Appendix 10.1
Site Specific Flood Risk Assessment

West Clare Railway Greenway – Section 1: Kilrush to Kilkee

Site Specific Flood Risk Assessment

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1. INTRODUCTION

Roughan & O'Donovan Consulting Engineers has carried out a Site-Specific Flood Risk Assessment (SS-FRA) for the proposed West Clare Greenway Section 1 (Kilrush to Kilkee) in Co. Clare (hereafter referred to as the 'proposed development'). The SS-FRA assesses the flood risk to the site and adjacent lands as a result of the proposed development. The SS-FRA has been conducted in accordance with 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' herein referred to as 'the Guidelines' as published by the Office of Public Works (OPW) and Department of Environment, Heritage and Local Government (DoEHLG) in 2009.

1.1 Scope of the Report

Under the Guidelines a proposed development must undergo a Flood Risk Assessment (FRA) to ensure sustainable development and effective management of flood risk.

The scope of this SS-FRA includes:

- A review of "The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices (November 2009)" (OPW/ DoEHLG),
- A description of the existing site conditions, the proposed development and the baseline data used in this report.
- A staged assessment of flood risk against the criteria and standards established by the guidelines and national, regional and local planning policies.

2. THE LEGISLATIVE AND POLICY CONTEXT

2.1 National Policy

Ireland's flood risk policy is guided by a combination of national strategies, EU directives, and local implementation plans. The key policy components include:

- Flood Risk Management Plans (FRMPs) developed under the Catchment Flood Risk Assessment and Management (CFRAM) Programme,
- Capital Flood Relief Schemes,
- Nature Based Solutions for Catchment Management (NbS-CM),
- Coastal Change Management Strategy,
- National Adaptation Strategy framework and Adaption Plan

The national CFRAM programme commenced in Ireland in 2011. The CFRAM Programme delivered on core components of the National Flood Policy, adopted in 2004, and on the requirements of the EU Floods Directive via the CFRAM studies, undertaken for each of the 29 river basins in Ireland.

The Office of Public Works (OPW) is the lead organisation for flood risk management in Ireland. It is responsible for leading and co-ordinating the implementation of national flood risk management policy which involves the development of a planned programme of feasible works, with a greater emphasis on non-structural flood risk management measures. The Planning System and Flood Risk Management Guidelines (DoEHLG/OPW, 2009) as amended by Circular PL 2/2014 introduce comprehensive mechanisms for the incorporation of flood risk identification, assessment, and management into the planning process. The application of the Guidelines is mandatory under Section 28 of the Planning and Development Act.

2.2 Regional Policy

The Clare County Development Plan 2023-2029 Interim Version (CCDP) sets out an overall strategy for the proper planning and sustainable development of the functional area of Clare County Council over a 6-year period. The proposed development is within the West Clare Municipal District. The Local Area Plan for the West Clare Municipal District is published in Volume 3d of the Clare County Development Plan, 2023-2029.

The County Development Plan Objectives related to flood risk management are reproduced in Table 2-1. A Strategic Flood Risk Assessment (SFRA) has been published for the County Development Plan.

Table 2-1 County Clare Development Plan 2023-2029 Flood Risk Management Policies

Development Plan Objective: Flood Risk Assessment and Management	
CDP2.6	It is an objective of Clare County Council: a) To ensure development proposals have regard to the requirements of the SFRA and Flood Risk Management Guidelines; and where required, are supported by an appropriately detailed hydrological assessment / flood risk assessment. b) To ensure that flood risk assessments include consideration of potential impacts of flooding arising from climate change including sea level rise and coastal erosion.

	c) To integrate sustainable water management solutions, prioritising nature-based solutions (such as SUDS, nonporous surfacing and green roofs) into development proposals. d) To include Natural Water Retention Measures (NWRMS) where appropriate in consultation with the Office of Public Works (OPW) and other relevant stakeholders. e) To support investment in the sustainable development of capital works under the Flood Capital Investment Programme and Flood Risk Management Plans developed under the Catchment Flood Risk Assessment and Management (CFRAM) process; and f) To ensure that potential future flood information obtained/generated through the Development Management process is used to inform suitable adaptation requirements in line with the Guidelines for Planning Authorities on Flood Risk Management (DoEHLG & OPW, 2009).
Development Plan Objective: **Coastal Erosion and Flooding**	
CDP2.7	It is an objective of Clare County Council to: a) To support measures (including Integrated Coastal Zone Management (ICZM)) for the management and protection of coastal resources and communities against sea level rise, coastal erosion, flooding and other threats and the implementation of adaptation responses in vulnerable areas; and b) To monitor the impact of climate change on the potential shock flows of surface water on to Clare's beaches during severe weather events, and how increased surface water flows will impact on bathing water quality and erosion of the beach infrastructure.
Development Plan Objective: **Storm Water Management**	
CDP2.11	It is an objective of Clare County Council: a) To ensure that adequate storm water infrastructure is in place to accommodate the planned level of growth in the Plan area. b) To require all new developments to provide a separate foul and surface water drainage system. c) To ensure the implementation of Sustainable Drainage Systems (SuDS) and in particular, to ensure that all storm water generated in a new development is disposed of on-site or is attenuated and treated prior to discharge to an approved storm water system; and d) To request the submission of details regarding Surface Water Attenuation Systems that take account of the potential future impact of climate change for multi-unit development applications in the plan area. Development will only be permitted in areas where sufficient surface water capacity exists.
Development Plan Objective: **Flood Risk Management, Green Infrastructure & Biodiversity**	
CDP2.12	It is an objective of Clare County Council: a) To facilitate and implement green infrastructure developments as a means of managing flood risk and enhancing the natural environment in the plan area in compliance with Objective CDP 3.1; and b) To avail of opportunities to enhance biodiversity and amenity and to ensure the protection of environmentally sensitive sites and habitats where flood risk management measures are planned subject to the requirements of the Habitats Directive.
Development Plan Objective: **Appropriate Assessment, Strategic Environmental Assessment and Strategic Flood Risk Assessment**	
CDP3.3	It is an objective of the Clare County Council:

	a) To require compliance with the objectives and requirements of the Habitats Directive, specifically Article 6(3) and where necessary 6(4), Birds, Water Framework, and all other relevant EU Directives and all relevant transposing national legislation; f) To require the preparation and assessment of all plans and projects to have regard to the information, data and requirements of the Appropriate Assessment Natura Impact Report, SEA Environmental Report and Strategic Flood Risk Assessment Report contained in Volume 10 of this development plan; and g) to require compliance with the objectives of the Water Framework Directive and support the implementation of the 3rd Cycle River Basin Management Plan (and any other iteration during the lifetime of the plan).
Development Plan Objective: **Coastal Erosion and Flooding**	
CDP13.11	It is an objective of Clare County Council: a) To engage with the OPW so it develops appropriate strategies for the management of identified coastal flood and erosion hazards and associated risks; b) To have regard to the Clare County Strategic Flood Risk Assessment, CFRAM Flood Risk Management Plans, the OPW Coast Protection Strategy Study, and any updated version/more detailed local studies, in the assessment of development applications in coastal areas; c) To permit developments only where the Council is satisfied that they will not be at risk from coastal erosion or inundation in the future; d) To permit developments only where the Council is satisfied that it will not result in an increase in coastal erosion or increase the risk of inundation, either at the subject site or at another location in the vicinity; e) To only permit development outside the boundaries of existing settlements where such development can be adequately defended over the lifetime of the development without the need to construct additional or new coastal defences; f) To support and facilitate the carrying out of coastal defence works based on the outcome of detailed Coastal Erosion and Flood Risk Management Studies undertaken in areas identified as being at risk from coastal flooding; g) To ensure full compliance with the requirements of the Habitats Directive, Water Framework Directive and overarching environmental Objective CDP3.1 of this plan with regard to development in the coastal area;
Development Plan Objective: **Coastal Squeeze**	
CDP13.12	It is an objective of the Development Plan: To ensure that coastal squeeze is taken into consideration in formulating and assessing coastal development proposals.

The CCDP also includes Local Area Plans, which set out strategies and objectives for the development of Kilrush, Kilkee and Moyasta. The following policies are of relevance to this SS-FRA:

- To prioritise the development of the West Clare Railway Greenway and facilitate an initial Kilrush to Kilkee pilot project in line with Strategic Priority 15 'Prioritise the development of the West Clare Rail Greenway' of the County Clare Tourism Strategy 2030.
- To support the development of a Flood Protection Plan for Kilkee.

2.3 The Planning System and Flood Risk Management

The Planning System and Flood Risk Management: Guidelines for Planning Authorities were published in 2009. The Guidelines introduced comprehensive mechanisms for the

incorporation of flood risk identification, assessment and management into the planning process.

The Guidelines require the planning system at national, regional and local level to:

- Avoid development in areas at risk of flooding, particularly floodplains, unless there are proven wider sustainability grounds that justify appropriate development and where the flood risk can be reduced or managed to an acceptable level without increasing flood risk elsewhere.
- Adopt a sequential approach to flood risk management when assessing the location for new development based on avoidance, reduction, and mitigation of flood risk.
- Incorporate flood risk assessment into the process of making decisions on planning applications and planning appeals.

The underpinning principles of the Guidelines 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 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 is 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. 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.

The Guidelines specify a staged approach to Flood Risk Assessment, carrying out only such appraisal and or assessment as is needed for the purposes of decision-making at the regional, development and local area plan levels, and at the site-specific level. The stages of appraisal and assessment are:

- Stage 1: Flood Risk Identification: Identify if there are any surface water management issues related to either the area of regional planning guidelines, development plans and LAP's or 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, to appraise the adequacy of existing information and to 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. In addition, the requirements of the detailed assessment should be scoped; and

- Stage 3: Detailed Flood Risk Assessment: to assess flood risk issues in sufficient detail and to provide a quantitative appraisal of potential flood risk to a proposed or existing development or land to be zoned, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures.

2.3.1 Types of Flood Hazard

1. Coastal flooding is caused by higher sea levels than normal, largely as a result of storm surges, resulting in the sea overflowing onto the land. Coastal flooding is influenced by the following three factors in combination: high tide level; storm surges caused by low barometric pressure and wave action.
2. Groundwater flooding occurs when the level of water stored in the ground rises as a result of prolonged rainfall to meet the ground surface and flows out overground. Groundwater flooding tends to be localised and results from interactions of site-specific factors such as tidal variations. While water level may rise slowly, it may be in place for extended periods of time. Hence, such flooding may often result in significant damage to property rather than be a potential risk to life.
3. Inland flooding is caused by prolonged and/or intense rainfall. Inland flooding can include a number of different types:
    a. Overland flow occurs when the amount of rainfall exceeds the infiltration capacity of the ground to absorb it. Excess water flows overland, ponding in natural hollows and low-lying areas or behind obstructions. This occurs as a rapid response to intense rainfall and eventually enters a piped or natural drainage system.
    b. River flooding occurs when the capacity of a watercourse is exceeded or the channel is blocked or restricted, and excess water spills out from the channel onto adjacent low-lying areas (the floodplain). This can occur rapidly in short steep rivers or after some time and some distance from where the rain fell in rivers with a gentler gradient.
    c. Flooding from artificial drainage systems results when flow entering a system, such as an urban storm water drainage system, exceeds its discharge capacity and the system becomes blocked, and / or cannot discharge due to high water levels in the receiving watercourse. This mostly occurs as a rapid response to intense rainfall. Together with overland flow, it is often known as pluvial flooding. Flooding arising from a lack of capacity in the urban drainage network has become an important source of flood risk, as evidenced during recent summers.
    d. Flooding can also arise from the failure of infrastructure designed to store or carry water (e.g. the breach of a dam, a leaking canal, or a burst water main), or to protect an area against flooding (e.g. breach of a flood defence, failure of a flap valve or pumping station or blockage of a pipe or culvert). Because of the sudden onset, the impacts of this form of flooding can be severe and where appropriate should be assessed.

2.4 Flood Zones

Flood zones are geographical areas within which the probability of flooding falls within a prescribed range. Flood zones are central to flood risk assessment and management. Figure 2-1 shows an example of a flood zone map extracted from the Guidelines.

Three Flood Zones are defined within the Guidelines based on the probability of river and coastal flooding only. The probability basis of the flood zone definitions is summarised in Table 2-2.

Delineation of Flood Zones should ignore the presence of defences. Areas that benefit from an existing flood relief scheme or flood defences have a reduced probability of flooding but can be particularly vulnerable due to the speed of flooding when overtopping or a breach or other failure takes place, hence development within these areas are exposed to a residual risk to flooding.

Figure 2-1 Indicative Flood Zone Map (extracted from The Planning System and Flood risk Management Guidelines (2009) p.15)

Maps such as Figure 2-1 show the risk of flooding associated with the specific sources of flooding for which they were generated and should not be used to conclude that an area is free of flood risk as all other sources of flood risk such as groundwater, pluvial and drainage systems must be considered in assessing flood risk.

Table 2-2 Fluvial and Coastal Flood Zone Definitions

Flood Zone	Definition	Annual Exceedance Probability
A	*Probability of flooding from rivers, lakes and the sea is highest*	*Greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding*
B	*Probability of flooding from rivers and the sea is moderate*	*Between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 year and 0.5% or 1 in 200 for coastal flooding*
C	*Probability of flooding from rivers and the sea is low. Flood Zone C covers all areas of the plan which are not in zones A or B*	*Less than 0.1% or 1 in 1000 for both river and coastal flooding*

2.5 Flood Risk

Flood risk results from the combination of the probability of a flood event occurring at a particular location and the consequences of that event on a given receptor. Flood risk is normally expressed as:

$$Flood\ risk = Probability\ of\ occurrence \times consequence$$

The consequences of a flood depend on both the severity of a flood event (depth, duration, and velocity) and the vulnerability of a particular receptor to harm from flooding.

The Guidelines recognise that the vulnerability of a development to flooding depends on the specific type of land use and the nature of the development. The Guidelines define

vulnerability classes and provide representative categories of land use and developments for each vulnerability class. These definitions are summarised in Table 2-3.

Table 2-3 Classification of vulnerability of different types of development (extracted from OPW, 2009 p.25)

Vulnerability Class	Land uses and type of development which include:
Highly vulnerable (including infrastructure)	Garda, ambulance and fire stations and command centres required to be operational during flooding; Hospitals; Emergency access and egress points; Schools; Dwelling houses, student halls of residence and hostels; Residential institutions such as residential care homes, children's homes and social services homes; Caravans and mobile home parks; Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility; and Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.
Less vulnerable	Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions; Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans; Land and buildings used for agriculture and forestry; Waste treatment (except landfill and hazardous waste); Mineral working and processing; and Local transport infrastructure
Water compatible	Flood control infrastructure; Docks, marinas and wharves; Navigation facilities; Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location; Water-based recreation and tourism (excluding sleeping accommodation); Lifeguard and coastguard stations; Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms; and Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan)
Uses not listed here should be assessed on their own merits	

Defining the intrinsic vulnerability of land use and development types to flooding assists in choosing appropriate development types in areas that are prone to flooding. A matrix of the compatibility vulnerability classes, and flood zone compatibility is presented in Table 2-4.

Most types of development would be considered inappropriate within Flood Zone A, and development within this flood risk zone should be avoided. Developments within this zone should only be permitted under exceptional circumstances such in city centres or in the case of essential infrastructure that cannot be located elsewhere. In cases where development cannot avoid areas of flood risk or where circumstances require that the location of a vulnerability class within inappropriate flood zone a Justification Test is required.

Table 2-4 Matrix of vulnerability versus flood zone to illustrate appropriate development (adapted from OPW. 2009 p.25)

Vulnerability Class (The Guidelines section 3.5)	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

Vulnerability Class (The Guidelines section 3.5)	Flood Zone A	Flood Zone B	Flood Zone C
Water-compatible development	Appropriate	Appropriate	Appropriate

2.6 The Justification Test

The Justification Test is a rigorous assessment of the appropriateness or otherwise of developments that are proposed in areas of moderate to high flood risk. The Test is an examination of such proposals against proper planning and sustainable development criteria and, if these are satisfied, against flood risk criteria to ensure that risks are reduced to an acceptable level and that flood risk is not increased elsewhere.

2.7 Sequential Approach

The Guidelines outline a sequential approach that is to be applied to all levels of the planning process. This approach should also be used in the design and layout of a development. This approach is summarised graphically in Figure 2-2. In general, development in areas with a high risk of flooding should be avoided as per the sequential approach. However, this is not always possible as many town and city centres are within flood zones and are targeted for development.

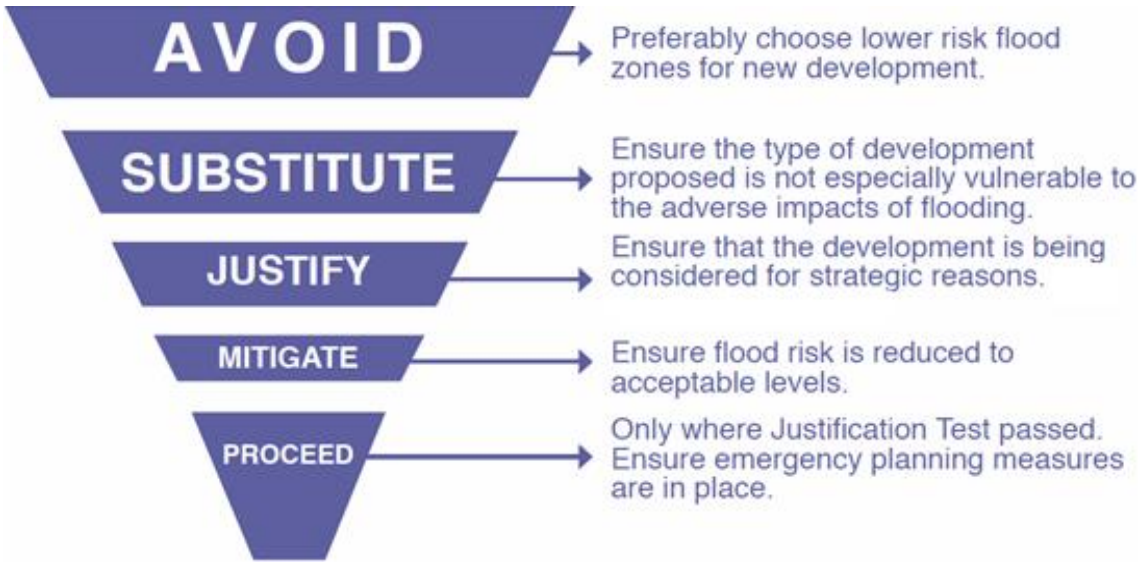

Figure 2-2 The Sequential Approach to Flood Risk Assessment (adapted from OPW, 2009, p 22)

The sequential approach makes use of flood risk assessment and of prior identification of Flood Zones for river and coastal flooding and classification of the vulnerability to flooding of different types of development, as illustrated in Table 2-4. It is essential that the risk potentially arising from other sources of flooding should also be considered in all areas and at all stages of the planning process.

3. DESCRIPTION OF PROPOSED DEVELOPMENT AND STUDY AREA

The proposed development is located in County Clare, commencing at the proposed Kilrush trailhead, travelling west through Moyasta towards Kilkee town. The proposed development is approximately 15.2km long and will mainly follow the route of the former West Clare Railway corridor where feasible. The proposed development will intersect a number of local roads along the route where crossings will be provided. A smaller trailhead / car park will be provided at Moyasta in addition to the Kilrush trailhead.

The proposed development will create a continuous route between key settlements, providing a safe transport corridor for vulnerable road users which will be predominantly segregated from motorised traffic. It will also provide views across the wider landscape and information for users on both the natural and built heritage of the region along the way.

3.1 Description of Proposed Development

A detailed description of the proposed Greenway route and construction is presented in Chapter 4 Description of the Proposed Development contained in Volume 2 of the Environmental Impact Assessment Report (EIAR) and is not reproduced within this assessment. The main feature of the proposed development is the Greenway mainline, which will follow the route of the former West Clare Railway corridor. The mainline Greenway will be constructed on top of the original embankment. Offline sections are proposed to avoid impacts to sensitive environments and existing development. Localised cut and fill will be required along the route where gradients are challenging. (refer to Drawing WCG-ROD-HGW-S1_ML-DR-CH-200601).

The typical pavement construction will feature a 3m wide asphalt surface with 1m verges and boundary treatments on either side. Where there are local constraints such as existing railway bridges or embankments, the overall width may narrow to fit within the available space. The pavement will be a 20mm bituminous macadam surface course over a 150mm sub-base. A geotextile layer and 300mm capping will also be implemented where necessary on soft ground along sections offline sections.

Surface water drainage will be managed through over-the-edge drainage, with runoff from paved surfaces discharging to the existing drainage network. Where necessary, existing field drains will be cleaned and regraded. Pipe drains, culverts, and headwalls will be installed where the Greenway crosses existing drainage features and to facilitate connections from larger hardstanding areas, such as trailheads, to existing drainage networks. Shallow filter drains will be incorporated within cuttings to promote infiltration to ground or to convey runoff to nearby watercourses.

A total of 12 structures are proposed, as summarised in Table 3-1. All proposed bridges will be clear-span structures, and no in-stream works will be required for their construction.

Table 3-1 Proposed Structures

Chainage [m]	Structure Description
2100	New proposed river bridge 5.6m wide x 10m approx. length for Greenway crossing. Crosses Termon East River Waterbody (RWB).
2100	New proposed river bridge 6.2m wide x 10m approx. length for agricultural vehicle crossing. Crosses Termon East RWB.

Chainage [m]	Structure Description
2265	New proposed river bridge 5.6m wide x 16m approx. length for Greenway crossing. Crosses Termon East RWB.
2265	New proposed river bridge 6.2m wide x 10m approx. length for agricultural vehicle crossing. Crosses Termon East RWB.
3850 to 4100	Retaining wall.
7340	New proposed overpass 6.2m wide x 9.5m approx. length for animal crossing.
780 to 7445	Retaining wall as Greenway in cutting to facilitate overpass listed above.
7480	New proposed overpass 3.6m wide x 8m approx. length for pedestrian crossing.
9800	Proposed bridge at canal channel.
11575	Proposed Greenway flyover to enable at-grade cattle access.
12400	New proposed overpass 6.2m wide x 10m approx. length for agricultural vehicle crossing (Greenway in cutting).
12510	New proposed culvert 2.5m wide x 10m approx. length for agricultural vehicle crossing.

