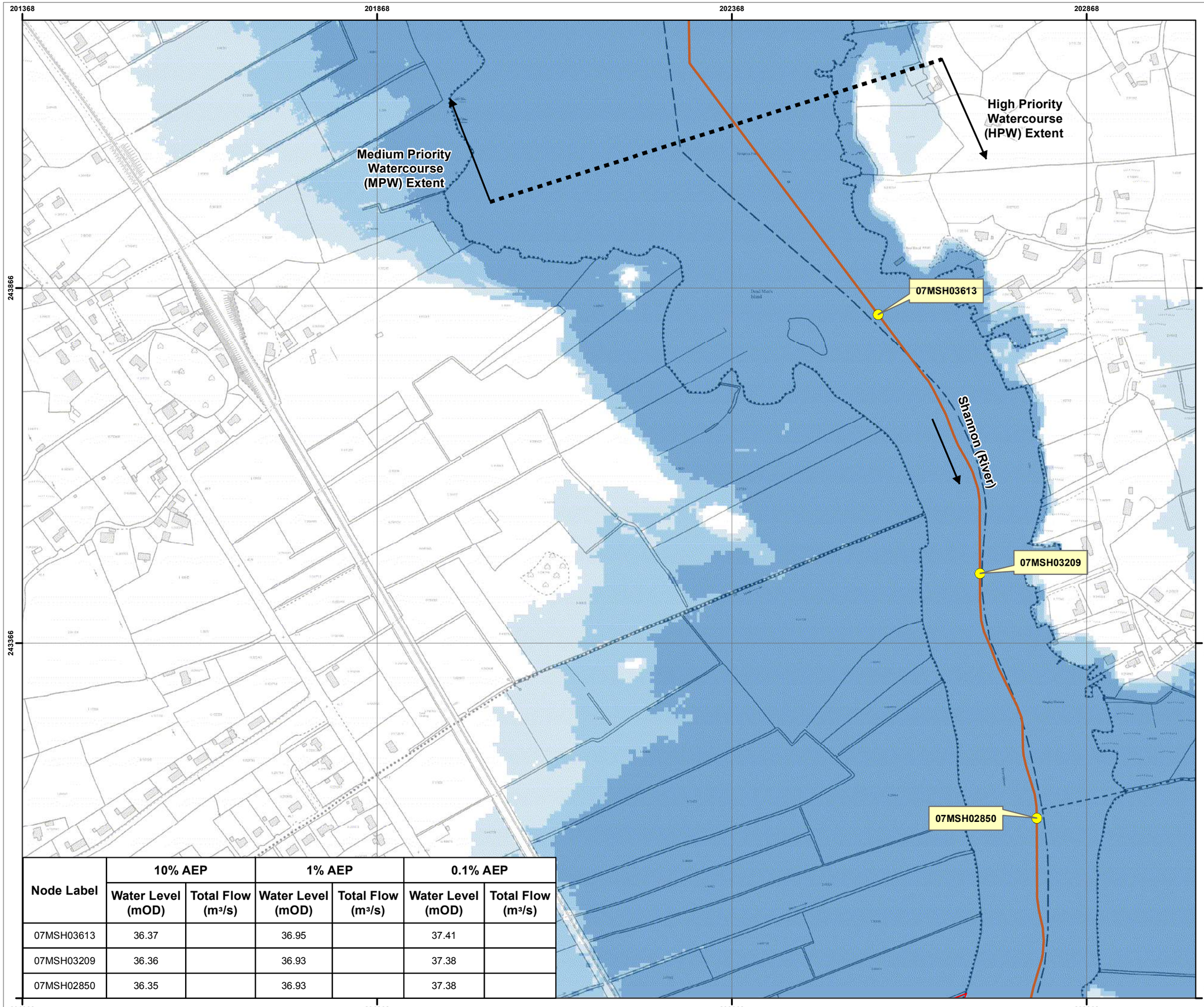
PHASE	PROJECT NUMBER	SCALE	FORMAT
PLANNING	25-006	1-1000	A0

OKRA
OKRA Landschapsarchitecten
Oudegracht 23
3511 AH Utrecht
The Netherlands

TEAM / CONSULTANTS
OKRA
RKC
GVIC

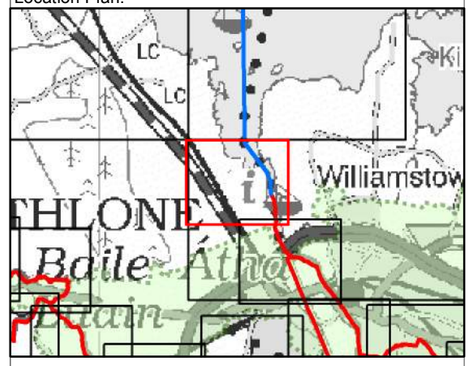
FILE NAME
OKRA_HBWP_Public Realm Basemap.dwg

Appendix C - Athlone and Lanesborough CFRAM Flood Maps



Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mOD)	Total Flow (m³/s)	Water Level (mOD)	Total Flow (m³/s)	Water Level (mOD)	Total Flow (m³/s)
