

INIS CEALTRA VISITOR EXPERIENCE PROJECT

Flood Risk Assessment

Clare County Council

November 2024



Contents

1.	Gen	iera	۱	1
	1.1	Ir	ntroduction	1
	1.2	С	Dbjectives	2
	1.3	N	Aethodology	2
	1.4	F	lood Zones	3
2.	Floc	od R	isk Identification (Stage 1)	5
	2.1	С	FRAM River Flood Extents – Present Day	5
	2.2	Р	Past Flood Events	6
	2.3	V	/isitor Management and Sustainable Tourism Development Plan	6
	2.4	С	Clare County Development Plan 2023–2029	7
3.	Initi	al F	lood Risk Assessment (Stage 2)	9
	3.1	F	looding Sources	9
	3.1.	1	Fluvial Flooding	9
	3.1.	2	Coastal Flooding	9
	3.1.	3	Pluvial Flooding	9
	3.1.	4	Groundwater Flooding	9
	3.2	Ir	nitial Assessment	10
4.	Just	ifica	ation Test	10
	4.1	Η	larbour Public Realms	10
	4.1.	1	Zoning	11
	4.1.	2	Mitigation to Residual Risks	12
	4.2	Ir	nis Cealtra	13
	4.2.	1	Zoning	13
	4.2.	2	Mitigation to Residual Risks	14
5.	Con	clus	sions and Recommendations	14

Tables

Table 1-1: Vulnerability Matrix	. 3
Table 1-2: Vulnerability Classification	4



Figures

Figure 1-1: Aerial Image of Site (Google Earth)	. 1
Figure 2-1: River Flood Extents – Present Day Map (floodinfo.ie)	. 5
Figure 2-2: Past Flood Events Map (floodinfo.ie)	. 6
Figure 2-3: Flooding in Harbour car park on the 10 th of December 2015 (Source: JBA Consulting Ltd.)	. 7
Figure 2-4: Zoning Map for Mountshannon (Source: Clare County Development Plan 2023-2029 Interim Versio	n) . 7
Figure 4-1: Mountshannon Zoning Map (Clare County Development Plan 2023 – 2029)	12

Appendices

Appendix A – Site Layout Plan

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
21760	21760-MWP-ZZ-ZZ-RP-C-6028	P01	22/11/2024	A O'Donnell	D Cagney	l Brosnan	Final
21760	21760-MWP-ZZ-ZZ-RP-C-6028	P02	28/11/2024	A O'Donnell	D Cagney	l Brosnan	Final

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1. General

1.1 Introduction

This Flood Risk Assessment (FRA) report has been prepared on behalf of Clare County Council for a proposed development on the island of Inis Cealtra and Mountshannon, Co. Clare, and as part of the Inis Cealtra Visitor Experience Project. Inis Cealtra is located in Lough Derg with the village of Mountshannon located approximately 2km northwest of the island on the Lough Derg shoreline as shown indicatively in Figure 1-1. Lough Derg is a lake on the River Shannon. The Inis Cealtra Visitor Experience Project comprises of four elements which are outlined as follows:

- Developing of Inis Cealtra with upgraded landing, paths and pods.
- Village Car Park located north of Aistear Park
- Construction of a Visitor Centre on the grounds of the Rectory
- Reconfiguration of the Harbour Car Park



Figure 1-1: Aerial Image of Site (Google Earth)



1.2 Objectives

The purpose of this report is to establish the flood risk associated with the proposed developments and, if appropriate to recommend mitigation measures to prevent any increase in flood risk within or outside the site which are in MWP's remit. Waterways Ireland are preparing a separate assessment for the water infrastructure facilities under their remit.

The report has been prepared in the context of The Planning System and Flood Risk Management – Guidelines for Planning Authorities, November 2009, published by the Office of Public Works and the Department of Environment, Heritage and Local Government. Flood Risk Assessments are carried out at different scales by different organisations. The hierarchy of assessment types are Regional (RFRA), Strategic (SFRA) and Site-specific (FRA). This report is site-specific.