The construction of two trailheads with car parking at Moyasta and Kilrush is proposed. The trailhead sites will serve as construction compounds during the construction phase of the project. The new car parks will be constructed using flood resilient, permeable paving.

The trailhead at Moyasta will be constructed on a brownfield site on railway lands on the south bank of the Moyasta_010 RWB. The trailhead will be accessed from the N67 road adjacent to Poulnasherry Bay. The bay forms part of the Mouth of the Shannon CWB. The area of the trailhead site is approximately 5,120m^2. The trailhead will incorporate a car park; the car park surface will be constructed from Permeable Interlocking Concrete Paving (PICP). Surface water will drain to an interception ditch along the northern side of the trailhead.

Suitable vegetation will be planted for bioretention purposes. These measures will filter pollutants from runoff and ensure sufficient water quality entering the Moyasta_010 RWB and the Mouth of the Shannon CWB. During the operational phase, toilet facilities will be provided in the form of two water-free compost toilets. Connection to foul sewers will not be required. Maintenance of the toilets will be managed by Clare County Council.

Construction works for the trailhead will include site clearance, excavation of topsoil, import and spread of a 0.3m thick gravel foundation, sub-base and surfacing, provision of public lighting, installation of permeable paving system, installation of vehicular barrier and planting of screen landscaping trees and shrubs. Traffic calming measures will also be implemented, and a zebra crossing will be provided at the N67.

The proposed trailhead at Kilrush will be constructed on a vacant 3.65ha site adjacent to Merchants Quay at Kilrush Creek Bay. The Marina Caravan and Camper Park is located at the western boundary of the site. The area of the trailhead will be approximately 36,534m^2. The trailhead will incorporate a carpark, constructed from PICP and areas of landscaped amenity open space, a playground and toilet facilities. Surface water which doesn't infiltrate through the carpark surface will drain to the existing storm water network. The toilet facilities will be provided in the form of four water-free compost toilets. Connection to the foul sewer will not be required. Maintenance of the toilets will be managed by Clare County Council.

The construction phase of the project is anticipated to take between 16 and 24 months.

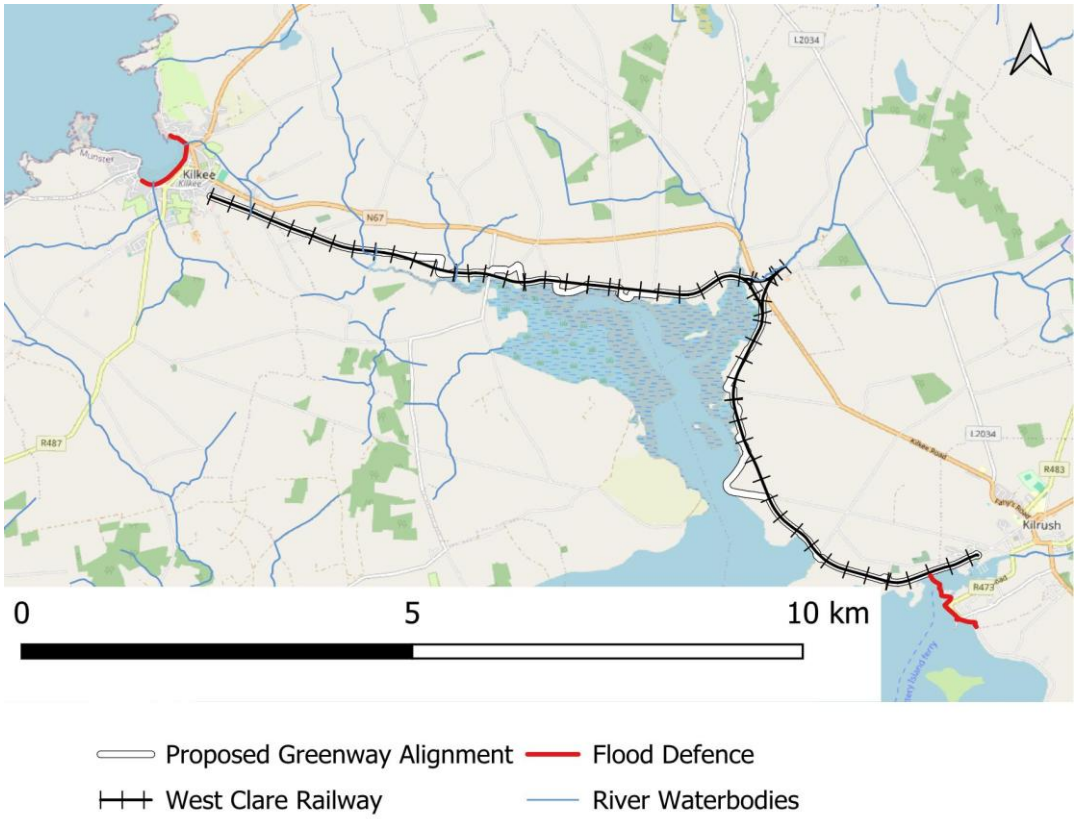

Figure 3-1 Greenway Route Map

3.2 Project Hydrological Environment

The proposed Greenway is located within Hydrometric Area 27: The Shannon Estuary North and is predominantly in the Wood_SC_010 sub catchment, which has an area of approximately 42km^2. The SAAR is 1188mm and 1225 mm per year respectively. The western extent of the Greenway is within the Doonagh_SC_010 sub catchment. The sub catchments are ungauged. The catchments are shown in Figure 3-2.

The Greenway crosses a reach of the Termon East_010 river waterbody (EPA Name Lisluinaghan) at chainage 2290m. A second branch of the Termon East_010 (EPA Name: Lisdeen stream) is crossed at chainage 3475m. The Moyasta_010 drains an extensive area of bog located inland and to the north of Moyasta village. The waterbody discharges to Poulnasherry Bay, an inlet on the Mouth of the Shannon CWB.

A fluvial Flood Relief Scheme (FRS) for Kilkee is currently at the Detailed Design and Construction stage; a planning application was formally approved by An Comhairle Plenála in August 2025. The scheme aims to protect 134 properties including 118 residential properties from recurrent fluvial flooding of the Atlantic Stream and the Victoria Stream: local names for branches of the Kilkee_010 waterbody flowing through urban Kilkee. Both streams are tidally influenced. A mainline section of the proposed Greenway passes over the Atlantic Stream.

Clare County Council planned to appoint technical consultants for the Stage 1 Scheme Development and Preliminary Design of a fluvial FRS in Kilrush in 2025. No formal updates have followed at the time of writing this report. Fluvial flooding in Kilrush is caused by the Stewart Street Bridge constricting flows in the Wood_020 waterbody where it discharges to Kilrush Creek. Kilrush Creek is a small bay on the Mouth of the Shannon CWB. The bay is isolated from the CWB by a seawall and tidal lock gate. The lock operates on an automated system that allows 24-hour access for leisure craft and small commercial vessels to the creek.

There are no OPW Arterial Drainage Channels or Drainage Districts impacted by the proposed route.

GSI Teagasc subsoil maps indicate that the proposed route is underlain by till sediments. There are small extents of the route underlain by peat close to Kilkee and Moyasta. There are no significant deposits of alluvium soils along the proposed route. Subsoil permeability is low across most of the study area. The GSI Bedrock Geology map indicates that the proposed route is underlain by the sandstone, mud stone and siltstone rocks of the Central Clare and Gull Island groups.

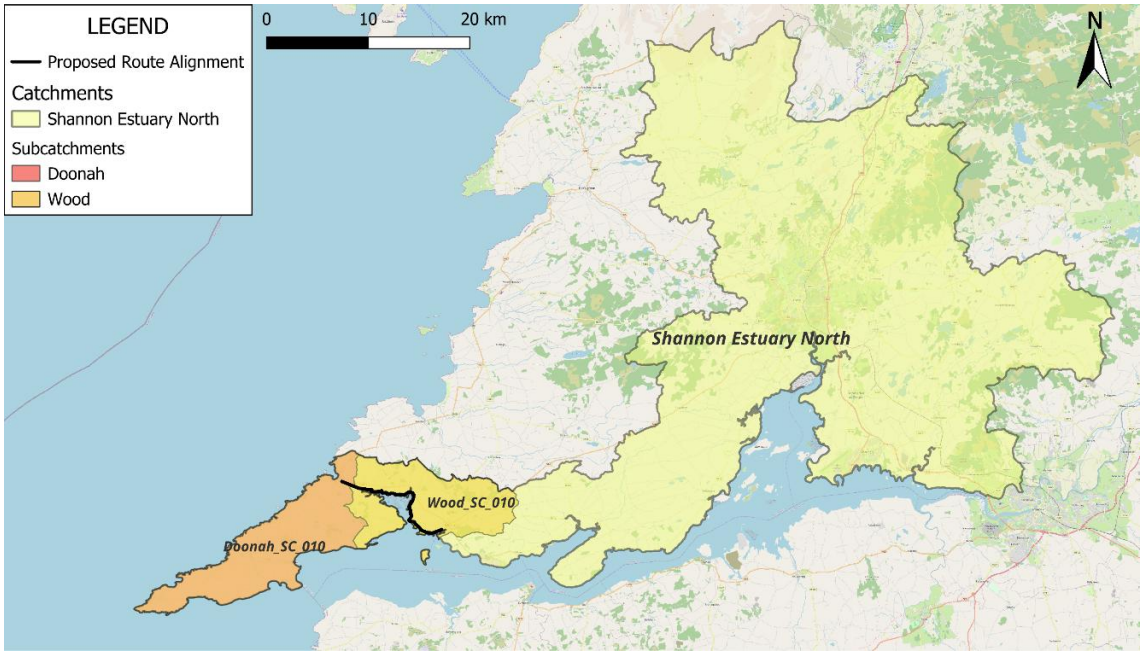

Figure 3-2 Catchments and Sub-Catchments

4. FLOOD RISK ASSESSMENT

4.1 Stage 1 Flood Risk Identification

The Stage 1 Flood Risk Identification includes a review of the existing information and the identification of any flooding or surface water management issues in the study area that may warrant further investigation.

4.1.1 Sources of Flood Risk Information

Directive 2007/EC/60 of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks (the Floods directive) was transposed into Irish Law by SI No 122 of 2010 designated the Office of Public Works (OPW) as the Competent Authority for the Floods Directive. During the first cycle of the Floods Directive the OPW undertook the Preliminary Flood Risk Assessment (PRFA), a national scale flood risk screening that was based upon readily accessible data.

The PRFA included analysis of historic floods, predictive analysis to assess areas prone to flooding, and consultation with local authorities and other government departments and agencies. The PFRA identified some 300 Areas for Further Assessment (AFA). The AFA are communities, townlands or sites potentially subject to significant flood risk.

Fluvial Flood Risk Information Sources

The CFRAM Programme, conducted between 2012 and 2021, assessed flood risk at catchment scale across Ireland and produced detailed Flood Hazard Maps and Flood Risk Maps for the AFAs.

The OPW produced a set of National Indicative Flood Maps (NIFM) as part of the first cycle of the PRFA in 2012. A second generation of NIFM maps covering approximately 27,000 km of river reaches that were not covered by hydraulic modelling under CFRAM were published by the OPW in 2020. The NIFM maps are based on predictive models that show areas likely to be inundated by river flooding. The NIFM flood maps are suitable for use in a Stage 1 Flood Risk Assessment to identify areas likely to be impacted by flooding.

The Flood Studies Update (FSU) Programme was initiated by the OPW in 2005 following the 2004 Flood Policy Review Group recommendations. The FSU Programme delivered enhanced methodologies for flood estimation across Ireland and provides a comprehensive framework for flood frequency and hydrograph analysis, urban flood estimation, and catchment descriptor generation.

Coastal Flood Risk Information Sources

CFRAM developed detailed flood hazard maps (for current and high-end future scenarios). Coastal Flood Mapping presents extents, depths, and probabilities (10%, 1%, 0.5%, 0.1% Annual Exceedance Probability AEP) for AFAs.

The Irish Coastal Protection Strategy Study (ICPSS) was commissioned by the OPW in 2003 to establish a national framework for assessing coastal flood and erosion risk. An initial overview phase was completed in 2004, followed by detailed mapping and analysis across Ireland's coastline, with the full study finalised in 2013. The ICPSS report collection was published online in 2019 and subsequently updated in 2020.

The ICPSS delivers a suite of strategic outputs that underpin coastal flood risk management in Ireland:

- Coastal Flood Hazard Mapping: Flood extents and depths. AEP 0.1%, 0.5%, and 10% events (under present-day and future climate scenarios);

- Erosion Hazard Mapping: Baseline vegetation line mapping and projected erosion hazard lines to 2050, based on historical erosion rates and assumptions of continued trends;
- Extreme Water Level Analysis: Statistical modelling of tide and surge components to define coastal boundary conditions for flood modelling; and
- Coastal Water Level Modelling & Storm Surge Analysis (ICWWS 2018). The ICWWS updated ICPSS outputs by including updated extreme water levels incorporating tide, surge, wave effects, and high-end sea-level rise scenarios (+1.5 m and +2.0 m by 2100).

The National Coastal Flood Hazard Mapping 2021 (NCFHM) delivers updated national-scale coastal flood extent and depth projections for Ireland under varied conditions. Developed by OPW and released via Floodinfo.ie in June 2021, the dataset includes flood scenarios for 50%, 20%, 10%, 5%, 2% AEPs for the Current, Mid-Range Future (MRFS) and High-End Future (HEFS) Climate Scenarios.

The Irish National Tide Gauge Network, operated by the Marine Institute, provides a critical observational dataset for coastal flood risk analysis and comprises 19 strategically located stations around Ireland. The network records water levels at five-minute intervals. Measurements are referenced to both Lowest Astronomical Tide (LAT) and Ordnance Datum Malin Head (OD Malin), ensuring consistency with national vertical datums.

4.1.2 Desk Study

A desk study was conducted to identify and review the available sources of flood risk information relevant to the proposed development. The desk study was informed by the sources summarised in Table 4-1.

The Clare County Development Plan 2023–2029 Volume 10c Strategic Flood Risk Assessment (SFRA) undertook an in-depth review of the available flood risk information to inform Clare County Council in delineating Flood Zone Maps for development zoning as part of the preparation of the Development Plan. Flood Zone Maps are available for Kilkee, Kilrush and Moyasta.

Table 4-1 Reviewed Flood Information Sources

Source	Data Gathered
Primary Sources of Baseline Data	
Clare County Development Plan 2023-2029 Volume 10c Strategic Flood Risk Assessment	Development Zone Flood Risk Maps
Catchment Flood Risk Assessment and Management Study (CFRAM): www.floodmaps.ie	Fluvial, Mid-Range & High-End Future Scenarios and Coastal flooding examined
National Indicative Fluvial Maps	Fluvial, Mid-Range & High-End Future Scenario maps examined
Hydraulic Modelling Report – Kilkee and Kilrush AFA's	Kilkee Fluvial FRS
Irish Coastal Protection Strategy Study (ICPSS) Phase 4, Appendix 3b-Flood Mapping, Shannon Estuary.	Coastal Flood extents for Poulnasherry Bay and Kilrush Creek
Irish Coastal Protection Strategy Study (ICPSS) Erosion Line Future Scenario	Predicted position of coastline in 2050 based on historical erosion.

Source	Data Gathered
National Coastal Flood Hazard Mapping, 2021 [1]	Coastal flooding, update to the ICPSS
Irish Coastal Wave and Water Level Modelling Study (ICWWS) 2018	Extreme coastal water level estimates superseding earlier ICPSS outputs.
GSI	Soil & subsoil properties
	Presence of Karst features along route
	Bedrock geology
	Groundwater Flooding Probability Maps
	Historic flood extent maps
Tailte Éireann	OSI 6" and 25" historic maps.
	High Water Mark – National Water Mark Long term tide levels.
Secondary Sources of Baseline Data	
Clare County Development Plan 2023-2029, Strategic Flood Risk Assessment (SFRA)	Fluvial, Coastal and Pluvial flooding examined
OPW-Coordinated Coastal Survey LIDAR Tiles	Coastal topographic data

The SFRA concluded that the Shannon CFRAM Study Modelling is 'best of breed' and its outputs allow informed decisions to be made on zoning objectives, design water levels and decisions relating to raising land and setting finished floor levels. The SFRA adopted CFRAM data where available as the basis for the Flood Risk Maps in the CCDP. CFRAM Flood Risk Maps for Fluvial and Coastal flooding are available for Kilkee and Kilrush.

For rivers outside of the AFAs not covered by CFRAM modelling, the NIFM datasets were adopted by the SFRA. The NIFM datasets are available for the rural sections of the proposed Greenway route between Kilkee and Kilrush, including Moyasta.

The SFRA adopted ICPSS flood extent mapping as the basis for defining the tidal flood risk element of Flood Zones A and B in non-CFRAM settlements. This approach reflects the limitations of the NCFHM 2021 mapping, which, while based on more recent water level estimates, is derived from a relatively coarse-scale Digital Elevation Model (DEM).

Historic Flood Risk

The OPW Flood Event Database was reviewed to determine if the proposed Greenway route has been affected by known flood events in the past. The database identifies a single recorded flood event at Moyasta located where the proposed Greenway alignment meets the N67. The flood event occurred on 01/01/2014 and the flood source is recorded as "Coastal/Estuarine Waters". (Refer to Appendix C for past flood events records).

The database also shows a single recorded flood event in Kilrush at Cappagh Road approximately 100m east of Kilrush trailhead. The flood event occurred on 01/02/2014 and the flood source is recorded as "Coastal/Estuarine Waters".

Internet searches for reports of flooding in Kilrush, Kilkee and Moyasta were also conducted. An article on the Clare FM website dated 12 December 2015 [accessed 4 September 2025] reports flooding on roads throughout Clare, including roads near Kilrush and Kilkee.

[1] Coastal Map - Floodinfo.ie

Additionally, the Kilkee FRS website [accessed 4 September 2025] notes that the Victoria Stream to overflow its banks over a length of 200-300m on an annual basis.

Historic maps were consulted to identify areas of flooding documented prior to the establishment of the flood event database. The 6" First Edition Cassini Map labels the coast around Baurnahard Point as 'liable to floods.' The lands around Moyasta and Lisdeen where the tributaries meet the coast are also labelled 'liable to floods. (Refer to Appendix E for historical mapping.)

4.1.3 Stage 1 Flood Risk Assessment

This Stage 1 Flood Risk Assessment provides an initial appraisal of potential flood risk to the proposed development in accordance with the Planning System and Flood Risk Management Guidelines (2009). The assessment considers all relevant sources of flooding, including fluvial, coastal, and groundwater, to identify whether the proposed development may be at risk from flooding or may give rise to impacts elsewhere. The assessment is based on a review of the flood risk information and mapping sources identified in Table 4-2. The findings of the review are used to assign Flood Zones to the proposed Greenway alignment, associated structures, and trailhead locations. The flood vulnerability classification of the project elements has been assessed in accordance with the guidelines (refer to Table 2-3). The Greenway is classified as Less Vulnerable Development in accordance with current TII Standards (Transport Infrastructure Ireland, 2022)

The outcomes of the Stage 1 Assessment are presented in summary tables. The 'Assessment' column within the summary tables has been populated by combining the Flood Zone classification with the vulnerability classification in accordance with the criteria set out in Table 2-4. Where modifications or refurbishments to existing infrastructure are proposed, a high-level drainage assessment has been undertaken to consider potential impacts on overland flow paths and to ensure that flood risk is not increased elsewhere having regard to the requirements of Section 5.28 of the Guidelines.

Greenway Alignment Stage 1 Fluvial Flood Risk Assessment

The CFRAM fluvial flood risk mapping indicates that the mainline traverses Fluvial Flood Zone A of the Atlantic Stream in Kilkee between Chainage 500m and 600m. This area is also designated as Flood Zone A in the SFRA. (Refer to Appendix B for fluvial flood mapping)

The proposed works at this location are considered to conform to the definition of minor development as set out in Section 5.28 of the Planning System and Flood Risk Management Guidelines (2009), and therefore a Justification Test is not required.

Fluvial flood risk at this location will be managed by the Kilkee FRS, which provides a Standard of Protection (SoP) to the 1% AEP fluvial flood event. Consultation with the FRS design consultants (Jeremy Benn and Partners) has confirmed that the proposed Greenway will not adversely impact the design or operation of the scheme.

The proposed Greenway surfacing will not materially increase runoff rates and will not impede existing overland flow paths. The proposed development at this location is therefore assessed as appropriate.

Based upon the NIFM fluvial flood risk maps there is a fluvial flood risk to the proposed Greenway route arising from the Moyasta_010 RWB from chainage 8150m to 8250m. The Moyasta trailhead and a section of the proposed Greenway in proximity and along the N67 at Moyasta are in Fluvial Flood Zone A. The SFRA designates the proposed Moyasta trailhead site and this Greenway section as Flood Zone A.

The outcome of the Stage 1 Fluvial Flood Risk Assessment for the proposed alignment is presented in Table 4-2.

