

APPENDIX D

1. Greenpark	LCC – C62 – 129
2. Shannon Mineral, Pa Healy Road	LCC – C62 – 41
3. Downes Site, Pa Healy Road	LCC – C62 – 55
4. Jetland District Centre, Clonmacken	LCC – 062 – 198 & LCC – C62 – 204
5. Clonmacken Residential, Condell Road	LCC – 06 – 159
6. Ballykeeffe	LCC – C62 – 170
7. Ballykeeffe/Mungret	LCC – C62 – 206
8. Dooradoyle Crescent	LCC – C62 – 149

Greenpark

LCC – C62 – 129

GREENPARK MASTERPLAN, LIMERICK

FLOOD RISK ASSESSMENT

IBE1706

Greenpark Masterplan FRA

D01

December 2020

FLOOD RISK ASSESSMENT

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
D01	Draft	D McGinnis	A Jackson	A Jackson	Oct 2020
D02	Final	D McGinnis	A Jackson	A Jackson	Dec 2020

Approval for issue

Andrew Jackson  18 December 2020

This report was prepared by **RPS Ireland Limited (NI)** ('RPS') within the terms of its engagement and in direct response to a scope of services. This report is strictly limited to the purpose and the facts and matters stated in it and does not apply directly or indirectly and must not be used for any other application, purpose, use or matter. In preparing the report, RPS may have relied upon information provided to it at the time by other parties. RPS accepts no responsibility as to the accuracy or completeness of information provided by those parties at the time of preparing the report. The report does not take into account any changes in information that may have occurred since the publication of the report. If the information relied upon is subsequently determined to be false, inaccurate or incomplete then it is possible that the observations and conclusions expressed in the report may have changed. RPS does not warrant the contents of this report and shall not assume any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report howsoever. No part of this report, its attachments or appendices may be reproduced by any process without the written consent of RPS. All enquiries should be directed to RPS.

Prepared by:

RPS

Diane McGinnis
Associate
Elmwood House
74 Boucher Road, Belfast
Co. Antrim BT12 6RZ

T +44 2890 667 914
E diane.mcginis@rpsgroup.com

Prepared for:

Voyage Property Ltd

Contents

1	INTRODUCTION.....	1
2	SITE DESCRIPTION.....	2
3	EXISTING FLOOD RISK	4
3.1	Existing Flood Defences	4
3.2	Fluvial Flood Risk.....	5
3.3	Coastal Flood Risk.....	6
3.4	Flood Zones	8
4	PROPOSED DEVELOPMENT	11
4.1	Description of the Proposed Development	11
5	PROPOSED MITIGATION MEASURES	14
5.1	Model Construction	14
5.2	Modelling of Existing Situation	15
5.2.1	0.5% AEP Simulation with Existing Ground Levels	15
5.3	Development and Modelling of Mitigation Measures	16
5.4	Breach Analysis of the Flood Defences.....	16
5.4.1	Modelling of the Existing Defences.....	16
5.5	Mitigation Measures for Breach Scenario.....	18
5.5.1	Residential Campus mitigation measures.....	19
5.5.2	Office Campus mitigation measures	19
5.5.3	Impact Modelling of Breach Mitigation Measures	21
5.5.4	Additional Mitigation Measures for Office Campus.....	22
5.5.5	Conclusions on Breach Modelling.....	27
5.6	Surface Water Drainage Strategy	27
5.6.1	Access and Egress from the Proposed Masterplan Area.....	28
5.6.2	Office Campus car parking areas	29
6	PLANNING SYSTEM AND FLOOD RISK MANAGEMENT GUIDELINES.....	30
6.1	Classification	30
6.2	Development Management Justification Test.....	31
7	SUMMARY AND CONCLUSION	35
7.1	Key Aspects of the Flood Mitigation Measures.....	36
8	REFERENCES.....	38

Appendices

Appendix A Flood Maps from Shannon CFRAM Study	39
Appendix B Climate Change Comparative Breach Maps.	

1 INTRODUCTION

RPS were commissioned by Voyage Property Ltd to carry out a Flood Risk Assessment (FRA) in support of Masterplan for previously undeveloped land at a site at the former Greenpark racecourse, with existing access from the Dock Road in Limerick. Greenpark was the home to Limerick Racecourse until it was relocated to Patrickswell, making way for the potential redevelopment of these lands and mix of use as prescribed in the City Development Plan e.g. office campus, housing, neighbourhood and leisure.

The purpose of this FRA is to define the flood risk to proposed development lands and demonstrate that with appropriate mitigation they can be developed in accordance with the requirements of 'The Planning System and Flood Risk Management' Guidelines' (DEHLG 2009).

The site is located west of Limerick city centre, between the N69 and the N18, adjacent to the Limerick Greyhound Stadium. The general location of the site is shown in Figure 1.1.

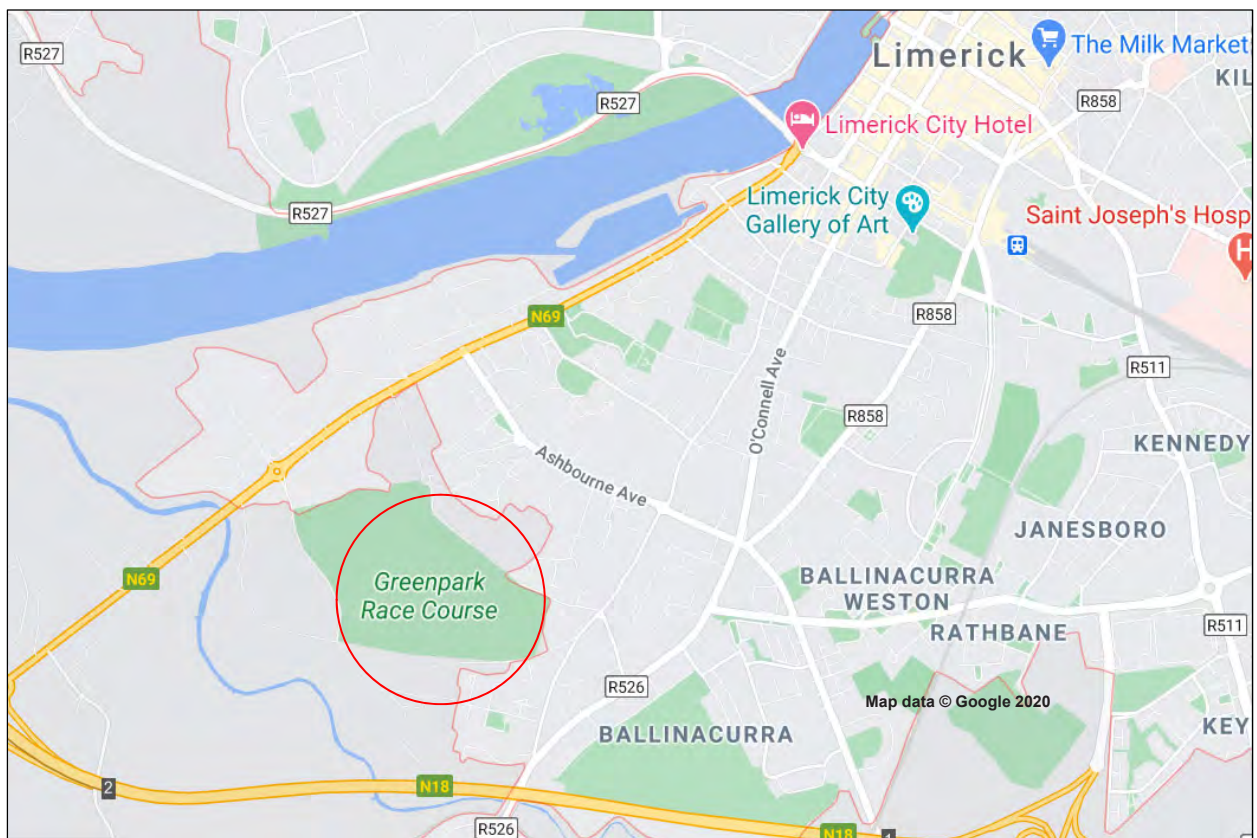


Figure 1.1 Location map

2 SITE DESCRIPTION

The existing site is part of the former Limerick Race Course. It is relatively low lying with respect to the Shannon Estuary and Ballynacloagh River. The majority of the site is flat with levels in the vicinity of 2.4m OD rising to above 7m OD adjacent to the existing Log Na gCapall development to the south east.

Limerick Greyhound Stadium is located adjacent to the site along with a large hardstanding area of car park and existing pond/lagoon located adjacent to the Ballynacloagh River. Figure 2.1 shows an aerial photo of the development site with the Masterplan area highlighted in red.



Figure 2.1 Aerial photograph indicating the extent of the masterplan area

FLOOD RISK ASSESSMENT

The River Shannon flows at a distance of approximately 500m to the north and, a tributary, the Ballynaclough River, flows along the western boundary of the masterplan area. There is a the line of existing flood defences along both the Ballynaclough River and the River Shannon which offer a good standard of protection to this area of Limerick. More detail on these is provided in Section 3.

3 EXISTING FLOOD RISK

The National Catchment-based Flood Risk Assessment and Management (CFRAM) Programme was developed by the Office of Public Works (OPW) to meet national policy needs and the requirements of the EU Floods Directive. As part of the Shannon Catchment-based Flood Risk Assessment and Management (CFRAM) Study, Limerick was identified as an Area for Further Assessment (AFA). This meant that the watercourses in the area were modelled and flood maps produced. The maps are available to download from the OPW Flood Info website and provide the best available information to characterise the existing flood risk.

3.1 Existing Flood Defences

The defences along the Ballynacloagh River and the Shannon Estuary were built by the OPW under the Arterial Drainage Act, 1945. Arterial Drainage Schemes were carried out to improve land for agriculture and to mitigate flooding. The intention of building the embankments was initially to provide protection against the 3 year flood but in many locations the embankments have been raised further over time and a much higher standard of protection is provided. That can be said of the embankments at this location which have been constructed along the estuary to a height of approximately 5.2m OD and along the Ballynacloagh River to a height in excess of 6m OD. Figure 3.1 has been extracted from the floodinfo.ie website which provides records of the various drainage districts and the embankments located within them. At this location there are three embankments which offer protection to the masterplan area denoted on Figure 3.1 as E1A, E1 and E2. The defences also continue further into Limerick towards Ted Russell Dock but these are in private ownership and are therefore not shown on this mapping.

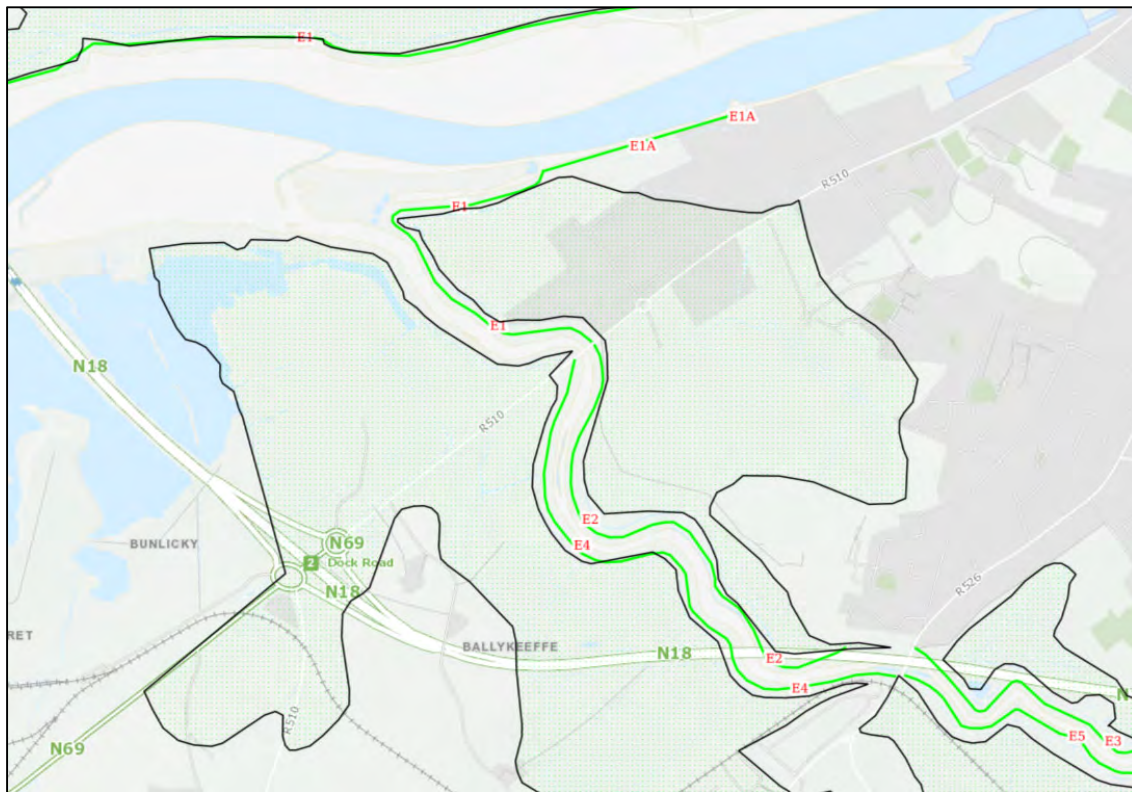


Figure 3.1 Extract of Arterial Drainage Districts mapping showing defences and benefitting areas

The embankments are constructed of unknown material and indeed it can be assumed that they are constructed of varying grades and types of strata including estuarine mud which is known to have been used at various points along the estuary. These defences extend for miles down the estuary on both banks. At this particular location the embankments provide a good standard of protection to all properties along the Dock Road which would otherwise be frequently inundated to a significant depth. Despite there being no historical risk of breach at this location, it remains a possibility and therefore will be addressed in the mitigation measures required to ensure the safety of the masterplan area. RPS have not carried out any visual or intrusive testing of the embankments and instead will set out mitigation measures for the masterplan area to deal with the event of a breach.

3.2 Fluvial Flood Risk

The CFRAMS maps show that the site is not at risk of fluvial flooding. An extract from the CFRAM Study Fluvial Flood Extents Map is shown in Figure 3.2, and the full map is shown in Appendix A. Fluvial flooding is not therefore considered further in this report.



Figure 3.2 Extract from CFRAMS fluvial flood extents map

3.3 Coastal Flood Risk

The CFRAMS maps show that the site has areas which are defended from coastal flooding by flood embankments along the Ballynacloagh River which have a standard of protection of 0.5% AEP. There are some areas of the site which are at risk of coastal flooding in a 0.5% AEP event from the River Shannon to the north, as the defences in this area only have a standard of protection of 2% AEP. There are also some areas within the site that are not at risk of coastal flooding. Extracts from the CFRAM Study Tidal Flood Extents Maps are shown in Figures 3.3 and 3.4 and the full maps are shown in Appendix A.

FLOOD RISK ASSESSMENT

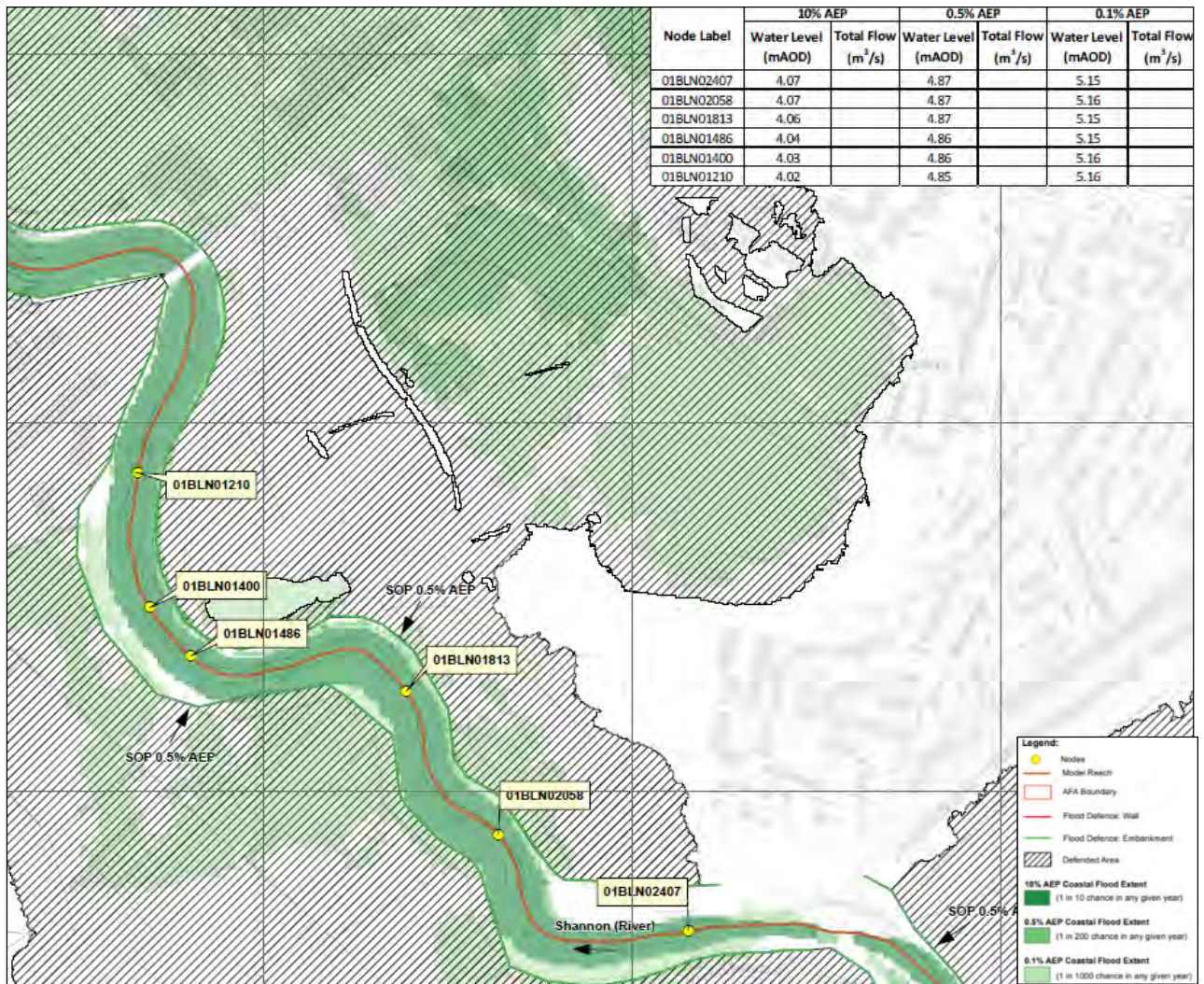


Figure 3.3 Extract from CFRAMS tidal flood extents map (Ballynaclough River)

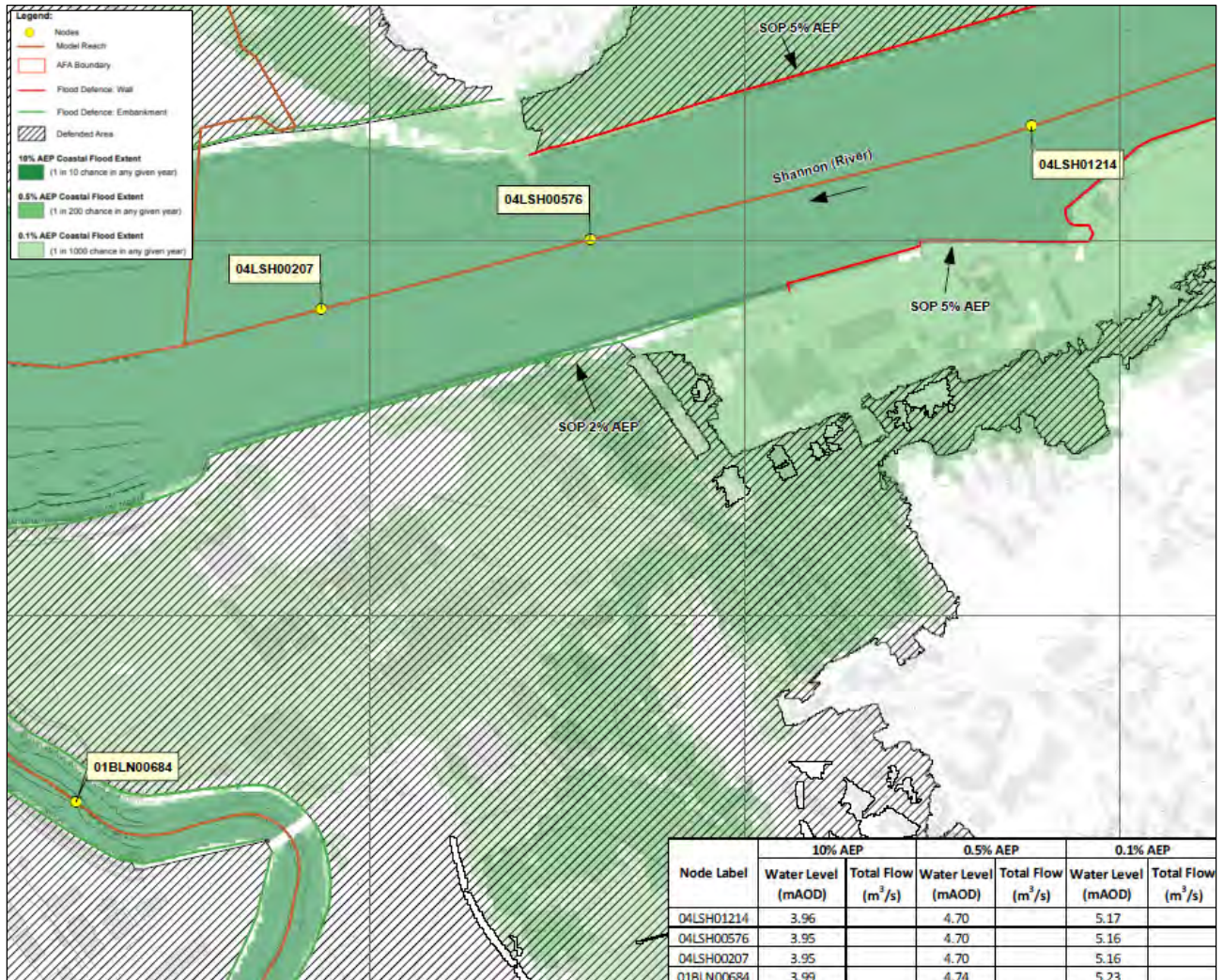


Figure 3.4 Extract from CFRAMS tidal flood extents map (River Shannon)

3.4 Flood Zones

Under the requirement of ‘The Planning System and Flood Risk Management’ Guidelines (2009) when considering existing flood risk it is necessary to assign flood zoning to the proposed development site. Flood zoning is defined as:

- **Flood Zone A:** areas where the probability of flooding from rivers and the sea is highest (greater than 1% for river flooding or 0.5% for coastal flooding).
- **Flood Zone B:** areas where the probability of flooding from rivers and the sea is moderate (between 0.1% and 1% for river flooding, and between 0.1% and 0.5% for coastal flooding).

FLOOD RISK ASSESSMENT

- **Flood Zone C:** Areas where the probability of flooding from rivers and the sea is low (less than 0.1% for both river and coastal flooding).

An important consideration for this particular location is the presence of the existing defences, which although, offering a good standard of protection even during extreme flood events must be ignored for the purpose of flood zoning. This is stated in Clause 2.25 of the Guidelines and is required because areas protected by flood defences still carry a residual risk of flooding from overtopping or breach of defences and the fact that there may be no guarantee that the defences will be maintained in perpetuity. In this respect, Figure 3.2 shows that part of the site is in Flood Zone C (white areas), however a significant portion of the site can be considered to be in Flood Zone A (dark blue) with a very small section of the land being contained within Flood Zone B. Figure 3.5 shows the flood zoning.

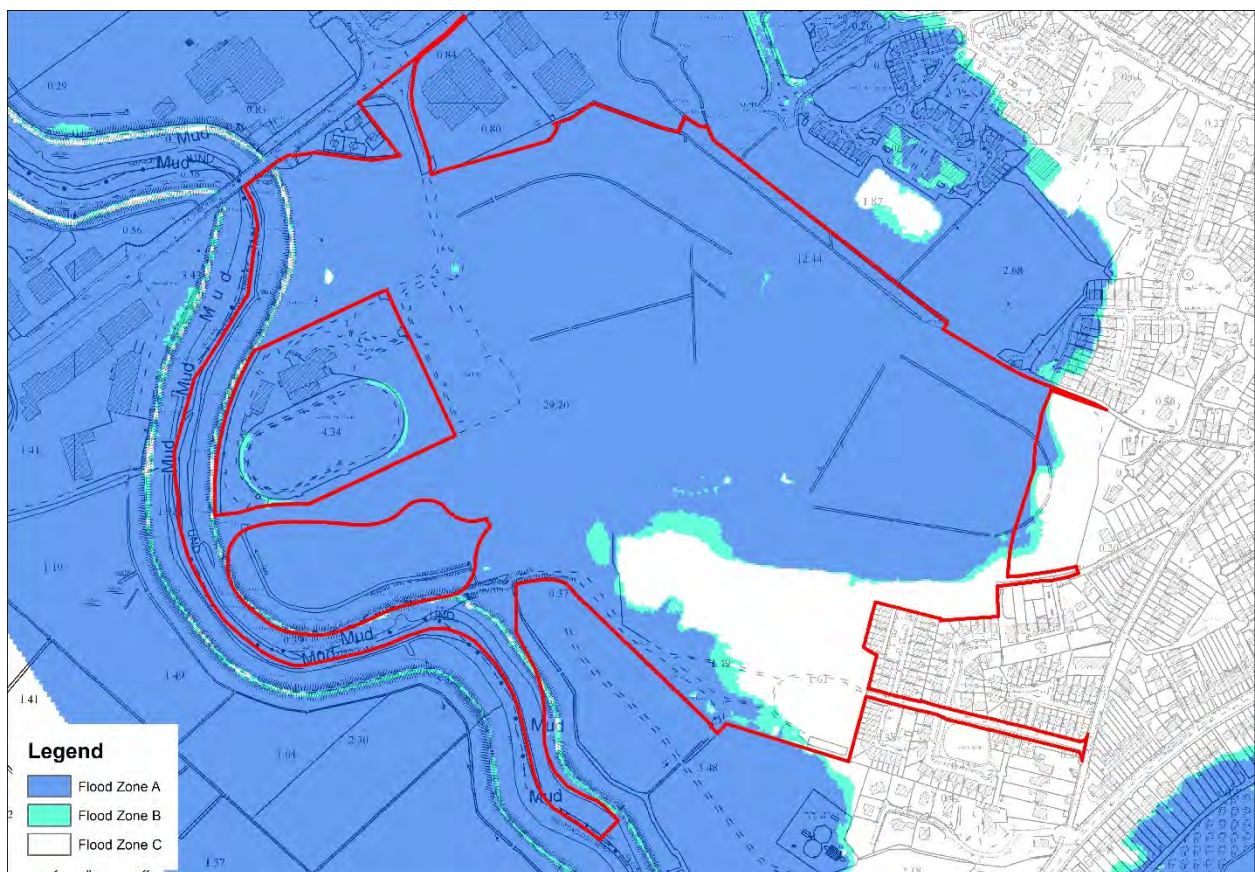


Figure 3.5 Flood Zone identification

Given the flood zoning identified in Figure 3.4, the Planning System and FRM Guidelines provide direction on the type of development appropriate to each flood zone. This is shown in Table 3.2 in guidelines which is reproduced in this report as Figure 3.6.

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

Table 3.2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

Figure 3.6 Flood zones and appropriate development

It follows from Table 3.2 that for residential (vulnerable) and commercial (less vulnerable) development in Flood Zone A the Justification Test will need to be applied and fully satisfied before development can be permitted. For land designated as being within Flood Zone C it is considered appropriate for all types of development. With respect to the masterplan area this includes an area adjacent to the existing Log Na gCapall development.

4 PROPOSED DEVELOPMENT

4.1 Description of the Proposed Development

The Greenpark Masterplan encompasses multi-phasing residential development and office campus, neighbourhood centre and public open spaces adjacent to Bord na gCon greyhound stadium along Ballynacloagh River. The office floor plates will be designed with greater flexibility and adaptability to local and multinational demands. Neighbourhood centre strategically located to serve the need of the local community and residents.

The residential component of the Masterplan, consists of 831 dwelling units, age appropriate housing, apartments, creche and residential amenity spaces. The development will be carried out in several phases. The first phase of the development includes strategic housing development application for 289 dwelling units with a residential density of 40.37 units/ha, creche and other associated ancillary uses in line with the masterplan.

The open space and riverwalk amenity are an essential and vital part of the masterplan to provide a greater biodiversity and sustainable amenity spaces for the new and existing community in Greenpark.

The overall Masterplan is shown in Figure 4.1.



Figure 4.1 Overall Masterplan

There are three significant parts of the masterplan- the Office Campus Development, the Neighbourhood Centre, and the Residential Development. For the purposes of this assessment the Neighbourhood Centre has been included with the Residential Development. The remainder of the masterplan area will remain at existing levels and as per the existing land use. These areas will be the primary focus of this flood risk assessment.

The purpose of the flood risk assessment is therefore to demonstrate how, given the flood risk identified in Section 3, the office campus and residential development (including the neighbourhood centre) areas can be developed in a manner that is fully compliant with the Planning System and Flood Risk Management Guidelines. In that respect there are a number of key principles which must be addressed in order to pass the Justification Test, these are:

- Firstly, demonstrating that during a 200 year (0.5% AEP) event and during a 200 year (0.5% AEP) Climate Change event there is no risk to the proposed development or increase in flood risk elsewhere.
- Secondly, Clause 5.16 on page 49 states that a precautionary approach should be applied for developments located behind existing defences. It suggests that an appropriate mitigation measure would be to set floor levels above the 0.5% AEP flood level (for a site affected by coastal flooding) and to include for the effects of climate change. When determining this 0.5% AEP level the effect of defences should be ignored.

Addressing these key issues is best practice in demonstrating compliance with the Justification Test as set out in Box 5.1 of the Planning system and Flood Risk Management Guidelines. Section 5 of this report describes the mitigation measures that address these criteria and the numerical modelling undertaken to demonstrate their effectiveness. Section 6 describes compliance with the Justification Test.

5 PROPOSED MITIGATION MEASURES

Given the scale of the masterplan area it is recognised that any mitigation measures proposed must be robust, sustainable with respect to climate change and not place any burden on the city of Limerick whereby there would be a requirement in the future to provide additional flood defences and capital expenditure to protect this development. It is also acknowledged that under the CFRAM process, where Limerick was an Area for Further Assessment (AFA), a significant capital scheme was proposed. This scheme is currently being tendered to engineering consultants under the OPW Capital Works Framework and should be developed over the next 10-15 years. While there is no doubt a scheme of this nature would further benefit the masterplan lands, RPS also recognise there is no guarantee a scheme will be developed as it will be subject to a cost-benefit analysis and availability of government funding. Conversely there is also a need to ensure mitigation measures proposed as part of this masterplan in no way compromise the development of a suitable flood alleviation scheme for Limerick.

5.1 Model Construction

In order to be able to assess the impact of any proposed mitigation measures RPS have developed a site specific model incorporating the masterplan area. As the masterplan lands are located behind existing defences it is obvious there is no impact either upstream or downstream in the Ballynaclough River or the Shannon Estuary. Instead the model has been developed specifically to understand the impact of the defences overtopping and also breaching, ensuring that the masterplan area is resilient to these flooding mechanisms and doesn't significantly adversely affect adjacent property and land.

Therefore RPS have constructed a InfoWorks ICM 2D model of this area of Limerick based on a Digital Terrain Model (DTM) constructed from LIDAR data which covers this area of Limerick. This has been supplemented by more detailed topographical survey of the existing flood defences to capture any low points or defects. The LiDAR provides a high resolution survey that is sufficient for establishing the effects of overtopping and breaching of the existing flood defences. RPS have utilised the 0.5% Annual Exceedance Probability (AEP) flood levels for the Shannon estuary and that for the Ballynaclough River developed in the CFRAM study. These provide the best available estimation of the predicted water level during extreme coastal events for this return period.

In addition RPS have improved upon the CFRAM inundation modelling by incorporating all of the existing buildings within Dock Road area within the model and blocked these out to prevent flow through them. This is a significant addition to the modelling undertaken during the CFRAM process as it can identify new flow paths as the water passes between buildings.

5.2 Modelling of Existing Situation

5.2.1 0.5% AEP Simulation with Existing Ground Levels

As a baseline model run RPS took the peak tidal levels from the CFRAM study in the estuary and Ballynaclough River and ran a 0.5 % AEP flood inundation simulation. This model was run over 72 hours covering tidal cycles leading up to and after the 0.5% AEP event with an appropriate tidal curve reflecting the rising and falling level of the flood and ebb tide during an extreme storm surge event. As stated previously the majority of the defences surrounding the Dock Road area are sufficiently high enough to prevent inundation and overtopping however there is a lower section near to the Ted Russel Dock where a limited amount of flooding can occur. The flood mapping output from this model simulation is shown in Figure 5.1.

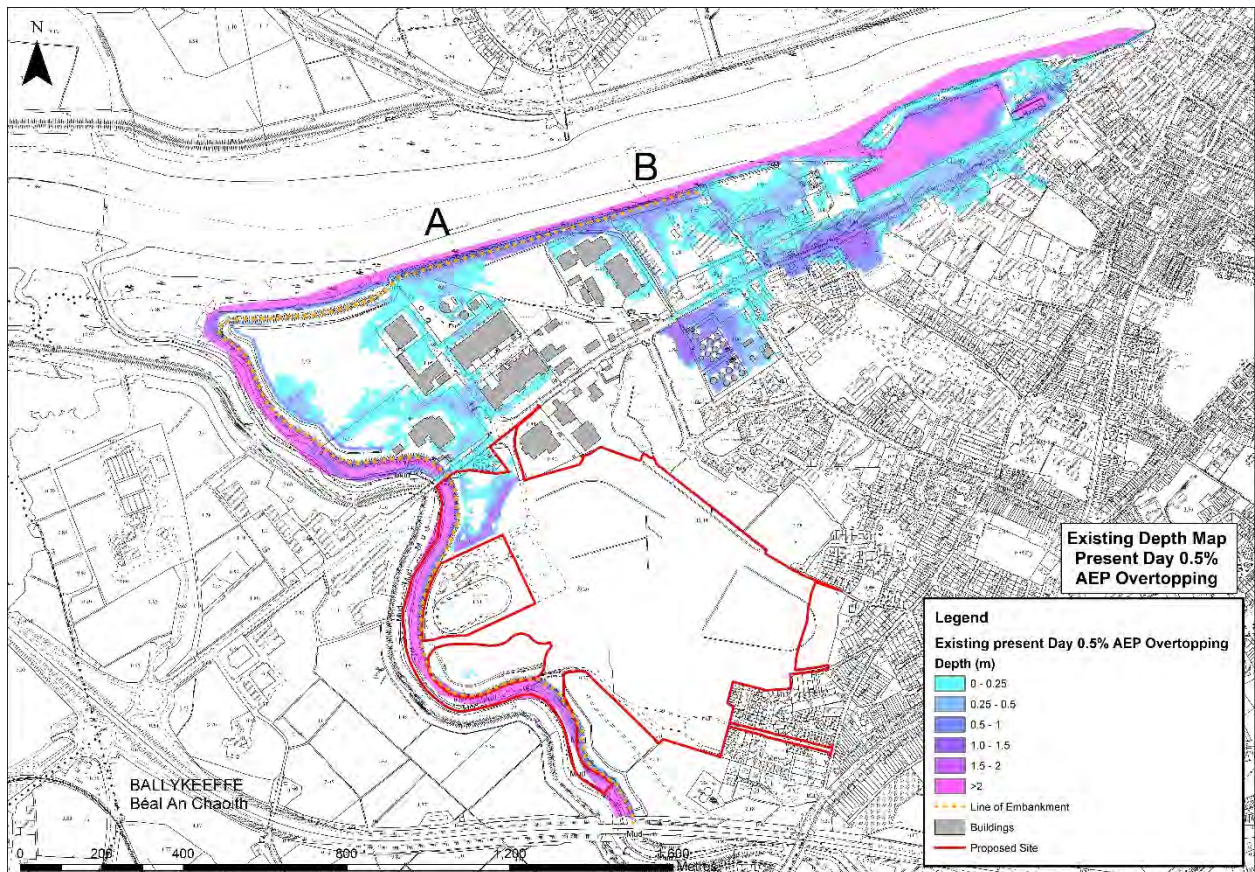


Figure 5.1 Flood depth map showing impact of 0.5% AEP flood inundation simulation

The model simulation indicates overtopping at two locations (Points A and B on Figure 5.1) where the defences are insufficiently high to prevent inundation. The extent of this inundation shows that the only

part of the masterplan area affected is open space to the north of the greyhound stadium. There is no proposed alterations to existing ground levels in this area as part of the masterplan so from this model run we can conclude:

- There is no risk to the area of the masterplan lands proposed for commercial or residential development during a 0.5% flood event providing defences are only overtopped and not breached.
- During inundation from an event of this magnitude where overtopping occurs, the water level behind the defences reaches a water level of approximately 2.3m OD. All existing levels within the masterplan area proposed for commercial or residential development are in excess of this level.
- As the 0.5% AEP water level does not inundate the proposed development area in the existing scenario there can be no increase in water level as a result of constructing the proposed development and therefore no further assessment is required in this regard.

5.3 Development and Modelling of Mitigation Measures

As stated previously in this FRA when quoting Clause 5.16 of the Planning System and Flood Risk Management Guidelines, there is a need to ensure a precautionary approach when developing behind existing defences. It suggests that the mitigation measures for dealing with that risk would be to set finished floor levels at the 0.5% flood level (for coastal flooding) ignoring the moderation effects of flood defences. Following this logic to address the impact of the inundation from the 0.5% AEP Climate Change MRFS event during a breach scenario, it is proposed to raise the level of the office campus and residential development to minimise the residual risk. By raising levels on the site it will provide sufficient protection to the proposed development, but it raises the question if it could also increase the risk of flooding to surrounding land and existing development. RPS have therefore carried out a comprehensive modelling exercise focussing on the breach scenario to ensure there is no increase risk to adjacent developments should this occur during a 0.5% AEP and 0.5% AEP Mid-range Future Scenario events.

5.4 Breach Analysis of the Flood Defences

5.4.1 Modelling of the Existing Defences

Given the scale of the proposed development and the high number of both residential and commercial properties a robust assessment of residual risk is required. The original purpose of the existing defences and the unknown make-up of their construction means it is necessary to undertake a breach analysis at certain locations along both the Ballynacloagh River and the Shannon estuary to assess the impact of such an event on the proposed and existing developments. Breach analysis was undertaken using the UK

FLOOD RISK ASSESSMENT

Environment Agencies guidance on breach modelling which was also adopted for use during the CFRAM process. It was undertaken at three locations:

Breach 1 – along the Estuary at the rear of McMahon Building Providers

Breach 2 – along the lower reaches of Ballynacloough River

Breach 3 – on the Ballynacloough River upstream of the Greyhound Stadium.

All breaches were run over 72 hour tidal cycle with the breach set to occur 1 hr before the peak of flood. At this time in the simulation a 50m section of the embankment is removed with the spill level being reduced to existing ground levels on either side of the defence. A separate map was produced for each location i.e. it is assumed only one breach occurred at a time. All 3 breach locations produced approximately the same flood extent and Figure 5.2 shows the 0.5% AEP Breach extent for the existing lands.

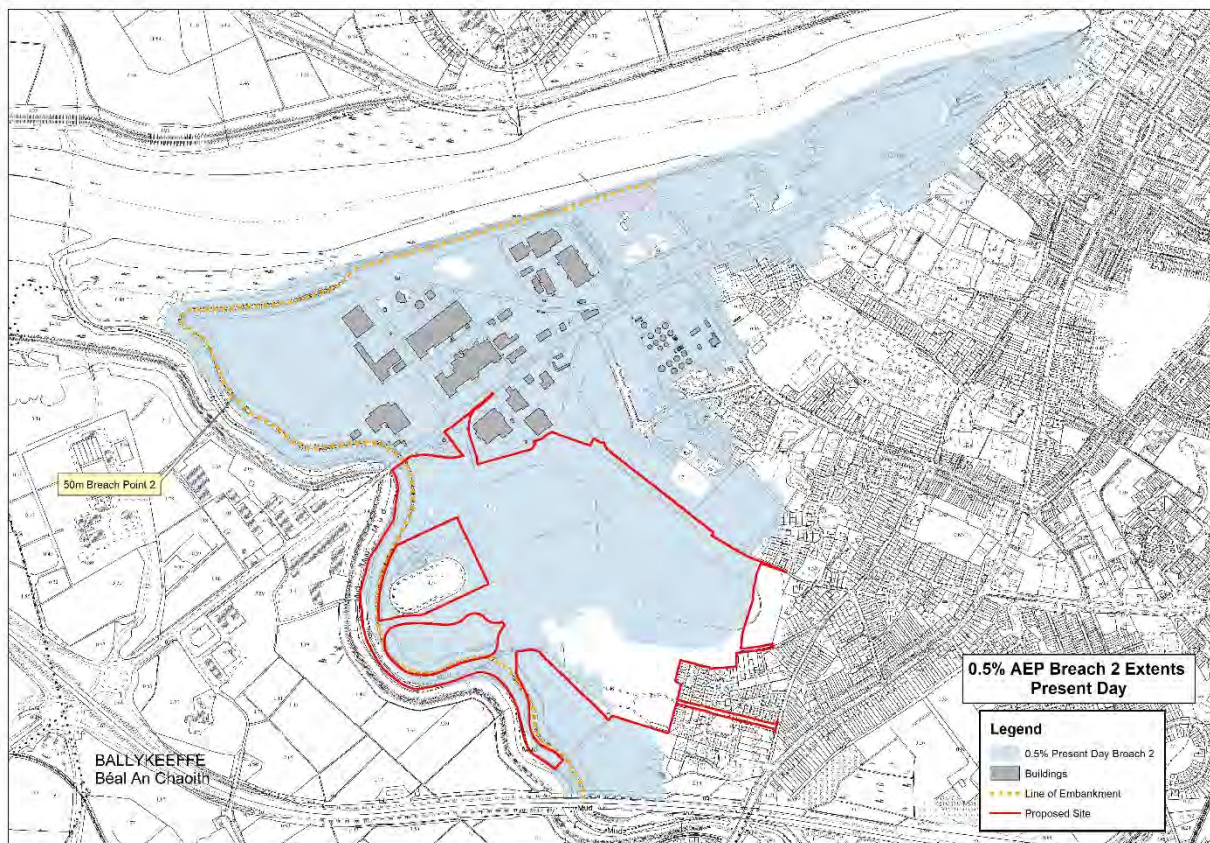


Figure 5.2 Breach Location 2 with 0.5% AEP event with Existing Ground Levels.

5.5 Mitigation Measures for Breach Scenario

RPS wanted to use the maximum breach water level to define suitable development levels for both the Office and Residential Campuses. From the three breach simulations described above the maximum derived water level reached within the masterplan area was 4.3m OD and was subsequently used as a design water level. Note this is less than the 4.87m OD level derived for the 0.5% AEP flood level in the Ballynaclough River during the Shannon CFRAM Process, but the spreading out of the water across the Dock Road area during a breach means that the maximum water level reached along the boundary of the masterplan area is 4.3m OD.

In order to address the risk from the potential flood depths during a breach, the preferred mitigation measure, as advised in the Planning system and Flood Risk Management Guidelines, is to raise the levels of the proposed development. In Clause 5.16 this is suggested as being above the 0.5% AEP flood level even when behind existing defences. The guidelines also state, on page 73, that although filling to this level is effective and beneficial it also has to be balanced against the risk of displacing water elsewhere during an overtopping or breach scenario. RPS have therefore proposed the following mitigation measures to manage the identified risk.

Table 5.1 Description of proposed mitigation measures during the breach scenario

Objective of Mitigation Measures	Proposed Mitigation Measures
To raise the proposed development area as far as is reasonably possible with the focus on protecting people and buildings	Based on the maximum breach level of 4.3m OD all buildings in Office Campus and Residential Campus should be protected to minimum level of 4.6m OD, which provides 300mm freeboard above the predicted breach level. Car parking and open space can be kept at a lower level. This lower level should be above the 0.5% AEP overtopping level, but there is an acceptance that it can flood during an unlikely breach scenario.
Recognise less vulnerable and vulnerable type of development	For Residential Development, which is classed as 'vulnerable' under the guidelines, additional freeboard should be added to allow for climate change and provide a full 500mm freeboard. This freeboard is incorporated into the majority of OPW flood schemes. This results in a proposed FFL of

	5.3m OD, which is made up of 4.3m OD maximum breach level + 500mm freeboard + 500mm climate change allowance.
Provide egress and access during extreme event to provide access for emergency services and also those wishing to evacuate the area	Designated internal roads should be raised to 4.6m OD. This provides access and egress to all vehicles and pedestrians even during a breach scenario.
Balance the beneficial effect of infilling verses the risk of increasing flood risk elsewhere for existing development	The raising of buildings and roads to the stated levels is a priority, but rather than infill the entire site an attempt has been made to balance the impact of infilling and not increase flood risk elsewhere. Hence areas of open space and car parking have been permitted to flood in a controlled manner.

5.5.1 Residential Campus mitigation measures

The residential campus and neighbourhood centre will be filled to minimum platform level of 4.6m OD. From this level the roads will be built up to approximately 5.0m OD and then all FFLs constructed to a minimum of 5.3m OD. This provides over 1m freeboard to all properties and provides a very high standard of protection to what is considered “vulnerable” development under the guidelines.

5.5.2 Office Campus mitigation measures

The office campus is considered “less vulnerable” development and therefore a balance can be struck on protecting buildings and people from the breach scenario as well as allowing open spaces to flood.

The proposed way of achieving this is shown in Figure 5.3 which indicates indicative development levels for the office campus. It depicts a ring of office development and plaza levels around the circumference which will prevent water inundation into buildings, internal roads and central car parking area during a breach scenario. Initially it was proposed to keep external car parking and open spaces at a lower level of approximately 2.6m OD which will not flood during a 0.5% AEP overtopping scenario but will be allowed to be inundated during a breach scenario. These proposed development levels achieve the balance of protecting new development to the required standard i.e. the 0.5% AEP plus climate change event but also minimising the risk of flooding to neighbouring properties. Figure 5.4 provides further illustration of the proposed development levels in cross section.



Figure 5.3 Proposed Mitigation Measures

FLOOD RISK ASSESSMENT



Figure 5.4 Cross sections through the proposed Office Campus

5.5.3 Impact Modelling of Breach Mitigation Measures

Based on the proposed development levels for the Office and Residential Campuses breach modelling has been undertaken for each of the three breach locations. Using the same boundary conditions as described for the existing scenario in Section 5.4 of this report.

To provide an easy comparison for the existing and proposed development scenarios a series of combined extent maps have been produced which clearly indicate the impact of infilling in the breach scenario.

These comparative maps show three different colours at each breach location:

1. Anywhere shown as green floods only in the existing scenario but not in the proposed scenario, which is reflective of the areas that have been infilled.
2. Anywhere shown as pink floods in both the existing scenario and in the proposed scenario. This means there is no flooding impact in this area as a result of the proposed development.
3. Anywhere shown as yellow floods only in the proposed scenario and not in the existing scenario.

Based on the proposed mitigation measures described in section 5.1 the impact of the raising all of the lands is shown in Figure 5.5.

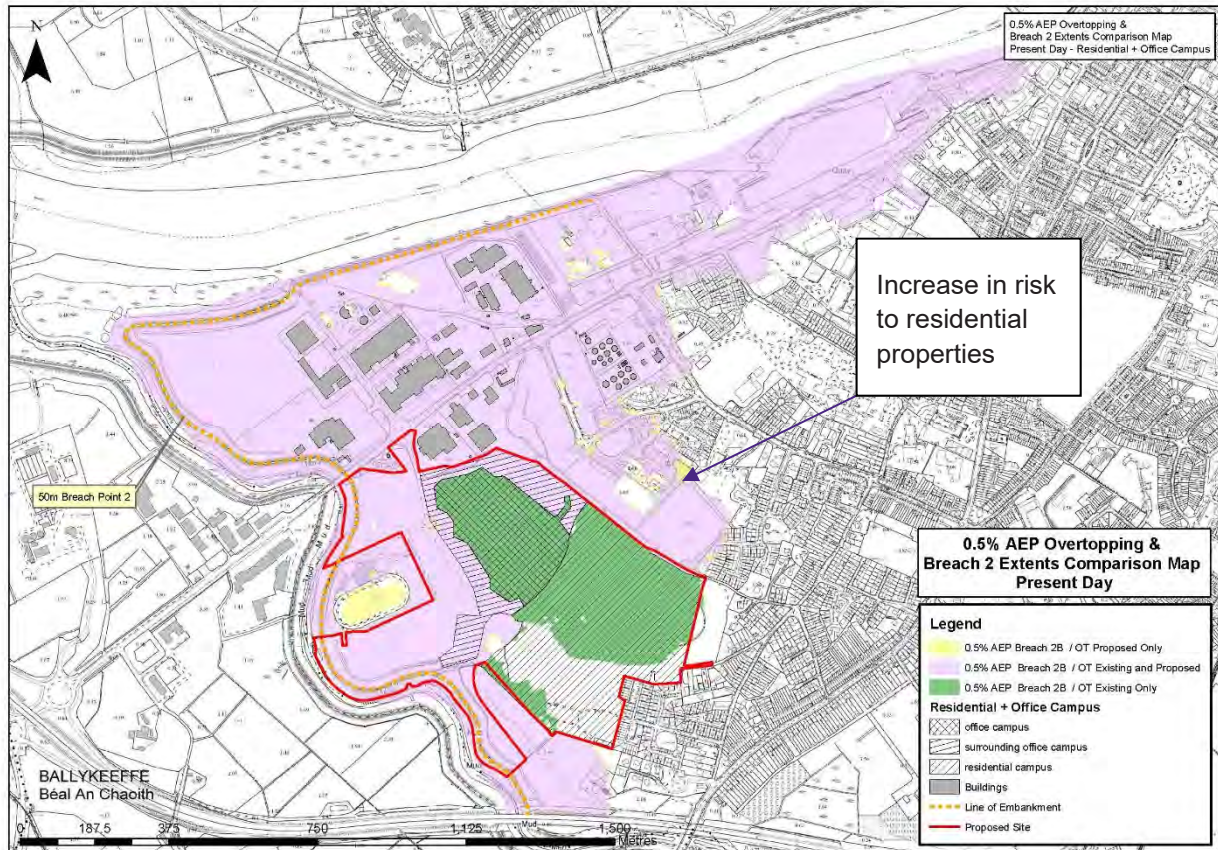


Figure 5.5 Impact of Raising Proposed Development Lands.

It can be seen from Figure 5.5 that raising of the lands highlighted in green is causing an impact to the Greyhound Stadium track and also residential properties to the north west of the masterplan area. While this increase in risk is very small, around 60mm in terms of an actual increase in water level, there are additional properties affected and therefore the proposal to raise all of the lands is unacceptable in the context of the guidelines and further mitigation measures will be required.

5.5.4 Additional Mitigation Measures for Office Campus

In order to offset the increase in risk identified in Figure 5.5, RPS considered allowing the inner car park of the Office Campus to store flood water during the breach scenario. This will be achieved by allowing roads into the proposed development to be lowered to convey water into this central area during the breach scenario thus providing additional storage. This will not affect the proposed development levels or finished floor levels in either the residential campus or office campus which will remain at the 4.6m and 5.3m OD respectively. Potential conveyance routes are shown in Figure 5.6.

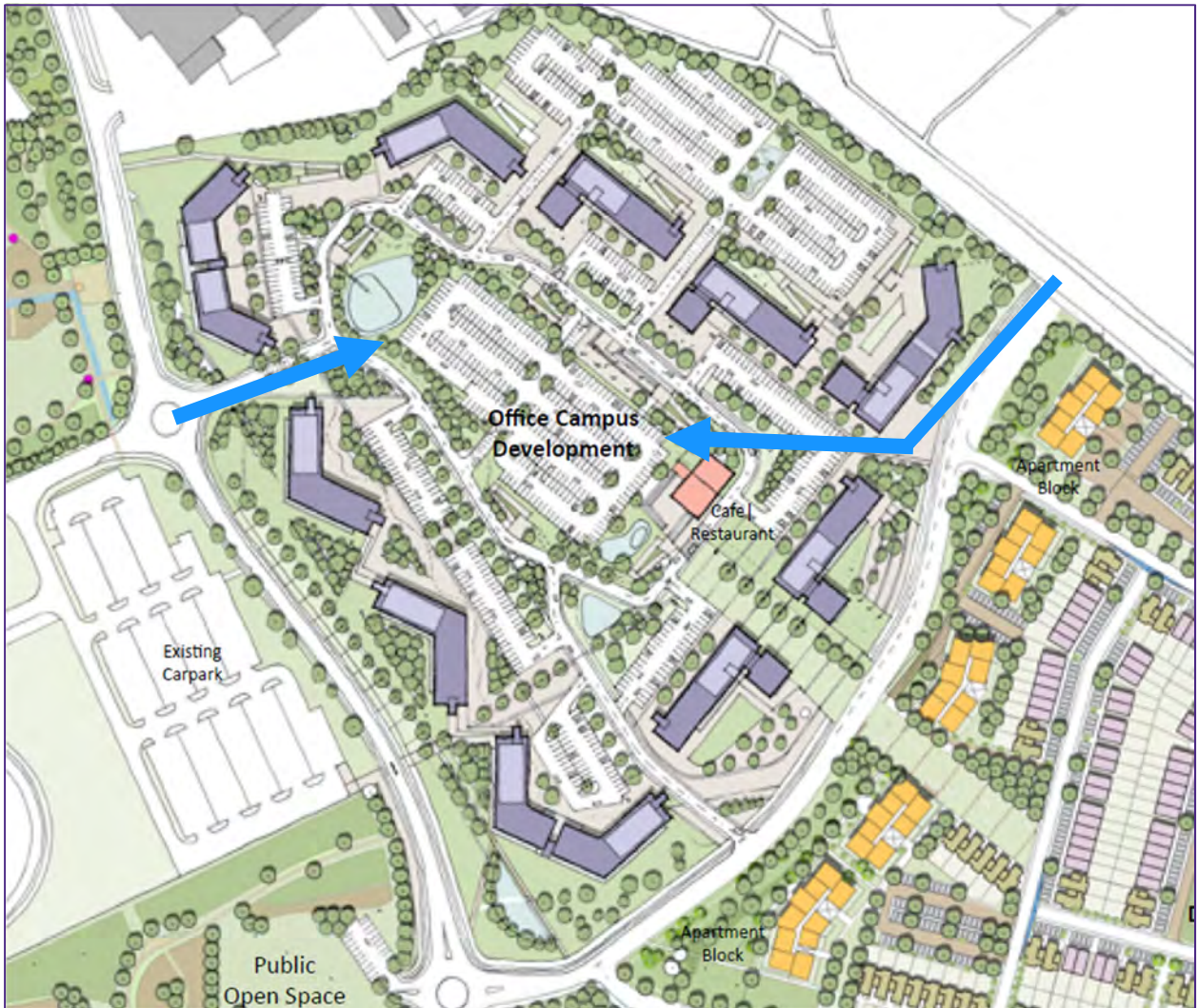


Figure 5.6 Potential Lowered Conveyance Routes into the Central Car Parking Area

Based on this revised approach the breach models were re-run to show the benefit of the additional storage area now provided. Figure 5.7, 5.8, 5.9 show comparative maps for each of the 3 breach locations based on this proposed mitigation measure.

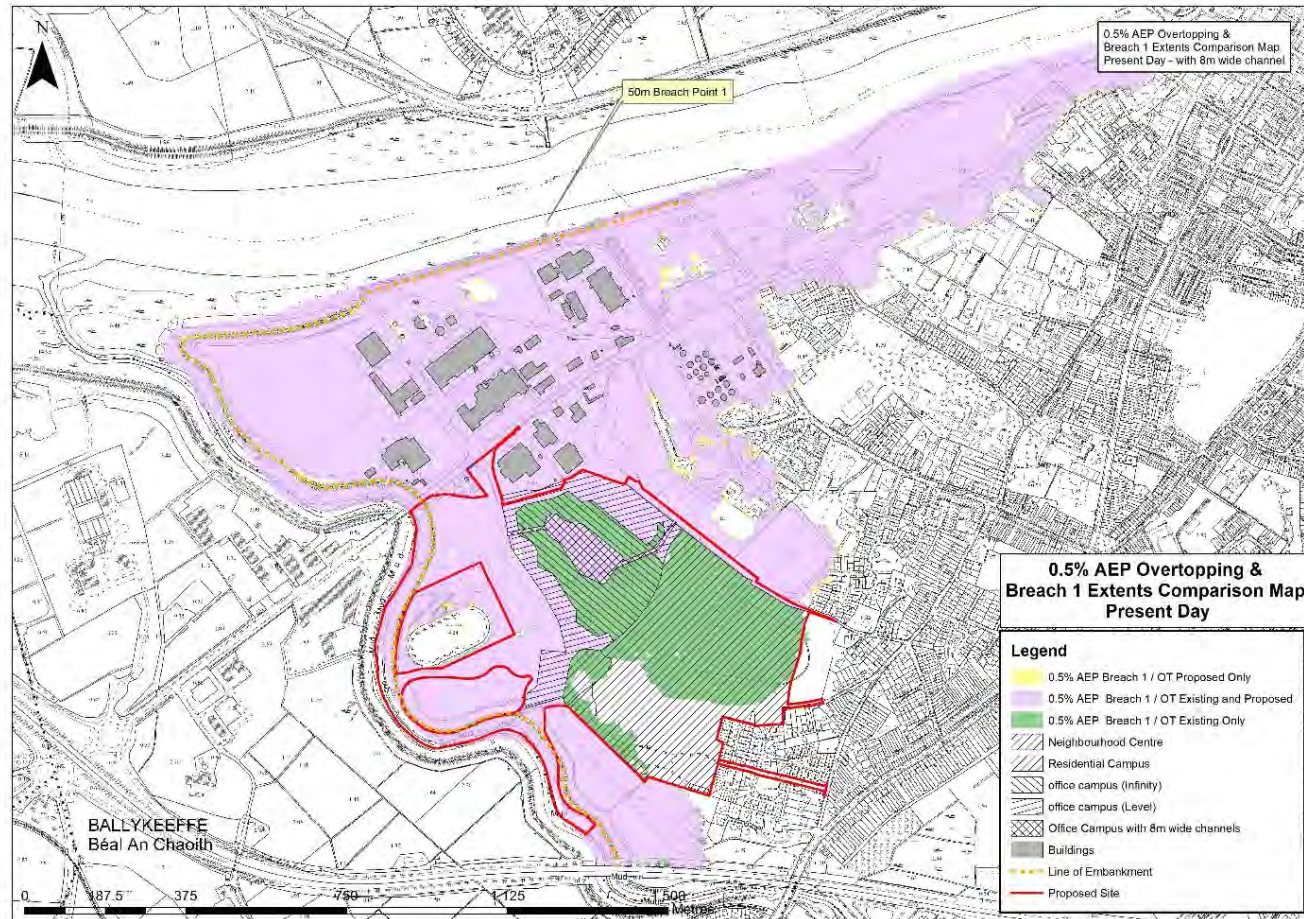


Figure 5.7 Extents comparison map- Breach 1 location

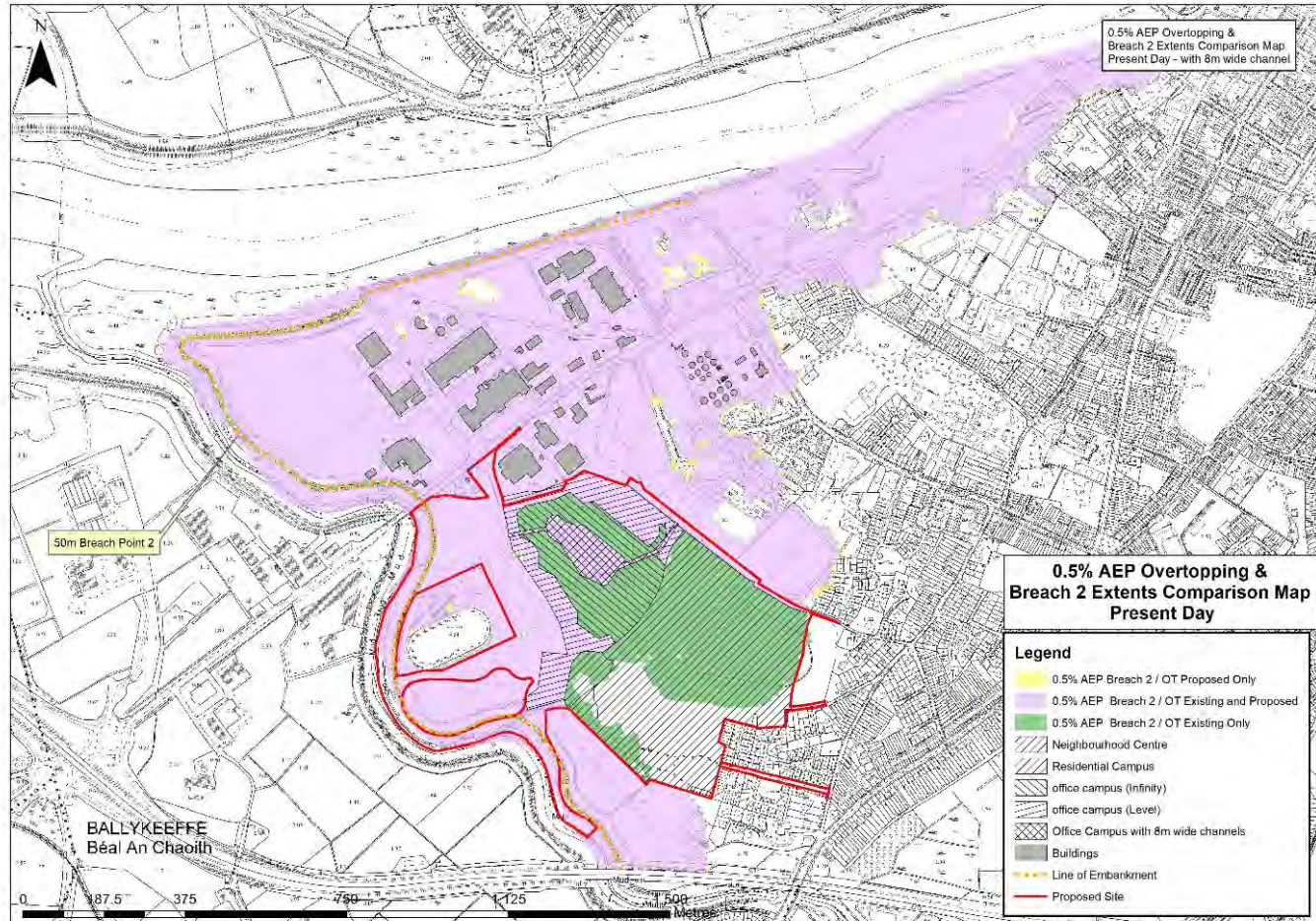


Figure 5.8 Extents comparison map – Breach 2 location

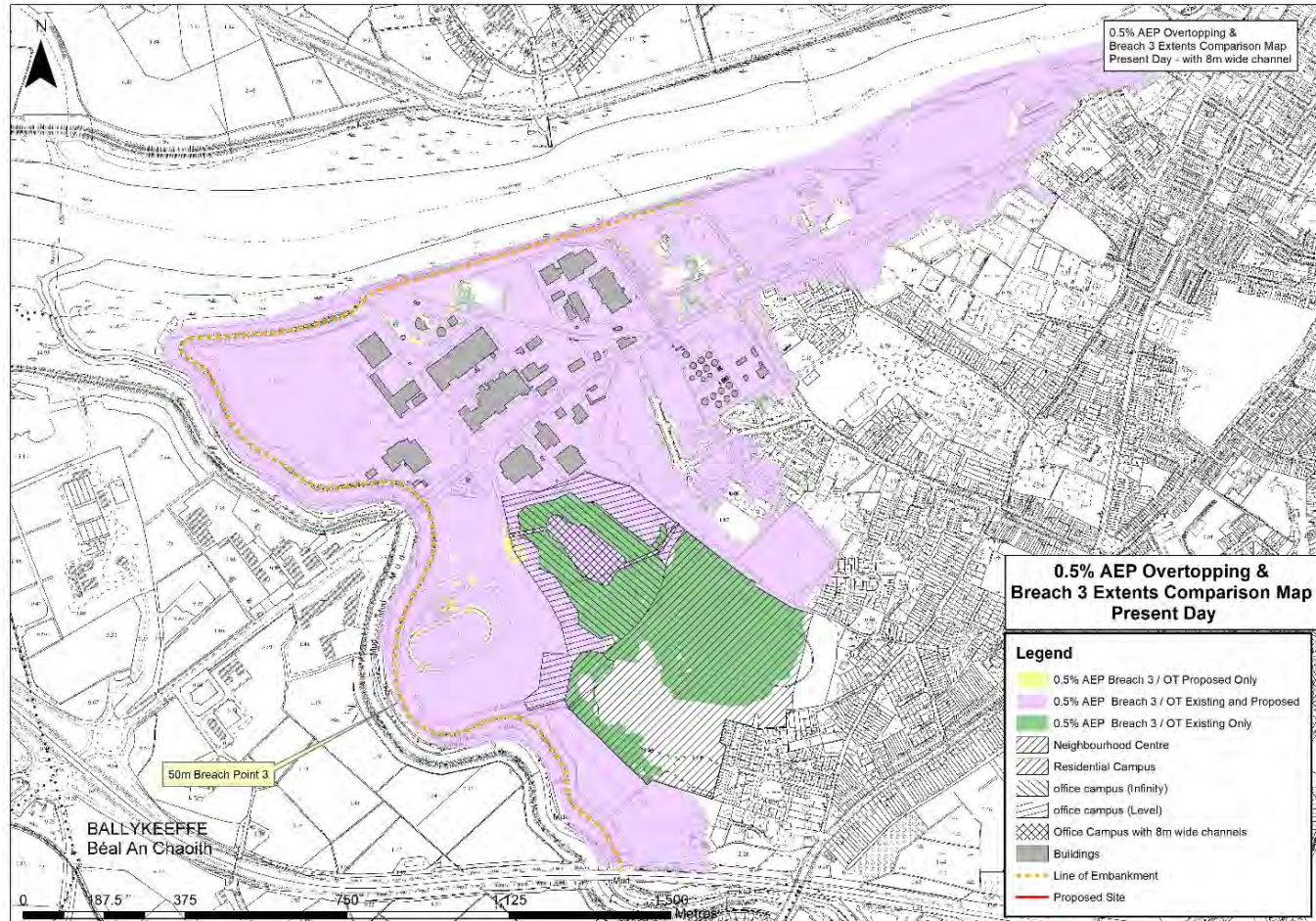


Figure 5.9 Extents comparison map – Breach 3 location

5.5.5 Conclusions on Breach Modelling

Based on the analysis the overwhelming conclusion is that the breach modelling indicates the proposed development does not create an increase in flood risk to existing development. These mitigation measures have also been tested for the 0.5% AEP MRFS event with no impact identified these maps are contained in Appendix B of this report.

As a point of note in relation to figures 5.7-5.9, it can be seen that along the edges of the flood extent small amounts of yellow and blue are visible. This is not an indication of the either an increase or a decrease in flood risk extent instead it occurs as a result of mesh in the 2D domain of the model changing as a result of the new mitigation measures introduced.

5.6 Surface Water Drainage Strategy

Given the scale of the proposed development and the change from a largely greenfield site to a residential and office campus there is the potential for a significant increase in the rate of run off and the need to attenuate flows to the receiving watercourse/s.

In order to mitigate this impact the proposed surface water design has been based on the requirement to ensure that the development does not result in increased runoff rates. The discharge rates from the identified contributing areas are to be limited for all events up to and including the 1 in 100 year extreme rainfall event. All flows will be attenuated within the development itself and by use of the existing Lagoon adjacent to the Ballynaclough River.

The existing storage lagoon top surface area is lined with puddle clay providing an impermeable layer. It has a current capacity of approximately 24,000m³ based on recent topographical survey (November 2017) and an allowance for 500mm freeboard.

There is an open channel from the last manhole on the existing drainage network to the lagoon inlet structure which is also lined with puddle clay. This channel directs the flows by gravity to the open lagoon. There are three storm water control structures associated with the lagoon;

1. Inlet structure to the lagoon - this headwall structure is located at manhole S.1 and is constructed of reinforced concrete. A baffle wall allows the stormwater to discharge directly to the lagoon via the open channel.
2. Penstock structure - the penstock structure controls the flow of the water from the lagoon to the outfall structure in the Ballynaclough River.
3. Outfall structure - the outfall structure is constructed of reinforced concrete and contains a 1050mm diameter Tideflex valve with thimble plate that allows discharge of water to the river at low tide but prevents backflow into the lagoon in times of high tide.

Given the proposed development levels for the office and residential campuses this will ensure free discharge to the Lagoon under gravity. The elevated development levels will also ensure that there will be no backing up from the storm drainage network resulting from elevated tidal levels even during a 0.5% AEP event.

5.6.1 Access and Egress from the Proposed Masterplan Area

Given the identified mitigation measures which propose to raise all development and finished floor levels above the 0.5% AEP breach level with suitable allowance for climate change and freeboard. There will be no requirement to evacuate either the office campus or residential campus even during a 0.5% AEP MRFS climate change event even when a breach occurs. This is an exceptionally high standard of protection given the severity and probability of the event being considered.

Access and egress therefore only needs to be considered in relation to emergency services, e.g. ambulance or fire services, requiring access when a breach of the defences occurs and thus cutting off the main access road leading onto the Dock Road. In this scenario there is still emergency access available in and out of the masterplan area from Greenpark Avenue. This is indicated on Figure 5.10.



Figure 5.10 Emergency Access and Egress Routes

5.6.2 Office Campus car parking areas

The central car parking area and those to North West of the office campus are being constructed to the lower level of 2.6m OD to maximise the amount of storage during a breach scenario. That also means that these areas are susceptible to flooding during a breach and given the nature of this event there no time for office users to move their cars once it has occurred. To mitigate this risk to property and also to anyone entering these areas during a breach, an emergency plan will be required to prevent cars being there in the first instance.

This can be achieved by the management company looking after the office campus reacting to coastal flood warnings which are readily given from Met Eireann and can facilitate closing of the car parks on those particular locations in advance. This will minimise the risk of damage to vehicles should a breach occur. A detailed flood warning and evacuation plan would need to be developed as part of a detailed planning application for the office campus.

6 PLANNING SYSTEM AND FLOOD RISK MANAGEMENT GUIDELINES

6.1 Classification

The ‘Planning System and Flood Risk Management’ Guidelines classify different types of development in terms of their vulnerability class (Table 3.1 of the Guidelines). This table has been reproduced as Table 6.1.

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

Table 3.1 Classification of vulnerability of different types of development

Figure 6.1 Extract from Planning Guidelines- Classification of vulnerability of development

Table 3.2 of the Guidelines identifies the type of development that would be appropriate to each flood zone and those that would need the Justification Test. This table has been reproduced as Figure 6.2.

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

Table 3.2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

Figure 6.2 Extract from Planning Guidelines- Vulnerability versus flood zones

The proposed site will incorporate an office campus and residential housing. The office campus would be classified as ‘less vulnerable development’, while the residential area will be ‘highly vulnerable development’. Both of these types of development requires a Justification Test in Flood Zone A (see Figure 6.2).

6.2 Development Management Justification Test

Where a planning authority is considering proposals for new development in areas at a high or moderate risk of flooding that includes types of development that are vulnerable to flooding and that would generally be inappropriate as set out in Table 3.2 of the Guidelines, the planning authority must be satisfied that the development satisfies all of the criteria of the Development Management Justification Test outlined in Box 5.1 of the guidelines and reproduced as Figure 6.3.

It is deemed not necessary to complete the Development Plan Justification Test as it is evident the Limerick City Development Plan 2010-2016 has already taken account of The Guidelines when considering the zoning for the masterplan area. Therefore the Development Management Justification Test need only be applied.

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:

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.
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.

Figure 6.3 Extract from Planning Guidelines- Justification Test for Development Management

Table 6.1 sets out the response to the criteria in Box 5.1 that must be satisfied. Each of the criteria have been shown to be satisfied and therefore it is concluded that the proposed development complies with the requirements of the Development Plan Justification Test.

Table 6.1 Response to Justification Test for Development Management for proposed development

Criteria	Response
<p>1. The subject lands have been zoned or otherwise designated for the particular use or form of development in an operative development plan, which takes account of these Guidelines</p>	<p>The lands are zoned for mixed use and residential in the Limerick City Development Plan 2010-2016 (as extended). The Development Plan clearly states that the plan was produced taking full account of the Guidelines and was still zoned on that basis. It can be considered that Point 1 of the Development Management Justification Test has therefore been met.</p>
<p>2. The proposal has been subject to an appropriate flood risk assessment that demonstrates:</p>	
<p>(i) The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk</p>	<p>During a present day 0.5% AEP flood event and a 0.5% AEP climate change event there is no risk to the proposed development and no subsequent increase in flood risk elsewhere. This is described in detail in section 5.1 to 5.3 of this report.</p> <p>Additional modelling has been undertaken to consider the impact of the infilling of the site on the displacement of water in a breach of the existing defences. This was found to not have an increased risk on any existing properties. This is described in detail in Section 5.4 and Section 5.5 of this report. It is therefore considered that Point 2 (i) of the Justification Test has been met.</p>
<p>(ii) The development proposal includes mitigation measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible</p>	<p>The proposed development will not flood during a 0.5% AEP flood event or in the case of the 0.5% AEP flood event plus climate change event. This provides an exceptionally high standard of protection and therefore, the risk of flooding to people, property and the environment is very low. This level of protection will ensure that there will be no impact on the economy, i.e. there will not be an unacceptable level of flood risk which might subsequently require government capital expenditure to alleviate the problem to either the proposed development or existing development</p> <p>As a further robustness check full consideration of a flood defence breach during a 0.5% AEP and 0.5% AEP MRFS CC flood event has been assessed. As a result of this analysis the proposed development has been elevated to provide protection against a catastrophic event of this nature. Breach analysis has confirmed that this does not increase the flood risk to the existing developments. It is therefore considered that Point 2 (ii) of the Justification Test has been met</p>
<p>(iii) The development proposed includes measures to ensure that residual risks to the area and/or</p>	<p>The residual risk to the proposed development is low, as the development is protected up to a future 0.5% AEP plus climate change tidal event with additional freeboard. This gives added assurance that</p>

FLOOD RISK ASSESSMENT

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 mitigation measures are more than adequate to deal with any future flood risk. Designated internal roads will be elevated to ensure free access and egress even during an extreme event. No specific residual risks have been identified that would necessitate a flood evacuation plan for the site. It is therefore considered that Point 2 (ii) of the Justification Test has been met

- (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 flood mitigation measures proposed do not materially impact upon the desired layout, orientation or approach to the proposed development. It is considered that the proposed development is compatible with the wider planning objectives in relation to development of good design and planning for the area, and is compliant with the Limerick City Development Plan 2010-2016 (as extended).

7 SUMMARY AND CONCLUSION

RPS were commissioned to carry out a Flood Risk Assessment (FRA) in support of a masterplan for Greenpark, Limerick which will be a mix of office developments, residential units and a neighbourhood centre. The purpose of this assessment is to ensure that the development takes cognisance of the existing flood risk and does not result in increased flood risk elsewhere. This report has been prepared in accordance with the requirements of 'The Planning System and Flood Risk Management' Guidelines (DEHLG 2009).

The River Shannon flows at a distance to the north of the site and a small tributary, the Ballynaclough River, flows to the west of the site. Both of these rivers can be considered to be tidal at this location. There are flood embankments along both the River Shannon and the Ballynaclough River.

As part of the Shannon Catchment Flood Risk Assessment and Management (CFRAM) Study, Limerick was identified as an Area for Further Assessment (AFA). The CFRAM mapping and the levels derived from this study provide the best available information to assess the flood risk to proposed development site. These maps indicate that the 0.5% AEP flood event does not reach the application site. This is because of the protection afforded by the existing flood defences constructed under the 1945 Arterial Drainage Act. Under the requirements of 'The Planning System and Flood Risk Management Guidelines' the effects of any existing defences must be ignored and therefore the vast majority of the masterplan area is considered to be Flood Zone A, a small section is Flood Zone B and parts are Flood Zone C.