1.3 Methodology

The Flood Risk Management Guidelines document outlines three stages in the assessment of flood risk as follows:

Stage 1 Flood risk identification -

To identify whether there may be any flooding or surface water management issues related to a plan area or proposed development site that may warrant further investigation;

Stage 2 Initial flood risk assessment -

To confirm sources of flooding that may affect a plan area or proposed development site, to appraise the adequacy of existing information and to determine what surveys and modelling approach is appropriate to match the spatial resolution required and complexity of the flood risk issues. The extent of the risk of flooding should be assessed which may involve preparing indicative flood zone maps. Where existing river or coastal models exist, these should be used broadly to assess the extent of the risk of flooding and potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures; and

Stage 3 Detailed 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, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures. This will typically involve use of an existing or construction of a hydraulic model or a river or coastal cell across a wide enough area to appreciate the catchment wide impacts and hydrological processes involved.

This flood risk assessment report has been prepared generally in accordance with these stages.



1.4 Flood Zones

The Flood Risk Management Guidelines document defines three flood zone types as follows:

Flood Zone A –

where the probability of flooding from rivers 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);

Flood Zone B –

where the 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 years and 0.5% or 1 in 200 for coastal flooding); and#

Flood Zone C -

where the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). Flood Zone C covers all areas of the plan which are not in zones A or B.

The flood zone type is determined based on current water surface levels without allowance for climate change.

The Guidelines divide developments into three vulnerability classes as follows:

- Highly vulnerable developments
- Less vulnerable developments
- Water compatible developments

The Guidelines include a matrix, Table 1-1, that determines the appropriateness of different types of development based on their vulnerability classification (Table 1-2) and the Flood Zones in which they are located.

Table 1-1: Vulnerability Matrix

Flood Zone A	Flood Zone B	Flood Zone C
Justification Test	Justification Test	Appropriate
Justification Test	Appropriate	Appropriate
Appropriate	Appropriate	Appropriate
	Flood Zone A Justification Test Justification Test Appropriate	Flood Zone AFlood Zone BJustification TestJustification TestJustification TestAppropriateAppropriateAppropriate



Table 1-2: Vulnerability Classification

Vulnerability Class	Land uses and types of development which include;
Highly vulnerable development (including essential infrastructure)	Garda, ambulance and fire stations and command centers required to be operational during flooding; Hospitals; Emergency access and egress points Schools Dwelling houses, student hails 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 development	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 process and Local transport infrastructure
Water- compatible development	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)

Where the matrix indicates that a development is not appropriate it may still be justified based on a procedure described as a Justification Test.

The elements within the proposed development would be classified as follows:

- Developing Inis Cealtra with paths and pods would be classified as Less Vulnerable Development as being used for leisure. The paths are to be mown grass paths with no level changes proposed.
- The Village Car Park located north of Aistear Park would be classified as Less Vulnerable Development as being used for local transport infrastructure. Level changes will occur at a minor level to accommodate the gradient required for vehicles and pedestrians to traverse the site.
- The proposed Visitor Centre on the grounds of the Rectory would be classified as Less Vulnerable Development as being used for leisure. Note that the ground floor will be lower than the existing levels on the site of its proposed location.
- Reconfiguration of the Harbour Car Park would be classified as Less Vulnerable Development as being used for local transport infrastructure.



2. Flood Risk Identification (Stage 1)

Possible sources of flood risk, as well as historic flood levels, were identified using the following publicly available information:

- Examination of available information on the OPW website (<u>www.floodinfo.ie</u>)
- National Flood Hazard Mapping
- Clare County Development Plan 2023-2029
- Visitor Management Plan FRA

The water levels in Lough Derg are controlled and managed by the ESB (Electricity Supply Board) for the purpose of electricity generation and to ensure floods are passed safely.

2.1 CFRAM River Flood Extents – Present Day

The Present Day scenario is referred to as the Current Scenario in the Maps and Plans. The Present Day maps were generated using methodologies based on historic flood data, without taking into account potential changes due to climate change. This layer shows the modelled extent of land that might be flooded by rivers in a severe flood event. River flooding is referred to as Fluvial flooding. Sections of land containing the visitor centre, harbour public realm and the island of Inis Cealtra are shown within the 1 in a 100 year flood extents. The car park location is not indicated to be vulnerable to Fluvial flooding.