Table 4-2 Greenway Alignment Stage 1 Fluvial Flood Risk Assessment

Chainage [m]	Flood Zone	Assessment	Description
0-500 (Kilkee end)	C	Appropriate	Mainline
500-600	A	Appropriate	Mainline
600-1250	C	Appropriate	Mainline
1250-1400	C	Appropriate	Offline
1400-2350	C	Appropriate	Mainline
2350-3450	C	Appropriate	Offline
3450-3650	C	Appropriate	Mainline
3650-4600	C	Appropriate	Offline
4600-4850	C	Appropriate	Mainline
4850-5800	C	Appropriate	Offline
5800-6200	C	Appropriate	Mainline
6200-6900	C	Appropriate	Offline
6900-8000	C	Appropriate	Mainline
8000-8150	C	Appropriate	Offline
8150-8200	A	Justification Test	Offline
8200-8250	A	Justification Test	Mainline
8250-9150	C	Appropriate	Mainline
9150-9750	C	Appropriate	Offline
9750-9950	C	Appropriate	Mainline
9950-10250	C	Appropriate	Offline
10250-10500	C	Appropriate	Mainline
10500-11900	C	Appropriate	Offline
11900-12650	C	Appropriate	Mainline
12650-13000	C	Appropriate	Offline
13000-13800	C	Appropriate	Mainline
13800-14000	C	Appropriate	Offline
14000-15179 (Kilrush end)	C	Appropriate	Mainline

Proposed Trailhead Stage 1 Fluvial Flood Risk Assessment

The proposed trailheads are considered to conform to the definition of local physical infrastructure contained with the CCDP and are classified as being Less Vulnerable Development in accordance with the criteria established in Table 4-3. The outcomes of the Stage 1 fluvial flood risk identification for the proposed trailheads is presented in Table 4-3. The SFRA designates the proposed Moyasta trailhead site as Flood Zone A.

Table 4-3 Trailhead Stage 1 Flood Fluvial Risk Assessment

Location	Proposal	Flood Zone	Assessment	Source
Kilrush	New Trailhead	C	Appropriate	CFRAM
Moyasta	New Trailhead	A	Justification Test	NIFM

Proposed Structures Stage 1 Fluvial Flood Risk Assessment

The proposed river bridges and culverts are considered to be local transport infrastructure and are classified as 'Less Vulnerable' development. The proposed retaining walls are classified as Less Vulnerable development. The outcomes of the Stage 1 Fluvial Flood Risk Assessment for the proposed structures are presented in Table 4-4.

Table 4-4 Proposed Structures Stage 1 Fluvial Flood Risk Assessment

Chainage [m]	Structure Description	Flood Zone	Assessment
2100	Proposed river bridge 6.2m wide x 10m long, is proposed at Lisdeen West End in proximity to the Lisdeen recycling centre and transfer station for agricultural use. This was requested by the landowner to replace the earlier railway bridge which is no longer standing. Crosses Termon East RWB.	C	Appropriate
2265	Proposed new river bridge 5.6m wide x 16m long to replace railway bridge that is no longer standing. Crosses Termon East RWB.	C	Appropriate
2265	Proposed river bridge 6.2m wide x 10m approx. length for agricultural use. Requested by landowner to replace a railway bridge that is no longer standing.	C	Appropriate
3850 to 4100	Retaining wall	C	Appropriate
7390	A landowner accommodation overpass (pedestrian only), 3.6m wide x 8m long is proposed at to mitigate severance for the adjacent landowner arising from the construction of the Greenway in retained cutting.	C	Appropriate
7300 to 7400	Earth retaining measures will be required where the Greenway is to be constructed in cutting to avoid impacting on adjacent landowners. The construction will incorporate drainage pipework to drain the retained section to a nearby field drain. A non-return valve will be required on the pipework.	C	Appropriate
9175	Proposed new bridge at turf canal. The bridge will carry the Greenway over the canal.	C	Appropriate
11575	A new cattle underpass, 6.2m wide, 3m long, and 2.7m high is proposed at Carrowncalla South to avoid causing severance for the local dairy farmer. The Greenway alignment will be raised above ground level at this location, and the accommodation route will run beneath at existing ground level.	C	Appropriate
12400	A new accommodation overpass, 3.4m wide x 10m long for agricultural crossing is proposed at Carrowncalla South at the request of the local landowner to minimise severance caused by the Greenway.	C	Appropriate

Chainage [m]	Structure Description	Flood Zone	Assessment
12510	New proposed culvert 2.5m wide x 10m approx. length for agricultural vehicle crossing.	C	Appropriate
14950 to 15125	Retaining walls are required where Greenway is to be constructed in cutting to avoid impacting on adjacent landowners and to reconcile steep gradients.	C	Appropriate

4.1.4 Stage 1 Coastal Flood Risk Assessment

The former railway track bed between Kilkee and Kilrush is approximately 15.2km in length. Based on the ICPSS flood maps approximately 23% of the former railway route lies within the coastal flood risk zones defined by the ICPSS dataset.

Proposed Alignment Stage 1 Coastal Flood Risk Assessment

The proposed Greenway route has been assessed for coastal flood risk using the current climate scenario ICPSS flood extent maps for the 0.5% and 0.1% AEP events. Links to GIS shapefiles and high-resolution versions of the ICPSS flood extent and flood depth maps are no longer publicly available (OPW, personal communications, 12th December, 2025). The Stage 1 coastal flood risk identification has used 1:25000 scale maps published on the ICPSS Phase 4 website[2]. The maps have been georeferenced, and the Stage 1 coastal flood risk identification has been conducted within GIS. The precautionary approach has been adopted in assigning Coastal Flood Zones reflecting the scale and resolution of the available flood risk mapping. (Refer to Appendix A for coastal flood mapping).

The proposed mainline sections will largely retain existing water course crossings and drainage infrastructure along the route, therefore the mainline sections of the proposed Greenway will not impact existing local drainage patterns or surface water flow paths. Mainline sections of the Greenway are considered to conform to the definition of a minor development under section 5.28 of the guidelines therefore the Justification Test does not apply.

The outcomes of the Stage 1 Coastal Flood Risk Assessment for the proposed alignment are presented in Table 4-5.

Table 4-5 Greenway Alignment Stage 1 Coastal Flood Risk Assessment

Chainage [m]	Description	Flood Zone	Assessment
0-1250	Mainline	C	Appropriate
1250-1400	Offline	C	Appropriate
1400-1900	Mainline	C	Appropriate
1900-2200	Mainline	A	Appropriate
2200-2350	Offline	C	Appropriate
2350-3450	Offline	C	Appropriate
3450-4850	Mainline	C	Appropriate
4850-5550	Offline	C	Appropriate
5550-5750	Offline	A	Justification Test
5750-6200	Mainline	C	Appropriate
6200-6250	Offline	C	Appropriate

[2] Irish Coastal Protection Strategy Study - Phase 4 - South West Coast

Chainage [m]	Description	Flood Zone	Assessment
6250-6870	Offline	C	Appropriate
6870-7200	Mainline	A	Appropriate
7200-7450	Mainline	C	Appropriate
7450-8200	Mainline	A	Appropriate
8200-8400	Offline	A	Justification Test
8400-8925	Mainline	A	Appropriate
8930-9200	Offline	A	Justification Test
9200-9550	Offline	C	Appropriate
9550-9850	Offline	A	Justification Test
9850-9950	Mainline	C	Appropriate
9950-10250	Offline	A	Justification Test
10250-10500	Mainline	C	Appropriate
10500-10550	Offline	C	Appropriate
10550-11700	Offline	A	Justification Test
11700-11900	Offline	C	Appropriate
11900-12100	Mainline	C	Appropriate
12100-12300	Mainline	A	Appropriate
12300-12400	Mainline	C	Appropriate
12400-12550	Mainline	A	Appropriate
12550-12620	Mainline	C	Appropriate
12620-12780	Offline	C	Appropriate
12780-12900	Offline	A	Justification Test
12900-13000	Offline	C	Appropriate
13000-13100	Mainline	C	Appropriate
13100-13650	Mainline	A	Appropriate
13650-13825	Mainline	C	Appropriate
13825-13975	Offline	C	Appropriate
13975-14200	Mainline	C	Appropriate
14200-14800	Mainline	B	Appropriate
14800-15179	Mainline	C	Appropriate

Sections of the proposed alignment identified as being within Flood Zone A, as summarised in Table 3-5, require the application of the Justification Test in accordance with the Guidelines. These sections are assessed further as part of the Stage 2 Flood Risk Assessment.

Proposed Structures Stage 1 Coastal Flood Risk Assessment

The outcomes of the Stage 1 Coastal Flood Risk Assessment for the proposed structures are presented in Table 4-6.

Table 4-6 Proposed Structures Stage 1 Coastal Flood Risk Assessment

Chainage [m]	Structure Description	Flood Zone	Assessment
2100	Proposed new proposed river bridge: 6.2 m wide x 10m approx. length for Greenway. For agricultural use, requested by landowner to replace a railway bridge that is no longer standing. The bridge will span the Termon East RWB	A	Justification Test
2265	Proposed new river bridge: 5.6m wide x 16 m long. The new bridge will replace a railway bridge that is no longer standing. The bridge will span the Termon East RWB.	C	Appropriate
2265	Proposed new river bridge 6.2m wide x 10m long. For agricultural use, requested by landowner to replace a railway bridge that is no longer standing. The bridge will span the Termon East RWB.	C	Appropriate
3850 to 4100	Retaining wall.	C	Appropriate
7300 to 7400	Earth retaining measures will be required where the Greenway is to be constructed in cutting to avoid impacting on adjacent landowners. The construction will incorporate drainage pipework to drain the retained section to a nearby field drain. A non-return valve will be required on the pipework	C	Appropriate
9175	Proposed new bridge at turf canal. The bridge will carry the Greenway over the canal.	B	Appropriate
11575	A new cattle underpass, 6.2m wide, 3m long, and 2.7m high is proposed at Carrowncalla South to avoid causing severance for the local dairy farmer. The Greenway alignment will be raised above ground level at this location and the accommodation route will run beneath at existing ground level.	B	Appropriate
12400	A new accommodation overpass, 3.4m wide x 10m long for agricultural crossing is proposed at Carrowncalla South at the request of the local landowner to minimise severance caused by the Greenway.	C	Appropriate
12510	A new accommodation overpass, 3.4m wide x 10m long for agricultural crossing is proposed at Carrowncalla South (Ch 12400) at the request of the local landowner to minimise severance caused by the Greenway.	A	Justification Test
14950 to 15125	Retaining walls are required where Greenway Is to be constructed in cutting to avoid impacting on adjacent landowners and to reconcile steep gradients.	C	Appropriate

The proposed river bridge at Chainage 2100 m is located within the Coastal Flood Zone of the Mouth of the Shannon CWB. The location is rural and flood risk has not been classified in the SFRA.

Proposed Trailhead Stage 1 Coastal Flood Risk Assessment

The site of the proposed trailhead at Moyasta village is within the coastal floodplain of Poulnasherry Bay and the floodplain of the Moyasta_010 river waterbody.

The proposed trail heads are classified as less vulnerable development. The outcomes of the Stage 1 Coastal Flood Risk Assessment for the proposed trailheads are presented in Table 4-7.

Table 4-7 Proposed Trailhead Stage 1 Coastal Flood Risk Assessment

Location	Proposal	Flood Zone	Assessment
Kilrush	New Trailhead	C	Appropriate
Moyasta	New Trailhead	A	Justification Test

The proposed trailhead site and a short section of offline Greenway at Moyasta are subject to combined coastal and fluvial flooding. It is proposed that the car park and offline Greenway section be constructed using flood resilient materials at existing ground levels. This approach ensures that flood damage to the proposed development is minimised and that no increase in flood risk arise in the surrounding area. The proposed trailhead is unlikely to significantly impact traffic volumes on the N67 and is not expected to significantly increase exposure of the public to flood risk. On this basis, the residual flood risk associated with the proposed trailhead is considered acceptable.

4.1.5 Pluvial Flood Risk

The proposed Greenway represents a minor increase in impermeable surface area at catchment scale. The embedded drainage design is considered sufficient to ensure that the Greenway will not increase local pluvial flood risk or alter existing surface water flow pathways.

4.1.6 Groundwater Flood Risk

The GSI Bedrock Geology map indicates that the proposed route is not underlain by limestone formations and there are no Karst features indicated along the route. The GSI Groundwater Flooding probability maps do not indicate that groundwater is a source of flood hazard to the proposed Greenway route. It is concluded that groundwater is not a source of flood risk to the proposed Greenway route.

4.1.7 Stage 1 Flood Risk Assessment Conclusions

In accordance with the Planning System and Flood Risk Management Guidelines (2009), a review of available flood risk information has been undertaken, including fluvial and coastal datasets, to identify potential sources of flood risk to the proposed development. Based on this review, Flood Zones have been delineated for the proposed Greenway alignment, associated structures, and trailhead locations.

A short section of the mainline within Kilkee is identified as being at risk of fluvial flooding from the Atlantic Stream. This area will benefit from protection afforded by the Kilkee FRS, which provides protection to the 1% AEP flood event. Consultation with the scheme designers has confirmed that the proposed development will not impact on the performance or integrity of the FRS.

Sections of the rural mainline and offline Greenway are identified as being at risk of fluvial flooding. Flood Zones for these sections have been defined with reference to CFRAM and NIFM flood hazard mapping (refer to Table 3-2).

Sections of the proposed Greenway are also identified as being at risk of coastal flooding. Coastal Flood Zones have been established based on ICPSS flood hazard mapping (refer to Table 3-5). Approximately 23% of the mainline is located within areas subject to coastal flood risk. Overall, approximately 37% of the proposed development is located within areas at risk of flooding.

The proposed trailhead at Moyasta, together with a short section of offline Greenway, is located within an area subject to both fluvial and coastal flood risk. In accordance with the Guidelines, a Justification Test is required for this element of the proposed development (refer to Table 3-3).

A Justification Test is also required for the proposed bridge at Lisdeen (refer to Table 3-6). flooding. The proposed development is not identified as being at risk from groundwater or pluvial flooding based on available data sources.

In accordance with the Guidelines, where the Justification Test is required, a Stage 2 Flood Risk Assessment must be undertaken to assess flood risk in greater detail and to demonstrate that the development will not give rise to unacceptable impacts on flood risk.

This Stage 1 Flood Risk Assessment establishes the baseline flood risk context and identifies the requirement for further assessment at Stage 2.

The available sources of flood risk information, including fluvial and coastal datasets, have been reviewed to identify potential sources of flood risk affecting the proposed development.

Based on this review, Flood Zones have been assigned to the proposed Greenway alignment, associated structures, and trailhead locations in accordance with the Guidelines.

A short section of the mainline being in urban Kilkee is subject to fluvial flood risk from the Atlantic Stream and will be protected from the 1% AEP fluvial flood by the Kilkee FRS. Consultation with the scheme consultants has confirmed that the proposed Greenway will not impact the FRS.

Rural mainline and offline sections of the proposed Greenway route are subject to fluvial flood risk. The Fluvial Flood Zones have been assessed for each of the sections (refer to Table 3-2) based on CFRAMs and NIFM flood hazard maps.

Rural mainline and offline sections of the proposed Greenway route are subject to coastal flood risk. The Coastal Flood Zones that these sections are in have been identified (refer to Table 3-5) based on ICPSS flood hazard maps. Approximately 23% of the mainline is subject to coastal flood risk. Overall approximately 37% of the proposed Greenway has been identified as susceptible to flooding based on this flood risk assessment.

The appropriateness of the proposed mainline and offline sections has been determined with reference to Flood Zone and vulnerability classification in accordance with the Guidelines (refer to Table 1.4). The mainline sections of the Greenway have been treated as conforming to the definition of a in Section 5.8 minor development in determining the need for a justification test.

The proposed trailhead site and a short section of offline Greenway at Moyasta are subject to combined coastal and fluvial flooding. A Justification Test is indicated for these elements under the Guidelines (Refer to Table 3-3).

A Justification Test is required for the proposed bridges at Lisdeen (Refer to Table 3-6) under the Guidelines.

The proposed development is not subject to flood risk from groundwater or pluvial sources. The requirements for Justification Tests identified in the Stage 1 Flood Risk Assessment requires a Stage 2 Flood Risk Assessment be undertaken.

4.2 Stage 2 Flood Risk Assessment

The available sources of flood risk information are assessed to be an adequate basis upon which to evaluate the extent of the risk of flooding to the proposed Greenway and the impact of the proposed Greenway on flooding elsewhere.

Localised cut and fill will be required along the route where gradients are challenging. (refer to Drawing WCG-ROD-HGW-S1_ML-DR-CH-200601). The sections of the mainline and offline Greenway identified as being subject to coastal flood risk traverse topographical low points where the proposed route runs along the coastline.

Based on the outcomes of the Stage 1 Flood Risk Assessment, the elevation of the Greenway surface at sections subject to coastal flood risk will be elevated to 3.20 metres Above Ordnance Datum (mAOD) at these locations (refer to Drawing WCG-ROD-HGW-S1_ML-DR-CH-200601). This increase in elevation will result in the pavement of the Greenway lying above the maximum coastal flood depth of 3.06 mAOD under the HEFS. The maximum coastal flood depth has been identified using the NCFHM 2021 flood depth data. The elevation of 3.20 mAOD provides a freeboard allowance of 140 mm above the HEFS climate change scenario flood levels. On this basis, the proposed finished levels will prevent inundation of the Greenway under the design flood conditions, and the residual flood risk to these sections is considered acceptable.

The paved surface of the offline section from chainage 5550 m to 5750 m will be elevated to 3.20mAOD. The section will cross the L20167 Local Road to the east of its point of deviation from the mainline section. It will run to the south of a residential building and will intersect a field boundary ditch approximately 80m southeast of the residence. It will subsequently run parallel to the principal field boundary drains in the area that discharge to the bay. The section will be designed to maintain connectivity to existing outfalls to ensure that overland flow paths are not impeded during the operational phase. With these design measures in place no pathway is identified for an increase in flood risk to the residential building or the local road.

The proposed offline section from chainage 8930m to 9200m follows the coastline of Poulnasherry Bay seaward of the railway corridor. The offline section will connect to an existing local access road at Carrowncalla South at which point it will turn east to rejoin the railway corridor. The paved surface of the offline section will be elevated to 3.20 mAOD. Existing surface drainage along this section consists of a network of field drain ditches conveying runoff from agricultural land towards the coast. The design of the offline section will maintain connectivity to existing outfalls to ensure that overland flow paths are not impeded during the operational phase. With these design measures in place no pathway is identified for an increase in local flood risk, and any local drainage requirements will be addressed at detailed design stage.

The offline section of the proposed Greenway from chainage 9950m to 10,250m deviates from the former railway track to follow the coastline of Poulnasherry Bay. The paved surface of the offline section will be elevated to 3.20 mAOD. The existing surface drainage channels along this section consists of a network of field drain ditches conveying runoff from agricultural land towards the coast. The design of the offline section will maintain connectivity to existing outfalls to ensure that overland flow paths are not impacted during the operational phase. With these design measures in place no pathway is identified for an increase in local flood risk, and any local drainage requirements will be addressed at detailed design stage.

The offline section of the proposed Greenway from chainage 12,780m to 12,900m deviates from the existing railway corridor towards the coastline by a matter of metres. The paved surface of the section will be elevated to 3.20 mAOD. Existing surface drainage channels along this section consists of a network of field drain ditches conveying runoff from agricultural

land towards the coast. The design of the offline sections will maintain connectivity to existing outfalls ensuring that overland flow paths are not impeded during the operational phase. The offline section will be extended to the seaward boundary of an existing carpark that connects to the L6092 Carrowncalla South Local road at chainage 12,900m. The road represents the dominant overland flow path in the area and will not be impacted by the proposed works. With the design measures in place there is no pathway for an increase in flood risk to the agricultural buildings or residences to the east of the road that are located outside of the coastal flood extent. Any local drainage issues will be addressed at detailed design stage.

The offline section of the proposed Greenway from chainage 8200m to 8400m will be constructed through derelict railway yards before running adjacent to the N67 as it passes the site of the proposed Moyasta trailhead. This offline section is subject to a mix of coastal and fluvial flooding and is located within the floodplain of Poulnasherry Bay and the Moyasta River. The section will be constructed at existing ground levels and represents an insignificant increase in impermeable surfaces at the local scale. The design of the section will maintain connectivity to existing drainage networks and construction at grade will ensure that local surface flow paths are not impeded during the operational phase. With the design measures in place there is no pathway for an increase in flood risk to the N67 or the commercial and residential buildings along the road.

The requirement for a Justification Test in Development Management is established in section 5.15 of the Guidelines (OPW, 2009). Where a planning authority is considering proposals for new development in areas at a high or moderate risk of flooding that include types of development that are vulnerable to flooding and that would generally be inappropriate as set out in Table 2-4, the planning authority must be satisfied that the development satisfies all of the criteria of the Justification Test as it applies to development management.

The criteria for the Justification Test are adapted from the Guidelines as headings in bold, with response below.

4.2.1 Proposed River Bridge at Chainage 2100m Justification Test

Criterion 1: The subject lands have been zoned or otherwise designated for the particular use or form of development in an operative development plan, which has been adopted or varied taking account of these Guidelines.

The location is rural and is not subject to specific zoning policies. The Clare County Development Plan contains an objective to prioritise the development of the West Clare Greenway. The Kilkee to Kilrush Greenway development accords with Strategic Priority 15 of the County Clare Tourism Strategy 2030. The proposed structures at this location contribute to these objectives. Criterion 1 is therefore assessed as being met.

Criterion 2: The proposal has been subject to an appropriate flood risk assessment that demonstrates:

Criterion 2 (i) The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk.

The proposed bridges will be clear span structures and will not impact conveyance in the river channel. The bridge will be subject to a mixed flood regime. The soffit levels of the bridge will be set above the greater of the 1 in 100 year peek fluvial flood level or the 1 in 200 year peak coastal flood level. The design levels will adopt the climate change allowances specified by the HEFS and will include a 500mm freeboard to account for modelling uncertainty to meet the requirements of the Section 50 consent process. These design criteria will ensure that bridge construction does not increase flood levels at the location or increase levels in the Termon river channel upstream of the bridge. Criterion 2 (i) is assessed as being satisfied.

Criterion 2 (ii) The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible.

The bridge will be used for agricultural purposes and will be lightly trafficked. The operation of the bridges will not significantly increase exposure of the public to flood risk as the operational phase will not significantly increase the volume of agricultural vehicles in the area relative to current use. Criterion 2 (ii) is assessed as being satisfied.