Applying the sequential approach set out in 'The Planning System and Flood Risk Management Guidelines' requires a Justification Test to be carried for development of residential and office use within flood zone A and B.

In accordance with Clause 5.16 of the guidelines a precautionary approach to development behind existing defences is to raise the finished levels to at least the 1% or 0.5% coastal flood level. This approach has been adopted for both the office and residential areas of the masterplan area.

Modelling of the impact of raising existing development was then undertaken considering both the 0.5% AEP and 0.5% AEP Climate Change (mid-range future scenario) flood level. There was no identified increase in risk to existing development as a result of this analysis. This is described in detail in Section 5.3 of this report.

As a further robustness check full consideration of a flood defence breach during a 0.5% AEP flood event has been assessed. As a result of this analysis the proposed development has been elevated to provide protection against a catastrophic event of this nature. Breach analysis has confirmed that there no increase in flood risk to existing developments. This is described in detail in Section 5.4 and 5.5 of this report.

Proposed development levels have been applied to the Office and Residential Campuses based on this breach analysis. Designated internal roads and office levels will be elevated to approximately 4.6m OD. Residential floor levels will be raised to 5.3m OD. This provides between 0.3m and 1m freeboard to predicted water levels during a breach scenario, which is considered a very high standard of protection.

Storm water from the proposed development will be fully attenuated for a 1 in 100yr rainfall event and the proposed drainage network and existing Lagoon beside the Ballynaclough River will provide the necessary attenuation. The elevated development levels will ensure drainage under gravity even during extreme tidal events in the Ballynaclough River and the Shannon Estuary.

Based on the proposed mitigation measures, consideration of the designated zoning and the proposed urban design, each of criteria in the Development Management Justification Test was shown to be satisfied. Therefore it was concluded that the proposed development complies with the requirements of the Development Management Justification Test and hence is compliant with 'The Planning System and Flood Risk Management Guidelines'.

7.1 Key Aspects of the Flood Mitigation Measures

The following are the key aspects of the mitigation measures proposed within this Flood Risk Assessment and demonstrate a robust and sustainable approach to developing the Greenpark lands.

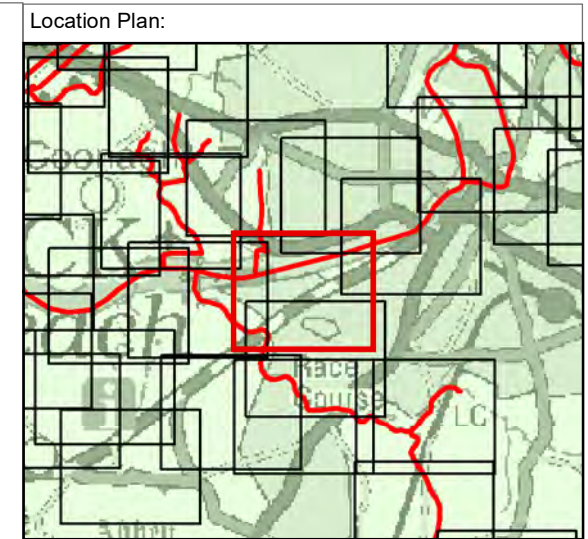
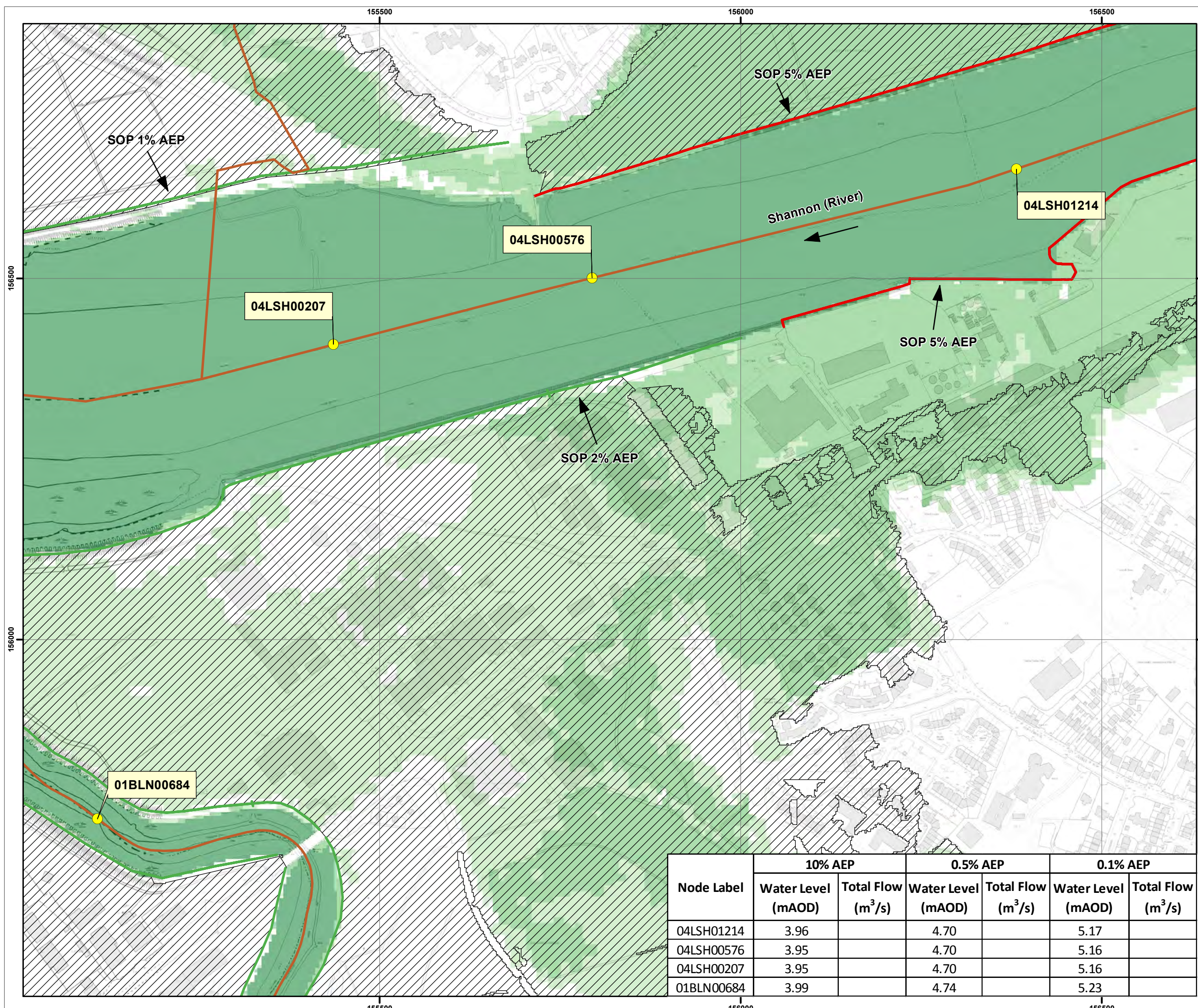
1. There is no reliance on the existing flood defences to provide any level of protection to the masterplan area.
2. The proposed masterplan is sustainable and will place no burden on Limerick City and County Council to provide additional flood defence infrastructure in the future.
3. The entire masterplan area will remain free from flooding during a 0.5% AEP Mid-Range Future Scenario event where overtopping of the existing defences occurs.
4. All buildings and key internal roads will be protected during a 0.5% AEP Mid-range Future Scenario event even when a breach of the existing defences has also occurred.
5. It has been robustly demonstrated that there is no increase in flood risk, even during a breach event, to surrounding developments.
6. A clear access and egress route for emergency vehicles can be provided to the office and residential campus and neighbourhood centre even during a breach event.
7. All storm drainage will be attenuated to existing run off rates and therefore will not cause capacity issues on the existing network or raise the increase of flooding elsewhere.

8 REFERENCES

- 1 The Planning System and Flood Risk Management Guidelines, DEHLG (2009)
- 2 OPW Flood Maps available at <http://www.floodinfo.ie/map/floodmaps/>
- 3 Limerick City Development Plan 2010-2016 (as extended).

Appendix A

Flood Maps from Shannon CFRAM Study



- 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)

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

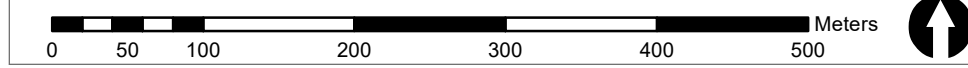


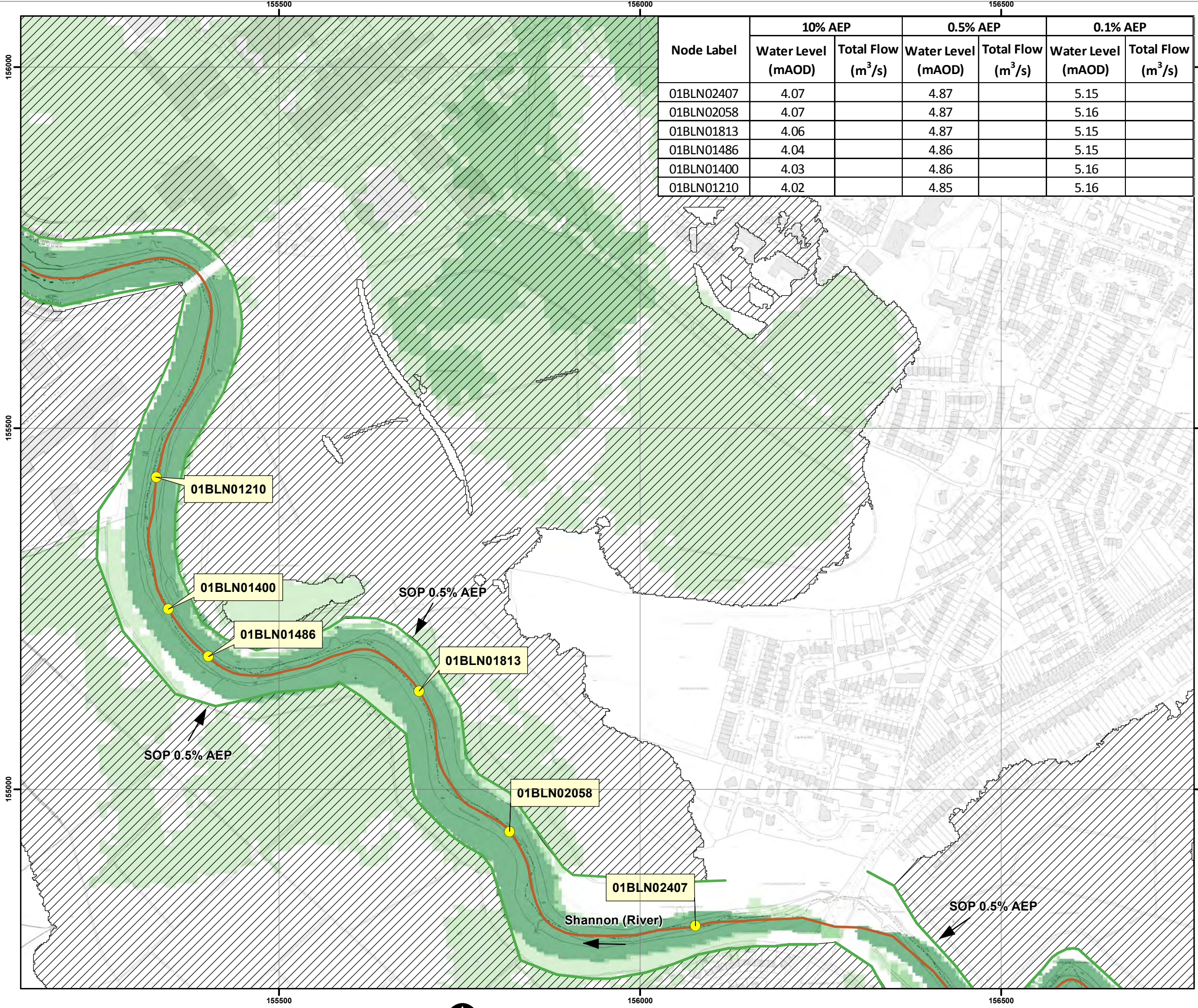
The Office of Public Works
 Jonathan Swift Street
 Trim
 Co. Meath
 C15 NX36

Merrion House
 Merrion Road
 Dublin 4
 D04 R2C5

Node Label	10% AEP		0.5% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)
04LSH01214	3.96		4.70		5.17	
04LSH00576	3.95		4.70		5.16	
04LSH00207	3.95		4.70		5.16	
01BLN00684	3.99		4.74		5.23	

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	COASTAL - TIDAL
Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH
Date:	June 2016
Checked by:	KM
Date:	June 2016
Reviewed by:	MC
Date:	June 2016
Approved by:	PS
Date:	June 2016
Map No.:	S2526LIK_EXCCD_F1_26
Sheet:	26 of 65
Revision:	0
Map Scale:	1: 5000
Plot Scale:	1:1 @ A3





Node Label	10% AEP		0.5% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)
01BLN02407	4.07		4.87		5.15	
01BLN02058	4.07		4.87		5.16	
01BLN01813	4.06		4.87		5.15	
01BLN01486	4.04		4.86		5.15	
01BLN01400	4.03		4.86		5.16	
01BLN01210	4.02		4.85		5.16	



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)

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



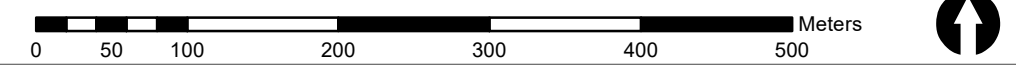
The Office of Public Works
 Jonathan Swift Street
 Trim
 Co. Meath
 C15 NX36



Merrion House
 Merrion Road
 Dublin 4
 D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	COASTAL - TIDAL
Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH
Checked by:	KM
Reviewed by:	MC
Approved by:	PS
Date:	June 2016

Map No.:	S2526LIK_EXCCD_F1_65
Sheet:	65 of 65
Map Scale:	1: 5000
Plot Scale:	1:1 @ A3
Revision:	0

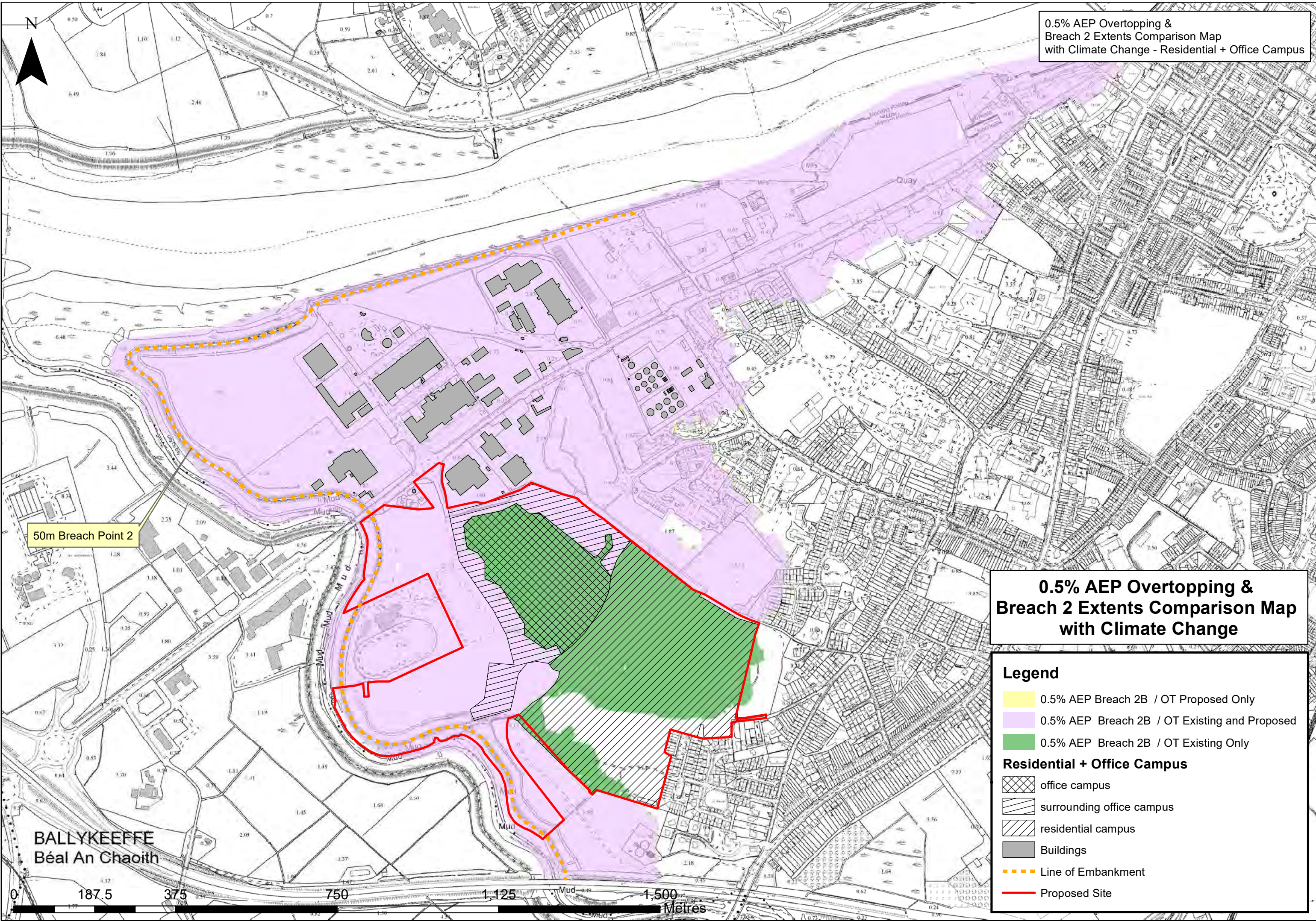




Appendix B

Climate Change Comparative Breach Maps

0.5% AEP Overtopping & Breach 2 Extents Comparison Map with Climate Change - Residential + Office Campus



50m Breach Point 2

0.5% AEP Overtopping & Breach 2 Extents Comparison Map with Climate Change

Legend

- 0.5% AEP Breach 2B / OT Proposed Only
- 0.5% AEP Breach 2B / OT Existing and Proposed
- 0.5% AEP Breach 2B / OT Existing Only

Residential + Office Campus

- office campus
- surrounding office campus
- residential campus
- Buildings
- Line of Embankment
- Proposed Site

BALLYKEEFFE
Béal An Chaoith





Lisney

PROPOSED REZONING OF LANDS AT GREENPARK, LIMERICK

Voyage Property

30TH AUGUST 2021

TABLE OF CONTENTS

1	INTRODUCTION	2
1.1	BRIEF	2
1.2	EXECUTIVE SUMMARY	2
2	LIMERICK COMMERCIAL PROPERTY MARKET	3
2.1	OFFICES	3
2.2	INDUSTRIAL	3
3	LIMERICK RESIDENTIAL PROPERTY MARKET	4
3.1	SALES MARKET	4
3.2	RENTAL MARKET	6
3.3	RESIDENTIAL CONSTRUCTION PIPELINE	7
4	PROPOSED REZONING	9
4.1	OVERVIEW OF PROPOSED CHANGE IN GREENPARK LAND USE	9
4.2	EMPLOYMENT LAND USE ZONING	10
5	CONCLUSION	13

1 INTRODUCTION

1.1 BRIEF

Lisney has been instructed by Voyage Property to consider the proposed rezoning of lands at Greenpark, Dock Road & South Circular Road, Limerick, having regard to past, prevailing and potential future demand for industrial, office and residential accommodation. Set out in this report is an overview of each of these property sectors in Limerick, in addition to an analysis of the quantum of development proposed in the Draft Limerick Development Plan 2022 – 2028.

1.2 EXECUTIVE SUMMARY

- Office market take-up in Limerick city and surrounding area (including Shannon) has averaged 15,000 sqm in the past decade, while industrial market take-up has average 45,000 sqm.
- The Limerick residential market has been strong in recent years and remains active. Between 2014 and 2020, between 2.0% and 2.4% of the housing stock in Limerick has transacted (ranging from 1,730 to 2,050 units annually). Market dynamics are similar to that of other urban areas, characterised by strong demand, a lack of supply and rising prices. While movers are most active in the market, first-time-buyers pay higher prices.
- The residential rental market remains active with strong demand prevailing but very tight supply; there were just 29 properties available to rent across all of Limerick at the end of August. In Q1 2021 average rents in Limerick City increased annually by 8.1% (greater percentage uplifts than Dublin City, Cork City and Waterford City).
- Just 516 residential properties were completed in Limerick in the 12 months to the end of March 2021, which only added about 0.6% to the building stock.
- Limerick City & County Council has identified individual sites in the Limerick Metropolitan area it deems suitable for the provision of employment related uses. At a headline level, we estimate that combined, all of these sites have the potential to deliver 1.98m sqm of employment related accommodation; split 530,000 sqm of offices and 1.46m sqm of industrial / logistics / manufacturing accommodation. **This is equivalent to 35 years office requirements and 32 years industrial requirements.**
- Taking into consideration the likely potential for expansion of the office and industrial markets in Limerick in the medium-term due to the local authority's commitment to economic growth and dynamic revitalisation via Limerick 2030, it is likely that the proposed level of potential development is **still equivalent to in excess of 20 years'**

requirements. **Even at this level, it remains an excessive amount of employment related development, particularly given the fact that Limerick, like all other parts of Ireland, is in the midst of a housing crisis with significant supply shortages and resultant rising prices.**

2 LIMERICK COMMERCIAL PROPERTY MARKET

As Ireland's fourth largest city, Limerick city and the surrounding area (including the Shannon region) experiences a good level of commercial property market activity annually. From our review of data, we have noted the trends set out below as they relate to the office and industrial occupational sectors.

2.1 OFFICES

Approximately 15,000 sqm of office space has, on average, been taken up annually in the last decade (Limerick and Shannon) but with annual figures ranging from below 10,000 sqm to more than 30,000 sqm.

Given the financial viability of office construction in recent years, very little new space has been added to the building stock. Most new buildings have had the backing of State-related bodies such as the IDA, Limerick 2030 and Shannon Commercial Properties. Examples of completed new buildings, or extensions to existing buildings, include those at the National Technology Park, Castletroy; City East Plaza, Ballysimon; Gardens International, Henry Street; and outside of the metropolitan area in Shannon.

While there are several office schemes with planning permission, there are no new buildings currently under construction in Limerick. Site clearance works have been completed at Bishops Quay (7,600 sqm – development currently on-hold but due to start in Q4) and on the Opera Centre (12,000 sqm at One Opera Square, where construction tenders have been issued and enabling works are ongoing).

There is currently approximately 42,000 sqm of on-market office accommodation available to occupy in Limerick and a further 6,000 sqm in Shannon. This represents just over three years supply and translates into a vacancy rate of approximately 12.5%, which is slightly above a normal market equilibrium.

2.2 INDUSTRIAL

Approximately 45,000 sqm of industrial space has, on average, been taken up annually in the last decade (Limerick and Shannon) but with annual figures ranging from about 20,000 sqm to more than 85,000 sqm.

There is approximately 72,500sqm of industrial space under construction in Limerick and Shannon, some of which relates to building extensions and also some design-and-build

projects given the ongoing viability issues with speculative development. This development comprises a mix of warehousing, manufacturing, light industrial and advanced technology buildings, along with laboratory space (laboratory accommodation comprises 30,000 sqm / 42% of the total).

There is currently approximately 22,000 sqm of on-market industrial accommodation available to occupy in Limerick and a further 16,000 sqm in Shannon. This represents about one years' supply and translates into a vacancy rate of sub-5%. Such a vacancy rate is similar to other markets such as Dublin and Cork, which are both also sub-5%.

3 LIMERICK RESIDENTIAL PROPERTY MARKET

3.1 SALES MARKET

3.1.1 Overview

The Limerick residential market has been strong in recent years and remains active. From 2014 to 2020, between 2.0% and 2.4% of the housing stock in Limerick was transacted (ranging from 1,730 to 2,050 units annually)¹. Market dynamics are similar to that of other urban areas, characterised by strong demand, a lack of supply and rising prices.

The market is mainly comprised of movers with those trading up or down accounting for 55% of all purchases in the last 12 months across Limerick. These movers are most active in the second-hand market where they account for 57% of all sales. First-time-buyers (FTB) account for 26% of the overall market but given the help-to-buy scheme dominate the new homes part of the market (42% of all new home sales) – albeit the new homes market is small with just 14% of all residential transactions comprised of newly built properties.

3.1.2 Availability

Supply remains a critical issue and fell to new lows in March 2021 with fewer than 500 second-hand properties advertised for sale across the entire county and just 16 new home schemes advertised. The figures relating to the second-hand market have remained relatively stable in the past five months with no noteworthy improvements evident but the number of new home schemes has fallen further.

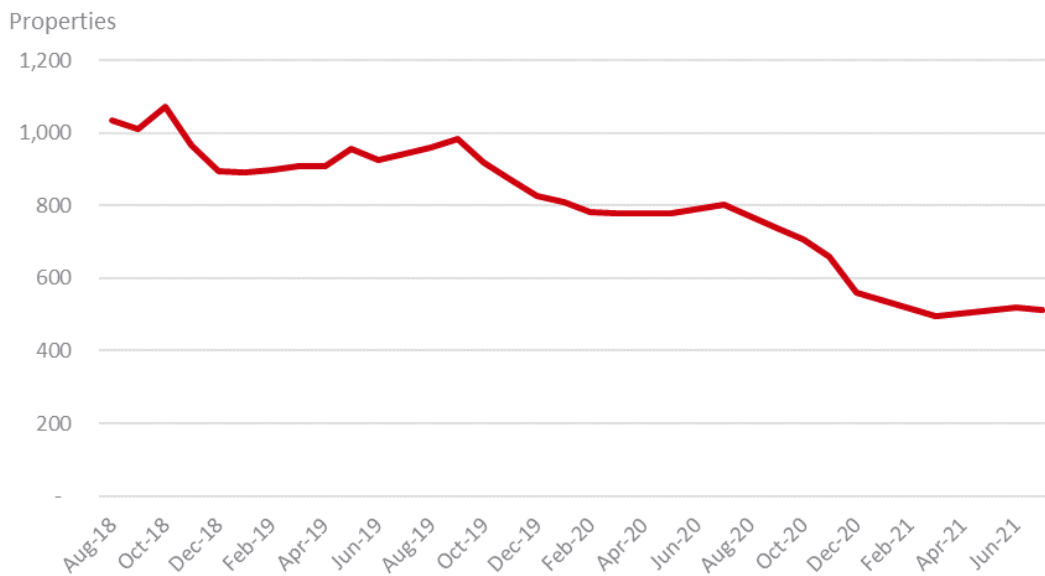
While there are just 13 new home schemes advertised currently across all of Limerick (and just five in the city), in the short-term a small number of additional schemes are due in the city region. However, given their size it is likely that they will only bring a limited number of additional homes to the market (approximately 200). In the more medium-term, it is

¹ This comprises all sales to household buyers in Limerick City and County, as defined by the CSO.

estimated that up to 2,000 additional homes are due. This is equivalent to just over one years' total market supply in the Limerick market.

In terms of second-hand supply, there remains a cohort of vendors that are unwilling to list their home for sale as they do not see the supply for their onward purchase and they do not want to enter the rental market in the short-term. While greater supply was expected to be seen in the Autumn months as the vaccination process progressed, it now seems more likely to be the new year before there are improvements. This will continue to have an upward impact on prices.

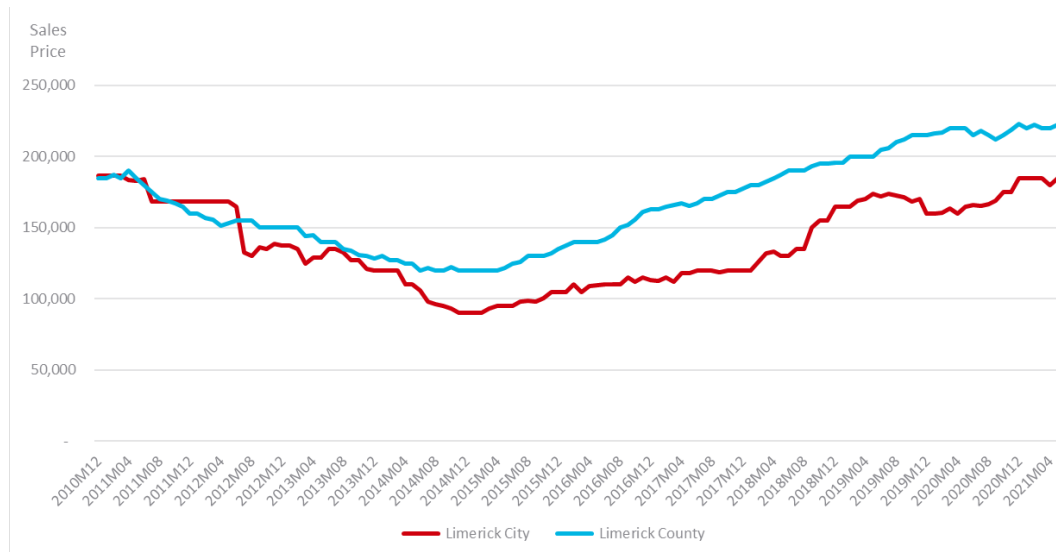
Figure 3-1: Second-Hand Residential Supply August 2018 – August 2021



Source: Daft.ie, Lisney analysis

3.1.3 Prices

Residential sales prices in both Limerick City and County have been trending upwards since the market low in 2014. Since that time, the median price in the City has grown by 106% and in the County by 86%. On an annual basis to the end of June 2021, the median price paid for a home in Limerick City has grown by 11.4% and by 3.8% in the County.

Figure 3-2: Median Sale Price - Limerick City & County (December 2012 - June 2021)

Source: CSO

In addition to this official data on property sales from the CSO, property portal Daft.ie states in its Q2 2021 House Price Report that list prices grew in Limerick City annually by 15.5% and by 19.5% in the County. While this reports focuses on asking prices (rather than actual transacted prices), it does provide a more forward looking indication on the market, particularly in relation to the next six months.

It is also worthwhile to note the variations in prices paid by purchaser type. In both Limerick City and County, FTB pay the most according to the CSO. This is contrary to many other markets around the country where movers (those trading up or down) generally pay the most. In Limerick City, the median price paid for a home by a FTB at the end of June 2021 was 14.1% higher than 12 months previous. The corresponding figure in Limerick County was 11.8% higher. Simultaneously, the median price paid by movers has remained flat in the 12 months. Consequently, price increases in the market have been driven by FTB. Meeting their demand for properties though additional supply will be critical to moderate price growth.

3.2 RENTAL MARKET

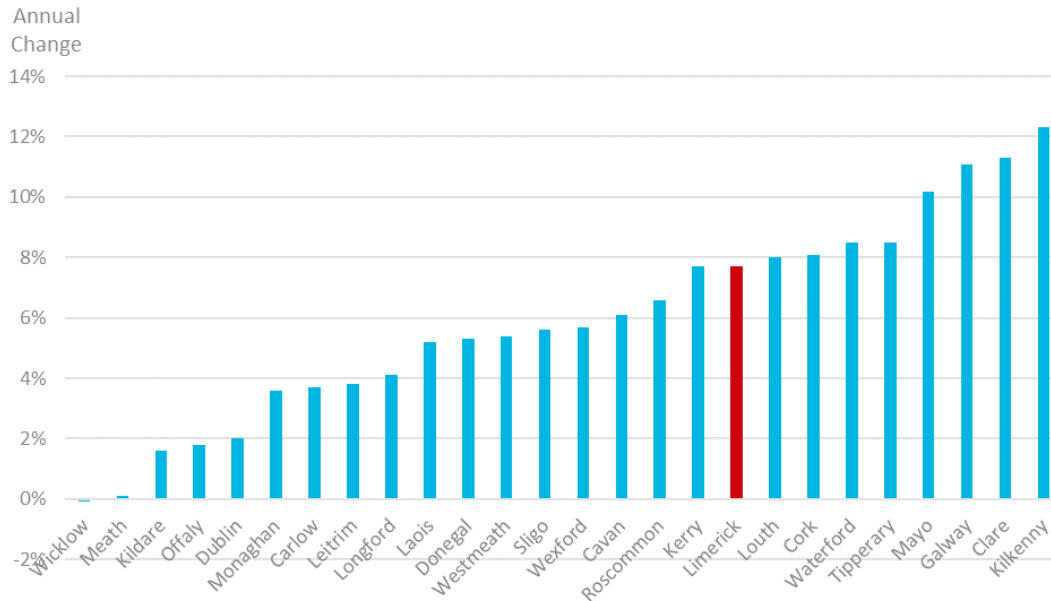
3.2.1 Overview

The rental market remains active with strong demand prevailing. In Limerick City and surrounding area, the market did not get a significant one-off increase in supply due to Airbnb properties becoming available for longer-term let at the onset of the pandemic (as happened in other areas) and as such, supply has remained extremely tight. At the end of August 2021 there were just 29 properties available to rent across all of Limerick.

3.2.2 Rental Prices

The latest available data from the Residential Tenancies Board (RTB) shows that in Q1 2021 average rents in Limerick City increased annually by 8.1% (greater percentage uplifts than Dublin City, Cork City and Waterford City) with the pace of growth fastest in the most recent quarter (Q1 2021) as rents in the city grew by 4.1% in the three months. In terms of Limerick County, it lies in the top third of all counties nationwide in terms of annual price growth, as seen on the chart below in Figure 3-3, growing by 7.7% in 12 months.

Figure 3-3: Annual Change in Average Rent Q1 2021

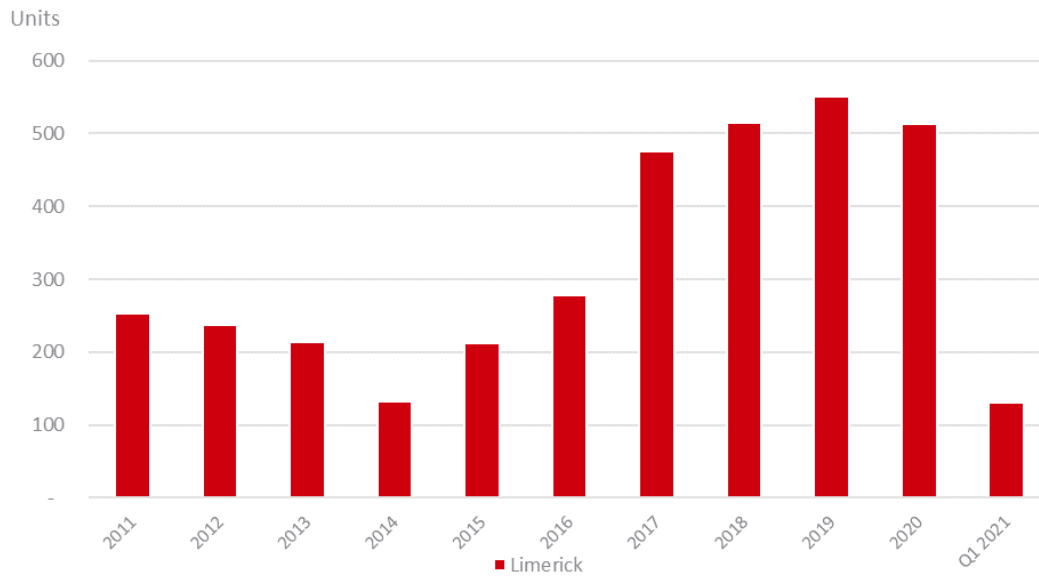


Source: RTB

3.3 RESIDENTIAL CONSTRUCTION PIPELINE

3.3.1 Completions

Based on CSO data, 516 units were completed in Limerick in the 12 months to the end of March 2021; 483 (94%) were houses and 33 (6%) were apartments. This remains well below what is required in the market and only added about 0.6% to the stock of residential properties across Limerick.

Figure 3-4: Limerick Residential Construction (2011 - Q1 2021)

Source: CSO, Lisney analysis

3.3.2 Under Construction

Based on CIS data², the total number of units under construction in new homes schemes (with greater than 10 units) across Co Limerick at the end of June 2021 totalled 1,341. These are schemes which commenced construction after January 2019 and which have not yet completed.

3.3.3 Planning Granted

Based on CIS data, the total number of units within new homes schemes (with greater than 10 units) across Co Limerick with planning permission granted (since January 2019) but with construction not yet commenced as at end-June 2021, totalled 1,701.

3.3.4 Planning Submitted

Based on CIS data, the total number of units within new homes schemes (with greater than 10 units) across Co Limerick with planning applications submitted (since January 2019) and awaiting a planning decision of either grant or refuse at the end of June 2021, totalled 1,138.

² CIS (Construction Information Services) is an online portal, which independently tracks Irish construction statistics. It is not possible to confirm that this system accurately covers all data, but we believe it is the best source available in relation to construction data. For the purpose of this report, we have included any schemes that comprise 10 or more units and which have been active on-site since January 2019 but have not yet been completed. All CIS data is as at end-June 2020.

4 PROPOSED REZONING

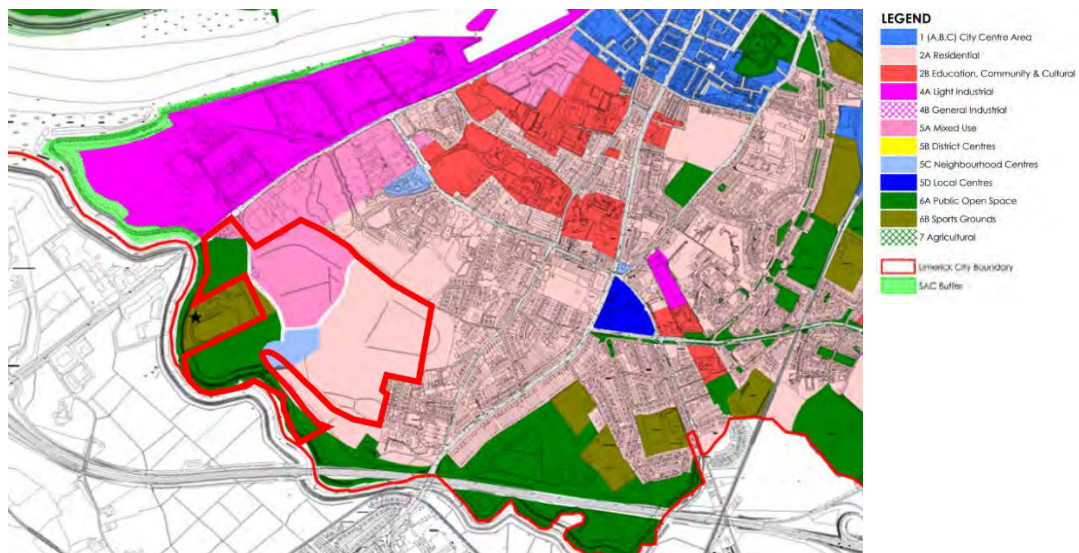
4.1 OVERVIEW OF PROPOSED CHANGE IN GREENPARK LAND USE

From the information Lisney has been provided with, our understand of the current and proposed land use zoning of the Greenpark lands is set out in Table 4-1 below.

Table 4-1: Current & Proposed Land Use Zoning

LAND USE ZONING	LIMERICK CITY DEVELOPMENT PLAN 2010 – 2016 (AS EXTENDED)	LIMERICK DEVELOPMENT PLAN 2022 – 2028
Residential	19.33 ha	4.42 ha
Mixed-Use	10.63 ha	0 ha
Neighbourhood Centre	2.28 ha	0 ha
Enterprise & Employment	0 ha	24.77 ha
Open Space & Sundry	14.92 ha	17.97 ha
Total	47.16 ha	47.16 ha

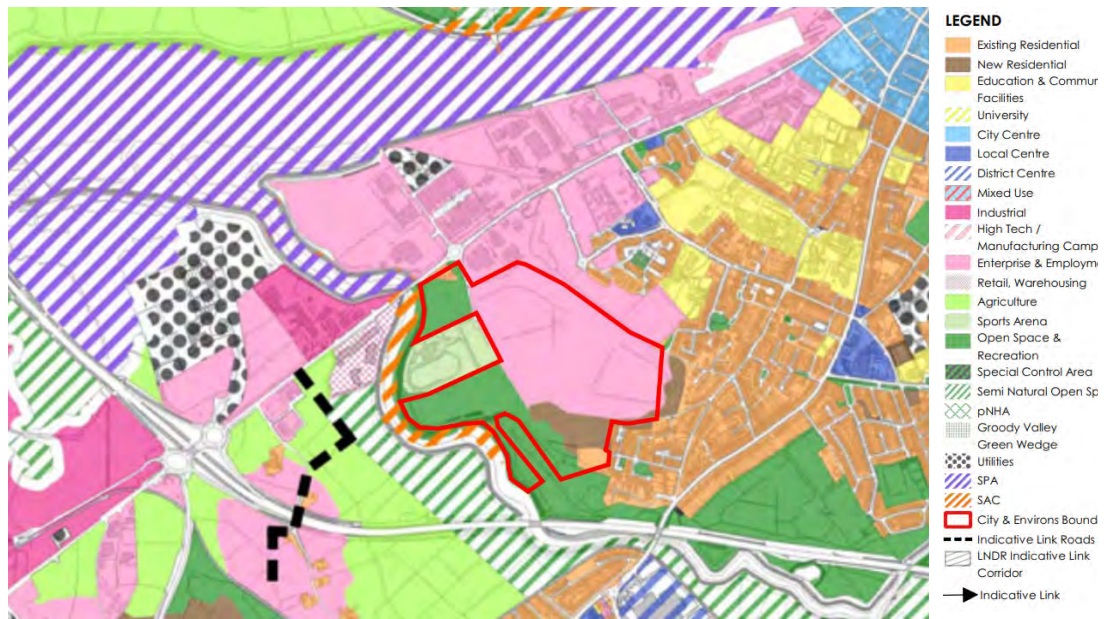
Figure 4-5: Land Use Zoning Map - Limerick City Development Plan 2010 - 2016 (As Extended)



Source: Limerick City & County Council

Indicative outline of subject lands by Lisney

Figure 4-6: Land Use Zoning Map - Draft Limerick Development Plan 2022 - 2028



Source: Limerick City & County Council

Indicative outline of subject lands by Lisney

4.2 EMPLOYMENT LAND USE ZONING

4.2.1 Overview

We note the following objectives within the Draft Limerick Development Plan 2022 – 2028:

- Enterprise & Employment - *'to provide for and improve general enterprise, employment, business and commercial activities'*
- Mixed Use – *'to provide a mixture of residential and compatible commercial uses'*
- High Tech / Manufacturing – *'to provide for office, research and development, high technology, manufacturing and processing type employment in a high quality built and landscaped campus style environment'*
- Industry – *'to provide for specialised and heavy industrial development and associated employment creation'*

The local authority has identified individual sites in the Limerick Metropolitan area it deems suitable for the provision of employment related uses³, as summarised in Table 4-2 below.

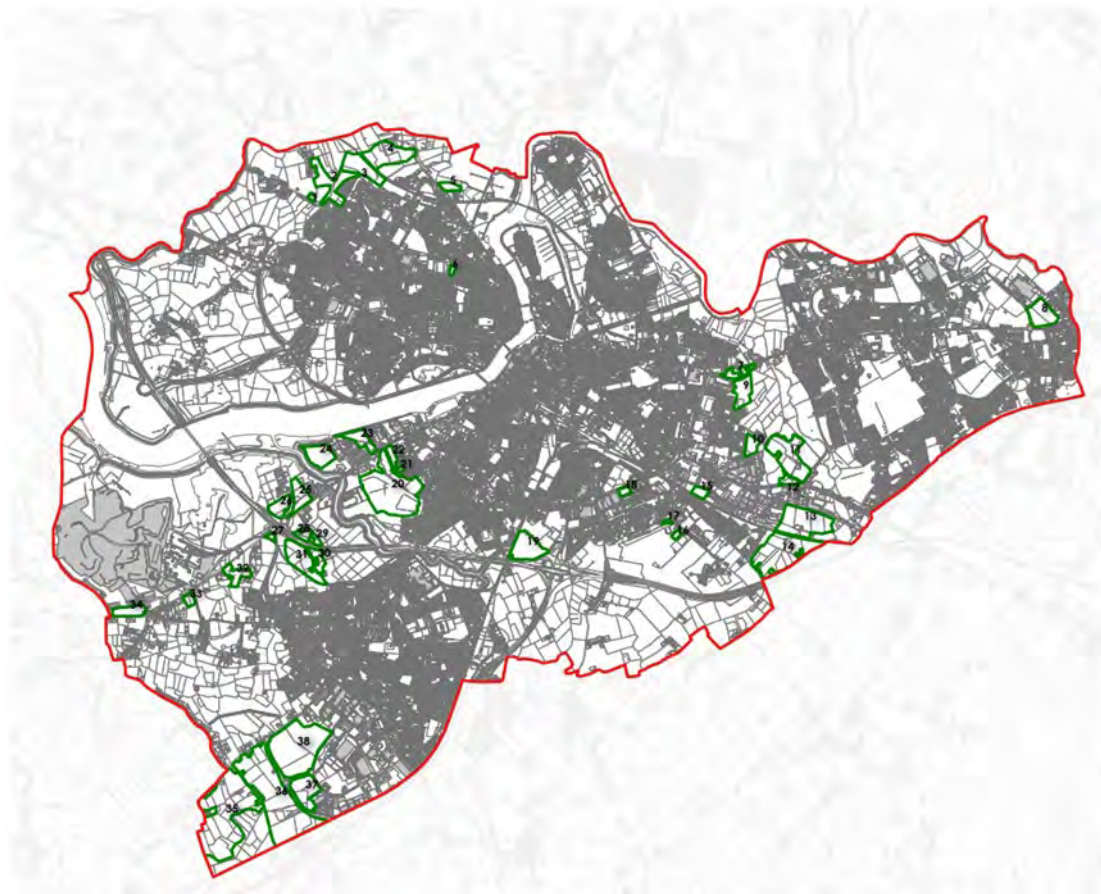
³ Volume 2, Draft Limerick Development Plan 2022 – 2028; Area Zoning and Tiered Approach to Zoning; Table 2 – Limerick City & Environs lands identified for potential employment related development.

Table 4-2: Greenpark Lands – Current & Proposed Land Use Zoning

LAND USE ZONING	NO. SITES	COMBINED TOTAL AREA (HA)
Enterprise & Employment	26	178.37 ha
Mixed-Use	4	18.82 ha
Industry	3	14.17 ha
High Tech / Manufacturing	5	145.89 ha
TOTAL	38	357.25 ha

The location of each of these parcels of land is shown in Figure 4-7 below.

Figure 4-7: Tiered Approach to Zoning Employment Lands Availability (June 2021)



Source: Draft Limerick Development Plan 2022 - 2028

4.2.2 Lisney Analysis

At a headline level, we estimate that combined, all of these sites have the potential to deliver **1.98m sqm of employment related accommodation; split 530,000 sqm of offices and 1.46m sqm of industrial / logistics / manufacturing accommodation.**

To put this in context, based on long-term average activity levels in the Limerick commercial property market (Limerick city and surrounding area, including Shannon), **it is equivalent to approximately 35 years of office requirements and 32 years of industrial requirements.** This is based on prevailing long-term annual average market activity levels (15,000 sqm offices and 45,000 sqm industrial).

However, this is at a high level and the long-term take-up may not correlate with future demand. Given the future focus of the city, particularly though Limerick 2030 and the commitments to economic growth by Limerick City and County Council through innovation and dynamic revitalisation, activity levels in both the office and industrial sectors is likely to grow in the medium-term. As such, we have considered the impact of activity increasing by 20%, 30%, 40%, 50% and 60%, and the resultant impact on the number of years' supply.

Table 4-3: Annual Commercial Market Occupier Activity / Take-Up

	CURRENT LTA	+20%	+30%	+40%	+50%	+60%
Office	15,000 sqm	18,000 sqm	19,500 sqm	21,000 sqm	22,500 sqm	24,000 sqm
Industrial	45,000 sqm	54,000 sqm	58,500 sqm	63,000 sqm	67,500 sqm	72,000 sqm

Table 4-4: Years' Supply

	CURRENT LTA	+20%	+30%	+40%	+50%	+60%
Office	35 yrs	29 yrs	27 yrs	25 yrs	23 yrs	22 yrs
Industrial	32 yrs	27 yrs	25 yrs	23 yrs	22 yrs	20 yrs

As stated, at a headline level we have estimated that there is enough land proposed to be zoned and available for employment related uses equivalent to occupier market requirements for 35 years offices and 32 years industrial. **Even assuming a 60% growth in demand in the medium-term, there remains over 20 years' supply of land.**

To provide some further context, it is useful to compare what is proposed for Limerick to other markets. Dublin is Ireland's biggest office and industrial market by a considerable length. In terms of industrial building stock, Dublin is approximately 6.8 times larger than Limerick with annual take-up in the past decade 6.3 times greater. Equally, the office building stock in Dublin is approximately 9.8 times greater than Limerick with annual take-up in the past decade 15.7 times more. Even in a Dublin context where industrial market activity is almost

16 times higher, the quantum of potential development proposed for Limerick in the draft plan is equivalent to over five years of Dublin supply.

We believe that the amount of land proposed for employment related development is grossly excessive, particularly given the fact that Limerick, like all other parts of Ireland, is in the midst of a housing crisis with significant supply shortages and resultant rising prices. Under the current development plan, 19.33 ha of Greenpark lands are zoned for residential purposes and have the potential to deliver up to 800 homes in the existing footprint of the city. Delivering these over a 10 year period would mean 80 additional homes available each year, which is equivalent to 15% of all housing completions across Limerick City and County in the past year; a significant percentage for an inner suburban area within walking distance of the city centre.

There are only five new homes schemes currently available in Limerick City. Two are in Mungret, which is significantly further out of the city centre and both schemes have asking prices in excess of €350,000. There is one scheme on the Ballyneety Road, slightly further out of the city centre and with asking prices starting at €315,000. There is a scheme just off the North Circular Road called Revington where asking prices start at €635,000 and another at Rhebogue Hill. Even taking into consideration likely residential development in the short-term (such as at Clonmacken, Croom and Patrick's Well), supply will not meet demand. The homes proposed for part of the Greenpark lands are significantly more affordable than many of the schemes currently for sale, they are within the southern ring road and will generally offer a greater selection of housing types.

5 CONCLUSION

Having considered the office, industrial and residential property sectors in Limerick, we are of the opinion that the quantum of lands proposed to be rezoned for enterprise and employment uses is **grossly excessive**; ranging between **20 and 35 years' market supply** depending on the level of market activity in the coming years. In the midst of a serious housing crisis, it would be more appropriate to **retain the existing residential and mixed-use land uses where the lands could significantly contribute to providing much needed affordable homes within the existing footprint of the city.**

HEAD OFFICE

St. Stephen's Green House,
Earlsfort Terrace,
Dublin 2, DO2 PH42

T: +353 1 638 2700
E: dublin@lisney.com

LEESON STREET

103 Upper Leeson Street,
Dublin 4,
DO4 TN84

T: +353 1 662 4511
E: 103@lisney.com

DALKEY

8 Railway Road,
Dalkey, Co. Dublin,
A96 D3K2

T: +353 1 285 1005
E: dalkey@lisney.com

BLACKROCK

51 Mount Merrion Avenue,
Blackrock, Co. Dublin,
A94 W6K7

T: +353 1 280 6820
E: blackrock@lisney.com

HOWTH ROAD

171 Howth Road,
Dublin 3,
DO3 EF66

T: +353 1 853 6016
E: howthroad@lisney.com

TERENURE

Terenure Cross,
Dublin 6W,
D6W P589

T: +353 1 492 4670
E: terenure@lisney.com

DUNDRUM

11 Main Street,
Dundrum, Dublin 14,
D14 Y2N6

T: +353 1 296 3662
E: dundrum@lisney.com

CORK

1 South Mall,
Cork, T12
CCN3

T: +353 21 427 5079
E: cork@lisney.com

BELFAST

1st Floor, Montgomery House,
29-33 Montgomery Street,
Belfast, BT1 4NX

T: +44 2890 501 501
E: belfast@lisney.com

Change City and Environs Zoning Map and Tiered Approach to Zoning – Proposed by Councillor xxxxxxxx

I propose a change to zoning of the portion of the lands known as Greenpark (Former Racecourse), Dock Road as illustrated in the map (Figure 1) below from A) *Enterprise & Employment (c.12.98ha)* and B) *Open Space (1.73ha)* to *New Residential (14.71ha)*.

This proposal reflects a retention of the quantum of land as zoned *Residential* under the current development plan (Limerick City Development Plan 2010 – 2016 As Extended).

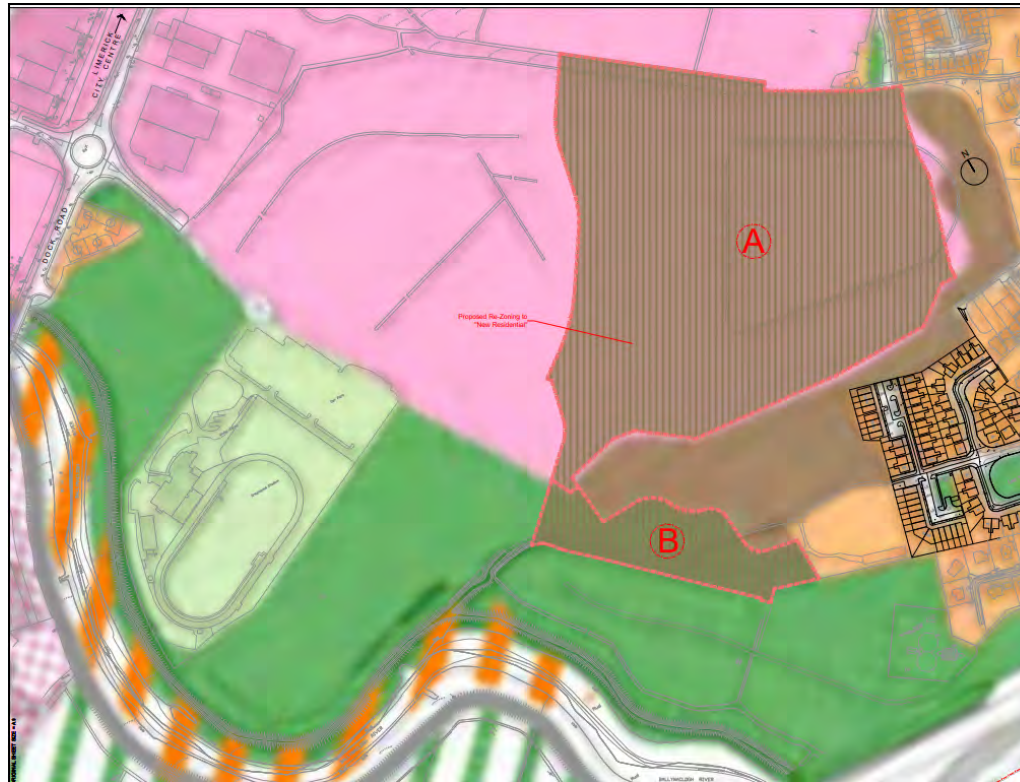


Figure 1 – Proposed Alteration of Draft Zoning Map

Reasons:

1. Greenpark, a site of c.47 ha (116 acres) presents a unique opportunity to create a new mixed use sustainable neighbourhood of in excess of 950no new homes, a significant commercial park and a large public amenity park with walking / cycling pathways in a well landscaped setting, all in close proximity to Limerick city centre. This opportunity will be lost by re-zoning these lands for *Enterprise & Employment*, as the lands will become economically unviable for development. A full masterplan was completed for the site in 2020 which includes a large public amenity area and envisages full permeability of the lands, thus opening the entirety of the new development to the public from South Circular Road, Alandale and Dock Road for the benefit of pedestrian / cycle users.
2. The Draft Plan doesn't zone enough lands for *New Residential* development. It identifies a minimum need in Limerick City CSO area, Annacotty & Mungret for 11,454 homes¹ during the life of the plan. LCCC then makes provision for lands to schedule delivery of 12,452 homes², an 8.7% uplift on minimum need³. In respect of these 12,452 homes identified in the Draft Plan, the plan itself acknowledges⁴ that 1,617 of these will not be delivered within the first five years of the plan as they are assigned a designation of "M (Medium term - 10 year delivery)" leaving a maximum deliverable number of homes of 10,835 in the plan lifetime, assuming 100% of the remaining lands deliver fully within lifetime of the plan which is highly unlikely. There would also have to be significant uncertainty surrounding the ability of Colbert Quarter to deliver the stated 625 units over the lifetime of the plan given the progress on that project to date as well as commercial viability questions over a number of smaller sites within the city centre.
3. The Draft Plan contemplates a maximum of circa 4,000 homes within the existing built-up footprint. This includes circa 630 homes which the plan itself acknowledges are unlikely to be built during its lifetime⁵. According to the National Planning Framework⁶ 50% of homes should be within the existing built up footprint of a city. Therefore, in order to comply with NPF policies and meet its own identified housing need, lands within the existing built up footprint of the city that can deliver a minimum of a further 2,500 homes during the lifetime of the plan are required to be zoned for *New Residential*. Greenpark presents the best opportunity to partially bridge this shortfall.
4. Under the Limerick City Development Plan 2010-2016 as extended, the subject lands are zoned *Residential*. Furthermore, in July 2017 the subject land was one of only two sites promoted by the council for LIHAF project funding and this was approved by the minister. Under this scheme, Greenpark was described as a "Major Urban Housing Development Site" close to the "heart of the city". In June 2021 in its Interim Review, Limerick 2030 identified the subject lands as "a major residential opportunity site".

¹ Reference Draft Plan - Table 2.7: Settlement hierarchy, population and household growth up to end of Draft Plan period Q2 2028 plus zoned land provision (page 27 of 292 CEO Material Alterations Document)

² Reference Draft Plan – Settlement Capacity Audit (Page 277 – 288 of 292 CEO Material Alterations Document)

³ Housing For All directs local authorities and elected members to zone up to 20% more land to provide homes in excess of the identified housing need

⁴ Reference Draft Plan – Settlement Capacity Audit (Page 277 – 288 of 292 CEO Material Alterations Document)

⁵ Reference Draft Plan – Settlement Capacity Audit (Page 277 -288 of 292 CEO Material Alterations Document)

⁶ Reference NPF – NPO 3b page 29

5. The re-development of the Greenpark Lands for a mix of commercial and residential uses of scale complies in full with the recommendations included in ‘The Future Development of Limerick City’ as produced by Indecon Research Economists and published by Limerick Chamber in June 2021. This report notes that ‘Increasing the population density in Limerick city is a critically important challenge for the future development of the city’ and recommends that ‘Strategic development areas should be identified in the city to facilitate new quality affordable residential developments’. It further recommends ‘The focus of all policies and investments should be on facilitating compact growth’.
6. The subject lands comply with the following:
- Project Ireland 2040 – National Planning Framework (NPF) 2018 policies [NPO 2a, 3b, 5, 7, 8, 33, 35 and 72c];
 - Development Plan Guidelines for Planning Authorities 2007 [Sections 4.9, 4.12 and 4.19];
 - Development Plan – Guidelines for Planning Authorities Draft for Consultation August 2021 [Sections 6.2.3 and 6.2.4];
 - Sustainable Residential Development in Urban Areas – Guidelines for Planning Authorities 2009 [Sections 5.7, 5.8 and 5.9];
 - Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities March 2018 [Section 2.4]
 - The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 (PSFRMG).
7. The PSFRMG were adopted in 2009 and the current development plan was prepared having full regard to these guidelines⁷, when the subject lands were zoned *Residential*.
8. Despite what is stated in the Draft Plan SFRA, there is no distinction drawn in the PSFRMG between “Highly Vulnerable” and “Less Vulnerable” uses in terms of their requirement to pass a Justification Test once the lands are located in Flood Zone A (see figure 2 below), which they are in the case of the subject lands. Once a planning authority has identified lands that are of strategic value to the continued growth of an urban centre, which in the case of Greenpark LCCC undeniably has, the authority can proceed to subject the lands to a sequential approach process which is clearly set out in the PSFRMG (see figure 3 below). Under this sequential approach, once the lands are in Flood Zone A, both “Highly Vulnerable” and / or “Less Vulnerable” uses require a Justification Test and once this test is passed the authority are not restricted regarding land use that can be applied. Planning need should determine the use thereafter and this must be *Residential* in a time of national housing crises. The quantum of *Enterprise & Employment* lands zoned in the Draft Plan are sufficient supply for 20 plus years in the Limerick market.

⁷ Reference Limerick City Development Plan 2010 – 2016 (As Extended) – Page 12.19

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

Table 3.2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

Figure 2 – Table 3.2 – Page 26 of *The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009*

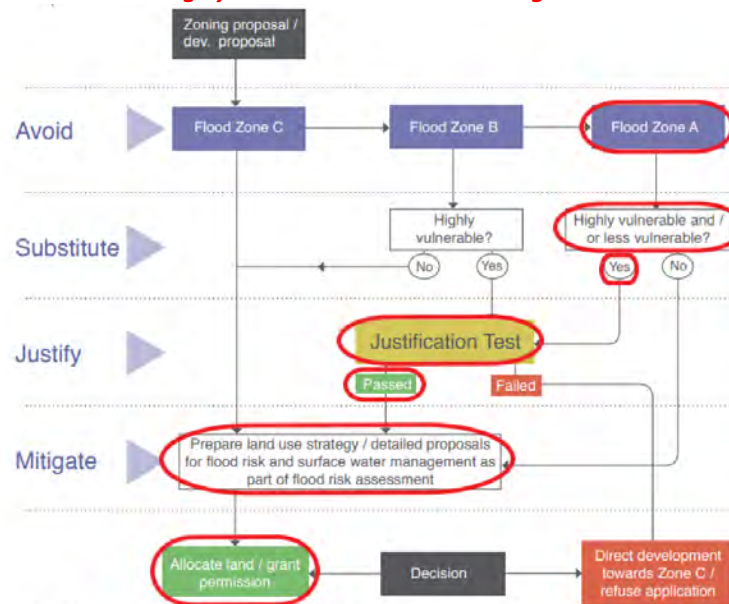


Fig. 3.2: Sequential approach mechanism in the planning process

Figure 3 – Figure 3.2 – Page 23 of *The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009*

9. In the Draft Plan, LCCC has passed the Greenpark lands under the Justification Test. This is the correct result given the strategic location and characteristics of the lands, but having passed the Justification Test LCCC has then chosen to zone the lands *Enterprise & Employment*, for which there is no planning need, rather than *Residential*, for which there is a severe and urgent planning need. Under the PSFRMG, once the land has passed the Justification Test there is no restriction on the type of use that the land can be zoned for. The safety valve in all cases is the planning application process, including the necessity for any

applicant to further justify the safe development of the lands through the preparation of a detailed Site Specific Flood Risk Assessment (SSFRA) including the necessary Development Management Justification Test. During this follow up process, the applicant must satisfy the local authority that the lands can be safely developed without negatively impacting third party property before planning permission can be granted and if not then planning permission can be refused. In the case of the Greenpark lands, the landowner has already undertaken and submitted to LCCC a comprehensive and robust SSFRA including very detailed breach analysis modelling which is far more accurate than the information available to LCCC in the SFRA prepared by JBA Consulting for the Draft Plan. This SSFRA for Greenpark comprehensively illustrates how the entire masterplan can be delivered safely without negatively impacting third party property.

10. Greenpark passes the **Justification Test** for *Residential* on the following basis:

<p>The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended</p>	<p>The Limerick Shannon Metropolitan Area is targeted for growth under the National Planning Framework (NPF) and Regional Spatial and Economic Strategy (RSES) for the Southern Region. Limerick City and suburbs is targeted for significant and ambitious population growth of 50-60% (47,000 – 56,000 people) to 2040 with 50% of this growth is mandated to occur within the existing built-up area of the city, which would naturally include the subject lands, given their inner suburban location. Significant strategic sites such as Greenpark adjoining the city centre, as opposed to lands located in peripheral locations of the city, should be prioritised as required by all current planning guidance.</p> <p>This criterion is met by the subject lands.</p>
<p><i>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 and, in particular:</i></p>	
<p><i>(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement</i></p>	<p>The Greenpark site is a strategically important zoned and serviced landholding of notable scale (47ha) located in the inner suburbs of Limerick City within 2km of the city centre and is in or adjacent the urban core. Within the Metropolitan Area, the area zoned as “City Centre” would correspond with the centre of the settlement. The undeveloped Greenpark lands consolidate the existing built up area between the City Centre and the natural boundary presented by the Ballinacurra Creek and N18. These greenfield and brownfield infill lands are therefore essential to facilitate the expansion and compact growth of Limerick City in accordance with national and regional planning policy.</p> <p>Moreover, the lands are explicitly identified in the <i>Limerick 2030 Interim Update June 2021</i> (see Volume 6 of the original Draft Plan) as part of the ‘<i>expanded plan</i>’ area described as follows:</p> <p><i>‘The expansion of the spatial plan allows it to consolidate this city identity and to ensure that the growth is managed in a way that not only avoids sprawl but actively reinforces the sense of a coherent urban area’. (see pg 78).</i> In this regard, the ‘<i>old Greenpark Racecourse</i>’ is identified as a ‘<i>City Gateway</i>’ clearly located within the inner part of the city and suburbs as delineated on page 79 of the interim update document. The graphic on page 85 also illustrates the subject lands as being comfortably within the 2.5km radius of the city centre and notes part of the site as being ‘<i>enterprise and employment</i>’ lands (site no. 21). The vision for the site in the expanded growth strategy is explained under the heading of “<i>Limerick Docklands</i>” (see pg 120) and is noted as “<i>Greenpark Racecourse</i>”</p>

	<p><i>site should be progressed as a major residential opportunity site” and it also allows for “provision of a c.12Ha enterprise and employment opportunity site accessed from Dock Road to supplement the IDA lands at capacity in the Castletroy/ UL neighbourhood”.</i></p> <p>Given this planning context, it is clear, therefore, that the lands are ‘essential to facilitate regeneration and/or expansion of the centre of the urban settlement’.</p> <p>This criterion is met by the subject lands.</p>
(ii) Comprises significant previously developed and/or under-utilised lands;	<p>The Greenpark site comprises a strategically important land bank of significance (47 ha) and constitutes the former Limerick racecourse, so is ‘previously developed’, having accommodated another land use with associated ancillary development. At present, the lands are grossly underutilised, having regard to their strategic locational context adjacent the core city area in the city’s inner suburbs proximate to several employment areas and public transportation corridors.</p> <p>This criterion is met by the subject lands.</p>
(iii) Is within or adjoining the core of an established or designated urban settlement;	<p><i>The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 PSFRMG defines the “Core of an Urban Settlement” as being “The core area of a city, town or village which acts as a centre for a broad range of employment, retail, community, residential and transport functions”.</i> It could be reasonably argued that the Dock Road area of Limerick City is actually part of the urban core of Limerick City as it satisfies the above definition but at the very least this location must be deemed “adjoining the core”.</p> <p>This criterion is met by the subject lands.</p>
(iv) Will be essential in achieving compact and sustainable urban growth;	<p>Limerick City is a designated growth centre in the NPF and RSES, whilst ambitious population and economic growth are explicitly supported in the current Draft Development Plan and the Limerick 2030 Plan Interim Update June 2021. All relevant planning policy (National, Regional and Draft Plan) require this growth to be delivered in accordance with the compact city model utilising underutilised brownfield and centrally located lands where possible.</p> <p>The projected growth of Limerick is earmarked to be accommodated in the city centre and the adjoining inner suburbs, where possible, in line with National planning policies and guidance in respect of the sequential approach to the zoning of land. The Greenpark lands are of scale (47 ha), so can deliver a significant contribution towards meeting both economic and residential growth targets in a sustainable location proximate to the city centre, employment centres, established social infrastructure and existing and emerging public transport corridors. The <i>Limerick 2030 Interim Update</i> (see Volume 6 of the initial Draft Plan) further supports these objectives and explicitly reference the subject lands as forming an important part of the ‘expanded plan’ strategy as both an employment (c.12 ha) and major residential opportunity site.</p> <p>The lands are essential in achieving this compact city model of sustainable urban growth being contiguous to the existing built-up area and promoting the use of cycling, walking and public transport. If the lands are not developed in this manner, it will promote the zoning and development of lands, particularly for residential purposes, in greenfield remote locations on the periphery of the existing built-up area at a significant remove (4km – 5km) from the city centre often requiring costly and significant new infrastructure and likely highly car dependent. This latter form of development is the antithesis of the ‘compact city’ and results in an unsustainable form of growth that will serve to undermine the overriding planning strategy guiding the growth of Limerick.</p> <p>This criterion is met by the subject lands.</p>
(v) 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	<p>There are no suitable alternative lands to accommodate the appropriate combination of commercial and residential use within, or adjoining the city’s urban core area that are at a lower risk of flooding. All such lands have already been zoned appropriately by LCCC in the Draft Plan.</p> <p>This criterion is met by the subject lands.</p>

<p><i>A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.</i></p> <p><i>N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment’.</i></p>	<p>In Appendix A.1.2 <i>Draft Strategic Flood Risk Assessment</i>, produced by JBA Consulting in support of the Draft Plan, the latter point of the Development Plan Justification Test for the Greenpark Lands states: “Any development proposals will have to address and manage flood risk with the site plans, typically through appropriate setting of finished floor levels, ground raising and use of the sequential approach within the development to ensure more vulnerable elements of the design are at a higher level. As breach is likely to happen rapidly, with little time for issue of a warning, consideration should be given to emergency access during a breach event and the means of ensuring the safety of all site users.”</p> <p>RPS have undertaken a detailed Site Specific Flood Risk Assessment (SSFRA) for the Greenpark Lands in accordance with the sequential approach required under the PSFRMG. The SSFRA was submitted to LCCC planning department in 2020. The SSFRA identified that the risk of flooding to the Greenpark Lands is low, as the OPW maintained Arterial Drainage scheme provides protection during both the 0.5% and 0.1% AEP tidal events. This was established previously by modelling during the OPW CFRAM process and, more recently, by comprehensive modelling undertaken by RPS to inform the SSFRA. The lands are still predominantly classed as Flood Zone A, in accordance with the PSFRMG, due to the residual risk of breach of the OPW embankments, which were constructed of a material of unknown origin. The focus of the RPS SSFRA was therefore to demonstrate, that during a breach scenario, the risk to property and life could be acceptably managed in the knowledge that this event could be sudden and without warning. The general approach to this was to raise the Greenpark lands above the predicted breach level with a suitable allowance for climate change and freeboard while ensuring there was no unacceptable adverse impacts to neighbouring lands or property. This was achieved and the mitigation measures provided the following benefits to ensure long term sustainability and a neutral impact on surrounding lands:</p> <ol style="list-style-type: none"> 1. There is no reliance on the existing OPW embankments to provide protection to the Greenpark Lands. 2. The proposed mitigation is entirely self-sufficient, sustainable and will place no burden on Limerick City and County Council to provide additional flood defence infrastructure in the future. 3. The Greenpark Lands will remain free from flooding during a 0.5% AEP Mid-Range Future Scenario event where overtopping of the existing defences occurs. 4. The Greenpark Lands will be protected during a 0.5% AEP Mid-range Future Scenario event, even when a breach of the existing defences has also occurred. 5. It has been robustly demonstrated that there is no increase in flood risk, even during a breach event, to surrounding developments. 6. A clear access and egress route for emergency vehicles can be provided through Log na gCapall, even during a breach event. This is essential, given that Dock Road itself will be impassable due to the depth of water. 7. All storm drainage will be attenuated to existing run-off rates and, therefore, will not cause capacity Issues on the existing network or raise the increase of flooding elsewhere. <p>The RPS SSFRA, the analysis undertaken and the report produced meets the requirement of the final point of the Development Plan Justification Test. This is in agreement with the JBA SFRA, which corresponds with the approach undertaken by RPS and similarly states that the Greenpark lands met the stringent requirements of the Development Plan Justification Test.</p>
--	---

STRATEGIC HOUSING DEVELOPMENT AT LANDS AT THE FORMER GREENPARK RACECOURSE, LIMERICK CITY

FLOOD RISK ASSESSMENT

IBE1706
Greenpark SHD FRA
F04
September 2021

FLOOD RISK ASSESSMENT

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
F01	Draft final	D McGinnis	A Jackson	A Jackson	April 2021
F02	Draft final	D McGinnis	A Jackson	A Jackson	April 2021
F03	Draft final	D McGinnis	A Jackson	A Jackson	Sept 2021
F04	Final	D McGinnis	A Jackson	A Jackson	Sept 2021

Approval for issue

Andrew Jackson



22 September 2021

This report was prepared by **RPS Ireland Limited (NI)** ('RPS') within the terms of its engagement and in direct response to a scope of services. This report is strictly limited to the purpose and the facts and matters stated in it and does not apply directly or indirectly and must not be used for any other application, purpose, use or matter. In preparing the report, RPS may have relied upon information provided to it at the time by other parties. RPS accepts no responsibility as to the accuracy or completeness of information provided by those parties at the time of preparing the report. The report does not take into account any changes in information that may have occurred since the publication of the report. If the information relied upon is subsequently determined to be false, inaccurate or incomplete then it is possible that the observations and conclusions expressed in the report may have changed. RPS does not warrant the contents of this report and shall not assume any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report howsoever. No part of this report, its attachments or appendices may be reproduced by any process without the written consent of RPS. All enquiries should be directed to RPS.

Prepared by:

RPS

Diane McGinnis
Associate
Elmwood House
74 Boucher Road, Belfast
Co. Antrim BT12 6RZ

T +44 2890 667 914
E diane.mcginis@rpsgroup.com

Prepared for:

Voyage Property Ltd

Contents

NON-TECHNICAL SUMMARY	1
1 INTRODUCTION.....	3
2 SITE DESCRIPTION.....	5
3 EXISTING FLOOD RISK	6
3.1 Existing Flood Defences	6
3.2 Fluvial Flood Risk.....	7
3.3 Coastal Flood Risk	8
3.4 Flood Zones	10
3.5 Justification Test Application.....	12
4 PROPOSED DEVELOPMENT	15
4.1 Masterplan Development	15
4.2 Strategic Housing Development (SHD)	16
4.3 Nursing Home	18
5 PROPOSED MITIGATION MEASURES	21
5.1 Model Construction	21
5.2 Modelling of Existing Situation	22
5.3 Development and Modelling of Mitigation Measures	23
5.4 Breach Analysis of the Flood Defences	23
5.5 Mitigation Measures for Breach Scenario	24
5.5.1 Derivation of Design Flood Level	24
5.5.2 Establishment of Freeboard	25
5.5.3 Proposed Mitigation Measures	26
5.5.4 Modelling of Breach Mitigation Measures	27
5.5.5 Conclusions on Breach Modelling.....	29
5.6 Assessment of Cumulative Impacts.....	29
5.7 Surface Water Drainage Strategy	32
5.8 Access and Egress from the SHD Area.....	33
6 PLANNING SYSTEM AND FLOOD RISK MANAGEMENT GUIDELINES.....	35
6.1 Classification	35
6.2 Development Management Justification Test	36
7 CONCLUSION	40
7.1 Summary of FRA.....	40
7.2 Key Aspects of the Flood Mitigation Measures.....	41

Figures

Figure 1.1	Location map.....	3
Figure 2.1	Aerial photograph indicating the extent of the SHD site	5
Figure 3.1	Extract of Arterial Drainage Districts mapping showing defences and benefitting areas	7
Figure 3.2	Extract from CFRAMS fluvial flood extents map.....	8
Figure 3.3	Extract from CFRAMS tidal flood extents map (Ballynaclogh River).....	9
Figure 3.4	Extract from CFRAMS tidal flood extents map (River Shannon)	10
Figure 3.5	Flood zone identification	11
Figure 3.6	Flood zones and appropriate development	12
Figure 3.7	Extract of Map 2 from the Limerick City Development Plan 2010-2016	13
Figure 3.8	Locations and planning reference numbers of recent applications	14
Figure 4.1	Overall Masterplan	16
Figure 4.2	Proposed SHD layout.....	17
Figure 4.3	Location of Nursing Home Development with respect to the SHD site	19
Figure 4.4	Proposed Nursing Home ground floor layout.....	20
Figure 5.1	Flood depth map showing impact of 0.5% AEP flood inundation simulation.....	22
Figure 5.2	Breach location 2- 0.5% AEP event with existing ground levels	24
Figure 5.3	Impact of raising proposed development lands at Breach location 2 (Present day)	28
Figure 5.4	Impact of raising proposed development lands at Breach location 2 (Climate change).....	29
Figure 5.5	Impact of raising nursing home and SHD site levels at Breach location 2 (Present day)	31
Figure 5.6	Impact of raising nursing home and SHD site levels at Breach location 2 (Climate change)	32
Figure 5.7	Emergency access and egress routes.....	34
Figure 6.1	Classification of vulnerability of development	35
Figure 6.2	Vulnerability versus flood zones	36
Figure 6.3	Justification Test for Development Management.....	37

Tables

Table 5.1	Comparison of RPS and LCCC freeboard recommendations	26
Table 5.2	Summary of proposed mitigation measures to manage the breach scenario	27
Table 6.1	Response to Justification Test for Development Management for proposed development.....	38

Appendices

Appendix A	Site location map.....	43
Appendix B	Flood Maps from Shannon CFRAM Study	44
Appendix C	Proposed site layout	45
Appendix D	Breach modelling results- existing levels, present day scenario	46
Appendix E	Breach modelling results- site raised, present day scenario	48
Appendix F	Breach modelling results- site raised, climate change scenario	50
Appendix G	Breach modelling results- Nursing Home & SHD sites raised, present day scenario	52
Appendix H	Breach modelling results- Nursing Home & SHD sites raised, climate change scenario.....	54

NON-TECHNICAL SUMMARY

RPS were commissioned to carry out a Flood Risk Assessment (FRA) in support of a strategic housing development (SHD) for Greenpark, Limerick. The purpose of this assessment is to ensure that the proposed development takes cognisance of the existing flood risk and does not result in increased flood risk elsewhere. This report has been prepared in accordance with the requirements of 'The Planning System and Flood Risk Management' Guidelines (DEHLG 2009).