Figure 2-1: River Flood Extents – Present Day Map (floodinfo.ie)



2.2 Past Flood Events

The Past Flood Event Local Area Summary reports for the site on Floodinfo.ie references one event for flooding during the latter months of 1954 and the early months of 1955, one of the major floods of record occurred on the River Shannon. At the height of the flood in December 1954, approximately 100 km² of agricultural land was submerged. Many hundreds of people endured suffering and loss; numerous individuals were driven from their flooded homes and farmsteads, numbers of livestock drowned, and extensive agricultural damage was wrought by the flood. The proposed development is not shown to be within the flood extents denoted on the flood info website.



Figure 2-2: Past Flood Events Map (floodinfo.ie)

Afloat.ie noted that flooding was present in January 2018 and that Waterways Ireland advised that it made the harbour unsafe for pedestrian and vehicular traffic.

2.3 Visitor Management and Sustainable Tourism Development Plan

JBA Consulting Ltd. prepared a flood risk assessment to accompany this plan in March 2017. They advised that the highest water level they estimated was 31.82mOD and that there was anecdotal evidence that the water level was 31.73mOD at a café adjacent to the Harbour car park. They noted that flooding occurred in the car park from imagery found online as shown in Figure 2-3. Note that the site of the proposed visitor centre is not within the flood extents in the image. They advised that the PFRA mapping did not predict pluvial flooding in the site's location. They recommended that the finished floor level be set at 32.53mOD Malin.



Figure 2-3: Flooding in Harbour car park on the 10th of December 2015 (Source: JBA Consulting Ltd.)

2.4 Clare County Development Plan 2023–2029

The County Development Plan available is in an interim version online as the final version is advised as having its graphics finalised. The zoning map for Mountshannon is shown in Figure 2-4. The Village Car park is shown indicatively with the red ellipse while the Harbour Public Realm and the Visitor Centre are shown with the blue circle. The Village Car Park is zoned as mixed use with zoning objective UT1 for car & bus parking. The Harbour Public Realm area is zoned for Maritime/Harbour uses with the southern section being mapped within a flood zone. Its zoning objective is for development to be compatible with the existing use of the lands and associated lakeshore. The Visitor Centre site is zoned for Tourism and the plan references a proposed visitor centre on these lands.



Figure 2-4: Zoning Map for Mountshannon (Source: Clare County Development Plan 2023-2029 Interim Version)

The development plan alludes to the island being developed for tourism purposes.



JBA Consulting Ltd. conducted the SFRA for the Mountshannon area as part of the County Development Plan. They show the Visitor Centre as being outside of the flood zones and that it passes the justification test. The marina is noted as being water compatible and that a sequential approach should be applied to ancillary uses.

The Clare County Development Plan (CCDP) 2023-2029 designates Inis Cealtra for tourism development, identifying the island as a major opportunity to grow the tourism industry and encourage visitors to East Clare. The plan promotes Inis Cealtra as a tourism destination and supports the sustainable expansion of tourist facilities on the island, as set out in policy objective CDP9.27:

It is an objective of Clare County Council:

- a) To identify the tourism function of the county's islands and address the functional, planning and environmental impacts of additional visitors in order to facilitate increased access to the islands in a sensitive and appropriate manner;
- b) To support and promote the Scattery Island Ferry Service and to support the provision of signage associated with this service;
- c) To ensure the on-going sustainable management of the historic and natural resources of Scattery Island and support tourism product development on the Island;
- d) To facilitate the further exploration of the tourism/leisure potential of the Shannon Estuary Islands having regard to the landscape/heritage sensitivities of the area and the European and local designations in the Estuary; and
- e) To promote the sustainable tourism development and management of Inis Cealtra (Holy Island) as part of the overall Visitor Management and Sustainable Tourism Development Plan.



3. Initial Flood Risk Assessment (Stage 2)

The purpose of Initial Flood Risk Assessment is to ensure that the relevant flood risk sources are identified so that they can be addressed appropriately in the Detailed Flood Risk Assessment.

3.1 Flooding Sources

The potential sources of flooding and their relevance to the flood risk to the site are outlined in the following sub section's.

3.1.1 Fluvial Flooding

Fluvial flooding occurs when the capacity of a river channel is exceeded and water flows onto the adjacent land or flood plain. Based on the previous section, it is deemed that the Inis Cealtra Island, Visitor Centre and Harbour Car Park are at potential risk of flooding from this mechanism from the River Shannon.