Criterion 2 (iii) The development proposed includes measures to ensure that residual risks to the area and/or development can be managed to an acceptable level as regards the adequacy of existing flood protection measures or the design, implementation and funding of any future flood risk management measures and provisions for emergency services access.

No vulnerable receptors have been identified upstream or downstream of the proposed bridge locations, therefore there is no pathway for an impact on residual risk to surrounding area and the proposed design measures will ensure that the bridge does not impact peak flow levels in the channel. Criterion 2 (iii) is assessed as being satisfied.

Criterion 2 (iv) The development proposed addresses the above in a manner that is also compatible with the achievement of wider planning objectives in relation to development of good urban design and vibrant and active streetscapes.

As the proposed location is rural it is not subject to specific urban zoning policies. Criterion 2 (iv) does not apply in this case.

4.2.2 Proposed Trailhead at Moyasta Justification Test

Criterion 1: The subject lands have been zoned or otherwise designated for the particular use or form of development in an operative development plan, which has and in the surrounding area been adopted or varied taking account of these Guidelines.

The proposed trailhead at Moyasta is consistent with existing land use at the site and in the surrounding area. The trailhead at Moyasta is considered essential to the operation of the Greenway as it is a key component of the traffic management plan for the overall project. The lands associated with the railway are zoned for tourist development in the County Development Plan 2023-2029 (Refer to Appendix D for land use maps). While the sites have been designated as Flood Zone A within the SFRA, the zoning and strategic function of the proposed development satisfy the requirements of Criterion 1. Accordingly, Criterion 1 is assessed as being satisfied.

Criterion 2: The proposal has been subject to an appropriate flood risk assessment that demonstrates:

Criterion 2 (i) The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk.

The proposed design features of at grade construction utilising PICP, landscaping and SuDS features to control surface runoff rates. There will be no loss of floodplain storage or disruption of existing surface flow pathways. The proposed trailhead will not affect the frequency or severity of flood level in the area. The site location means that floodwaters will drain directly to the Moyasta river watercourse prior to discharge to the bay. It is unlikely that that the proposed development will increase exposure of the public to the flood risk as the N67 would be inundated during peak flood events. Criteria 2(i) is assessed as being satisfied.

Criterion 2 (ii) The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible.

The design of the trailhead incorporates flood resilient construction and measures to control surface runoff rates. With the design measures in place there will be no increase in flood extents or inundation durations The trailhead as proposed will not increase flood risk locally or significantly increase exposure of the public to flood risk. Criterion 2 (ii) is assessed as being satisfied.

Criterion 2 (iii) The development proposed includes measures to ensure that residual risks to the area and/or development can be managed to an acceptable level as regards the adequacy of existing flood protection measures or the design, implementation and funding of any future flood risk management measures and provisions for emergency services access.

The proposed trailhead and offline Greenway sections have been designed to minimise residual flood risk in the area. There are no plans for a FRS in the area and local flood risk is managed by development zoning. Criterion (iii) is assessed as being satisfied.

Criterion 2 (iv) The development proposed addresses the above in a manner that is also compatible with the achievement of wider planning objectives in relation to development of good urban design and vibrant and active streetscapes.

The trailhead and associated landscaping and traffic calming measures will provide segregated active travel facilities in Moyasta and are consistent with zoning objectives in the CCDP. Criterion 2 (iv) is assessed as being met.

4.2.3 Proposed Offline Greenway Sections Justification Test

The locations of the offline Greenway sections are and not subject to specific zoning policies. The CCDP contains an objective to prioritise the development of the West Clare Greenway. The Kilkee to Kilrush Greenway development accords with Strategic Priority 15 of the County Clare Tourism Strategy 2030. The proposed bridges at this location contributes to these aims. Criterion 1 is assessed as being met.

Criterion 2: The proposal has been subject to an appropriate flood risk assessment that demonstrates:

Criterion 2 (i) The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk.

The potential impacts of the proposed offline sections on surface drainage pathways and floodplains have been assessed. The offline sections are subject to coastal flood risk and there will be no loss of floodplain storage. The design of the sections will maintain connectivity to existing drainage outfalls ensuring minimal disruption of existing surface flow pathways during operation. Criteria 2 (i) is assessed as being satisfied.

Criterion 2 (ii) The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible.

The paved surface of the offline sections will be elevated above the HEFS peak flood levels. This design measure minimises the risk of inundation and associated damage to the Greenway pavement. The offline Greenway sections as proposed will not increase flood risk locally or significantly increase exposure of people to flood risk locally. The areas in which the offline sections are to be constructed are primarily rural and no pathway for an increase in

flood risk to vulnerable receptors has been identified by the flood risk assessment. Criterion 2 (ii) is assessed as being satisfied.

Criterion 2 (iii) The development proposed includes measures to ensure that residual risks to the area and/or development can be managed to an acceptable level as regards the adequacy of existing flood protection measures or the design, implementation and funding of any future flood risk management measures and provisions for emergency services access.

The proposed offline Greenway sections have been designed to minimise residual flood risk. The alignments have been selected to avoid flood risk impacts to vulnerable receptors and the design of the offline sections will not adversely impact existing drainage patterns. Criterion 2 (iii) is assessed as being satisfied.

Criterion 2 (iv) The development proposed addresses the above in a manner that is also compatible with the achievement of wider planning objectives in relation to development of good urban design and vibrant and active streetscapes.

As the proposed locations are rural, Criterion 2 (iv) does not apply in this case.

5. FLOOD RISK ASSESSMENT CONCLUSIONS

A Stage 1 and Stage 2 Flood Risk Assessment has been conducted for the proposed development. The sources of available flood risk information have been assessed as sufficient to assign Fluvial and Coastal Flood Zones for the proposed Greenway.

The Stage 1 Flood Risk assessment identified locations along the proposed alignment where coastal and fluvial flood risk are significant. In accordance with the Guidelines, Flood Zones have been defined based on existing information and flood vulnerability classifications assigned to the Greenway mainline and offline sections and trailheads. A Stage 2 Flood Risk Assessment and associated Justification Test have been completed where required under the Guidelines. It is concluded that a Stage 3 Flood Risk Assessment is not required under the Guidelines.

It is concluded that the proposed development is appropriate under national and regional flood risk management policies.

6. FLOOD RISK ASSESSMENT CONCLUSIONS

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(Western CFRAM Unit of Management 34 Moy and Killala Bay Hydrology Report). Office of Public Works. Retrieved 12 05, 2025, from https://s3-eu-west-1.amazonaws.com/docs.floodinfo.opw/floodinfo_docs/Western_CFRAM/_UOM_34_/01_Hydrology/2202_TECH_171012_UoM34_Final_Hydrology_Report_v6.0.pdf

APPENDIX A

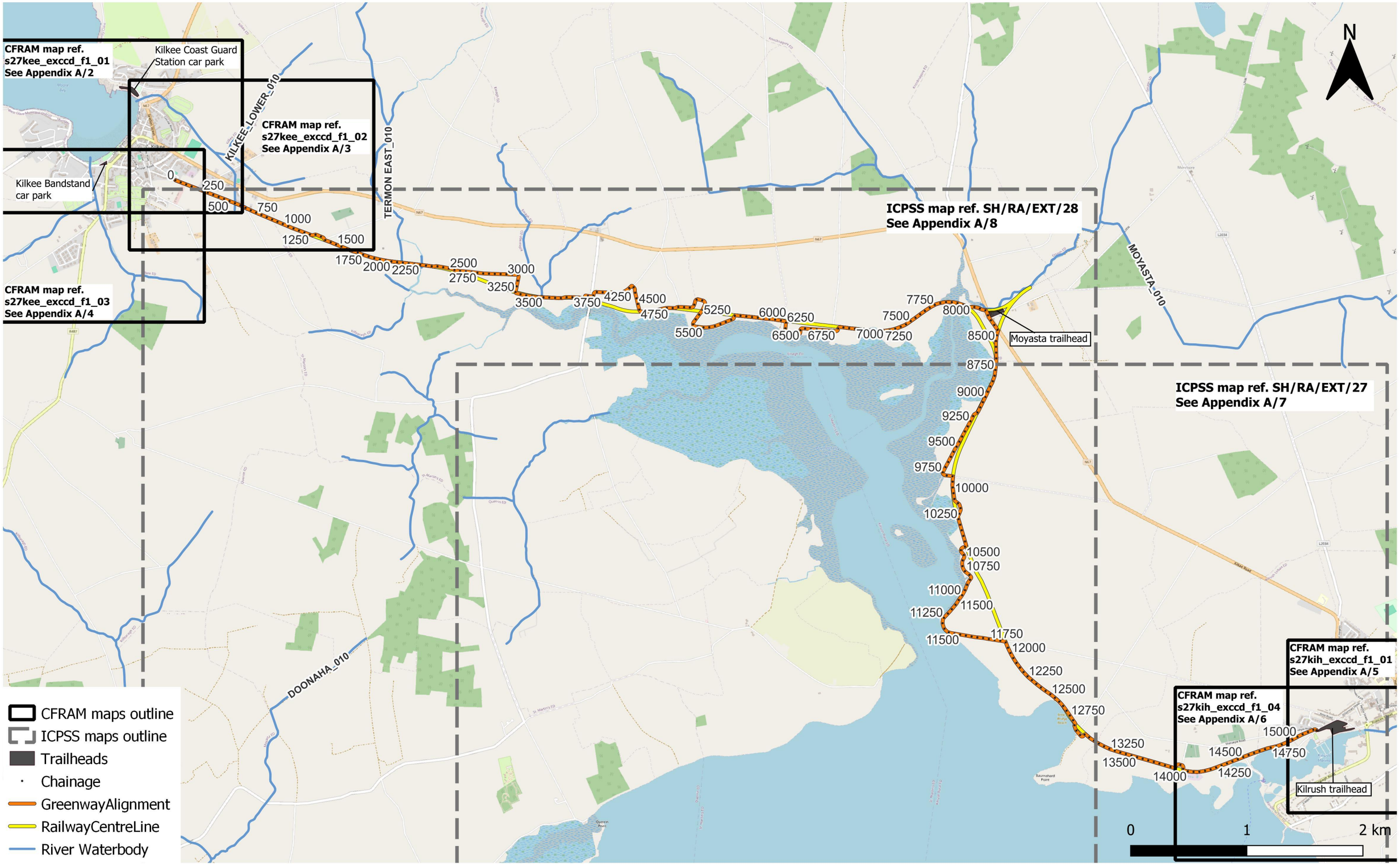
COASTAL FLOOD MAPS

APPENDIX A/1

CFRAM AND ICPSS COVERAGE

Proposed West Clare Railway Greenway Section 1
CFRAM and ICPSS Coverage - Coastal Flooding (present day)

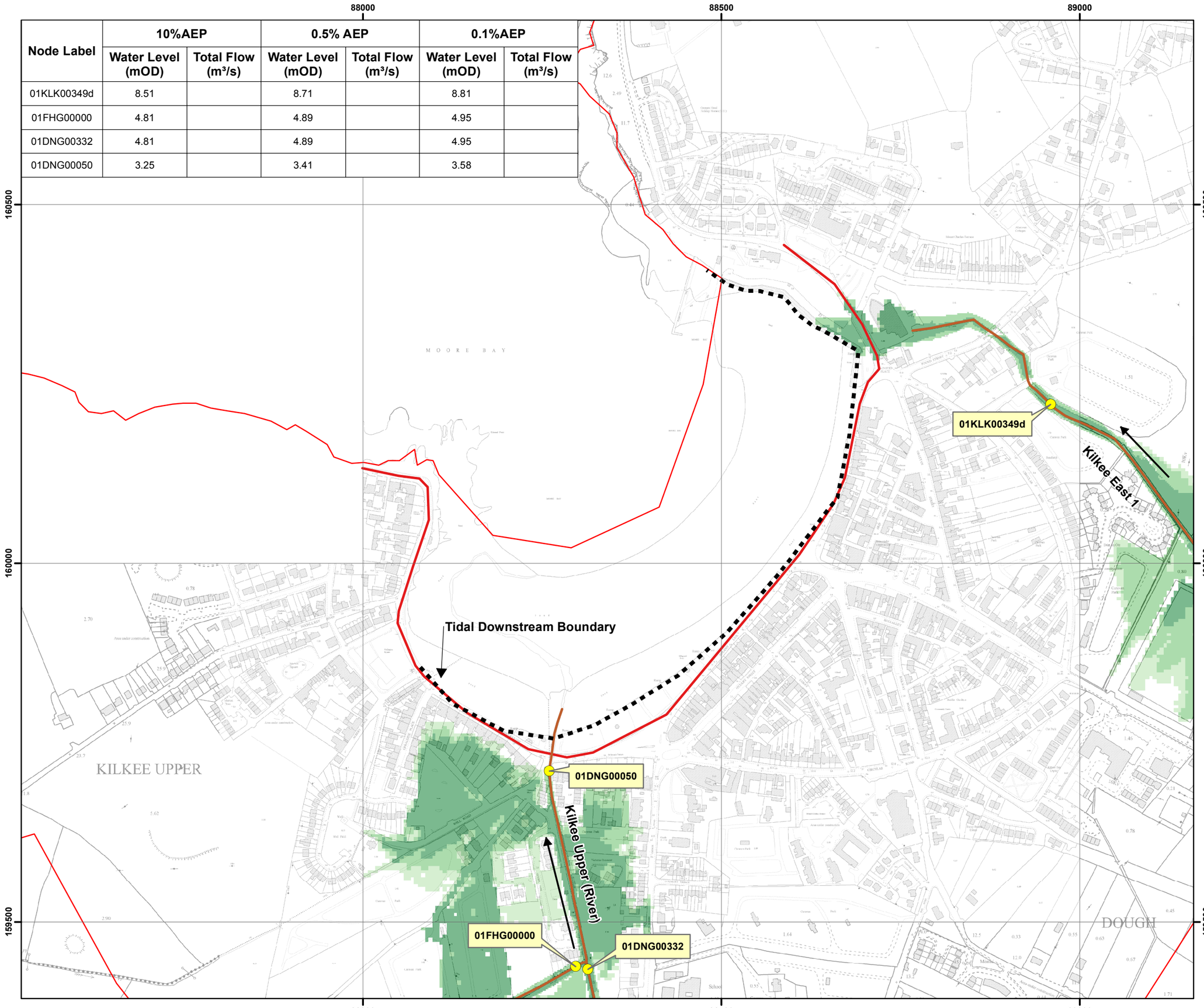
1 in 30000 @ A3



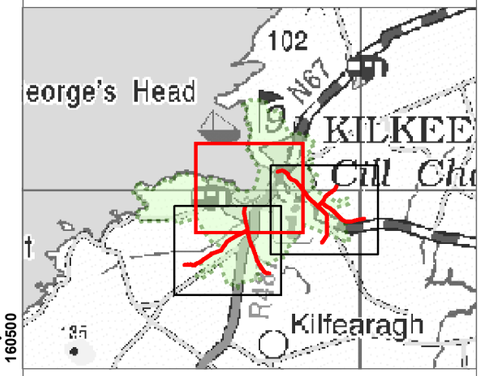
APPENDIX A/2

CFRAM PRESENT-DAY COASTAL FLOOD EXTENTS KILKEE 1 OF 3

Node Label	10%AEP		0.5% AEP		0.1%AEP	
	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)
01KLK00349d	8.51		8.71		8.81	
01FHG00000	4.81		4.89		4.95	
01DNG00332	4.81		4.89		4.95	
01DNG00050	3.25		3.41		3.58	



Location Plan:



Legend:

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

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

0.5% AEP Coastal Flood Extent
(1 in 200 chance in any given year)

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

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Co. Meath
C15 NX36

Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	COASTAL-TIDAL
Area:	KILKEE
Scenario:	EXISTING
Drawn by: GH	Date: JUNE 2016
Checked by: AC	Date: JUNE 2016
Reviewed by: MC	Date: JUNE 2016
Approved by: PS	Date: JUNE 2016
Map Number:	S27KEE_EXCCD_F1_01
Sheet: 1 of 3	Revision: 0
Map Scale: 1: 5000	Plot Scale: 1:1 @ A3

APPENDIX A/3

CFRAM PRESENT-DAY COASTAL FLOOD EXTENTS KILKEE 2 OF 3

89000 89500 90000

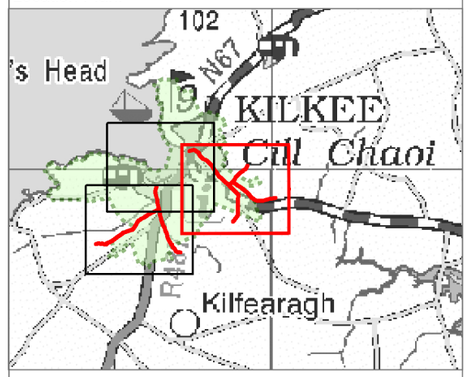
160000 159500

01KLK00349d
Kilkee East 1
01KLE00332
Upstream Model Limit
Kilkee East 3
01KLE00000
02ROA00000
01KLK00824
01ROA00085
01ROA00038
02KLK00000
Kilkee East 2
02ROA00670
Upstream Model Limit
Kilkee East 1
Upstream Model Limit

Node Label	10%AEP		0.5%AEP		0.1%AEP	
	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)
02ROA00670	11.18		11.18		11.18	
02ROA00000	9.15		9.32		9.36	
02KLK00000	9.01		9.09		9.15	
01ROA00085	9.15		9.32		9.36	
01ROA00038	9.07		9.16		9.18	
01KLK00824	8.87		9.04		9.13	
01KLK00349d	8.51		8.71		8.81	
01KLE00332	11.01		11.15		11.23	
01KLE00000	9.15		9.32		9.36	

0 50 100 200 300 400 500 Meters

Location Plan:



Legend:

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

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

0.5% AEP Coastal Flood Extent
(1 in 200 chance in any given year)

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

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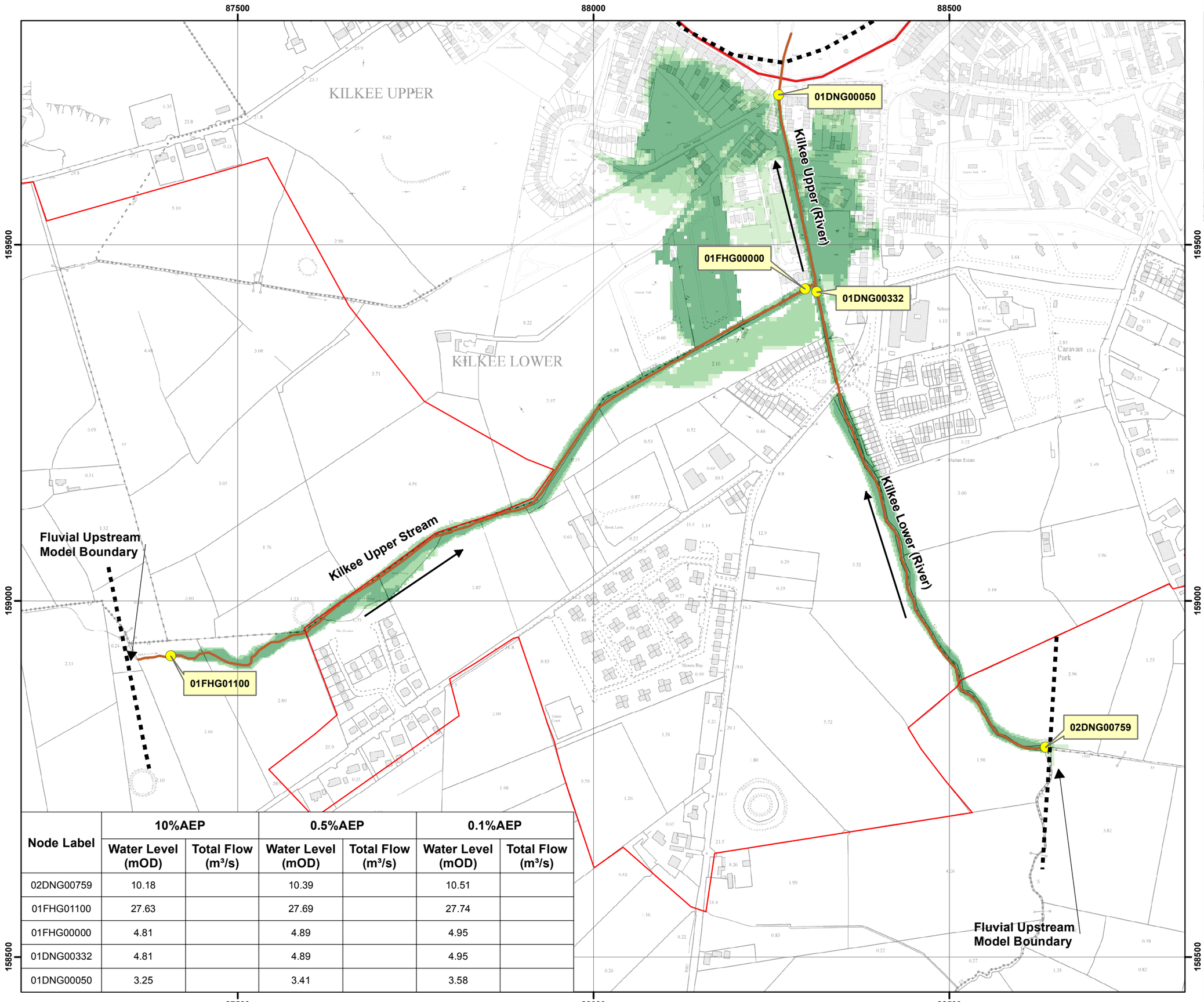
Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	COASTAL-TIDAL
Area:	KILKEE
Scenario:	EXISTING
Drawn by: GH	Date: JUNE 2016
Checked by: AC	Date: JUNE 2016
Reviewed by: MC	Date: JUNE 2016
Approved by: PS	Date: JUNE 2016
Map Number:	S27KEE_EXCCD_F1_02
Sheet: 2 of 3	Revision: 0
Map Scale: 1: 5000	Plot Scale: 1:1 @ A3