The River Shannon flows at a distance to the north of the site and a small tributary, the Ballynaclogh River, flows to the west of the site. Both of these rivers can be considered to be tidal at this location. There are flood embankments along both the River Shannon and the Ballynaclogh River.

The Shannon Catchment Flood Risk Assessment and Management (CFRAM) Study maps indicate that the 0.5% AEP coastal flood event does not reach the application site. This is because of the protection afforded by the existing flood defences. Following the sequential approach as set out in 'The Planning System and Flood Risk Management Guidelines' the effects of any existing defences must be ignored when establishing flood zoning. Using this approach, the majority of the SHD site is considered at low risk and in Flood Zone C. However, areas of the site are in Flood Zone A, with a very small section of the land being contained within Flood Zone B. In accordance with 'The Planning System and Flood Risk Management Guidelines' a Development Management Justification Test to be carried for a residential development within Flood Zones A and B.

In accordance with Paragraph 5.16 of the Guidelines, a precautionary approach to development behind existing defences is to raise the finished levels to at least the 1% fluvial or 0.5% AEP coastal flood level with an appropriate allowance for freeboard and climate change. This approach has been adopted for the SHD area where a freeboard of 500mm and allowance for climate change (sea level rise) of 500mm has been provided to all Finished Floor Levels. This provides a minimum of a 1m elevation to all new properties above the 0.5% AEP breach flood level, thus providing a very high standard of protection.

Modelling of the impact of raising the proposed development was then undertaken considering both the 0.5% AEP and 0.5% AEP climate change (MRFS) flood events when a breach of the defences occurs. The results of the modelling showed that there was no identified increase in risk to existing development as a result of the site raising, either in the present day or climate change scenarios.

A nursing home is proposed adjacent to the SHD site. This is a separate planning application, however this FRA has included an assessment of the cumulative impact of both developments. The nursing home site will be filled to a FFL of 6.3m OD. This development is already in flood zone C and already has levels in the vicinity of this. Breach analysis has confirmed that there is no increase in flood risk to existing

developments with both the nursing home and SHD sites raised, either in the present day or climate change scenarios.

A new surface water sewer network shall be provided for the proposed development which will be entirely separate from the foul water sewer network. Surface water run-off from roof areas and hardstanding areas are designed to be collected by a gravity pipe network. Surface water will be collected and discharged via a mixture of traditional and Sustainable urban Drainage System (SuDS) to the existing 1350mm/ 1500mm diameter surface water sewer. This sewer discharges the existing lagoon adjacent to the Ballynaclogh River. Both the pipe and the lagoon were designed to take into account future developments. The lagoon attenuates flows to Greenfield discharge rate and discharges to the Ballynaclogh River through the use of a penstock structure. SuDS measures include green roofs, tree pit systems, permeable surfacing, infiltration trenches, swales, rain gardens and attenuation tanks.

Based on the proposed mitigation measures, consideration of the designated zoning and the proposed urban design, each of criteria in the Development Management Justification Test was shown to be satisfied. Therefore it was concluded that the proposed development complies with the requirements of the Development Management Justification Test and hence is compliant with 'The Planning System and Flood Risk Management Guidelines'.

1 INTRODUCTION

Voyage Property Limited intend to apply to An Bord Pleanála (the Board) for permission for a strategic housing development (SHD) with a total application site area of c.10.5 ha (with a substantive residential site development area of c.7.9 ha), on lands at the former Greenpark Racecourse, located off Dock Road (N69), Limerick. The strategic housing development will consist of the provision of 371 no. residential units and a childcare facility, along with a new access road. The general location of the site is shown in Figure 1.1.

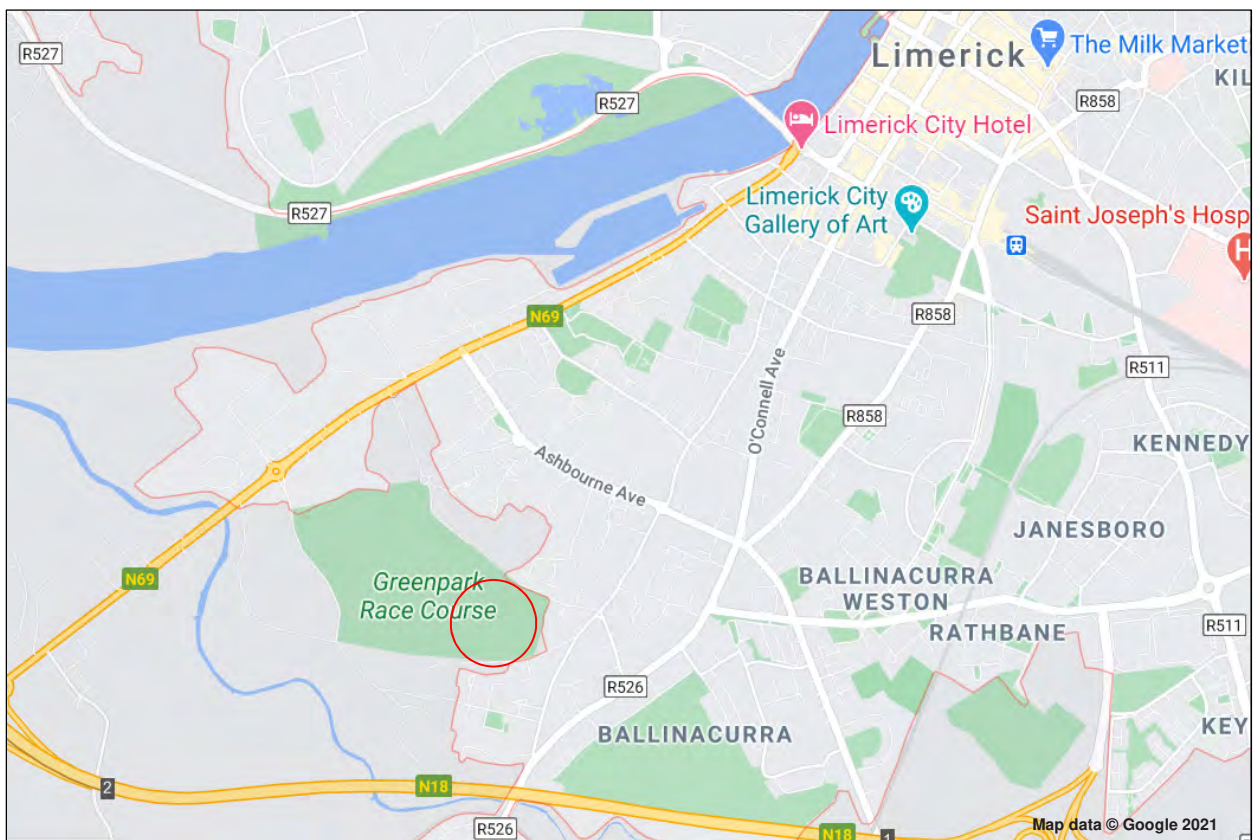


Figure 1.1 Location map

RPS were commissioned by Voyage Property Limited to carry out a Flood Risk Assessment (FRA) in support of the strategic housing development application. The purpose of this FRA is to define the flood risk to the proposed development and demonstrate that, with appropriate mitigation, the subject lands can

FLOOD RISK ASSESSMENT

be safely developed as housing in accordance with the requirements of 'The Planning System and Flood Risk Management' Guidelines¹.

¹ The Planning System and Flood Risk Management Guidelines, DEHLG (2009)

2 SITE DESCRIPTION

The strategic housing development site has a total application site area of c.10.5 ha (with a substantive residential site development area of c.7.9 ha), on lands at the former Greenpark Racecourse, located off Dock Road (N69), Limerick. The site is principally bounded by existing undeveloped lands to the north, south and west and the adjoining Log na gCapall Housing Estate to the east. The application site includes the proposed access road which joins into the Dock Road at the north-western corner of the former Greenpark Racecourse lands and runs adjacent to the Limerick Greyhound Track. A location map showing the site boundary is shown in Appendix A. Figure 2.1 shows an aerial photo of the development site with the SHD site extent highlighted in red.



Figure 2.1 Aerial photograph indicating the extent of the SHD site

The River Shannon flows at a distance of approximately 500m to the north, and one of its tributaries, the Ballynaclogh River, flows to the west of the site. There is a line of existing flood defences along both the Ballynaclogh River and the River Shannon which offer a good standard of protection to this area of Limerick. More details on the defences is provided in Section 3.

3 EXISTING FLOOD RISK

The National Catchment-based Flood Risk Assessment and Management (CFRAM) Programme was developed by the Office of Public Works (OPW) to meet national policy needs and the requirements of the EU Floods Directive. As part of the Shannon Catchment-based Flood Risk Assessment and Management (CFRAM) Study, Limerick was identified as an Area for Further Assessment (AFA). This meant that the watercourses in the area were modelled and flood maps produced which can be used to establish the existing flood risk at a site. The maps are available to download from the OPW Flood Info website².

3.1 Existing Flood Defences

The defences along the Ballynaclogh River and the Shannon Estuary were built by the OPW under the Arterial Drainage Act, 1945. Arterial Drainage Schemes were carried out to improve land for agriculture and to mitigate flooding. The intention of building the embankments was initially to provide protection against the 3 year flood but in many locations the embankments have been raised further over time and a much higher standard of protection is provided. That can be said of the embankments at this location which have been constructed along the estuary to a height of approximately 5.2m OD and along the Ballynaclogh River to a height in excess of 6m OD. Figure 3.1 has been extracted from the floodinfo.ie website which provides records of the various drainage districts and the embankments located within them. At this location there are three embankments which offer protection to the SHD area denoted on Figure 3.1 as E1A, E1 and E2. The defences also continue further into Limerick towards Ted Russell Dock but these are in private ownership and are therefore not shown on this mapping.

² OPW Flood Maps available at <http://www.floodinfo.ie/map/floodmaps/>

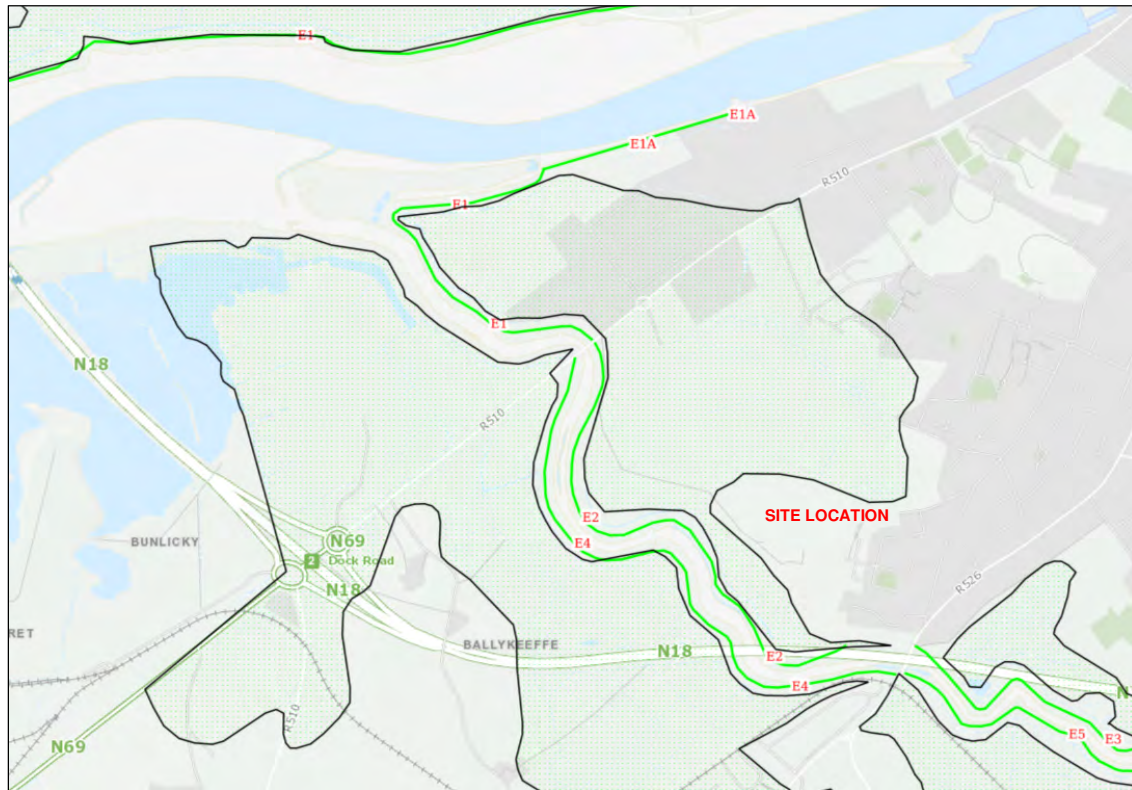


Figure 3.1 Extract of Arterial Drainage Districts mapping showing defences and benefitting areas

The embankments are constructed of unknown material, and indeed it can be assumed that they are constructed of varying grades and types of strata including estuarine mud, which is known to have been used at various points along the estuary. These defences extend for miles down the estuary on both banks. At this particular location the embankments provide a good standard of protection to all properties along the Dock Road which would otherwise be frequently inundated to a significant depth. Despite there being no historical risk of breach at this location, it remains a possibility and therefore will be addressed in the mitigation measures required to ensure the safety of the SHD site. RPS have not carried out any visual or intrusive testing of the embankments, instead the strategy is to propose a series of mitigation measures which in no way rely on the protection afforded by these existing defences.

3.2 Fluvial Flood Risk

The CFRAMS maps show that the site is not at risk of fluvial flooding. An extract from the CFRAM Study Fluvial Flood Extents Map is shown in Figure 3.2, and the full map is shown in Appendix B. Fluvial flooding is not therefore considered further in this report.

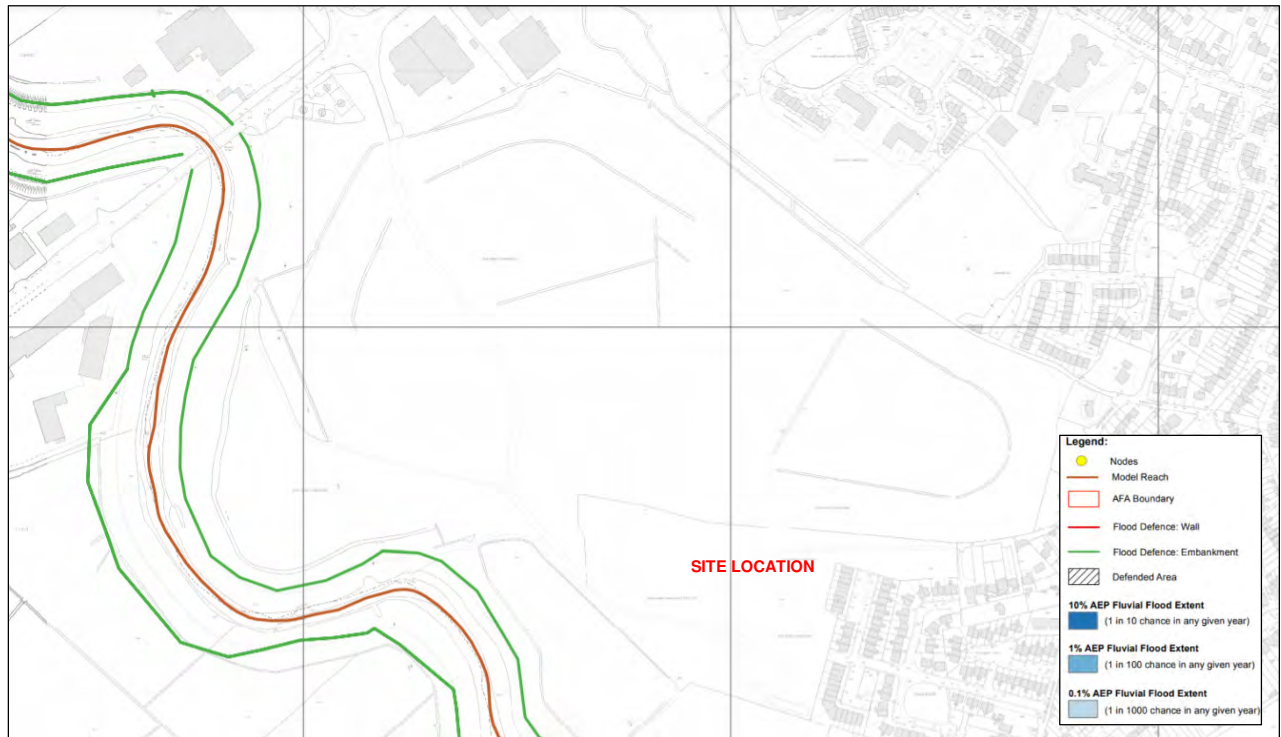
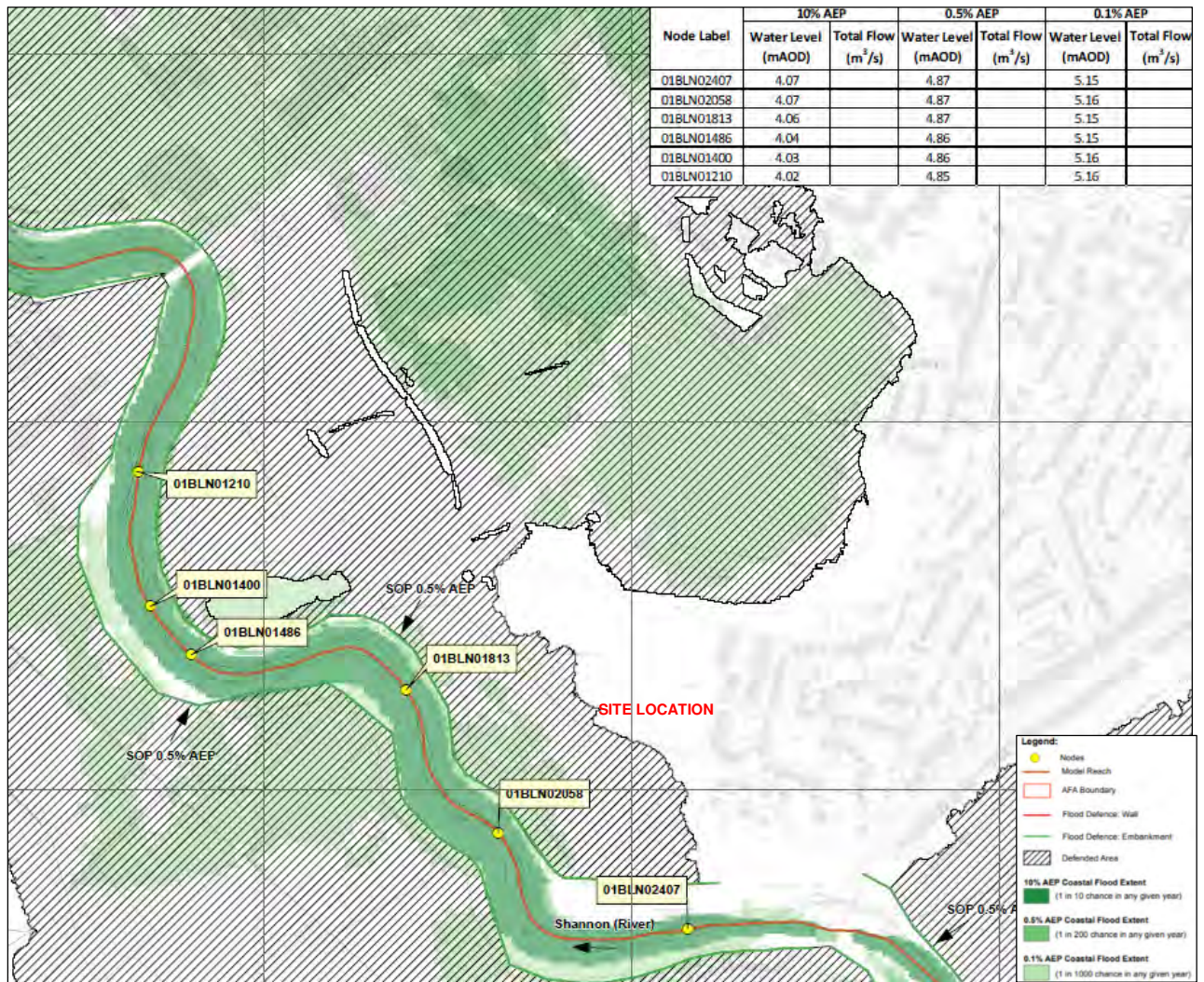


Figure 3.2 Extract from CFRAMS fluvial flood extents map

3.3 Coastal Flood Risk

The CFRAMS maps show that the site has some areas which are defended from coastal flooding by flood embankments along the Ballynaclogh River which have a standard of protection of 0.5% AEP. There are some areas of the site which are at risk of coastal flooding in a 0.5% AEP event from the River Shannon to the north, as the defences in this area only have a standard of protection of 2% AEP. There are also some areas within the site that are not at risk of coastal flooding. Extracts from the CFRAM Study Tidal Flood Extents Maps are shown in Figures 3.3 and 3.4, and the full maps are shown in Appendix B.

FLOOD RISK ASSESSMENT



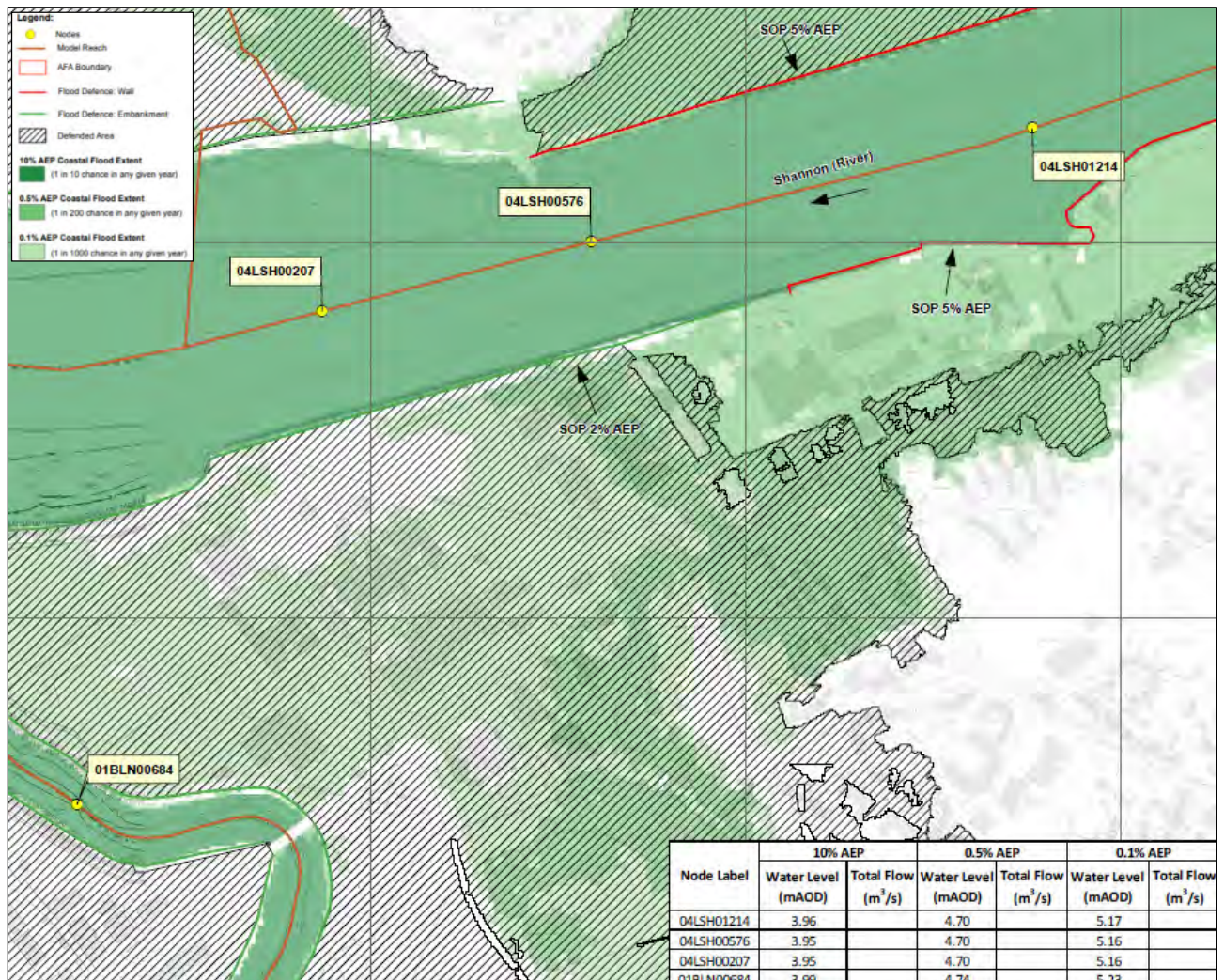


Figure 3.4 Extract from CFRAMS tidal flood extents map (River Shannon)

3.4 Flood Zones

Under the requirements of 'The Planning System and Flood Risk Management' Guidelines (2009), when considering existing flood risk it is necessary to assign flood zoning to the proposed development site. Flood zoning is defined as:

- **Flood Zone A:** areas where the probability of flooding from rivers and the sea is highest (greater than 1% for river flooding or 0.5% for coastal flooding);
- **Flood Zone B:** areas where the probability of flooding from rivers and the sea is moderate (between 0.1% and 1% for river flooding, and between 0.1% and 0.5% for coastal flooding);

FLOOD RISK ASSESSMENT

- **Flood Zone C:** Areas where the probability of flooding from rivers and the sea is low (less than 0.1% for both river and coastal flooding).

An important consideration for this particular location is the presence of the existing defences which, although offering a good standard of protection even during extreme flood events, must be ignored for the purpose of flood zoning. This is stated in Paragraph 2.25 of the Guidelines and is required because areas protected by flood defences still carry a residual risk of flooding from overtopping or breach of defences, and there is no guarantee that the defences will be maintained in perpetuity. Figure 3.5 shows the flood zones for the site, as determined by RPS based on the CFRAMS information. Figure 3.5 shows that the majority of the site where housing is being proposed is in Flood Zone C (white areas), however areas of the site can be considered to be in Flood Zone A (dark blue), with a very small section of the land being contained within Flood Zone B (light blue).

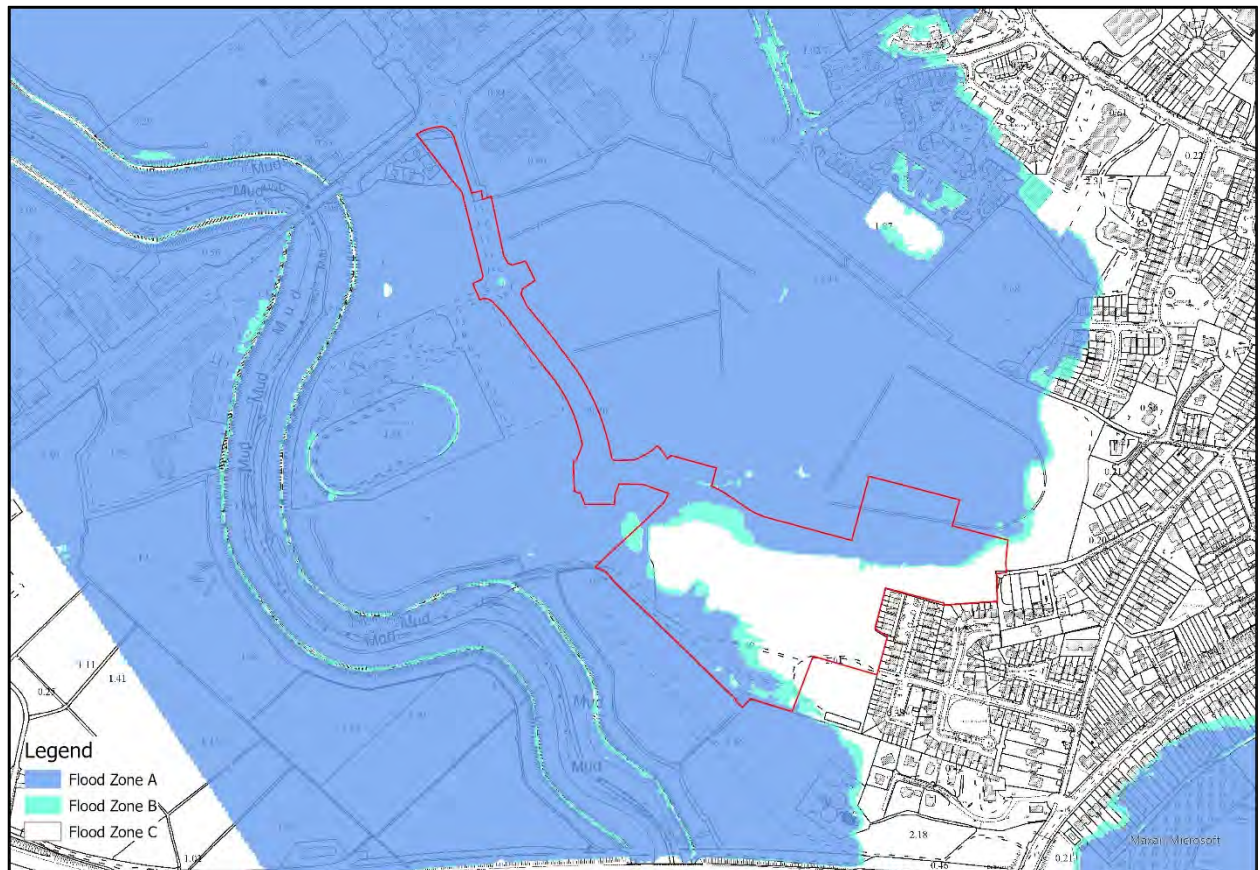


Figure 3.5 Flood zone identification

Given the flood zoning identified in Figure 3.5, the Planning System and FRM Guidelines provide direction on the type of development appropriate to each flood zone. This is shown in Table 3.2 in Guidelines, which is reproduced in this report as Figure 3.6.

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

Table 3.2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

Figure 3.6 Flood zones and appropriate development

As described above, a large part of the SHD site is in Flood Zone C, however there are some areas that can be considered to be in Flood Zones A and B. Table 3.2 of the Guidelines (Figure 3.6) shows that for residential development (highly vulnerable) in Flood Zones A and B, the Justification Test will need to be applied and fully satisfied before development can be permitted.

3.5 Justification Test Application

The Greenpark Lands have been zoned for both General Mixed Use, Neighbourhood Centre and Residential uses since 2010 as per the Limerick City Development Plan 2010-2016³, which was adopted with the benefit of the application of the provisions of the Planning System and Flood Risk Management Guidelines for Planning Authorities 2009. Page 12.19 of the Limerick City Development Plan 2010-2016 states:

“Limerick City Council shall have full regard to these guidelines within the Limerick City Development Plan 2010-2016, with particular reference to lands zoned for development. In this regard Limerick City Council has provided Map 2 - Flood Risk Areas in Appendix I. This map indicates the zones of High Probability and Moderate Probability of flooding as set out in Chapter 3 of the guidelines. Proposed developments in these zones must have regard to the guidance provided”.

³ Limerick City Development Plan 2010-2016 (as extended)

The portion of Map 2 (referred to in the extracted text above) relating to the Greenpark lands is shown in Figure 3.7, and this shows an almost identical flood extent to the flood zoning produced by RPS as shown in Figure 3.5.

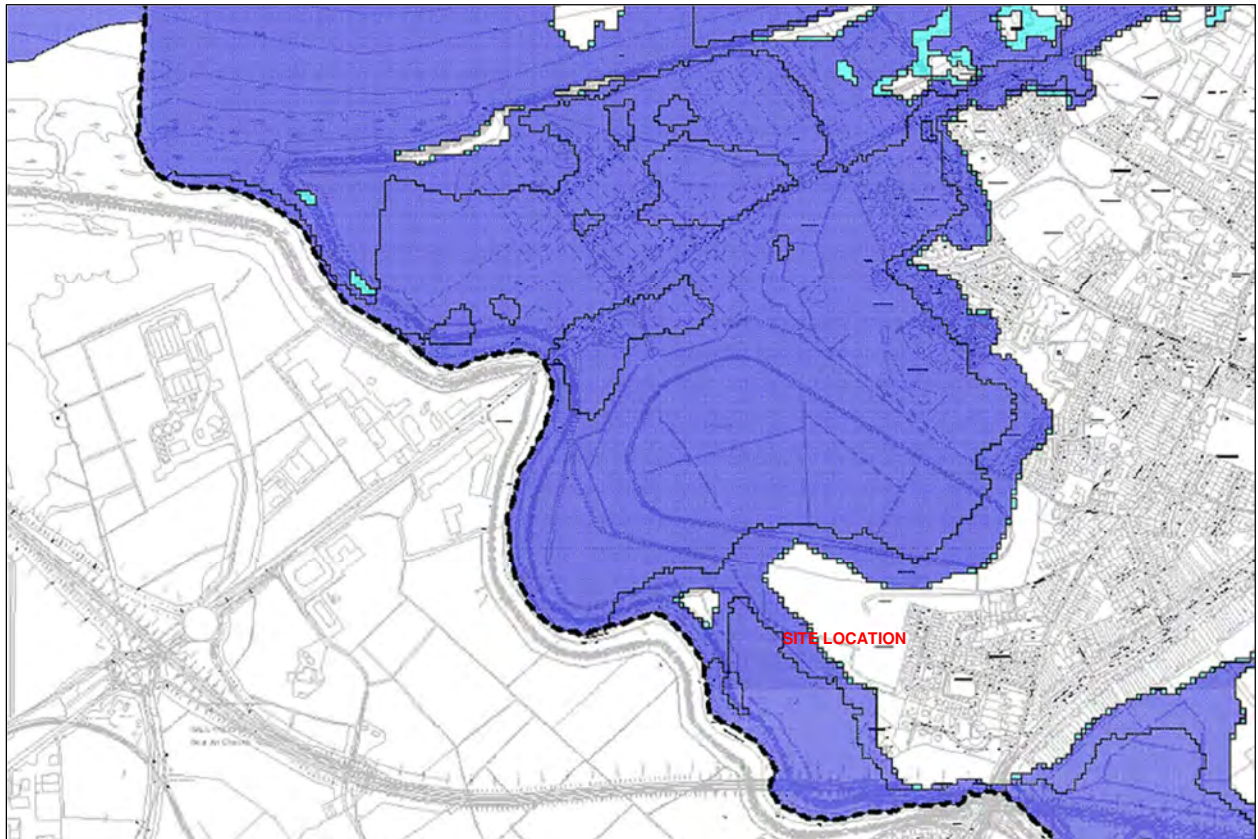


Figure 3.7 Extract of Map 2 from the Limerick City Development Plan 2010-2016

This demonstrates that the flood risk which informed the 2010-2016 Development Plan was accurate and well documented. Subsequently, the Development Plan Justification Test must have been applied and passed in order for the General Mixed Use, Neighbourhood Centre and Residential uses zonings to be established for the Greenpark Lands. Given that the Development Plan Justification Test has been applied there is only a need to comply with the Development Management Justification Test as part of this application.

RPS have reviewed a number of recent planning decisions (typically over the last 4- 5 years and as recently as 2020) in the LCCC administrative area, all located within Flood Zones A/ B. It would appear that all FRAs submitted with these applications applied the Development Management Test only (see Figure 3.8 showing the approximate locations and related planning reference numbers). This approach seems to have been accepted by LCCC based on the internal Council assessments in each case as being the

FLOOD RISK ASSESSMENT

appropriate methodology. This would support RPS' position that the use of the Development Management Justification Test is similarly correct in relation to the FRA for the SHD site at Greenpark.

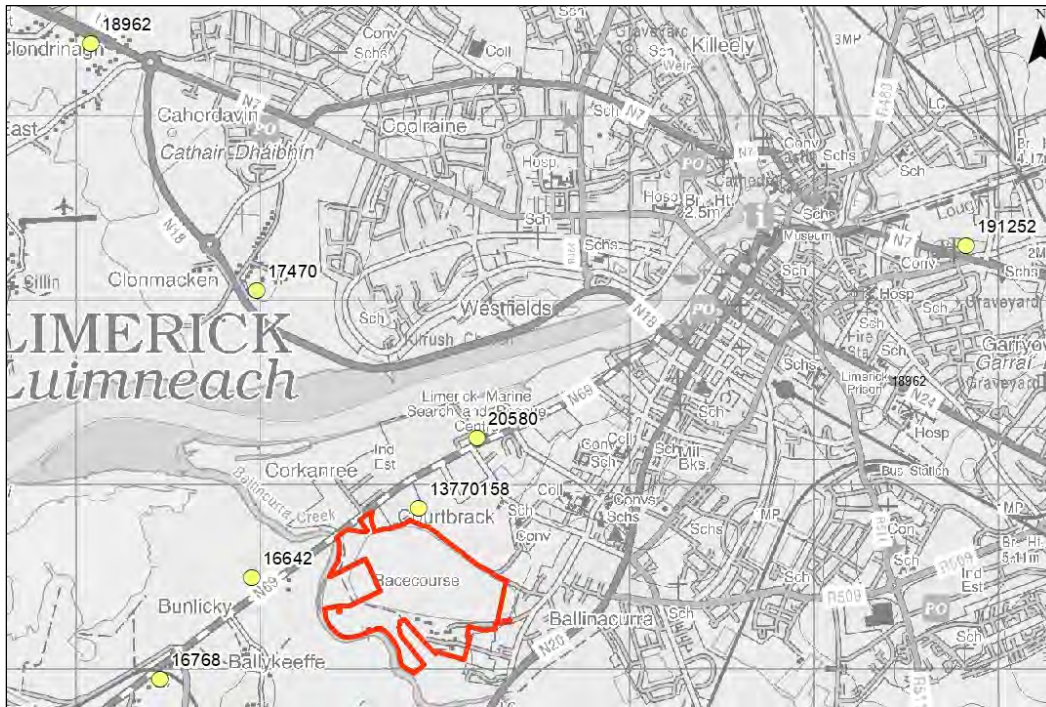


Figure 3.8 Locations and planning reference numbers of recent applications

4 PROPOSED DEVELOPMENT

4.1 Masterplan Development

The SHD site is part of the overall development of the Greenpark lands. A wider masterplan has been prepared of these lands in their entirety and it encompasses multi-phased residential development and office campus, neighbourhood centre and public open spaces adjacent to Bord na gCon greyhound stadium along Ballynaclogh River. The office floor plates will be designed with greater flexibility and adaptability to local and multinational demands. A neighbourhood centre will be strategically located to serve the need of the local community and residents.

The residential component of the Masterplan consists of 920 dwelling units, crèche and residential amenity spaces. The development will be carried out in several phases. The first phase of the development includes a strategic housing development application for 371 dwelling units with a residential density of 47 units/ha, crèche and other associated ancillary uses in line with the Masterplan. The overall Masterplan is shown in Figure 4.1. Note that the Masterplan has been updated since the original masterplan document (Nov 2019) was issued in order to reflect the changes to the SHD site.

An FRA in support of the Masterplan for the Greenpark area was previously prepared by RPS and has been reviewed by Limerick City and County Council Water Services Department, who in a meeting with RPS confirmed verbally that they accepted the technical work presented and mitigation measures proposed. The flood risk assessment accompanying the Masterplan sets out how the lands can be developed safely in accordance with the Planning System and Flood Risk Management Guidelines. It demonstrates the necessary mitigation measures to ensure the entire Masterplan area can be protected to the required standard (including considering the breach scenario and climate change) and importantly that there is no increase in risk to existing developments. The flood risk mitigation measures that are proposed for the SHD site will align with those from the FRA prepared in support of the overall Masterplan from November 2019.



Figure 4.1 Overall Masterplan

4.2 Strategic Housing Development (SHD)

The strategic housing development with a total gross floor area of c. 36, 329 sq m will consist of the provision of 371 no. residential units comprising 157 no. two storey houses (consisting of 10 no. 4 bedroom units, 110 no. 3 bedroom units and 37 no. 2 bedroom units); 76 no. three storey duplex units (consisting of 14 no. 3 bedroom units, 38 no. 2 bedroom units and 24 no. 1 bedroom units) and 138 no. apartments (consisting of 92 no. 2 bedroom units and 46 no. 1 bedroom units arranged in 3 no. blocks ranging between 4 and 5 storeys together with communal amenity space) and a childcare facility (550 sq m), including all private, communal and public open space provision (including balconies and terraces to be provided on to front and rear elevations and related play areas); surface car parking (510 no. spaces in total, including car sharing and accessible spaces); electric vehicle charging points; bicycle parking (long and short stay spaces including secure stands); storage areas; internal roads and pathways; hard and soft landscaping and boundary treatments; piped infrastructural services and connections; plant; revised entrances and tie-

FLOOD RISK ASSESSMENT

in arrangements to adjoining roads, including emergency access via Log na gCapall and Greenpark Avenue; waste management provision; solar panels; attenuation tank and related SUDS measures; signage; public lighting; bulk earthworks; and all site development and excavation works above and below ground. Vehicular access to the site will be from Dock Road, via the proposed access road. The proposed layout for the SHD site is shown in Figure 4.2 and in Appendix C.



Figure 4.2 Proposed SHD layout

This FRA report has been prepared in accordance with the Masterplan FRA, ensuring that all developments constructed in the short term do not compromise the flood protection afforded to buildings constructed in the future or vice versa.

The purpose of this FRA is to demonstrate how, given the flood risk identified in Section 3, the strategic housing development area can be safely developed in a manner that is fully compliant with the Planning System and Flood Risk Management Guidelines. In that respect there are a number of key principles which must be addressed in order to pass the Development Management Justification Test, these are:

- Firstly, demonstrating that during a 200 year (0.5% AEP) event and during a 200 year (0.5% AEP) Climate Change event there is no risk to the proposed development or increase in flood risk elsewhere.
- Secondly, Paragraph 5.16 of the Guidelines states that a precautionary approach should be applied for developments located behind existing defences. It suggests that an appropriate mitigation measure would be to set floor levels above the 0.5% AEP flood level (for a site affected by coastal flooding) and to include for the effects of climate change. When determining this 0.5% AEP level the effect of defences should be ignored.

Addressing these key issues is best practice in demonstrating compliance with the Development Management Justification Test as set out in Box 5.1 of the Planning system and Flood Risk Management Guidelines. Section 5 of this report describes the mitigation measures that address these criteria and the numerical modelling undertaken to demonstrate their effectiveness. Section 6 describes compliance with the Justification Test.

4.3 Nursing Home

A nursing home is proposed adjacent to the SHD site. This is a separate planning application that has been submitted to LCCC for their consideration (Ref. no. 21/1222). In order to complete a comprehensive assessment, this FRA for the SHD site has considered the cumulative impact of both developments.

The nursing home is 4 storeys in height with a total gross floor area of c.5,237 sq m, consisting of 123 no. rooms, comprising 126 no. bedspaces (120 no. single rooms and 3 no. double rooms) and ancillary facilities, including 777 sq m of day space. The nursing home development will also consist of soft and hard landscaping, car and bicycle parking spaces; 3 no. electric parking spaces; bicycle parking; internal roads and pathways. The location of the Nursing Home development in relation to the SHD site is shown in Figure 4.3, and its proposed layout is shown Figure 4.4.



Figure 4.3 Location of Nursing Home Development with respect to the SHD site



Figure 4.4 Proposed Nursing Home ground floor layout

5 PROPOSED MITIGATION MEASURES

Any mitigation measures proposed must be robust, sustainable with respect to climate change, and not place any burden on the city of Limerick, whereby there would be a requirement in the future to provide additional flood defences and capital expenditure to protect this development. It is also acknowledged that under the CFRAM process, where Limerick was an Area for Further Assessment (AFA), a significant capital scheme was proposed. This scheme is currently being progressed under the OPW Capital Works Framework and should be developed over the next 10-15 years. While there is no doubt a scheme of this nature would further benefit the Masterplan lands, RPS also recognise there is no guarantee a scheme will be developed as it will be subject to a cost-benefit analysis and availability of government funding. Conversely there is also a need to ensure mitigation measures proposed as part of this SHD application in no way compromise the development of a suitable flood alleviation scheme for Limerick.

5.1 Model Construction

In order to be able to assess the impact of any proposed mitigation measures RPS have developed a site specific model incorporating the Masterplan area. As the SHD lands are located behind existing defences it is obvious there is no impact on the Ballynaclogh River either upstream or downstream, or the Shannon Estuary. Instead the model has been developed specifically to understand the impact of the defences overtopping and also breaching, ensuring that the SHD area is resilient to these flooding mechanisms and doesn't adversely affect adjacent property and land.

RPS have constructed an InfoWorks ICM 2D model of this area of Limerick based on a Digital Terrain Model (DTM) constructed from LiDAR data which covers this area of Limerick. This has been supplemented by more detailed topographical survey of the existing flood defences to capture any low points or defects. The LiDAR provides a high-resolution survey that is sufficient for establishing the effects of overtopping and breaching of the existing flood defences. RPS have utilised the 0.5% Annual Exceedance Probability (AEP) flood levels for the Shannon Estuary and for the Ballynaclogh River that were developed in the CFRAM study. These provide the best available estimation of the predicted water level during extreme coastal events for this return period.

In addition, RPS have improved upon the CFRAM inundation modelling by incorporating all of the existing buildings within Dock Road area within the model and blocked these out to prevent flow through them. This is a significant addition to the modelling undertaken during the CFRAM process as it can identify new flow paths as the water passes between buildings.

5.2 Modelling of Existing Situation

As a baseline model run, RPS used the peak tidal levels from the CFRAM study in the estuary and Ballynaclogh River to run a 0.5% AEP flood inundation simulation. This model was run over 72 hours, covering tidal cycles leading up to and after the 0.5% AEP event, with an appropriate tidal curve reflecting the rising and falling level of the flood and ebb tide during an extreme storm surge event. As stated previously, the majority of the defences surrounding the Dock Road area are sufficiently high enough to prevent inundation and overtopping, however there is a lower section near to the Ted Russel Dock where a limited amount of flooding can occur. The flood mapping output from this model simulation is shown in Figure 5.1.

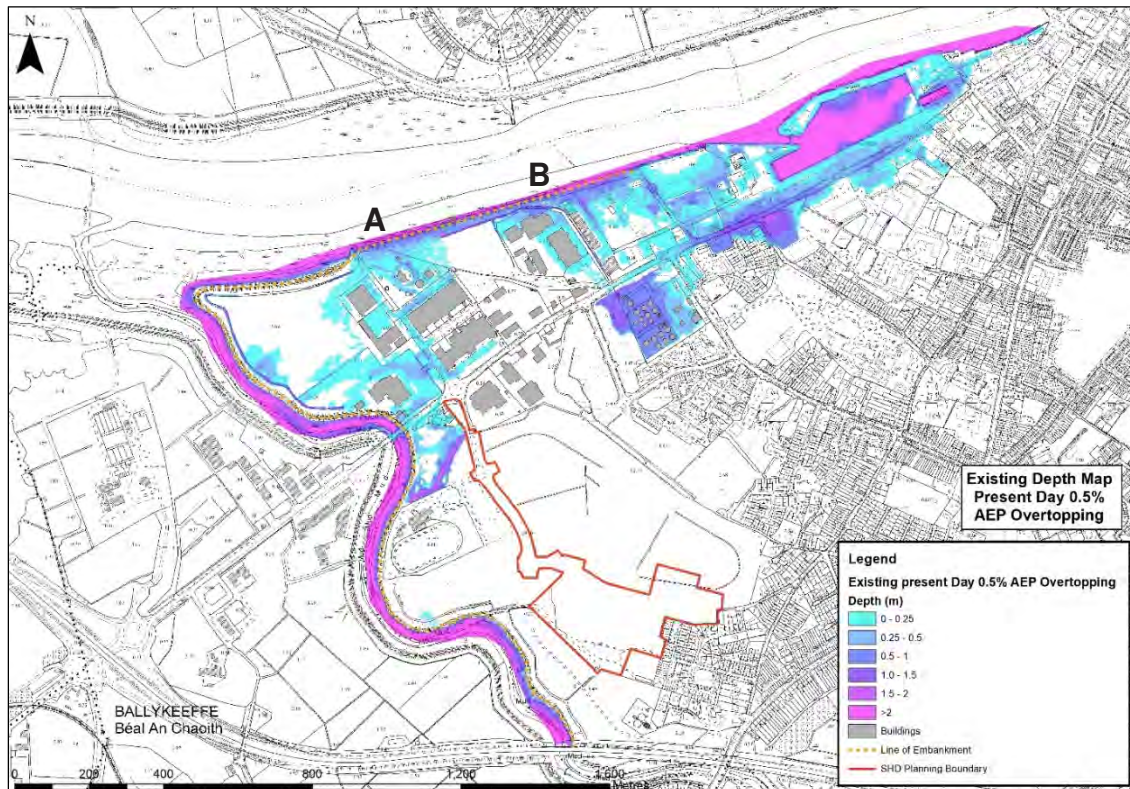


Figure 5.1 Flood depth map showing impact of 0.5% AEP flood inundation simulation

The model simulation indicates overtopping at two locations (Points A and B on Figure 5.1) where the defences are insufficiently high to prevent inundation. From this model run it can be concluded that there is no risk to the SHD lands during a 0.5% AEP flood event, providing defences are only overtopped and not breached. As the 0.5% AEP water level does not inundate the proposed development area in the existing scenario there can be no increase in water level as a result of constructing the proposed development, and therefore no further assessment is required in this regard.

5.3 Development and Modelling of Mitigation Measures

As stated previously in this FRA, when quoting Paragraph 5.16 of the Planning System and Flood Risk Management Guidelines, there is a need to ensure a precautionary approach when developing behind existing defences. It suggests that the mitigation measures for dealing with that risk would be to set finished floor levels at the 0.5% AEP flood level (for coastal flooding) ignoring the moderation effects of flood defences. Following this logic, to address the impact of the inundation from the 0.5% AEP Climate Change event (Mid-range Future Scenario), it is proposed to raise the level of the SHD site to minimise the residual risk. By raising levels on the site it will provide sufficient protection to the proposed development, but it raises the question if it could also increase the risk of flooding to surrounding land and existing development. RPS have therefore carried out a comprehensive modelling exercise focussing on the breach scenario to ensure there is no increase risk to adjacent developments should this occur. This was tested for the 0.5% AEP and 0.5% AEP Mid-range Future Scenario (MRFS) events.

5.4 Breach Analysis of the Flood Defences

Given the number of residential properties in the application, a robust assessment of residual risk is required. The original purpose of the existing defences and the unknown make-up of their construction means it is necessary to undertake a breach analysis at certain locations along both the Ballynaclogh River and the Shannon Estuary to assess the impact of such an event on the proposed and existing developments. Breach analysis was undertaken using the UK Environment Agency's guidance on breach modelling which was also adopted for use during the CFRAM process. It was undertaken at three locations:

Breach 1 – along the Estuary at the rear of McMahon Building Providers;

Breach 2 – along the lower reaches of Ballynaclogh River;

Breach 3 – on the Ballynaclogh River upstream of the Greyhound Stadium.

All breaches were run over a 72 hour tidal cycle, with the breach set to occur 1 hour before the peak of flood. At this time in the simulation a 50m section of the embankment is removed with the spill level being reduced to existing ground levels on either side of the defence. A separate map was produced for each location, i.e. it is assumed only one breach occurred at a time. All three breach locations produced approximately the same flood extent. As an example and for easy reference, the 0.5% AEP extent for the existing lands for Breach Location 2 has been included as Figure 5.2, and the breach maps for Locations 1 and 3 have been provided in Appendix D.

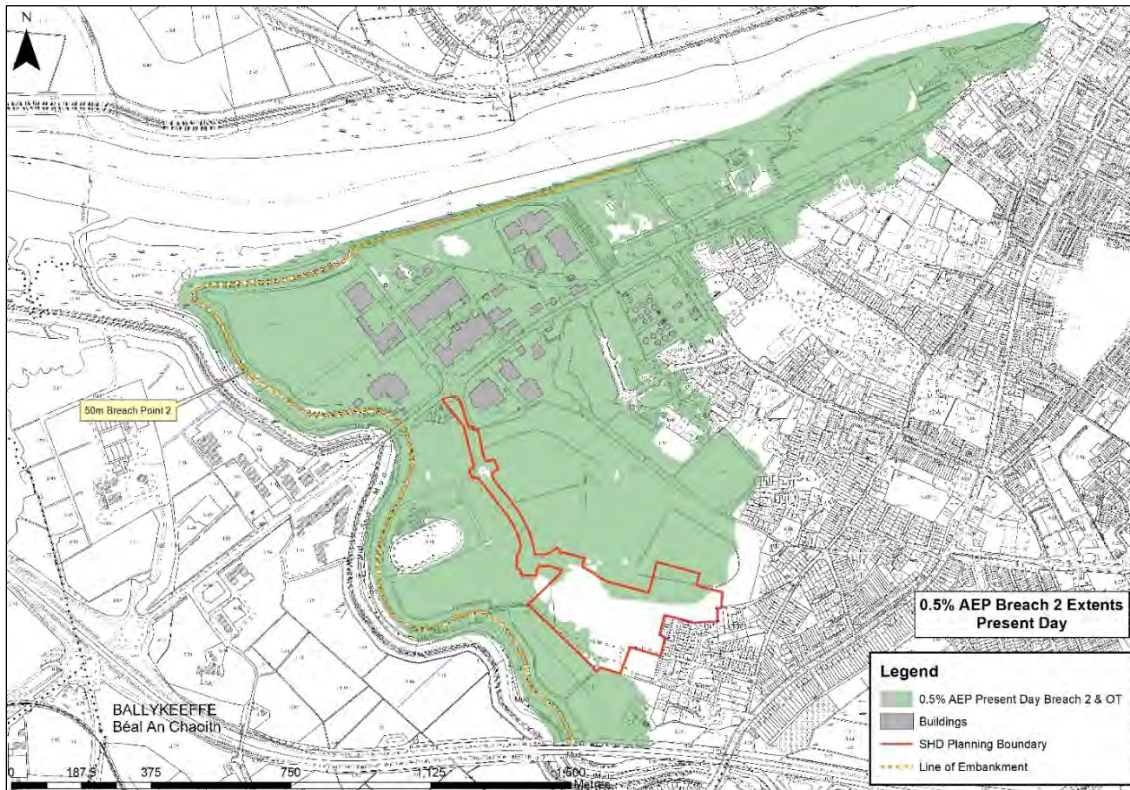


Figure 5.2 Breach location 2- 0.5% AEP event with existing ground levels

5.5 Mitigation Measures for Breach Scenario

5.5.1 Derivation of Design Flood Level

In the Tripartite meeting with Limerick City and County Council (LCCC) and An Bord Pleanála, LCCC stated that their preference was to use the 4.87m OD level as the design flood level for the site. This flood level was derived for the 0.5% AEP flood event in the Ballynaclogh River during the Shannon CFRAM Study. RPS agree that this level can be reached during a 0.5% AEP event in the river when the water is contained by the defences, but it can never be realised at the SHD site during an event of this magnitude. This is because, once the defences are breached, the water spreads out across the entire Dock Road/ Greenpark area resulting in a significant reduction in the 0.5% AEP flood level by the time the water from the breach reaches the proposed development site.

From the three breach simulations (as described in Section 5.4 of this FRA), the maximum derived water level within the immediate vicinity of the SHD was 4.3m OD. This approach in deriving an actual breach flood level at the application site is considered acceptable by Limerick City and County Council as noted in

the draft SFRA completed in support of the current Draft Development Plan 2022-2028⁴, which states in Section 5.8.1:

“Breach modelling – for more complex and higher value developments, bespoke breach modelling can be undertaken in which the overtopping or breach of a flood defence can be investigated with specific reference to a development site.....Breach modelling will also allow a site specific assessment of finished floor levels to be developed, which may be lower than the default standard set out in Section 5.10.”

Having due regard to Section 5.8.1 of the Draft Development Plan, the bespoke breach modelling undertaken by RPS, which included the use of up to date LiDAR, a higher-resolution model and included all of the buildings within the breach area to more accurately capture and derive flood flow paths, endorses the approach set out in the current SFRA for Limerick.

The highest possible flood level for the 0.5% AEP flood event at the application site is 4.3mOD. RPS believes this an accurate, fair and reasonable assessment of the design water level which should be used to establish the mitigation measures.

5.5.2 Establishment of Freeboard

In order to address the risk from the potential flood depths during a breach, the preferred mitigation measure, as advised in the Planning System and Flood Risk Management Guidelines, is to raise the levels of the proposed development. In Paragraph 5.16 this is suggested as being above the 0.5% AEP flood level, even when behind existing defences, and to ensure a precautionary approach it should also include the effects of climate change.

While the Flood Risk Management Guidelines 2009 do not recommend the amount of freeboard to be applied, RPS are proposing a 500mm freeboard as this is currently the freeboard applied by the Office of Public Works (OPW) to all capital flood schemes where earth embankments are being constructed. Given the previously described earth embankments that exist along the Ballnaclogh River and Shannon estuary this would seem to be a reasonable assessment of the freeboard to be applied to the SHD development.

In addition, RPS are proposing a further allowance of 500mm be applied for sea level rise associated with climate change for the Mid Range Future Scenario (MRFS), to ensure a precautionary approach is adhered to.

At the Tripartite meeting LCCC proposed a freeboard of 300mm and a further 500mm for climate change, resulting in a 0.8m freeboard above the design water level. This is less than the 1m freeboard recommended by RPS for the SHD site. This is summarised in Table 5.1.

⁴ Strategic Flood Risk Assessment for Draft Limerick Development Plan 2021-2028, JBA, June 2021

	Freeboard allowance proposed (mm)	Climate change allowance proposed (mm)	Overall allowance (mm)
RPS	500	500	1000
Limerick CCC	300	500	800

Table 5.1 Comparison of RPS and LCCC freeboard recommendations

5.5.3 Proposed Mitigation Measures

The SHD site will be filled to a level to ensure that all roads within the development will be developed to a minimum of 5.0m OD, and then all FFLs will be constructed to a minimum of 5.3m OD. The 5.3m level provides an allowance of 500mm freeboard and 500mm for climate change as described in Section 5.5.2 of this FRA. This provides over 1m freeboard to all new properties which is a very high standard of protection to what is considered ‘highly vulnerable development’ under the Guidelines. Note that the materials being used for filling operations is available within the application site by means of a cut and fill operation.

It is not proposed to raise the access road between the Dock Road and the SHD development. There are numerous reasons for this as follows:

- Firstly, should a breach of the flood defences occur, the Dock Road itself will be flooded to a significant depth in excess of 2m in certain places and completely impassable. Therefore raising the access road between the Dock Road and the SHD development road does not improve access or egress to the proposed development in any way during an event of this magnitude;
- Secondly, should the access road be raised to the minimum recommended 5.0m OD it will effectively create a raised causeway above the surrounding land. During a breach event and the consequential high velocities and flows, a raised causeway of this nature will almost certainly be subject to significant structural damage;
- A final consideration is that the SHD site has been designed so that during a breach event people will remain in their homes, as that is the safest place to be. Providing an access road that is raised may only encourage people to use the access road to travel towards an area that is flooded to a significant depth, or to get a closer look at the flooded areas. This is not behaviour that should be facilitated in any way. RPS would therefore recommend that the access road is maintained at the so ground levels.

The mitigation measures that RPS have proposed to manage the identified risk are described in Table 5.2.

Table 5.2 Summary of proposed mitigation measures to manage the breach scenario

Objective of mitigation measures	Proposed mitigation measures
To raise the proposed development area as far as is reasonably possible, with the focus on protecting people and buildings	The entire development area will be filled, with roads constructed to a level of 5.0m OD and finished floor levels to a level of 5.3m OD. This provides 1m of freeboard above the 0.5% AEP breach flood level. This means that during a breach event, which will cause significant damage to the Dock Road/ Greenpark area and has a high risk to life, residents and their property will remain entirely safe.
Provide egress and access during extreme event to provide access for emergency services and also those wishing to evacuate the area	Designated internal roads should be raised to 5.0m OD. This provides access and egress to all emergency vehicles and pedestrians even during a breach scenario. This road level is over 700mm above the predicted breach level during a 0.5% AEP event.

5.5.4 Modelling of Breach Mitigation Measures

It is recognised in Paragraph 5.16 of the Flood Risk Management Guidelines 2009, that when lands are to be filled behind defences “...the flood risk assessment should be thorough and measures to manage these residual risks carefully detailed”. Furthermore, in the Frequently Asked Questions on page 73 of the Guidelines it states “...the beneficial effects of land-raising should therefore be balanced against potential increased flood risk elsewhere”. It is therefore clear, that although land raising is the preferred approach to mitigate against a potential breach of the defences, the potential to increase flood risk to neighbouring existing development needs to be assessed and mitigated where required.

Based on the proposed development levels for the SHD site, breach modelling has been undertaken for each of the three breach locations using the same boundary conditions as described for the existing scenario in Section 5.4 of this report. This was done for both the present day and climate change scenarios. To provide an easy comparison of the existing and proposed development scenarios a series of combined extent maps have been produced which clearly indicate the impact of infilling in the breach scenario. These comparative maps show three different colours at each breach location as follows:

1. Anywhere shown as green floods only in the existing scenario but not in the proposed scenario, which is reflective of the areas that have been infilled;

2. Anywhere shown as purple floods in both the existing scenario and in the proposed scenario. This means there is no impact of flooding in this area as a result of the proposed development;
3. Anywhere shown as yellow floods only in the proposed scenario and not in the existing scenario.

5.5.4.1 Present Day Scenario Results

All three breach locations produced approximately the same flood extent. As an example and for easy reference, a comparative map is shown in Figure 5.3 for a breach at Location 2. The breach maps for Locations 1 and 3 are provided in Appendix E. Based on the proposed mitigation measures described in Section 5.1, the impact of the raising all of the SHD lands is negligible for all of the breach locations. This is not unsurprising given the relatively small amount of infill required for the SHD site, given that a large portion of the site is already in Flood Zone C.

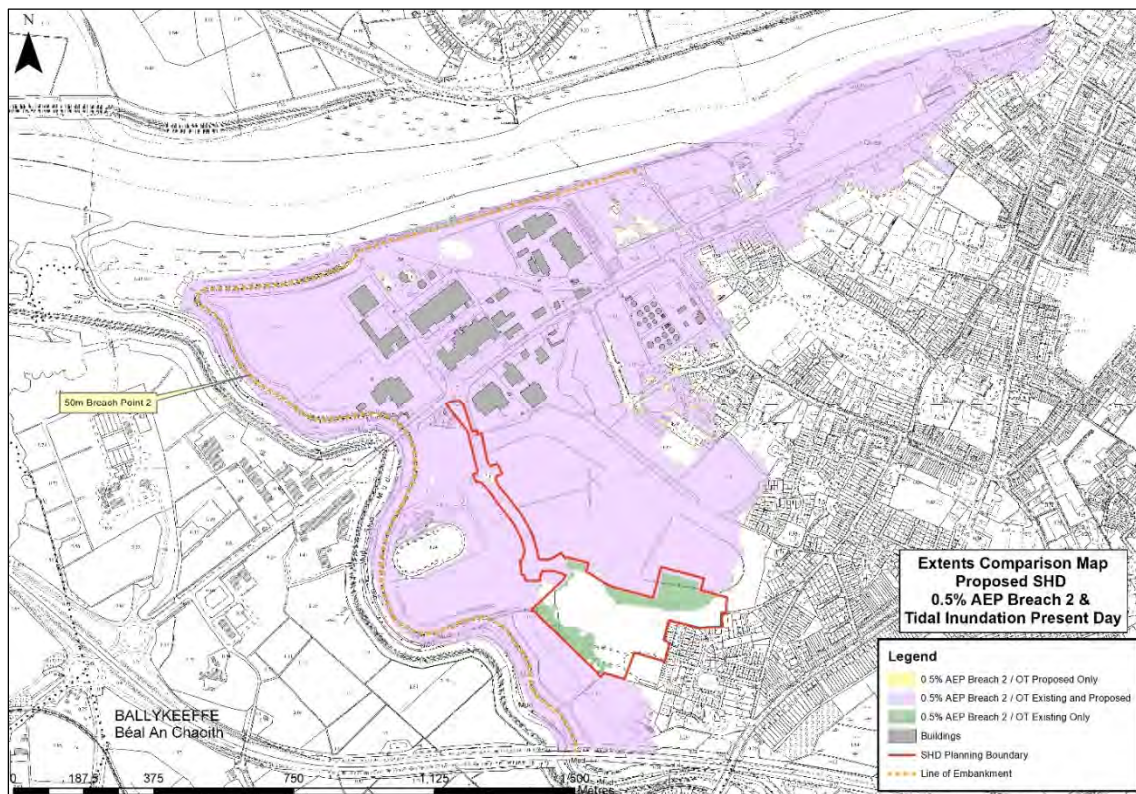


Figure 5.3 Impact of raising proposed development lands at Breach location 2 (Present day)

5.5.4.2 Climate Change Scenario Results

The mitigation measures have also been tested for the 0.5% AEP MRFS event with no impact identified. All three breach locations produced approximately the same flood extent. As an example a comparative

map is shown in Figure 5.4 for a breach at Location 2. The breach maps for Locations 1 and 3 are provided in Appendix F.

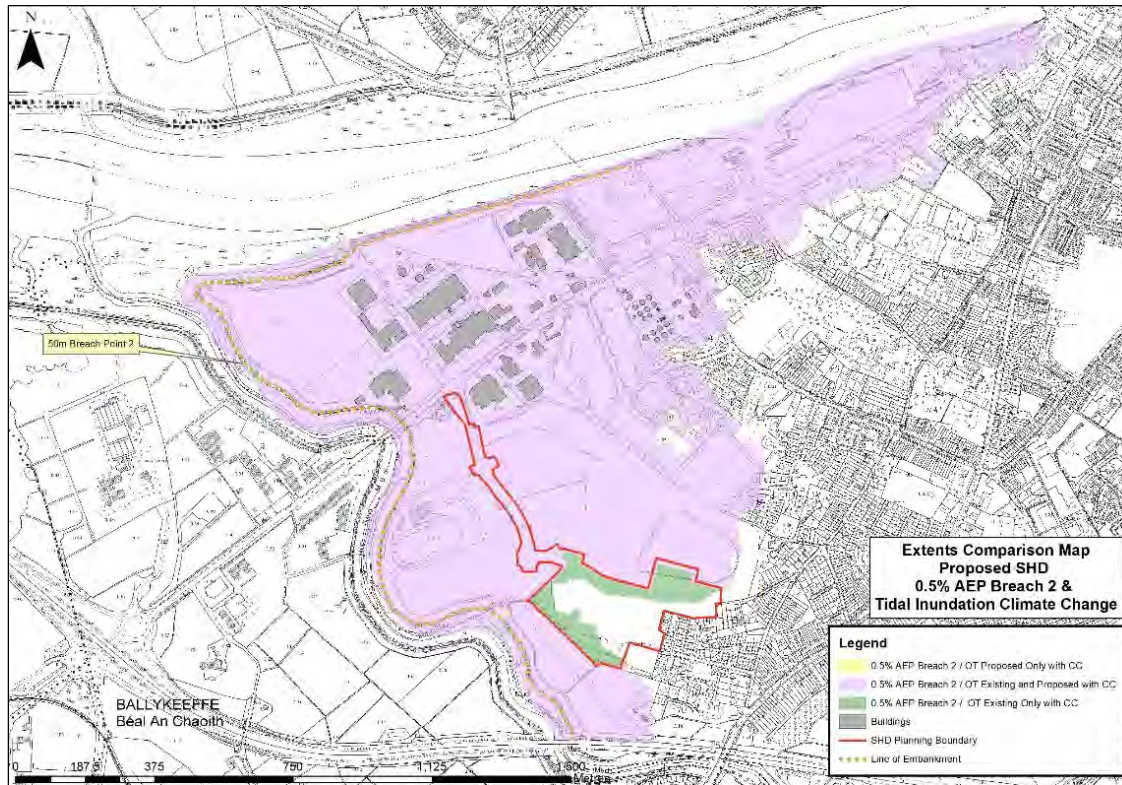


Figure 5.4 Impact of raising proposed development lands at Breach location 2 (Climate change)

5.5.5 Conclusions on Breach Modelling

Based on the analysis, the overwhelming conclusion of the breach modelling is that the proposed development does not create an increase in flood risk to the existing development, either in the present day or climate change scenarios.

As a point of note in relation to the breach maps, it can be seen that along the edges of the flood extent small amounts of yellow and green are visible. This is not an indication of either an increase or a decrease in flood risk extent, instead it occurs as a result of mesh in the 2D domain of the model changing as a result of the new mitigation measures introduced.

5.6 Assessment of Cumulative Impacts

A nursing home is proposed adjacent to the SHD site. This is a separate planning application that has been submitted to LCCC for their consideration (Ref. no. 21/1222). This FRA for the SHD site has included

an assessment of the cumulative impact of both developments. The nursing home site is much smaller in area than the SHD site, and it will be filled to a FFL of 6.3m OD.

Based on the proposed development levels for both the SHD and the nursing home site, breach modelling has been undertaken for each of the three breach locations using the same boundary conditions as described for the existing scenario in Section 5.4 of this report. To provide an easy comparison for the existing and proposed development scenarios a series of combined extent maps have been produced which clearly indicate the impact of infilling in the breach scenario. These comparative maps show three different colours at each breach location:

1. Anywhere shown as green floods only in the existing scenario but not in the proposed scenario, which is reflective of the areas that have been infilled;
2. Anywhere shown as purple floods in both the existing scenario and in the proposed scenario. This means there is no flooding impact in this area as a result of the proposed development.
3. Anywhere shown as yellow floods only in the proposed scenario and not in the existing scenario.

The impact of the raising both the SHD and the nursing home site is shown in Figure 5.5 for a breach at Location 2 for the present day scenario. The breach maps for Locations 1 and 3 are shown in Appendix G.

The impact of the raising both the SHD and the nursing home site is shown in Figure 5.6 for a breach at Location 2 for the climate change scenario. The breach maps for Locations 1 and 3 are shown in Appendix H.

Based on the analysis, the overwhelming conclusion is that the breach modelling indicates that raising of both the nursing home and SHD site does not create an increase in flood risk to existing development, either in the present day or climate change scenarios.

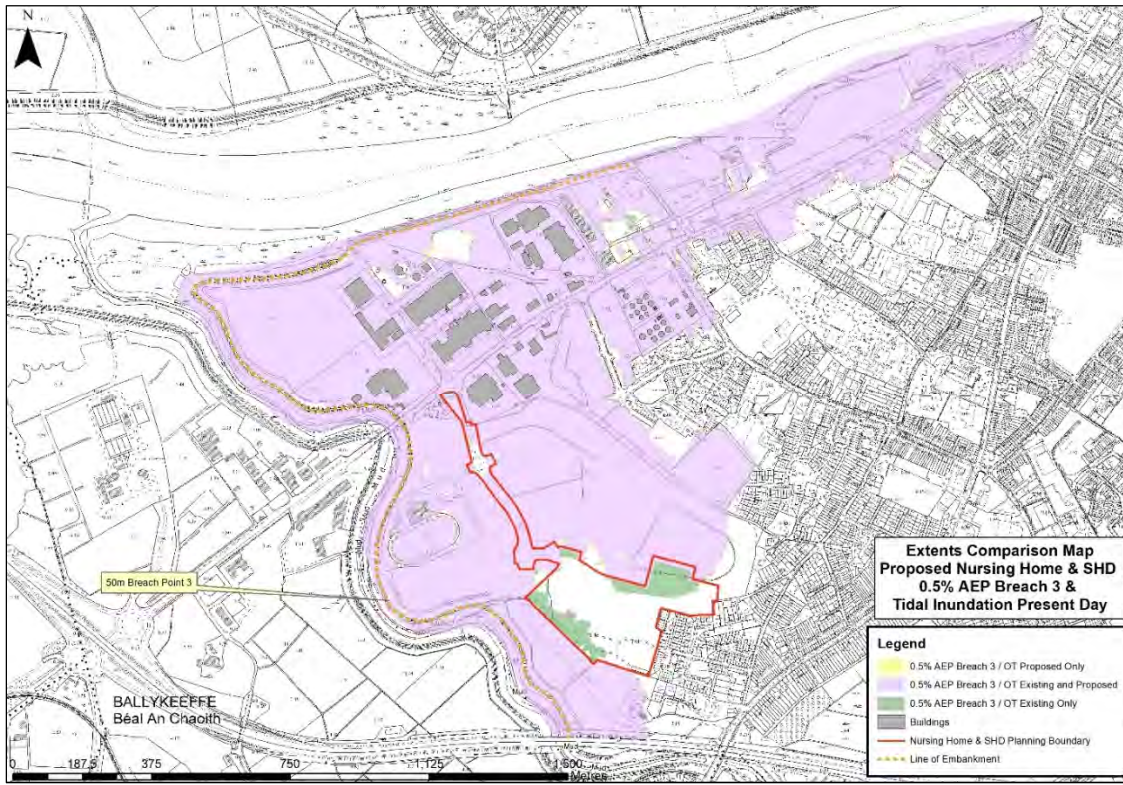


Figure 5.5 Impact of raising nursing home and SHD site levels at Breach location 2 (Present day)

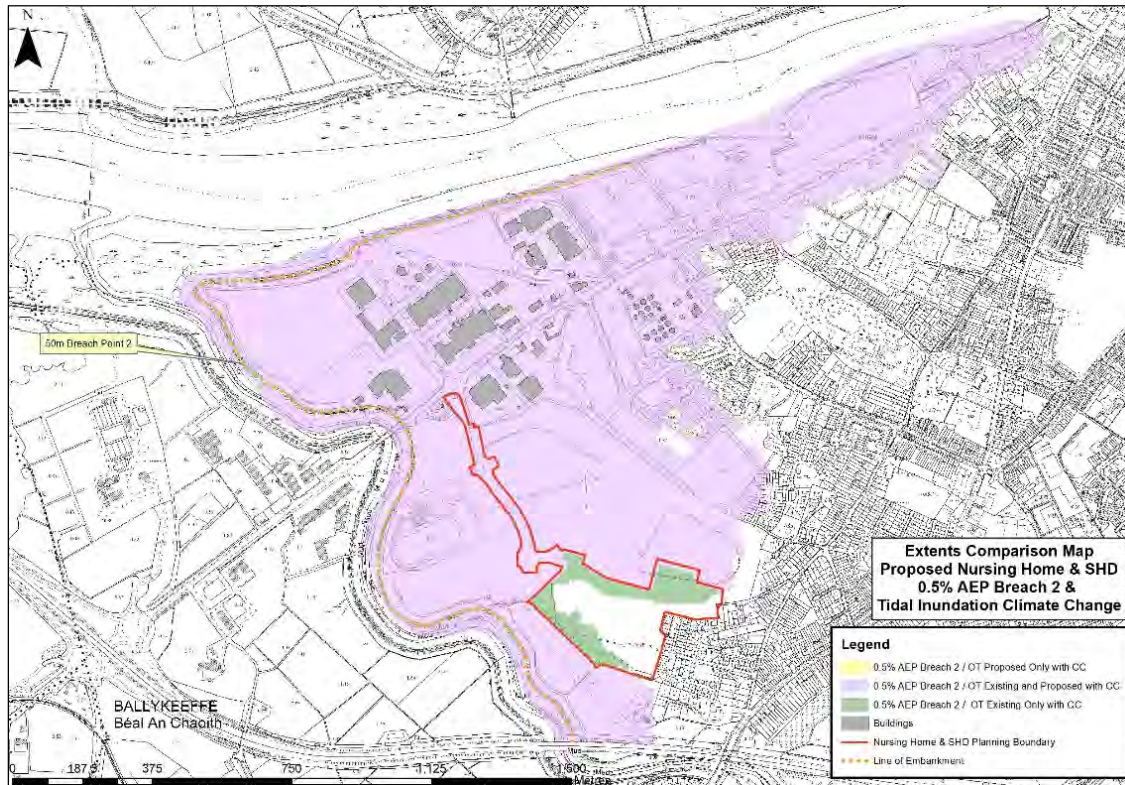


Figure 5.6 Impact of raising nursing home and SHD site levels at Breach location 2 (Climate change)

5.7 Surface Water Drainage Strategy

Given the change from a largely greenfield site to a residential development, there is the potential for an increase in the rate of run off and the need to attenuate flows to the receiving watercourse(s). In order to mitigate this impact the proposed surface water design has been based on the requirement to ensure that the development does not result in increased runoff rates. The surface water drainage design is fully described in the Engineering Planning Report⁵.