It is recommended that the minimum finished floor level be established at 32.83mOD. This is for the 1% AEP (1 in 100 year) event and includes a freeboard allowance to account for uncertainties in, among other things, the hydraulic model, wave action, topographic survey, and climatic change.

This is roughly one metre higher than the area's known greatest recorded flood elevation of 31.74mOD Malin.

3.1.2 Coastal Flooding

Coastal flooding is flooding caused by the sea. The site is located 33km from the Shannon Estuary and upstream of the extent modelled as part of the CFRAM process. Therefore, the risk due to coastal flooding is deemed to be low.

3.1.3 Pluvial Flooding

Pluvial flooding or overland flow occurs when rainfall intensity exceeds the infiltration capacity of the ground. The excess water flows overland to the nearest watercourse or results in ponding in low areas or upstream of physical obstructions. Overland flow is most likely to occur following periods of sustained rainfall that cause the ground surface to become saturated or by high intensity short duration rainfall events.

The drainage design intent for the sites should be designed.

3.1.4 Groundwater Flooding

Groundwater flooding occurs when the water table rises to the level of the ground surface due to rainfall and flows out over the surface. The Groundwater Flooding Data Viewer by the GSI and Floodinfo.ie both show closest area at risk of being affected by groundwater flooding as being over 10km to the east in County Tipperary. Therefore, the risk due to groundwater flooding is deemed to be low.



3.2 Initial Assessment

The initial assessment for the proposed development is as follows:

- Inis Cealtra: Outside the areas under Waterways Ireland's remit, the levels are proposed to be unchanged with the use of grass paths. The WC pod is located where the ground is 34.05mOD which is outside Flood Zones A and B. The Shelter Pod and Staff Pod are located where ground levels are 31.83mOD which is in an area at potential risk of flooding. It is noted that this is the previous recorded flood level is 31.82mOD as discussed previously. Therefore, a justification test is required for the Shelter Pod and Staff Pod.
- Village Car Park: Outside of Flood Zones A and B. Therefore, there is a low risk of flooding.
- Harbour Public Realm: This area has been previously subjected to flooding. It is mapped as being in Flood Zone A for the majority of the area. Therefore, a justification test is required.
- Visitor Centre: While the existing site is shown as being outside Flood Zones A and B, it should be noted that the ground is being lowered. However, the ground floor is at 32.83mOD Malin which is higher than the flood level; therefore, the inside of the visitor centre is at a low risk of flooding.

4. Justification Test

4.1 Harbour Public Realms

The justification test for the Harbour Public Realms has been applied in line with the following:

Box 5.1 Justification Test for development management to be submitted by the applicant) When considering proposals for development, which may be vulnerable to flooding, and that would generally be inappropriate as set out in Table 3.2, the following criteria must be satisfied: 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 2. The proposal has been subject to an appropriate flood risk assessment that demonstrates: (i) The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk; (ii) The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible; (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; and (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 acceptability or otherwise of levels of residual risk should be made with consideration of the type and foreseen use of the development and the local development context. Note: See section 5.27 in relation to major development on zoned lands where sequential approach has not been applied in the operative development plan.

Refer to section 5.28 in relation to minor and infill developments.

4.1.1 Zoning

The Harbour Public Realm area is zoned for Maritime/Harbour uses, with the southern section mapped within a flood zone, as shown in Figure 4-2. Its zoning objective is for development to be compatible with the existing use of the lands and associated lakeshore. A Justification Test was completed in the SFRA for the Harbour Car Park as part of the SFRA which accompanied the City Development Plan as shown in Figure 4-1.

The site is currently used as a car park, and the proposed use is that it remains as a car park. The proposed configurations allow for a more efficient use of space and utilise good urban design with vibrant and active streetscapes through the use of the area as a shared space. Levels are unchanged, thus having a minimal impact on flood risk elsewhere.