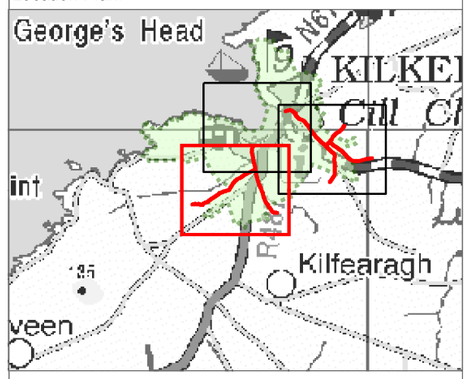
APPENDIX A/4

CFRAM PRESENT-DAY COASTAL FLOOD EXTENTS KILKEE 3 OF 3



Node Label	10%AEP		0.5%AEP		0.1%AEP	
	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)
02DNG00759	10.18		10.39		10.51	
01FHG01100	27.63		27.69		27.74	
01FHG00000	4.81		4.89		4.95	
01DNG00332	4.81		4.89		4.95	
01DNG00050	3.25		3.41		3.58	

Location Plan:



Legend:

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

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

0.5% AEP Coastal Flood Extent
(1 in 200 chance in any given year)

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

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Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	COASTAL-TIDAL
Area:	KILKEE
Scenario:	EXISTING
Drawn by: GH	Date: JUNE 2016
Checked by: AC	Date: JUNE 2016
Reviewed by: MC	Date: JUNE 2016
Approved by: PS	Date: JUNE 2016
Map Number:	S27KEE_EXCCD_F1_03
Sheet: 3 of 3	Revision: 0
Map Scale: 1: 5000	Plot Scale: 1:1 @ A3

APPENDIX A/5

CFRAM PRESENT-DAY COASTAL FLOOD EXTENTS KILRUSH 1 OF 2

99000 99500 100000

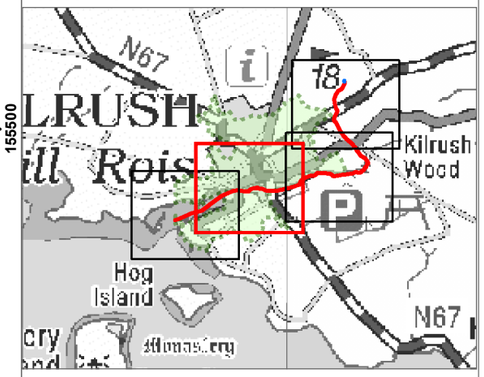
155500 155000 154500

01WOO02103
01WOO01003u
01WOO01190u
01WOO01735u
01WOO00542
Kilrush Creek
KILRUSH

Node Label	10 % AEP		0.5% AEP		0.1% AEP	
	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)
01WOO02103	6.32		6.51		6.57	
01WOO01735u	5.15		5.31		5.39	
01WOO01190u	2.66		2.82		2.92	
01WOO01003u	0.51		0.75		1.32	
01WOO00542	0.30		0.73		1.30	

0 50 100 200 300 400 500 Meters

Location Plan:



Legend:

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

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

0.5% AEP Coastal Flood Extent
(1 in 200 chance in any given year)

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

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Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	COASTAL-TIDAL
Area:	KILRUSH
Scenario:	EXISTING
Drawn by: EF	Date: JUNE 2016
Checked by: AC	Date: JUNE 2016
Reviewed by: PT	Date: JUNE 2016
Approved by: PT	Date: JUNE 2016
Map Number:	S27KIH_EXCCD_F1_01
Sheet: 1 of 4	Revision: 0
Map Scale: 1: 5000	Plot Scale: 1:1 @ A3

APPENDIX A/6

CFRAM PRESENT-DAY COASTAL FLOOD EXTENTS KILRUSH 2 OF 2

Node Label	10 % AEP		0.5% AEP		0.1% AEP	
	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)
01WOO01003u	0.51		0.75		1.32	
01WOO00542	0.30		0.73		1.30	
01WOO00000	2.98		3.37		3.58	

98000 98500 99000

155000 154500 154000

01WOO01003u

Kilrush Creek

01WOO00542

Tidal Downstream Boundary

01WOO00000

GraveYard

Mud

Mud & Shingle

Skagh Point

Carrigillaun

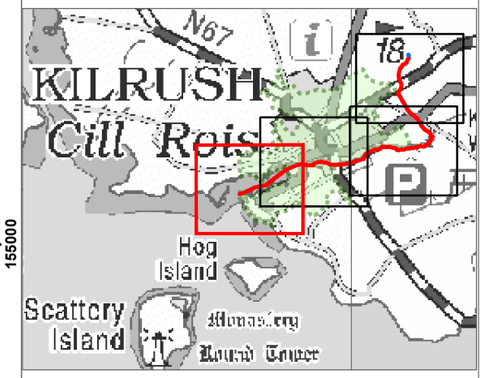
Watch House Point

Coastguards Arch

CAPPAGH PIER

0 50 100 200 300 400 500 Meters

Location Plan:



Legend:

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

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

0.5% AEP Coastal Flood Extent
(1 in 200 chance in any given year)

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

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Project:		SHANNON CFRAM STUDY
Map Type:		EXTENT
Source:		COASTAL-TIDAL
Area:		KILRUSH
Scenario:		EXISTING
Drawn by:	EF	Date: JUNE 2016
Checked by:	AC	Date: JUNE 2016
Reviewed by:	PT	Date: JUNE 2016
Approved by:	PT	Date: JUNE 2016
Map Number:		S27KIH_EXCCD_F1_04
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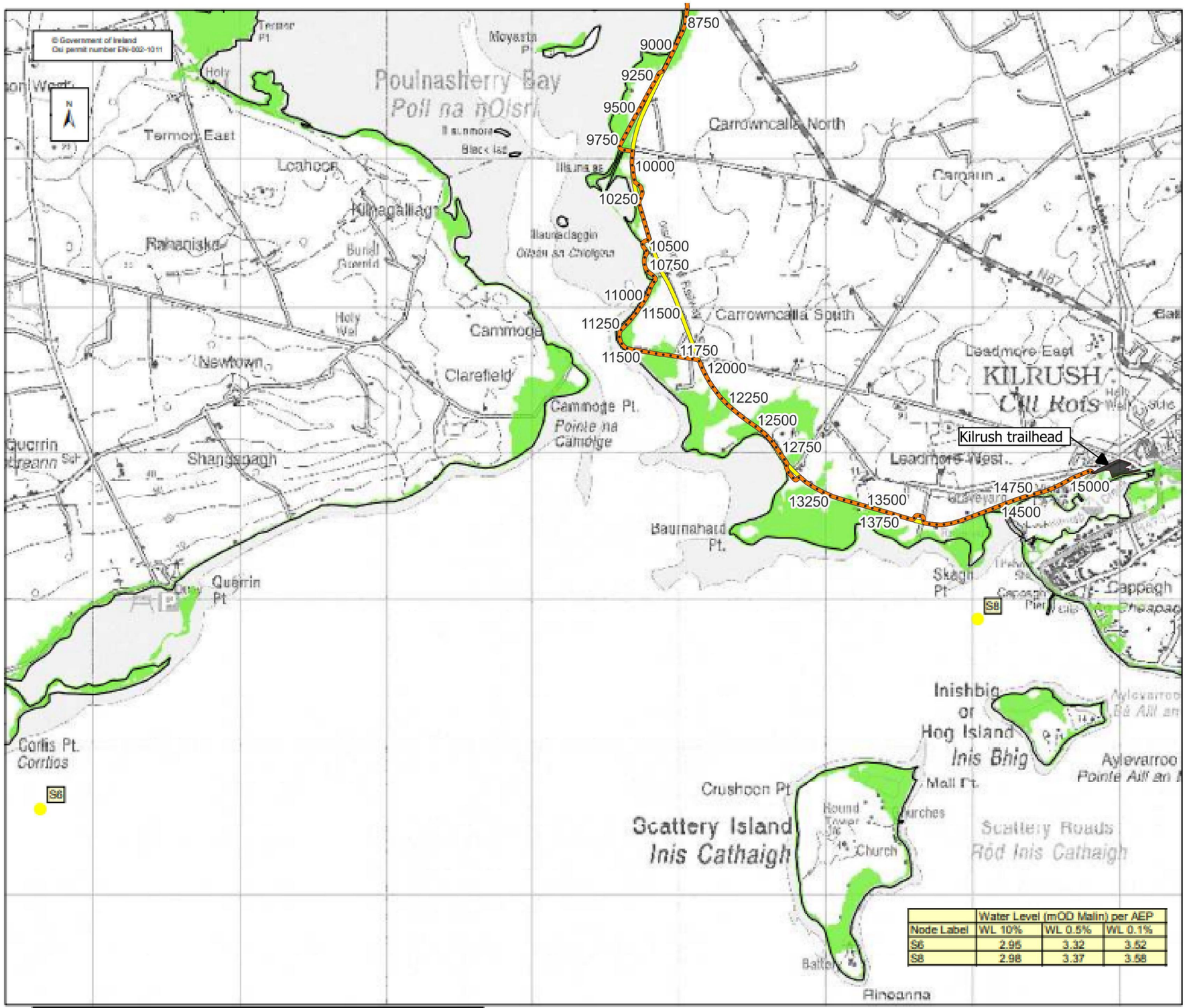
APPENDIX A/7

ICPSS PRESENT-DAY COASTAL FLOOD EXTENTS KILRUSH



	Water Level (mOD Malin) per AEP		
Node Label	WL 10%	WL 0.5%	WL 0.1%
S6	2.95	3.32	3.52
S8	2.98	3.37	3.58

Location Plan :

EXTENT MAP

Legend:

- 0.5% AEP FLOOD EXTENT (1 in 200 chance in any given year)
- 0.1% AEP FLOOD EXTENT (1 in 1000 chance in any given year)
- High Water Mark (HWM)
- Node Point
- S 34 Node Label
- Trailheads
- Chainage
- GreenwayAlignment
- RailwayCentreLine

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Elmwood House
74 Boucher Road
Belfast
BT 12 6RZ
Northern Ireland

OPW
Office of Public Works
17-19 Lower Hatch Street
Dublin 2
Ireland

Project :
IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE IV

Map :
SHANNON ESTUARY FLOOD EXTENT MAP

Map Type :	FLOOD EXTENT		
Source :	TIDAL FLOODING		
Map area :	RURAL AREA		
Scenario :	CURRENT		
Figure By :	PJW	Date :	JUN 2011
Checked By :	JMC	Date :	JUN 2011

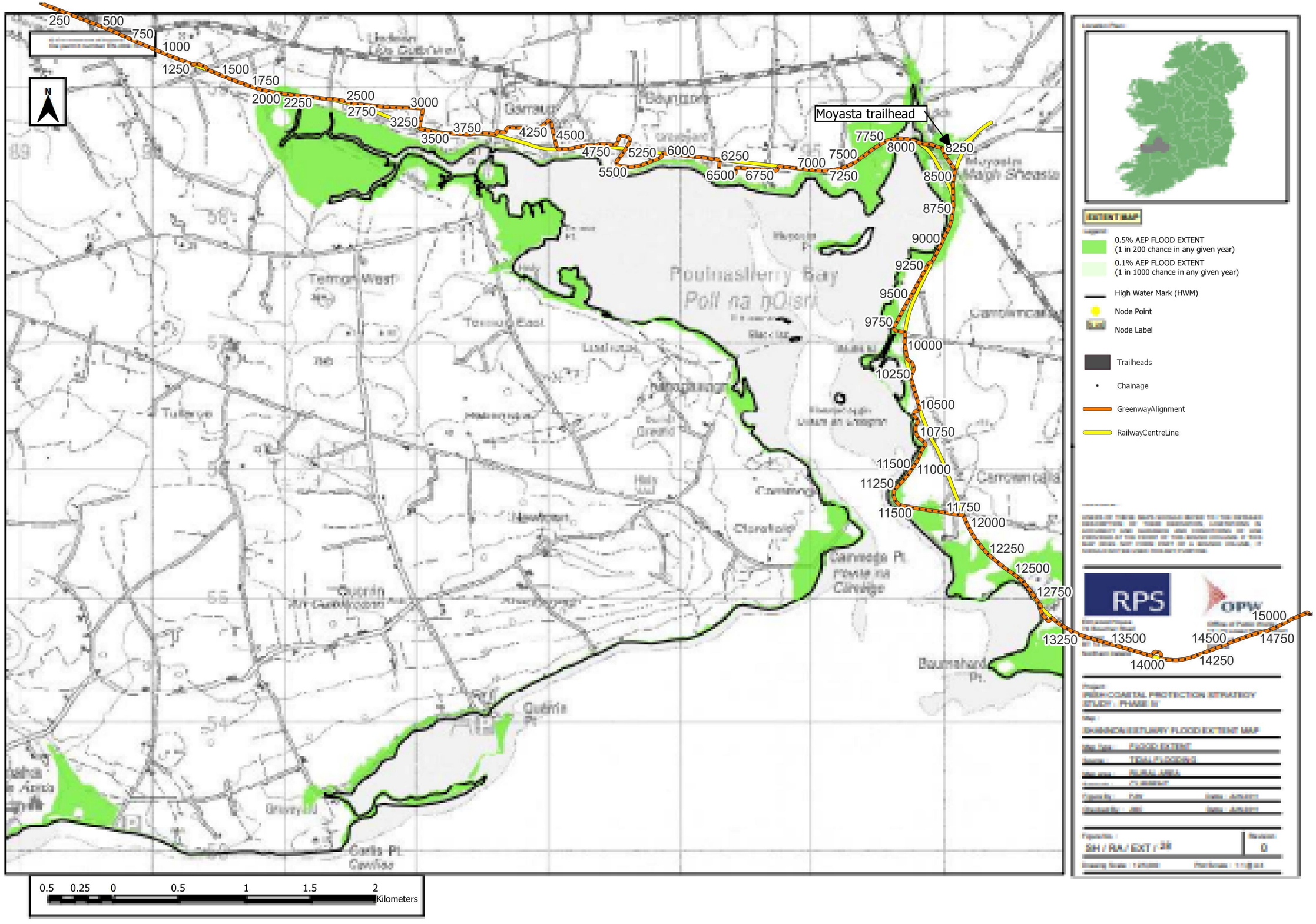
Figure No. : SH / RA / EXT / 27

Revision 0

Drawing Scale : 1:25,000 Plot Scale : 1:1 @ A3

APPENDIX A/8

ICPSS PRESENT-DAY COASTAL FLOOD EXTENTS POULNASHERRY BAY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3250
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4250
4500
4750
5250
6000
6250
5500
6500
6750
7000
7500
7250
7750
8000
8250
8500
8750
9000
9250
9500
9750
10000
10250
10500
10750
11500
11000
11250
11500
11750
12000
12250
12500
12750
13250
13500
14000
14500
14250
14750
15000
Moyasta trailhead
N
Poulnasherry Bay
Poll na nOisrí
Carrigaholt
Cappagh
Querrin
Baumaharde Pt.
Carrig Pt.
Carrigeeja Pt.
Cross
Tullaroe
Newtown
Clonrehaw
Ballyline
Ballynote
Ballyheeny
Ballyhea
Ballyhea Abbey
Ballyhea Castle
Ballyhea Church
Ballyhea Cross
Ballyhea Lough
Ballyhea Pt.
Ballyhea Quay
Ballyhea Rock
Ballyhea Strand
Ballyhea Village
Ballyhea West
Ballyhea East
Ballyhea North
Ballyhea South
Ballyhea Upper
Ballyhea Lower
Ballyhea Middle
Ballyhea Old
Ballyhea New
Ballyhea Big
Ballyhea Little
Ballyhea Hill
Ballyhea Glen
Ballyhea Wood
Ballyhea Bridge
Ballyhea Road
Ballyhea Street
Ballyhea Square
Ballyhea Green
Ballyhea Common
Ballyhea Park
Ballyhea Field
Ballyhea Meadow
Ballyhea Pasture
Ballyhea Orchard
Ballyhea Garden
Ballyhea House
Ballyhea Cottage
Ballyhea Farm
Ballyhea Mill
Ballyhea Forge
Ballyhea Inn
Ballyhea Hotel
Ballyhea Shop
Ballyhea Post Office
Ballyhea School
Ballyhea Church
Ballyhea Graveyard
Ballyhea Cemetery
Ballyhea Well
Ballyhea Spring
Ballyhea Stream
Ballyhea River
Ballyhea Bridge
Ballyhea Ford
Ballyhea Pier
Ballyhea Harbour
Ballyhea Quay
Ballyhea Wharf
Ballyhea Jetty
Ballyhea Slipway
Ballyhea Boathouse
Ballyhea Lighthouse
Ballyhea Beacon
Ballyhea Buoy
Ballyhea Mooring
Ballyhea Anchorage
Ballyhea Channel
Ballyhea Sandbank
Ballyhea Rock
Ballyhea Reef
Ballyhea Island
Ballyhea Peninsula
Ballyhea Bay
Ballyhea Estuary
Ballyhea Mouth
Ballyhea Entrance
Ballyhea Exit
Ballyhea Boundary
Ballyhea Townland
Ballyhea Parish
Ballyhea Barony
Ballyhea County
Ballyhea Province
Ballyhea Country
Ballyhea Ireland
Ballyhea Europe
Ballyhea World
Ballyhea Universe
Ballyhea Everything
Ballyhea Nothing
Ballyhea Void
Ballyhea Infinity
Ballyhea Eternity
Ballyhea Time
Ballyhea Space
Ballyhea Matter
Ballyhea Energy
Ballyhea Force
Ballyhea Power
Ballyhea Work
Ballyhea Motion
Ballyhea Rest
Ballyhea Equilibrium
Ballyhea Balance
Ballyhea Harmony
Ballyhea Peace
Ballyhea Love
Ballyhea Hate
Ballyhea War
Ballyhea Conflict
Ballyhea Resolution
Ballyhea Agreement
Ballyhea Treaty
Ballyhea Alliance
Ballyhea Enemy
Ballyhea Friend
Ballyhea Neutral
Ballyhea Ally
Ballyhea Foe
Ballyhea Stranger
Ballyhea Guest
Ballyhea Host
Ballyhea Visitor
Ballyhea Resident
Ballyhea Citizen
Ballyhea Subject
Ballyhea Ruler
Ballyhea Leader
Ballyhea Follower
Ballyhea Master
Ballyhea Servant
Ballyhea Slave
Ballyhea Free
Ballyhea Bound
Ballyhea Chain
Ballyhea Link
Ballyhea Knot
Ballyhea Tie
Ballyhea Bond
Ballyhea Union
Ballyhea Separation
Ballyhea Division
Ballyhea Unity
Ballyhea Diversity
Ballyhea Sameness
Ballyhea Difference
Ballyhea Identity
Ballyhea Individuality
Ballyhea Personality
Ballyhea Character
Ballyhea Nature
Ballyhea Essence
Ballyhea Soul
Ballyhea Spirit
Ballyhea Mind
Ballyhea Body
Ballyhea Life
Ballyhea Death
Ballyhea Birth
Ballyhea Rebirth
Ballyhea Reincarnation
Ballyhea Transmigration
Ballyhea Metempsychosis
Ballyhea Transmutation
Ballyhea Transformation
Ballyhea Change
Ballyhea Evolution
Ballyhea Progress
Ballyhea Development
Ballyhea Growth
Ballyhea Decay
Ballyhea Dissolution
Ballyhea Annihilation
Ballyhea Nothingness
Ballyhea Void
Ballyhea Infinity
Ballyhea Eternity
Ballyhea Time
Ballyhea Space
Ballyhea Matter
Ballyhea Energy
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Ballyhea Power
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Ballyhea Motion
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Ballyhea Conflict
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Ballyhea Visitor
Ballyhea Resident
Ballyhea Citizen
Ballyhea Subject
Ballyhea Ruler
Ballyhea Leader
Ballyhea Follower
Ballyhea Master
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Ballyhea Slave
Ballyhea Free
Ballyhea Bound
Ballyhea Chain
Ballyhea Link
Ballyhea Knot
Ballyhea Tie
Ballyhea Bond
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Ballyhea Separation
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Ballyhea Individuality
Ballyhea Personality
Ballyhea Character
Ballyhea Nature
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Ballyhea Body
Ballyhea Life
Ballyhea Death
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Ballyhea Transmigration
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Ballyhea Transmutation
Ballyhea Transformation
Ballyhea Change
Ballyhea Evolution
Ballyhea Progress
Ballyhea Development
Ballyhea Growth
Ballyhea Decay
Ballyhea Dissolution
Ballyhea Annihilation
Ballyhea Nothingness
0.5 0.25 0 0.5 1 1.5 2
Kilometers
EXTENT MAP
0.5% AEP FLOOD EXTENT
(1 in 200 chance in any given year)
0.1% AEP FLOOD EXTENT
(1 in 1000 chance in any given year)
High Water Mark (HWM)
Node Point
Node Label
Trailheads
Chainage
GreenwayAlignment
RailwayCentreLine
RPS
OPW
SH / RA / EXT / 28
0