A new surface water sewer network shall be provided for the proposed development which will be entirely separate from the foul water sewer network. Each unit will have its own independent connection to the surface water sewer network. Surface water run-off from roof areas and hardstanding areas are designed to be collected by a gravity pipe network. Surface water will be collected and discharged via a mixture of traditional and Sustainable urban Drainage System (SuDS) to the existing 1350mm/ 1500mm diameter

⁵ Proposed SHD at Lands at Former Greenpark Racecourse, Limerick City. PUNCH (September 2021).

surface water sewer. This sewer discharges the existing lagoon adjacent to the Ballynacloagh River. Both the pipe and the lagoon were designed to take into account future developments. The lagoon attenuates flows to Greenfield discharge rate and discharges to the Ballynacloagh River through the use of a penstock structure.

The surface water drainage network has been analysed for the risk of flooding for a 1 in 5-year flood event, 1 in 30-year rainfall event and a 1 in 100-year rainfall event by means of simulating such events in the drainage model with no flooding occurring. An increase of 20% in rainfall has been included to account for climate change and 10% for urban creep.

The proposed development has been assessed in relation to Sustainable Urban Drainage Systems (SuDS) and a variety of SuDS measures have been adopted including the following:

- Green roofs for the proposed crèche and apartments buildings;
- Tree pit systems in the development's landscaped paved areas;
- Permeable paving for house driveways and the visitor parking;
- Infiltration trenches;
- Swales;
- Rain gardens (dwelling roofs);
- Attenuation tanks (5 no.) located in open spaces throughout the development.

5.8 Access and Egress from the SHD Area

Given the identified mitigation measures which propose to raise all development and finished floor levels above the 0.5% AEP breach level with suitable allowance for climate change and freeboard, there will be no requirement to evacuate the residential development during a 0.5% AEP MRFS (climate change) event, even when a breach occurs. This is an exceptionally high standard of protection given the severity and probability of the event being considered.

Access and egress therefore only needs to be considered in relation to emergency services, e.g. ambulance or fire services, requiring access for a medical emergency or when a fire has occurred concurrently with a breach of the defences. In the unlikely scenario that the main access road leading onto the Dock Road has been flooded, there is still emergency access available in and out of the SHD site along pavements that link to the adjacent Log na gCapall development and to Greenpark Avenue. The pavements are wide enough and have been designed to accommodate emergency vehicles. The routes are shown by red arrows in Figure 5.7.



Figure 5.7 Emergency access and egress routes

6 PLANNING SYSTEM AND FLOOD RISK MANAGEMENT GUIDELINES

6.1 Classification

The ‘Planning System and Flood Risk Management’ Guidelines classify different types of development in terms of their vulnerability class (Table 3.1 of the Guidelines). This table has been reproduced as Table 6.1.

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

Table 3.1 Classification of vulnerability of different types of development

Figure 6.1 Classification of vulnerability of development

Table 3.2 of the Guidelines identifies the type of development that would be appropriate to each flood zone and those that would need the Justification Test. This table has been reproduced as Figure 6.2.

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

Table 3.2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

Figure 6.2 Vulnerability versus flood zones

A large part of the SHD site is in Flood Zone C, however there are some areas that can be considered to be in Flood Zones A and B. Table 3.2 of the Guidelines (Figure 6.2) shows that for residential development (highly vulnerable) in Flood Zones A and B, the Justification Test will need to be applied and fully satisfied before development can be permitted.

6.2 Development Management Justification Test

Where a planning authority is considering proposals for new development in areas at a high or moderate risk of flooding that includes types of development that are vulnerable to flooding and that would generally be inappropriate as set out in Table 3.2 of the Guidelines, the planning authority must be satisfied that the development satisfies all of the criteria of the Development Management Justification Test outlined in Box 5.1 of the Guidelines and reproduced as Figure 6.3.

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:

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.
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.

Figure 6.3 Justification Test for Development Management

Table 6.1 sets out the response to the criteria in Box 5.1 that must be satisfied. Each of the criteria have been shown to be satisfied and therefore it is concluded that the proposed development complies with the requirements of the Development Management Justification Test.

Table 6.1 Response to Justification Test for Development Management for proposed development

Criteria	Response
<p>1. The subject lands have been zoned or otherwise designated for the particular use or form of development in an operative development plan, which takes account of these Guidelines</p>	<p>The lands are zoned for residential use in the Limerick City Development Plan 2010-2016 (as extended). The Development Plan clearly states that the plan was produced taking full account of the Guidelines and was still zoned on that basis. It can be considered that Point 1 of the Development Management Justification Test has therefore been met.</p>
<p>2. The proposal has been subject to an appropriate flood risk assessment that demonstrates:</p>	
<p>(i) The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk</p>	<p>During a present day 0.5% AEP flood event and a 0.5% AEP climate change event there is no increase in flood risk elsewhere. This is described in detail in Section 5.2 of this report.</p> <p>Additional modelling has been undertaken to consider the impact of the infilling of the site on the displacement of water during a breach of the existing defences. This was found to not have an increased risk on any existing development. This is described in detail in Section 5.5 of this report.</p> <p>It is therefore considered that Point 2 (i) of the Justification Test has been met.</p>
<p>(ii) The development proposal includes mitigation measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible</p>	<p>The proposed development will not flood during a 0.5% AEP flood event or during a 0.5% AEP flood event plus climate change event. This provides an exceptionally high standard of protection and therefore the risk of flooding to people, property and the environment is very low. This level of protection will ensure that there will be no impact on the economy, i.e. there will not be an unacceptable level of flood risk which might subsequently require government capital expenditure to alleviate the problem to either the proposed development or existing development.</p> <p>It is therefore considered that Point 2 (ii) of the Justification Test has been met.</p>
<p>(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</p>	<p>The residual risk to the proposed development is low, as the development is protected up to a 0.5% AEP plus climate change tidal event, with additional freeboard. This gives added assurance that the proposed mitigation measures are more than adequate to deal with any future flood risk. Designated internal roads will be elevated to ensure free access and egress even during an extreme event. No specific residual risks have been identified that would necessitate a flood evacuation plan for the site.</p>

FLOOD RISK ASSESSMENT

<p>provisions for emergency services access</p>	<p>It is therefore considered that Point 2 (iii) of the Justification Test has been met.</p>
<p>(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</p>	<p>The flood mitigation measures proposed do not materially impact upon the desired layout, orientation or approach to the proposed development. It is considered that the proposed development is compatible with the wider planning objectives in relation to development of good design and planning for the area, and is compliant with the Limerick City Development Plan 2010-2016 (as extended).</p> <p>It is therefore considered that Point 2 (iv) of the Justification Test has been met.</p>

7 CONCLUSION

7.1 Summary of FRA

RPS were commissioned to carry out a Flood Risk Assessment (FRA) in support of a strategic housing development (SHD) for Greenpark, Limerick. The purpose of this assessment is to ensure that the proposed development takes cognisance of the existing flood risk and does not result in increased flood risk elsewhere. This report has been prepared in accordance with the requirements of 'The Planning System and Flood Risk Management' Guidelines (DEHLG 2009).

The River Shannon flows at a distance to the north of the site and a small tributary, the Ballynaclogh River, flows to the west of the site. Both of these rivers can be considered to be tidal at this location. There are flood embankments along both the River Shannon and the Ballynaclogh River.

As part of the Shannon Catchment Flood Risk Assessment and Management (CFRAM) Study, Limerick was identified as an Area for Further Assessment (AFA). This meant that the watercourses in the area were modelled and flood maps produced which can be used to establish the existing flood risk at a site. The CFRAMS maps indicate that the 0.5% AEP flood event does not reach the application site. This is because of the protection afforded by the existing flood defences constructed under the 1945 Arterial Drainage Act.

Following the sequential approach as set out in 'The Planning System and Flood Risk Management Guidelines' the effects of any existing defences must be ignored when establishing flood zoning. Using this approach, a large area of the SHD site is considered at low risk and in Flood Zone C. However areas of the site are in Flood Zone A, with a very small section of the land being contained within Flood Zone B. Applying the sequential approach set out in 'The Planning System and Flood Risk Management Guidelines' requires a Development Management Justification Test to be carried for a residential development within Flood Zones A and B.

The Greenpark Lands have been zoned for General Mixed Use, Neighbourhood Centre and Residential uses since 2010 as per the Limerick City Development Plan 2010-2016, which was adopted with the benefit of the application of the provisions of 'The Planning System and Flood Risk Management Guidelines'. The Development Plan Justification Test must have been applied and passed in order for the General Mixed Use, Neighbourhood Centre and Residential uses zonings to be established for the Greenpark Lands. Given that the Development Plan Justification Test has been applied there is only a need to comply with the Development Management Justification Test as part of this application.

In accordance with Paragraph 5.16 of the Guidelines, a precautionary approach to development behind existing defences is to raise the finished levels to at least the 1% fluvial or 0.5% AEP coastal flood level. This approach has been adopted for the SHD area. The SHD site will be filled to ensure all roads will be

built up to approximately 5.0m OD, and then all FFLs will be constructed to a minimum of 5.3m OD. This provides over 1m freeboard to all new properties above the 0.5% AEP breach flood level, thus providing a very high standard of protection.

Modelling of the impact of raising the proposed development was then undertaken considering both the 0.5% AEP and 0.5% AEP climate change (MRFS) flood events when a breach of the defences occurs. The modelling shows that there was no identified increase in risk to existing development as a result of the proposed SHD site raising, either in the present day or climate change scenarios.

A nursing home is proposed adjacent to the SHD site. This is a separate planning application, however this FRA has included an assessment of the cumulative impact of both developments. The nursing home site will be filled to FFL of 6.3m OD. Breach analysis has confirmed that there is no increase in flood risk to existing developments with both the nursing home and SHD sites raised, either in the present day or climate change scenarios.

A new surface water sewer network shall be provided for the proposed development which will be entirely separate from the foul water sewer network. Each unit will have its own independent connection to the surface water sewer network. Surface water run-off from roof areas and hardstanding areas are designed to be collected by a gravity pipe network. Surface water will be collected and discharged via a mixture of traditional and Sustainable urban Drainage System (SuDS) to the existing 1350mm/ 1500mm diameter surface water sewer. This sewer discharges the existing lagoon adjacent to the Ballynaclogh River. Both the pipe and the lagoon were designed to take into account future developments. The lagoon attenuates flows to Greenfield discharge rate and discharges to the Ballynaclogh River through the use of a penstock structure. SuDS measures include green roofs, tree pit systems, permeable surfacing, infiltration trenches, swales, rain gardens and attenuation tanks.

Based on the proposed mitigation measures, consideration of the designated zoning and the proposed urban design, each of criteria in the Development Management Justification Test was shown to be satisfied. Therefore it was concluded that the proposed development complies with the requirements of the Development Management Justification Test and hence is compliant with 'The Planning System and Flood Risk Management Guidelines'.

7.2 Key Aspects of the Flood Mitigation Measures

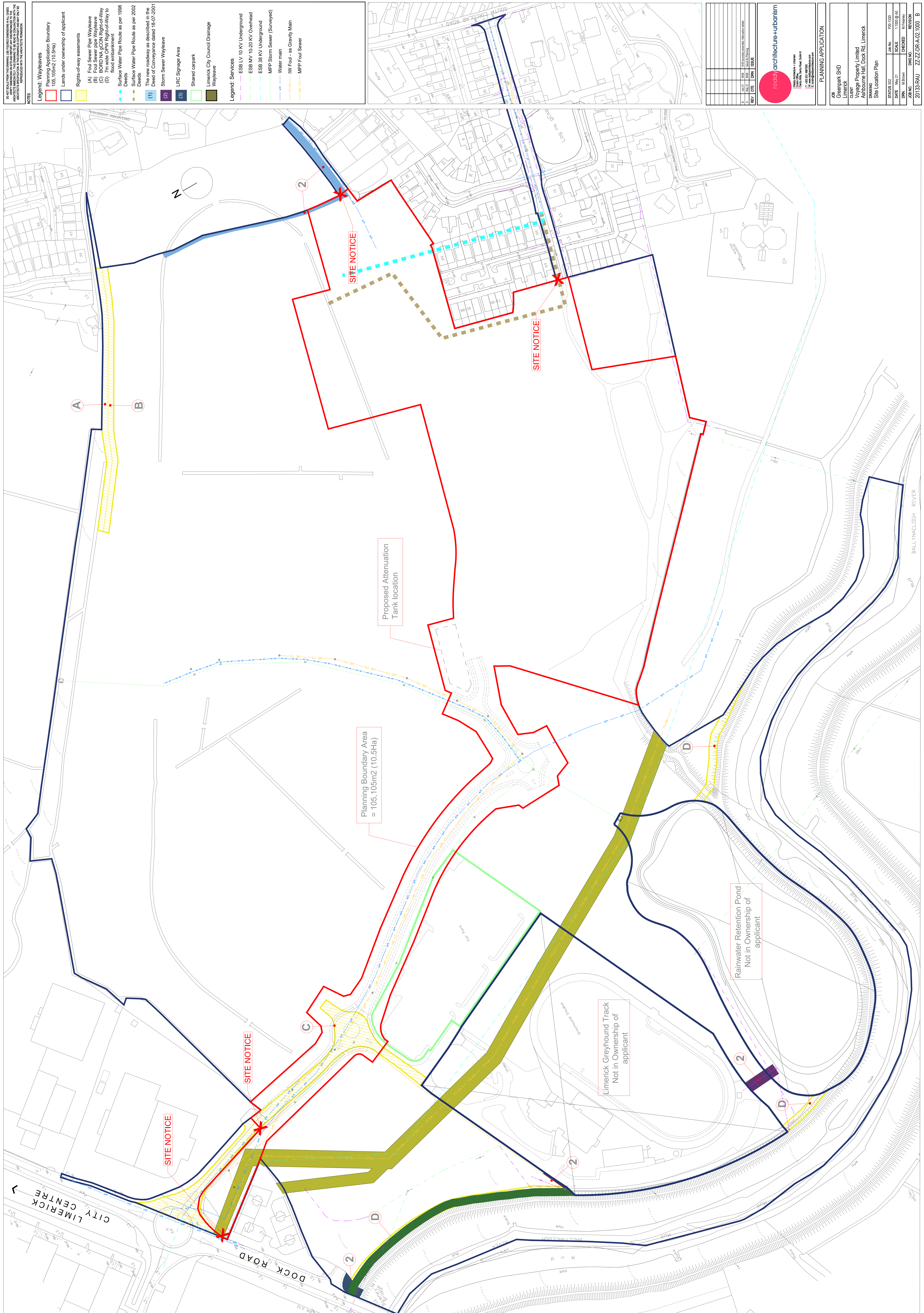
The following are the key aspects of the mitigation measures proposed within this Flood Risk Assessment and demonstrate a robust and sustainable approach to developing the SHD site:

1. There is no reliance on the existing OPW maintained flood defences to provide any level of protection to the SHD area;

2. The proposed SHD mitigation measures are sustainable and have been developed with climate change and predicted sea level rise being fully considered. This will ensure that Limerick City and County Council will not be required to provide additional flood defence infrastructure in the future to protect the SHD site;
3. The entire SHD site will remain free from flooding during a 0.5% AEP Mid-Range Future Scenario event where overtopping of the existing defences occurs;
4. All buildings and key internal roads will be protected during a 0.5% AEP Mid-range Future Scenario event, even when a breach of the existing defences has also occurred. A total freeboard of 1m has been applied in this regard. This is a very high standard of defence.
5. It has been robustly demonstrated that there is **no increase** in flood risk, even during a breach event, to surrounding existing developments as a result of the proposed development;
6. A clear access and egress route for emergency vehicles can be provided to the SHD site through Log na gCapall and Greenpark Avenue, even during a breach event;
7. All storm drainage will be attenuated to existing run off rates and therefore will not cause capacity issues on the existing network or raise the increase of flooding elsewhere.

Appendix A

Site location map



NOTES

DO NOT SCALE FROM THIS DRAWING. USE DIMENSIONS TO FULL SCALE. VERIFY DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ARCHITECT IMMEDIATELY. THIS DRAWING IS THE PROPERTY OF REDDY architecture+urbanism AND IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF REDDY architecture+urbanism.

- Legend: Wayleaves**
- Planning Application Boundary
 - 105,105m2 (10.5Ha)
 - Lands under ownership of applicant
 - Rights-of-way easements
 - (A) Foul Sewer Pipe Wayleave
 - (B) Surface Water Pipe Wayleave
 - (C) 7m wide OPW Right-of-Way to flood embankment
 - (D) 7m wide OPW Right-of-Way to Surface Water Pipe Route as per 1998 Deeds
 - Surface Water Pipe Route as per 2002 Deeds
 - The new roadway as described in the Deed of Conveyance dated 18/07/2001
 - Storm Sewer Wayleave
 - LRC Signage Area
 - Shared carpark
 - Limerick City Council Drainage Wayleave
- Legend: Services**
- ESB LV 10 KV Underground
 - ESB MV 10-20 KV Overhead
 - ESB 38 KV Underground
 - MPP Storm Sewer (Surveyed)
 - Water main
 - IW Foul - ss Gravity Main
 - MPP Foul Sewer



REV	DATE	ISSUE
1	18/07/2021	Issue for Planning
2	18/07/2021	Issue for Planning
3	18/07/2021	Issue for Planning
4	18/07/2021	Issue for Planning
5	18/07/2021	Issue for Planning
6	18/07/2021	Issue for Planning
7	18/07/2021	Issue for Planning
8	18/07/2021	Issue for Planning
9	18/07/2021	Issue for Planning
10	18/07/2021	Issue for Planning

reddy architecture+urbanism

1000 Wellington Road, Dublin 4
 01-493 07 488/322
 E: info@reddyurbanism.com

PLANNING APPLICATION

JOB: Greenpark SHD Limerick City Council

Client: Voyage Property Limited
 Ashbourne Hall, Dock Rd, Limerick

Drawing: Site Location Plan

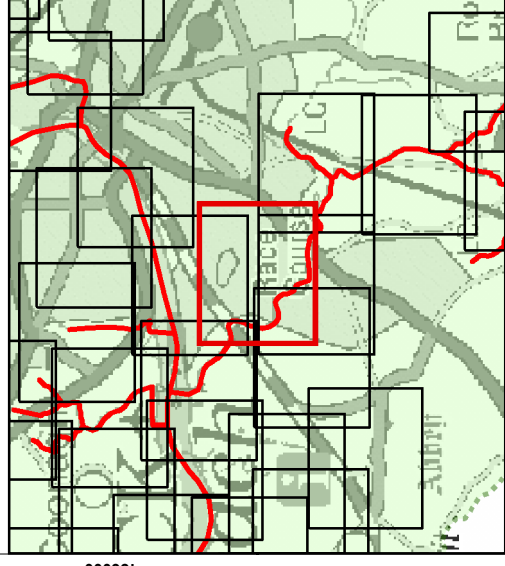
STATUS: 352
 JOB NO: P001330
 DATE: 18/07/21
 SCALE: 1:1000 @ A0
 DRAWN: J. Brown
 CHECKED: J. Kennedy
 DESIGNED: J. Kennedy
 APPROVED: J. Kennedy

2019-03-RAU_ZZZZ-UR-A02-1000_B

Appendix B

Flood Maps from Shannon CFRAM Study

Location Plan:



Legend:

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

- 10% AEP Fluvial Flood Extent**
(1 in 10 chance in any given year)
-
- 1% AEP Fluvial Flood Extent**
(1 in 100 chance in any given year)
-
- 0.1% AEP Fluvial Flood Extent**
(1 in 1000 chance in any given year)
-

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



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

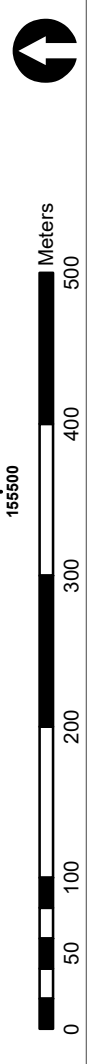


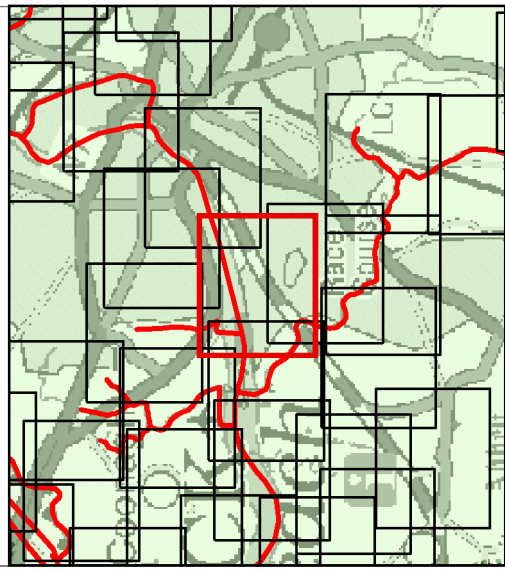
Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	FLUVIAL
Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH Date: June 2016
Checked by:	KM Date: June 2016
Reviewed by:	MC Date: June 2016
Approved by:	PS Date: June 2016
Map No.:	S2526LIK_EXFCD_F1_65
Sheet: 65 of 65	Revision: 0
Map Scale: 1: 5000	Plot Scale: 1:1 @ A3



© Ordnance Survey Ireland. All rights reserved. Licence Number EN0021014





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)

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

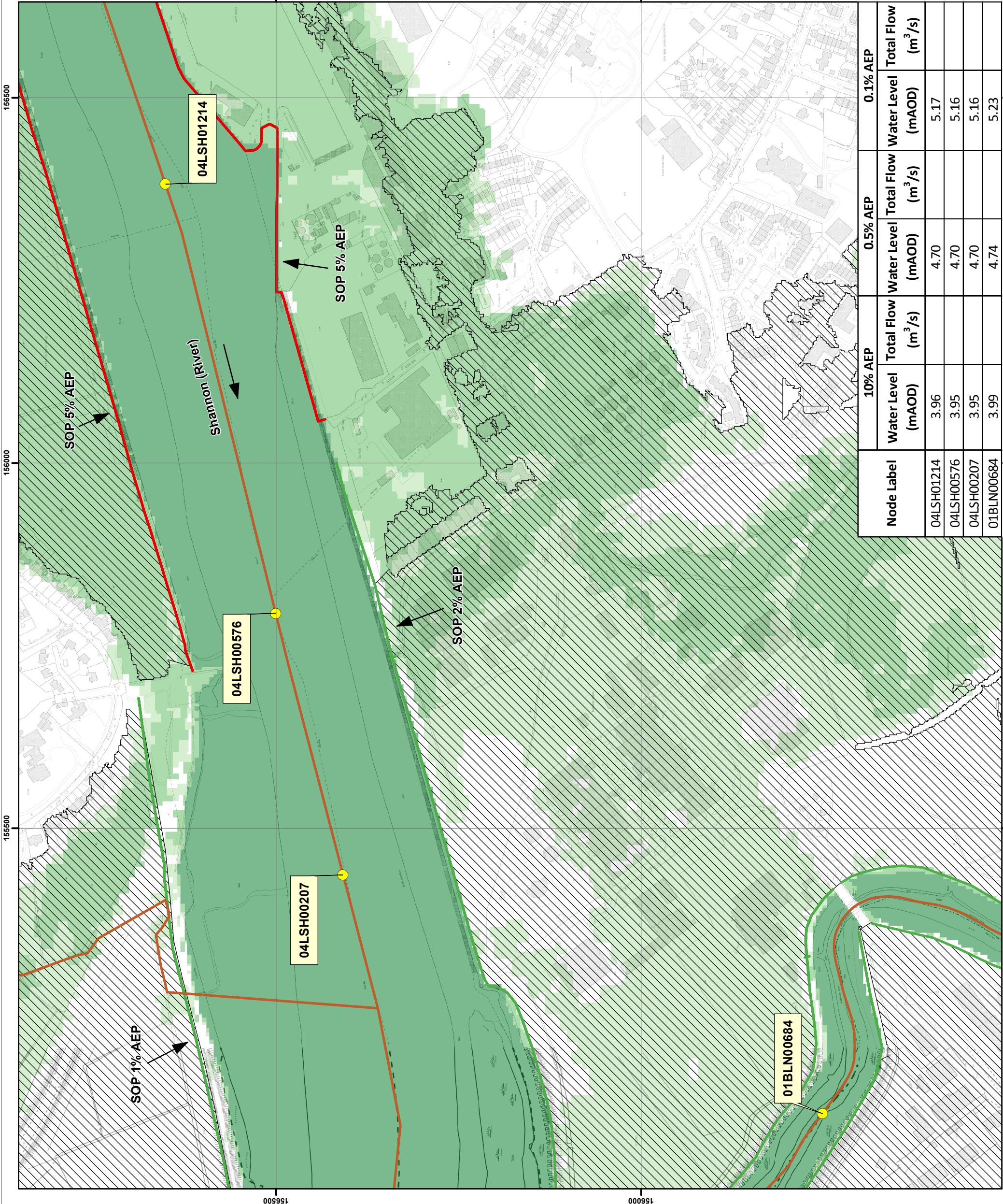


The Office of Public Works
Jonathan Swift Street
Trim
Co. Meath
C15 NX36



Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	COASTAL - TIDAL
Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH
Date:	June 2016
Checked by:	KM
Date:	June 2016
Reviewed by:	MC
Date:	June 2016
Approved by:	PS
Date:	June 2016
Map No.:	S2526LIK_EXCCD_F1_26
Sheet: 26 of 65	Revision: 0
Map Scale: 1: 5000	Plot Scale: 1:1 @ A3



Node Label	10% AEP		0.5% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)
04LSH01214	3.96		4.70		5.17	
04LSH00576	3.95		4.70		5.16	
04LSH00207	3.95		4.70		5.16	
01BLN00684	3.99		4.74		5.23	

155500

156000

156500

156500

155500

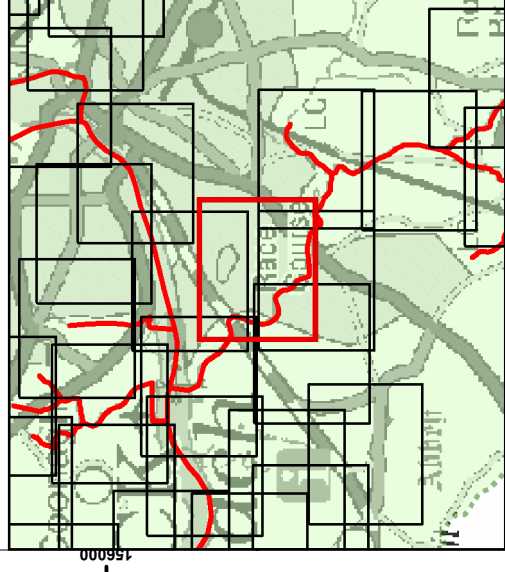
156000

156500

156500



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)

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

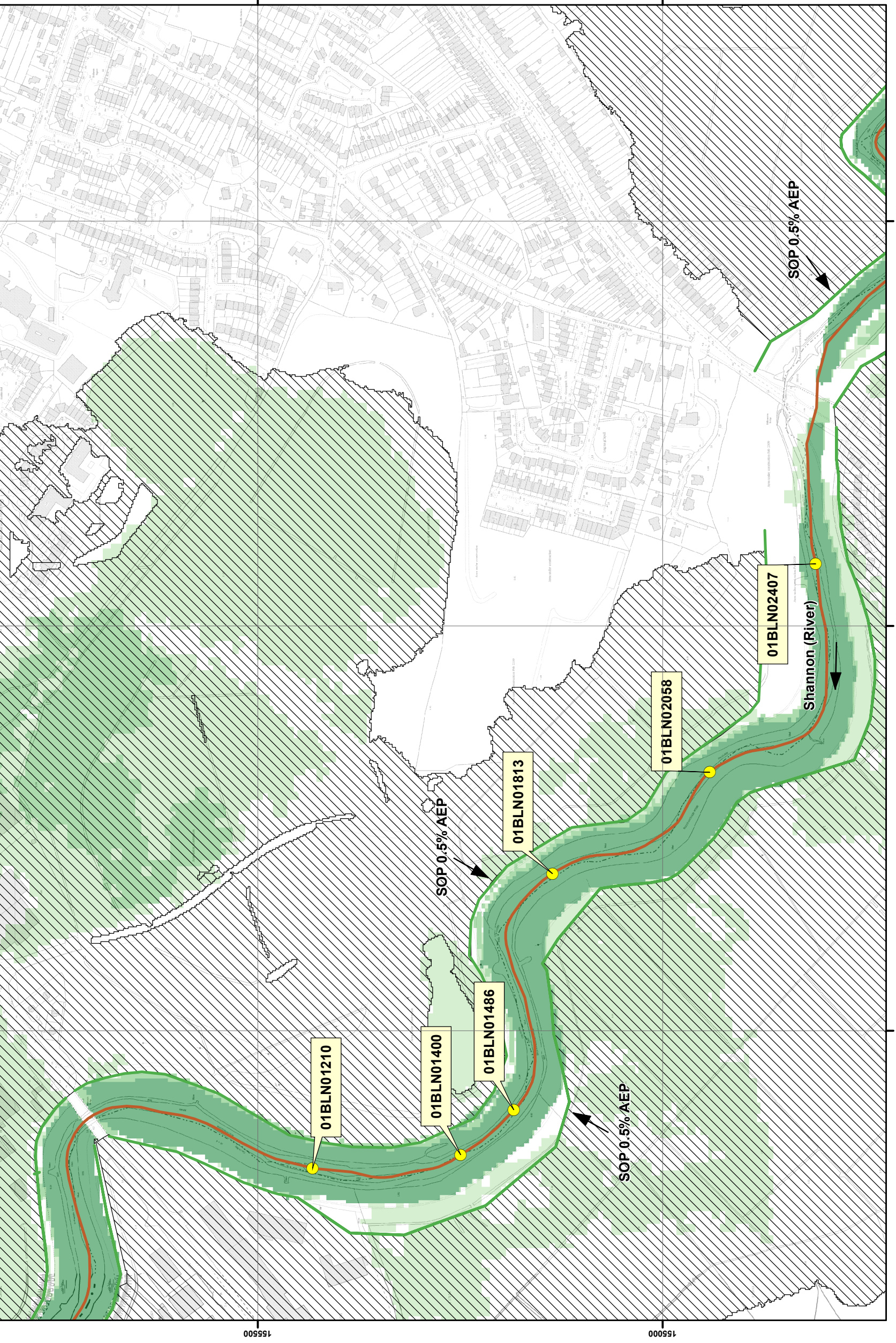


The Office of Public Works
Jonathan Swift Street
Trim
Co. Meath
C15 NX36

Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	COASTAL - TIDAL
Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH
Checked by:	KM
Reviewed by:	MC
Approved by:	PS
Map No.:	S2526LIK_EXCCD_F1_65
Sheet: 65 of 65	Revision: 0
Map Scale: 1: 5000	Plot Scale: 1:1 @ A3

Node Label	10% AEP		0.5% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)
01BLN02407	4.07		4.87		5.15	
01BLN02058	4.07		4.87		5.16	
01BLN01813	4.06		4.87		5.15	
01BLN01486	4.04		4.86		5.15	
01BLN01400	4.03		4.86		5.16	
01BLN01210	4.02		4.85		5.16	

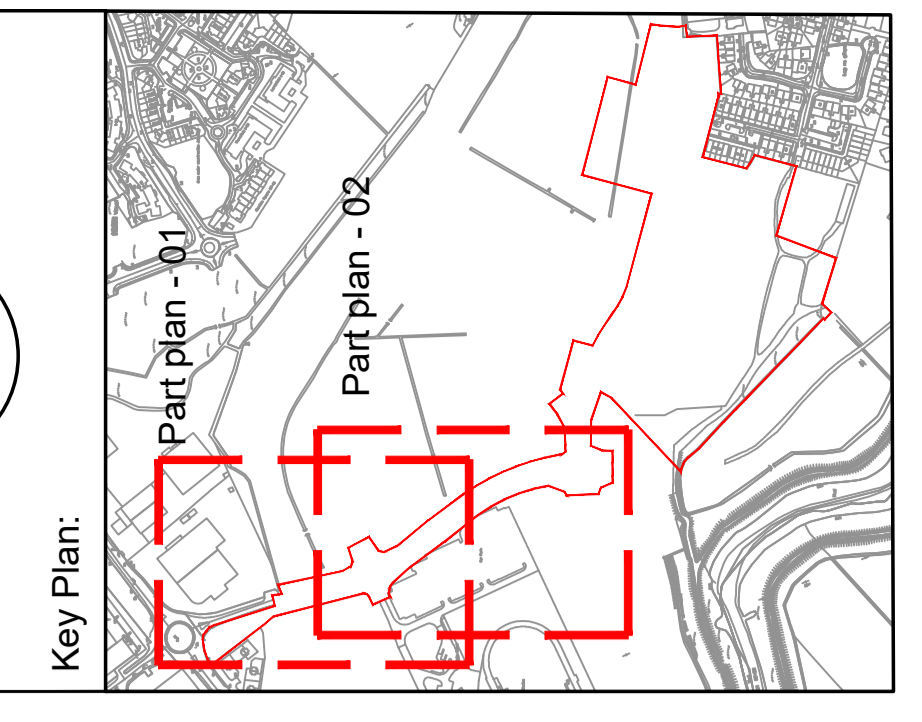
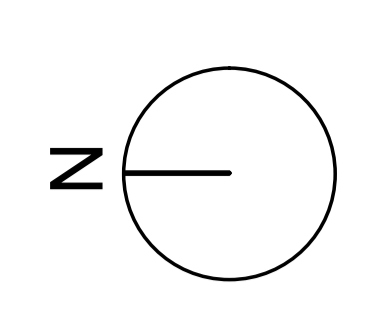


Appendix C

Proposed site layout

DO NOT SCALE FROM THIS DRAWING. THE FIGURES SHOWN ON ALL CARDS ARCHITECTS ILLUSTRATIONS. THE DRAWINGS OR ANY INFORMATION WITHIN THE ARCHITECTS ILLUSTRATIONS ARE THE PROPERTY OF REDDY ARCHITECTURE+URBANISM. ANY REPRODUCTION OF THESE ARCHITECTS ILLUSTRATIONS WITHOUT THE WRITTEN PERMISSION OF REDDY ARCHITECTURE+URBANISM IS PROHIBITED.

- NOTES
- Legend:
 - Planning Application Boundary
 - 100% 102mhz (10.2Ha)
 - Lands under ownership of applicant
 - Proposed new link road. From existing roundabout to Limerick Greyhound Track - to SHD Site
 - SHD Lands (Developable Area)
 - 78.956mhz (7.89Ha)



REV	DATE	BY	ISSUE

reddy architecture+urbanism

100% 102mhz (10.2Ha)

78.956mhz (7.89Ha)

PLANNING APPLICATION

100% 102mhz (10.2Ha)

CLIENT: Voyaga Property Limited, Ashbourne Hall, Dock Rd, Limerick

DRAWING: Proposed Site Plan - sht 1

STATUS: S22

DATE: May 21

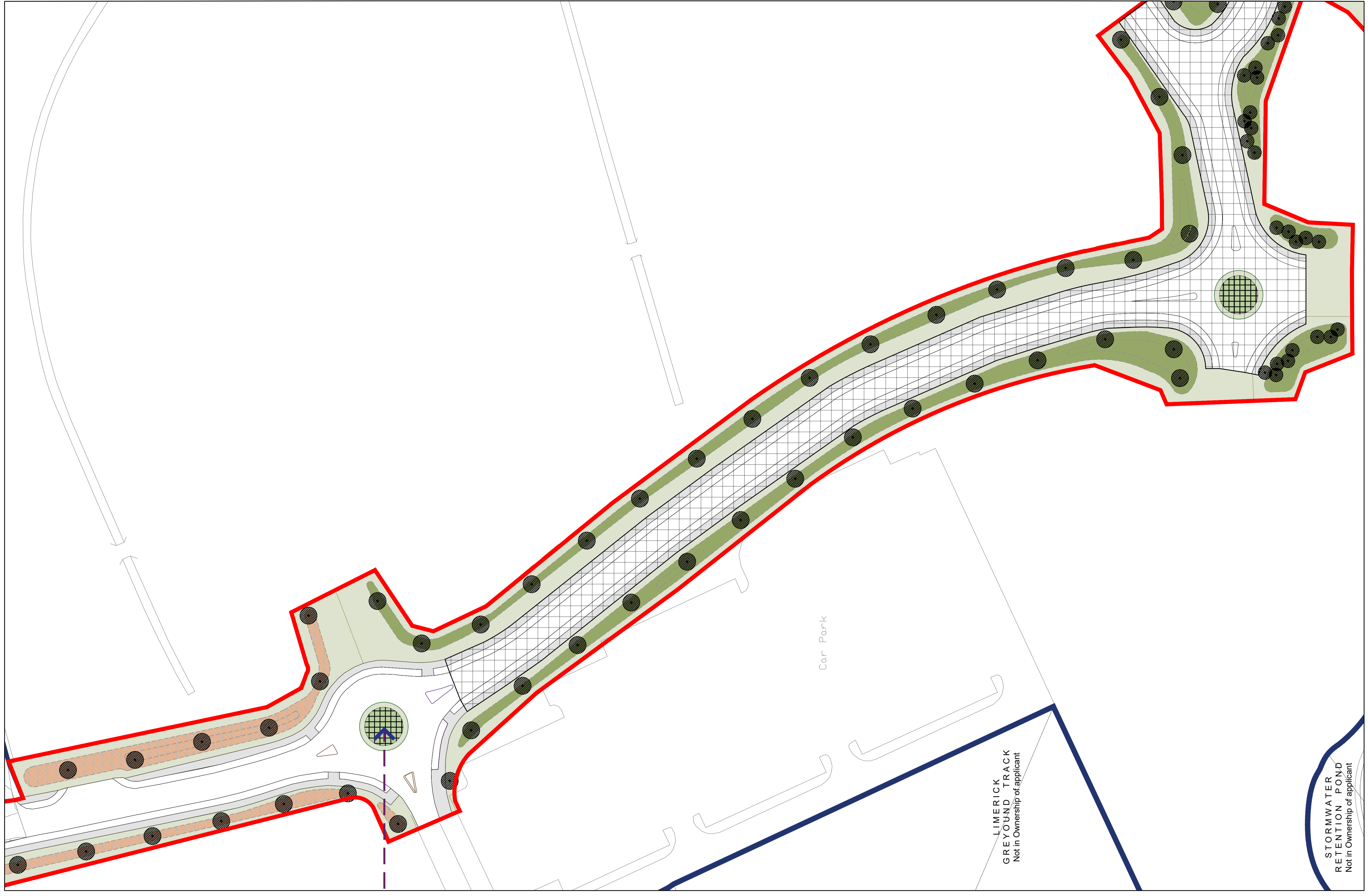
SCALE: 1:500 @ A0

DRAWN: M. NAWRO

CHECKED: M. NAWRO

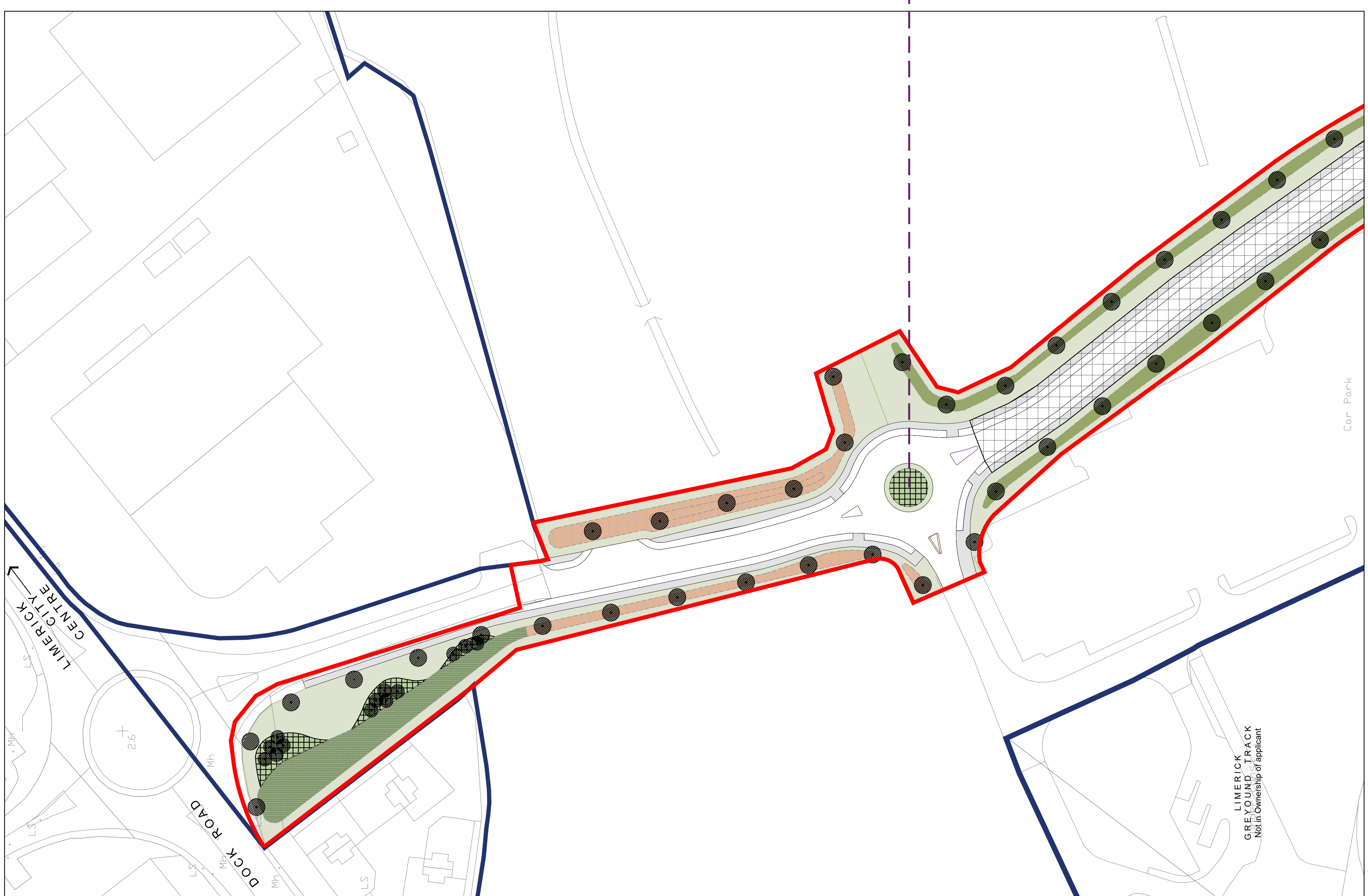
JOB NO: 20133-RAU

DWG NO: ZZZZ-DR-A-02.1003_B



STORMWATER RETENTION POND
Not in Ownership of applicant

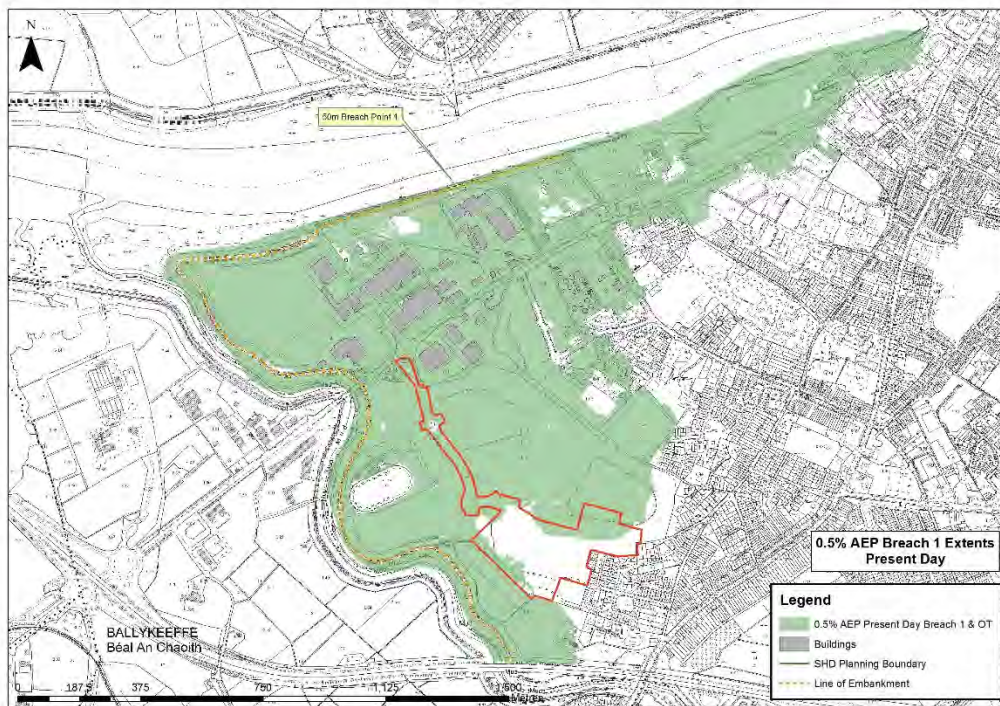
PART PLAN - 02



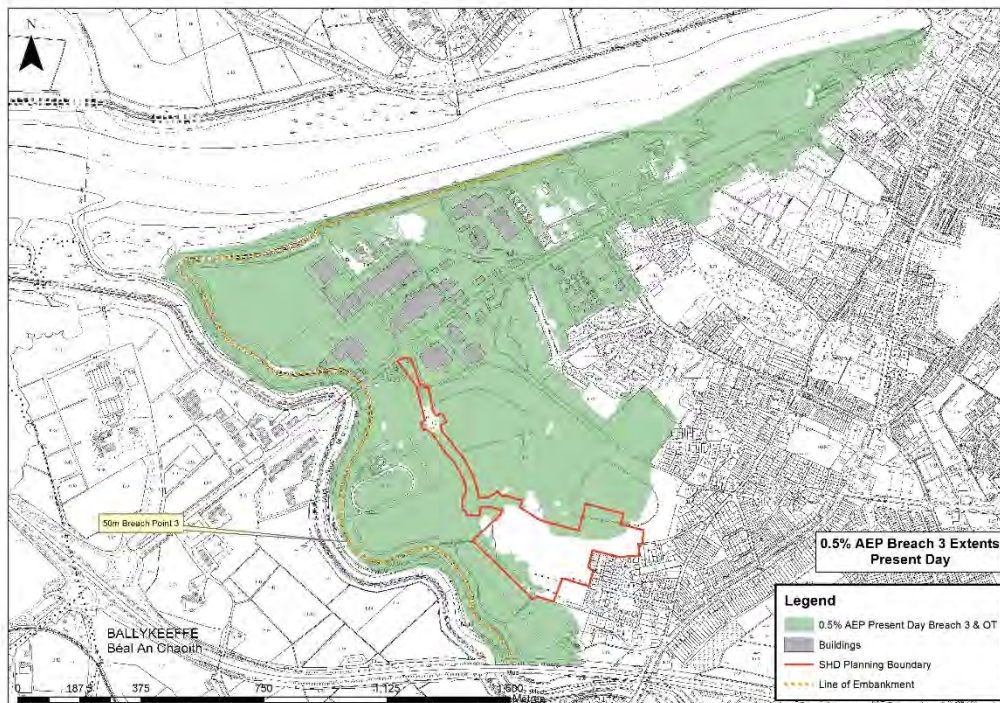
PART PLAN - 01

Appendix D

Breach modelling results- existing levels, present day scenario



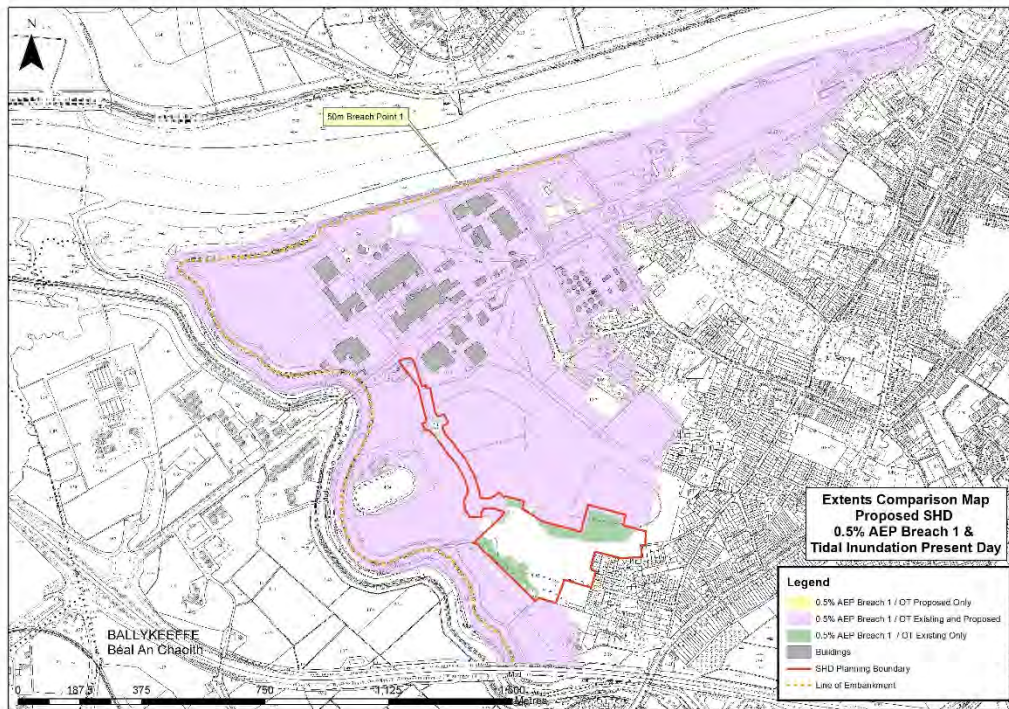
Breach Location 1- 0.5% AEP event with existing ground levels



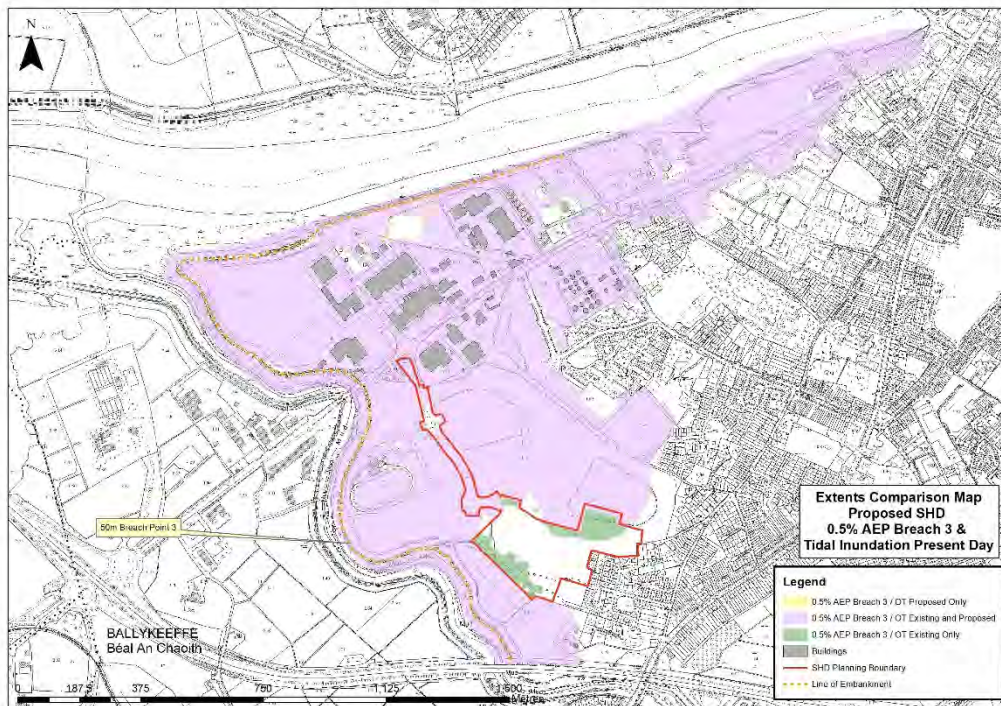
Breach Location 3- 0.5% AEP event with existing ground levels

Appendix E

Breach modelling results- site raised, present day scenario



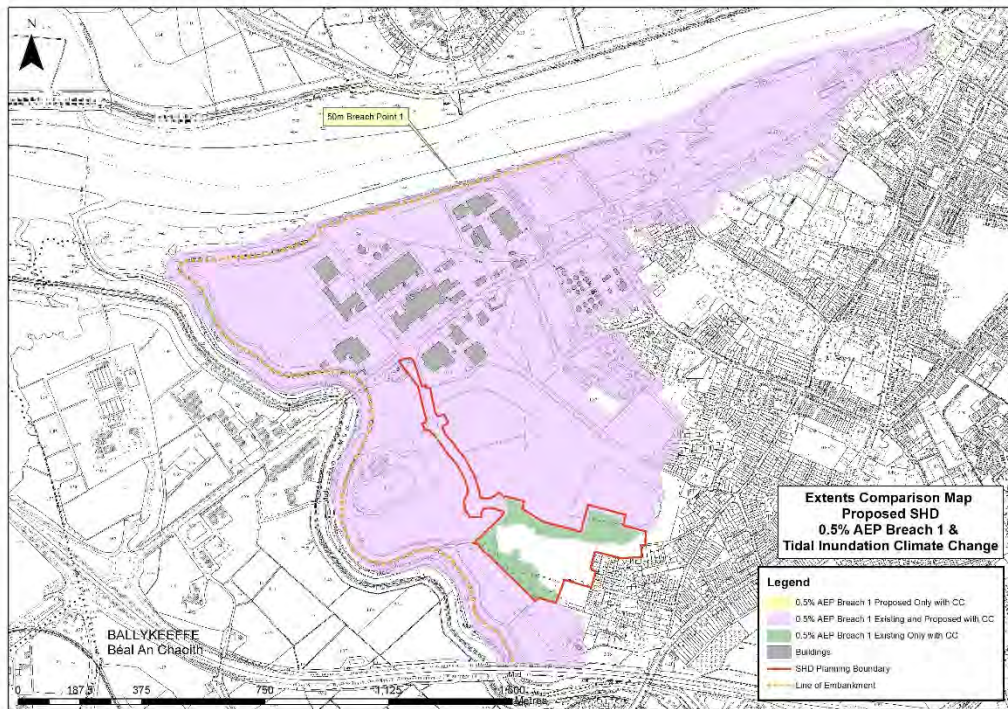
Breach Location 1- Impact of raising proposed development lands (Present day)



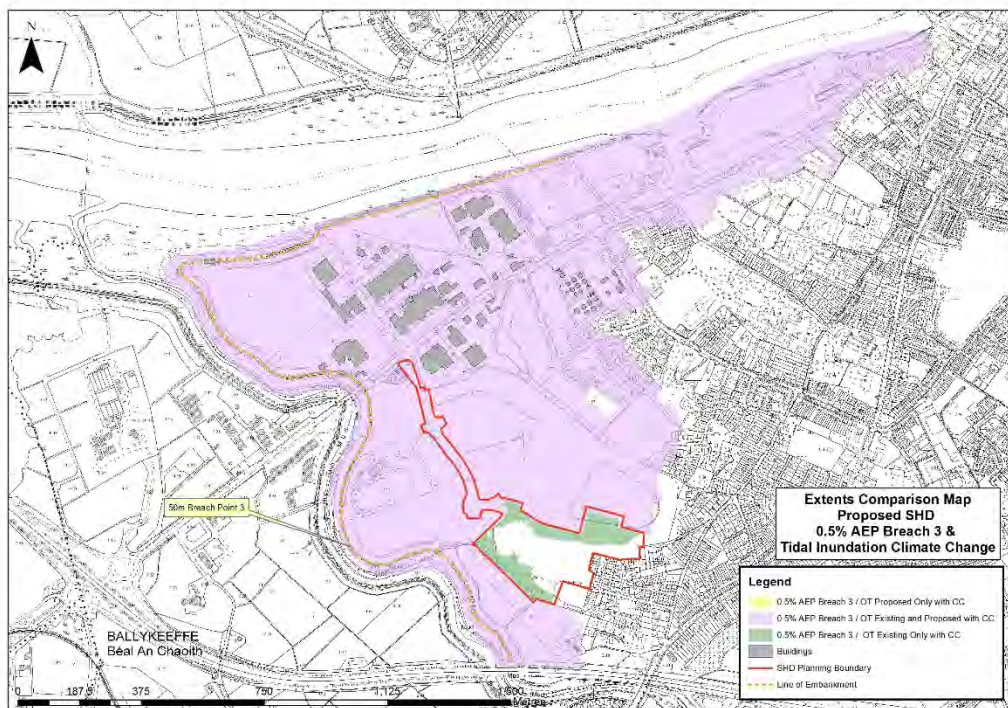
Breach Location 3- Impact of raising proposed development lands (Present day)

Appendix F

Breach modelling results- site raised, climate change scenario



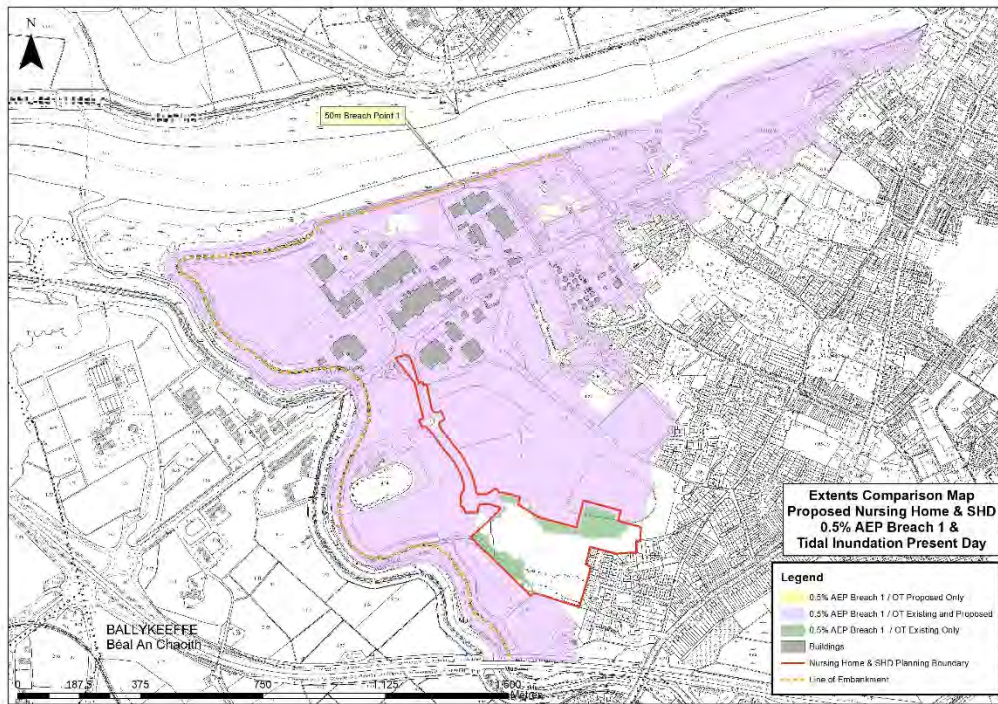
Breach Location 1- Impact of raising proposed development lands (Climate change)



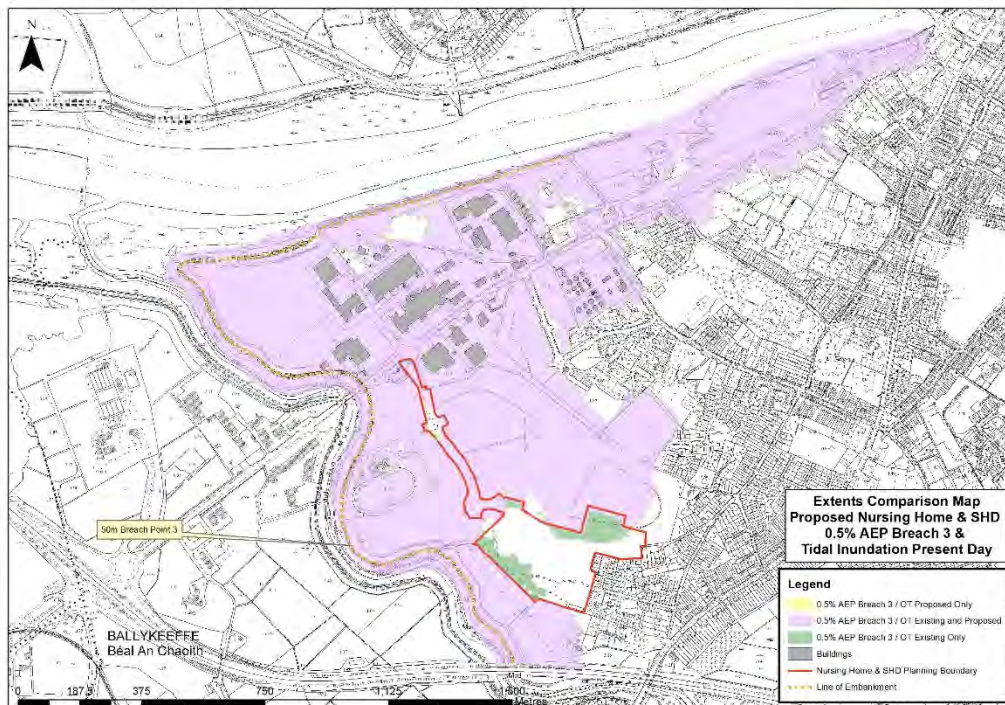
Breach Location 3- Impact of raising proposed development lands (Climate change)

Appendix G

Breach modelling results- Nursing Home & SHD sites raised, present day scenario



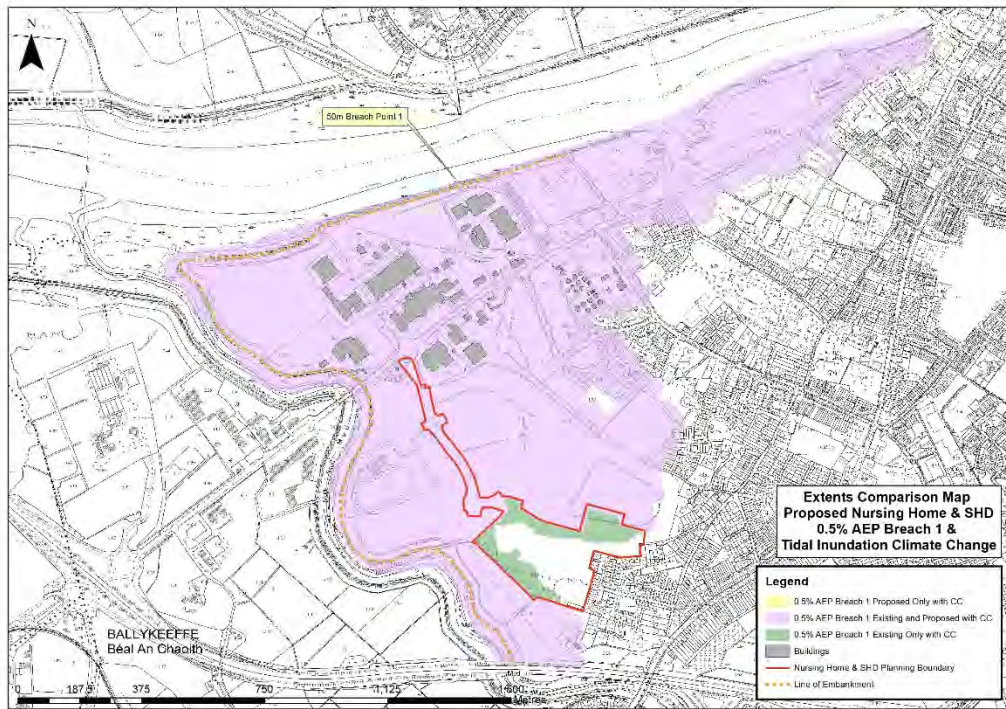
Breach Location 1- Impact of raising nursing home & SHD sites (Present day)



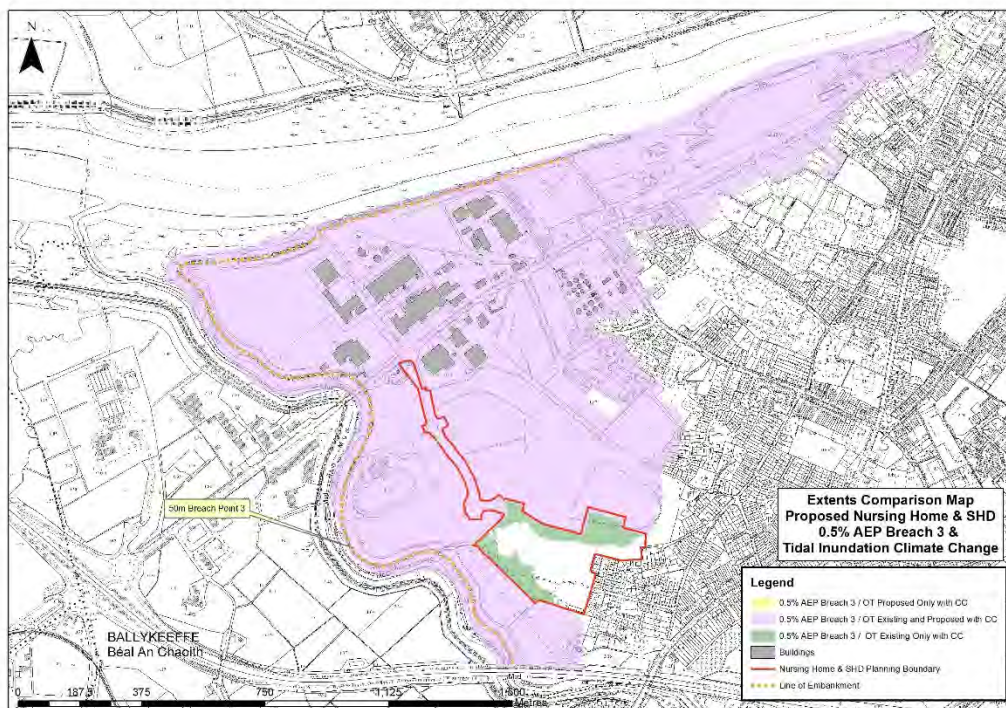
Breach Location 3- Impact of raising nursing home & SHD sites (Present day)

Appendix H

Breach modelling results- Nursing Home & SHD sites raised, climate change scenario



Breach Location 1- Impact of raising nursing home & SHD sites (Climate change)



Breach Location 3- Impact of raising nursing home & SHD sites (Climate change)

Limerick City and County Council
County Hall
Dooradoyle
Limerick

Friday, 3rd September 2021

[By Email]

DRAFT LIMERICK DEVELOPMENT PLAN 2022-2028
- SUBMISSION -

Dear Sir/Madam,

RE: FORMER RACECOURSE LANDS, GREENPARK, LIMERICK

1.0 INTRODUCTION

Tom Phillips + Associates, Town Planning Consultants, 80 Harcourt Street, Dublin 2 have been retained by Voyage Property Limited, Ashbourne Hall, Ashbourne Business Park, Corcanree, Dock Road, Limerick to make this submission in relation to the *Draft Limerick Development Plan 2022-2028* (generally referred to as the *Draft Plan* for the remainder of this submission) currently on public display. Voyage Property Limited is the owner of a strategic c.47 ha landholding comprising the former Racecourse lands located in Greenpark, Dock Road, Limerick. (The subject lands are generally referred to as the 'Greenpark Lands' for the remainder of this submission.)

The Draft Plan seeks to materially alter the land use zoning objectives that pertain to the lands under the current *Limerick City Development Plan 2010-2016* (generally referred to as the *Current Development Plan* for the remainder of this submission), which comprises General Mixed Use, New Residential, Neighbourhood Centre and Public Open Space zoning designations. The Draft Plan now proposes to replace the current General Mixed Use, Neighbourhood Centre and the majority of the New Residential zoning with a single use Enterprise and Employment zone. The Public Open Space zoning objective and a small residual area of Residential zoned land is retained. The proposed changes in the Draft Plan threaten the potential delivery of hundreds of new homes in the heart of Limerick City.

We wish to strongly object to these proposed changes, which are counter to National, Regional and Development Plan planning policies and objectives and do not accord with the core strategy for Limerick City and its environs as described in the Draft Plan.

1.1 Purpose of this Submission

As noted above, in the Current Development Plan, the Greenpark lands are currently zoned under four different zoning objectives as follows:

- Objective 5A - General Mixed Use (c.10.6 ha)
- Objective 2A - New Residential (c.19.3 ha)
- Objective 5C - Neighbourhood Centre (c.2.3 ha)
- Objective 6A - Public Open Space

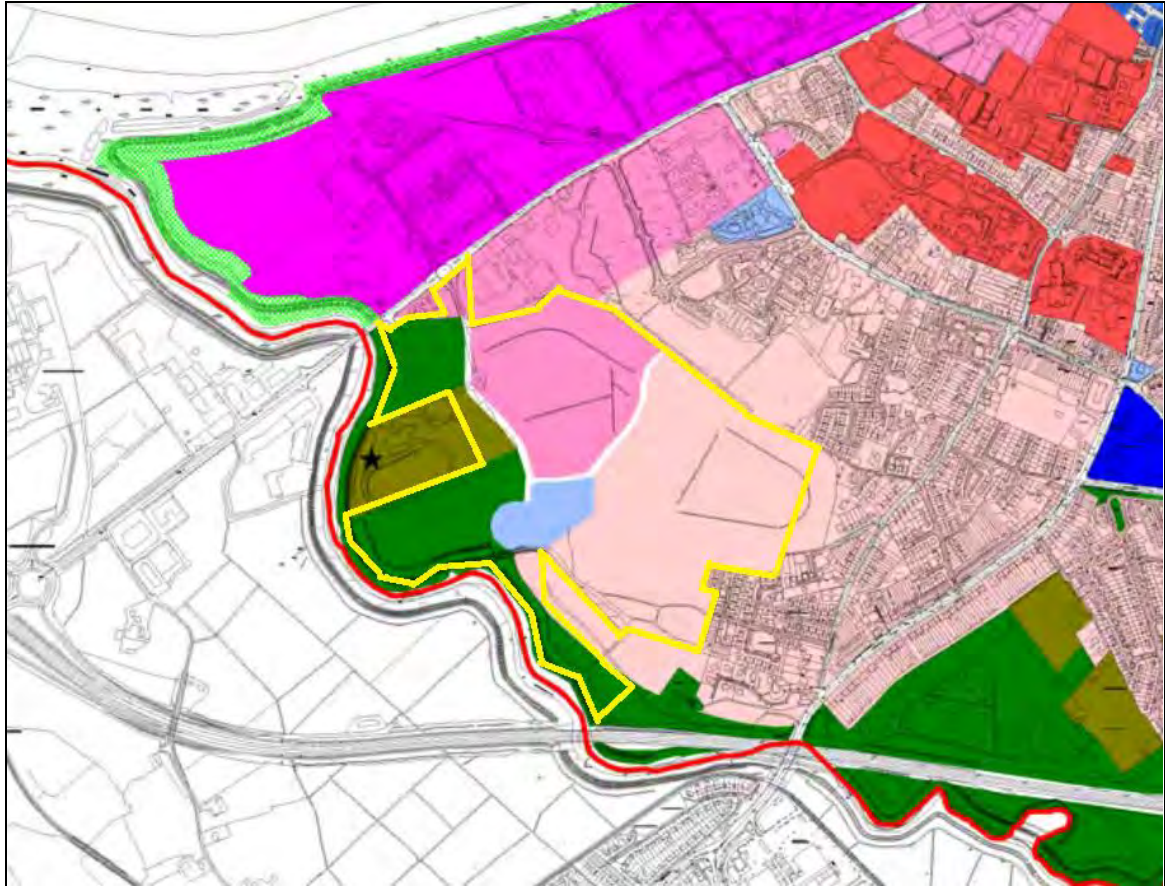




Figure 1.1: Extract of Land Use Zoning Map, with indicative site boundary in yellow, *Limerick City Council Development Plan 2010-2016* (cropped and annotated by Tom Phillips + Associates, 2021)

Under the Draft Plan, the zoning of the lands has changed significantly as follows:

- The General Mixed Use and Neighbourhood Centre zoning objectives have been removed from the lands, whilst the Residential component is very significantly reduced (from c.19.3 ha to c.4.4 ha). These areas have now been replaced with a single Enterprise and Employment zone (c.24.7 ha).
- The remaining residual New Residential zoned area comprises c.4.4 ha of land, which could not be considered a major residential development site in this context.
- An additional c.1.8 ha of land is now zoned for Public Open Space purposes in lieu of New Residential land use.

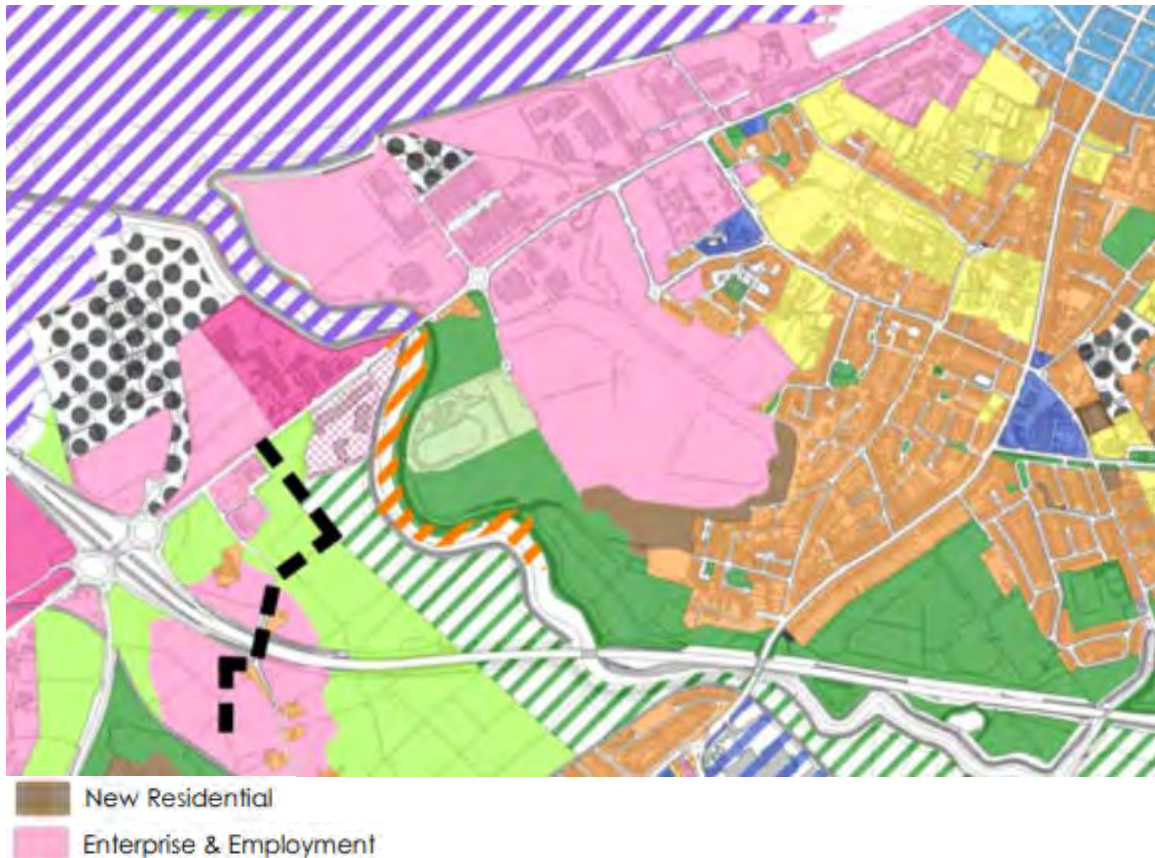


Figure 1.2: Extract of Land Use Zoning Map, *Draft Limerick Development Plan 2022-2028*
(Cropped and annotated by Tom Phillips + Associates, 2021)

It should also be noted that both the General Mixed Use and Neighbourhood Centre zoning objectives currently pertaining to the lands both permit Residential use in principle, so the potential Residential yield of the entire landholding is being very drastically reduced on foot of the Draft Plan.