lountshannon						
Justification test for sites within Flood Zone A and / or B	Existing Residential	Tourism				
The urban settlement is targeted for growth	Mountshannon is designated for growth in the Clare Co. Development Plan 2023-2029 (CDP)	Mountshannon is designated for growth in the Clare Co. Development Plan 2023-2029 (CDP)				
The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement	Existing residential lands zoning reflect where housing has been provided which contributes to the continued sustainable development of the settlement.	Tourism zoning reflects an existing holiday house complex which contributes to the continued sustainable development of the settlement.				
Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.	Retention of existing residential zoning is essential to regeneration and vitality of the settlement and to retaining a strong and cohesive village centre. The type of developments envisaged to occur would include small scale developments such as domestic extensions and changes of use which do not increase risk of flooding. Change of use to a more vulnerable class would not be permitted. (Table 3.1 Classification of vulnerability of different types of development) The Planning System and Flood Risk Management Guidelines refers.	Retention of tourism zoning reflects the current use and is essential to the economy of the settlement. The type of developments envisaged to occur would include small scale developments such as domestic extensions and changes of use which do not increase risk of flooding. Change of use to a more vulnerable class, or intensification of use, would not be permitted. (Table 3.1 Classification of vulnerability of different types of development) The Planning System and Flood Risk Management Guidelines refers.				
Comprises significant previously developed and/ or under utilised lands	The lands are previously developed.	The lands are previously developed.				
Is within or adjoining the core of an established or designated urban settlement	Existing residential lands are located adjoining the core.	Tourism lands are located adjoining the core.				
Will be essential in achieving compact and sustainable urban growth	The development of housing has achieved compact and sustainable growth. Retention of existing residential lands will maintain a strong and cohesive settlement. Any growth in this zoning will be limited to uses which do not increase flood risk.	Zoning reflects the existing land use.				
There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	The zoning classification 'existing residential' is a unique category of zoning which reflects existing rather than proposed use. There are no alternative zoning categories on lands in lower risk of flooding within or adjoining the core that fulfils the same role as 'existing residential'.	Zoning reflects the existing land use.				
A flood risk assessment to an appropriate level of detail has been carried out	See below.	See below.				
Result	Pass	Pass				
Recommendation for zoning	Retain Existing Residential zoning.	Retain Tourism zoning.				

Figure 4-1: Justification Test



Figure 4-2: Mountshannon Zoning Map (Clare County Development Plan 2023 – 2029)

4.1.2 Mitigation to Residual Risks

Mitigation measures are advised to mitigate residual flood risk to the Harbour Public Realms. Noted that the car park is accessed by two directions at the higher level. An emergency and evacuation plan is required to ensure that everyone on the site can be kept safe and evacuated safely. The design should incorporate resilient measures to help with the repair of the car park in the event that it is inundated and to mitigate any potential impacts due to flooding within and around the site.

In the event of flooding the area surrounding the proposed development could be inundated during high water events in Lough Derg, which could result in the interruption of road access to residents and emergency services to the jetty. Local services, gas, electricity, and phones could be disrupted. The Council should consider this possibility and plan for periods of tide locking/ surge or periods of fluvial inundation.



4.2 Inis Cealtra

The justification test for the Staff Pod and Shelter Pod on Inis Cealtra Island has been applied in line with the following:

(to be submitted by the applicant) When considering proposals for development, which may be vulnerable to flooding, and that would generally be inappropriate as set out in Table 3.2, the following criteria must be satisfied:

- 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 proposal has been subject to an appropriate flood risk assessment that demonstrates:
 - (i) The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk;
 - (ii) The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible;
 - (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; and
 - (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 acceptability or otherwise of levels of residual risk should be made with consideration of the type and foreseen use of the development and the local development context.

Note: See section 5.27 in relation to major development on zoned lands where sequential approach has not been applied in the operative development plan.

Refer to section 5.28 in relation to minor and infill developments.

4.2.1 Zoning

The Planning Statement which accompanies this application should be referred to for full details regarding the policy support for the proposed development, demonstrating that the principle of development is acceptable on the subject lands, both at Inis Cealtra (Holy Island) and on the mainland in Mountshannon.

The Clare County Development Plan (CCDP) 2023-2029 designates Inis Cealtra for tourism development, identifying the island as a major opportunity to grow the tourism industry and encourage visitors to East Clare. The plan promotes Inis Cealtra as a tourism destination and supports the sustainable expansion of tourist facilities on the island, as set out in policy objective CDP9.27:

It is an objective of Clare County Council:

- a) To identify the tourism function of the county's islands and address the functional, planning and environmental impacts of additional visitors in order to facilitate increased access to the islands in a sensitive and appropriate manner;
- b) To support and promote the Scattery Island Ferry Service and to support the provision of signage associated with this service;
- c) To ensure the on-going sustainable management of the historic and natural resources of Scattery Island and support tourism product development on the Island;



- d) To facilitate the further exploration of the tourism/leisure potential of the Shannon Estuary Islands having regard to the landscape/heritage sensitivities of the area and the European and local designations in the Estuary; and
- e) To promote the sustainable tourism development and management of Inis Cealtra (Holy Island) as part of the overall Visitor Management and Sustainable Tourism Development Plan.