07MSH03613	36.37		36.95		37.41	
07MSH03209	36.36		36.93		37.38	
07MSH02850	36.35		36.93		37.38	

Location Plan:



Legend:

- Nodes
- Model Reach
- AFA Boundary
- Flood Defence: Wall
- Flood Defence: Embankment
- Defended Area

10% AEP Fluvial Flood Extent
(1 in 10 chance in any given year)

1% AEP Fluvial Flood Extent
(1 in 100 chance in any given year)

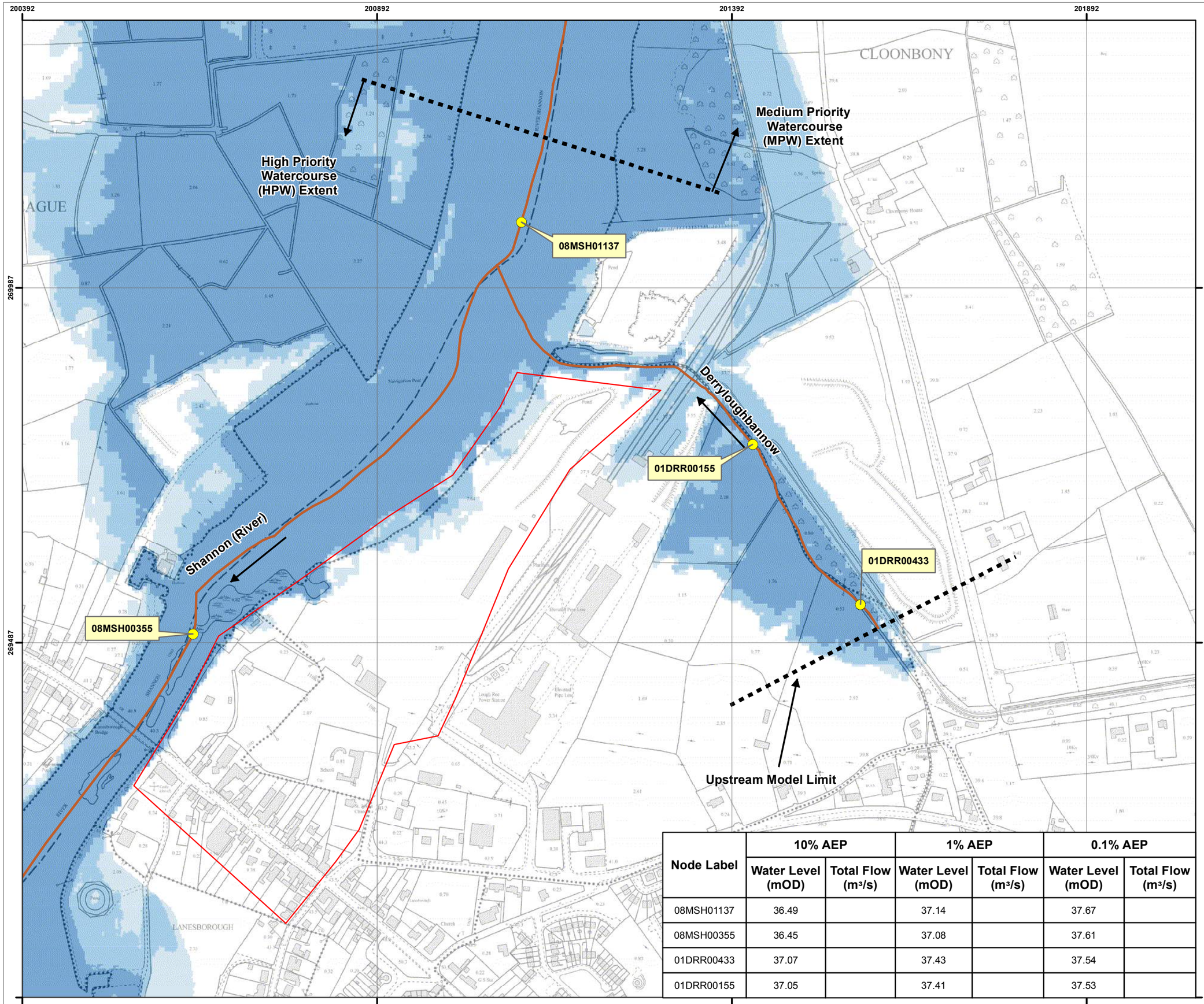
0.1% AEP Fluvial Flood Extent
(1 in 1000 chance in any given year)