Residential use is not permitted under the proposed Enterprise and Employment zone, which leaves only c.4.4 ha of a strategic c.47 ha inner suburban landholding available for Residential purposes. This cannot be considered to represent a planning strategy in line with current National or Regional planning policy.

By way of this submission, therefore, we are seeking:

- The maintenance of c.19.3 ha of New Residential zoned land in line with the Current Development Plan zoning provisions pertaining to the site.

Our Client is amenable to the change in zoning from the current General Mixed Use and Neighbourhood Centre to Enterprise and Employment use. No other changes are being sought on foot of the Draft Plan.



1.2 Executive Summary

- Having reviewed the Draft Plan in detail, our core observation regarding the Greenpark Lands and the current Development Plan review process is the inexplicable absence of any meaningful reference to Greenpark in the written statement of the Draft Plan (Volume One), despite the site comprising one of the largest remaining and best located undeveloped strategic land banks in the inner suburbs of Limerick City. The Draft Plan will essentially eliminate the potential for hundreds of new homes in the heart of Limerick City.
- Notwithstanding the Greenpark Lands superb locational characteristics and size, they are not identified as a *'Limerick City Opportunity Site'* in the Draft Plan, despite being better located and larger than many of the other designated opportunity sites and being of a similar strategic size to the strongly promoted Colbert, Parkway and Mungret landholdings. Some of the other sites being promoted are significantly further away from the city centre.
- The absence of any such designation is entirely inconsistent with the *Limerick 2030 Interim Update and Review*, which comprises Volume Six of the Development Plan. The written statement includes a number of policy objectives, which underline the Planning Authority's commitment to implementing the *Limerick 2030 Interim Update*. The Planning Authority has an obligation to give effect to these objectives under Section 15 of the *Planning and Development Act 2000*, as amended.
- The limited references to the Greenpark Lands that are included in the Draft Plan documentation (in particular, see Volume 6 - *Limerick 2030 Interim Update*) identify the site as being both an employment opportunity site (c. 12 ha) and a *'major residential opportunity site'*. This promotes a mixed use approach to the future development of the lands in line with the Current Development Plan and current National planning policy. This is not, however, reflected in the proposed zoning of the lands in the Draft Plan that will now include c.4.4 ha of Residential zoned land only with some c.24.7 ha of Enterprise and Employment zoned land.
- In stark contrast to the Draft Plan provisions, the Current Development Plan explicitly identifies the Greenpark Lands as being capable of delivering 1,188 no. residential units with related development objectives seeking *'...the balanced development of the existing under utilised lands...in particular the former racecourse'* (see Chapter 14). The proposed change in zoning to create an overwhelmingly commercial site eliminates the majority of these potential new homes in the Draft Plan.
- The strategic importance of the Greenpark Lands ('Racecourse lands') as a major Residential site in Limerick City is further illustrated by way of its designation as a key development site under the *Rebuilding Ireland LIHAF* programme, which is a Government sponsored initiative prepared by the then Department of Housing, Planning, Community and Local Government in March 2017. In this document, 'Greenpark' is explicitly identified as being within the inner suburbs of Limerick City and described as a *'Major Urban Housing Development Site'* close to the *'heart of the city'* with the capability of supporting c.400 units by 2021 and the potential for 700 units in the longer term. The Draft Plan would require a significant change to Government Housing policy in the Limerick area.



- The enclosed Report prepared by Lisney (see Appendix B) on behalf of Voyage Property Limited analysing residential and commercial lands in Limerick City concludes that the extent of employment- related zoned land as proposed in the Draft Plan could provide c. 1.98 million sq m of accommodation (530,000 sq m of offices and 1.46 million sq m of industrial/logistics/manufacturing).
- Taking into consideration the likely potential for expansion of the office and industrial markets in Limerick in the medium-term due to LCCC'S commitment to economic growth and dynamic revitalisation via *Limerick 2030*, Lisney estimate that the proposed level of potential development is equivalent to over 20 years' requirements assuming a generous 60% increase in demand in the medium term. (It is estimated that this level of employment-related zoned land would satisfy the significantly larger Dublin market for 5 years).
- Demand for residential properties remains strong but with clear undersupply in the market. Based on CSO data, 516 units were completed in Limerick in the 12 months to the end of March 2021; 483 (94%) were houses and 33 (6%) were apartments. This remains well below what is required in the market and only added about 0.6% to the stock of residential properties across Limerick.
- Lisney note that there are only five new housing schemes currently available in Limerick City. Two are in Mungret with a further scheme on Ballyneety Road, all of which are further from the city centre than Greenpark. Of the other two schemes, 'Revington' (located off the North Circular Road) comprises a low density development of large 4 and 5 bedroom detached properties only. The future development of the Residential zoned lands in Greenpark in line with the Current Development Plan zoning would deliver a significantly more affordable housing proposal with a greater selection of housing types in an inner urban location.
- An Bord Pleanála ('the Board'), as part of the recent pre-application consultation process regarding a Strategic Housing Development proposal on a portion of the lands (July 2021), noted in its formal Opinion the '*...status of the Racecourse lands as one of the largest remaining undeveloped land banks in Limerick City and the strategic importance of the lands in the context of National planning policy, residential density guidelines and its accessible location relative to Limerick City Centre, Mary Immaculate College, Dooradoyle District Centre and employment zones such as the Raheen Industrial Estate and University Hospital Limerick campus*'.
- The Board also noted the availability of existing and proposed roads, pedestrian, cycle and public transport infrastructure in the vicinity of the site, in the context of the Draft Limerick Shannon Metropolitan Area Transport Strategy (LSMATS).
- The Greenpark Lands are subject to Flood Risk designations and are, accordingly, subject to the provisions of the '*Planning System and Flood Risk Management Guidelines for Planning Authorities 2009*' including the Development Plan Justification Test in respect of land use zoning. It is noted that the zoning of the lands under the Current Development Plan (adopted in 2010), including New Residential, were previously considered in the context of these Guidelines (see Policy WS8, which references that all new development proposals must comply fully with the above Guidelines).



- The Greenpark Lands also satisfy the criteria of the Development Plan Justification Test. It is noted in the 2009 Guidelines that the Development Plan Justification Test applies to *'...future development of areas in an urban settlement that are at moderate or high risk of flooding, for uses or development vulnerable to flooding that would generally be inappropriate as set out in Table 3.2'*. There is no distinction drawn, therefore, in this Test between land use types (residential, commercial) or whether the uses are highly or less vulnerable. Future planning applications on zoned lands will be required to demonstrate that the criteria of the Development Management Justification Test will also be satisfied by Applicants, which will necessitate the submission of a Site Specific Flood Risk Assessment (SSFRA).
- We contend that the site is suitable for significant Residential use being crucial to the achievement of a balanced *'compact growth'* strategy and projected population increase, which are envisaged for Limerick City. This is a key National, Regional and Draft Plan objective and necessitates the sustainable provision of well-located housing. As demonstrated in this submission, the Greenpark Lands satisfy the criteria of the Development Plan Justification Test for Residential use.
- A detailed Site Specific Flood Risk Assessment (SSFRA) was carried out by RPS, Consulting Engineers in respect of the subject lands (see Appendix A), which includes substantial and robust modelling and breach analysis that confirms that the site can be fully developed in a safe manner without impact on third party lands. This was submitted for discussion with representatives of Limerick City and County Council who confirmed that they were satisfied that the methodology and analysis in that assessment was robust and accurate.
- The re-development of the lands for a mix of commercial and residential uses of scale complies in full with current National (*NPF 2018, Development Plan Guidelines, Residential Density Guidelines*), Regional (*RSES 2020*) and Draft Plan (including *Limerick 2030 Interim Update*) planning objectives regarding the achievement of compact urban growth; the sequential zoning of land; meeting population growth projections for Limerick as a Nationally designated city of scale, and the sustainable re-development of inner suburban serviced lands adjoining the city centre and public transport corridors.
- The re-development of the Greenpark Lands for a mix of commercial and residential uses of scale complies in full with the recommendations included in *'The Future Development of Limerick City'* as produced by Indecon Research Economists and published by Limerick Chamber in June 2021. This notes that *'Increasing the population density in Limerick city is a critically important challenge for the future development of the city'* and recommends that *'Strategic development areas should be identified in the city to facilitate new quality affordable residential developments'*.
- *'The Future Development of Limerick City'* further recommends that *'The focus of all policies and investments should be on facilitating compact growth'* and that *'Targets should be set (and monitored) to achieve an increase in apartment and other residential regeneration developments in inner areas of the city'*.



- Having regard to all of the above planning context, it is submitted that there is no planning and development rationale consistent for the proposed zoning of the lands under the Draft Plan, which would reduce the extent of Residential zoned land from the current c.19.3 ha (capable of delivering c.800+ no. units) to the proposed c.4.4 ha (c.200 no. units). The weighting in favour of Enterprise and Employment zoning is entirely disproportionate.
- We request, therefore, that the current extent and location of Residential zoned land should be maintained on the Greenpark lands as per the current Development Plan zoning arrangements (c.19.3 ha). Our Client accepts that it is appropriate to zone c.12 ha of land for Enterprise and Employment purposes on the north-western part of the subject lands (essentially replacing the existing General Mixed Use and Neighbourhood Centre zones) in order to support and complement the economic growth strategy proposed for Limerick City and its environs and in line with the *Limerick 2030 Interim Update* vision for the site.
- If the Draft Plan is not amended, Limerick City will lose hundreds of potential new homes, which are capable of delivery in the short term. This site is not reliant on the provision of major new infrastructure and, being in single ownership, is free from complex legal ownership arrangements involving multiple parties that will delay other sites being progressed for development.

1.3 Site Location

The c. 47 ha subject site is situated approximately 2 km to the south-west of Limerick City Centre and south of the River Shannon. The site generally comprises an extensive open area of the former Greenpark Racecourse (now re-located). The site is generally bounded by Ballinacloy River to the west and south-west and surrounding lands including the Greenpark Greyhound Stadium; Dock Road and industrial buildings to the north-west and existing clustered student accommodation and residential development to the south-east and east.



Figure 1.3: Aerial view of the subject site, with indicative site area in red
(Source: Google Maps, annotated by Tom Phillips + Associates, 2021)

The overall landholding can be accessed from three existing points as follows (i) via Greenpark Avenue; (ii) via an existing gated entrance in the Log na gCapall residential estate to the south, which is accessed off South Circular Road, and ultimately the Ballinacurra Road (R526), and (iii) via the Dock Road to north of the site, via an access road, which has a shared roundabout with the Limerick Greyhound Stadium. An additional potential access point via an existing roundabout at Ashdown to the north, near Alandale Square, may be provided at a future date and forms part of the overall Masterplan vision for the Greenpark lands. The future development of the site will also benefit from good quality pedestrian and cyclist linkages that can be readily provided via Log na gCapall and Greenpark Avenue

The site is located within easy reach of O'Connell Avenue, which is an important arterial route in and out of Limerick City Centre. This area of the City is well serviced with a variety of primary and secondary schools and Mary Immaculate College, a third level institution, is also located in close proximity to the site. Public transport facilities service this area of Limerick, with the bus routes No. 13, 14, 301, 304, 304A, 304X, 315, 320, 321 and 435 available nearby on Ballinacurra Road.

The re-location of the racecourse has facilitated the potential re-development of these lands in line with the provisions and land use zoning as set out in the Current Development Plan e.g. office campus, housing (including crèche), nursing home, neighbourhood centre and open space.



Change in Land Use Zoning

We strongly object to this proposed change in zoning classification, which we submit is not grounded in rational planning analysis of the land use requirements of Limerick City, nor is it supported by National and Regional planning policy guidance, or Development Plan policy, all of which seek to promote ‘compact growth’ and the efficient use of underutilised urban lands close to city centres nationwide.

The subject lands are ideally located to deliver on this concept and facilitate a mixed use, sustainable form of development that can maximise their locational advantages for the benefit of future residents and employees, given their location within reasonable walking and cycling distance of the city centre and existing and emerging public transport routes (see the *Draft Limerick Shannon Metropolitan Area Transport Strategy (LSMATS)* for further details).

The lands are also serviced (foul/surface water drainage and water supply) and will be served by a new internal link road providing vehicular access from Dock Road that will be delivered by the landowner through the planning process. Thus, the future development of the lands is not contingent on the future provision of new infrastructure that is beyond the control of the landowner and can, accordingly, deliver new development in a timely manner including much needed homes for Limerick residents, which is crucial for the further economic development of Limerick City.

The land use zoning arrangement pertaining to the lands in the current Development Plan comprises an excellent planning model that will enable the creation of a new mixed use urban quarter in line with the much vaunted ‘10/15 minute city’ (see Volume Six of the Draft Plan, *Limerick 2030 Interim Update*) models where people can live, work and enjoy recreational amenities (in this case, significant areas of Public Open Space) all within a 10-15 minute walk/cycle catchment that is not dependent on the private car.

The juxtaposition of General Mixed Use (which strongly promotes employment generation), Neighbourhood Centre and Residential uses as per the current Development Plan will also ensure that there will not be an abrupt transition in scale and land use between the future development of the site and the well-established uses adjoining the site and will enable new development to reflect the two principal character areas that define the lands, viz:

- the north-western Commercial area proximate to the Greyhound Stadium and the traditional industrial/manufacturing/dock-based uses associated with Dock Road, and
- the south-eastern Residential area generally centred around the former racecourse track that adjoins the well-established housing areas situated off South Circular Road (Log na gCapall, Greenpark Avenue, Castlewell, Alandale and student housing clusters). By its nature, these areas will be more sensitive to the potential effects of new development on the Greenpark lands and will require to be designed accordingly.

In planning terms, it is wholly appropriate that well designed contemporary new residential development should adjoin existing long established generally lower density residential areas noted above, where potential planning and environmental impacts can be minimised at the design stage and existing residential amenity protected from the outset.

To the north, the existing General Mixed Use zone enables an appropriate transition to occur from the heavier, more traditional industrial/manufacturing/dock-based uses associated with Dock Road to a more office/services-based form of development in a high quality landscaped campus style setting. The centrally located Neighbourhood Centre zone ensures that future employees and residents of the development alike would have easy access to a range of local services including shops, etc.



Figure 1.4: *Greenpark Masterplan 2020* (Annotated by Tom Phillips + Associates, 2021)

Based on this model of development, our Client has prepared a Masterplan for the entire lands ('Greenpark Masterplan'), which demonstrates how this vision might be delivered on the site. This Masterplan, which goes well beyond an architectural vision, also assesses the likely ecological, traffic, construction and flood impacts of the entire development of the lands and confirms that the development of the lands can occur safely and without any significant impacts on the local environment. This approach to the development of the lands fully accords with the Transitional Zoning policy noted in the Draft Plan (see page 348), which states:

'Transitional Zoning Areas should be considered in the design of developments in order to avoid abrupt transitions in scale, density and use in the boundary areas of adjoining land use zones. In particular, developments which would be detrimental to the amenities of residential properties should be avoided in order to protect the amenities of such properties'.



The proposed juxtaposition of c.24.7 ha of new Enterprise and Employment zoning, which is a very substantial commercial area that allows a wide range of permitted uses such as offices, machinery sales, builders providers, car parking, food and drink processing, manufacturing, fuel depot, light industry, logistics, plant storage and warehousing, adjoining existing low density residential areas would result in an abrupt transition in scale and use. In summary, therefore, the removal of the majority of the Residential land use component from the current zoning of the lands does not accord with contemporary planning policy and its replacement with a mono-use Enterprise and Employment zoning objective is a retrograde step.

This submission describes how the proposed zoning identified in the Draft Plan for the Greenpark lands runs counter to National and Regional planning policy guidance for sites such as this in an inner urban context. In addition, the policies and objectives of the Draft Plan itself, which must follow the policy framework set out at National and Regional level, also support the Residential development of a significant portion of the subject lands.

2.0 KEY ISSUES ARISING

- The 47 ha site comprises a zoned serviced strategic undeveloped and underutilised landholding (former Racecourse lands) located at Greenpark within the built-up inner suburban area of Limerick City. The mixed use re-development of the lands, including a strong Residential component, is explicitly supported by National, Regional and Development Plan policies and objectives and represents the optimum planning and design solution for the future sustainable re-development of the lands.
- The site meets all relevant criteria as an appropriate location to support Residential land use zoning when assessed against the provisions of *Development Plans - Guidelines for Planning Authorities 2007* and the recently published *Development Plan - Guidelines for Planning Authorities Draft for Consultation August 2021*. The lands are contiguous to the existing built footprint of Limerick City and located proximate to the city centre, a range of employment centres, public transport services and an established social infrastructure. The zoning of lands for Residential purposes is in accordance with the sequential approach to the zoning of land noted in the above Guidelines, given the location of the lands relative to Limerick city centre. The proposed zoning of a substantial tract of land for a single commercial use (Enterprise and Employment – c.24.7 ha) represents an inappropriate use of what is scarce urban serviced lands that can also contribute significantly to meeting a defined need for better located residential development and a projected population increase in the city.
- The inclusion of a significant Residential component in the re-development of the lands accords in full with the ‘compact city’ model of development, which underpins *Project Ireland 2040 - National Planning Framework (NPF) 2018* and includes the key objective that 50% of future housing during the lifetime of the Strategy will occur within the existing built footprint of urban areas (as opposed to greenfield or locations at a remove from urban centres, which are often car dependent and reliant on new infrastructure). Unlike other sites identified in the Draft Plan, Greenpark is not constrained by the absence of any services and can deliver housing within the lifetime of the Development Plan.



- This compact city strategy is replicated at Regional level in the *Regional Spatial & Economic Strategy (RSES) for the Southern Region 2020* and the Draft Plan. The subject site clearly represents a far superior and sustainable alternative to other Residential zoned lands identified in the Draft Plan, which are located at a significant remove from the city centre and its contiguous inner suburbs.
- The population growth projected to occur in Limerick City is defined at both National and Regional levels and requires to be met through appropriately located Residential zoned land. The population of Limerick City and suburbs in 2016 was 94,000 and the above referenced NPF seeks population growth of 50-60% to 2040, or 47,000-56,000 additional people. As noted above, 50% of this growth (c. 23,000 – 28,000) should occur within the existing built-up area of the city, which would naturally include the subject lands, given their inner suburban location. The subject lands are ideally located to contribute towards meeting these population growth targets in a sustainable location.
- The Draft Plan projects population growth of 34,177 persons to 2028. The Plan notes that the Limerick Metropolitan Area (city and suburbs) has the capacity to accommodate 12,322 no. units on zoned land. It is clear, therefore, that there is significant population growth forecast for Limerick City, which requires to be met by appropriately zoned and located land. Significant strategic sites such as Greenpark, as opposed to lands located in peripheral locations of the city, must be prioritised to comply with current planning guidance.
- The NPF also explicitly supports making better use of under-utilised land and buildings, including ‘infill’, ‘brownfield’ and publicly owned sites and vacant and under-occupied buildings, with higher housing and jobs densities, better serviced by existing facilities and public transport. The subject lands are undeveloped and highly underutilised but with the inherent advantages of being serviced and proximate to the city centre, major employment centres and public transport services.
- The Greenpark Lands are not noted anywhere in the *Limerick 2030* strategy as a potential location for significant new enterprise or employment uses, or as one of the ‘*knowledge locations*’.
- On the other hand, the *Limerick 2030 Interim Update* (see Volume Six of the Draft Plan), which is informed by the policy objectives of the RSES identifies the former Racecourse lands as part of the ‘*expanded plan*’ area and potentially being both ‘*...a major residential opportunity site*’ and a ‘*c.12 Ha enterprise and employment opportunity site*’. This mixed use form of development would accord with the Current Development Plan zoning parameters but is not reflected in the Draft Plan zoning provisions pertaining to the site. Policy ECON P1, Chapter 4 of Volume One (written statement) of the Draft Plan notes the importance of *Limerick 2030* as reviewed stating:

‘It is a policy of the Council to support the review and implementation of Limerick 2030 – An Economic and Spatial Plan to guide the economic, social and physical renaissance of Limerick City Centre and the wider County/Mid-West Region’.



- As part of the pre-application consultation process with An Bord Pleanála in relation to a proposed Strategic Housing Development (SHD) on part of the currently Residential zoned lands (see ABP Ref. 310233-21), the Board, in its Opinion of July 2021, noted a number of characteristics of the Greenpark lands in the context of future Residential development on the site, which we consider are pertinent to this submission:
 - o *The status of the Racecourse lands as one of the largest remaining undeveloped land banks in Limerick City.*
 - o *The strategic importance of the proposed development site and the Racecourse lands for the development of the Limerick Metropolitan area, in the context of national planning policy to achieve compact urban areas and, specifically, National Planning Objectives NPO 2a, NPO 3b, NPO 7, NPO8 regarding the development of Ireland’s existing cities; NPO 5 regarding the development of cities and towns of sufficient scale and quality to compete internationally and to be drivers of national and regional growth, investment and prosperity and NPO 35 to increase residential density in settlements, as set out in the National Planning Framework. [our emphasis]*
 - o *National planning policy on residential development as set out in the Sustainable Residential Development in Urban Areas Guidelines for Planning Authorities and the Design Standards for New Apartments Guidelines for Planning Authorities.*
 - o *Table 2.4 of the Core Strategy of the Limerick City Development Plan 2010-2016 (as varied), which identifies the Racecourse lands (36 ha) as having capacity for 1,188 no. residential units, also the objectives for the Racecourse lands set out in Development Plan Chapter 14.*
 - o *The accessible location of the proposed development site close to Limerick City Centre, Mary Immaculate College, Dooradoyle District Centre and employment zones such as the Raheen Industrial Estate and University Hospital Limerick campus.*
 - o *The availability of existing and proposed roads, pedestrian, cycle and public transport infrastructure in the vicinity of the site, in the context of the draft Limerick Shannon Metropolitan Area Transport Strategy (LSMATS).*
- It is evident from the above that An Bord Pleanála consider the former Racecourse lands to be a key land bank for Limerick and of strategic importance to the future development of the city in respect of meeting several key National planning objectives pertaining to the achievement of compact growth and the required increase in residential density mandated for the State’s main cities.
- The Board also acknowledge the status of the lands in the context of National residential density (2009) and apartment design guidelines (2018), both of which explicitly encourage higher density residential development on lands that share the locational characteristics of the Greenpark Lands including its proximity to Limerick city centre, major third level institutions, a district centre, several major centres of employment and existing and emerging public transport services.



- By way of further illustration of the site's strategic importance as a future Residential development area, we refer the Planning Authority to the document entitled '*Rebuilding Ireland, Project Descriptions Local Infrastructure Housing Activation Fund (LIHAF)*' prepared by the then Department of Housing, Planning, Community and Local Government in March 2017. In this document, 'Greenpark' is explicitly identified as being within the inner suburbs of Limerick City.
- Under the heading '*Public Infrastructure*', the proposed works required associated with the lands are described as follows: '*The public infrastructure proposed includes the upgrading of roads infrastructure and a new link road*'.
- Under the heading of '*Housing Delivery*', the subject lands are described as follows:

*'This is a **Major Urban Housing Development Site**. Greenpark, which is located between the Dock Road and the South Circular Road in the inner suburbs of Limerick City, is close to the heart of the City Centre and the commercial business district. This area is comprised of the lands in former use as a racecourse, which remain undeveloped, comprising of a 44 hectare site. Works proposed include the upgrading of roads infrastructure to support the development of approximately 400 units by 2021 with the potential for 700 homes to be delivered on the identified lands long term. The total length of the new link road will be 1,000 metres'. [Department's emphasis]*

A total of €4.93 million was proposed to be allocated to facilitate the infrastructure required to realise this project. Notably, Greenpark was one of only two projects identified in the Limerick City and County area, the other being Mungret described as being '*...approximately 5km to the southwest of Limerick City. Limerick City and County Council is a partial owner of the lands*'. A total of €10.5 million is allocated towards roads infrastructure necessary for the Mungret project to proceed on a phased basis.

- Having regard to all of the above planning context, it is submitted that there is no planning and development rationale that is consistent with current planning policy to reduce the extent of Residential zoned land from the current c.19.3 ha capable of delivering c. 800+ no. units to the proposed c.4.4 ha (c.200 no. units).
- We request, therefore, that the current extent and location of Residential zoned land should be maintained on the Greenpark lands as per the current Development Plan zoning arrangements. Our Client considers it appropriate to provide for the zoning of c.12 ha of land for Enterprise and Employment purposes on the north-western part of the subject lands (essentially replacing the existing General Mixed Use and Neighbourhood Centre zones) in order to support and complement the economic growth strategy proposed for Limerick City and its environs and in line with the *Limerick 2030* Interim Update vision for the site.



- The Greenpark Masterplan prepared on behalf of Voyage Property Limited shows that this extent of commercial land can deliver c. 40,000 sq m of employment floorspace in a high quality landscaped campus setting. It is submitted that this is a significant potential contribution to the economic and employment growth strategy earmarked for Limerick City (as referenced in the *Limerick 2030 Interim Update* as a 12 ha enterprise site) and can complement adjoining Residential development on the Greenpark Lands.
- Regarding flood risk management, the flood risk designations pertaining to the lands are noted and have been integrated into the overall masterplanning of the entire landholding from the outset (see Greenpark Masterplan as previously submitted to LCCC). A detailed Site Specific Flood Risk Assessment (SSFRA) was carried out by RPS, Consulting Engineers in respect of the subject lands, which includes substantial and robust modelling and breach analysis (see Appendix A attached). This was previously submitted for discussion with representatives of Limerick City and County Council who confirmed that they were satisfied that the methodology and analysis in that assessment was robust and accurate.
- The SSFRA confirms that the lands can be safely developed for mixed use purposes including a major new residential development (New Residential zoning) and will facilitate all necessary flood alleviation measures. As confirmed in the Draft Plan (see Volume 4), the Greenpark Lands also satisfy the Development Plan Justification Test criteria as provided for in the *Planning System and Flood Risk Management Guidelines for Planning Authorities 2009*, albeit we contend that the site is also suitable for Residential use, having regard to the relevant test criteria. It is noted that the Justification Test draws no distinction between land uses or vulnerability to flooding.



3.0 NATIONAL AND REGIONAL PLANNING POLICY

This section of the submission assesses the Greenpark lands in the context of the suite of current National and Regional planning policy guidance documents, all of which would support the Residential development of a significant part of the subject lands.

3.1 *Project Ireland 2040 - National Planning Framework (NPF) 2018*

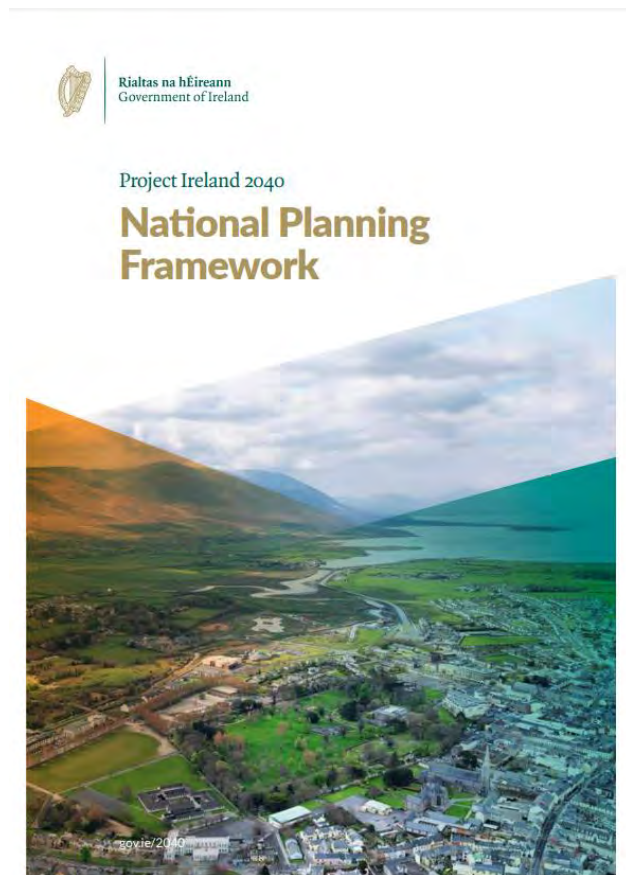


Figure 3.1: *Project Ireland 2040 - National Planning Framework (NPF)* (Source: Government of Ireland, 2018)

There have been a number of recent national policy changes that strongly support the sustainable redevelopment of the Greenpark lands incorporating a significant Residential component. In summary, the *National Planning Framework (NPF)* is the Government's plan to cater for the extra one million people that will be living in Ireland, the additional two thirds of a million people working in Ireland and the half a million extra homes needed in Ireland by 2040.

The Framework focuses on:

- Growing regions, their cities, towns and villages and rural fabric;
- Building more accessible urban centres of scale and
- Better outcomes for communities and the environment, through more effective and coordinated planning, investment and delivery.



The NPF states that in Ireland, the location of housing has taken on a dispersed and fragmented character, which has led to people living further away from their jobs and often being at a sizeable remove from important services such as education and healthcare. Development sprawl at every settlement level in Ireland has manifested as scattered development, ‘leapfrogging’, continuous suburbs and linear patterns of strip or ribbon development.

Under the concept of ‘*Compact Growth*’, which underpins much of the Strategy, the NPF is:

‘Targeting a greater proportion (40%) of future housing development to happen within and close to existing built-up areas. Making better use of under-utilised land, including ‘infill’ and ‘brownfield’ and publicly owned sites together with higher housing and jobs densities, better serviced by existing facilities and public transport.’

More balanced growth also means more concentrated growth. There are five cities in Ireland today in terms of population size (>50,000 people): Dublin, Cork, Limerick, Galway and Waterford. The NPF targets these five cities for 50% of overall national growth between them, with Ireland’s large and smaller towns, villages and rural areas accommodating the other 50% of growth.

The planned growth of the four cities including Limerick is designed to enhance their significant potential to become cities of scale. In the case of Limerick, the population of Limerick City and suburbs in 2016 was 94,000 and the NPF seeks population growth of 50-60% to 2040, or 47,000-56,000 additional people. As noted above, 40% of this growth (c. 19,000 – 22,000) should occur within the existing built-up area of the city including the subject lands.

The NPF also supports making better use of under-utilised land and buildings, including ‘infill’, ‘brownfield’ and publicly owned sites and vacant and under-occupied buildings, with higher housing and jobs densities, better serviced by existing facilities and public transport. This ‘compact growth’ strategy is designed to counter the prevailing situation whereby the fastest growing areas are at the edges of and outside the cities and towns. This results in:

- A constant process of infrastructure and services catch-up in building new roads, new schools, services and amenities and a struggle to bring jobs and homes together, meaning that there are remarkably high levels of car dependence and that it is difficult to provide good public transport;
- A gradual process of run-down of city and town centre and established suburban areas as jobs, retail and housing move out, leaving behind declining school enrolments, empty buildings and a lack of sufficient people to create strong and vibrant places, both day and night;
- Most development takes the form of greenfield sprawl that extends the physical footprint of urban areas, and when it is the principal form of development, this works against the creation of attractive, liveable, high quality urban places in which people are increasingly wishing to live, work and invest.



The NPF identifies the preferred approach, which is compact development that focuses on reusing previously developed, 'brownfield' land and building up infill sites, which may not have been built on before and either reusing or re-developing existing sites and buildings.

With regard to Limerick City and Metropolitan Area, the NPF supports growing and diversifying the City's employment base and attracting more people to live in the city, both within the city centre and in new, accessible green-field development areas. This means improving housing choice, supported by facilities and infrastructure.

The NPF identifies the following as a key growth enabler for new development in Limerick City:

'Identifying infill and regeneration opportunities to intensify housing and employment development throughout inner suburban areas'.

In summary, it is clear that National Planning Objectives NPO 2a, NPO 3b, NPO 5, NPO 7 and NPO8 regarding the development of Ireland's existing cities would support significant Residential development on the Greenpark lands. In addition, NPO 5 relates to the development of cities and towns of sufficient scale and quality to compete internationally and to be drivers of national and regional growth, investment and prosperity, whilst NPO 35 seeks to increase residential density in existing settlements. In summary, the key NPF objectives for Limerick seek increased population and employment activity. This means encouraging more people, jobs and activity generally within our existing urban areas, rather than mainly 'greenfield' development.

Key Issue Arising: The re-development of the Greenpark Lands inherently complies with the overarching policies and NPOs of the NPF to encourage '*compact growth*' and to accommodate part of the population increase projected for Limerick in appropriate locations. The lands are ideally situated in close proximity to Limerick city centre in an inner suburban location and, as a former racecourse, meet the definition of 'brownfield' lands. The lands are serviced and close to the established urban social infrastructure of the city and provide a far superior sustainable alternative to lands located in peripheral greenfield locations that are reliant on new infrastructure to become developable. The principal zoning of the Greenpark lands in the Current Development Plan for Mixed Use and New Residential purposes provide the perfect blend of land uses in that both will contribute to the realisation of NPF objectives in relation to population growth and increased economic activity.

The removal of the Residential zoning from a very significant part of the overall landholding runs counter to the policy objectives of the NPF that seek to promote Limerick as a city of scale with significant population growth and housing provision in inner suburban locations (see NPOs 2a, NPO 3b, NPO 5, NPO 7, NPO8 and NPO 35). The Greenpark Lands represent a textbook example of a well located landholding of a scale that will deliver on the above core planning objectives of the Strategy.



3.2 Development Plan Guidelines

There are currently two sets of National Guidelines governing the preparation of Development Plans at present in Ireland viz., the *Development Plan Guidelines for Planning Authorities 2007* and the recently published *Development Plan - Guidelines for Planning Authorities Draft for Consultation August 2021*.

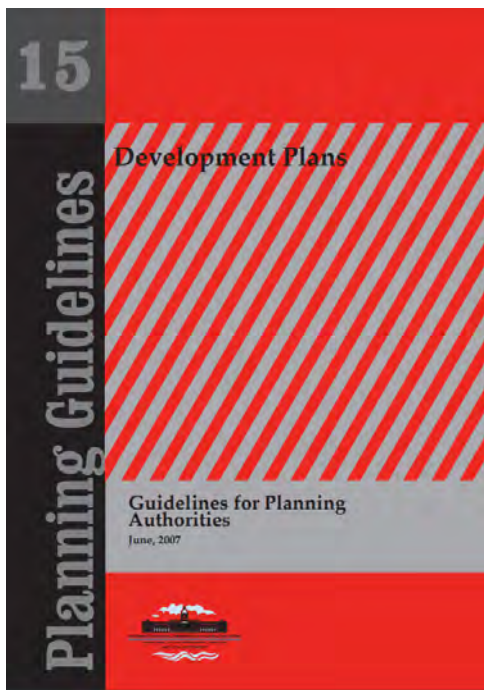


Figure 3.2: *Development Plan Guidelines for Planning Authorities*
(Source: Department of the Environment, Heritage and Local Government, 2007).

Both documents set out detailed best practice in the making and implementation of Development Plans and, of particular relevance to this case, the appropriate process for the zoning of lands including for Residential use. This is considered in further detail below.

Development Plan Guidelines for Planning Authorities 2007

Regarding the zoning of land, the 2007 Guidelines state:

'Land-use zoning is therefore about identifying the quantity of land needed over the plan period, the best locations for such land, the acceptability or otherwise of the various classes of land use within any particular zone, and in the case of relevant land uses, the intensity of development to be permitted. Zoning gives a degree of certainty to residents, developers etc. The use of non-specific zoning designations should be avoided. Following the approach set out, a development plan should ensure that enough land will be available to meet anticipated development requirements and will be developed in a sequential and co-ordinated manner. This will avoid, for example, a situation where housing estates are built beyond the outer edges of existing built-up areas while intervening lands lie undeveloped resulting in deficiencies in terms of footpaths, lighting, drainage or adequate roads infrastructure. [our emphasis]



Section 4.9 of the Guidelines note that:

'Development plan land use zones have traditionally been single-use zones such as residential, industrial or commercial and related uses. This will continue to be appropriate in some cases. In other areas, such as city, town or neighbourhood centres, it may be more appropriate to consider mixed use zones where a wide range of compatible activities would normally be considered appropriate. This will help promote the achievement of sustainable development by facilitating a balance of housing, employment and local facilities within an area, and by promoting compatible re-use of existing development, thereby reducing the need to travel. It is important that zoning designations are applied in a manner which generally facilitates an appropriate mix of compatible uses within urban areas. Factors to be taken into account in determining compatibility include traffic impact, amenity considerations, possible phasing issues and the character or sense of place which it is intended to create or protect. The intention should be to guide and influence change in the interests of the common good, balancing various interests, in preference to creating homogenous land-use areas. [our emphasis]

Section 4.12 states that:

'...when considering the suitability of specific lands for development, within the process of preparing zoning objectives in making a development plan, the members are restricted to considering the proper planning and sustainable development of the area to which the development plan relates, statutory obligations and Government policy. Matters typically relevant to the proper planning and sustainable development of areas, inter alia, include:

- *Need*
- *Policy Context*
- *Capacity of Water, Drainage and Roads Infrastructure*
- *Supporting Infrastructure and Facilities*
- *Physical Suitability*
- *Sequential Approach*
- *Environmental and Heritage policy, including conservation of habitats and other sensitive areas.*

In terms of Residential zoning on the Greenpark lands, there is a clear need for additional Residential development in appropriate locations (which includes these lands) in Limerick City as quantified in the RSES and Draft Development Plan and arising from significant projected population growth. As described above, and in the Draft Development Plan itself, the planning policy context at National and Regional level fully and unequivocally supports the zoning of Residential lands in this location. In terms of water, drainage and roads infrastructure, the Greenpark lands are fully serviced with access to mains drainage and water supply. A new internal link road providing vehicular access from Dock Road will be delivered by the landowner as part of the planning process. No other roads or services infrastructure is required to be provided to facilitate the development of the lands.



The Guidelines also note that supporting infrastructure, such as community facilities, health-care, schools, public open space, retail and other service provision and public transport is required when allocating land for development. Given the site's location proximate to the city centre and a well-established social infrastructure in the area, there will be good access to the required range of supporting services. The development of the lands will further augment these facilities as required.

Regarding physical suitability, Section 4.18 of the Guidelines state that:

'The development plan should strive to ensure that the form and location of new development offers the best "value for money" in terms of efficient use of existing infrastructure, while minimising the need for costly new infrastructure. Where land in green-field locations is to be zoned, account should be taken, in considering the different options available, of the land's capacity for development by way of the most cost effective means of providing the necessary infrastructure'.

The development of the Greenpark site would represent a highly sustainable model of development, as it would maximise the efficient use of public transport, roads and services infrastructure and minimise the requirement for costly new infrastructure required to service greenfield lands in more peripheral and far less sustainable locations. This section of the guidance notes the issue of flood risk, which is addressed elsewhere in this submission in the context of the subject lands (see Section 3.8 below).

In terms of the sequential approach to zoning, Section 4.19 of the Guidelines state:

'In order to maximise the utility of existing and future infrastructure provision and promote the achievement of sustainability, a logical sequential approach should be taken to the zoning of land for development:

- (i) Zoning should extend outwards from the centre of an urban area, with undeveloped lands closest to the core and public transport routes being given preference (i.e. 'leapfrogging' to more remote areas should be avoided);*
- (ii) A strong emphasis should be placed on encouraging infill opportunities and better use of under-utilised lands; and*
- (iii) Areas to be zoned should be contiguous to existing zoned development lands. Only in exceptional circumstances should the above principles be contravened, for example, where a barrier to development is involved such as a lake close to a town. Any exceptions must be clearly justified by local circumstances and such justification must be set out in the written statement of the development plan'.*

The Greenpark Lands fully adhere to the sequential approach described above regarding the zoning of lands. The site is within 2km of the city core and is contiguous to existing Residential zoned lands/housing areas. Its zoning and consequent development clearly follows a logical sequential approach and would avoid 'leapfrogging' or the zoning of more remote lands further from the city centre. In addition, the site comprises a major infill opportunity and, as a former 47 ha racecourse, comprises a significantly underutilised land bank in need of regeneration.



Finally, with regard to Environmental and Heritage policy, including conservation of habitats and other sensitive areas, the site has been subject to a holistic site wide Ecological Impact Assessment and also a Natura Impact Statement. There are no environmental or heritage designations in play that would preclude the zoning and consequent development of the lands. In summary, therefore, the zoning of the lands accords with the criteria noted in the above referenced Guidelines and Greenpark would have an important role in meeting the predicted residential housing requirements necessary to accommodate a growing urban population.

Development Plan - Guidelines for Planning Authorities Draft for Consultation August 2021

These Draft Guidelines are designed to ultimately replace and update the 2007 Guidance and will reflect the changes in the policy, institutional and regulatory framework that have occurred since 2007.

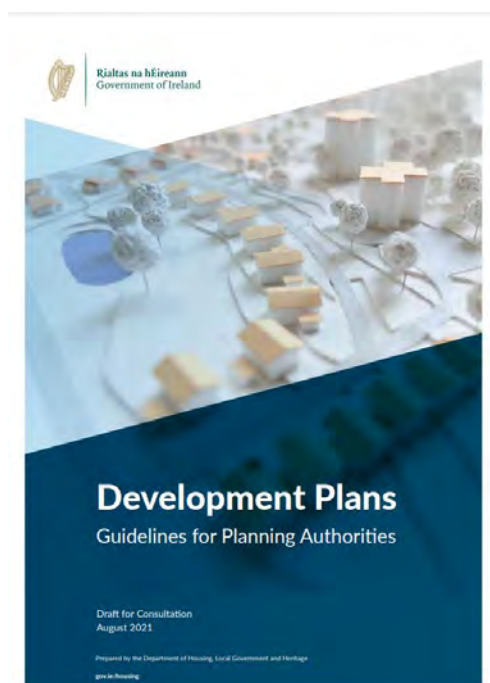


Figure 3.3: *Development Plan - Guidelines for Planning Authorities Draft for Consultation*
(Source: Department of Housing, Local Government and Heritage, 2021)

Section 6.2.4 of the Draft Guidelines relate to ‘*Sequential Development in the City Context*’ and notes:

‘While sequential development at the city scale is not comparable to town settlements with a single central spatial focus from which the town has grown historically, city development must also be approached sequentially, taking into consideration multiple opportunities for the intensification of development at appropriate scales relative to context. In a city area, development policy must ensure that the focus of the development plan is on securing a sufficient quantum of infill and brownfield development and regeneration to meet national policy objectives. As part of this approach, prioritising new development along high quality public transport corridors must be integrated into the policies and objectives of the development plan, in order to support and reinforce public



transport investment. Similarly, parts of urban areas identified as specific focus for regeneration, may be appropriate for prioritised new residential development in tandem with programmed investment in new infrastructure and amenities'. [our emphasis]

The Greenpark Lands comprise a significant brownfield infill site in need of regeneration that can contribute significantly to the provision of new residential development and employment growth in a sustainable manner close to the city centre and public transport corridors. As noted above, the site is also appropriately located in terms of the sequential approach being contiguous to existing zoned lands and a logical site for development purposes in the context of the growth of the core city area.

Section 6.2.5 of the Draft Guidelines relates to 'Zoning for Employment Uses' and notes that:

'Ensuring that the economic or employment strategy of the development plan is translated into the appropriate land use zoning proposals is an important consideration in the plan preparation process. The evidence and rationale underpinning the zoning of land for employment purposes must be clear and strategic in nature. Development plan preparation should include a comprehensive approach to estimating the differing zoning requirements for employment uses.

The development plan should provide an overview of the existing quantum and rate of take-up of zoned employment land, both developed and undeveloped and should also include relevant servicing information. The plan must include a rationale for any requirement to zone additional lands, based on projected population, economic and employment growth and change over the lifetime of the development plan.

Estimating the land-use zoning requirement for employment development may require some flexibility and a strategic, long-term perspective. However, proposed employment zonings must have a credible rationale, particularly with regard to location and type of employment. It should be possible to demonstrate that the quantum of land zoned is not significantly out of step with estimated future demand arising from population, economic and employment growth and change. The economic policy objectives of the Regional Spatial and Economic Strategy will be instructive in this regard and the development plan must demonstrate consistency with these'.

In our opinion, the zoning of the additional lands in Greenpark from c.10.6 ha of General Mixed Use zoned land to c.24.7 ha of Enterprise and Employment lands is not consistent with the commitment under the Draft Plan to give effect to the *Limerick 2030 Interim Update*. It is also submitted that the existing and proposed employment centres noted in the Draft Plan may not be in line with 'estimated future demand' noted above for this quantum of employment-related lands (see Appendix B – Lisney Report). This also requires to be considered in the context of the consequent reduction in Residential zoned land from c.19.3 ha to c.4.4 ha, where significant future population growth and housing demand is quantified in detail in both the NPF, RSES and Draft Development Plan and will categorically exist, especially in accessible inner urban locations such as Greenpark.



3.3 Residential Density and Apartment Design Guidelines

There are two key National planning guidance documents that govern levels of residential density on zoned land in appropriate locations. It is evident that the Greenpark lands enjoy the locational characteristics required for compliance with these Guidelines and readily applicable to the site. These are described in greater detail below.

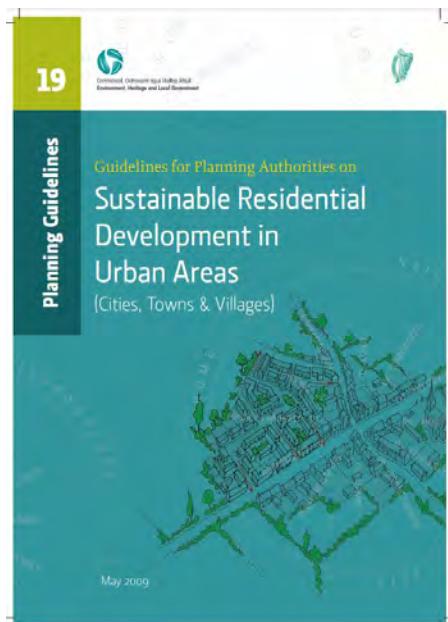


Figure 3.4: Sustainable Residential Development in Urban Areas – Guidelines for Planning Authorities (Source: Department of Environment, Heritage and Local Government, 2009)

Sustainable Residential Development in Urban Areas – Guidelines for Planning Authorities (2009)

These Guidelines provide national guidance in relation to the appropriate locations for the siting of higher density residential development, having regard to the locational characteristics of the lands in question. In this regard, it is considered that the subject lands may comprise either 'Brownfield' lands or an 'Inner Suburban/Infill' site, as it shares characteristics of both as per the descriptions included in the Guidelines. Section 5.7 of the Guidelines describes 'Brownfield' lands (within city or town centres) as follows:

'Brownfield' lands, which may be defined as "any land which has been subjected to building, engineering or other operations, excluding temporary uses or urban green spaces", generally comprise redundant industrial lands or docks but may also include former barracks, hospitals or even occasionally, obsolete housing areas. Where such significant sites exist and, in particular, are close to existing or future public transport corridors, the opportunity for their re-development to higher densities, subject to the safeguards expressed above or in accordance with local area plans, should be promoted, as should the potential for car-free developments at these locations'.



The Greenpark lands comprise a former racecourse, so the site was subjected to some previous building (grandstand, racetrack, fencing, ancillary structures, etc) but is now a redundant site close to the city centre. It is a significant landholding, given its site area (c. 47 ha). It is close to public transport routes (existing and emerging), so is deemed an appropriate location for higher density residential development.

Regarding Inner Suburban/Infill sites, Section 5.9 of the Guidelines state:

'The provision of additional dwellings within inner suburban areas of towns or cities, proximate to existing or due to be improved public transport corridors, has the revitalising areas by utilising the capacity of existing social and physical infrastructure. Such development can be provided either by infill or by sub-division: (i) Infill residential development Potential sites may range from small gap infill, unused or derelict land and backland areas, up to larger residual sites or sites assembled from a multiplicity of ownerships.

In residential areas whose character is established by their density or architectural form, a balance has to be struck between the reasonable protection of the amenities and privacy of adjoining dwellings, the protection of established character and the need to provide residential infill. The local area plan should set out the planning authority's views with regard to the range of densities acceptable within the area. The design approach should be based on a recognition of the need to protect the amenities of directly adjoining neighbours and the general character of the area and its amenities, i.e. views, architectural quality, civic design etc. Local authority intervention may be needed to facilitate this type of infill development, in particular with regard to the provision of access to backlands'.

As noted above, the site is acknowledged as being an 'inner suburban' location in the *Rebuilding Ireland LIHAF* document pertaining to Greenpark and is also an Infill site, as it is bounded by existing development on several boundaries and, to be developed successfully, will require to recognise the need to protect the amenities of directly adjoining neighbours, which in this case, principally comprises the established adjoining residential communities to the east of the lands. It also comprises a large site (47 ha) capable of significant residential development.

The site is also in close proximity to public transport corridors, which are assessed under Section 5.8 of the Guidelines, which state:

"Walking distances from public transport nodes (e.g., stations/halts/bus stops) should be used in defining such corridors. It is recommended that increased densities should be promoted within 500 metres walking distance of a bus stop, or within 1 km of a light rail stop or rail station. The capacity of public transport (e.g., the number of train services during peak house) should also be taken into consideration in considering appropriate densities... In general, minimum net densities of 50 dwellings per hectare, subject to appropriate design and amenity standards, should be applied within public transport corridors, with the highest densities being located at rail stations / bus stops, and decreasing with distance away from such nodes."



Whilst the subject lands do not have the benefit of being proximate to very high quality public transportation services at present, they are within reasonable proximity of a number of bus routes with further improvements due to come on stream under the above referenced LSMATS. In our opinion, on the basis of these Guidelines, the Greenpark lands are appropriate for densities in the range of 35-50 units per ha. As previously noted, the SHD scheme delivers a residential density of 47 no. units per ha (in line with what was proposed on the submitted Greenpark Masterplan Residential zoned lands, subject to planning parameters) which accords with the above guidance.

Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (March 2018)

These guidelines seek to promote high density apartment development on Residential zoned land in appropriate locations in line with the above referenced NPF overarching policies in relation to encouraging residential development within existing urban settlements. Having regard to the site's location close to Limerick city centre, and within reasonable walking/cycling distances of some employment centres and public transport routes, these Guidelines are appropriate for application to the Greenpark lands.

In our view, applying the locational criteria noted in the Guidelines objectively, the site cannot be classified as a 'Centrally Accessible Urban Location' appropriate for very high density apartment development (in excess of 50 units per ha) arising from its relative walking distances from the city centre, major employment centres and the absence of high frequency public transport routes.

The site would, however, meet most of the criteria in respect of what is classified as an 'Intermediate Urban Location' as per these Guidelines. As such, this would require overall residential densities on the site to be in the order of 45 units per ha. The aforementioned SHD proposal demonstrates that a density of 47 units per ha can be achieved on the application site (and c.47 units per ha on the overall Residential zoned lands as per Greenpark Masterplan).

Key Issue Arising: The above density and apartment design guidelines both identify the required locational characteristics necessary to support higher density residential development in urban areas. Where such sites exist, there is an imperative that they are used to accommodate sustainable forms of residential development ahead of other less suitable land uses that could be sited elsewhere. The Greenpark Lands unequivocally meet the locational characteristics noted in both Guidance documents and, therefore, must be considered appropriate to deliver Residential development at the densities discussed above.



3.4 Regional Spatial & Economic Strategy (RSES) for the Southern Region 2020

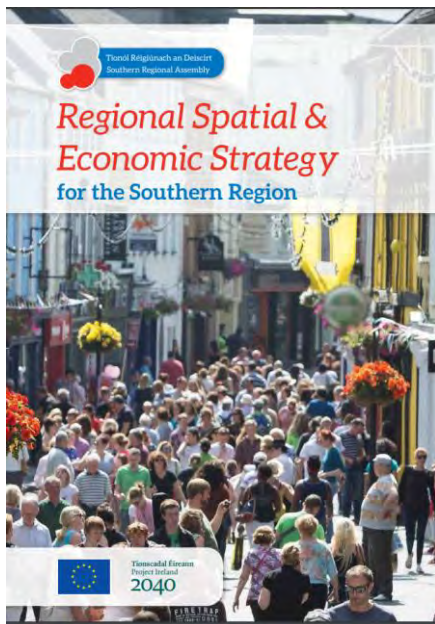


Figure 3.5: Regional Spatial & Economic Strategy (RSES) for the Southern Region
(Source: Southern Regional Assembly, 2020)

Each of the three Regional Assemblies have prepared their own RSES which will provide a long-term regional level strategic planning and economic framework in support of the implementation of the *National Planning Framework*. The RSES for the Southern Region was adopted in January 2020, which includes the Limerick City Metropolitan Area and encompasses the Greenpark lands. The RSES seeks to achieve balanced regional development and full implementation of *Project Ireland 2040 – the National Planning Framework*. It will be implemented in partnership with local authorities and state agencies to deliver on this vision and build a cohesive and sustainable region.

Regarding Employment and Enterprise use in Limerick, the RSES notes ‘key employment locations’ including the Shannon Free Zone, National Technology Park, IDA Raheen Business Park, Limerick’s Dock Road, Annacotty Business Park, Ballysimon and Clondrinagh Industrial Estates with development in progress in Limerick City Centre (Gardens, Opera, Cleeves).

The *Limerick Metropolitan Area Spatial Plan (LMASP)* identifies a number of key infrastructure and transformative projects within Limerick City including:

- Projects identified within the *Limerick 2030* plan;
- Densification of development in the city centre including identification and assembly of brownfield sites for development;
- Development of key strategic sites including Opera site, Cleeves, Arthur’s Quay and continuation of the riverside links;
- Potential for alternative uses in Limerick Docklands;
- Development of a new business park on the north side of Limerick City linked with Limerick IT, Moyross and building on the regeneration process.



MASP Objective 2(f) seeks ‘investment to achieve the regeneration and consolidation in the city suburbs’.

In terms of population, the LMASP identifies a projected population increase in the Limerick City and Suburbs (located in Limerick) of 22,328 persons by 2026 and by 33,528 by 2031. As noted in the NPF, some 50% of this population growth will occur within the existing built-up area of the city, which equates to c. 11,000 – 17,000 people.

Regarding employment distribution, the LMASP notes that:

‘Modern service companies require high quality office space in areas that offer a good quality of life and reliable public transport. The completed Gardens International Centre, the Opera Centre and the planned Cleeves development have the capacity to add 7,000 additional jobs. There is also existing capacity in Ballysimon (c. 54.6 hectares), Clondrinagh (c. 27.7 hectares) and Annacotty (c. 37.5 hectares). The MASP supports further plans for development of central sites for continued employment growth, which should also add to the core regeneration of Limerick City. The proposed development of the Dock Road provides significant potential. Concentrations of employment outside the City Centre area are predominantly at locations in Shannon, Castletroy and Raheen. The MASP area has capacity for expansion of scale at these primary locations. These strategic locations offer the capacity to cater for companies that complements access to an international airport and third level graduates.’

Table 3 of the LMASP identifies strategic employment locations in the area including higher level institutions, public hospitals, the Shannon Free Zone (195 ha), the National Technological Park (71 ha), Raheen (57.5 ha), Cleeves (4 ha), Dock Road (113.2 ha) and a new Northside Business Campus.

Key Issue Arising: It is submitted that there is no evidence basis for the increase in the former Mixed Use zone in Greenpark from the current c. 10.6 ha to c. 24.7 ha of Enterprise and Employment zoning (an over 230% increase in land area) with significant uncertainty over the demand for, and viability of, same. The demand for such a quantum of additional Enterprise and Employment zoned land cannot be justified and its viability is open to serious question and would serve to undermine the strategy of seeking to deliver the transformational projects earmarked for the city centre many of which include a substantial office and employment-based component. (This issue is discussed in further detail below in respect of *Limerick 2030*.)

In this context, the omission of c.15 ha of Residential zoned land in a highly accessible location to facilitate this zoning change is contrary to proper planning and sustainable development. The ambitious targets identified to significantly increase numbers working in the city will necessitate a consequent increase in residential development to provide good quality and well located housing accommodation for this cohort of people.

The removal of a substantive Residential land use from this location is counterintuitive in that context. As noted above, however, our Client does accept that the provision of c.12 ha of Enterprise and Employment zoned land as a direct replacement for the current Mixed Use and Neighbourhood Centre zonings is appropriate.



Such a quantum on part of the subject lands could be complementary to the future transition of the Dock Road as a new employment area. However, it is crucial that the quantum of the existing Residential zoning is retained.

3.5 Limerick 2030 – An Economic and Spatial Plan for Limerick

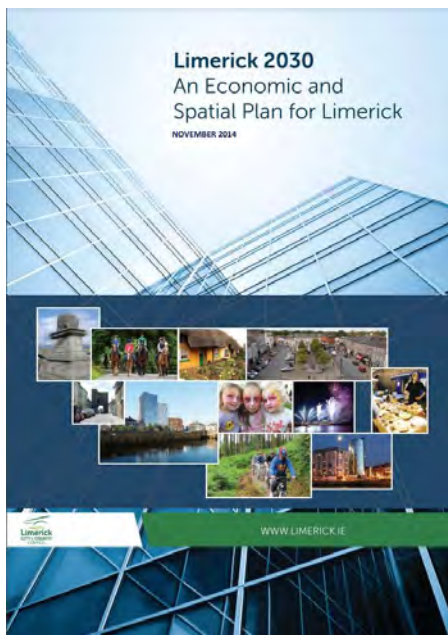


Figure 3.6: Limerick 2030 – An Economic and Spatial Plan for Limerick
(Source: Limerick City and County Council, 2014)

Limerick 2030 was published in 2014 and is described as a ‘once in a generation’ plan designed to guide the economic, social and physical renaissance of Limerick City Centre and the wider County/Mid-West Region. The plan included targets of €1 billion in enterprise and investment infrastructure and the creation of 12,000 jobs and seeks to integrate economic development with spatial planning throughout the city centre area. In order to deliver the required changes to Limerick city centre, seven ‘transformational projects’ have been identified as being key to the strategy. These are:

1. A ‘World Class’ Waterfront – a renaissance of Limerick’s entire Waterfront;
2. The ‘Limerick Cultural Centre’ – an iconic destination building on the Waterfront;
3. ‘Great streets’ – a transformation of the City’s three main streets – O’Connell Street, Catherine Street and Henry Street;
4. A new City Square/Plaza – to define the focal point or ‘heart’ of the City Centre;
5. A City Centre higher education campus - the creation of a multi-versity combining facilities from Limerick Institute of Technology, University of Limerick and Mary Immaculate College in the heart of the City Centre;
6. Renewal of the Georgian Quarter – a concentrated programme to restore the Georgian part of the City to its former glory; and
7. Colbert Station renewal – a new public transport interchange and enhanced station environment.



It is clear, therefore, that *Limerick 2030* is centred on reimagining and revitalising Limerick City Centre as the primary location for new business and enterprise in the Region with particular emphasis on the ‘knowledge economy’. The Plan notes that Limerick had traditionally been the focus of FDI in IT Manufacturing. As a sector, this has shifted towards lower-cost locations, most recently in Eastern Europe and the Far East. *Limerick 2030* considers that this has been to the detriment of Limerick, which had seen its labour and business costs rise prior to the recession.

Notably, the plan states that the IDA clustering policy is not deemed to be effective for Limerick, where an emphasis on a broad sector approach to promote innovation and interaction with distinctive strengths in ICT and Digital is needed. The plan recommends that Limerick should capture elements of sectors which are clustering elsewhere based on a competitive proposition focussed on its skills, R&D assets and a regenerated City Centre. *Limerick 2030* identifies a number of knowledge economy locations across Limerick and the wider area each bringing different strengths and characteristics including the City Centre, Raheen/Dooradoyle, Castletroy/Plassey, Newcastle West and Shannon.

The plan also describes several potential city centre sites as new business/enterprise locations as follows:

‘The Opera Site is a major opportunity site for new business activity – tying into the heart of the City’s shopping offer. The Plan envisages that a key component of this mix would be an ‘Innovation Hub’ closely aligned to new higher education facilities, providing graduation space for fledgling businesses as highlighted in the economic strategy. The Plan advocates detailed consideration of the removal and redevelopment of Sarsfield House, currently occupied by the Revenue Commissioners. This could generate a pre-let to help kick-start the redevelopment of the Opera Site. Secondly, the revitalisation of the Georgian Quarter is intended to reinforce the cluster of important professional service businesses already located there, benefiting from good access to the railway station and ready access by car. There is also potential to reinforce Henry Street and the Waterfront as a business location. This can be achieved by the redevelopment of the site at Bishop’s Quay for mixed use, complementing the ‘Hanging Garden’ Site directly opposite on Henry Street.’

Limerick 2030 also identifies the need for an ‘urban’ Science and Technology Park in the city centre. The plan identifies potential alternative locations for this technology park, subject to further feasibility, on the former ‘Cleeves’ Site at the entrance to the Shannon Bridge on the north side of the River; or to the south of Colbert Station (described as being ‘ripe for redevelopment/regeneration’) or at the Docks area to the immediate west of Steamboat Quay.

Limerick 2030 states that there is the potential to generate over 12,000 new high value jobs in the Limerick area with approximately 5,000 new jobs specifically identified for the city centre. This would include higher value jobs linked to key sectors identified by the *Limerick 2030* Economic Strategy at locations such as the Medical Park at King’s Island, the Opera Site, the Colbert Station area, etc. The plan notes that the Limerick Quays also have the potential to accommodate additional office employment, as well as hotel and leisure employment. Wider and secondary economic impacts can be expected from this activity.



With regard to residential development, *Limerick 2030* identifies the potential for a minimum of 800-1,000 new homes in the city centre located in the Georgian Quarter and Irishtown (renovation, conversion and infill). The Plan notes that '*The wider invigoration of the City Centre can be expected to lead to organic and private sector-led development activity which could substantially increase housing outputs*'.

Key Issue Arising: *Limerick 2030* seeks to provide a spatial planning and policy framework to reinvigorate the city centre and to establish the area as the primary new office and enterprise location in the region. In this regard, seven specific 'transformational' projects are identified to be progressed in the city in order to deliver this vision. The plan notes the creation of an urban technology park as an important part of the strategy with several potential city locations identified (Opera site, Colbert lands, Cleeves, etc), together with knowledge economy locations across the wider county each bringing different strengths and characteristics including the City Centre, Raheen/Dooradoyle, Castletroy/Plassey, Newcastle West and Shannon. An estimated total of 12,000 jobs are proposed to be delivered in the wider area (5,000 in the city centre) and c. 800-1,000 new housing units.

The Greenpark lands are not noted anywhere in the *Limerick 2030* strategy as a potential location for significant new enterprise or employment uses or as one of the '*knowledge locations*'. This is notwithstanding the fact that when *Limerick 2030* was published in 2014, the Greenpark lands comprised some 10.6 ha of 'General Mixed Use' (Objective 5A) zoned lands, the primary purpose of which was '*to provide for a range of employment and related uses*'.

Thus, it is clear that the primary focus of the *Limerick 2030* strategy was the regeneration of the city centre to be largely delivered by the creation of new office floorspace including a significant new urban technology park. Whilst significant progress has been made since 2014 in advancing several of the *Limerick 2030* projects, there is still considerable work to be done regarding the completion of these projects. In that context, it is again unclear as to why the Planning Authority has zoned an additional c.14 ha of lands just outside the city centre for Enterprise and Employment purposes (24.7 ha in total including the former Mixed Use and Neighbourhood Centre zoned lands) and significantly reduced the Residential zoned area.

As noted above, the Greenpark lands were not identified as being of strategic importance in this regard in *Limerick 2030*. In our opinion (see Appendix B - Lisney Report), there is sufficient zoned land for Enterprise and Employment use in the city that would likely accommodate potential demand for this form of development in Limerick City for many years to come. As such, there would seem to be no rationale for substantially increasing the extent of Enterprise and Employment zoned lands in a location not identified as being of strategic importance in the Planning Authority's key regeneration strategy.

In this regard, the enclosed Report prepared by Lisney (see Appendix B) on behalf of Voyage Property Limited analysing residential and commercial lands in Limerick City concludes that the extent of employment-related zoned land as proposed in the Draft Plan could provide c. 1.98 million sq m of accommodation (530,000 sq m of offices and 1.46 million sq m of industrial/logistics/manufacturing).



Taking into consideration the likely potential for expansion of the office and industrial markets in Limerick in the medium-term due to LCCC'S commitment to economic growth and dynamic revitalisation via *Limerick 2030*, Lisney estimate that the proposed level of potential development is equivalent to over 20 years' requirements assuming a generous 60% increase in demand in the medium term. (It is estimated that this level of employment-related zoned land would satisfy the significantly larger Dublin market for 5 years). This extent of Enterprise and Employment zoned land might also serve to undermine the *Limerick 2030* central strategy, should these lands attract users at the expense of the city centre.

Given the extent of other Enterprise and Employment zoned lands proposed in the Draft Plan, we would also query whether this extent of zoned land is required to facilitate the likely demand arising in Limerick over the life of this Development Plan (and several future Plans) and, consequently, whether this is the correct use of this site, given its location. It is acknowledged that there may be an indirect or secondary demand for lands outside the city centre, but still in close proximity, for certain employment uses. As such, our Client is amenable to the former Mixed Use and Neighbourhood Centre zoned lands (as per the Current Development Plan) being zoned for Enterprise and Employment use to ensure that this extent of enterprise and employment zoned lands remains available to cater for any potential demand that might arise in this regard.

Regarding residential use, we note that *Limerick 2030* identifies the potential for a minimum of 800-1,000 new homes in the city centre located in the Georgian Quarter and Irishtown (renovation, conversion and infill). The Plan notes that '*The wider invigoration of the City Centre can be expected to lead to organic and private sector-led development activity which could substantially increase housing outputs*'.

Whilst the estimated delivery of 800-1,000 residential units in the city centre is to be welcomed, it is a relatively small quantum of housing to meet the accommodation needs of a rejuvenated city employing up to an additional 12,000 people. The Greenpark Residential lands, which are in close proximity to the city centre are superbly located to contribute to meeting this demand and to provide a range of additional residential unit types and sizes within easy walking/cycling distance of the city proximate to public transport services.

In summary, it is considered that Greenpark is ideally located to complement the *Limerick 2030* plan in terms of providing proximate commercial floorspace arising from secondary or indirect demand generated by the rejuvenation of the city centre but, crucially, also Residential land use to facilitate new employees that are seeking to live in close proximity to their places of work, without being reliant on the private car and unsustainable commuting.

3.6 *Limerick 2030 Interim Update*

Limerick 2030 Interim Update June 2021 (see Volume 6 of the Draft Development Plan) reviews and analyses the progress of the Limerick 2030 Plan 2013 over the last seven years and updates the plan with new targets and recommendations to take the city and county to 2030. This updated plan builds on the original Limerick 2030 objectives and project ambitions. The focus of this document is to complement the original plan's emphasis on transformational sites and projects, as well as capturing emerging projects and opportunity areas.



The interim update notes that Limerick City centre has a very low population compared to the suburbs (with some areas suffering population decline between 2011 and 2016), indicating a level of sprawl. The Limerick 2030 Plan outlines the importance of the city growing and consolidating its population in order to realise the goals set out in the plan, with an appropriate critical mass being an important influence on the feasibility and achievability of the Limerick 2030 vision.

The interim update notes the policy requirements of the NPF and RSES (neither of which existed in 2013 at the time of the publication of the original Limerick 2030), with the NPF including a target of half (50%) of future population and employment growth to be focused in the existing five cities and their suburbs. It further notes that:

‘For Limerick, compact growth (both in the city centre and across the county’s towns and villages) is thus a key priority to 2030. The city centre and its environs have opportunities to significantly increase population over the next 8 years. Housing delivery is central to this. A diverse offer of quality homes attracts and retains talent, and is vital to enabling the city centre and the region’s wider economic growth’.

The revised plan identifies a series a new opportunity sites and identifies potential connections between them to the work progressed to date – building new opportunity from the transformations of the current plan. The Greenpark Lands (referred to in the interim update as the ‘old Greenpark Racecourse’) is identified as one such new opportunity site as described below.

The interim update adds the following objective to the initial Limerick 2030 spatial plan:

‘To expand the provisions of the plan to encompass opportunities for transformation across the wider city and outlying urban areas’.

The ‘expanded plan’ concept is described as follows:

‘The expansion of the spatial plan allows it to consolidate this city identity and to ensure that the growth is managed in a way that not only avoids sprawl but actively reinforces the sense of a coherent urban area’. (see pg 78)

In this regard, the ‘old Greenpark Racecourse’ is identified as a ‘City Gateway’ clearly located within the inner part of the city and suburbs as delineated on page 79 of the interim update document.

The graphic on page 85 of *Limerick 2030 Interim Update* (see Figure 3.9 below) also illustrates the subject lands as being comfortably within the 2.5km radius of the city centre and notes part of the site as being ‘enterprise and employment’ lands (site no. 21). (As an aside, we would query whether some of the graphics used in the Interim Update (see pages 82 and 85) accurately represent the centre of Limerick City and whether the radii as shown are centred on the city centre proper. We submit that these may not be accurate in that regard, which could change how certain sites including Greenpark are represented in locational terms and in the associated analysis.)

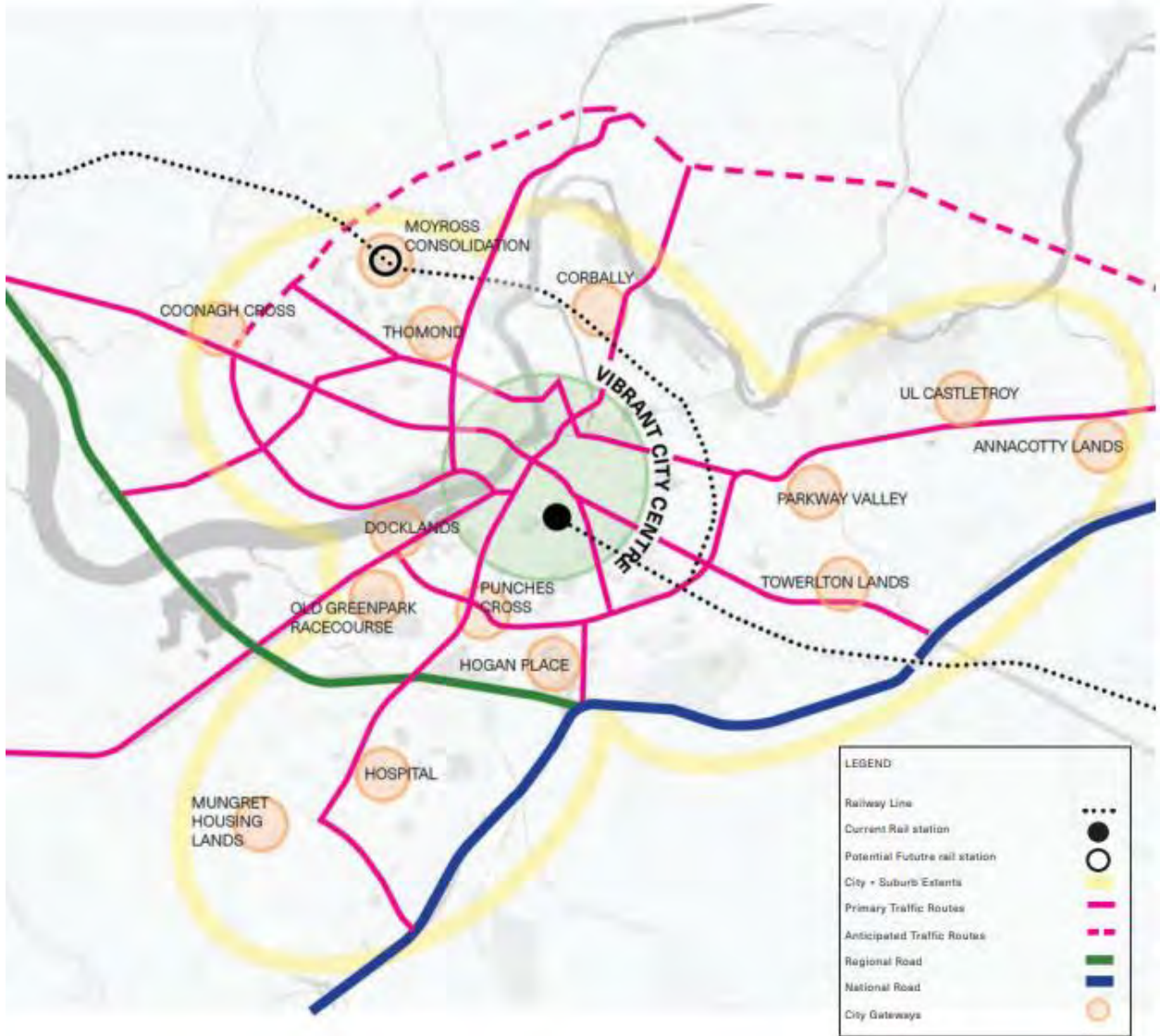


Figure 3.7: 'Gateways in a Polycentric City'
(Source: Draft Limerick Development Plan 2022-2028 – Limerick 2030 Interim Update, 2021, Page 79)

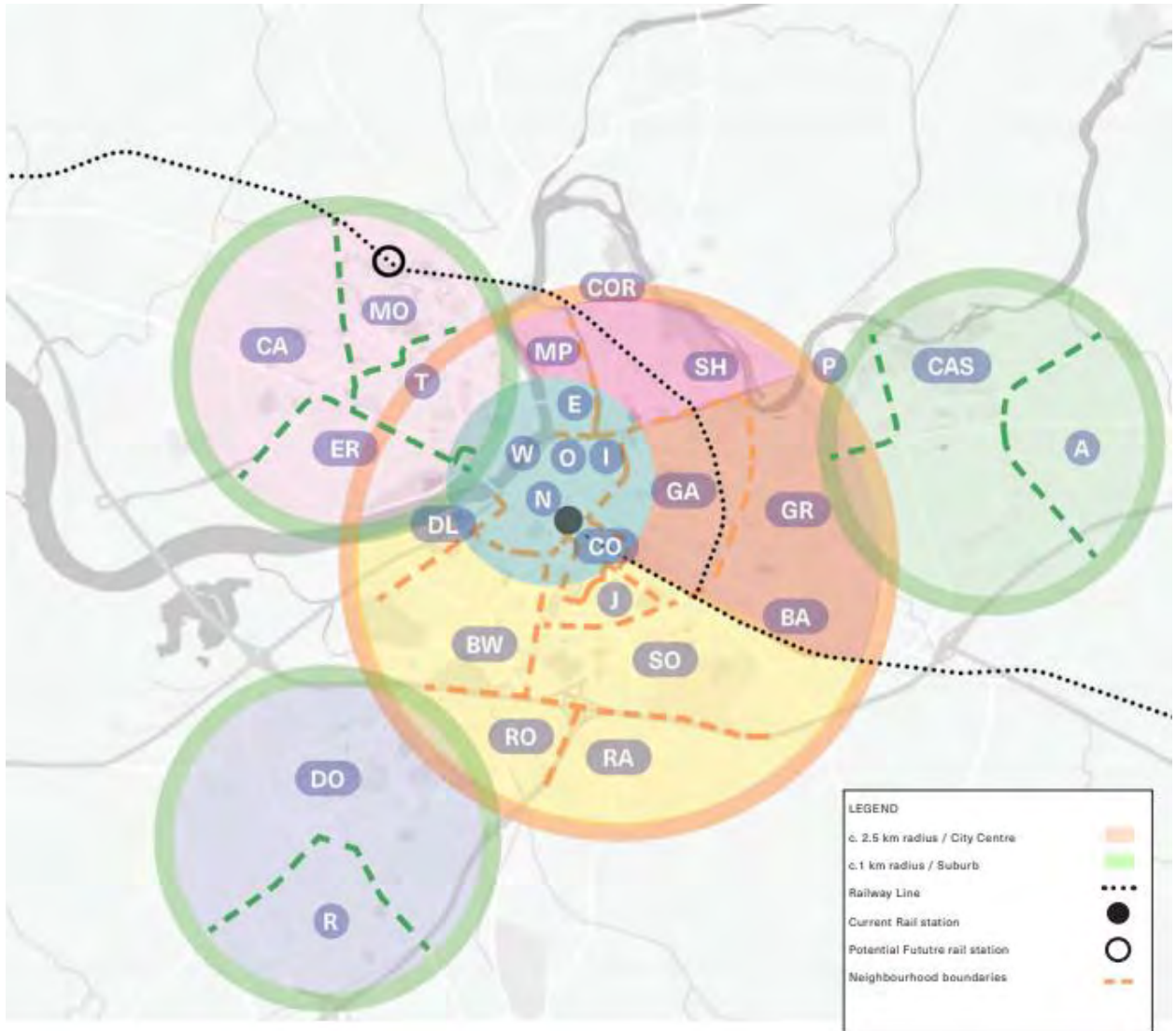


Figure 3.8: 'The City Neighbourhoods'.
(Source: *Draft Limerick Development Plan 2022-2028 – Limerick 2030 Interim Update*, 2021, Page 82)

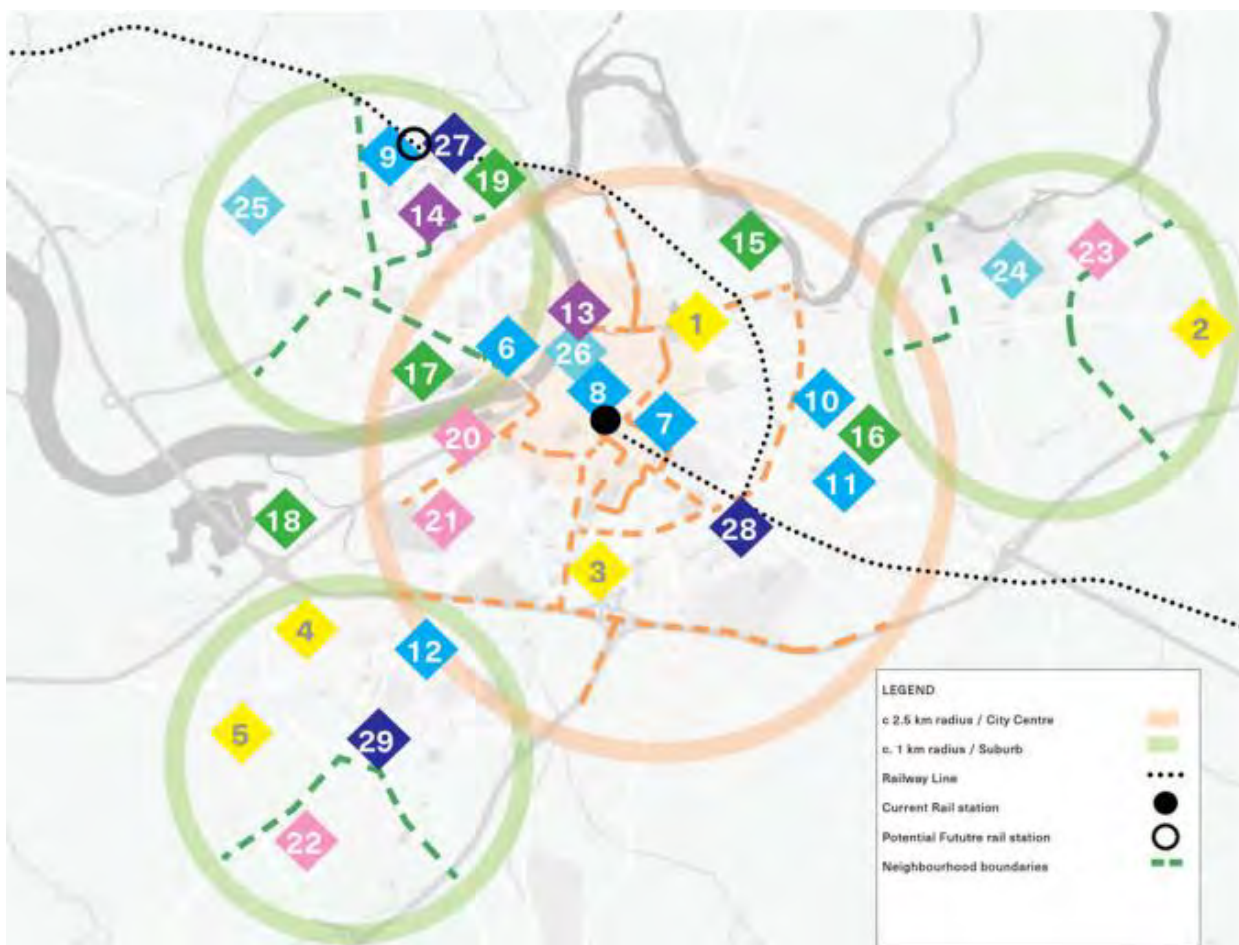


Figure 3.9: 'Opportunities and Destinations'

(Source: Draft Limerick Development Plan 2022-2028 – Limerick 2030 Interim Update, 2021, Page 85)

The expansion of the city's urban settlement is further described in Chapter 7 (Spatial Opportunities) and notes that '...proposals in Moyross and King's Island each assume a new pedestrian bridge at Thomond Weir; so proposals at the Limerick Docks and at Clonmacken reference a new pedestrian bridge at Barrington Pier; so proposals in the Dooradoyle-Raheen neighbourhood forge linkages to the Greenpark Racecourse lands and the Limerick Docks' (our emphasis - see pg 108). The vision for the site in the expanded growth strategy is explained under the heading of 'Limerick Docklands' (see pg 120) and is described as follows:

*'Greenpark Racecourse site should be progressed as a **major residential opportunity site** along its northern extents and the opportunity explored for the feasibility of **the provision of a c.12Ha enterprise and employment opportunity site** accessed from Dock Road to supplement the IDA lands at capacity in the Castletroy/ UL neighbourhood.*
[our emphasis]

It is clear, therefore, from the above statement that c. 12 ha of the Greenpark lands is identified as being potentially feasible as an enterprise and employment 'opportunity site' accessed from Dock Road, together with a 'major residential opportunity site' all within an emerging 'expanded plan' area for the city centre.