APPENDIX B

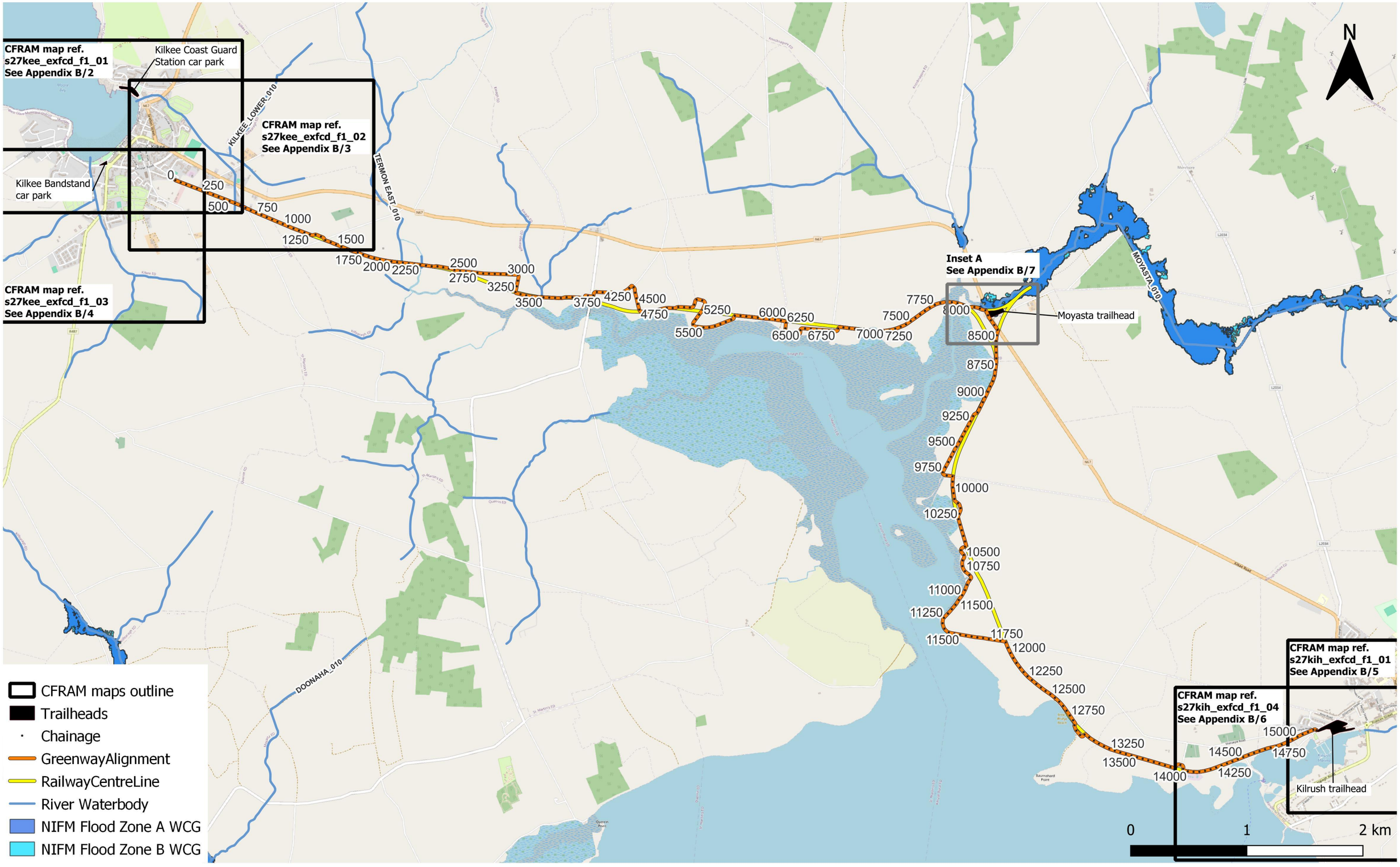
FLUVIAL FLOOD MAPS

APPENDIX B/1

CFRAM AND NIFM COVERAGE

Proposed West Clare Railway Greenway Section 1
CFRAM and NIFM Coverage - Fluvial Flooding (present day)

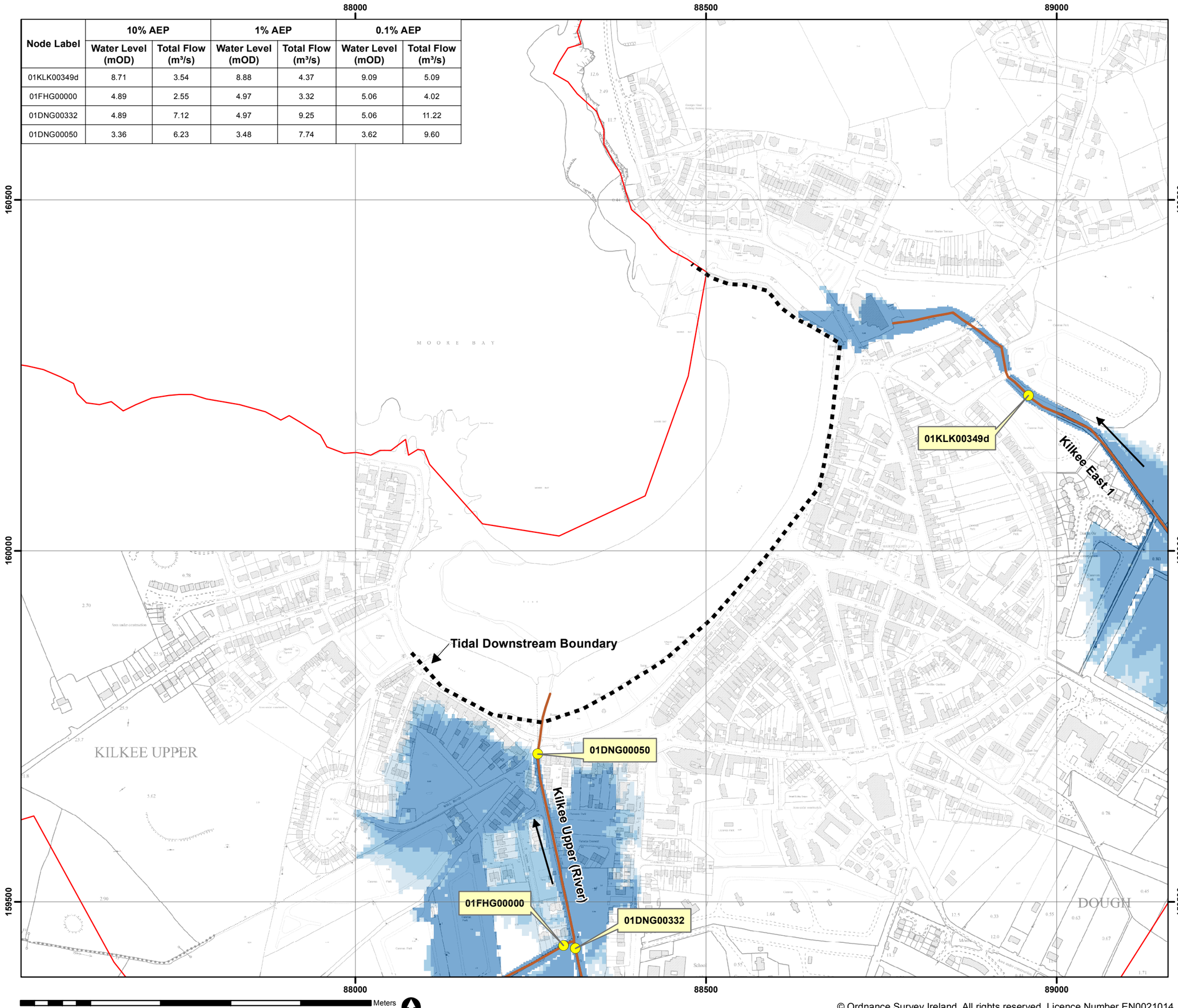
1 in 30000 @ A3



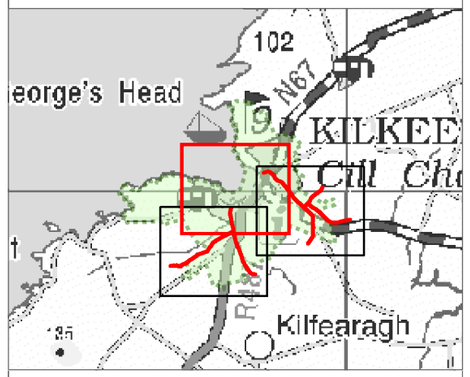
APPENDIX B/2

CFRAM PRESENT-DAY FLUVIAL FLOOD EXTENTS KILKEE 1 OF 3

Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)
01KLK00349d	8.71	3.54	8.88	4.37	9.09	5.09
01FHG00000	4.89	2.55	4.97	3.32	5.06	4.02
01DNG00332	4.89	7.12	4.97	9.25	5.06	11.22
01DNG00050	3.36	6.23	3.48	7.74	3.62	9.60



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:
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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:		KILKEE
Scenario:		EXISTING
Drawn by:	GH	Date: JUNE 2016
Checked by:	AC	Date: JUNE 2016
Reviewed by:	MC	Date: JUNE 2016
Approved by:	PS	Date: JUNE 2016
Map Number:		S27KEE_EXFCD_F1_01
Sheet: 1 of 3		Revision: 0
Map Scale: 1: 5,000		Plot Scale: 1:1 @ A3

APPENDIX B/3

CFRAM PRESENT-DAY FLUVIAL FLOOD EXTENTS KILKEE 2 OF 3

89000 89500 90000

160000

159500

01KLK00349d

Kilkee East 1

01KLE00332

Upstream Model Limit

Kilkee East 3

01KLE00000

02ROA00000

01ROA00085

01KLK00824

01ROA00038

02KLK00000

Kilkee East 2

Upstream Model L imit

Kilkee East 1

02ROA00670

Upstream Model L imit

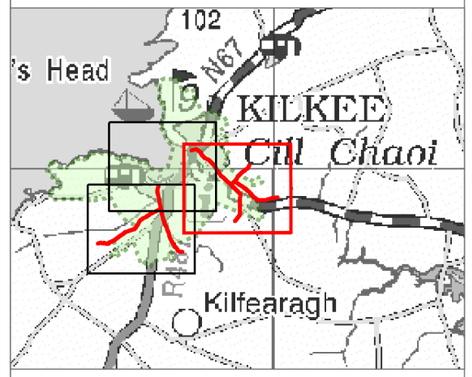
DOUGH

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)
01KLK00349d	8.71	3.54	8.88	4.37	9.09	5.09
01FHG00000	4.89	2.55	4.97	3.32	5.06	4.02
01DNG00332	4.89	7.12	4.97	9.25	5.06	11.22
01DNG00050	3.36	6.23	3.48	7.74	3.62	9.60

89000 89500 90000

0 50 100 200 300 400 500 Meters

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:
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OPW
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Trim
Co. Meath
C15 NX36

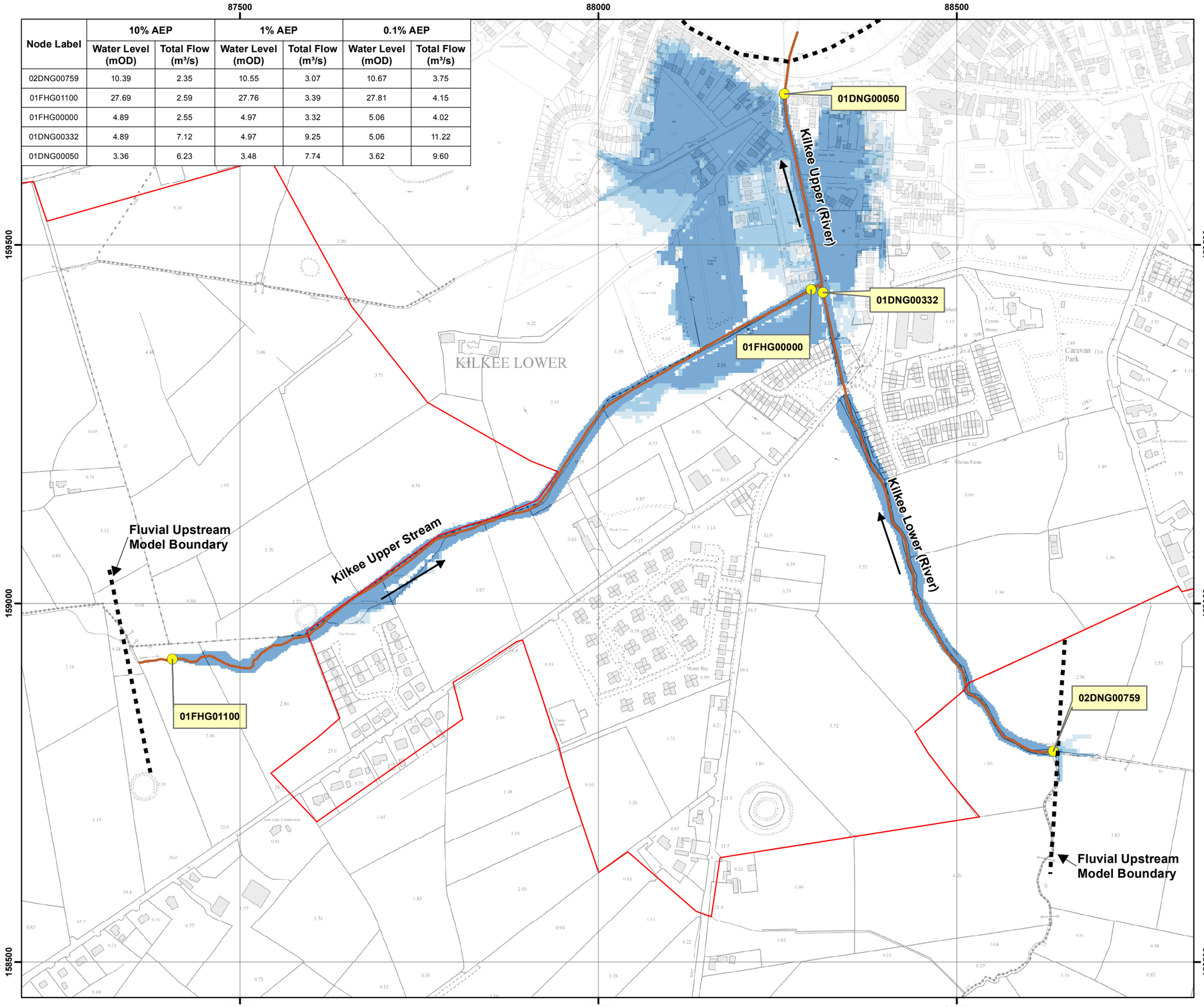
JACOBS
Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	FLUVIAL
Area:	KILKEE
Scenario:	EXISTING
Drawn by: GH	Date: JUNE 2016
Checked by: AC	Date: JUNE 2016
Reviewed by: MC	Date: JUNE 2016
Approved by: PS	Date: JUNE 2016
Map Number:	S27KEE_EXFCD_F1_02
Sheet: 2 of 3	Revision: 0
Map Scale: 1: 5,000	Plot Scale: 1:1 @ A3

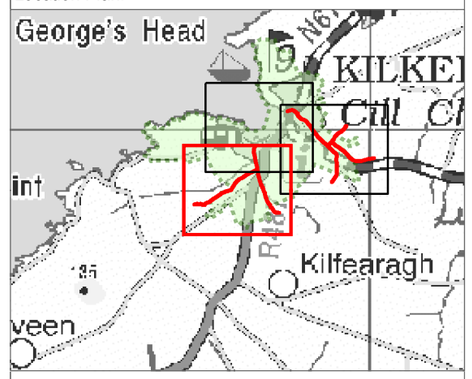
APPENDIX B/4

CFRAM PRESENT-DAY FLUVIAL FLOOD EXTENTS KILKEE 3 OF 3

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)
02DNG00759	10.39	2.35	10.55	3.07	10.67	3.75
01FHG01100	27.69	2.59	27.76	3.39	27.81	4.15
01FHG00000	4.89	2.55	4.97	3.32	5.06	4.02
01DNG00332	4.89	7.12	4.97	9.25	5.06	11.22
01DNG00050	3.36	6.23	3.48	7.74	3.62	9.60



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:
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Co. Meath
C15 NX36

Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	FLUVIAL
Area:	KILKEE
Scenario:	EXISTING
Drawn by: GH	Date: JUNE 2016
Checked by: AC	Date: JUNE 2016
Reviewed by: MC	Date: JUNE 2016
Approved by: PS	Date: JUNE 2016
Map Number:	S27KEE_EXFCD_F1_03
Sheet: 3 of 3	Revision: 0
Map Scale: 1: 5,000	Plot Scale: 1:1 @ A3

APPENDIX B/5

CFRAM PRESENT-DAY FLUVIAL FLOOD EXTENTS KILRUSH 1 OF 2

99000 99500 100000

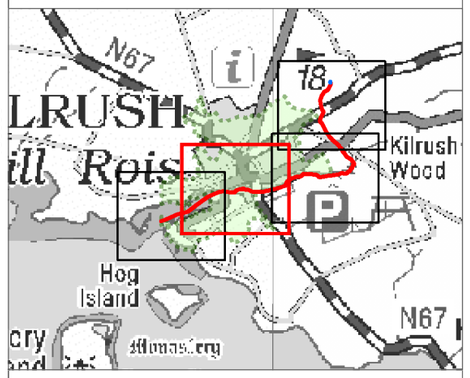
155500 155000 154500

01WOO02103
01WOO01003u
01WOO01190u
01WOO01735u
01WOO00542
Kilrush Creek
KILRUSH

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)
01WOO02103	6.51		6.59		6.63	
01WOO01735u	5.31	8.53	5.42	11.39	5.51	14.16
01WOO01190u	2.82	8.64	2.94	11.40	3.03	13.86
01WOO01003u	0.68	9.176	1.03	12.14	1.41	14.73
01WOO00542	0.63		1.01		1.39	

0 50 100 200 300 400 500 Meters

Location Plan:



Legend:

- Nodes
- Model Reach
- AFA Boundary
- Defence: Wall
- 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:
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OPW
The Office of Public Works
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Trim
Co. Meath
C15 NX36

JACOBS
Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	FLUVIAL
Area:	**KILRUSH**
Scenario:	EXISTING
Drawn by: GH	Date: JUNE 2016
Checked by: AC	Date: JUNE 2016
Reviewed by: MC	Date: JUNE 2016
Approved by: PS	Date: JUNE 2016
Map Number:	S27KIH_EXFCD_F1_01
Sheet: 1 of 4	Revision: 0
Map Scale: 1: 5,000	Plot Scale: 1:1 @ A3

APPENDIX B/6

CFRAM PRESENT-DAY FLUVIAL FLOOD EXTENTS KILRUSH 2 OF 2

98000 98500 99000

155000 154500 154000

01WOO01003u

01WOO00542

Kilrush Creek

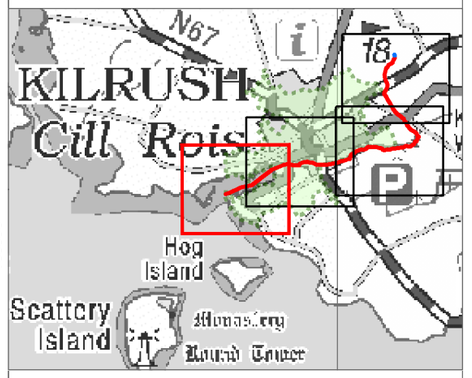
01WOO00000

Tidal Downstream Boundary

Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)	Water Level (mOD)	Total Flow (m^3/s)
01WOO01003u	0.68	9.176	1.03	12.14	1.41	14.73
01WOO00542	0.63		1.01		1.39	
01WOO00000	2.58		2.89		3.19	

0 50 100 200 300 400 500 Meters

Location Plan:



Legend:

- Nodes
- Model Reach
- AFA Boundary
- Defence: Wall
- 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:
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Trim
Co. Meath
C15 NX36

Merrion House
Merrion Road
Dublin 4
D04 R2C5

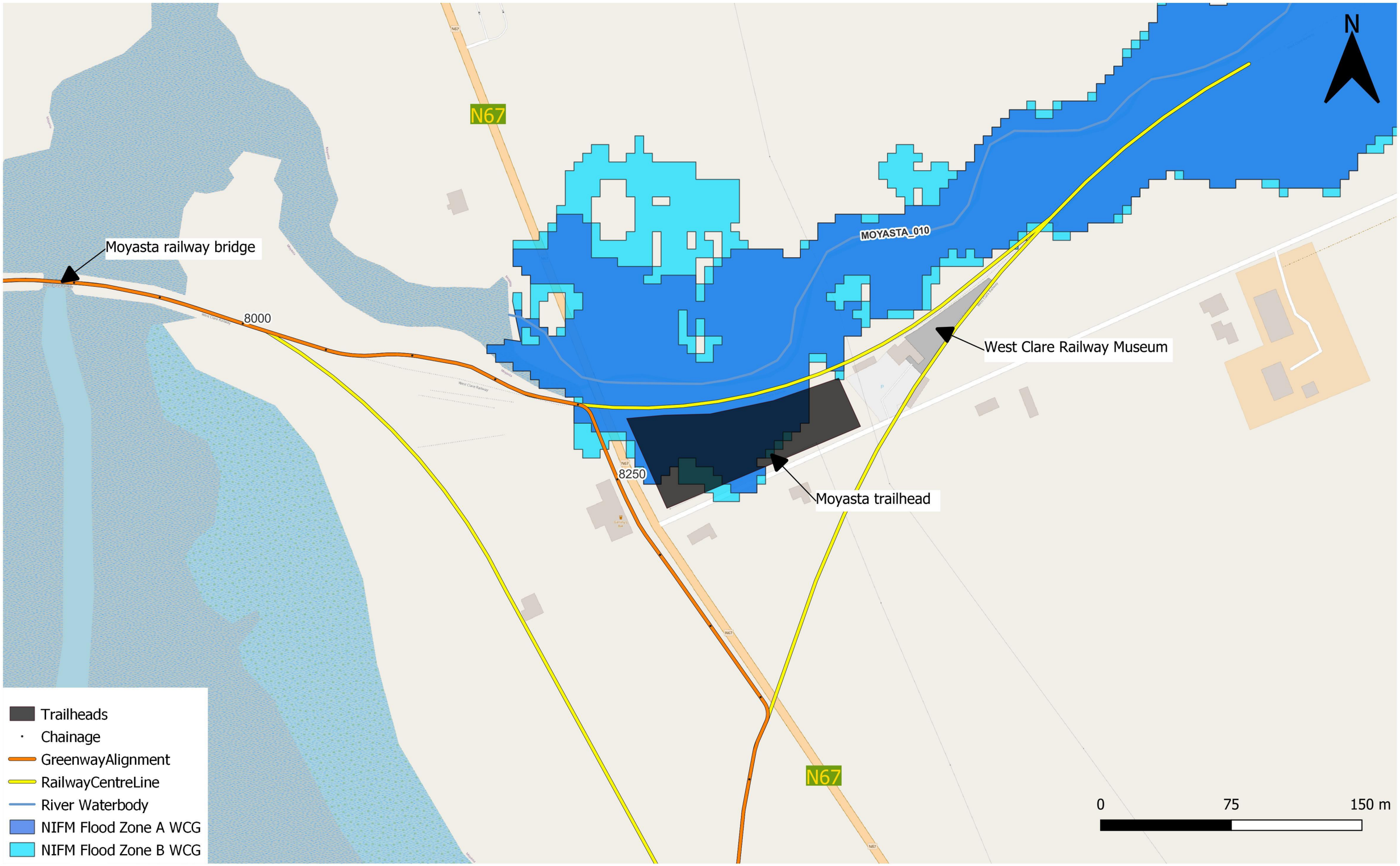
Project:		SHANNON CFRAM STUDY
Map Type:		EXTENT
Source:		FLUVIAL
Area:		KILRUSH
Scenario:		EXISTING
Drawn by:	GH	Date: JUNE 2016
Checked by:	AC	Date: JUNE 2016
Reviewed by:	MC	Date: JUNE 2016
Approved by:	PS	Date: JUNE 2016
Map Number:		S27KIH_EXFCD_F1_04
Sheet: 4 of 4		Revision: 0
Map Scale: 1: 5,000		Plot Scale: 1:1 @ A3