Inis Cealtra is therefore designated for the development of tourist facilities in the operative development plan for the area which has been adopted taking account of The Planning System and Flood Risk Management Guidelines for Planning Authorities.

4.2.2 Mitigation to Residual Risks

Mitigations have been used in the design of the Staff Pod and Shelter Pod to mitigate the potential for flood risk. The structure is to be elevated by piles so that the floor structure is above the 32.83mOD so that the intrusion into the flood zone is minimal. Their footprint is minimal when compared to the overall size of Lough Derg.

The floor level within the pods is above 32.83mOD so that persons using these are not within the flood zone. The piles will be constructed using steel to ensure resilience of the structure that is below 32.83mOD and minimise the potential for impact on the environment.

The Visitor Management Plan contains measures to ensure that any residual risks associated with these are mitigated in so far as is reasonably practicable. These include closing the Island to visitors when there is flooding forecast to happen and during flood events. In the event that the island is occupied during a flood event that occurs quickly, people will move to higher ground for refuge and wait for rescue

Inis Cealtra is not situated within a settlement and therefore the objectives of good urban design and creating vibrant and active streetscapes is not relevant to the proposed development of tourist facilities on the island. Notwithstanding, the development strategy is compatible with wider planning objectives aimed at providing economic benefits to the region in a sustainable manner that takes account of environmental sensitivities and conserves the island as a significant historical, ecclesiastical, archaeological and cultural site.

5. Conclusions and Recommendations

The flood risk assessment identified that elements of the project is within Flood Zone A & B as defined in the Flood Risk Management Guidelines. The proposed uses are justified based on existing zoning, existing use and the SFRA conducted for the County Development Plan. The primary flood source to the project will be from fluvial sources due to its proximity to Lough Derg.

The following recommendations should be incorporated into the design:

- An emergency and evacuation plan should be put in place for the Harbour Public Realms to allow for evacuation and prevention of access in the event of the area becoming inundated. This should cater to how users of the dock and boats are rescued and avoid becoming trapped. Signage should be erected to warn car park users of the risk and the use of camper vans in this area should be forbidden when water levels are high. Pedestrians could be directed to through the Rectory grounds away from flooding towards Aistor Park and Harbour Road.
- An emergency and evacuation plan should be put in place for the use of the Staff Pod and Shelter Pod on Inis Cealtra to allow for evacuation and prevention of access in the event of the area becoming inundated. This should cater to how visitors to the Island are rescued and avoid becoming trapped.



- Drainage infrastructure should take cognisance of the flood levels in the design to reduce risk to those maintaining it and risk of flooding due to the system being unable to discharge due to water levels in Lough Derg.
- Location of critical infrastructure above the elevation of 32.83mOD Malin and use of elements resilient to flooding such as masonry walls instead of timber studs and plywood.
- An emergency plan should be in place in the event that a boat or swimmer has to seek refuge on Inis Cealtra so that the risk levels do not increase. Barriers/ gates should be positioned outside the area at risk of flooding so that people seeking refuge are not trapped.
- Levels in the Harbour Car Park and the existing drainage regime of this car park that are within Flood Zone A are recommended to not be changed so to minimise impact on the flood risk in this area.
- Drainage Design for the site should attenuate the stormwater runoff generated by the development to the previous conditions prior to the development of the site.

Appendix 1

Past Flood Event Local Area Summary Report

Past Flood Event Local Area Summary Report OPW Report Produced: 4/7/2024 16:41 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. Mountain Map Legend A Single Flood Event 🙈 Recurring Flood Event Past Flood Event Extents Drainage Districts Benefited Lands* Land Commission Benefited Lands* Arterial Drainage Schemes Benefited Lands* 32 * Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained on Floodinfo.ie 2 lom 1 Results Name (Flood_ID) Start Date Event Location Shannon December 1954 (ID-3) 01/12/1954 1.8 Area Additional Information: Reports (4) Press Archive (16)