The land use zoning of the Greenpark Lands in the Draft Plan does not, however, support this vision for the site and retains only c.4.4 ha of Residential zoned land, which could not be considered a ‘major residential opportunity site’ as described above. This contrasts with the c.12 ha of land earmarked as a potential enterprise and employment opportunity site to be accessed from Dock Road, which does equate to the existing General Mixed Use and Neighbourhood Centre zones in the Current Development Plan (c. 12 ha). This confirms that this part of the site is deemed the correct general location for this form of development.

In line with the above recommendation, we would request that the lands are otherwise zoned to facilitate the major residential opportunity as identified to be realised on the lands.

3.7 *The Future Development of Limerick City, June 2021*



Figure 3.10: *The Future Development of Limerick City.* (Source: Limerick Chamber, 2021)

Limerick Chamber appointed Indecon Research Economists in late 2020 to undertake ‘an independent benchmarking assessment of the performance of Limerick city versus other Irish cities; to analyse international experiences and best practice; and to outline recommendations that support the development of an environmentally and economically sustainable future Limerick city’. This report, known as ‘*The Future Development of Limerick City*’ (generally referred to below as ‘*Future Limerick*’) identifies a ‘Future Limerick Model, which includes the following key concepts:

- Compact growth with high density housing and;
- Location of employment opportunities in proximity to residential areas.



The re-development of the Greenpark Lands would deliver the above objectives through the mixed use development model that can deliver substantial employment opportunities in close proximity to new residential areas.

The *Future Limerick* report was commissioned as a result of concerns held by Limerick Chamber and its members surrounding *inter alia*: *'the pace of delivery of key public projects; **the lack of private commercial and residential development in the city centre**; the decline in footfall in the city centre; the emerging skills shortage across several sectors'*. [our emphasis]

In this regard, *Future Limerick* notes that:

'The current crisis in our city centre is a result of poor planning decisions by successive administrations leading to significant sprawl of large housing and retail developments across suburbs. This 'hollowing out' has contributed to several problems in our city centre including increased numbers of vacant buildings and a general sense of diminishing shared public space'.

With regard to future housing provision, the Report states:

'There is a need to ensure that housing supply increases to meet forecasted population growth for Limerick. ESRI estimates that the population in Limerick city and county will grow by 10% by 2040. Indecon notes that this rate is lower than the national average and would fail to meet the targets of the National Planning Framework. However, even with this lower level of population growth, there will be a requirement for approximately 1,100 new homes per year over the next 20 years. This would represent a 100% increase on the current annual delivery rate for Limerick City and County. This does not account for historical undersupply of affordable homes that has led to Ireland having the highest rate in the EU (47.2%) of individuals aged 25-29 still living with their parents'.

There is a clear and significant demand for, and shortage of, well-located new housing in the Limerick City and environs area that can facilitate the population growth envisaged for the settlement in National and Regional planning policy. Greenpark is ideally located to contribute to meeting this demand in a sustainable manner.

Future Limerick concludes that:

'Population density is important in ensuring a sustainable economic base and in realising the benefits of economic externalities. This is fundamental to meeting climate change objectives and in supporting a vibrant retail and local service economy. The population density in Limerick city and suburbs is higher than Cork but is lower than Galway and Dublin. Increasing the population density in Limerick city is a critically important challenge for the future development of the city'.

In order to achieve the objectives of population density in the city and the required levels of new housing, *Future Limerick* recommends that:



- *Strategic development areas should be identified in the city to facilitate new quality affordable residential developments. This could potentially be introduced in tandem with strengthened regulation and improved access to finance for small and medium developers.*
- *The focus of all policies and investments should be on facilitating compact growth.*
- ***Targets should be set (and monitored) to achieve an increase in apartment and other residential regeneration developments in inner areas of the city. [our emphasis]***

We submit that Greenpark comprises a ‘strategic development area’ and should be so designated in the Development Plan as a suitable to meet the ‘compact growth’ policy underpinning the planning of the city. As an ‘inner area of the city’, the Greenpark Lands represent a residential regeneration area that can facilitate a mix of residential unit types and sizes including apartments.

Future Limerick also recognises that the planning of the city area will play a significant role in tackling climate change and unsustainable commuting patterns. It states:

‘Evidence on the commuting patterns of the population in Limerick city examined by Indecon indicated that more than half of the population in Limerick city rely on a car to travel to work or school or college. Ensuring that the infrastructure and services are available to reduce this percentage, is an important challenge for the city.’

The Greenpark Lands are superbly located to minimise the need to travel and reduce reliance on the private car. In this regard, it is noted that:

‘Indecon has used Geographic Information System (GIS) techniques to analyse the accessibility to essential facilities (Hospitals, Schools, Parks) within the Limerick metropolitan area. The results show that accessibility to services by pedestrians is particularly high in most of the electoral districts of the metropolitan area, where it is possible to reach these facilities within 10 minutes from virtually every point. Highlighting and utilising the strength of proximity within Limerick city should be a core element of a future sustainable strategy. The results of the analysis carried out suggest that the city has the potential to facilitate a significant shift in commuting patterns’.

Greenpark is located within reasonable walking/cycling distance from the city centre, hospitals, schools, open space and several major places of employment together with a well-established social infrastructure. Its promotion as an appropriate location to facilitate sustainable development is entirely consistent with the above recommendations.

3.8 Flood Risk Considerations

It is acknowledged that the Greenpark Lands are subject to flood risk designations viz., principally Flood Zones A (High Probability of Flooding) and B (Moderate Probability of Flooding). The existence of these designations has formed a central tenet of the future planning and development of the lands and its design from the outset (see Greenpark Masterplan).



This Masterplan sets out a detailed vision for the future development of the lands and includes a detailed Site Specific Flood Risk Assessment (SSFRA) prepared by RPS, Consulting Engineers, which includes substantial and robust modelling work and breach analysis. The Masterplan illustrates how the SSFRA recommendations can be implemented and managed on the lands to ensure that future development can take place safely and in line with National and Regional planning policy.

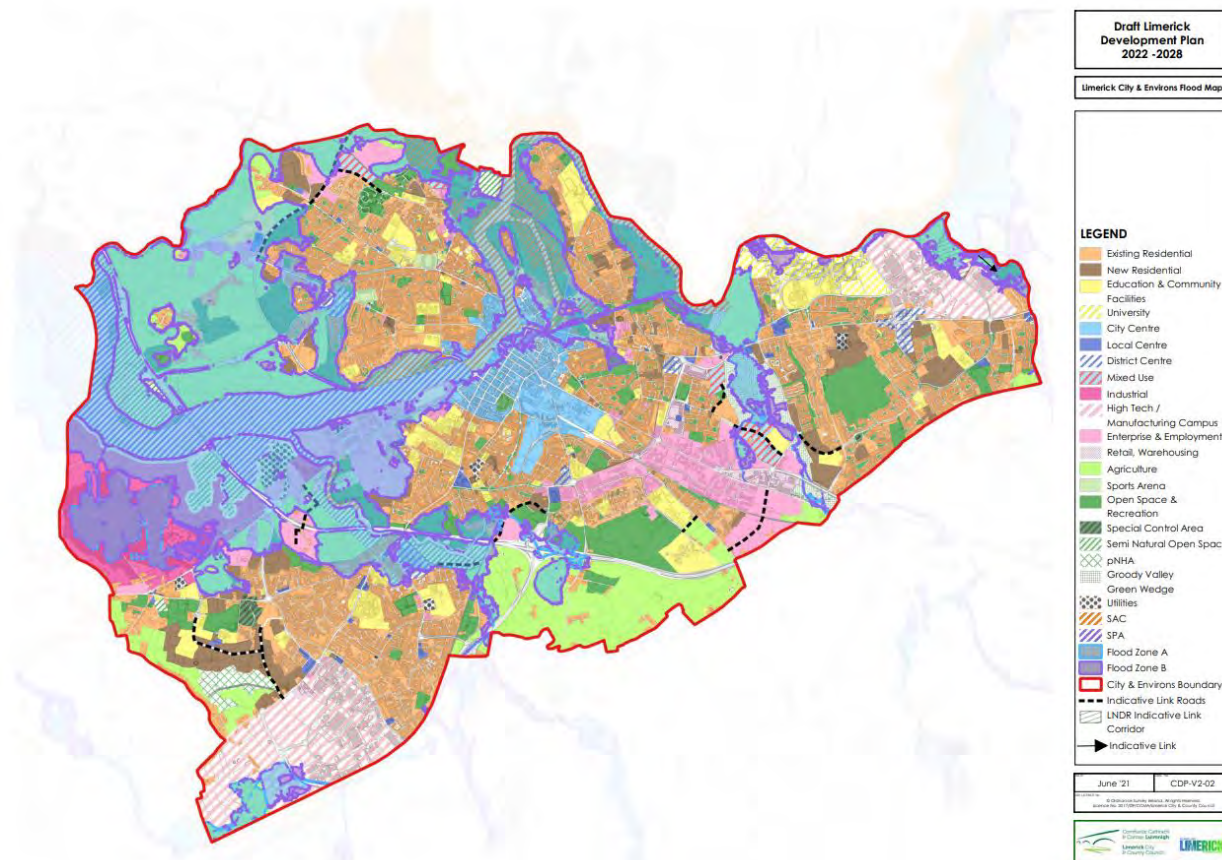


Figure 3.11: ‘Limerick City and Environs Flood Map’
(Source: *Draft Limerick Development Plan 2022-2028* – Volume 2, Limerick City and County Council, 2021)

It should also be noted that the lands have been zoned for both General Mixed Use, Neighbourhood Centre and Residential uses since 2010 under the Current Development Plan, which was adopted having regard to the provisions of the *Planning System and Flood Risk Management Guidelines for Planning Authorities 2009*.

Limerick City is a ‘*strategically located urban centre*’ as referenced in the 2009 Guidelines much of which is subject to flood risk designations including significant areas of land in the city centre and inner suburbs. It is, however, earmarked for ‘*continued growth and development*’ in order to ‘*bring about compact and sustainable urban development and more balanced regional development*’.



The Development Plan Guidelines as referenced in the *Planning System and Flood Risk Management Guidelines for Planning Authorities 2009* are described in detail in Section 3.2 of this submission and these explicitly support the sequential development of urban areas, which would comfortably include Greenpark in the Limerick City context.

It is submitted that Limerick City must continue to be developed in a sequential manner in order to achieve these overriding National and Regional planning objectives; otherwise, very significant tracts of scarce serviced urban lands in close proximity to the city centre may not be developed and a wholly unsustainable growth model focused on lands in outer suburban locations will be promoted. As illustrated in the enclosed SSFRA (see Appendix A), the Greenpark Lands can be developed safely and will not increase flood risk elsewhere.

It is noted that since the Flood Risk Management Guidelines were published in 2009, the National Spatial Strategy and Regional Planning Guidelines referenced in that document have been replaced by the *National Planning Framework (NPF) 2018* and the *Regional Spatial & Economic Strategy (RSES) for the Southern Region 2020* respectively, which are described in detail above in this submission (see Sections 3.1 and 3.4). Both planning guidance documents, however, remain centred on the promotion and delivery of the ‘compact growth’ concept and explicitly support the redevelopment of underutilised lands in inner urban locations. In addition, it is a stated NPF and RSES objective to meet 50% of all new housing provision within the existing built-up area of the country’s main cities (including Limerick), which also underpins the overall growth strategy of the Draft Plan.

Thus, notwithstanding the flood risk designations pertaining to the lands, it is evident that the strategic nature of the Greenpark lands located in close proximity to Limerick city centre means that they are ideally located to meet these National, Regional and Draft Plan policy objectives. As noted above, the alternative to this strategy is the zoning and development of lands in peripheral remote locations well beyond the core and inner suburban areas, which will give rise to an inherently unsustainable pattern of development that will undermine the compact city strategy that will encourage reliance on the car. This, in turn, will result in the new Development Plan failing to comply with mandated National and Regional planning guidance.

The *Planning System and Flood Risk Management Guidelines for Planning Authorities 2009* note the requirement for a ‘Plan-making Justification Test’ described in Chapter 4 and used at the plan preparation and adoption stage, where it is intended to zone or otherwise designate land, which is at moderate or high risk of flooding. It is noted that the Justification Test will apply to ‘uses or development vulnerable to flooding’ with no distinction drawn between ‘highly’ or ‘less vulnerable development’ or particular land uses. Section 4.23 and Box 4.1 of the Guidelines describe the Development Plan Justification Test in detail. The relevant components of the Justification Test, which must be satisfied, are set out below when assessed against the Greenpark site.



3.8.1 Development Plan Justification Test

The following criteria are identified in the Development Plan Justification Test (Box 4.1) in the 2009 Guidelines. These are set out below in italics and assessed in turn.

'The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended'.

As noted above, the NPF and RSES replace the above referenced National Spatial Strategy and regional planning guidelines respectively. As described in detail in Sections 3.1 and 3.4 of this submission, Limerick City and suburbs is targeted for significant and ambitious population growth of 50-60% (47,000 – 56,000 people) to 2040 with 50% of this growth mandated to occur within the existing built-up area of the city, which would naturally include the subject lands, given their inner suburban location.

Similarly, the Draft Plan projects population growth of 34,177 persons to 2028. The Plan notes that the Limerick Metropolitan Area (city and suburbs) has the capacity to accommodate 12,322 no. units on zoned land. It is clear, therefore, that there is significant population growth forecast for Limerick City that will generate future demand for housing, which requires to be met by appropriately zoned and located land. Significant strategic sites such as Greenpark close to the city centre, as opposed to lands located in peripheral locations of the city, should be prioritised as required by all current planning guidance. This criterion is met by the subject lands.

The next criterion noted in Box 4.1 states:

'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 and, in particular:

(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement';

The Greenpark site is a strategically important zoned and serviced landholding of notable scale (47 ha) located in the inner suburbs of Limerick City within 2km of the city centre. Moreover, it is explicitly identified in the *Limerick 2030 Interim Update June 2021* (see Volume Six of the Draft Plan) as part of the 'expanded plan' area described as follows:

'The expansion of the spatial plan allows it to consolidate this city identity and to ensure that the growth is managed in a way that not only avoids sprawl but actively reinforces the sense of a coherent urban area'. (see pg 78)

In this regard, the 'old Greenpark Racecourse' is identified as a 'City Gateway' clearly located within the inner part of the city and suburbs as delineated on page 79 of the *Limerick 2030 Interim Update* document. The graphic on page 85 also illustrates the subject lands as being comfortably within the 2.5km radius of the city centre and notes part of the site as being 'enterprise and employment' lands (site no. 21).



The expansion of the city's urban settlement is further described in Chapter 7 (Spatial Opportunities) and notes that '*...proposals in Moyross and King's Island each assume a new pedestrian bridge at Thomond Weir; so proposals at the Limerick Docks and at Clonmacken reference a new pedestrian bridge at Barrington Pier; so proposals in the Dooradoyle-Raheen neighbourhood forge linkages to the Greenpark Racecourse lands and the Limerick Docks*' (our emphasis - see pg 108). The vision for the site in the expanded growth strategy is explained under the heading of 'Limerick Docklands' (see pg 120) and are noted as follows:

*'Greenpark Racecourse site should be progressed as a **major residential opportunity site** along its northern extents and the opportunity explored for the feasibility of **the provision of a c.12Ha enterprise and employment opportunity site** accessed from Dock Road to supplement the IDA lands at capacity in the Castletroy/ UL neighbourhood.*
[our emphasis]

It is clear from the above statement that c.12 ha of the Greenpark lands is identified as being potentially feasible as an enterprise and employment '*opportunity site*' accessed from Dock Road, together with a '*major residential opportunity site*' all within an emerging '*expanded plan*' area for the city centre. Given this planning context, it is clear, therefore, that the lands are '*essential to facilitate regeneration and/or expansion of the centre of the urban settlement*'. This criterion is met by the subject lands.

(ii) Comprises significant previously developed and/or under-utilised lands;

The Greenpark site comprises a strategically important land bank of significance (47 ha) and constitute the former Limerick racecourse, so is '*previously developed*', having accommodated another land use with associated ancillary development. At present, the lands are undeveloped and are grossly underutilised, having regard to their strategic locational context on the edge of core city area in the city's inner suburbs proximate to several employment areas and public transportation corridors. This criterion is met by the subject lands.

(iii) Is within or adjoining the core of an established or designated urban settlement;

Limerick is a designated urban settlement and growth area under the provisions of the NPF and RSES with projected population growth in the order of 47,000-56,000 people up to 2040. The Draft Plan envisages growth of c. 34,000 people to 2028. The Greenpark Lands are centrally located within the inner suburbs of Limerick City within 2 km of the city core and adjoining the existing built-up area of the city centre. This criterion is met by the subject lands.

(iv) Will be essential in achieving compact and sustainable urban growth;

Limerick City is a designated growth centre in the NPF and RSES, whilst ambitious population and economic growth are explicitly supported in the current Draft Development Plan and the Limerick 2030 Plan Interim Update. All relevant planning policy (National, Regional and Draft Plan) require this growth to be delivered in accordance with the compact city model utilising underutilised brownfield and centrally located lands where possible.



The projected growth of Limerick is earmarked to be accommodated in the city centre and the adjoining inner suburbs, where possible, in line with National planning policies and guidance in respect of the sequential approach to the zoning of land (see also Section 3.2 above). The Greenpark lands are of scale (47 ha), so can deliver a significant contribution towards meeting both economic and residential growth targets in a sustainable location proximate to the city centre, employment centres, established social infrastructure and existing and emerging public transport corridors. The *Limerick 2030 Interim Update* (see Volume 6 of the Draft Plan) further support these objectives and explicitly reference the subject lands as forming an important part of the 'expanded plan' strategy as both an employment (c.12 ha) and major residential opportunity site.

The lands will, therefore, be essential in achieving this compact city model of sustainable urban growth being contiguous to the existing built-up area and promoting the use of cycling, walking and public transport. If the lands are not developed in this manner, it will promote the zoning and development of lands, particularly for residential purposes, in greenfield remote locations on the periphery of the existing built-up area at a significant remove from the city centre often requiring costly and significant new infrastructure and likely highly car dependent. This latter form of development is the antithesis of the 'compact city' and results in an unsustainable form of growth that will serve to undermine the overriding planning strategy guiding the growth of Limerick. This criterion is met by the subject lands.

- (v) *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*

There are no suitable alternative lands to accommodate the appropriate combination of commercial and residential use within, or adjoining the city's core area that are at a lower risk of flooding. There are limited available development lands adjoining the subject site that are located closer to the city centre and, where such limited sites exist, these are also designated as being at risk of flooding or otherwise committed for development/already developed. This criterion is met by the subject lands.

In summary, therefore, the Greenpark Lands satisfy the criteria included in the Development Plan Justification Test and are, therefore, appropriate to be zoned for development including commercial and residential uses.

The final requirement of the Development Plan Justification Test requires the preparation of a flood risk assessment to an appropriate level. In this regard, a detailed SSFRA was completed by RPS Consulting Engineers in respect of the Greenpark Lands (see below). The Guidelines state:

'A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.'



N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment'.

As noted, RPS have undertaken a detailed site specific flood risk assessment (SSFRA) for the Greenpark Lands in accordance with the sequential approach required under *The Planning System and Flood Risk Management Guidelines for Planning Authorities (2009)* (PSFRMG). The SSFRA is appended to this submission as Appendix A.

The SSFRA identified that the risk of flooding to the Greenpark Lands is low, as the OPW maintained Arterial Drainage scheme provides protection during both the 0.5% and 0.1% AEP tidal events. This was established previously by modelling during the OPW CFRAM process and, more recently, by comprehensive modelling undertaken by RPS to inform the SSFRA. The lands are still predominantly classed as Flood Zone A, in accordance with the *PSFRMG*, due to the residual risk of breach of the OPW embankments, which were constructed of a material of unknown origin.

The focus of the RPS SSFRA was, therefore, to demonstrate, that during a breach scenario, the risk to property and life could be safely managed in the knowledge that this event could be sudden and without warning. The general approach to this was to raise the Greenpark Lands above the predicted breach level with a suitable allowance for Climate Change and freeboard, while ensuring there was no unacceptable adverse impacts to neighbouring lands or property. This was achieved and the mitigation measures provided the following benefits to ensure long term sustainability and a neutral impact on surrounding lands:

1. There is no reliance on the existing OPW embankments to provide protection to the Greenpark Lands.
2. The proposed mitigation is entirely self-sufficient, sustainable and will place no burden on Limerick City and County Council to provide additional flood defence infrastructure in the future.
3. The Greenpark Lands will remain free from flooding during a 0.5% AEP Mid-Range Future Scenario event where overtopping of the existing defences occurs.
4. The Greenpark Lands will be protected during a 0.5% AEP Mid-range Future Scenario event, even when a breach of the existing defences has also occurred.
5. It has been robustly demonstrated that there is no increase in flood risk, even during a breach event, to surrounding developments.
6. A clear access and egress route for emergency vehicles can be provided through Log na gCapall, even during a breach event. This is essential, given that Dock Road itself will be impassable due to the depth of water.
7. All storm drainage will be attenuated to existing run-off rates and, therefore, will not cause capacity issues on the existing network or raise the increase of flooding elsewhere.



The RPS SSFRA, the analysis undertaken and the report produced meets the requirement of the final criterion of the Development Plan Justification Test.

Key Issue Arising: The application of the *Planning System and Flood Risk Management Guidelines 2009*, at the Development Plan stage, demonstrates that the Greenpark Lands satisfy the requirements of the Development Plan Justification Test.

4.0 DRAFT LIMERICK DEVELOPMENT PLAN 2022-2028

Future Residential Development

The written statement (Volume 1) of the Draft Development Plan sets out the Planning Authority's vision for the Limerick City and County administrative area. Chapter 2 of the Draft Plan sets out the core strategy, which informs the overall framework for the objectives and policies throughout the Draft Plan. The Core Strategy provides a rationale for the amount of land proposed to be zoned for new residential development and for mixed use development, involving a residential component that is required to meet the proposed population growth over the lifetime of the Draft Plan period, at settlement level. This section reinforces that the Draft Development Plan must be underpinned by the policy objectives of the NPF and RSES (as described above in this submission) in respect of achieving the projected population growth in Limerick City and Environs of at least 50% by 2040 and promoting the compact growth concept with 50% of new housing development to occur within the existing built-up area of the city environs.

Table 2.4 identifies the Limerick Settlement Hierarchy with the top of the hierarchy (Level 1) described as the Limerick City Metropolitan Area, which comprises '*Limerick City and Environs, including Mungret and Annacotty*'. The bulk of new population and housing growth will occur within this area.

Table 2.3 estimates a total household projection for the Plan period (2022-2028) of 15,591 and a population growth of 33,618 persons in Limerick city and suburbs to 2031. Table 2.6 identifies '*Density Assumptions per Settlement Hierarchy*', which is broken down into Density Zones 1-3 for City Centre, Central & Accessible Locations (100+ units per ha); Intermediate Urban Locations/Transport Corridors (45+ units per ha) and Suburban Edge (35+ units per ha) respectively. Figure 2.2 of the Draft Plan suggests that the site is located at the interface of the Intermediate Urban Location and the Suburban Edge, which would give an appropriate residential density of 35-45 units per ha for the Greenpark Lands. (As noted above, the current SHD proposal on part of the subject lands shows a density of 47 units per ha as being achievable on the lands).

Section 2.4 of the Draft Plan notes that:

'Guidance throughout the Draft Plan on housing densities, building height and development layouts, are all aimed at ensuring the economic use of land for development, compact, quality neighbourhoods and integration with infrastructure and non-residential land uses that nurtures sustainable travel patterns and choices.'



Table 2.7 comprises the core strategy table and suggests that no additional zoned land is required to accommodate additional growth in the Level 1 settlement tier (Limerick Metropolitan City and Environs including Mungret and Annacotty) with 358 ha of existing zoned undeveloped land available with capacity for 12,322 residential units.

Key Issue Arising: Given that the Residential zoning of the Greenpark Lands has decreased by c. 15 ha in the Draft Plan with capacity for c. 650+ no. residential units in a highly accessible inner suburban location, we submit that there may be lands identified for residential development purposes that are less suitable when assessed against the relevant National, Regional and Draft Plan policies and the sequential approach to the zoning of residential land as set out in the Development Plan Guidelines.

Chapter 3 of the Draft Plan further details the proposed settlement and housing strategy for Limerick, which once again reinforces that the strategy aligns with the overriding policy objectives of the NPF and RSES (see Policies SS P1 and SS P2).

Regarding 'compact growth', Objective SS 01 states:

'It is an objective of the Council to strengthen the core of settlements and encourage compact growth, through the development of infill sites, brownfield lands, under-utilised land/buildings, vacant sites and derelict sites, within the existing built-up footprint of the settlements and develop outwards from the centre in a sequential manner'.

Policy SS P3 Level 1 – Growing Limerick City Metropolitan Area, including Mungret and Annacotty states that:

'It is a policy of the Council to strengthen and consolidate Limerick City Metropolitan Area as a key driver of social and economic growth in Limerick and become a vibrant living, retailing and working City. In accordance with national and regional policy it is a requirement that at least 50% of all new homes will be located within the existing built-up footprint of the settlement, in order to deliver compact growth and reduce unsustainable urban sprawl'.

Regarding Housing Mix, Objective HO 01 states:

'It is an objective of the Council to ensure that new developments are socially inclusive and provide for a wide variety of housing types, sizes and tenure, throughout Limerick, to cater for the demands established in the Draft Housing Strategy and the Housing Need Demand Assessment'.

Section 3.7.4 of the Draft Plan again notes the key objectives of the NPF and RSES that seek to increase the density of development in all built up areas, in order to achieve the indicated population targets in a compact and sustainable manner. The Draft Plan confirms that increased densities will facilitate optimising the use of serviced lands and maximising the viability of investment in social and physical infrastructure, in particular public transport. Integration of land use and transport planning is identified as being crucial to deliver the '10 minute city/town' concept and this will be supported with higher densities at appropriate locations.



Key Issue Arising: As noted throughout Section 3 of this submission above, the Greenpark Lands are a textbook example of a significant underutilised and undeveloped infill urban land bank located in close proximity to the city centre, areas of employment, existing social infrastructure and public transport corridors. The lands are inherently suitable to accommodate substantial residential development as an expansion of the core urban area of Limerick.

Allied to an Enterprise and Employment zoned area adjoining the Residential component, this would enable the creation of a highly sustainable '10 minute' city district as referenced above and encourage walking, cycling and the use of public transport. The lands are also serviced, so do not require expensive and lengthy infrastructural upgrades to become available for development in the short term. The development of a significant portion of the lands for Residential purposes will contribute significantly to the achievement of the above Draft Plan objectives (viz., compact growth, urban consolidation and housing mix).

Future Employment Development

Chapter 4 of the Draft Development Plan is entitled 'A Strong Economy' with the aim of supporting the growth of employment and enterprise, retail, tourism and the marine economy in Limerick, in a manner, which ensures that economic development does not impact adversely on the environment. Section 4.3.1 notes that the Limerick 2030 Economic and Spatial Plan for Limerick has the ambition to create a City Centre that can attract new inward business investment and encourage the formation of new local business by providing high quality, flexible space.

It is noted that:

'The Draft Plan seeks to protect and promote the strategic employment locations identified in the RSES. Chapter 10: Compact Growth and Revitalisation identifies opportunity sites for future development. In line with the Core Strategy, the Draft Plan considers how best to ensure that there are sufficient zoned lands available in appropriate locations, to support the range of future employment needs for Limerick'.

Policy ECON P1 notes the importance of *Limerick 2030* stating:

'It is a policy of the Council to support the review and implementation of Limerick 2030 – An Economic and Spatial Plan to guide the economic, social and physical renaissance of Limerick City Centre and the wider County/Mid-West Region'.

Policy ECON P3 states that:

'It is a policy of the Council to: a) Promote, facilitate and enable economic development and employment generating activities in Limerick City Centre, at Strategic Employment Locations and other appropriately zoned locations in a sustainable manner. b) Facilitate the future sustainable economic development of Limerick City and Environs to optimise the benefits of its strategic location in the Limerick Shannon Metropolitan Area, in accordance with the National Planning Framework and the Regional Spatial and Economic Strategy'.



Section 4.7 of the Draft Development Plan focuses on Enterprise and Employment. The National and Regional policy context is noted particularly the provisions of the MASP, which supports Limerick City in becoming a major economic force in the Irish and international economy, a leading centre for commercial investment.

Section 4.7.2 relates to Strategic Employment Locations in Limerick City and Environs. It states that:

'The Local Authority is committed to the delivery of a vibrant and compact community where people live close to where they work in Limerick City Centre, which must be prioritised for investment. The strategic employment areas identified, support the objectives for compact growth of the settlement of Limerick City and Environs... With an increase of critical mass in the City and Environs, it is envisaged that population and jobs growth will occur in a sustainable manner focusing on clusters and smart specialisation.'

Regarding the Docklands area, the Draft Plan states:

'The maintenance of the city's existing working port and associated industries will also be supported in the Draft Plan. These lands represent an invaluable asset for the future maritime related economic development of the City Centre. There is also potential for significant development of underutilised City Centre lands within the Docklands area for a major employment and residential quarter'.

The juxtaposition of employment residential land uses is further restated in the Draft Plan:

'It is therefore acknowledged that additional locations may become available and the Local Authority recognises the need to be flexible to accommodate employment opportunities and the aims of revitalising and regenerating Limerick City, for higher density living and higher value jobs during the lifetime of the Draft Plan.'

Objective ECON O13 'Strategic Employment Locations City and Environs' sets out policy provisions that promote a diverse range of employment opportunities in appropriate locations and explicitly identifies the following as 'Strategic Employment Locations' in line with the RSES MASP:

- Limerick City Centre,
- University Hospital Limerick,
- Raheen Business Park,
- the National Technology Park,
- Higher Education Institutes,
- Public Hospitals,
- Dock Road,
- Northside Business Campus,
- Opera Centre and
- Cleeves Site



Key Issue Arising: Notwithstanding that the quantum of zoned Enterprise and Employment zoned lands increasing to c.24.7 ha in the Draft Development Plan (a c.14 ha increase from the General Mixed Use zone in the existing Development Plan), which is a very significant site area, the Greenpark Lands are not identified at any stage in the Draft Plan as a Strategic Employment Location. This is despite the fact that this would comprise one of the largest Enterprise and Employment zoned land parcels in the inner suburban part of the city environs.

As noted above, however, the *Limerick 2030 Interim Update* identifies Greenpark ('old racecourse') as being both an employment opportunity site (c.12 ha) and a major residential opportunity site. All of the above suggests that whilst part of the Greenpark Lands may have a role in supporting the future economic growth of the city centre and an emerging new Docklands centre, they do not represent a Strategic Employment Location. Given its locational characteristics, the overall site comprises a landholding ideally suited to accommodating mixed use development in line with the above Draft Plan policies that seek to co-locate employment and residential development in line with sustainable development principles.

Chapter 10 relates to Compact Growth and Revitalisation and, as with all other parts of the Draft Plan, this provides the National and Regional planning context, which explicitly supports:

- The City Centre as the primary location at the heart of the Metropolitan Area and Region;
- Compact growth and revitalisation of Limerick City Centre and suburbs;
- Densification of development in the City Centre, including identification and assembly of brownfield sites for development.

It is also explicitly referenced that Limerick City and County Council will have regard to, *inter alia*, *Limerick 2030: An Economic and Spatial Plan for Limerick*.

Regarding 'compact growth', the Draft Plan makes a series of statements all of which clearly support the development of the Greenpark Lands for uses including Residential:

'Limerick City and County Council acknowledges the social and economic benefits of more compact settlements and is committed to delivering compact growth, through active land management and initiatives to revitalise urban settlements. The policies and objectives in this Draft Plan promote the efficient use of urban lands to achieve compact growth, through the intensification, consolidation and positive revitalisation of the City, towns and villages throughout Limerick.

The compact growth concept requires the provision of higher densities and mixed-use developments in urban settlements, in order to ensure a more efficient use of scarce lands and optimise public investment in infrastructure. This requires the integration of land use and transport, an intensification of use of existing underutilised lands and the consolidation of the built environment through the development of brownfield and infill lands, as well as the reuse of vacant and derelict buildings in urban settlements. In conjunction with the provision of social and green infrastructure, the principles of compact growth set the foundations for a higher quality of life, through the promotion of mixed-use settlements, served by sustainable modes of transport and the creation of an attractive environment in which to live, work and do business.



Successful compact growth requires enhanced connectivity and accessibility for pedestrians and cyclists, as well as the provision of viable public transport services through the concentration of higher density developments at strategic employment locations and along public transport nodes. There are many sustainability benefits of the compact growth concept compared to that of urban sprawl or greenfield developments at the edge of settlements. Such benefits include maximising the viability and cost efficiency of providing public transport and other infrastructure, as well as reduced car dependency and commuting times, which will facilitate the mitigation of climate change, through a reduction in traffic congestion, energy consumption and greenhouse gas emissions.

The Local Authority acknowledges the social and economic benefits of more compact settlements as outlined above. Therefore, this Draft Plan will continue to support the sequential approach to the delivery of development, with priority given to the revitalisation of settlements and the consolidation of the existing built environment, through the development of brownfield, infill and backland urban sites’.

Policy CGR P1 provides policy support for the above principles. It is submitted that the Greenpark Lands enjoy all the locational characteristics described in the above commentary and comprise an ideal site that would demonstrate how the above principles could be implemented in practice.

Chapter 10 also addresses the importance of Brownfield sites in achieving compact urban growth and describes these sites as follows:

‘Brownfield land is a term used to describe previously developed land that is not currently in use and which has the potential for redevelopment. Often such lands are of large scale and have previously been in use for industrial or commercial purposes and became derelict due to obsolescence, vacancy or demolition of structures

Redeveloping brownfield sites provides opportunities for revitalisation of the built environment and reuse of existing infrastructure including roads and utilities. The Planning Authority will encourage the redevelopment of brownfield sites in settlements throughout Limerick, in accordance with the concept of compact growth and the Development Management Standards of this Draft Plan. A number of strategic brownfield sites have been identified for redevelopment in Limerick City Centre, which will have transformational effects on the revitalisation of the City. Such strategic sites include, for example, the Opera Centre, Cleeves Riverside Quarter, the University of Limerick Riverside Campus and Colbert Station Quarter. Some of these projects are briefly outlined under the Limerick City Revitalisation Projects and Opportunity Sites section further below’.

As above, the Greenpark Lands are not identified as being a Brownfield Site despite being located in the inner suburbs of the city and comprising a largescale site (47 ha) that was formerly in use.

This chapter also reinforces the importance of Limerick 2030 in the future regeneration of the city and environs:



‘The key tool for the revitalisation of Limerick is the Limerick 2030 – An Economic and Spatial Plan. The Limerick 2030 Plan sets out a blueprint for the economic and spatial revitalisation of Limerick City, to reposition it as a world class City in Ireland and Europe. The NPF sees its implementation as a growth enabler, which can act as an exemplar to other cities not just nationally but internationally. The establishment of the Limerick Twenty Thirty Strategic Development DAC (Designated Activity Company) has accelerated the implementation of the Limerick 2030 Plan, with actions proposed over a 20-year period. The DAC is the first entity of its kind created by a Local Authority to deliver a City and countywide programme of investment. It is the biggest single Irish commercial property development programme undertaken outside of Dublin.’

Map 10.1: Opportunities Sites

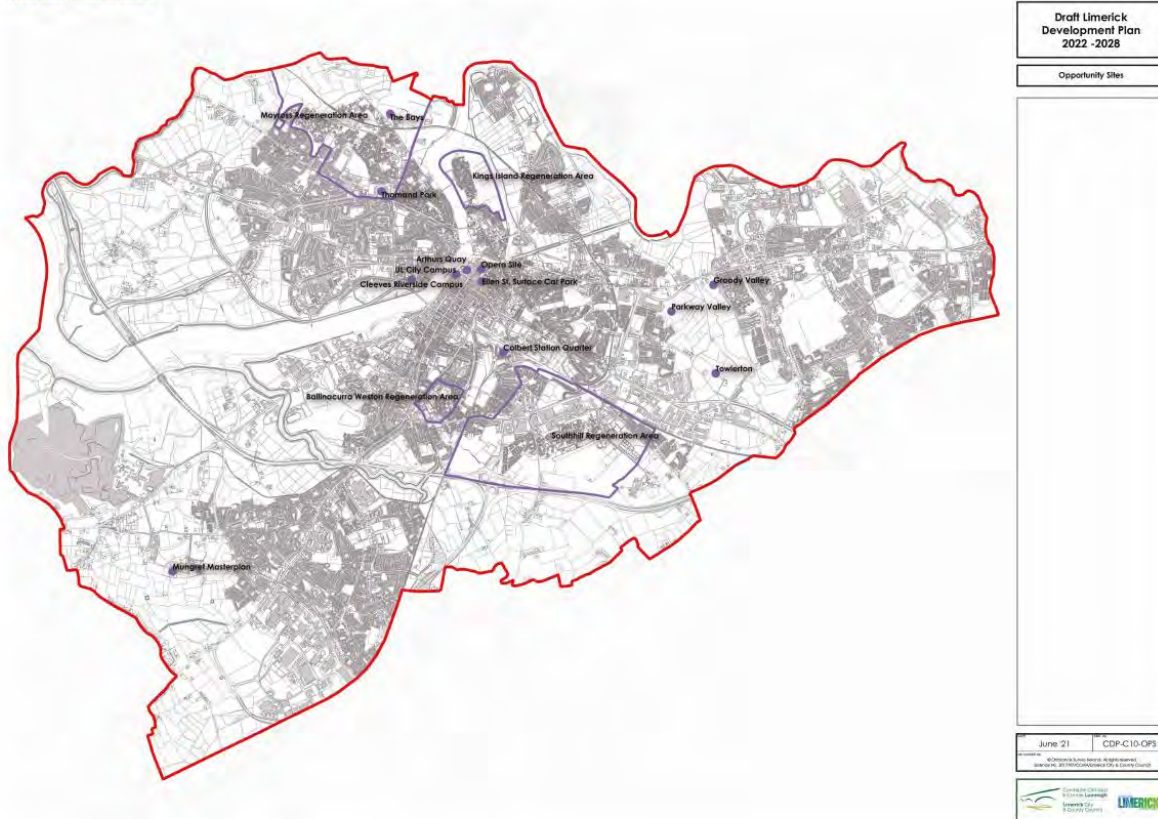


Figure 3.12: ‘Opportunity Sites’

(Source: *Draft Limerick Development Plan 2022-2028*, Limerick City and County Council, 2021, Page 261)

Section 10.4.2 relates to the ‘*Limerick City Opportunity Sites*’, which are noted to include the Opera Site, Cleeves Riverside Quarter, UL City Campus, Arthur’s Quay, Colbert Quarter, Ellen Street Car Park, Thomond Park, The Bays, Moyross, Mungret Masterplan, Parkway Valley, Groody Valley and Towlerton. These sites are illustrated on Map 10.1 together with the regeneration areas of Kings Island, Southhill and Ballinacurra-Weston. It is notable that Greenpark is not an identified ‘Opportunity Site’ despite its size and strategic location in the context of Limerick city centre. As noted above, however, the *Limerick 2030 Interim Update* identifies Greenpark (‘old racecourse’) as being both an employment opportunity site (c.12 ha) and a major residential opportunity site.



Key Issue Arising: It is apparent that the Greenpark Lands meet the policy objectives outlined in the Draft Plan regarding the achievement of compact growth and revitalisation objectives. Its re-development for a mixture of employment and residential uses will inherently accord with the relevant planning objectives. In spatial planning terms, It is remarkable, therefore, that the lands do not feature as one of the identified Opportunity Sites (see Volume One written statement) in the Limerick City and Suburbs area, given the strategic size of the landholding (47 ha) and its location close to the city centre, centres of employment and public transport corridors. Moreover, the lands are hardly mentioned at all anywhere in the Draft Plan, which seems scarcely believable, given the superb locational characteristics of the site and their suitability for sustainable new development in line with National and Regional planning policies. This omission makes little sense, having regard to the fact that the site meets virtually all relevant Draft Plan policies and objectives regarding compact growth, regeneration, sustainable development, mixed use, densification, the 10 minute city, etc.

In terms of size, the site is significantly larger than Towlerton (16.4 ha), Groody Valley (2.4 ha) and Parkway (16.4 ha) and is, in relative terms, of similar scale to Colbert (69 ha) and Mungret (59.6 ha). It is also significantly closer to the city centre than Mungret, Towlerton, Groody Valley and Parkway and, therefore, in terms of the sequential development of cities from the centre outwards as per National guidance, it should clearly be a site of significant priority on those grounds alone as a sustainable development opportunity. It is also a serviced site and can be developed with relative ease and speed through the provision of a new internal link road from Dock Road, which can be delivered by the landowner through the planning process.

The virtual disappearance of Greenpark from the Draft Plan is in stark contrast to the Current Development Plan, which explicitly identified the site as being part of the South Circular/Ballinacurra Area with an objective:

‘To seek the balanced development of the existing under-utilised lands in the area in particular the former racecourse lands.’

The existing Development Plan notes that the c. 36 ha of undeveloped, zoned land at the former race course could release 1,188 residential units and its explicitly noted in Table 2.5 (core strategy) as the *‘former racecourse’*. It is submitted that with the adoption of the NPF and the RSES, as now copperfastened by the *Limerick 2030 Interim Update*, the lands are more suitable for a mix of commercial and residential development in National planning policy terms than was the case in 2010.



5.0 CONCLUSION

We contend that this submission provides a compelling evidence-based planning case as to why the proposed overwhelmingly commercial zoning of the Greenpark Lands in the Draft Plan is not supported by National and Regional planning policies and objectives, particularly in the context of the ambitious projected growth of Limerick in population terms and as an NPF-designated city of scale. In summary, the overriding planning policy imperative at all levels of the Irish planning hierarchy is that 50% of anticipated future housing and population growth to 2040 requires to be accommodated within the existing built footprint of urban centres preferably on underutilised lands close to existing city centres, public transport routes, employment centres and services. This is the mandated growth model enshrined in the NPF and RSES LMASP that must now be adhered to in the Draft Limerick Development Plan and is the sustainable alternative to continued urban sprawl and new car-reliant greenfield development on the periphery of cities often involving complex ownership arrangements, costly significant new infrastructure provision and lengthy development programmes.

The Greenpark Lands comprise a serviced underutilised 47 ha site located within 2 km of Limerick city centre consisting of a former racecourse that can be developed in the short-term. As described in detail in this submission, it is ideally located to deliver both residential and commercial development in a mixed use planning model that will deliver substantial housing provision and also significantly contribute to the ongoing economic growth of Limerick by way of employment-based uses. It is proximate to established social infrastructure, public open space zoned land, existing and emerging public transport routes, employment centres, third level institutions and the city centre. Its re-development will facilitate and encourage the use of public transport, walking and cycling in the city. This vision is fully supported in the zoning provisions of the Current Development Plan, which also explicitly acknowledges the site's importance as a strategic residential land bank with the capability of accommodating over 1,100 housing units. We contend that this model of development remains appropriate and wholly in compliance with current planning policy.

As described above, our Client is fully cognisant of the flood risk designations that apply to the lands and the provisions of the *Planning System and Flood Risk Management Guidelines for Planning Authorities (2009)*, which were also in force when the Current Development Plan was adopted in 2010. We do not consider that these designations constitute grounds to alter the current zoning of the lands as now proposed. This change is not supported by the 2009 Guidelines, given the strategic central location of the Greenpark Lands adjoining the city centre and their crucial role in meeting the core strategic planning objectives underpinning the future growth of Limerick as required in the NPF, the LMASP and the Draft Plan. As confirmed in this submission, the lands satisfy the criteria of the Development Plan Justification Test (see 2009 Guidelines) as being appropriate for land use zoning. This Test does not distinguish between particular land uses, so commercial and residential uses are deemed appropriate on the site.

In addition, the entirety of the lands have been subject to a Site Specific Flood Risk Assessment (SSFRA), which informed the vision for the lands and was integrated into the design of the overall landholding as detailed in the Greenpark Masterplan. The SSFRA confirms that the lands can be developed safely with appropriate mitigation measures and will not increase flood risk on other lands.



The substantial reduction in Residential zoned land proposed in the Draft Plan at Greenpark is counter to planning policy and the provisions of a wide range of National and Regional planning policy documents including:

- *Project Ireland 2040 - National Planning Framework (NPF) 2018*
- *Development Plan Guidelines for Planning Authorities 2007*
- *Development Plan - Guidelines for Planning Authorities Draft for Consultation August 2021*
- *Sustainable Residential Development in Urban Areas – Guidelines for Planning Authorities 2009*
- *Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities, March 2018*
- *The Planning System and Flood Risk Management Guidelines for Planning Authorities (2009)*
- *Rebuilding Ireland, Project Descriptions Local Infrastructure Housing Activation Fund (LIHAF) 2017*
- *Regional Spatial & Economic Strategy (RSES) for the Southern Region 2020*
- *Limerick Metropolitan Area Spatial Plan (LMA SP) 2020*

At the local planning level, numerous policies and objectives of the Draft Plan also fully support the re-development of the Greenpark Lands for a mix of uses including a significant residential component as detailed above in this submission. The recently published '*The Future Development of Limerick City*' published by Limerick Chamber further supports this planning approach and strategic residential regeneration in the inner urban areas of Limerick.

Despite the site's strategic size and location, it is not identified as an 'Opportunity Site' in Volume One of the Draft Plan, notwithstanding being larger and better located than many of those so designated. Whilst Greenpark is not specifically referenced in the written statement (Volume One), the lands are clearly identified in the *Limerick 2030 Interim Update* (see Volume Six of the Draft Plan) as being a 'City Gateway' clearly located within the inner part of the city and suburbs. They are further described as forming a 'major residential opportunity site' and the Interim Update makes reference to exploring the opportunity for the '*...feasibility of the provision of a c.12Ha enterprise and employment opportunity site accessed from Dock Road*'.

The written statement notes the importance of the *Limerick 2030 Interim Update* in Policy ECON P1, which confirms the Council's policy support regarding '*...the review and implementation of Limerick 2030 – An Economic and Spatial Plan to guide the economic, social and physical renaissance of Limerick City Centre and the wider County/Mid-West Region*'.

However, the proposed Enterprise and Employment zoning of the lands in the Draft Plan does not reflect this aspect of the *Limerick 2030 Interim Update*. In summary terms, the overwhelming provision of Enterprise and Employment zoned lands at Greenpark (in the context of the overall Draft Plan that will provide over 20 years supply of employment zoned land assuming a 60% increase in demand for employment based floorspace – see Lisney Report enclosed in Appendix B) and the consequent substantial reduction in Residential zoning cannot be supported in the midst of an acute and ongoing housing crisis.



We request, therefore, that the existing quantum of New Residential zoned lands be retained in the Draft Plan as described above in the interest of the proper planning and sustainable development of Limerick City. Our Client is amenable to the proposed change from General Mixed Use and Neighbourhood Centre zoned land to Enterprise and Employment in order to support the City's economic growth strategy.

We look forward to written acknowledgement of receipt of this submission.

Yours sincerely

John Gannon
Director
Tom Phillips + Associates

Encl.



APPENDIX A

Site Specific Flood Risk Assessment for Greenpark
as prepared by RPS, Consulting Engineers



APPENDIX B

Lisney Report

**Shannon Minerals,
Pa Healy Road
LCC – C62 – 41**

Kieran O'Hanlon

Response to Chief Executives Report on Public Consultation
and
Motion to Change Landuse Using Zoning in the Draft Plan

On behalf of:

O'Mara Family – Land at Pa Healy Road

January 2022



HRA | PLANNING
chartered town planning consultants

DEVELOPMENT PLANNING | ENVIRONMENTAL PLANNING | MASTERPLANNING

Limerick | Dublin | t: 061 435000 | f:061 405555 | e:info@hraplanning.ie | w:www.hraplanning.ie

Title:	22005a Draft Development Plan Motion
Project:	Response to CE Report & Motion to Change Zoning
Prepared by:	MH
Date:	January 2022
Issue:	Issue 1
<p><i>© Copyright HRA PLANNING. All rights reserved. This report has been prepared for the exclusive use of the commissioning party and unless otherwise agreed in writing by HRA Planning, no other party may copy, reproduce, distribute, make use of, or rely on the contents of the report. No liability is accepted by HRA PLANNING for any use of this report, other than for the purposes for which it was originally prepared and provided. Opinions and information provided in this report are on the bases of HRA PLANNING using due skill, care and diligence in the preparation of the same and no explicit warranty is provided as to their accuracy. It should be noted and is expressly stated that no independent verification of any of the documents or information supplied to HRA PLANNING has been made.</i></p>	

TABLE of CONTENTS

1.0	INTRODUCTION	1
2.0	BACKGROUND	1
2.1	Site Context	
2.2	Adjoining Gaelholaiste	
2.3	Flooding	
2.4	Development Proposal	
3.0	THE CASE FOR MIXED USE DEVELOPMENT	6
3.1	Flooding & Planning Precedence	
3.2	Flooding & the Justification Test	
3.3	Sustainable Neighbourhoods & Sequential Development	
5.0	MOTION TO AMEND THE DRAFT PLAN	13

1.0 INTRODUCTION

HRA PLANNING has been retained by the O'Mara Family to prepare a response to the Chief Executives Report on submissions received in respect of the Draft Limerick Development Plan 2022 – 2028 and to prepare a motion on behalf of Councillor Kieran O'Hanlon to secure a change in zoning from Enterprise & Employment Use to Mixed Use purposes.

A submission was made by AK Planning on behalf of the O'Mara family at Draft Plan stage, setting out the reasons why it was considered that the zoning afforded to the land should be changed from Enterprise & Employment Use to Mixed Use purposes. It is not the purpose of this submission to revisit the issues originally raised, but rather to concentrate on the core reasons why the planning authority does not consider mixed use zoning appropriate to the land as detailed in the Chief Executives Report, including:

- Flooding;
- Justification Test;
- Sequential Approach; and
- Sustainable Neighbourhoods

In advance, it is considered necessary to set out a number of pertinent points regarding the characteristics of the site, in particular its close connections to the city centre, immediately adjoining facilities and services.

2.0 BACKGROUND

2.1 Site Context

The 1.01 hectares brownfield site is situated on a prominent corner site with frontage onto Upper Clare Street, Park Road and the Pa Healy Road as illustrated in Figure 1.0. Brownfield in nature, the site comprises 2,000sqm of vacant industrial building with the existing primary access to the site off Pa Healy Road.

The site is fully serviced with a surface water and gravity foul sewer and a potable water supply. It benefits from public lighting, footpaths and a cycleway route and will adjoin a significant secondary school with capacity to accommodate 750 no. students.

The site is located within a 10 - 15 minute walk of Limerick city centre; a 7 minute walk from St. Johns Hospital; a 4 minute walk from O'Briens Public Park and the Limerick School of Art & Design; and a 25 minute walk from the University of Limerick. The site is also well serviced by existing bus routes, with 2 no. bus stops within a 2 minute walk of the site (See Figure 2.0 for bus stops in the area). The site is effectively serviced by the 323, 341, 323 X and 304A bus routes. The 304A Raheen – University bus route provides effective connectivity to both sides of the city (Raheen & Castletroy) every 20 minutes.

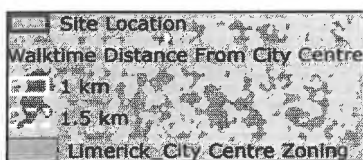
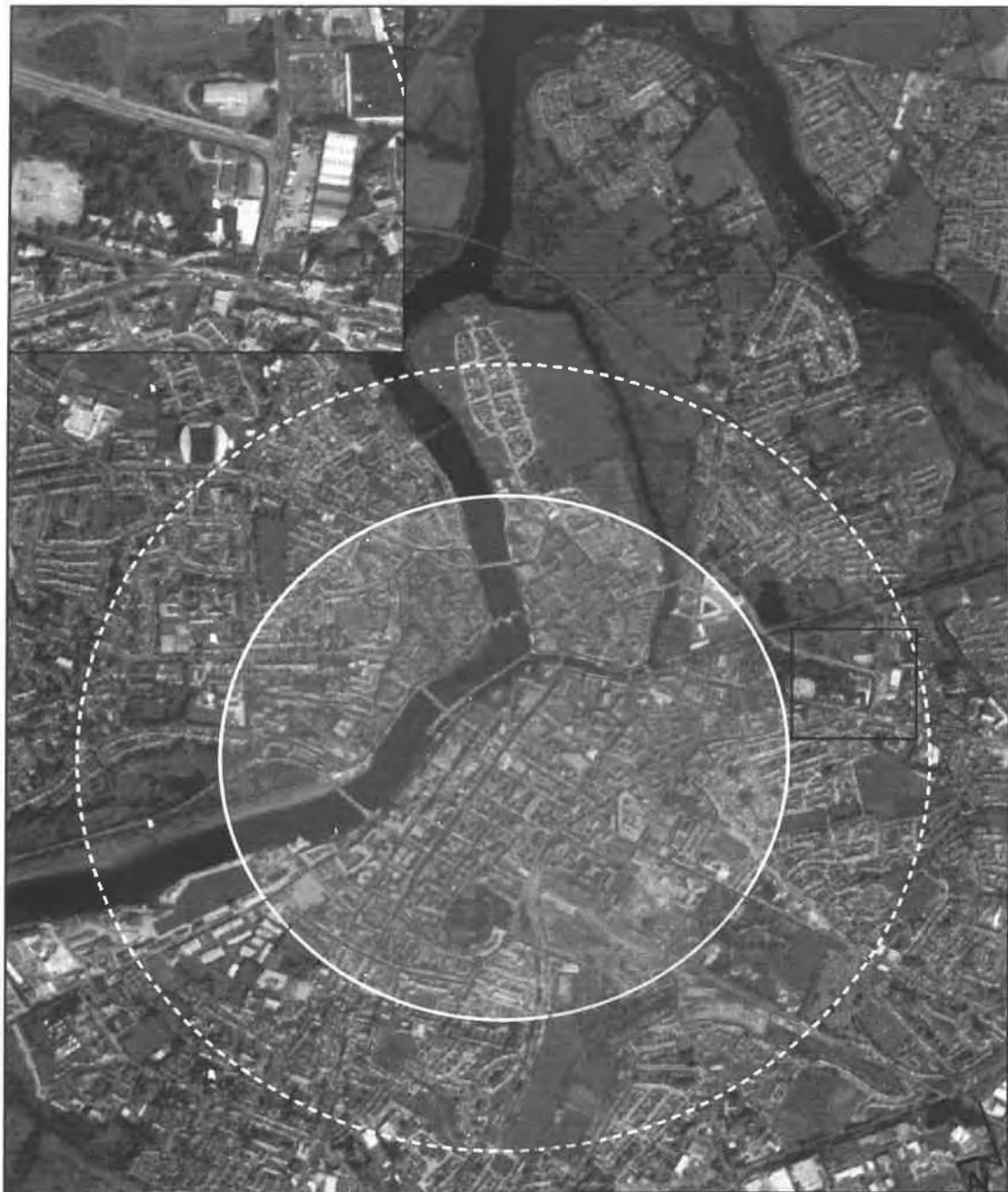


Figure 1.0 Site Location & Context in Proximity to City Core

It is noted that the site will be situated immediately adjacent to the proposed Bus Connects Corridor on the Dublin Road, which will provide a 10 minute regular bus service as per the Limerick Shannon Metropolitan Area Transport Study (LSMATS).

2.2 Adjoining Gaelcholaiste

Significantly, planning permission was recently granted for a new 7.800sqm post primary (Gaelcholaiste) school on adjoining lands to the southwest of the site (old Dawn Dairies site – planning references P19/1252). The primary permitted access to the new school is off the Pa Healy Road, via a shared access with the subject lands. A condition of the shared agreement is that Heavy Goods Vehicles (HGV's) would not utilise the shared access, as to do so would directly conflict with school traffic development.

The agreement with the school was made at a time when the subject land was zoned for mixed use purposes in the Limerick City Development Plan 2010 – 2016 and there was a genuine and realistic assumption that the site would change to residential use in accordance with its mixed use zoning. There was no indication at that time that the subject land would be rezoned to enterprise & employment purposes as proposed in the Draft Plan. The O'Mara family wish to uphold their agreement with the Limerick Clare Education Training Board (LCETB) and facilitate the permitted shared access to the new school. However, the proposed change in zoning of the land to enterprise & employment use is likely to compromise such an agreement as such zoning is likely to result in HGV movements on the access road, contrary to the original agreement.

In such instance, where enterprise & employment use is maintained on the subject site, the O'Mara family shall maintain their existing access arrangements, which permits HGV access. Unfortunately, in such instance a shared access road with the Gaelcholaiste will not be facilitated, notwithstanding the adverse impact that such decision will place on the planning permission granted by Limerick City & County Council.

2.3 Flooding

A Flood Risk Assessment (FRA) was prepared by CS Consulting Group in respect of the land and was submitted to the planning authority as part of the Draft Plan submission. The FRA acknowledges that the site is subject to coastal flooding and contrary to the CFRAM maps, the site is not subject to fluvial flooding.

It is noted that the subject site exhibits the same flooding characteristics as the adjoining Dawn Dairies site on which a new school was granted planning permission (P19/1252). Within the Planning System and Flood Risk Management Guidelines for Planning Authorities (the Flooding Guidelines), a school, similar to residential development is considered to be Highly Vulnerable Development. However, the Justification Test was undertaken in support of the development proposal and was deemed acceptable by the planning authority subject to mitigation measures and management of residual risk. In this instance the school mitigated against flooding by proposing a finished floor level of 5.30mOD.

Similar to the recently permitted school, a mixed use development on the subject site can be comprehensively mitigated to ensure effective management of residual risks.

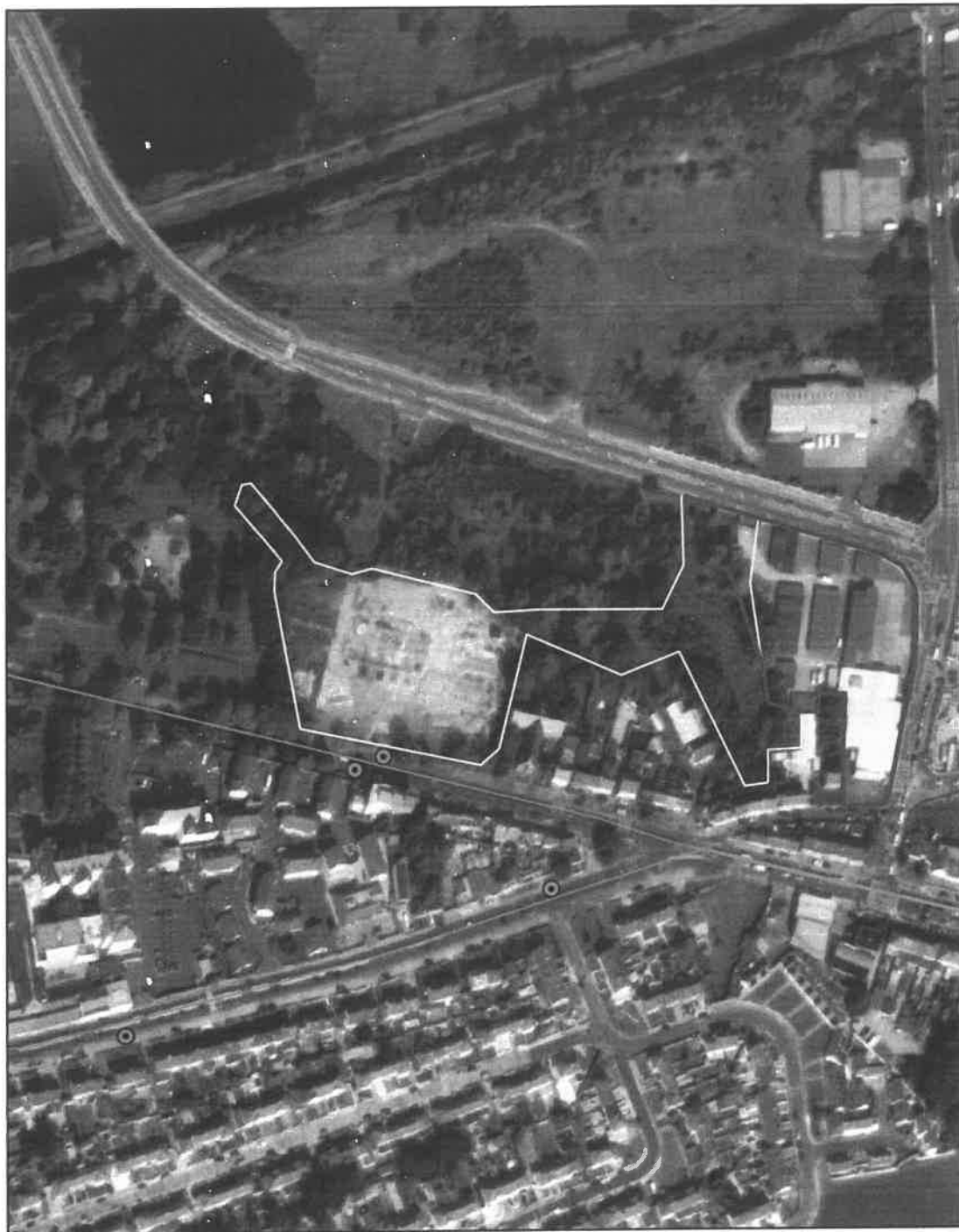
2.4 Development Proposal

Significant resources and financial investment have been spent to date in advancing a development proposal on the site under its current mixed use zoning. An unexpected change in the zoning of the site to proposed enterprise & employment use, will adversely impact such efforts rendering the scheme incompatible with the proposed amended land use zoning.

The proposed development and the design of finished ground levels are responsive to the potential of flood risk. Having conducted a flood risk assessment (FRA), that the level of predicted flood risk, derived from a worst-case coastal flood event (where the probability of flooding from the sea is highest (greater than 0.5% AEP for coastal flooding), would occur in this area at 5.15mOD (Malin). Similar, to the recently permitted school on the adjoining site, a proposed finished floor level of 5.30mOD would provide flood protection against all flood events.

Consistent with the Planning System and Flood Risk Management Guidelines for Planning Authorities (the Flooding Guidelines), and specifically the recommended approach set out in Section 5.16 of those guidelines, the proposed development seeks to mitigate and manage the potential for flood risk through the proposed design in order to further reduce such risk to an acceptable level. In this regard, and as per those Guidelines, the proposed development has adopted a precautionary approach proposing less vulnerable car parking use at ground floor level and maintaining residential use at first floor level thereby ensuring that such use is situated out of the floodplain.

Other mitigation and emergency plan measures can be proposed as part of the development proposal. These include patron awareness and education of flood risk scenarios and protocols and restrictions of use of the parking area in certain instances of flood risk to all residents and patrons of the development as part of operational management mechanisms prior to first and each occupation. This will be delivered by early warning advise and updates which will be sourced from Met Eireann and relayed to residents through the development management. Given the designed finished floor levels, inundation of development will not be anticipated and accessibility in/out of the development will be maintained via the shared access road with the Gaelcholaiste which was permitted under planning permission P19/1252. Such access was deemed safe and appropriate from a flooding perspective when assessed as part of the school proposal and it is considered that such assessment and conclusions would be applicable to the subject site.







-  Site Location
-  School Site location
-  Bus Eireann Routes
-  Bus Eireann Stops



Figure 2.0 Site In Context of Permitted New Post Primary School

3.0 THE CASE FOR MIXED USE ZONING

As per Section 3.7 of the Flooding Guidelines, although there is a need for future development to avoid areas at risk of flooding, it is recognised in the Guidelines that the existing urban structure of the country contains many well established cities and urban centres, which will continue to be at risk of flooding. Accordingly, the flood risk management guidelines do facilitate development within areas of flood risk which contribute to compact sustainable growth of established urban city areas where the type and extent for flood risk has been established, where the potential flood risks can be mitigated, and, where the proposed development would not give rise to residual flood risk effect to the proposed development, or to surrounding people, environment or the economy. It is submitted that development on the subject site, similar to the permitted Gaelcholaiste, can comply with Section 4 of the Flooding Guidelines and therefore should be considered from a zoning perspective.

3.1 Flooding & Planning Precedence

Notwithstanding that Limerick City & County Council has established its own precedence in granting planning permission for the Gaelcholaiste on adjoining land, there is other similar precedence adopted by other Councils in Ireland and approved by An Bord Pleanála. Further to the flood risk management case set out above, the O'Mara Family submit that its interpretation of the Flood Risk Management Guidelines, is consistent with the interpretation and application of those guidelines also by both Cork City Council and by An Bord Pleanála (ABP) in their recent assessment of a planning application for student housing development presented to them.

In this regard, reference is made to a planning application submitted to Cork City Council and subsequently appealed by the first party to An Bord Pleanála for development consisting of the construction of a four-storey student accommodation building located in the Mardyke area of Cork City adjacent to the River Lee (Cork City Council ref: 21/39853 and An Bord Pleanála ref: ABP-309974-21).

In its assessment, the Board acknowledged that that site was identified as being the subject of both a 1% AEP fluvial flood risk and a 0.5% AEP tidal flood risk. The Board thus categorised the site as being with Flood zone A (under the Planning System and Flood Risk Management Guidelines) and the proposed residential use as being highly vulnerable development. Accordingly, the flood risk management Justification Test was applicable to that application. In its assessment of the Justification Test, the Board acknowledged that the site was suitably zoned for residential use, it acknowledged that proposed design levels were raised to exceed predicted worst case flood levels under the 1% AEP flood event scenario; that an emergency plan was proposed which included evacuation of occupants during worst case events, and it considered that the proposed building would represent good urban design, vibrancy and activity of the streetscape. On that basis, the Board stated that the proposed development passed the 'Justification Test' and that the proposed development would be consistent with The Planning System and Flood Risk Management Guidelines.

The applicant submits that there are parallels between that approved scheme and the proposed development. This includes the urban city location proximity to both the city and the university; the same potential coastal flood risk; the suitability of raising the design level and its tie-in with the urban streetscape. In that instance, the River Lee flood relief scheme is not in place, and there are no current urban protection measures other than the design and mitigation. That said, the particular difference from the Cork Mardyke scheme, is that the proposed development the subject of this application, is brownfield in nature, is visually unattractive in its current state and is not reliant upon emergency evacuation and thus is considered an even more appropriate scheme of development without that requirement.

3.2 Flooding & the Justification Test

In order to achieve the aims and objectives and comply with the requirements of the Guidelines, the Local Authority's approach to the zoning of land is to avoid development in areas at risk, where possible and substitute less vulnerable uses, where avoidance is not possible. A precautionary approach has been adopted by the local authority in line with the Guidelines. Whilst this approach is noted and acceptable in principle, it is considered that the Local Authority also has a duty to promote compact growth and to facilitate residential development in proximity to the city core and adjoining services (schools) and facilities (public parks).

The Local Authority state in the Chief Executives Report that in considering the Justification Test the Draft Plan takes a City Centre first approach to the spatial development of Limerick City and Environs. It is stated that 'the core' is defined as the area zoned "City Centre". As detailed in Section 2(iii) of the Justification Test, the subject site must be either within or adjoining the core. As detailed in the Justification Test below (Table 1.0) and illustrated in Figure 1.0, the subject site adjoins the city centre zoned area. The O'Mara family thus submits, contrary to the opinion of the local authority, that the proposed development does in fact comply with the Justification Test, similar to the adjoining Gaelcholaiste development on adjoining lands recently granted planning

Criteria to be Addressed

The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.

Planning Response

Limerick has been identified in the National Planning Framework (NPF) as one of the five cities in the country which is the subject of a Metropolitan Area Strategic Plan. This emphasises the Metropolitan Area's national importance, for significant additional growth. This is echoed in the Regional Spatial and Economic Strategy for the Southern Region, which mentions that the Limerick Shannon Metropolitan area is "a key economic driver for the region and Ireland". Limerick has been identified for significant population growth in the NPF along with an objective that 50% of that future growth be located within the city and its suburbs. (NPO2a).

The City is located at a pivotal point on the Atlantic Economic Corridor. The NPF and RSES confirms that Limerick has the potential to generate and be the focus of significant employment and housing growth.

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 and, in particular:

- a. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement
- b. Comprises previously developed and/or under-utilised land.
- c. Is within or adjoining the core of an established or designated urban settlement.

The subject site is brownfield in nature and along with adjoining lands is in need of regeneration. An adjoining site comprising the former Dawn Dairy complex is to be redeveloped as a school. This regeneration initiative cannot be considered in isolation and synergies between the school site and neighbouring brownfield land must be exploited to ensure sustainable compact growth and mixed use development.

The land is brownfield in nature comprising circa 2,000sqm of an industrial building with extensive hardcore material over the entirety of the site. The site previously operated as Shannon Minerals but closed its doors a number of years ago. The juxtaposition of the site with high visibility frontage onto three public roads, reinforces the need for high quality development and regeneration of the site.

The site adjoins the centre of the urban settlement (city core). As illustrated in Figure 1.0 the city centre zoning (blue) extends for a distance of 1.5km, encompassing a 15 minute walk-time. The subject site is located within the 10 and 15 minute walk-time catchment and is situated the same distance from the center of Limerick city as the city centre zoning that covers the Colbert Station lands The Pa Healy Road was originally constructed to open up land for development and to provide a connection between Rhebogue and Corbally.

Development on the subject land would facilitate such regeneration and development within walking distance of the city core.

- d. Will be essential in achieving compact and sustainable urban growth.

The site is fully serviceable, has both pedestrian and cycle links, is served by existing public transport and neighbours a proposed Bus Connects route. It is located within a 15 minute walk of the city core, adjoining city centre zoning. It adjoins a proposed new 750 student school, is located beside a public park, is within 7 minutes walking distance of an established hospital and within a 25 minute walk of the university. It is situated adjoining city centre zoned land. Its development would result in increased synergies, generating a sustainable mix of uses.
- e. 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.

It is requested that the site is afforded a mixed use zoning capable of accommodating residential use. There are no other identified mixed use zoned sites in closer proximity to the city centre. Most of the mixed use and residential zoned lands in Limerick are located in the 'suburbs' at out of centre locations, substantially removed from the city centre. Development of the subject site would facilitate compact growth and provide for housing in an area of the city accommodating substantial existing and proposed new services including a new school. Population growth should be located in proximity to such infrastructure, resulting in shared trips and enhanced connectivity.

A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment

Table 1.0 Justification Test (Box 4.1 of Guidelines)

The Limerick City Development Plan 2010 – 2016 identified various strategically located urban centres and zoned land whose continued growth and development is/was encouraged in order to bring about compact and sustainable urban development and more balanced regional development. The subject site is one of the very few sites adjoining the city centre that remains undeveloped and which is capable of immediate development. Therefore, in full consideration of the Planning System and Flood Risk Management Guidelines, the subject site complies with Box 4.1 Justification Test of the Guidelines and it is submitted that the subject lands should be appropriately zoned to accommodate development.