APPENDIX B/7

NIFM PRESENT-DAY FLUVIAL FLOOD EXTENTS MOYASTA

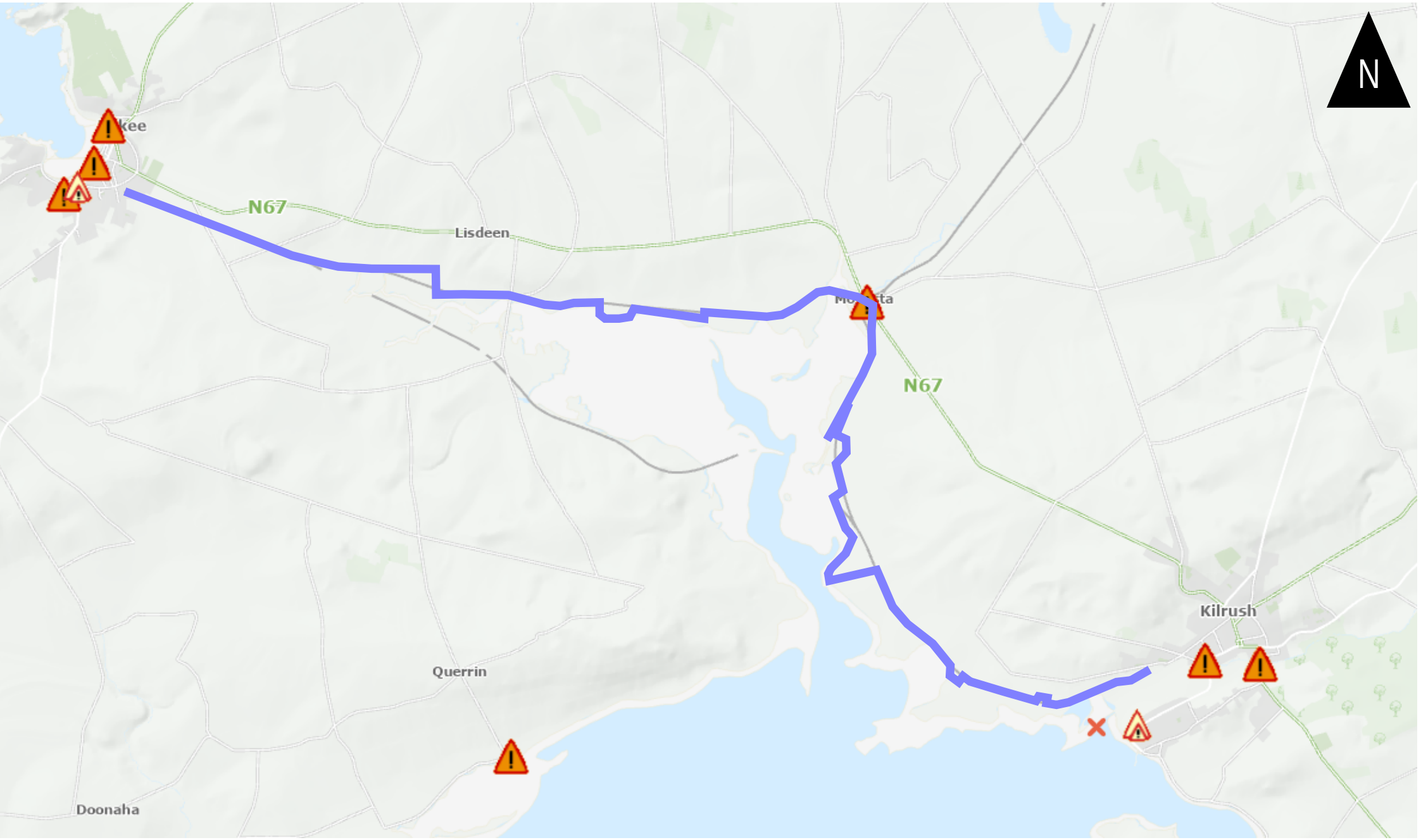
Inset A: Fluvial Flood Extents in Moyasta (present day)

1 in 2000 @ A3



APPENDIX C

PAST FLOOD EVENTS



Approximate route of the proposed West Clare Railway Greenway Section 1

Single Flood Event

Recurring Flood Event

Flooding Reported On Roads Throughout Clare

12 DECEMBER 2015

NEWS

Emergency services are advising motorists from making any unnecessary journeys this lunchtime, with roads throughout the county flooded once more.

Inspector John Ryan of the Clare Garda Division has told Clare FM that they're advice for motorists is to postpone their journeys if possible, and to avoid driving through floods.

Flooding has occured right throughout the county.

The N85 Inagh to Ennistymon Road is closed half a kilometre northwest of Inagh. The road is open from Miltown to Inagh and from Inagh to Ennis.

Flooding has also been reported on routes in East Clare – a full list of affected roads is available below.

The Council says a small number of properties have been hit by flooding, while more were threatened by rising waters primarily because of flash flooding. It's understood these include properties in Clarecastle, Newmarket on Fergus and in Ennis.

Fire services have been called to assist trapped motorists at Maurices Mills and also in Kilnamona.

Sand bags are being made available to members of the public this afternoon, at Ennis Mart and at Clare GAA headquarters in Clare Abbey.

There has been a small reprieve – Met Eireann says rains are becoming less intense and has now withdrawn its second highest level of rain warning. A low-level Status Yellow alert is in place for Munster and Leinster.

ENNIS & ENVIRONS:
Hencheys Cross (Tulla Road) to Lynchs Cross (Quin Road)
R474 at Inch Bridge
Doora village to M18
Corofin to Ennis at Toonagh

EAST CLARE:
Quin to Tulla
R462 Sixmilebridge to Kilmurry
Feakle to Bodyke
Killaloe to Limerick
R466 Broadford side of Broadford to Bridgetown road
Shaughnessy Cross to Kilmurry McMahon
Bodyke to Feakle (at Ross)
Killaloe to O'Brien's Bridge (at Clooney Bridge)
Creevroe Cottages and Garranboy Church, Killaloe
Larkins Bridge (Killaloe)
Ballymurtagh, Shannon
Morgans Cross to Doora Church, Ballaghboy, Doora
Road to Drumcliffe, before Equestrian Centre

WEST/NORTH CLARE:
Coast road from Labasheeda to Kildysart
Maurices Mills (Inagh)
Ennistymon to Corofin
Approach roads to Kilkee
Miltown to Coore (at Kildimo)
Corofin to Kilfenora Road at Leamaneh Castle
Labasheeda to Kildysart
Cooraclare to Kilrush
N67 at Mountrivers
Kilmihil to Knockalough
Kilmaley to Connolly
Road between Cooraclare and Kilrush starting to flood at Cooraclare

The Council is continuing to operate an emergency helpline – 1890 252 943 – for members of the public to report issues in their own areas.

Kilkee Flood Relief Scheme

An Coimisiún Pleanála Submission for Kilkee Flood Relief Scheme

Kieran O'Donnell TD, Minister of State with responsibility for the Office of Public Works (OPW), announced on 6 August 2024 that his Office has given the approval for Clare County Council to submit a planning application for a much-needed flood relief scheme for Kilkee:

"I wish to acknowledge the support from the Kilkee community that was invaluable to inform the design of a scheme for its town, which will protect the 134 properties including 118 residential and families at risk from flooding…. This is the first of two planned schemes for Kilkee and work is separately continuing on design for a scheme to manage the risk from coastal flooding in the town."

The scheme has now been submitted for planning consent from An Coimisiún Pleanála. The planning application documents are available to download from the Project Documents section of this website. The progress of the planning application can be viewed at An Coimisiún Pleanála.

Kilkee is a popular seaside resort town located adjacent to Moore Bay on the west coast of County Clare. The Atlantic Stream and the Victoria Stream are the major watercourses that flow through the town, with the Atlantic Stream to the

north and the Victoria Stream to the south. Both watercourses are tidal. Kilkee is susceptible to both coastal and fluvial flood risk.

There have been a number of instances of flooding in Kilkee. The Victoria Stream is noted to overflow its banks over a length of 200-300m on an annual basis, causing flooding of Church Street, Well Road and a number of properties. Many more properties are at risk.
In 2014, winter storms damaged a section of the existing seawall and promenade, a protected structure, and a 45m section was replaced with a terraced structure.

Improvements to the flood defence regime are required to try to prevent re-occurrences of such flood events. With this in mind, Clare County Council, along with project partners the OPW, appointed JBA Consulting to review and develop the Shannnon CFRAM study (2012) and design an appropriate viable, cost-effective and sustainable flood relief scheme which aims to minimise risk to human beings, the existing community, social amenity, environment and landscape character.

This website has been set up to provide information to anyone who is interested in the scheme and to keep you informed of the project's progress.

Latest News

Newsletter No.4 (November 2024)
Read More

Newsletter No.3 (February 2024)
Read More

Newsletter No.2 (April 2023)
Read More

Newsletter No.1 (September 2021)
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Project Commencement
Read More

Public Information Video

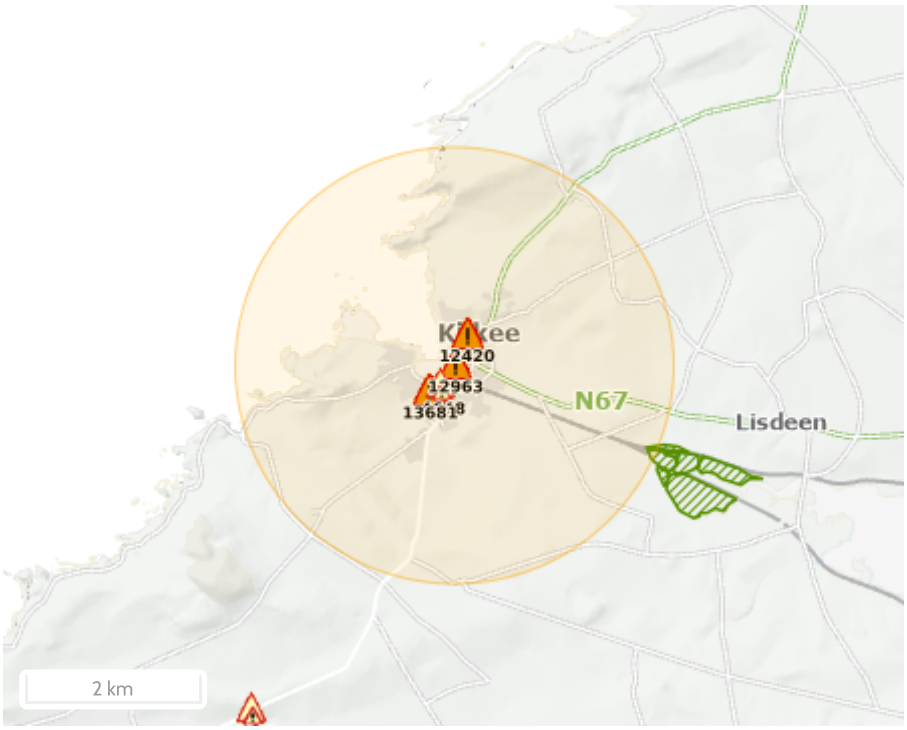
04:29

Past Flood Event Local Area Summary Report

Report Produced: **4/9/2025 16:12**

This Past Flood Event Summary Report summarises all past flood events within 2.5 kilometres of the map centre.

This report has been downloaded from www.floodinfo.ie (the "**Website**"). The users should take account of the restrictions and limitations relating to the content and use of the Website that are explained in the Terms and Conditions. It is a condition of use of the Website that you agree to be bound by the disclaimer and other terms and conditions set out on the Website and to the privacy policy on the Website.



Map Legend

- Single Flood Event
- Recurring Flood Event
- Past Flood Event Extents
- Drainage Districts Benefited Lands*
- Land Commission Benefited Lands*
- Arterial Drainage Schemes Benefited Lands*

* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained on Floodinfo.ie

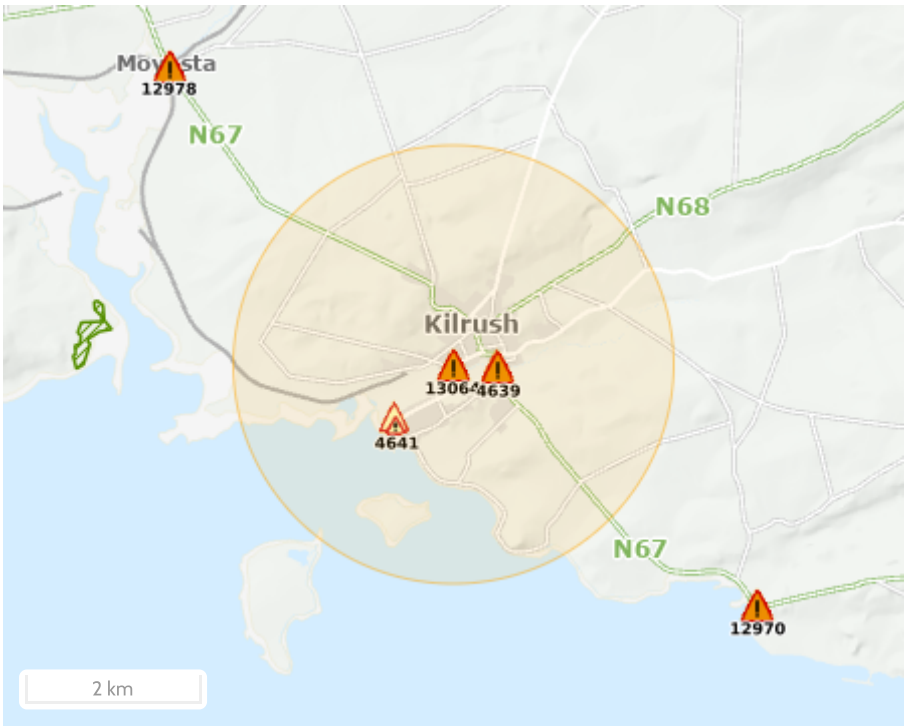
4 Results

	Name (Flood_ID)	Start Date	Event Location
1.	Flooding at Kilkee on 01/01/2014 (ID-12963)	01/01/2014	Approximate Point
	Additional Information: Reports (0) Press Archive (0)		
2.	Flooding at Kilkee on 14/10/2019 (ID-13681)	14/10/2019	Approximate Point
	Additional Information: Reports (0) Press Archive (0)		
3.	Kilkee, Co.Clare 12th.April 2015 (ID-12420)	11/04/2015	Approximate Point
	Additional Information: Reports (1) Press Archive (0)		
4.	Kilkee Recurring (ID-4648)	n/a	Exact Point
	Additional Information: Reports (2) Press Archive (19)		

Past Flood Event Local Area Summary Report

Report Produced: **4/9/2025 16:06**

This Past Flood Event Summary Report summarises all past flood events within 2.5 kilometres of the map centre.



Map Legend

- Single Flood Event
- Recurring Flood Event
- Past Flood Event Extents
- Drainage Districts Benefited Lands*
- Land Commission Benefited Lands*
- Arterial Drainage Schemes Benefited Lands*

* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained on Floodinfo.ie

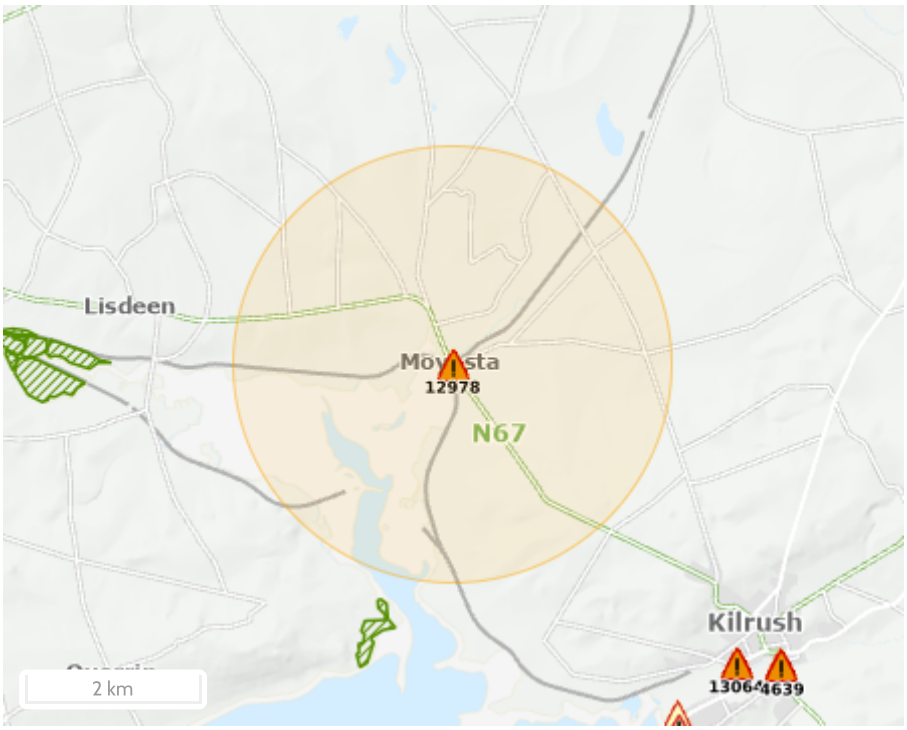
4 Results

	Name (Flood_ID)	Start Date	Event Location
1.	Kilrush Recurring (ID-4639)	n/a	Approximate Point
	Additional Information: Reports (2) Press Archive (15)		
2.	R473 at Cappagh Recurring (ID-4641)	n/a	Approximate Point
	Additional Information: Reports (2) Press Archive (0)		
3.	Kilrush Jan 2005 (ID-4640)	07/01/2005	Approximate Point
	Additional Information: Reports (2) Press Archive (0)		
4.	Flooding at Kilrush on 01/02/2014 (ID-13064)	01/02/2014	Approximate Point
	Additional Information: Reports (0) Press Archive (0)		

Past Flood Event Local Area Summary Report

Report Produced: **4/9/2025 16:29**

This Past Flood Event Summary Report summarises all past flood events within 2.5 kilometres of the map centre.