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

The Office of Public Works
Jonathan Swift Street
Trim
Co. Meath
C15 NX36

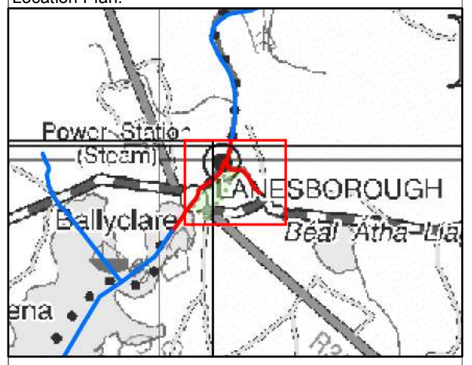
Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:		SHANNON CFRAM STUDY
Map Type:		EXTENT
Source:		FLUVIAL
Area:		ATHLONE
Scenario:		EXISTING
Drawn by:	EF	Date: JUNE 2016
Checked by:	AC	Date: JUNE 2016
Reviewed by:	MC	Date: JUNE 2016
Approved by:	PS	Date: JUNE 2016
Map Number:		S2526ATN_EXFCD_F1_03
Sheet: 3 of 25		Revision: 0
Map Scale: 1: 5000		Plot Scale: 1:1 @ A3



Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mOD)	Total Flow (m³/s)	Water Level (mOD)	Total Flow (m³/s)	Water Level (mOD)	Total Flow (m³/s)
08MSH01137	36.49		37.14		37.67	
08MSH00355	36.45		37.08		37.61	
01DRR00433	37.07		37.43		37.54	
01DRR00155	37.05		37.41		37.53	

Location Plan:



Legend:

- Nodes
- Model Reach
- AFA Boundary
- Flood Defence: Wall
- Flood Defence: Embankment
- Defended Area

10% AEP Fluvial Flood Extent
(1 in 10 chance in any given year)

1% AEP Fluvial Flood Extent
(1 in 100 chance in any given year)

0.1% AEP Fluvial Flood Extent
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Merrion Road
Dublin 4
D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	FLUVIAL
Area:	LANESBOROUGH
Scenario:	EXISTING
Drawn by: EF	Date: JUNE 2016
Checked by: AC	Date: JUNE 2016
Reviewed by: MC	Date: JUNE 2016
Approved by: PS	Date: JUNE 2016
Map Number:	S2526LAH_EXFCD_F1_01
Sheet: 1 of 7	Revision: 0
Map Scale: 1: 5000	Plot Scale: 1:1 @ A3

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