3.3 Sustainable Neighbourhoods & Sequential Development

The National Planning Framework (NPF) seeks to achieve more compact and sustainable growth through consolidating a greater share of future development within the existing built footprint of settlements, to include new homes, businesses and amenities. The NPF sets national targets for brownfield/infill housing development in cities (50%) to support the regeneration of existing urban areas. NPF compact growth objectives together with Town Centres First principles are focused on the reuse of previously developed buildings and land and building up 'infill' sites, especially those that are centrally located in settlements at all scales.

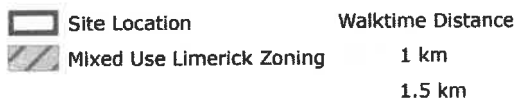
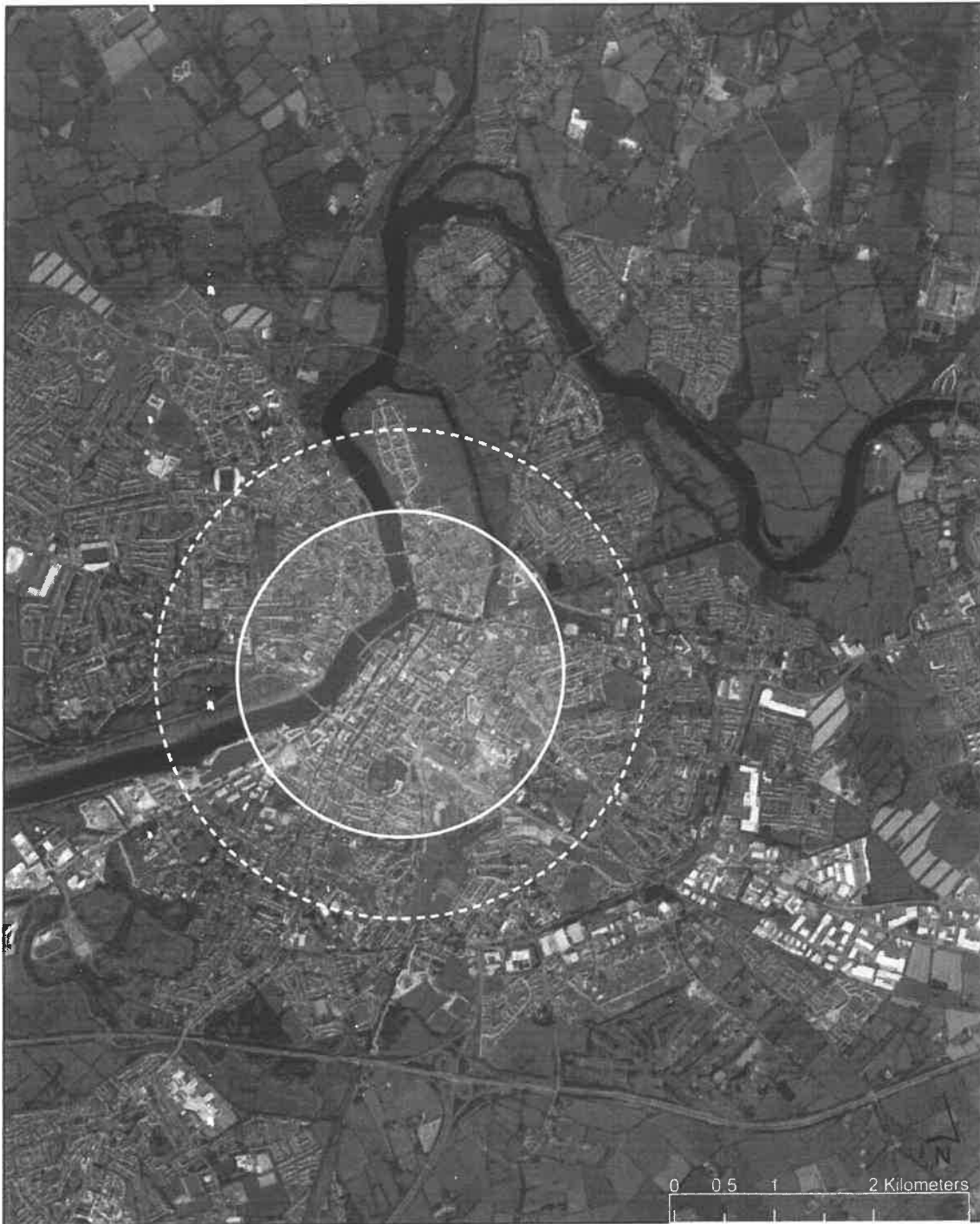
SPPR DPG 7 of the Draft Development Plan Guidelines states that,

"Planning authorities shall adopt a sequential approach when zoning lands for development, whereby the most spatially centrally located development sites in settlements are prioritised for new development first, with more spatially peripherally located development sites being zoned subsequently".

The subject site adjoins the city centre, is within a 15 minute walking distance of services and facilities in the city core, adjoins a proposed new school and neighbours an existing hospital. The land is accessible with adequate water services and facilities. The principle of developing this land has always been acceptable, with the land zoned for mixed use purposes in previous development plans.

Zoning this brownfield site for mixed use purposes will ensure that a portion of new development reflects the compact growth and town centres first agenda, which is also a key dynamic in addressing climate change, through reducing dependence on car-based transport, the extent of green-field land consumption and costly and inefficient infrastructure provision and use. In this instance, the development plan is provided with an opportunity to deliver a framework for development, which ensures a close correlation between facilitating residential and mixed uses on land with infrastructural capacity whilst also ensuring that a substantial element of future growth adjoining the city centre.

The case for mixed use zoning has already been established in the Draft Plan with 4 no. sites already identified in the environs of the city, well removed from the city core, as detailed in Figure 3.0.



HRA | PLANNING
chartered town planning consultants

Figure 3.0 Extent of Mixed Use Zoning in Draft Plan

It is confirmed that the subject land falls within Tier 1 land, which is suitable for development in the short term and during the life of the proposed Development Plan, at no cost to Exchequer, as detailed in Table 2.0.

Whilst the land has capacity for 50 no. additional units and which will need to be added to the core strategy, it should be noted that the land could be developed for a mix of residential and other uses. Accordingly, only a percentage of the estimated residential yield from the site land needs to be included in the core strategy table.

Site Capacity Audit		
Area of Site	1.01 hectares gross	
Site in Built-Up Area	Within 15 minute walk-time of city centre	
Service Status	Tier 1	
	Lighting	✓
	Footpaths & Cycle Lanes	✓
	Public Transport	●
	Road Access	✓
	Water	✓
	Foul	✓
	Surface Water	✓
	Flood Risk	✗
	Infill / Brownfield	✓
	Proximity to Schools	✓
Assumed Residential Density	50 units per hectare ¹	
Estimated Residential Yield from Site	50 units max	
Planning History	Historical planning permission for industrial uses	

Table 2.0 Site Capacity Audit as per Draft Development Plan Guidelines (merged with structure proposed in Draft Plan).

¹ Minimum 50 units per hectare in proximity to bus corridor as per Design Standards for New Apartments

4.0 MOTION TO AMEND THE DRAFT PLAN

It is hereby requested that the enterprise and employment landuse zoning afforded to land located at the junction of Upper Clare Street, Park Road and the Pa Healy Road as illustrated in Figure 1.0 is changed to mixed use zoning.

It will be necessary to insert a new 'Section 10.4.2.14 Pa Healy Road' into the Draft Plan in Chapter 10: Compact Growth and Revitalisation to ensure compliance with the existing plan structure. The text proposed is as follows:

Section 10.4.2.14 Pa Healy Road

The 1.01 hectares brownfield site is in a prominent location with road frontage on three sides. The site and adjoining land (former Dawn Dairies) require significant regeneration in a coordinated and holistic manner facilitating mixed uses and associated synergies whilst ensuring sustainable compact growth

Objective----- Pa Healy Road

It is an objective of the Council to:

- a) Facilitate creation of a mixed use / residential development
- b) Enhance the character of the area through urban design and placemaking, incorporating buildings of high quality design having regard to the sites prominent location surround by public road on three sides;
- c) Require provision of an integrated sustainable mobility network, with walking, cycling and public transport as the main components
- d) Ensure green infrastructure is a key component of the design and layout
- e) Provide a single coordinated access from Pa Healy Road to the site with provision for made for access to the adjoining Dawn Dairies site to the south west
- e) Promote a site-specific approach, reflecting emerging best practice, in addressing flood risk and prepare a Site Specific Flood Risk Assessment in accordance with the Planning System and Flood Risk Management Guidelines for Planning Authorities.

It will be necessary to amend Section 12.3 of the Draft Plan in respect of Land Use Zoning Objectives (additional text shown in red) as follows:

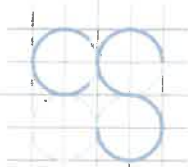
Objective: To provide for a mixture of residential and compatible commercial uses.

Purpose: To facilitate the use of land for a mix of uses, making provisions, where appropriate for 'primary' uses i.e. residential and combined with other compatible uses e.g. offices as 'secondary'. These secondary uses will be considered by the Local Authority, having regard to the particular character of the area. A diversity of uses for both day and evening is encouraged. These areas require high levels of accessibility, including pedestrian, cyclists and public transport (where feasible). Opportunity sites set out in Chapter 10: Compact Growth and Revitalisation, include Mixed Use zoned lands located at Towlerton, Parkway Valley, Thomond Park, and the Pa Healy Road which have been accounted for in the Core Strategy figures. In

In addition, the Draft Retail Strategy has identified capacity for additional retail floor space in Moyross, which could be accommodated on the Mixed Use lands at The Bays identified for employment uses only.

Briefing Note – O'Mara Family Lands

- It is requested that the enterprise and employment landuse zoning afforded to land in the Draft Plan located at the junction of Upper Clare Street, Park Road and the Pa Healy Road, measuring 1.01 hectares, is changed to mixed use zoning.
- The site is currently zoned for mixed use development in the existing City Development Plan, is brownfield in nature and requires regeneration.
- It is optimally located neighboring a permitted post primary school (Gaelcholaiste), O'.Briens Public Park, Limerick School of Art & Design, St. Johns Hospital and is within a 10-15 minute walk of the city centre core.
- A single joint access to the site has been permitted off the Pa Healy Road with the adjoining Gael Cholaiste as part of their permission on condition that no HGV traffic utilises the access road. The proposed Enterprise & Employment Use Zoning will result in HGV traffic and compromise delivery of this access road.
- The site is subject to coastal flooding and exhibits the exact same characteristics as the Dawn Dairy site which was granted planning permission for a school (P19/1252).
- Both a school and residential use fall into the same 'vulnerability category' as per the Flooding Guidelines and both sites require / required a Justification Test.
- If planning permission was recently granted for a school on adjoining lands with the exact same flooding characteristics, then there is no reason why residential use could not be considered appropriate on the subject site.
- Significant resources and financial investment have been spent to date in advancing residential development on the site under its current mixed use zoning.
- The site can provide similar flood mitigation measures as the adjoining permitted Gaelcholaiste.
- Cork City Council and An Bord Pleanála recently granted permission for a significant residential development adjacent to the River Lee which was also located in Flood Zone A as it was deemed to pass the Justification Test (ABP 309974-21).
- The Justification Test requires a site to be either within or adjoining the city core. The subject site adjoins the city core. The city centre zoning extends to a 1.5km distance in parts and the subject site is located within a similar catchment. For example, the subject site is situated the same distance from the centre of Limerick city as the city centre zoning that covers the Colbert Station lands.
- The case for mixed use zoning has already been established in the Draft Plan with 4 no. sites already identified in the environs of the city, well removed from the city core.
- The land falls within Tier 1 land, which is suitable for development in the short term and during the life of the proposed Development Plan, at no cost to Exchequer



CRONIN & SUTTON CONSULTING (part of the CS Consulting Group)
19-22 Dame Street, Dublin 2, D02 E267, Ireland

T 353 1 5480863

E info@csconsulting.ie

W www.csconsulting.ie

**CS CONSULTING
GROUP**
DUBLIN - LONDON - LIMERICK

Flood Risk Assessment For Downes Family Site, Pa Healy Road, Limerick.

Client: Downes Family

Job No. F012L

August 2021

Limerick Office

45 O'Connell Street
Limerick, V94 XE18
Ireland

T: 353 (0)61 594988
E: info@csconsulting.ie
W: www.csconsulting.ie

London Office

45 Beech Street
London, EC2Y 8AD
UK

T: +44 (0) 207 070 3660
E: info@csconsultinguk.com
W: www.csconsultinguk.com

KP & Associates Consulting Engineers Ltd. T/A Cronin & Sutton Consulting

Directors: K. Cronin, D. Rehill, O. Sullivan, P. Sutton

Associate Directors: N. Barrett, R. Fitzmaurice, M. McEntee, L. McNamee Associates: C. Twomey, C. Barry

Registered Office: 1st Floor, 19-22 Dame Street, Dublin 2, D02 E267, Ireland | Company No. 505303



Flood Risk Assessment

For Downes Family Site, Pa Healy Road, Limerick.

CONTENTS:

1.0	Introduction	1
2.0	Fluvial & Coastal Mapping & The Proposed Site	2
3.0	Site Description	4
4.0	Proposed Development	7
5.0	Definition of Flood Risk	8
6.0	Potential Flood Risk & Mitigation Measures	10
7.0	Justification Test	11
8.0	Conclusions	14

Appendix A: Fluvial Mapping

Appendix B: Coastal Mapping

Appendix C: Topographical Survey

Appendix D: Notional Proposed Development Layout

This Report was prepared by CS Consulting Engineers for the benefit of its Client only. The contents of this Report are shared with interested parties for information only and without any warranty or guarantee, express or implied, as to the accuracy, reliability or completeness of its content. This Report cannot be relied on by any party other than the party who commissioned it.

Job Ref:	Author	Reviewed By	Authorised	Issue Date	Rev No.
F012L	SC	GC	GC	August '21	1

1.0 INTRODUCTION

Cronin Sutton Cotter were appointed by the Downes Family to carry out an appropriate level of Flood Risk Assessment for the site of a proposed Mixed-Use development at Pa Healy Road in Limerick City. See below site location map Fig 1.

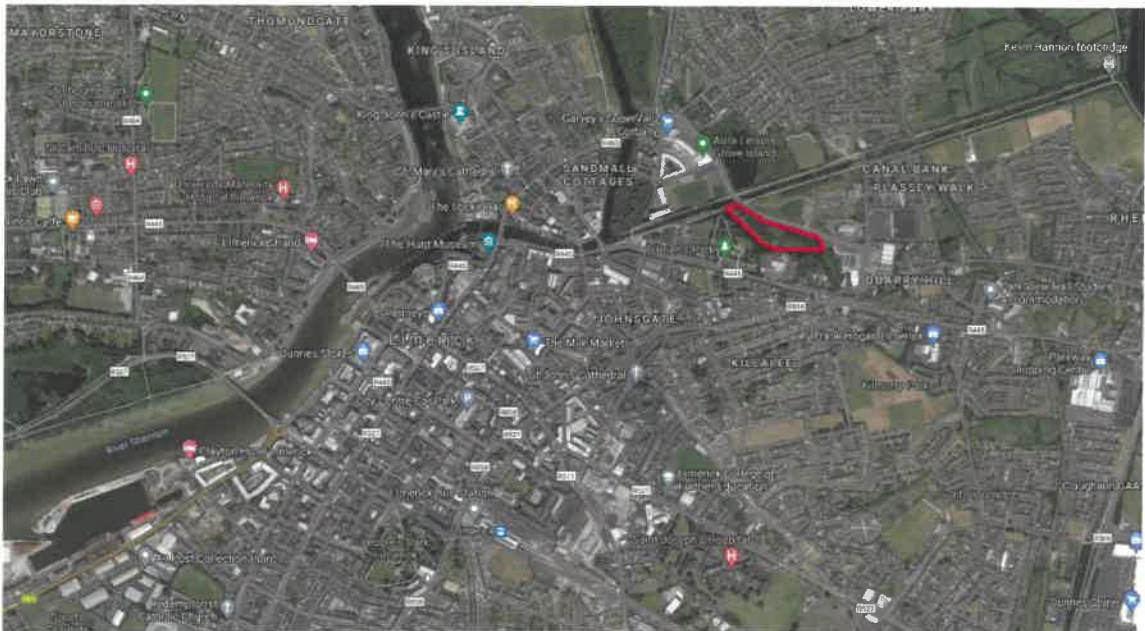


Figure 1 – Current Aerial (Google Maps) - location of development site in red.

In preparing this report Cronin Sutton Cotter Consulting Engineers have made reference to the following:

- Limerick City Development Plan 2010 – 2016,
- Office of Public Works, (OPW) via Floodinfo.ie.
- Ordnance Survey of Ireland, (OSI),
- The Department of the Environment, Community & local Government – flooding documents, notably, *The Planning System & Flood Risk Management: Guidelines for Planning Authorities & Technical Appendices.*

2.0 Fluvial & Coastal Mapping & Proposed Site

An extract from map no. S2526LIK_EXFCD_F1_59 Fluvial Flooding Extent with site outline marked in red can be seen in Fig.2 below. Full map is attached within Appendix A.

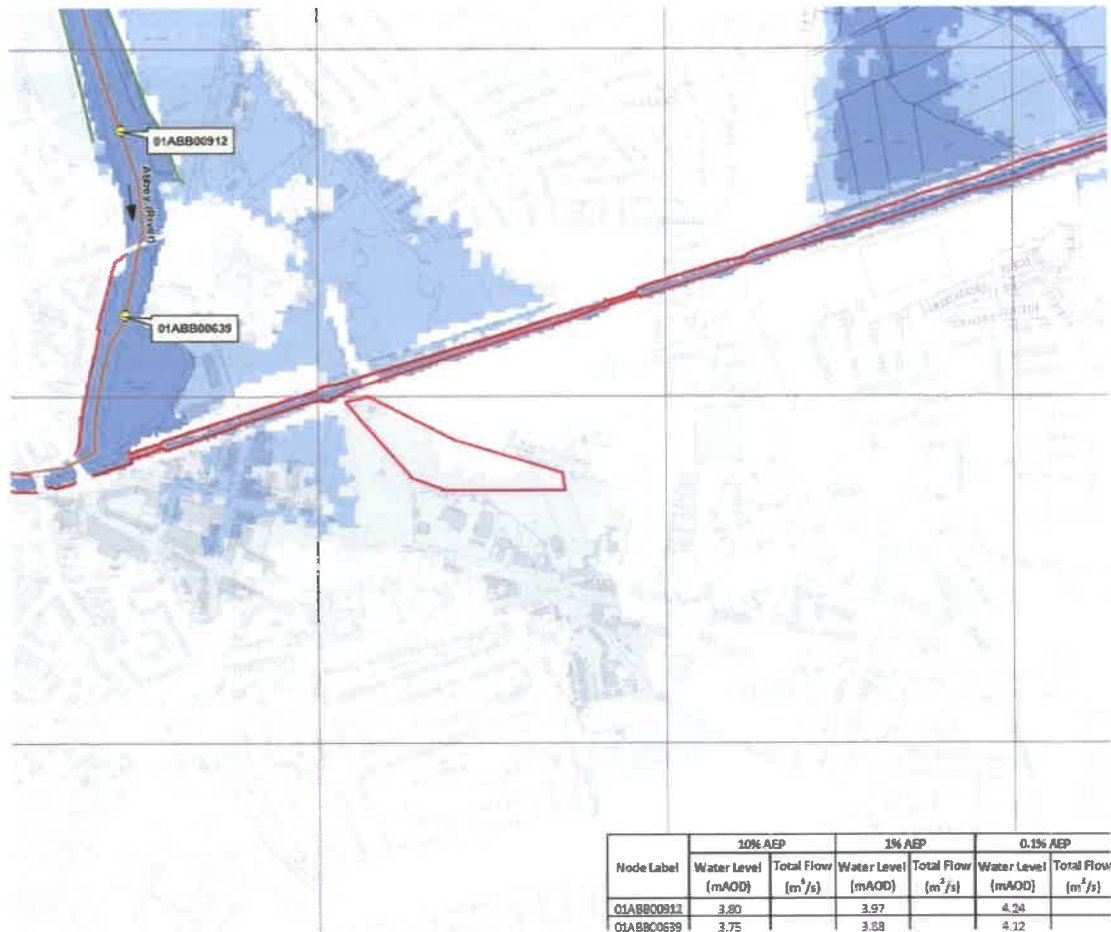


Figure 2 –Current CFRAM Fluvial Map with site marked on in red.

The map shows a large part of the site as being within the 0.1% AEP flood zone and that means that this part of the site has an 'Annual Exceedance Probability' of 1 in 1000 chance of being exceeded or an event occurring. In terms of predicted fluvial flood levels, the node most relevant to the site on the map is 01ABB00639 and the 0.1% AEP water level is 4.12m AOD.

The extract below is taken from the Coastal Map (S2526LIK_EXCCD_F1_59) and indicates that there is a notable portion of the site liable to flood but is in an area being defended from coastal/tidal flooding, with a 'Standard of Protection' equivalent to 0.5% AEP, or 1 in 200-year event. See Fig. 3 below with site marked on in red. The full map can be found within Appendix B of this report.

In terms of predicted coastal/tidal flood levels, the node most relevant to the site on the map is 01ABB00639 and the 0.1% AEP water level is predicted to be 5.15m AOD.

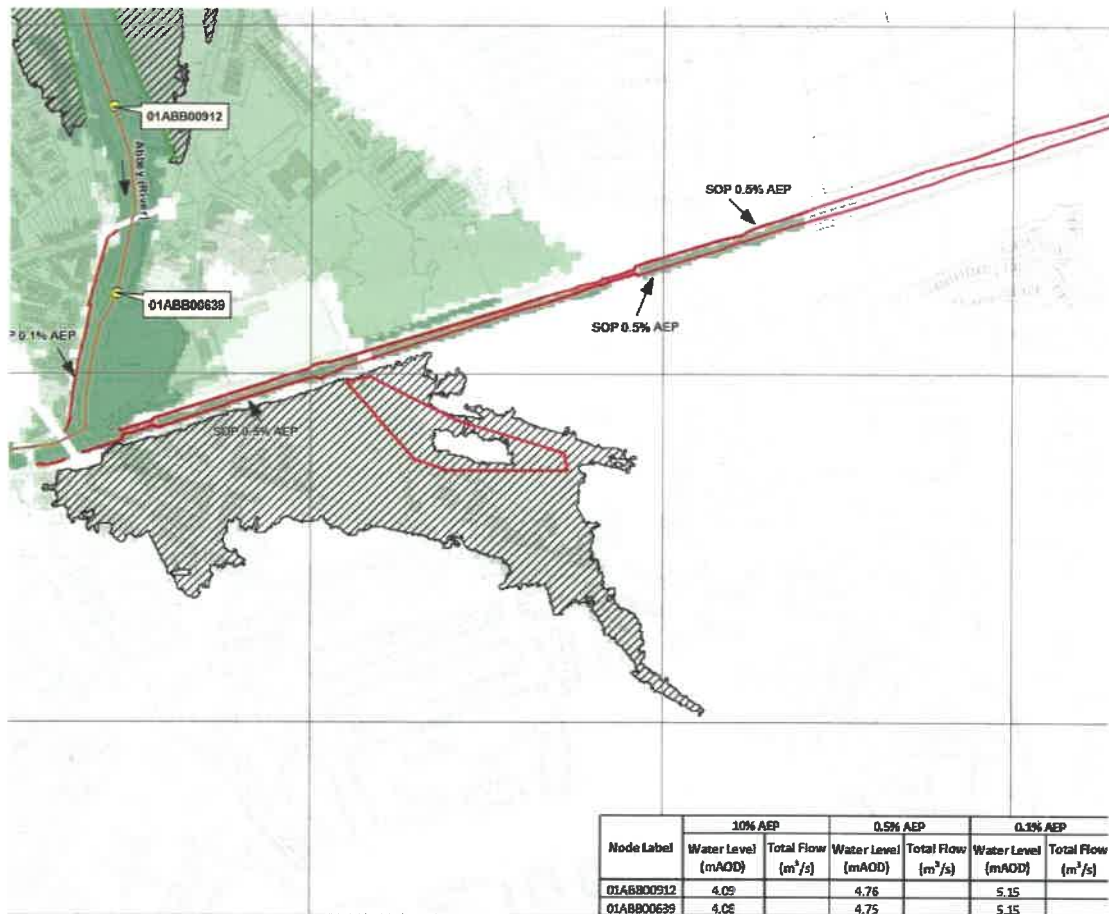
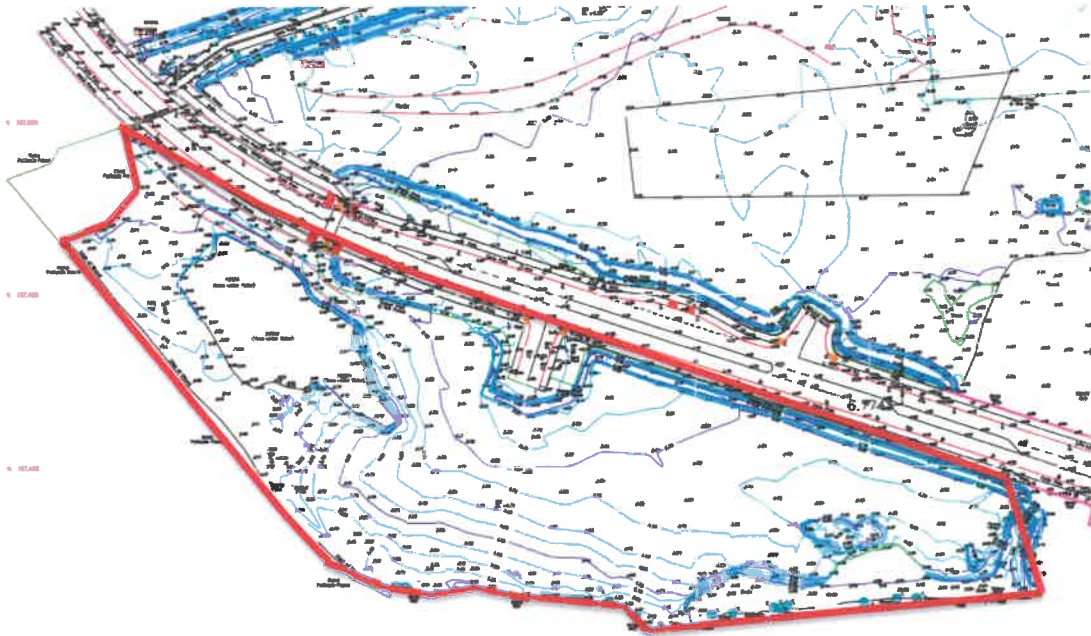


Figure 3 – Current CFRAM Coastal Map with site marked on in red.

3.0 SITE DESCRIPTION

The development site is as shown in Figure 4 below.



A topographical survey of the site is attached in Appendix C of this report. There are public footpath, cycle lane and roadway (Pa Healy Road) on the northern boundary, with third party lands on the eastern and southern boundaries, including the Clare Street Recreation Park. At the western boundary, there is a Local Authority pumping station, which is part of the Limerick Main Drainage infrastructure, and public walking amenities alongside the Park Canal, see photos below.

Along the southern boundary of the site, there is a 'Maintenance Right-of-Way' to facilitate any potential future works required to the Limerick Main Drainage scheme, formerly known as the Loggers Stream, which is now piped.

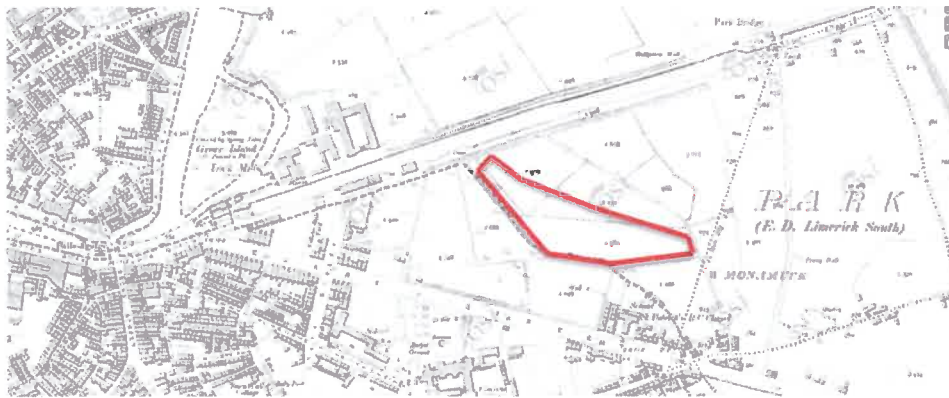
The western end of the site is at a low level, significantly below the level of the Pa Healy Road itself, see photos below. A large part of this area contains reed growth and standing water or ponding which is visible from the Pa Healy Road and can be seen on the topographical survey also. This area is adjacent to the Clare Street Recreation Park, which appears to be noted as wet land on the 1913 historic OSI mapping shown below the photos.



F012L – Downes Family Site, Pa Healy Road, Limerick.

At the existing site entrance and along Pa Healy Road, the topographical survey shows the site to have higher ground levels. This eastern end of the site is immediately adjacent to the site of the proposed Gaelscoil (Planning Reference 19/1252), which has received planning permission and construction is reportedly imminent.

The development of the area and the site is summarised in the historic mapping (OSI) below showing 1913, 2000 and 2012 respectively.



F012L – Downes Family Site, Pa Healy Road, Limerick.

4.0 PROPOSED DEVELOPMENT

While a finalised site layout is not confirmed at this time, a notional proposed site layout is shown below. It is proposed that a large proportion of the site will be soft landscaping including all the west end of the site adjacent to the Clare Street Recreation Park, possibly incorporating a Storm Water Retention Pond.



The majority of this Mixed-Use development will be concentrated around the existing entrance to the site and along the road frontage of Pa Healy Road, essentially the highest level of the lands. Some development may take place towards the southern boundary to compliment the proposed buildings given permission as part of the Gaelscoil with planning reference 19/1252. A large portion of the east end of the development will include hard landscaping such as circulation road and car parking (non-vulnerable development) but with SUDS measures incorporated to minimise attenuation requirement and to minimise loss of floodplain (retain existing levels as far as is practical).

5.0 DEFINITION OF FLOOD RISK

There is an existing inherent risk of any flood event occurring during any given year. Typically, this likelihood of occurrence was traditionally expressed, for example, as a 1-in-100 chance or a 100-year storm event happening in any given year.

A less ambiguous expression of probability is the Annual Exceedance Probability (AEP), which may be defined as the probability of a flood event being exceeded in any given year. Therefore a 1-in-100-year event has a return period of 1% AEP flood event, similarly a 100% AEP can be expressed as a 1-in-1-year event.

5.1 *The Planning System and Flood Risk Management, Guidelines for Planning Authorities* set out the best practice standards for flood risk assessment in Ireland. These are summarised in Table 1.0 below (Table 8.1 from Guideline's document).

Flooding Source	Drainage	River	Tidal/Coastal
Residential	1% AEP	0.1% AEP	0.1% AEP
Commercial	1% AEP	1% AEP	0.5% AEP
Water-compatible (Docks, marinas)	-	>1% AEP	>0.5% AEP

Table 1.0: Summary of Level of Service – Flooding Source.

Under these guidelines a proposed development site has first to be assessed to determine the flood zone category it falls under.

5.2 It is a requirement of the Department of the Environment, Community & Local Government flooding guidelines, *The Planning System and Flood Risk Management, Guidelines for Planning Authorities*, that the predicted effects of climate change are incorporated into any proposed design.

Design Category	Predicted Impact of Climate Change
Drainage	10% Increase in rainfall
Fluvial (River flows)	20% Increase in flood flow

Table 2.0 The predicted climate change variations.

5.3 The flooding guidelines categorise the risks associated with flooding into three areas, Zone A, B & C. This categorisation is indicated below.

- **Zone 'A'** – High Probability of Flooding. Where the annual exceedance probability of flooding from rivers and sea is highest (10% annually or 1 in 10 for river flooding and coastal flooding).
- **Zone 'B'** – Moderate Probability of Flooding. Where the annual exceedance probability of flooding from rivers and sea is moderate (1% annually or 1 in 100 and 0.5% annually or 1 in 200 for coastal flooding).
- **Zone 'C'** – Low Probability of Flooding. Where the annual exceedance probability of flooding from rivers and sea is moderate to low (0.1% annually or 1 in 1000 for both rivers and coastal flooding).

In accordance with the *Planning Systems and Flood Risk Management Guidelines for Planning Authorities*, **Mixed-Use (incorporating residential) developments are classified as 'highly vulnerable developments'**.

5.4 The flooding guidelines have developed an 'appropriateness' matrix for various developments and their potential risk factor.

As noted above, a Mixed-Use (incorporating residential) development is classified as 'highly vulnerable' and as the site is confirmed by CFRAM mapping to potentially flood, a justification test is required. See Section 7.0 for justification test for the proposed scheme.

6.0 POTENTIAL FLOOD RISKS & MITIGATION MEASURES

6.1 Fluvial Flooding

Fluvial flooding is the result of a river exceeding its capacity and excess water spilling out onto the adjacent floodplain. The subject site is located near the River Shannon and Park Canal.

Fluvial mapping shown in section 2.0 above shows a large portion of the site to be at a low risk (0.1% AEP) of flood water rising to 4.12mAOD. The existing levels on the site vary from 5.0mAOD at the existing site entrance and along the north-east boundary of the site (along Pa Healy Road), to between 3.0 and 3.5mAOD along the southern boundary and for the majority of the western end of the site.

6.2 Coastal/Tidal Flooding

Coastal flooding in this instance is the result of the river exceeding its capacity and excess water spilling out onto the adjacent floodplain, when influenced by the tidal movements at the coast/estuary. The subject site is located near the River Shannon and Park Canal.

Coastal/Tidal mapping shown in section 2.0 above shows a large portion of the site to be at a low risk (0.1% AEP) of flood water rising to 5.15mAOD, subject to the failure or over topping of the local flood defences which provide a standard of protection to 0.5% AEP. As noted above, the existing levels on the site vary.

6.3 Mitigation Measures

The majority of the existing site levels will be maintained as far as is practical, particularly all the western end of the site and along the southern boundary and these areas will consist of soft landscaping and non-vulnerable uses.

The majority of the mixed-use development will be constructed at the highest part of the site on the road frontage to Pa Healy Road. Finished floor levels of 5.3mAOD will be adopted, ie, 5.15mAOD plus 150mm for climate change,

similar to the recently permitted adjacent development of the Gaelscoil.

7.0 JUSTIFICATION TEST

- 7.1 In accordance with *The Planning system and Flood Risk Management issued by the Department of the Environment, Heritage and Local Government* a site should be classified accordingly.
- 7.2 The subject lands are deemed '*highly vulnerable*', and the site is confirmed to flood by the CFRAM mapping and so, as such, a justification test is required.
- 7.3 There are two parts to the justification test, (A) *Justification Test for Development Plans* and (B) *Justification Test for Development Management*. The Justification Test for Development Plans is intended to inform land-use zoning decisions in the preparation of a Development Plan.
- 7.4 The subject lands are zoned for mixed use development in the current Limerick City & Council Development Plan. CSC have carried out a type (A) *Justification Test for Development Plans*, see section 6.5 and a type (B) *Justification test for Development Management*, see section 6.6.
- 7.5 Justification Test for Development Plans

Justification Test for Development Plans	
1.0 Urban settlement is targeted for growth.	Yes: The subject site is located within Limerick City, which is targeted for growth and in need of housing and associated facilities.
2.0 The zoning or designation of the lands for the particular use or development type is required to achieve proper planning and sustainable development of the urban settlement and, in particular:	
i. Essential to facilitate regeneration and / or expansion of the centre of the urban settlement.	Yes: This site is in an established area of the city. Development in this area is a mixture of retail, commercial and residential. This site is considered a high profile, infill site, appropriate for a mixed-use development and for the expansion of the city.

ii. Comprises significant previous development and / or underutilised lands.

The River and Canal along this stretch primarily flows through the built-up established City of Limerick. The site has been underutilised for many years, particularly since the construction of the Pa Healy Road prior to 2010. Specific access to the site was developed as part of the Pa Healy Road construction. There is existing development to the east, south and west boundaries of the site.

iii. Is within or adjoining the core of an established or designated urban settlement.

Yes: The land forms part of an established, large urban settlement.

iv. Will be essential in achieving compact and sustainable urban growth.

Yes: See responses to (i), (ii) and (iii) above.

v. There are no suitable alternative lands for the particular use or development type, in the areas at lower risk of flooding within or adjoining the core of the urban settlement.

There are no alternative suitably zoned lands available for significant development with equivalent proximity to the city centre, recently constructed road infrastructure and Limerick Main Drainage underground services.

3.0 A Flood risk assessment to an appropriate level of detail has been carried out.

Yes.

Conclusion: The subject site passes the Justification Test for Development Plans.

7.6 Justification Test for Development Management

Justification Test for Development Management	
1.0	<p>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.</p> <p>The subject lands are zoned 'Mixed-Use', which includes Residential development.</p>
2.0	<p>The proposal has been subject to an appropriate flood risk that demonstrates:</p> <p>(i) <i>The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk;</i></p> <p>Yes, the lower levels of the site up to 4.12mAOD, will be allowed to flood in the event of fluvial flooding. In the event of coastal/tidal flooding as a result of a breach of the local flood defences (greater than a 1 in 200-year event), flood levels could rise to 5.15mAOD. Based on existing levels of the site and surrounding lands, there will be minimal loss of flood plain as a result of this development. While some areas of the site will change from soft landscape to hard landscape, SUDS measures will be incorporated to minimise any contribution to flood risk elsewhere, but overall flood risk will not be reduced.</p> <p>(ii) <i>The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible;</i></p> <p>Yes, the ground floor residences proposed will have a finished floor level 5.3mAOD, 150mm above the highest flood level that could be reached in the event of a breach of the local flood defences.</p> <p>(iii) <i>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 provisions for emergency services access;</i></p> <p>Yes, emergency services access around all the buildings will be maintained. SUDS measures will be incorporated to minimise the residual risk to the site from</p>

fluvial flooding. Finished floor levels of 5.3mAOD will provide adequate flood protection for buildings.

(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.

Yes: the development will be in accordance with planning objectives and in accordance with development and flooding prevention guidelines.

Conclusion: The site passes the Justification Test for Development Management.

8.0 Conclusions

- 8.1 CFRAM mapping indicates a large portion of the site may be subject to fluvial flooding and also a similar large portion of the site may be subject to coastal/tidal flooding in the event of a breach of the local flood defences. However, existing site levels suggest that fluvial flooding at 4.12mAOD will only affect the lower areas of the site to the west and the south.
- 8.2 As noted above, a mixed-use (incorporating residential) complex is classified as 'highly vulnerable' and as flooding is predicted to occur on the site, a Justification Test is required to be carried out. This is carried out in detail in section 7.0 above and in our opinion the site passes both parts of the Justification Test.
- 8.3 Mixed-Use/Residential development is proposed at ground level and a finished floor level of 5.3mAOD will be adopted, ie, 150mm above the highest flood level of 5.15mAOD in the event of a breach of the local flood defences. Existing ground levels will, in general, be maintained and utilised as surfaced car parking or soft landscape. A nett increase of hard surface will arise, but SUDS measures will be adopted to manage the resultant storm water accumulation.

Appendix A

Fluvial Mapping

Location Plan:



Legend:

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

- 10% AEP Fluvial Flood Extent
(1 in 10 chance in any given year)
- 1% AEP Fluvial Flood Extent
(1 in 100 chance in any given year)
- 0.1% AEP Fluvial Flood Extent
(1 in 1000 chance in any given year)

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



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

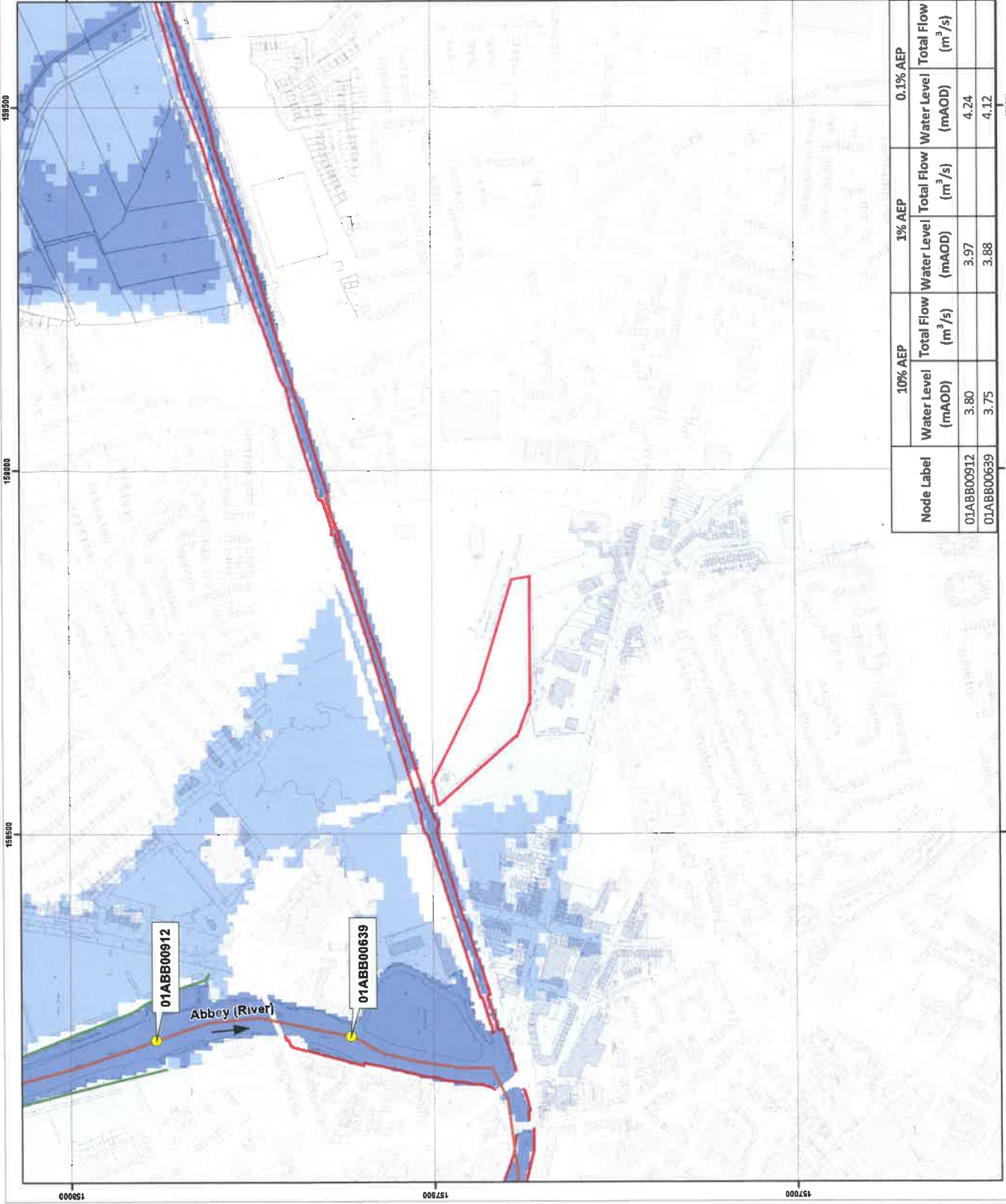


Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project: SHANNON CFRAM STUDY
Map Type: EXTENT
Source: FLUVIAL

Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH
Checked by:	KM
Reviewed by:	MC
Approved by:	PS
Date:	June 2016
Date:	June 2016
Date:	June 2016
Map No.:	S2526LJK_EXFOD_F1_59

Sheet: 59 of 65
Map Scale: 1: 5000
Plot Scale: 1:1 @ A3
Revision: 0



Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)
01ABB00912	3.80	3.97	3.97	4.24	4.24	4.12
01ABB00639	3.75	3.88	3.88	4.12	4.12	4.12

Appendix B

Coastal Mapping

Location Plan:



Legend:

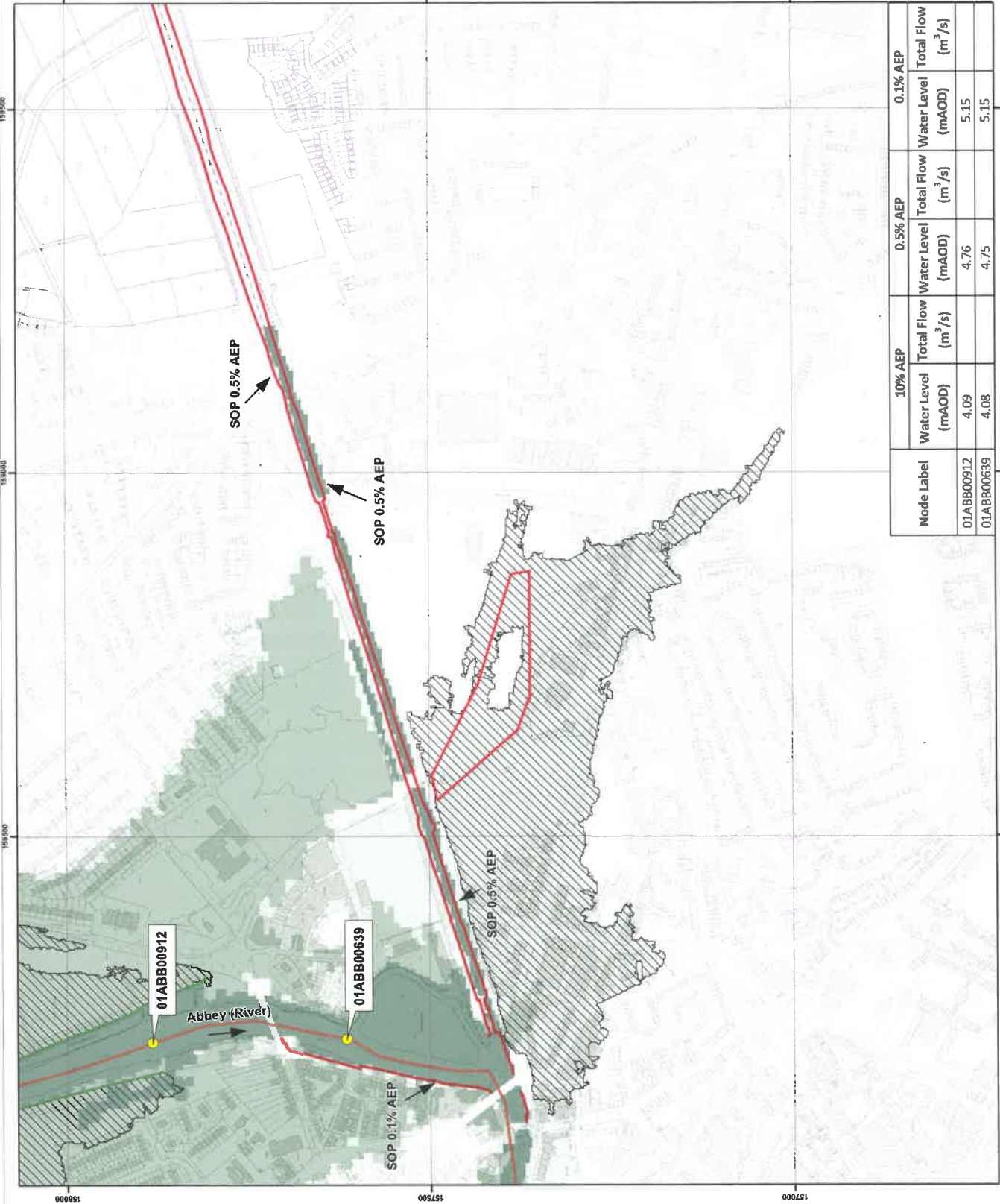
- Nodes
- Model Reach
- AFA Boundary
- Flood Defence: Wall
- Flood Defence: Embankment
- Defended Area
- 10% AEP Coastal Flood Extent
(1 in 10 chance in any given year)
- 0.5% AEP Coastal Flood Extent
(1 in 200 chance in any given year)
- 0.1% AEP Coastal Flood Extent
(1 in 1000 chance in any given year)

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

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

JACOBS
Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	COASTAL - TIDAL
Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH
Checked by:	KM
Reviewed by:	MC
Approved by:	PS
Map No.:	S2528LIK_EXCCOD_F1_59
Sheet:	59 of 65
Map Scale:	1: 5000
Plot Scale:	1:1 @A3
Revised:	0



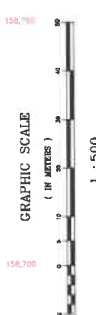
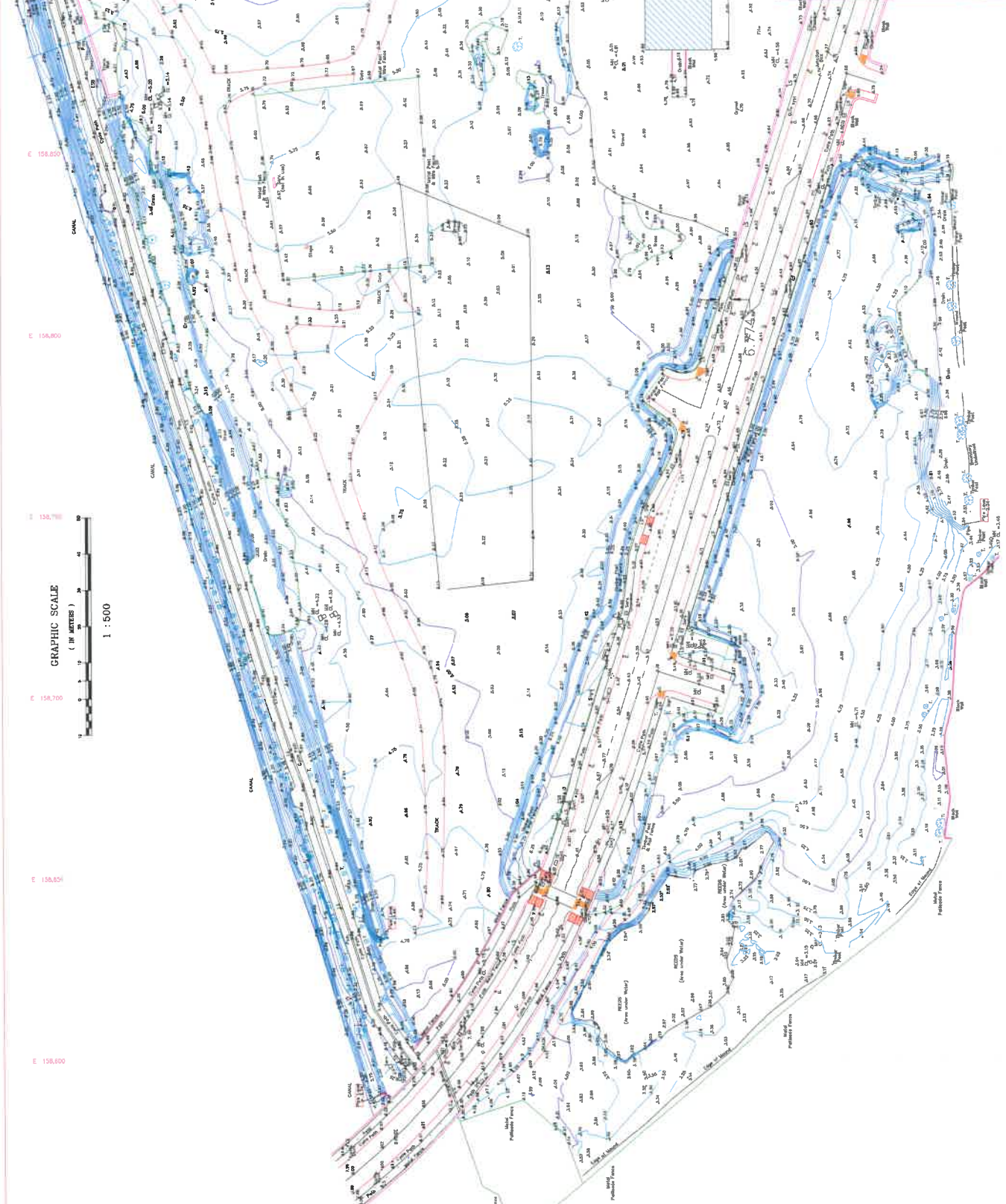
Node Label	10% AEP		0.5% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)
01ABB00912	4.09		4.76		5.15	
01ABB00639	4.08		4.75		5.15	




Appendix C

Topographical Survey

NOTES:
 All levels are relative to Ordnance Datum
 All contours are at 0.5m intervals
 50m sq Grid relative to Irish National Grid
 (IC 1975)
 Contours are at .25m intervals
 Part of site surveyed by Walsh Survey
 Services and Surveygraph and were
 signed back in 1980s

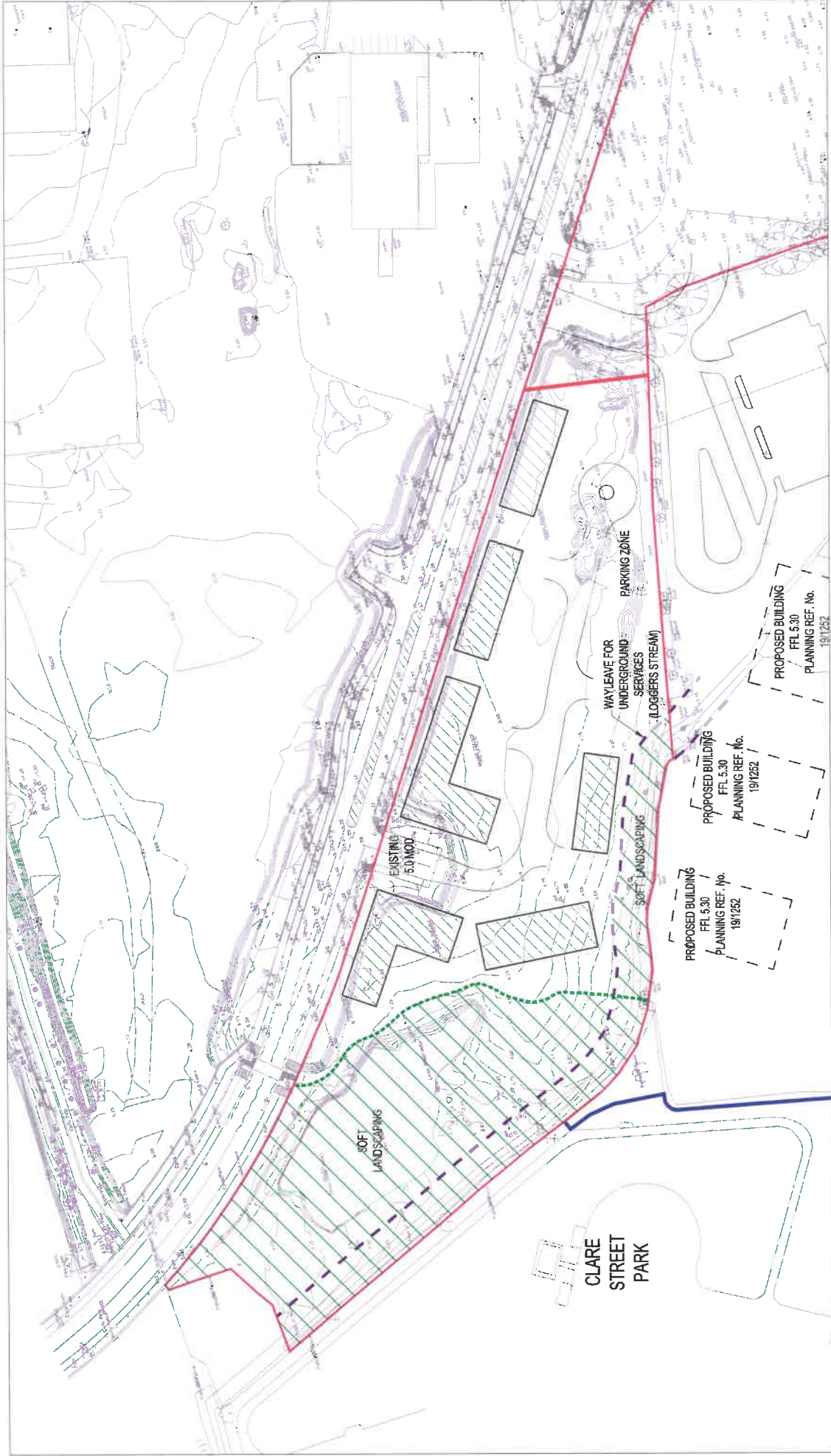


Client	ARUP Consulting Engineers Horseshoe Lane, Upper Wexford Road, Limerick, No. 031 212005
Title	Site Survey of Lands at Park Road, Limerick.
Drawn: C. G. Z.	Drawn no. 08-105-01
Scale: 1:500	Date: 04-01-03
 Control Surveys 8 O'Connell Street, Limerick, Co. Clare, N. E. 007 2029712 Email: control@control.ie	

N 158,500 N 157,500 N 157,000 N 156,500 N 156,000

Appendix D

Notional Proposed Development Layout



Cronin Sutton Cotter
 45 O'Connell Street, Limerick, Co. Limerick
 T: +353 (0)81 594988 F: +353 (0)1 9011355
 e: info@csconsulting.ie
 w: www.csconsulting.ie

Quality
 Environment
 Energy
 Health & Safety

U.S. EN ISO 9001:2008
 U.S. EN ISO 14001:2004
 U.S. EN ISO 50001:2011
 Certified OHSAS 18001:2007

Client	Downnes Family		
Project	Flood Risk Assessment Pa Healy Road, Limerick		
Title	National Proposed Development Layout		
Drawn by	Checked by	Approved by	Revision
NO	GC	GC	
Date	Scale	Proj. No.	F012L-001
JULY 2021	1:1000		

Rev. No.	Date	REVISION NOTE	Drawn By	Checked By

NOTES

- For setting out refer to Architect's drawings.
- This drawing to be read in conjunction with all other Architectural and Engineering drawings and all other relevant drawings and Specifications.
- DO NOT SCALE THIS DRAWING. Use figured dimensions only.
- No part of this document may be reproduced or transmitted in any form or stored in any retrieval system of any nature without the written permission as copyright holder except as agreed.
- For use on the project for which the document was originally issued.
- Ordinance Survey Ireland Licence Number EN 0074612

**Downes Site, Pa Healy
Road**

LCC – C62 – 55

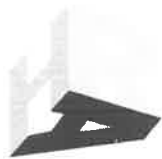
Kieran O'Hanlon

Response to Chief Executives Report on Public Consultation
and
Motion to Change Landuse Using Zoning in the Draft Plan

On behalf of:

Downes Family – Land at Pa Healy Road

January 2022



HRA | PLANNING
chartered town planning consultants

DEVELOPMENT PLANNING | ENVIRONMENTAL PLANNING | MASTERPLANNING

Limerick | Dublin | t: 061 435000 | f:061 405555 | e:info@hraplanning.ie | w:www.hraplanning.ie

Title:	22005 Draft Development Plan Motion
Project:	Response to CE Report & Motion to Change Zoning
Prepared by:	MH
Date:	January 2022
Issue:	Issue 1
<p><i>© Copyright HRA PLANNING. All rights reserved. This report has been prepared for the exclusive use of the commissioning party and unless otherwise agreed in writing by HRA Planning, no other party may copy, reproduce, distribute, make use of, or rely on the contents of the report. No liability is accepted by HRA PLANNING for any use of this report, other than for the purposes for which it was originally prepared and provided. Opinions and information provided in this report are on the bases of HRA PLANNING using due skill, care and diligence in the preparation of the same and no explicit warranty is provided as to their accuracy. It should be noted and is expressly stated that no independent verification of any of the documents or information supplied to HRA PLANNING has been made.</i></p>	

TABLE of CONTENTS

1.0	INTRODUCTION	1
2.0	BACKGROUND	1
2.1	Site Context	
2.2	Adjoining GaelCholaiste	
2.3	Flooding	
2.4	Development Proposal	
3.0	THE CASE FOR MIXED USE DEVELOPMENT	6
3.1	Flooding & Planning Precedence	
3.2	Flooding & the Justification Test	
3.3	Sustainable Neighbourhoods & Sequential Development	
5.0	MOTION TO AMEND THE DRAFT PLAN	18

1.0 INTRODUCTION

HRA PLANNING has been retained by the Downes Family to prepare a response to the Chief Executives Report on submissions received in respect of the Draft Limerick Development Plan 2022 – 2028 and to prepare a motion on behalf of Councillor Kieran O’Hanlon to secure a change in zoning from Education and Community Use to Mixed Use purposes.

Of the total 1.7 hectares currently zoned for education & community use, only 1.2 hectares are considered developable from a level and flooding perspective. It is therefore proposed to incorporate 0.5 hectares of low lying land at the western extremity of the site adjoining O’Briens public park as a natural recreational / wetland area.

A submission was made on behalf of the Downes family at Draft Plan stage, setting out the reasons why it was considered that the zoning afforded to the land should be changed from Education and Community Use to Mixed Use purposes. It is not the purpose of this submission to revisit the issues originally raised, but rather to concentrate on the core reasons why the planning authority does not consider mixed use zoning appropriate to the land as detailed in the Chief Executives Report, including:

- Flooding;
- Justification Test;
- Sequential Approach; and
- Sustainable Neighbourhoods

In advance, it is considered necessary to set out a number of pertinent points regarding the characteristics of the site, in particular its close connections to the city centre, immediately adjoining facilities and services.

2.0 BACKGROUND

2.1 Site Context

The circa 1.7 hectare site fronts onto the Pa Healy Road as illustrated in Figure 1.0, with a dedicated access provided into the site from the road. The land was part of an overall development site which was subdivided following construction of the Pa Healy Road. Phase I of a proposed residential development is being advanced on the northern side of the road via the Strategic Housing Development (SHD) process. The subject land comprises Phase II of the development proposal.

The site is fully serviced with a surface water and gravity foul sewer and a potable water supply. It benefits from public lighting, footpaths and a cycleway route and will adjoin a significant secondary school with capacity to accommodate 750 no. students.

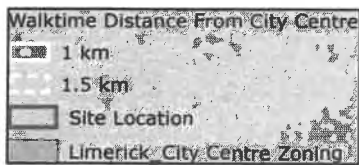
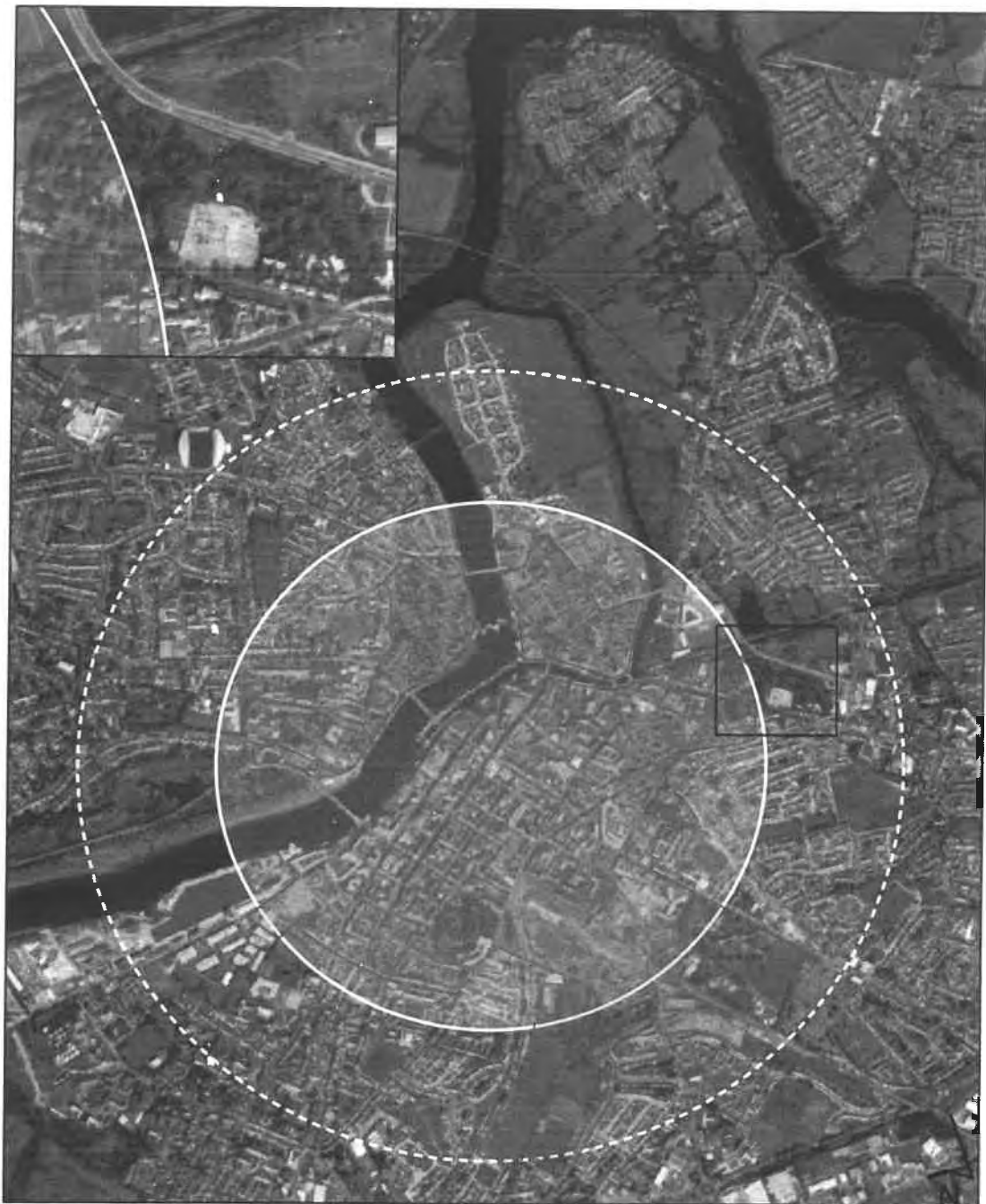


Figure 1.0 Site Location & Context in Proximity to City Core

The site is located within a 10 - 15 minute walk of Limerick city centre; a 10 minute walk from St. Johns Hospital; a 7 minute walk of O'Briens Public Park and the Limerick School of Art & Design; and a 25 minute walk from the University of Limerick. The site is also well serviced by existing bus routes, with 2 no. bus stops within a 4 minute walk of the site (See Figure 2.0 for bus stops in the area). The site is effectively serviced by the 323, 341, 323 X and 304A bus routes. The 304A Raheen - University bus route provides effective connectivity to both sides of the city (Raheen & Castletroy) every 20 minutes.

It is noted that the site will be situated immediately adjacent to the proposed Bus Connects Corridor on the Dublin Road, which will provide a 10 minute regular bus service as per the Limerick Shannon Metropolitan Area Transport Study (LSMATS).

2.2 Adjoining Gaelcholaiste

Significantly, planning permission was recently granted for a new 7.800sqm post primary (Gaelcholaiste) school on adjoining lands to the south of the site (old Dawn Dairies site - planning references P19/1252) and as detailed in Figure 2.0. The primary permitted access to the new school is off the Pa Healy Road, via a shared access with the adjoining Shannon Minerals site.

The subject lands are zoned for education and community purposes, presumably to facilitate future expansion of the recently permitted Gaelcholaiste. This assumption is confirmed in the Chief Executive's Report to Submissions made on the Draft Development Plan, whereby the Council states that the land is required to facilitate the future expansion of schools. However, Limerick Clare & Education Training Board (LCETB) has confirmed that the development of the new Gaelcholaiste Luimnigh has commenced on site and is due for completion in the second half of 2023. Accordingly, LCETB does not require to extend the school site through the purchase of additional lands (See email as detailed in Appendix 1). It is thus confirmed that this land is not required for education purposes.

2.3 Flooding

A Flood Risk Assessment (FRA) was prepared by CS Consulting Group in respect of the land and was submitted to the planning authority as part of the Draft Plan submission. The FRA acknowledges that the site is subject to coastal and fluvial flooding.

The western end of the site is at a low level, significantly below the level of the Pa Healy Road. A large part of this area contains reed growth and standing water or ponding which is visible from the Pa Healy Road. This area is adjacent to the Clare Street Recreation Park, which appears to be noted as wet land on the 1913 historic OSI mapping shown below the photos. It is proposed to maintain this area free from development and to incorporate it into the overall development of the land as a natural wetland / recreational area adjoining O'Briens Public Park.

It is noted that the eastern, developable area of the subject site exhibits the same flooding characteristics as the adjoining Dawn Dairies site on which a new school was granted planning permission (P19/1252). Within the Planning System and Flood Risk Management

Guidelines for Planning Authorities (the Flooding Guidelines), a school, similar to residential and other mixed use development is considered to be Highly Vulnerable Development. However, the Justification Test was undertaken in support of the school development proposal and was deemed acceptable by the planning authority subject to mitigation measures and management of residual risk. In this instance the school mitigated against flooding by proposing a finished floor level of 5.30mOD.

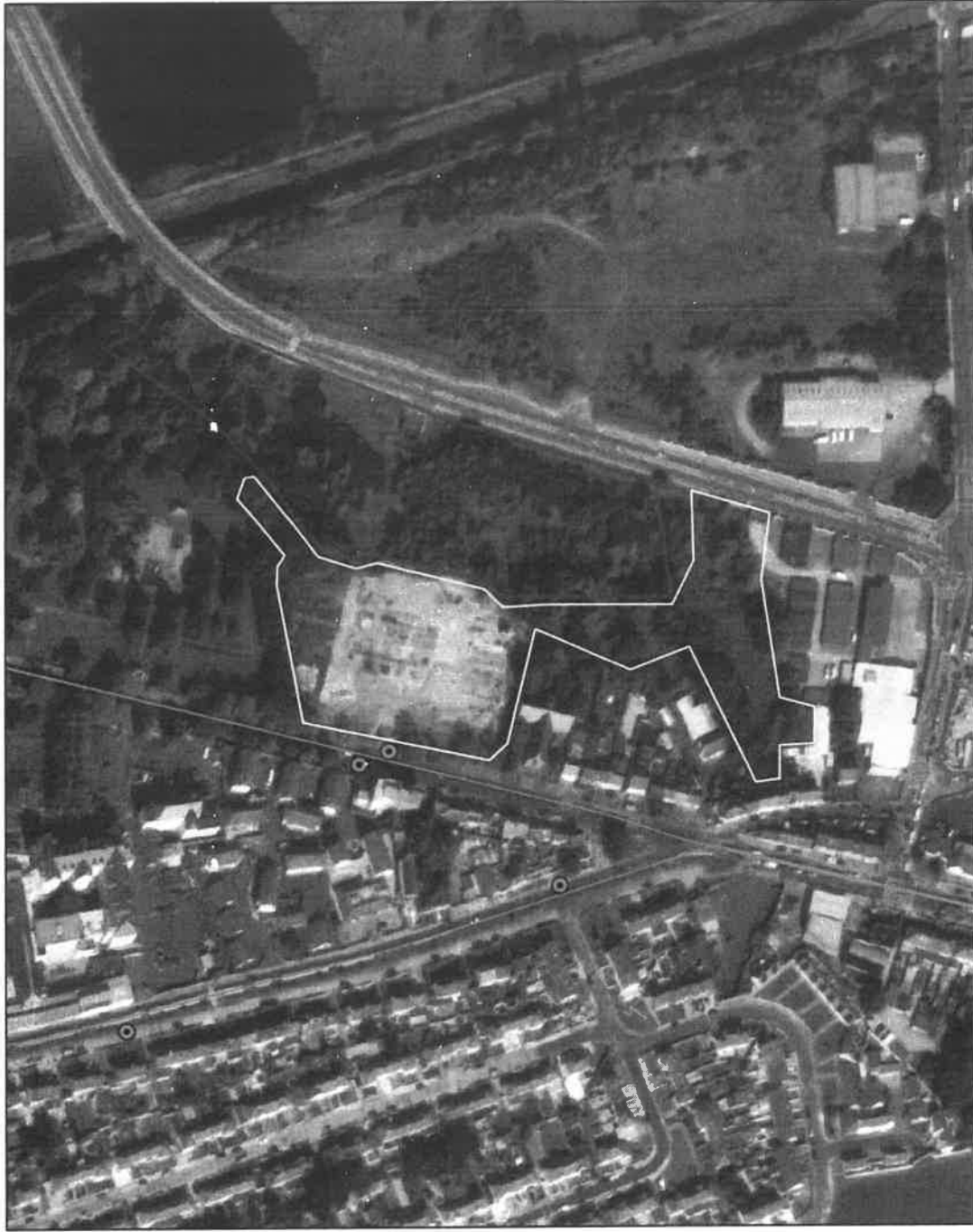
Similar to the recently permitted school, a mixed use development on the subject site can be comprehensively mitigated to ensure effective management of residual risks.

2.4 Development Proposal

Development proposals for the site are currently at feasibility stage and includes live work units with office accommodation at ground floor level and residential use overhead fronting onto the Pa Healy Road, workshop units and a primary care centre with associated office space.

The proposed development and the design of finished ground levels will be responsive to the potential of flood risk. Similar, to the recently permitted school on the adjoining site, any proposed development on site will have a finished floor level of 5.30mOD which will provide protection against all flood events. Consistent with the Planning System and Flood Risk Management Guidelines for Planning Authorities (the Flooding Guidelines), and specifically the recommended approach set out in Section 5.16 of those guidelines, the proposed development seeks to mitigate and manage the potential for flood risk through the proposed design in order to further reduce such risk to an acceptable level.

A comprehensive emergency plan can be prepared to ensure that appropriate flood risk measures are adopted as part of the development proposal. These include patron awareness and education of flood risk scenarios and protocols and restrictions of use of the parking area in certain instances of flood risk to all residents and patrons of the development as part of operational management mechanisms prior to first and each occupation. This will be delivered by early warning advice and updates which will be sourced from Met Eireann and relayed to residents / occupiers through the development management. Given the designed finished floor levels, inundation of development will not be anticipated and accessibility in/out of the development will be maintained via Pa Healy Road similar to the access arrangements for the Gaelcholaiste which was permitted under planning permission P19/1252. Such access was deemed safe and appropriate from a flooding perspective when assessed as part of the school proposal and it is considered that such assessment and conclusions would be applicable to the subject site.







-  Site Location
-  School Site location
-  Bus Eireann Routes
-  Bus Eireann Stops



Figure 2.0 Site In Context of Permitted New Post Primary School

3.0 THE CASE FOR MIXED USE ZONING

As per Section 3.7 of the Flooding Guidelines, although there is a need for future development to avoid areas at risk of flooding, it is recognised in the Guidelines that the existing urban structure of the country contains many well established cities and urban centres, which will continue to be at risk of flooding. Accordingly, the flood risk management guidelines do facilitate development within areas of flood risk which contribute to compact sustainable growth of established urban city areas where the type and extent for flood risk has been established, where the potential flood risks can be mitigated, and, where the proposed development would not give rise to residual flood risk effect to the proposed development, or to surrounding people, environment or the economy. It is submitted that development on the subject site, similar to the permitted Gaelcholaiste, can comply with Section 4 of the Flooding Guidelines and therefore should be considered from a zoning perspective.

3.1 Flooding & Planning Precedence

Notwithstanding that Limerick City & County Council has established its own precedence in granting planning permission for the Gaelcholaiste on adjoining land, there is other similar precedence adopted by other Councils in Ireland and approved by An Bord Pleanála. Further to the flood risk management case set out above, the Downes Family submit that its interpretation of the Flood Risk Management Guidelines, is consistent with the interpretation and application of those guidelines also by both Cork City Council and by An Bord Pleanála (ABP) in their recent assessment of a planning application for student housing development presented to them.

In this regard, reference is made to a planning application submitted to Cork City Council and subsequently appealed by the first party to An Bord Pleanála for development consisting of the construction of a four-storey student accommodation building located in the Mardyke area of Cork City adjacent to the River Lee (Cork City Council ref: 21/39853 and An Bord Pleanála ref: ABP-309974-21).

In its assessment, the Board acknowledged that that site was identified as being the subject of both a 1% AEP fluvial flood risk and a 0.5% AEP tidal flood risk. The Board thus categorised the site as being with Flood zone A (under the Planning System and Flood Risk Management Guidelines) and the proposed residential use as being highly vulnerable development. Accordingly, the flood risk management Justification Test was applicable to that application. In its assessment of the Justification Test, the Board acknowledged that the site was suitably zoned for residential use, it acknowledged that proposed design levels were raised to exceed predicted worst case flood levels under the 1% AEP flood event scenario; that an emergency plan was proposed which included evacuation of occupants during worst case events, and it considered that the proposed building would represent good urban design, vibrancy and activity of the streetscape. On that basis, the Board stated that the proposed development passed the 'Justification Test' and that the proposed development would be consistent with The Planning System and Flood Risk Management Guidelines.