Map Legend

- Single Flood Event
- Recurring Flood Event
- Past Flood Event Extents
- Drainage Districts Benefited Lands*
- Land Commission Benefited Lands*
- Arterial Drainage Schemes Benefited Lands*

* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained on Floodinfo.ie

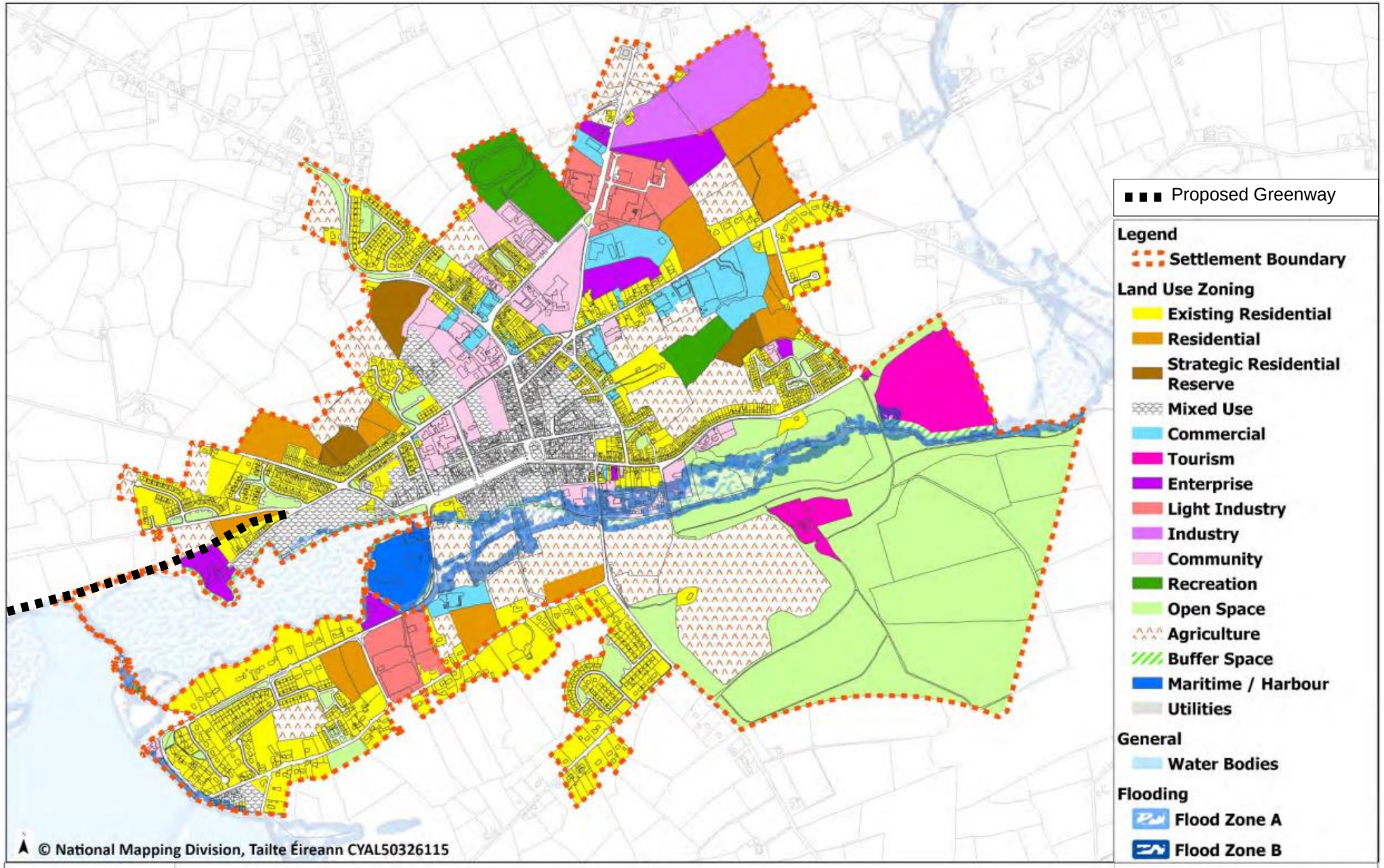
1 Results

	Name (Flood_ID)	Start Date	Event Location
1.	Flooding at Moyasta on 01/01/2014 (ID-12978)	01/01/2014	Approximate Point

Additional Information: Reports (0) Press Archive (0)

APPENDIX D

LAND USE MAPS (CCDP)



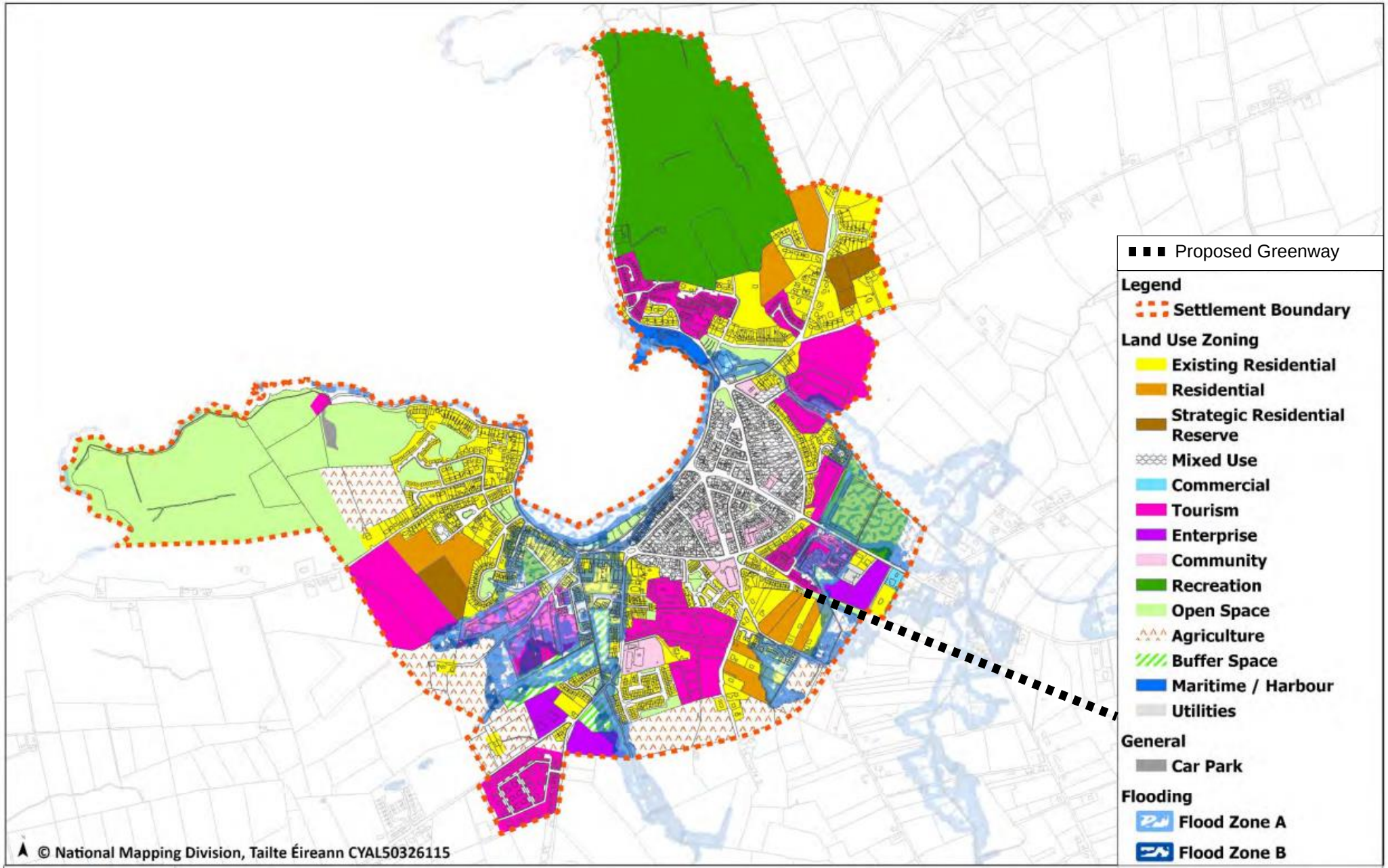
Clare County Development Plan 2023 - 2029

Kilrush

Date: April 2023 Not To Scale

Comhairle Contae an Chláir | Clare County Council

Clare County Development Plan 2023-2029



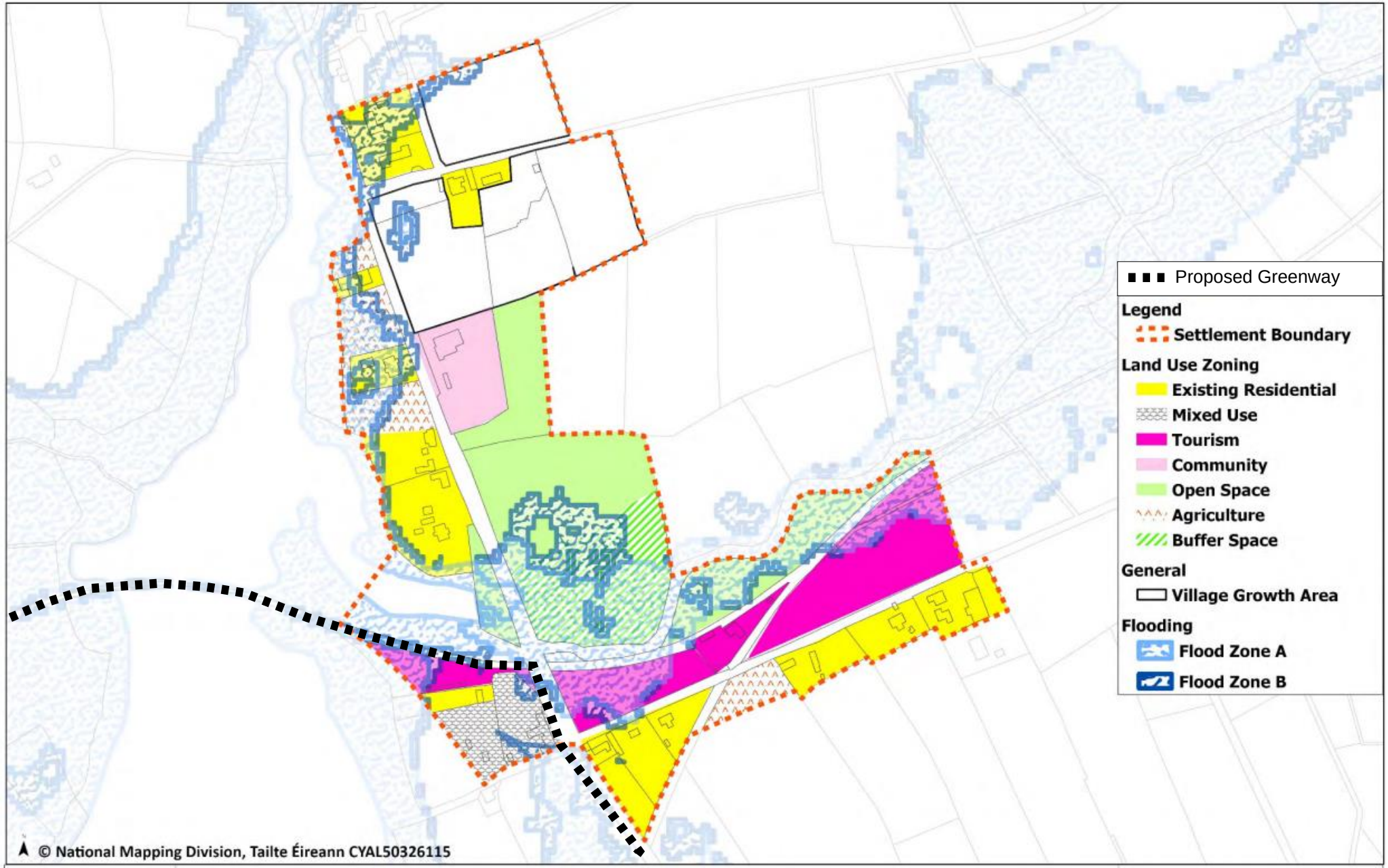
Clare County Development Plan 2023 - 2029

Kilkee

Date: April 2023 Not To Scale

Comhairle Contae an Chláir | Clare County Council

Clare County Development Plan 2023-2029



Clare County Development Plan 2023 - 2029

Moyasta

Date: April 2023 Not To Scale

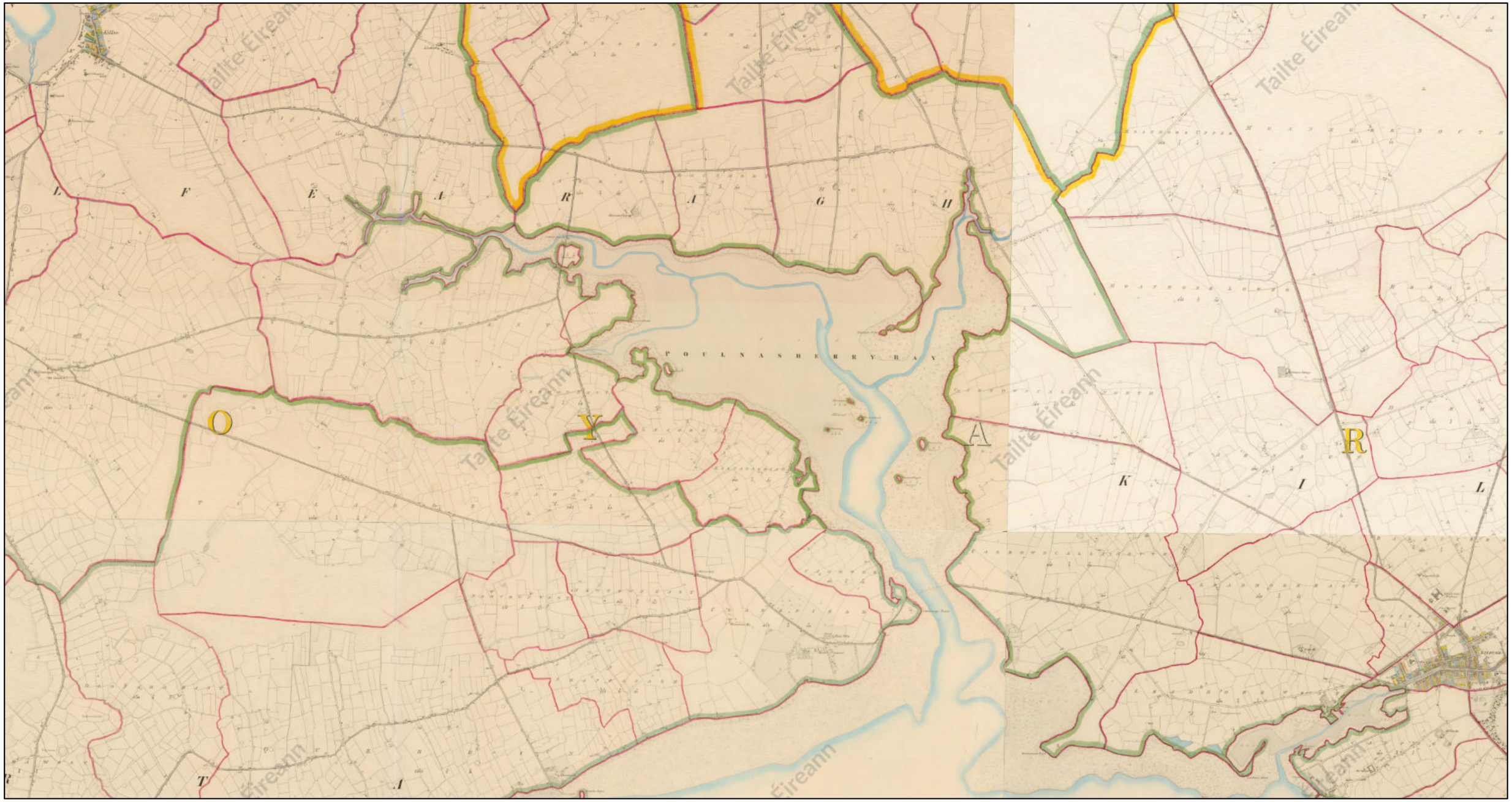
Comhairle Contae an Chláir | Clare County Council

Clare County Development Plan 2023-2029

APPENDIX E

HISTORICAL MAPPING

6" First Edition (1:30000)



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1:30,000

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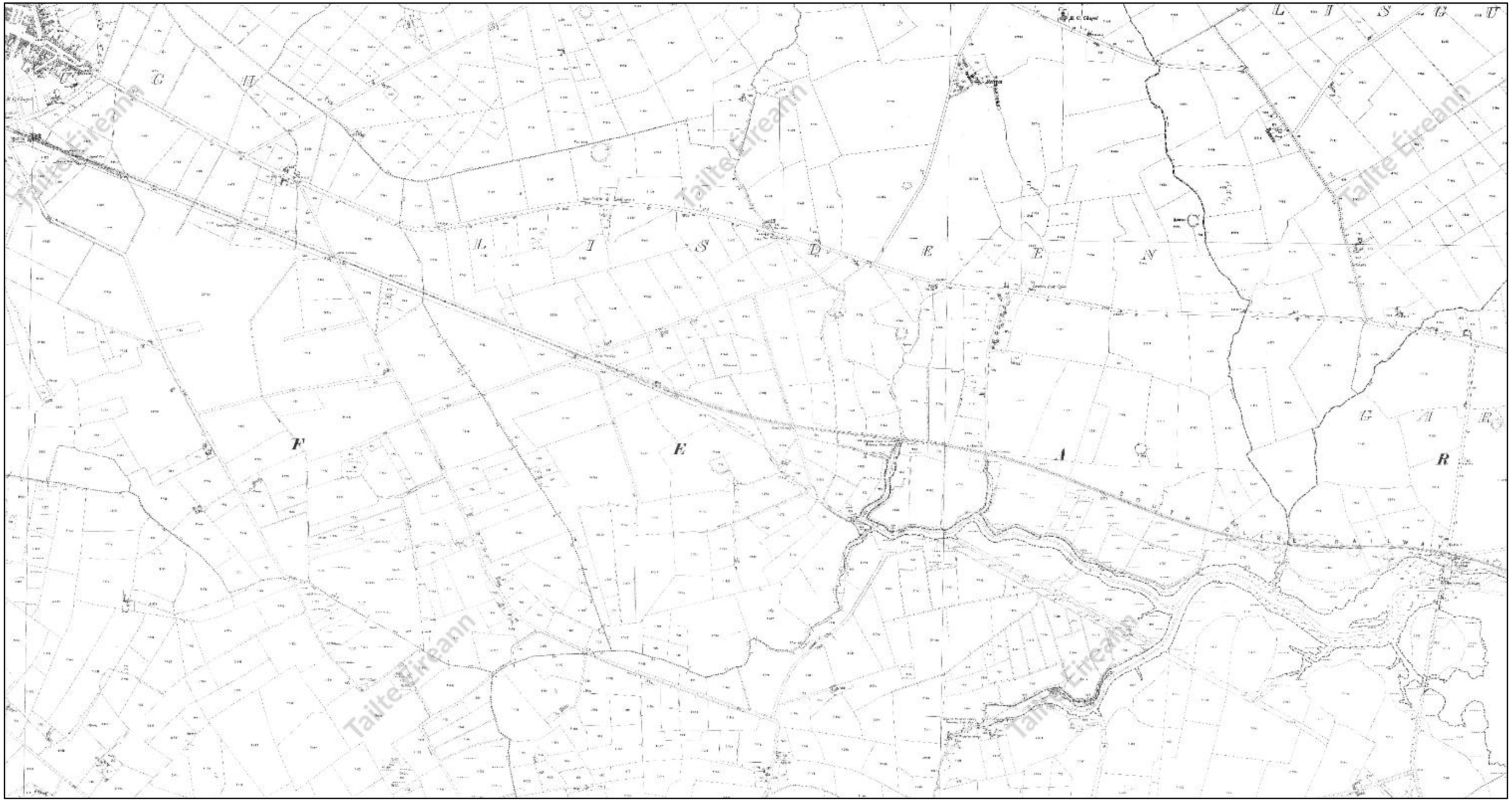
0 0.5 1 2 km

25" (1:10000) Kilkee



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0 0.2 0.4 0.8 km

25" (1:10000)

16/09/2025, 12:33:07

1:10,000

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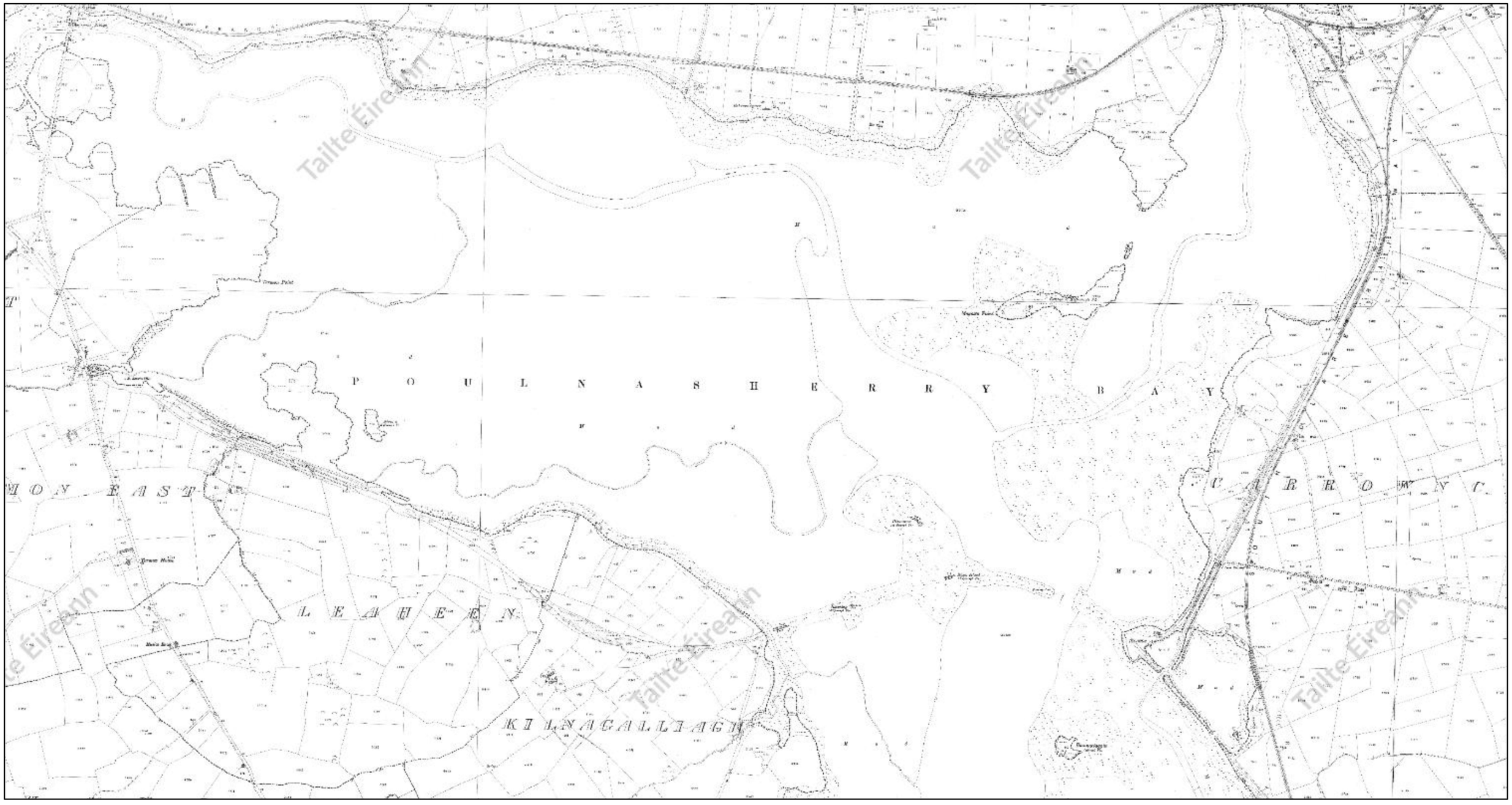
0 0.2 0.4 0.8 km

25" (1:10000) Moyasta



16/09/2025, 12:36:03

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0 0.2 0.4 0.8 km