The applicant submits that there are parallels between that approved scheme and the proposed development. This includes the urban city location proximity to both the city and the university; the same potential coastal flood risk; the suitability of raising the design level and its tie-in with the urban streetscape. In that instance, the River Lee flood relief scheme is not in place, and there are no current urban protection measures other than the design and mitigation.

3.2 Flooding & the Justification Test

In order to achieve the aims and objectives and comply with the requirements of the Guidelines, the Local Authority's approach to the zoning of land is to avoid development in areas at risk, where possible and substitute less vulnerable uses, where avoidance is not possible. A precautionary approach has been adopted by the local authority in line with the Guidelines. Whilst this approach is noted and acceptable in principle, it is considered that the Local Authority also has a duty to promote compact growth and to facilitate residential development in proximity to the city core and adjoining services (schools) and facilities (public parks).

The Local Authority state in the Chief Executives Report that in considering the Justification Test the Draft Plan takes a City Centre first approach to the spatial development of Limerick City and Environs. It is stated that 'the core' is defined as the area zoned "City Centre". As detailed in Section 2(iii) of the Justification Test, the subject site must be either within or adjoining the core. As detailed in the Justification Test below (Table 1.0) and illustrated in Figure 1.0, the subject site adjoins the city centre zoned area. The Downes family thus submits, contrary to the opinion of the local authority, that the proposed development does in fact comply with the Justification Test, similar to the adjoining Gaelcholaiste development on adjoining lands recently granted planning

Criteria to be Addressed

The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.

Planning Response

Limerick has been identified in the National Planning Framework (NPF) as one of the five cities in the country which is the subject of a Metropolitan Area Strategic Plan. This emphasises the Metropolitan Area's national importance, for significant additional growth. This is echoed in the Regional Spatial and Economic Strategy for the Southern Region, which mentions that the Limerick Shannon Metropolitan area is "a key economic driver for the region and Ireland". Limerick has been identified for significant population growth in the NPF along with an objective that 50% of that future growth be located within the city and its suburbs. (NPO2a).

The City is located at a pivotal point on the Atlantic Economic Corridor. The NPF and RSES confirms that Limerick has the potential to generate and be the focus of significant employment and housing growth.

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 and, in particular:

a. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement

The subject site is located in an area undergoing local redevelopment and regeneration, including provision of a new 750 student school on an old industrial site. This regeneration initiative cannot be considered in isolation and synergies between the school site and neighbouring land must be exploited to ensure sustainable compact growth and mixed use development. The provision of a new school in the area can be complimented by other compatible uses including residential and local commercial uses.

b. Comprises previously developed and/or under-utilised land.

The land is part of an overall landholding which was subdivided circa 10 years ago with the construction of a new link road. The link road was not only intended to more effectively distribute passing traffic away from the city centre, but was also intended to open up land for development, with dedicated access arrangements provided to service land to the north and south (subject land). This land is serviced by a recently constructed public road and remains under-utilised in its current form, in proximity to the city centre. Further, the juxtaposition of the site with high visibility frontage onto the Pa Healy road, reinforces the need for high quality development and regeneration of the site.

c. Is within or adjoining the core of an established or

The site adjoins the centre of the urban settlement (city core). As illustrated in Figure 1.0 the city centre zoning (blue) extends for a distance of 1.5km,

designated settlement. urban encompassing a 15 minute walktime. The subject site is located within the 10 and 15 minute walktime catchment and is situated the same distance from the centre of Limerick city as the city centre zoning that covers the Colbert Station lands The Pa Healy Road was originally constructed to open up land for development and to provide a connection between Rhebogoue and Corbally. Development on the subject land would facilitate such regeneration and development within walking distance of the city core.

d. Will be essential in achieving compact and sustainable urban growth. The site is fully serviceable, has both pedestrian and cycle links, is served by existing public transport and neighbours a proposed Bus Connects route. It is located within a 15 minute walk of the city core, adjoining city centre zoning. It adjoins a proposed new 750 student school, is located beside a public park, is within 10 minutes walking distance of an established hospital and within a 25 minute walk of the university. It is situated adjoining city centre zoned land.

e. 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. It is requested that the site is afforded a mixed use zoning capable of accommodating residential use. There are no other identified mixed use zoned sites in closer proximity to the city centre. Most of the mixed use and residential zoned lands in Limerick are located in the 'suburbs' at out of centre locations, substantially removed from the city centre. Development of the subject site would facilitate compact growth and provide for housing in an area of the city accommodating substantial existing and proposed new services including a new school.

A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment

Table 1.0 Justification Test (Box 4.1 of Guidelines)

The Limerick City Development Plan 2010 – 2016 identified various strategically located urban centres and zoned land whose continued growth and development is/was encouraged in order to bring about compact and sustainable urban development and more balanced regional development. The subject site is one of the very few sites adjoining the city centre that remains undeveloped and which is capable of immediate development. Therefore, in full consideration of the Planning System and Flood Risk Management Guidelines, the subject site complies with Box 4.1 Justification Test of the Guidelines and it is submitted that the subject lands should be appropriately zoned to accommodate development.

3.3 Sustainable Neighbourhoods & Sequential Development

The National Planning Framework (NPF) seeks to achieve more compact and sustainable growth through consolidating a greater share of future development within the existing built footprint of settlements, to include new homes, businesses and amenities. The NPF sets national targets for brownfield/infill housing development in cities (50%) to support the regeneration of existing urban areas. NPF compact growth objectives together with Town Centres First principles are focused on the reuse of previously developed buildings and land and building up 'infill' sites, especially those that are centrally located in settlements at all scales.

SPPR DPG 7 of the Draft Development Plan Guidelines states that,

"Planning authorities shall adopt a sequential approach when zoning lands for development, whereby the most spatially centrally located development sites in settlements are prioritised for new development first, with more spatially peripherally located development sites being zoned subsequently".

The subject site adjoins the city centre, is within a 15 minute walking distance of services and facilities in the city core, adjoins a proposed new school and neighbours an existing hospital. The land is accessible with adequate water services and facilities. The principle of developing this land has always been acceptable, with the land zoned for mixed use purposes in previous development plans.

Zoning this land for mixed use purposes will ensure that a portion of new development reflects the compact growth and town centres first agenda, which is also a key dynamic in addressing climate change, through reducing dependence on car-based transport, the extent of green-field land consumption and costly and inefficient infrastructure provision and use. In this instance, the development plan is provided with an opportunity to deliver a framework for development, which ensures a close correlation between facilitating residential and mixed uses on land with infrastructural capacity whilst also ensuring that a substantial element of future growth adjoining the city centre.

The case for mixed use zoning has already been established in the Draft Plan with 4 no. sites already identified in the environs of the city, well removed from the city core, as detailed in Figure 2.0.



Figure 3.0 Extent of Mixed Use Zoning in Draft Plan

It is confirmed that the subject land falls within Tier 1 land, which is suitable for development in the short term and during the life of the proposed Development Plan, at no cost to Exchequer, as detailed in Table 2.0.

Whilst the land has capacity for 50 no. additional units and which will need to be added to the core strategy, it should be noted that the land could be developed for a mix of residential and other uses, including a substantial area dedicated to open space / recreational use as detailed in Figure 4.0. Accordingly, only a percentage of the estimated residential yield from the site land needs to be included in the core strategy table.

Site Capacity Audit		
Area of Site		1.7 hectares gross – 1.2 hectare net
Site in Built-Up Area		Within 15 minute walk-time of city centre
Service Status		Tier 1
	Lighting	✓
	Footpaths & Cycle Lanes	✓
	Public Transport	●
	Road Access	✓
	Water	✓
	Foul	✓
	Surface Water	✓
	Flood Risk	✗
	Infill / Brownfield	✓
	Proximity to Schools	✓
Assumed Residential Density		50 units per hectare ¹
Estimated Residential Yield from Site		50 units max
Planning History		Historical planning permission for industrial uses

Table 2.0 Site Capacity Audit as per Draft Development Plan Guidelines (merged with structure proposed in Draft Plan).

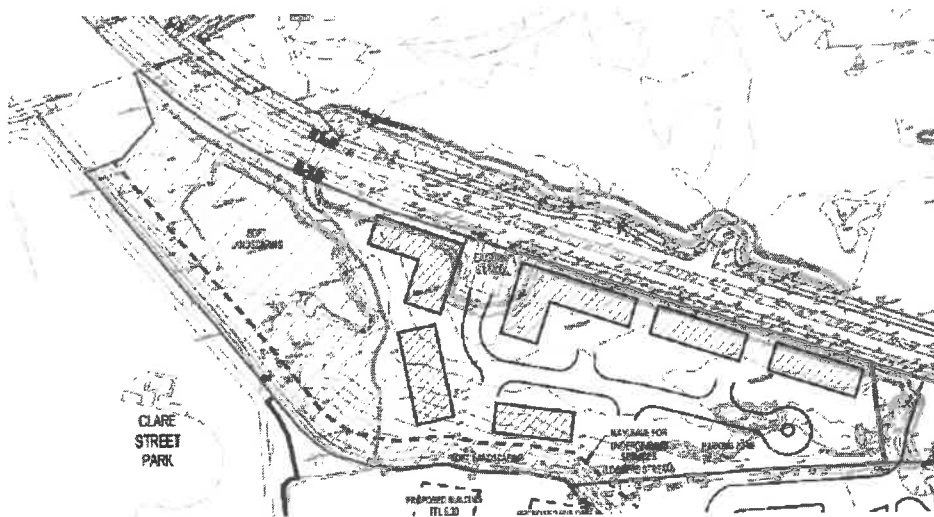


Figure 4.0 Area of Land Hatched Green to be Developed as Public Recreation Area

¹ Minimum 50 units per hectare in proximity to bus corridor as per Design Standards for New Apartments

4.0 MOTION TO AMEND THE DRAFT PLAN

It is hereby requested that the education & employment landuse zoning afforded to land located on the southern side of the Pa Healy Road as illustrated in Figure 1.0 is changed to mixed use zoning.

It will be necessary to insert a new 'Section 10.4.2.14 Pa Healy Road' into the Draft Plan in Chapter 10: Compact Growth and Revitalisation to ensure compliance with the existing plan structure. The text proposed is as follows:

Section 10.4.2.14 Pa Healy Road

The 1.7 hectares site is in a prominent location with road frontage onto the Pa Healy Road. The site and adjoining land (former Dawn Dairies) require significant regeneration. in a coordinated and holistic manner, facilitating mixed uses and associated synergies whilst ensuring sustainable compact growth.

Objective ---- Pa Healy Road

It is an objective of the Council to:

- a) Require the preparation of a masterplan for the land which utilises the low-lying land to the west for recreational purposes and facilitates a mixed-use / residential development to the west with vehicular access off the existing permitted entrance which was constructed as part of the link road (Pa Healy Road);
- b) Enhance the character of the area through urban design and placemaking, incorporating buildings of high-quality design having regard to the sites prominent location on the Pa Healy Road;
- c) Require provision of an integrated sustainable mobility network, with walking, cycling and public transport as the main components;
Facilitate connectivity between the lowlying land to the west and the adjoining O'Briens public park to the south;
- d) Ensure green infrastructure is a key component of the design and layout;
- e) Promote a site-specific approach, reflecting emerging best practice, in addressing flood risk and prepare a Site Specific Flood Risk Assessment in accordance with the Planning System and Flood Risk Management Guidelines for Planning Authorities.

It will be necessary to amend Section 12.3 of the Draft Plan in respect of Land Use Zoning Objectives (additional text shown in red) as follows:

Objective: To provide for a mixture of residential and compatible commercial uses.

Purpose: To facilitate the use of land for a mix of uses, making provisions, where appropriate for 'primary' uses i.e. residential and combined with other compatible uses e.g. offices as 'secondary'. These secondary uses will be considered by the Local Authority, having regard to the particular character of the area. A diversity of uses for both day and evening is encouraged. These areas require high levels of accessibility, including pedestrian, cyclists and public transport (where feasible). Opportunity sites set out in Chapter 10: Compact Growth and Revitalisation, include

Mixed Use zoned lands located at Towlerton, Parkway Valley, Thomond Park, and the Pa Healy Road which have been accounted for in the Core Strategy figures. In addition, the Draft Retail Strategy has identified capacity for additional retail floor space in Moyross, which could be accommodated on the Mixed Use lands at The Bays identified for employment uses only.

Appendix 1.0

Email from LCETB Confirming Additional Education & Community Zoned Land is Not Required


----- Forwarded message -----

From: **Eamon Murphy** <eamon.murphy@lcetb.ie>

Date: Fri, Jan 21, 2022 at 3:20 PM

Subject: Re: Clare Street

To: fmcmanagementservicesltd@gmail.com <fmcmanagementservicesltd@gmail.com>

 This e-mail was sent from a sender outside of your organisation. Please do not click links or open attachments unless you recognise the source of this e-mail and know that the content is safe.

Hi Frank,

Further to our recent discussions, the development of the new Gaelcholáiste Luimnigh has commenced on site and is due for completion in the second half of 2023. In this regard, Limerick and Clare ETB does not require to extend the school site through the purchase of additional lands.

Best regards,

Eamon.

Caipitil agus Soláthair

Capital & Procurement

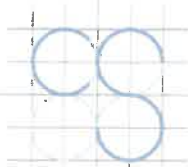
Bord Oideachais agus Oiliúna Luimnigh agus an Chláir

Limerick and Clare Education and Training Board (LCETB)



Briefing Note – Downes Family Lands

- It is requested that the education & community landuse zoning afforded to land located on the southern side of the Pa Healy Road in the Draft Plan, is changed to mixed use zoning.
- Although zoned for education & community use, Limerick Clare Education Training Board has confirmed in writing that they do not require additional land for the adjoining permitted Gaelcholaiste.
- Of the total 1.7 hectares zoned for education & community use in the Draft Plan only 1.2 hectares are considered developable from a level and flooding perspective. Accordingly, 0.5 hectares of low lying land at the western extremity of the site adjoining O'Briens pubic park as a natural recreational / wetland area.
- The land is optimally located neighboring a permitted post primary school (Gaelcholaiste), O'.Briens Public Park, Limerick School of Art & Design, St. Johns Hospital and is within a 10-15 minute walk of the city centre core.
- The site is subject to flooding and exhibits the exact same characteristics as the Dawn Dairy site which was granted planning permission for a school (P19/1252).
- Both a school and residential use fall into the same 'vulnerability category' as per the Flooding Guidelines and both sites require / required a Justification Test.
- If planning permission was recently granted for a school on adjoining lands with the exact same flooding characteristics, then there is no reason why residential / mixed use could not be considered appropriate on the subject site.
- Significant resources and financial investment have been spent to date in advancing feasibility studies for mixed use development on the site under its current mixed use zoning, including live work units with office accommodation at ground floor level and residential use overhead fronting onto the Pa Healy Road, workshop units and a primary care centre with associated office space.
- The site can provide similar flood mitigation measures as the adjoining permitted Gaelcholaiste.
- Cork City Council and An Bord Pleanála recently granted permission for a significant residential development adjacent to the River Lee which was also located in Flood Zone A as it was deemed to pass the Justification Test (ABP 309974-21).
- The Justification Test requires a site to be either within or adjoining the city core. The subject site adjoins the city core. The city centre zoning extends to a 1.5km distance in parts and the subject site is located within a similar catchment. For example, the subject site is situated the same distance from the centre of Limerick city as the city centre zoning that covers the Colbert Station lands.
- The case for mixed use zoning has already been established in the Draft Plan with 4 no. sites already identified in the environs of the city, well removed from the city core.
- The land falls within Tier 1 land, which is suitable for development in the short term and during the life of the proposed Development Plan, at no cost to Exchequer



CRONIN & SUTTON CONSULTING (part of the CS Consulting Group)
19-22 Dame Street, Dublin 2, D02 E267, Ireland

T 353 1 5480863

E info@csconsulting.ie

W www.csconsulting.ie

**CS CONSULTING
GROUP**
DUBLIN - LONDON - LIMERICK

Flood Risk Assessment For Downes Family Site, Pa Healy Road, Limerick.

Client: Downes Family

Job No. F012L

August 2021

Limerick Office

45 O'Connell Street
Limerick, V94 XE18
Ireland

T: 353 (0)61 594988
E: info@csconsulting.ie
W: www.csconsulting.ie

London Office

45 Beech Street
London, EC2Y 8AD
UK

T: +44 (0) 207 070 3660
E: info@csconsultinguk.com
W: www.csconsultinguk.com

KP & Associates Consulting Engineers Ltd. T/A Cronin & Sutton Consulting

Directors: K. Cronin, D. Rehill, O. Sullivan, P. Sutton

Associate Directors: N. Barrett, R. Fitzmaurice, M. McEntee, L. McNamee Associates: C. Twomey, C. Barry

Registered Office: 1st Floor, 19-22 Dame Street, Dublin 2, D02 E267, Ireland | Company No. 505303



Flood Risk Assessment

For Downes Family Site, Pa Healy Road, Limerick.

CONTENTS:

1.0	Introduction	1
2.0	Fluvial & Coastal Mapping & The Proposed Site	2
3.0	Site Description	4
4.0	Proposed Development	7
5.0	Definition of Flood Risk	8
6.0	Potential Flood Risk & Mitigation Measures	10
7.0	Justification Test	11
8.0	Conclusions	14

Appendix A: Fluvial Mapping

Appendix B: Coastal Mapping

Appendix C: Topographical Survey

Appendix D: Notional Proposed Development Layout

This Report was prepared by CS Consulting Engineers for the benefit of its Client only. The contents of this Report are shared with interested parties for information only and without any warranty or guarantee, express or implied, as to the accuracy, reliability or completeness of its content. This Report cannot be relied on by any party other than the party who commissioned it.

Job Ref:	Author	Reviewed By	Authorised	Issue Date	Rev No.
F012L	SC	GC	GC	August '21	1

1.0 INTRODUCTION

Cronin Sutton Cotter were appointed by the Downes Family to carry out an appropriate level of Flood Risk Assessment for the site of a proposed Mixed-Use development at Pa Healy Road in Limerick City. See below site location map Fig 1.

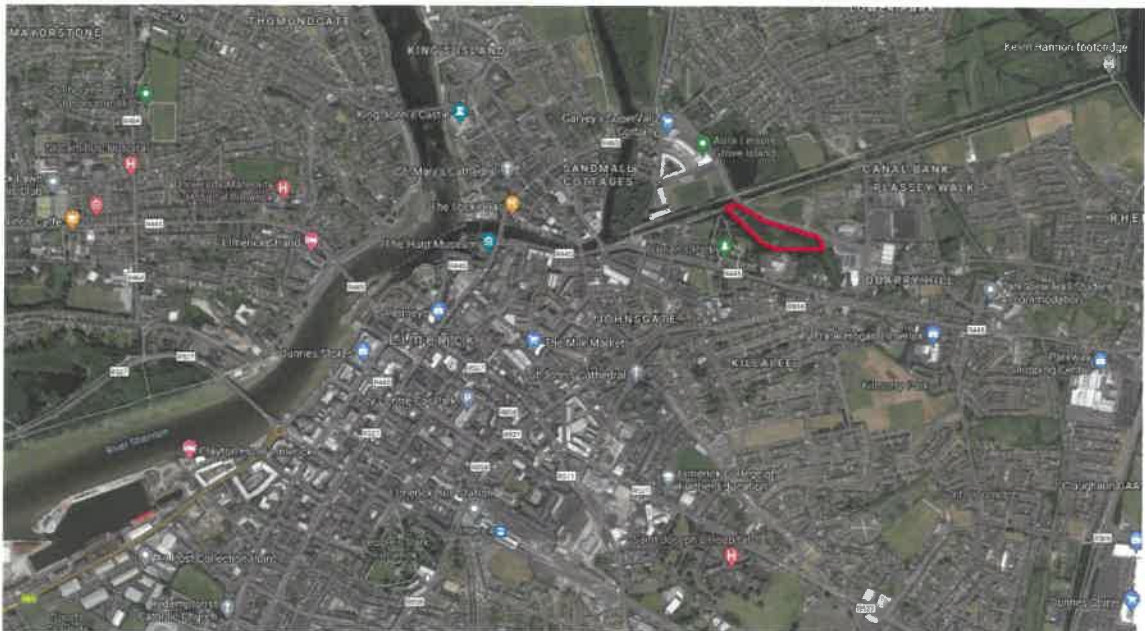


Figure 1 – Current Aerial (Google Maps) - location of development site in red.

In preparing this report Cronin Sutton Cotter Consulting Engineers have made reference to the following:

- Limerick City Development Plan 2010 – 2016,
- Office of Public Works, (OPW) via Floodinfo.ie.
- Ordnance Survey of Ireland, (OSI),
- The Department of the Environment, Community & local Government – flooding documents, notably, *The Planning System & Flood Risk Management: Guidelines for Planning Authorities & Technical Appendices.*

2.0 Fluvial & Coastal Mapping & Proposed Site

An extract from map no. S2526LIK_EXFCD_F1_59 Fluvial Flooding Extent with site outline marked in red can be seen in Fig.2 below. Full map is attached within Appendix A.

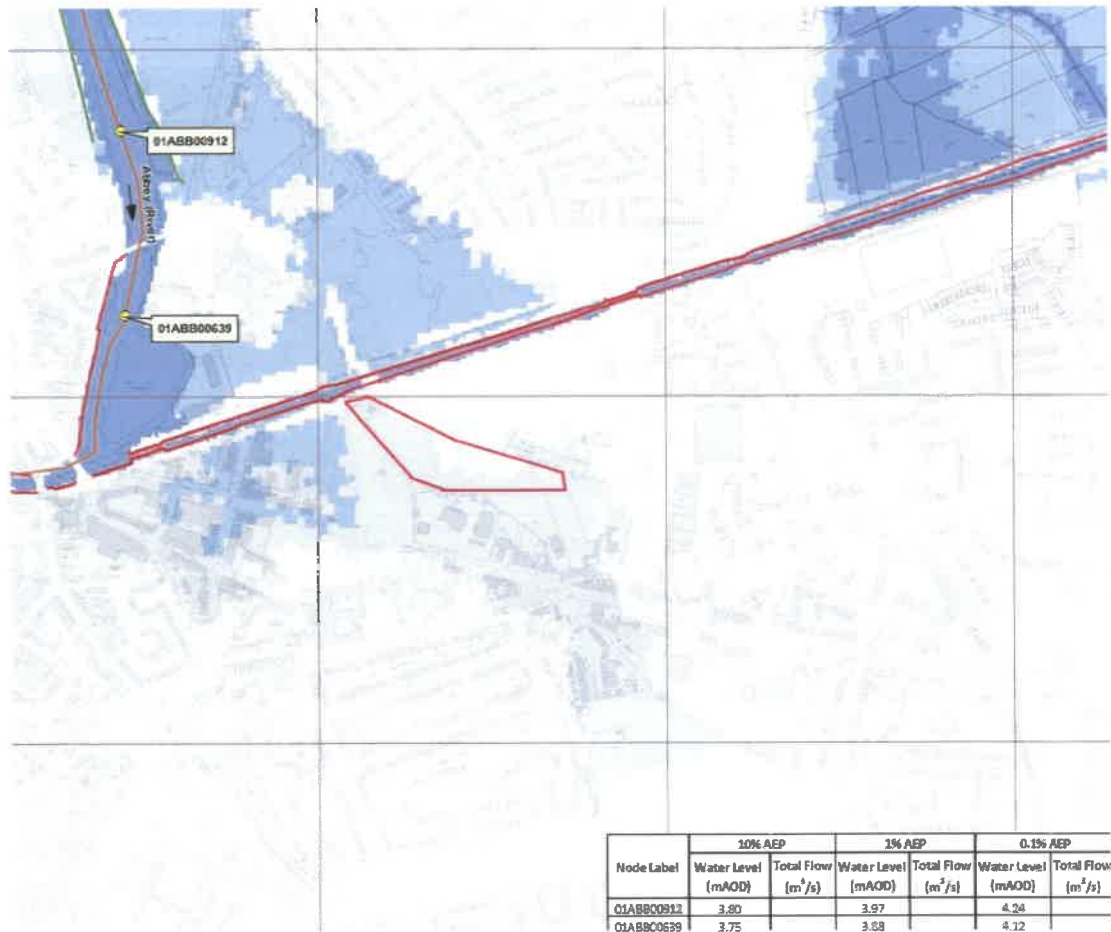


Figure 2 –Current CFRAM Fluvial Map with site marked on in red.

The map shows a large part of the site as being within the 0.1% AEP flood zone and that means that this part of the site has an 'Annual Exceedance Probability' of 1 in 1000 chance of being exceeded or an event occurring. In terms of predicted fluvial flood levels, the node most relevant to the site on the map is 01ABB00639 and the 0.1% AEP water level is 4.12m AOD.

The extract below is taken from the Coastal Map (S2526LIK_EXCCD_F1_59) and indicates that there is a notable portion of the site liable to flood but is in an area being defended from coastal/tidal flooding, with a 'Standard of Protection' equivalent to 0.5% AEP, or 1 in 200-year event. See Fig. 3 below with site marked on in red. The full map can be found within Appendix B of this report.

In terms of predicted coastal/tidal flood levels, the node most relevant to the site on the map is 01ABB00639 and the 0.1% AEP water level is predicted to be 5.15m AOD.

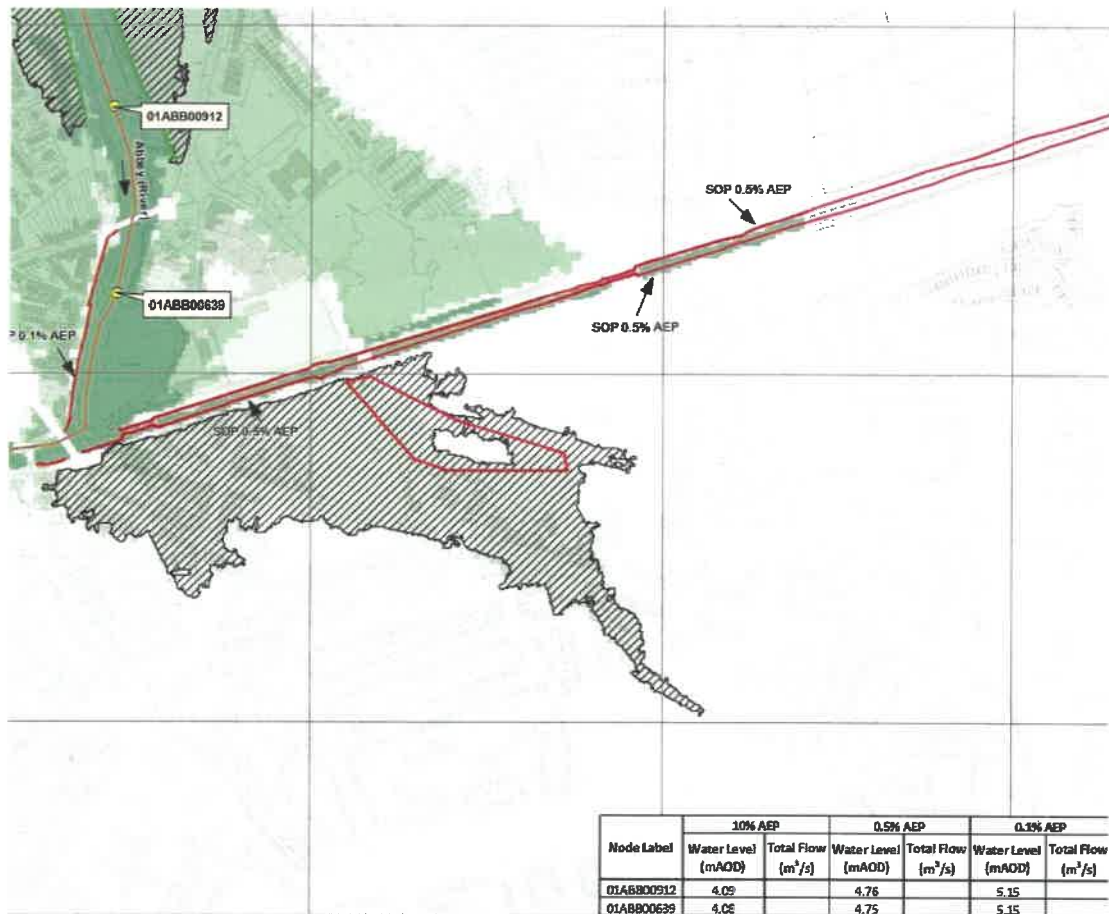
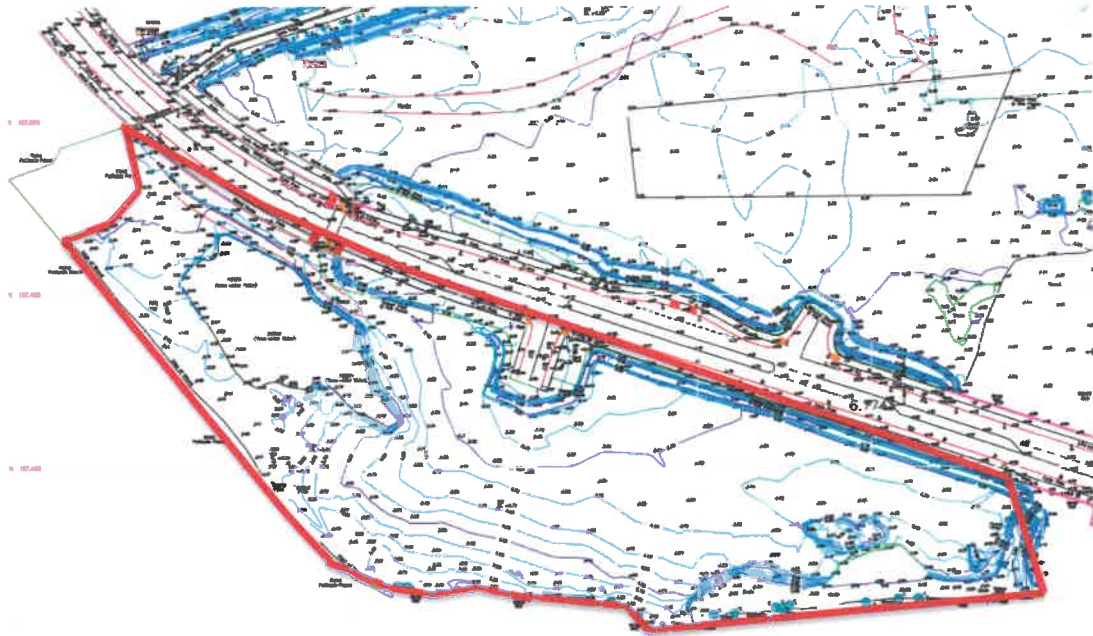


Figure 3 – Current CFRAM Coastal Map with site marked on in red.

3.0 SITE DESCRIPTION

The development site is as shown in Figure 4 below.



A topographical survey of the site is attached in Appendix C of this report. There are public footpath, cycle lane and roadway (Pa Healy Road) on the northern boundary, with third party lands on the eastern and southern boundaries, including the Clare Street Recreation Park. At the western boundary, there is a Local Authority pumping station, which is part of the Limerick Main Drainage infrastructure, and public walking amenities alongside the Park Canal, see photos below.

Along the southern boundary of the site, there is a 'Maintenance Right-of-Way' to facilitate any potential future works required to the Limerick Main Drainage scheme, formerly known as the Loggers Stream, which is now piped.

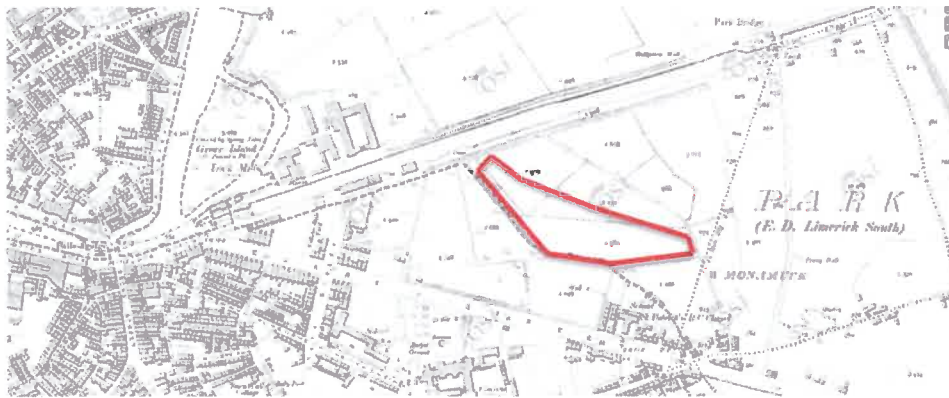
The western end of the site is at a low level, significantly below the level of the Pa Healy Road itself, see photos below. A large part of this area contains reed growth and standing water or ponding which is visible from the Pa Healy Road and can be seen on the topographical survey also. This area is adjacent to the Clare Street Recreation Park, which appears to be noted as wet land on the 1913 historic OSI mapping shown below the photos.



F012L – Downes Family Site, Pa Healy Road, Limerick.

At the existing site entrance and along Pa Healy Road, the topographical survey shows the site to have higher ground levels. This eastern end of the site is immediately adjacent to the site of the proposed Gaelscoil (Planning Reference 19/1252), which has received planning permission and construction is reportedly imminent.

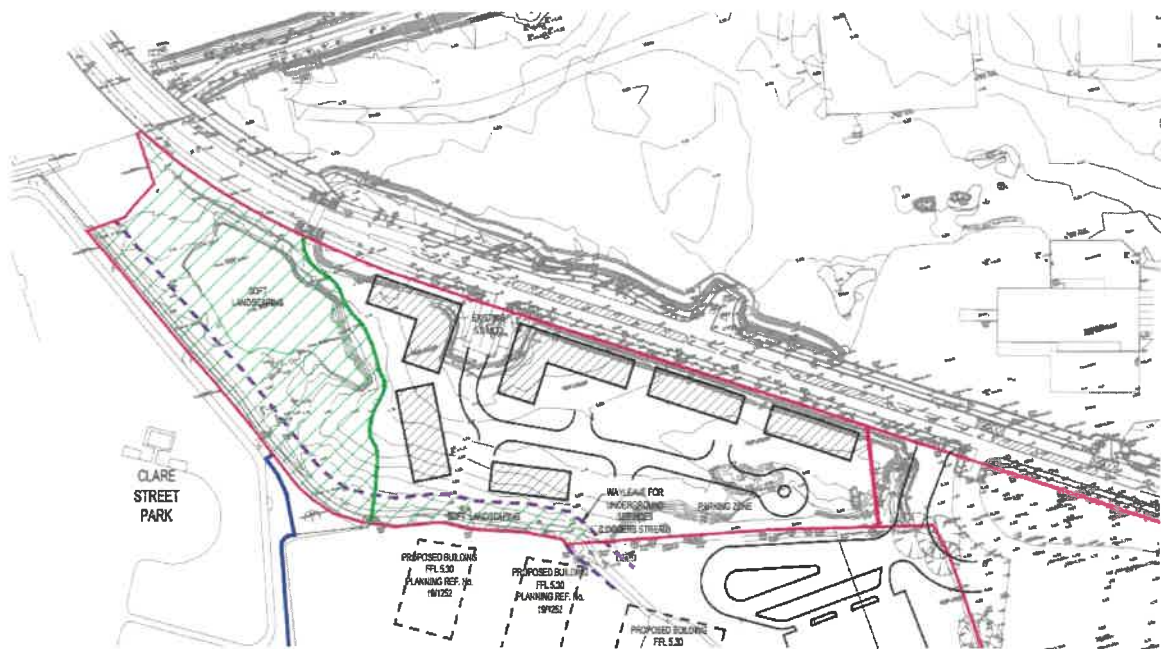
The development of the area and the site is summarised in the historic mapping (OSI) below showing 1913, 2000 and 2012 respectively.



F012L – Downes Family Site, Pa Healy Road, Limerick.

4.0 PROPOSED DEVELOPMENT

While a finalised site layout is not confirmed at this time, a notional proposed site layout is shown below. It is proposed that a large proportion of the site will be soft landscaping including all the west end of the site adjacent to the Clare Street Recreation Park, possibly incorporating a Storm Water Retention Pond.



The majority of this Mixed-Use development will be concentrated around the existing entrance to the site and along the road frontage of Pa Healy Road, essentially the highest level of the lands. Some development may take place towards the southern boundary to compliment the proposed buildings given permission as part of the Gaelscoil with planning reference 19/1252. A large portion of the east end of the development will include hard landscaping such as circulation road and car parking (non-vulnerable development) but with SUDS measures incorporated to minimise attenuation requirement and to minimise loss of floodplain (retain existing levels as far as is practical).

5.0 DEFINITION OF FLOOD RISK

There is an existing inherent risk of any flood event occurring during any given year. Typically, this likelihood of occurrence was traditionally expressed, for example, as a 1-in-100 chance or a 100-year storm event happening in any given year.

A less ambiguous expression of probability is the Annual Exceedance Probability (AEP), which may be defined as the probability of a flood event being exceeded in any given year. Therefore a 1-in-100-year event has a return period of 1% AEP flood event, similarly a 100% AEP can be expressed as a 1-in-1-year event.

5.1 *The Planning System and Flood Risk Management, Guidelines for Planning Authorities* set out the best practice standards for flood risk assessment in Ireland. These are summarised in Table 1.0 below (Table 8.1 from Guideline's document).

Flooding Source	Drainage	River	Tidal/Coastal
Residential	1% AEP	0.1% AEP	0.1% AEP
Commercial	1% AEP	1% AEP	0.5% AEP
Water-compatible (Docks, marinas)	-	>1% AEP	>0.5% AEP

Table 1.0: Summary of Level of Service – Flooding Source.

Under these guidelines a proposed development site has first to be assessed to determine the flood zone category it falls under.

5.2 It is a requirement of the Department of the Environment, Community & Local Government flooding guidelines, *The Planning System and Flood Risk Management, Guidelines for Planning Authorities*, that the predicted effects of climate change are incorporated into any proposed design.

Design Category	Predicted Impact of Climate Change
Drainage	10% Increase in rainfall
Fluvial (River flows)	20% Increase in flood flow

Table 2.0 The predicted climate change variations.

5.3 The flooding guidelines categorise the risks associated with flooding into three areas, Zone A, B & C. This categorisation is indicated below.

- **Zone 'A'** – High Probability of Flooding. Where the annual exceedance probability of flooding from rivers and sea is highest (10% annually or 1 in 10 for river flooding and coastal flooding).
- **Zone 'B'** – Moderate Probability of Flooding. Where the annual exceedance probability of flooding from rivers and sea is moderate (1% annually or 1 in 100 and 0.5% annually or 1 in 200 for coastal flooding).
- **Zone 'C'** – Low Probability of Flooding. Where the annual exceedance probability of flooding from rivers and sea is moderate to low (0.1% annually or 1 in 1000 for both rivers and coastal flooding).

In accordance with the *Planning Systems and Flood Risk Management Guidelines for Planning Authorities*, **Mixed-Use (incorporating residential) developments are classified as 'highly vulnerable developments'**.

5.4 The flooding guidelines have developed an 'appropriateness' matrix for various developments and their potential risk factor.

As noted above, a Mixed-Use (incorporating residential) development is classified as 'highly vulnerable' and as the site is confirmed by CFRAM mapping to potentially flood, a justification test is required. See Section 7.0 for justification test for the proposed scheme.

6.0 POTENTIAL FLOOD RISKS & MITIGATION MEASURES

6.1 Fluvial Flooding

Fluvial flooding is the result of a river exceeding its capacity and excess water spilling out onto the adjacent floodplain. The subject site is located near the River Shannon and Park Canal.

Fluvial mapping shown in section 2.0 above shows a large portion of the site to be at a low risk (0.1% AEP) of flood water rising to 4.12mAOD. The existing levels on the site vary from 5.0mAOD at the existing site entrance and along the north-east boundary of the site (along Pa Healy Road), to between 3.0 and 3.5mAOD along the southern boundary and for the majority of the western end of the site.

6.2 Coastal/Tidal Flooding

Coastal flooding in this instance is the result of the river exceeding its capacity and excess water spilling out onto the adjacent floodplain, when influenced by the tidal movements at the coast/estuary. The subject site is located near the River Shannon and Park Canal.

Coastal/Tidal mapping shown in section 2.0 above shows a large portion of the site to be at a low risk (0.1% AEP) of flood water rising to 5.15mAOD, subject to the failure or over topping of the local flood defences which provide a standard of protection to 0.5% AEP. As noted above, the existing levels on the site vary.

6.3 Mitigation Measures

The majority of the existing site levels will be maintained as far as is practical, particularly all the western end of the site and along the southern boundary and these areas will consist of soft landscaping and non-vulnerable uses.

The majority of the mixed-use development will be constructed at the highest part of the site on the road frontage to Pa Healy Road. Finished floor levels of 5.3mAOD will be adopted, ie, 5.15mAOD plus 150mm for climate change,

similar to the recently permitted adjacent development of the Gaelscoil.

7.0 JUSTIFICATION TEST

- 7.1 In accordance with *The Planning system and Flood Risk Management issued by the Department of the Environment, Heritage and Local Government* a site should be classified accordingly.
- 7.2 The subject lands are deemed '*highly vulnerable*', and the site is confirmed to flood by the CFRAM mapping and so, as such, a justification test is required.
- 7.3 There are two parts to the justification test, (A) *Justification Test for Development Plans* and (B) *Justification Test for Development Management*. The Justification Test for Development Plans is intended to inform land-use zoning decisions in the preparation of a Development Plan.
- 7.4 The subject lands are zoned for mixed use development in the current Limerick City & Council Development Plan. CSC have carried out a type (A) *Justification Test for Development Plans*, see section 6.5 and a type (B) *Justification test for Development Management*, see section 6.6.
- 7.5 Justification Test for Development Plans

Justification Test for Development Plans	
1.0 Urban settlement is targeted for growth.	Yes: The subject site is located within Limerick City, which is targeted for growth and in need of housing and associated facilities.
2.0 The zoning or designation of the lands for the particular use or development type is required to achieve proper planning and sustainable development of the urban settlement and, in particular:	
i. Essential to facilitate regeneration and / or expansion of the centre of the urban settlement.	Yes: This site is in an established area of the city. Development in this area is a mixture of retail, commercial and residential. This site is considered a high profile, infill site, appropriate for a mixed-use development and for the expansion of the city.

ii. Comprises significant previous development and / or underutilised lands.

The River and Canal along this stretch primarily flows through the built-up established City of Limerick. The site has been underutilised for many years, particularly since the construction of the Pa Healy Road prior to 2010. Specific access to the site was developed as part of the Pa Healy Road construction. There is existing development to the east, south and west boundaries of the site.

iii. Is within or adjoining the core of an established or designated urban settlement.

Yes: The land forms part of an established, large urban settlement.

iv. Will be essential in achieving compact and sustainable urban growth.

Yes: See responses to (i), (ii) and (iii) above.

v. There are no suitable alternative lands for the particular use or development type, in the areas at lower risk of flooding within or adjoining the core of the urban settlement.

There are no alternative suitably zoned lands available for significant development with equivalent proximity to the city centre, recently constructed road infrastructure and Limerick Main Drainage underground services.

3.0 A Flood risk assessment to an appropriate level of detail has been carried out.

Yes.

Conclusion: The subject site passes the Justification Test for Development Plans.

7.6 Justification Test for Development Management

Justification Test for Development Management	
1.0	<p>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.</p> <p>The subject lands are zoned 'Mixed-Use', which includes Residential development.</p>
2.0	<p>The proposal has been subject to an appropriate flood risk that demonstrates:</p> <p>(i) <i>The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk;</i></p> <p>Yes, the lower levels of the site up to 4.12mAOD, will be allowed to flood in the event of fluvial flooding. In the event of coastal/tidal flooding as a result of a breach of the local flood defences (greater than a 1 in 200-year event), flood levels could rise to 5.15mAOD. Based on existing levels of the site and surrounding lands, there will be minimal loss of flood plain as a result of this development. While some areas of the site will change from soft landscape to hard landscape, SUDS measures will be incorporated to minimise any contribution to flood risk elsewhere, but overall flood risk will not be reduced.</p> <p>(ii) <i>The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible;</i></p> <p>Yes, the ground floor residences proposed will have a finished floor level 5.3mAOD, 150mm above the highest flood level that could be reached in the event of a breach of the local flood defences.</p> <p>(iii) <i>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 provisions for emergency services access;</i></p> <p>Yes, emergency services access around all the buildings will be maintained. SUDS measures will be incorporated to minimise the residual risk to the site from</p>

fluvial flooding. Finished floor levels of 5.3mAOD will provide adequate flood protection for buildings.

(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.

Yes: the development will be in accordance with planning objectives and in accordance with development and flooding prevention guidelines.

Conclusion: The site passes the Justification Test for Development Management.

8.0 Conclusions

- 8.1 CFRAM mapping indicates a large portion of the site may be subject to fluvial flooding and also a similar large portion of the site may be subject to coastal/tidal flooding in the event of a breach of the local flood defences. However, existing site levels suggest that fluvial flooding at 4.12mAOD will only affect the lower areas of the site to the west and the south.
- 8.2 As noted above, a mixed-use (incorporating residential) complex is classified as 'highly vulnerable' and as flooding is predicted to occur on the site, a Justification Test is required to be carried out. This is carried out in detail in section 7.0 above and in our opinion the site passes both parts of the Justification Test.
- 8.3 Mixed-Use/Residential development is proposed at ground level and a finished floor level of 5.3mAOD will be adopted, ie, 150mm above the highest flood level of 5.15mAOD in the event of a breach of the local flood defences. Existing ground levels will, in general, be maintained and utilised as surfaced car parking or soft landscape. A nett increase of hard surface will arise, but SUDS measures will be adopted to manage the resultant storm water accumulation.

Appendix A

Fluvial Mapping

Location Plan:



Legend:

- Nodes
- Model Reach
- AFA Boundary
- Flood Defence: Wall
- Flood Defence: Embankment
- Defended Area
- 10% AEP Fluvial Flood Extent
(1 in 10 chance in any given year)
- 1% AEP Fluvial Flood Extent
(1 in 100 chance in any given year)
- 0.1% AEP Fluvial Flood Extent
(1 in 1000 chance in any given year)

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

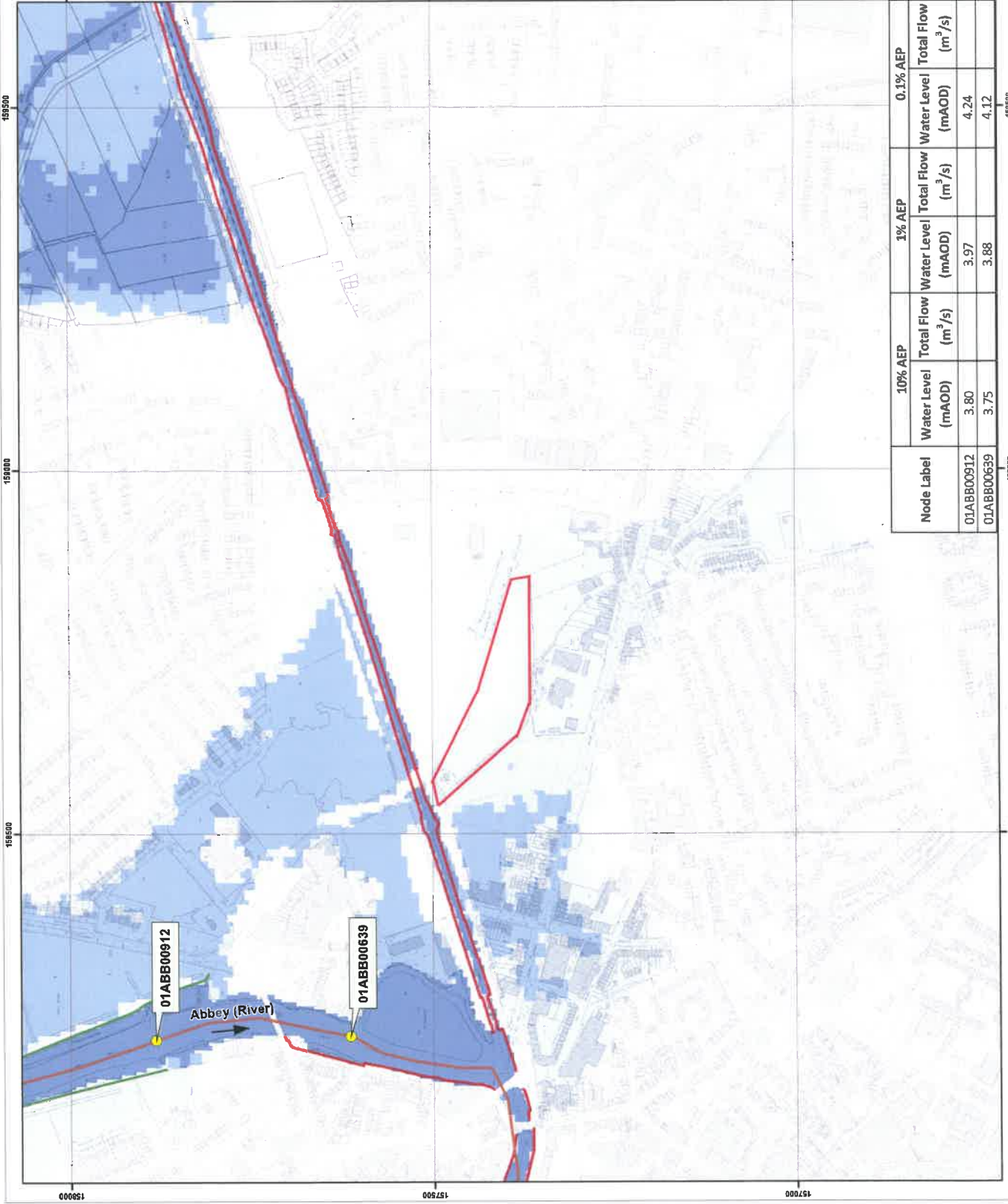


The Office of Public Works
Jonathan Swift Street
Trim
Co. Meath
C15 NX36

Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project: SHANNON CFRAM STUDY
Map Type: EXTENT
Source: FLUVIAL

Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH
Checked by:	KM
Reviewed by:	MC
Approved by:	PS
Date:	June 2016
Date:	June 2016
Date:	June 2016
Map No.:	S2526LJK_EXFOD_F1_59
Revision:	0
Plot Scale:	1:1 @ A3



Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)
01ABB00912	3.80	3.97	3.97	4.24	4.24	4.12
01ABB00639	3.75	3.88	3.88	4.12	4.12	4.12

© Ordnance Survey Ireland. All rights reserved. Licence Number EN0021014



Appendix B

Coastal Mapping

Location Plan:



Legend:

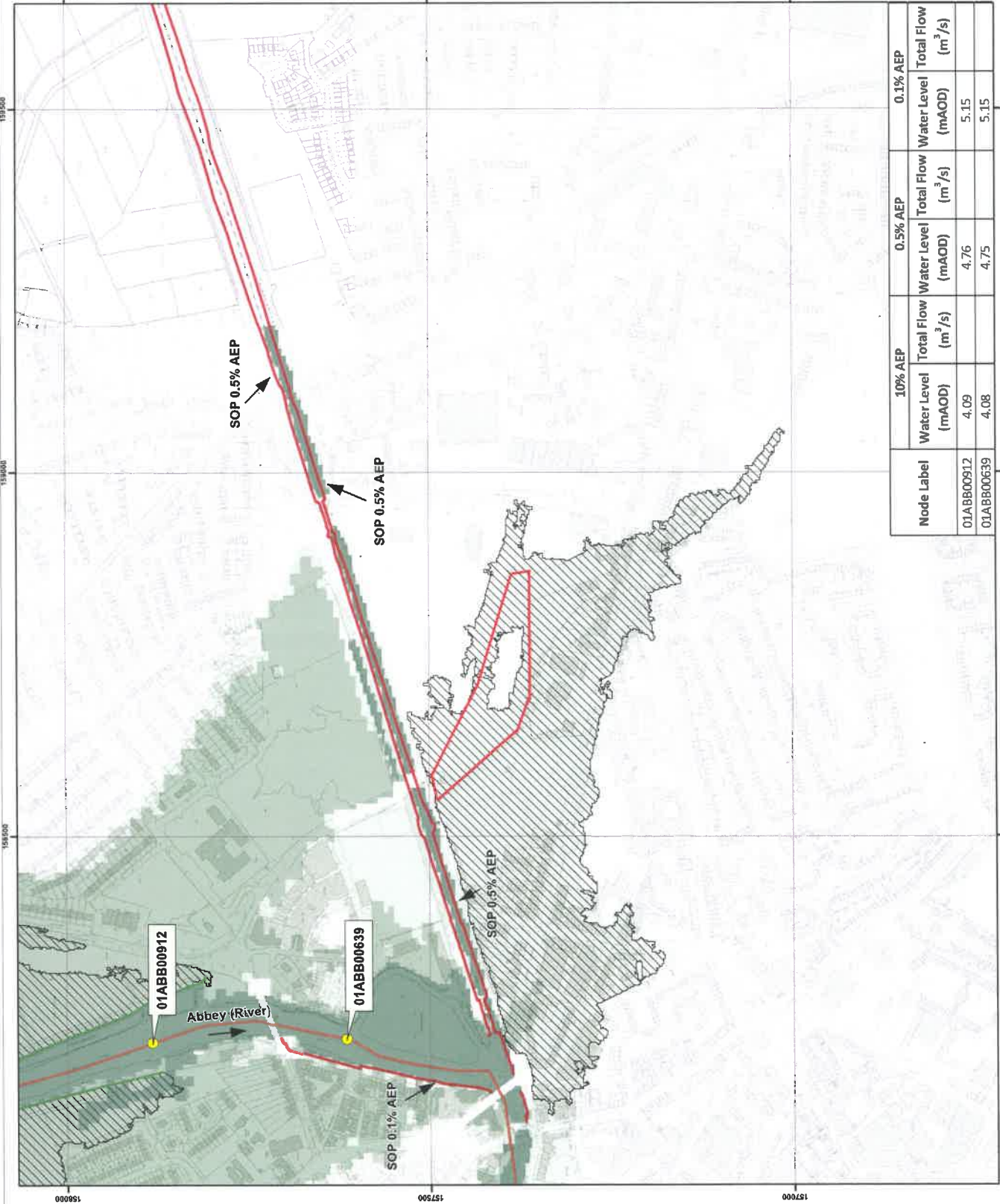
- Nodes
- Model Reach
- AFA Boundary
- Flood Defence: Wall
- Flood Defence: Embankment
- Defended Area
- 10% AEP Coastal Flood Extent (1 in 10 chance in any given year)
- 0.5% AEP Coastal Flood Extent (1 in 200 chance in any given year)
- 0.1% AEP Coastal Flood Extent (1 in 1000 chance in any given year)

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

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

JACOBS
Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:	SHANNON CFRRAM STUDY
Map Type:	EXTENT
Source:	COASTAL - TIDAL
Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH
Checked by:	KM
Reviewed by:	MC
Approved by:	PS
Map No.:	S2528LIK_EXCCOD_F1_59
Sheet:	59 of 65
Map Scale:	1: 5000
Plot Scale:	1:1 @A3
Revis'n:	0

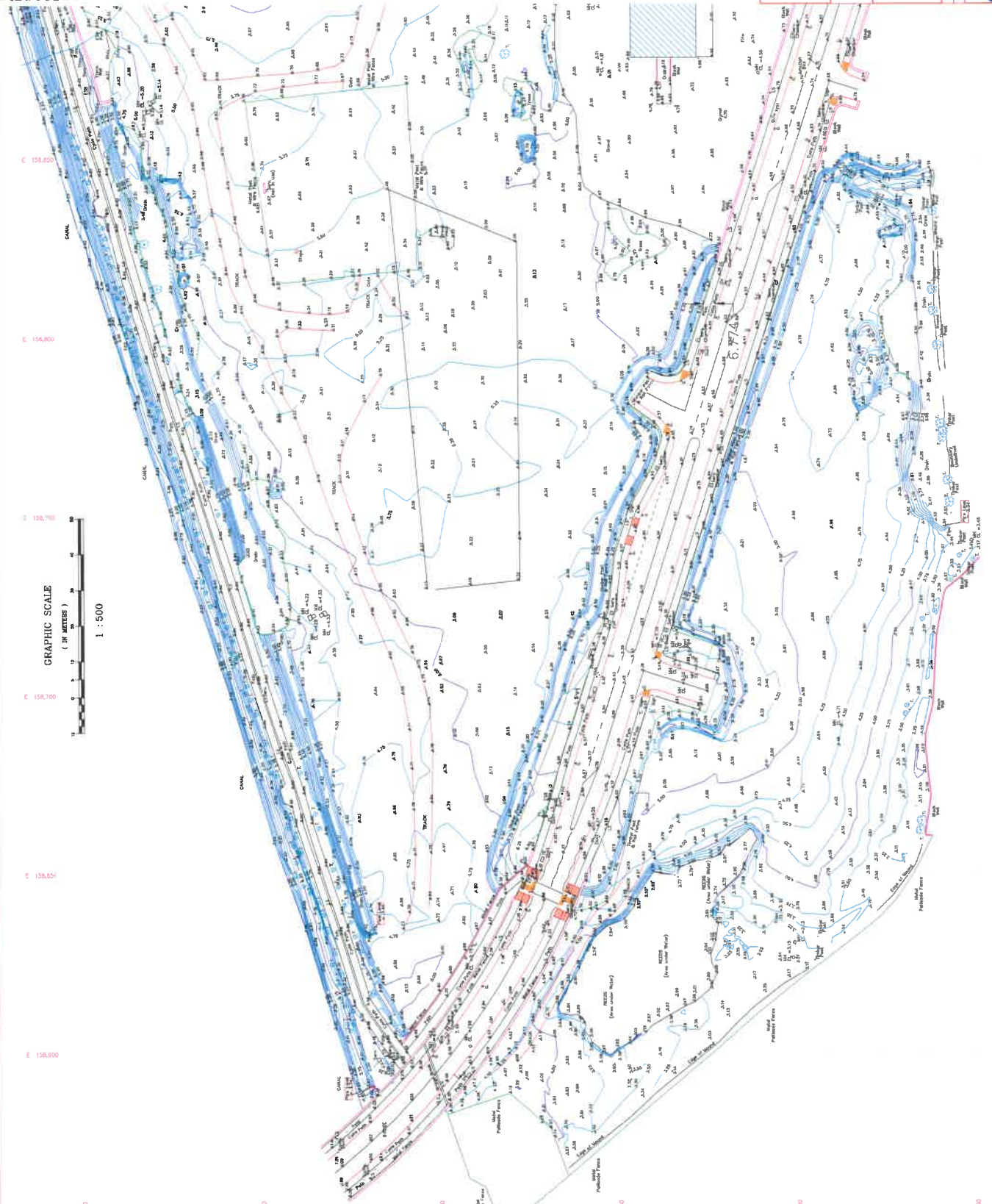



Node Label	10% AEP		0.5% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)
01ABB00912	4.09		4.76		5.15	
01ABB00639	4.08		4.75		5.15	

Appendix C

Topographical Survey

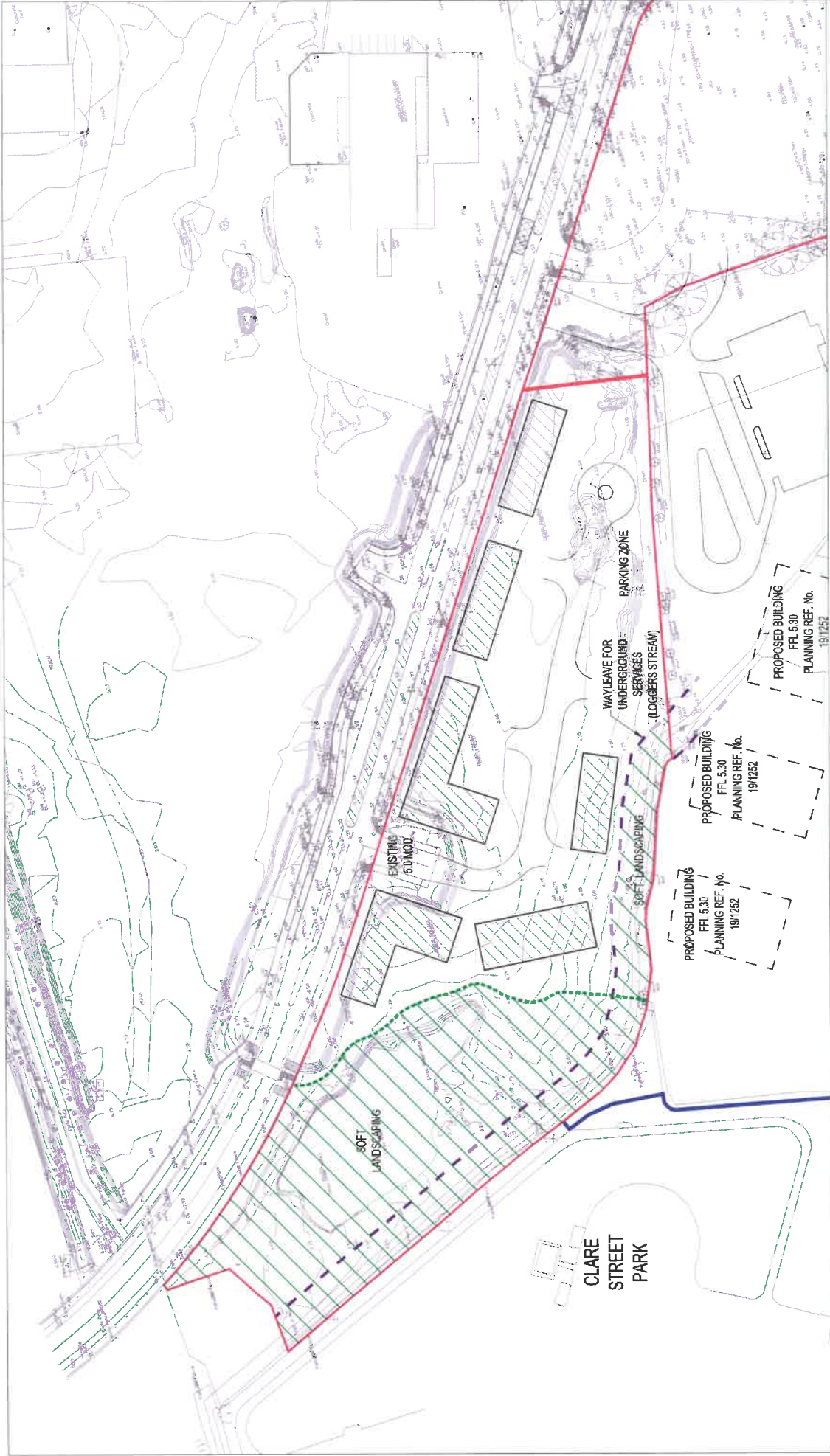
NOTES:
 All levels are relative to Ordnance Datum
 All levels are 50m sq GDA relative to Irish National Grid
 (IC 1975)
 Contours are at .25m intervals
 Part of site surveyed by Walsh Survey
 Services and Surveying and were
 signed back in 1990



Client	ARUP Consulting Engineers Horseshoe Lane, Upper Wexford Road, Limerick, No. 031 212005
Title	Site Survey of Lands at Park Road, Limerick.
Drawn: C. G. Z.	Drawn no. 08-105-01
Scale: 1:500	Date: 04-01-03
 Control Surveys 8 O'Connell Street, Limerick, Co. Clare, N. E. 007 2289712 Email: control@control.ie	

Appendix D

Notional Proposed Development Layout



Cronin Sutton Cotter
 45 O'Connell Street, Limerick, Co. Limerick
 T: +353 (0)81 594988 F: +353 (0)1 9011355
 e: info@csconsulting.ie
 w: www.csconsulting.ie

Quality
 Environment
 Energy
 Health & Safety

U.S. EN ISO 9001:2008
 U.S. EN ISO 14001:2004
 U.S. EN ISO 50001:2011
 Certified OHSAS 18001:2007

Client	Downnes Family	
Project	Flood Risk Assessment Pa Healy Road, Limerick	
Title	National Proposed Development Layout	
Drawn by	Checked by	Approval by
NO	GC	GC
Date	Scale	Revision
JULY 2021	1:1000	F012L-001

Rev. No.	Date	REVISION NOTE	Drawn By	Checked By

- NOTES**
- For setting out refer to Architect's drawings.
 - This drawing is to be read in conjunction with all other Architectural and Engineering drawings and all other relevant drawings and Specifications.
 - DO NOT SCALE THIS DRAWING. Use figured dimensions only.
 - No part of this document may be reproduced or transmitted in any form or stored in any retrieval system of any nature without the written permission as copyright holder except as agreed.
 - Ordnance Survey Ireland Licence Number EN 0074612

**Jetland District
Centre, Clonmacken
LCC – C62 – 198 &
LCC-C62-204**

Motion to Amend Draft Development Plan

On behalf of:

Councillor Sasa Novak

January 2022



HRA | PLANNING
chartered town planning consultants

DEVELOPMENT PLANNING | ENVIRONMENTAL PLANNING | MASTERPLANNING

Limerick | Dublin | t: 061 435000 | f:061 405555 | e:info@hraplanning.ie | w:www.hraplanning.ie

Title:	18019 Draft Development Plan Motion
Project:	Motion to Amend Draft Plan
Prepared by:	MH
Date:	January 2022
Issue:	Issue 1
<p><i>© Copyright HRA PLANNING. All rights reserved. This report has been prepared for the exclusive use of the commissioning party and unless otherwise agreed in writing by HRA Planning, no other party may copy, reproduce, distribute, make use of, or rely on the contents of the report. No liability is accepted by HRA PLANNING for any use of this report, other than for the purposes for which it was originally prepared and provided. Opinions and information provided in this report are on the bases of HRA PLANNING using due skill, care and diligence in the preparation of the same and no explicit warranty is provided as to their accuracy. It should be noted and is expressly stated that no independent verification of any of the documents or information supplied to HRA PLANNING has been made.</i></p>	

TABLE of CONTENTS

1.0	Introduction.....	1
2.0	The Need for Change.....	1
3.0	The Case for District Centre Zoning	2
3.1	Submitted Planning Application	
3.2	Flooding	
3.3	Brownfield and Infill Land	
3.4	Justification Test	
4.0	Motion to Amend the Draft Plan.....	5

1.0 Introduction

In accordance with Section 12(6) of the Planning & Development Act 2000 - 2021 and further to consideration of the Draft Development Plan and the **Chief Executive's report**, it is considered that the Draft Plan should be further amended.

The proposed amendment relates to 1.6 hectares of land adjoining the Jetland District Centre. A detailed submission was made by Valley Healthcare Infrastructure Investment Fund ICAV at Draft Plan stage, inclusive of a Flood Risk Assessment and Justification Test, seeking a change in the zoning from proposed agricultural use to District Centre zoning.

It is not the purpose of this submission to revisit the issues raised in the submission, but rather to concentrate on the core reasons why the planning authority does not consider mixed use zoning appropriate to the land as detailed in the Chief Executives Report.



Figure 1.0 Location of the Proposed Development Site

2.0 The Need for Change

It is submitted that the response of the Chief Executive to the submission made on the Draft Plan needs to be reconsidered, having regard to the brownfield nature of part of the site and **the definition of an 'urban core' in the 'Planning System and Flood Risk Management Guidelines – DoEHLG-2009' (Flooding Guidelines)**. In consideration of the matter, it is requested that regard is had to the following pertinent points.

1. Since the zoning submission was made on the Draft Plan, a comprehensive planning application has been submitted on the land for HSE sponsored Primary Care Centre (PCC)
2. A comprehensive Site Specific Flood Risk Assessment (SSFRA) and Justification Test was prepared and submitted in support of the Draft Development Plan submission and the planning application, demonstrating that the site is at low risk of flooding and can be developed **in accordance with 'The Planning System and Flood Risk Management Guidelines – DoEHLG-2009' (Flooding Guidelines)**.
3. A substantial part of the site, adjoining the road is brownfield in nature and is in need of regeneration.
4. Contrary to the consideration of the planning authority it is submitted that the proposed development does comply with the Justification Test, having regard to its location within and adjoining the core of an urban area.

It is proposed to deal with each of these issues in further detail below.

3.0 The Case for District Centre Zoning

3.1 Submitted Planning Application

Since the zoning submission was made on the Draft Plan, a comprehensive planning application has been submitted on the land for a 8,452sqm HSE sponsored Primary Care Centre (PCC) with additional services provided by TUSLA (P21/1741). This application was lodged on the 15th December 2021 with a decision due on the 17th February 2022.

The building comprises a four storey development extending to five storey in parts. Because the building is constructed above the level of the floodplain, primary access to the building is via a raised entrance podium.

The proposed development seeks to deliver a primary care facility that will accommodate significant health and social care services for the city of Limerick outside of the hospital setting. The proposed development will facilitate a multidisciplinary group of health and social care professionals who work together to deliver local accessible health and social services, for the benefit of the community. The development will provide for significant community infrastructure within the north-western side of the city, on a site in the heart of an established District Centre, proximate to other existing services and facilities.

There is no other alternative site available in the north western suburbs of Limerick City, surrounded by residential development, accessible by public transport with the ability to create synergies with other services and facilities, that can accommodate the development proposal. This is the only remaining site within the Jetland District Centre that can be developed, which can deliver the diversity of uses currently advocated in the Development Plan.

3.2 Flooding

As per Section 3.7 of the Flooding Guidelines, although there is a need for future development to avoid areas at risk of flooding, it is recognised in the Guidelines that the existing urban structure of the country contains many well established cities and urban centres, which will continue to be at risk of flooding. Accordingly, the flood risk management guidelines do facilitate development within areas of flood risk which contribute to compact sustainable growth of established urban city areas where the type and extent for flood risk has been established, where the potential flood risks can be mitigated, and, where the proposed development would not give rise to residual flood risk effect to the proposed development, or to surrounding people, environment or the economy.

A comprehensive Site Specific Flood Risk Assessment (SSFRA) and Justification Test was prepared and submitted in support of the Draft Development Plan submission and the planning application, demonstrating how the site can be developed **in accordance with 'The Planning System and Flood Risk Management Guidelines – DoEHLG-2009'** (Flooding Guidelines). The building has been constructed on a podium above the level of the floodplain.

The SSFRA establishes that the subject site is located within Flood Zone A in an undefended scenario and is located within Flood Zone B when flood defences are taken into consideration. The findings of the Flood Risk Management Plan were mapped by Punch Consulting and the findings suggest any overland flows resulting from a potential breach to the flood defences along the northern bank of the Shannon will not encroach on the subject site. This fact is significant in the context of assessing the suitability of land for development in the context of residual risk and indicates that flood levels on the land are unlikely to increase in the event of a breach. This includes providing a finished floor level for the proposed building of 5.50mAOD

The SSFRA concludes that the proposed development is at a low risk of flooding and is deemed appropriate provided the residual risk of coastal flooding is addressed by implementing the mitigation measures set out in the report.

3.3 Brownfield and Infill Land

The National Planning Framework (NPF) seeks to achieve more compact and sustainable growth through consolidating a greater share of future development within the existing built footprint of settlements, to include new homes, businesses and amenities. The NPF

sets national targets for brownfield/infill housing development in cities (50%) to support the regeneration of existing urban areas. NPF compact growth objectives together with Town Centres First principles are focused on the reuse of previously developed buildings **and land and building up 'infill' sites, especially those that are centrally located** in settlements at all scales.

SPPR DPG 7 of the Draft Development Plan Guidelines states that,

"Planning authorities shall adopt a sequential approach when zoning lands for development, whereby the most spatially centrally located development sites in settlements are prioritised for new development first, with more spatially peripherally located development sites being zoned subsequently".

The subject site is within a designated District Centre, within walking distance of services and facilities. The land is accessible with adequate water services and facilities. The principle of developing this land has always been acceptable, with the land zoned for district centre use and residential use in previous development plans. The zoning of this land would complete development within the District Centre with the provision of a new PCC for the benefit of the immediate and wider community.

3.4 Justification Test

Contrary to the consideration of the planning authority it is submitted that the proposed development does comply with the Justification Test. The planning authority has stated in the Chief Executives Report **that it defines the 'core' as that area zoned for city centre use only.** However, the Flooding Guidelines makes it clear that

*"in the case of Gateway planning authorities, where a number of strategic growth centres have been identified within the overall area of the authority, the Justification Test may be applied for vulnerable development within each centre"*¹.

Further, the core of an urban settlement is defined in the Guidelines² as

"the core area of a city, town or village which acts as a centre for a broad range of employment, retail, community, residential and transport functions".

The Jetland Centre is identified as a 'District Centre' in the Draft Plan where it is an objective to *"provide for a mixture of retail, residential, commercial, civic and other uses"*. Its purpose as stated in the Draft Plan is to *"facilitate a district level centre consisting of a compatible mix of uses complimentary to the City Centre, having regard to the principles of compact growth, consolidation and densification"*.

Thus, in accordance with the Flooding Guidelines, the subject land is located within and adjoins one of the identified cores within the established urban settlement.

¹The Planning System and Flood Risk Management Guidelines – DoEHLG-2009' pp.37

² Ibid - Glossary of Terms

Accordingly, it is submitted that the subject site does in fact comply with the Justification Test in this regard.

4.0 Motion to Amend the Draft Plan

It is hereby requested that the agricultural use zoning afforded to 1.6 hectares of land located within the Jetland District Centre at Cahaerdavin, Ennis Road is changed to District Centre zoning commensurate with adjoining lands for the valid reasons as set out above and in accordance with the proper planning and sustainable development of the area.

HRA PLANNING
Chartered Town Planning Consultants

Submission on
Draft Limerick Development Plan 2022 - 2028

On behalf of:
Valley Healthcare Infrastructure Investment Fund ICAV

August 2021



HRA | PLANNING
chartered town planning consultants

Title:	18019 Glencar Primary Care – Jetland Centre
Project:	Draft Limerick Development Plan 2022 – 2028 Submission
Prepared by:	MH
Date:	August 2021
Issue:	Issue 1
<p><i>© Copyright HRA PLANNING. All rights reserved. This report has been prepared for the exclusive use of the commissioning party and unless otherwise agreed in writing by HRA Planning, no other party may copy, reproduce, distribute, make use of, or rely on the contents of the report. No liability is accepted by HRA PLANNING for any use of this report, other than for the purposes for which it was originally prepared and provided. Opinions and information provided in this report are on the bases of HRA PLANNING using due skill, care and diligence in the preparation of the same and no explicit warranty is provided as to their accuracy. It should be noted and is expressly stated that no independent verification of any of the documents or information supplied to HRA PLANNING has been made.</i></p>	

TABLE of CONTENTS

1.0	INTRODUCTION.....	1
2.0	BACKGROUND.....	1
2.1	Location of Site	
2.2	Flood Risk Assessment	
3.0	DEVELOPMENT PLAN PROVISIONS.....	3
4.0	PROPOSED DEVELOPMENT.....	5
4.1	Development Proposal	
4.2	Need & Suitability of the Site	
4.3	Supporting National & Regional Policy	
5.0	MATERIAL CONSIDERATIONS.....	9
5.1	Flooding	
5.2	Planning for Compact Growth & Sequential Development	
5.0	THE REQUEST.....	11
	Appendix 1.0 Letter of Support from HSE	
	Appendix 2.0 Site Specific Flood Risk Assessment	

1.0 INTRODUCTION

HRA PLANNING has been retained by Valley Healthcare Infrastructure Investment Fund ICAV (our client) to prepare this submission to Limerick City and County Council in respect of the Draft Limerick Development Plan 2022 – 2028 (Draft Plan).

Our client has entered into a contractual arrangement to purchase 1.6 hectares of brownfield land located within the Jetland District Centre and currently zoned for 5B District Centre and 2A Residential Uses in the existing City Development Plan 2010 – 2016, with a narrow strip along the eastern boundary zoned for 6A Public Open Space. The Draft Plan proposes to change the zoning on the land to agricultural use, whilst maintaining the Public Open Space zoning to the east of the site.

This submission seeks to revert the zoning back to District Centre Use and to extend this zoning to the full 1.6 hectares of land, whilst maintaining the public open space zoning to the east. Such a change is requested and is necessary as a planning application is in the advanced stages of preparation and is due to be lodged in the next month for a Primary Care Centre (PCC) with a Tusla facility on the subject land.

The request to change the zoning provisions in the Draft Plan and to revert back to District Centre use are based on the following material considerations:

- a. A comprehensive Site-Specific Flood Risk Assessment (SSFRA) has been prepared which demonstrates that the proposed development is at a low risk of flooding and the site can be sustainably developed provided the residual risk of coastal flooding is addressed by implementing the mitigation measures proposed.
- b. The need to plan for compact growth and accommodate a sequential approach to development; and
- c. The need for a Primary Care Centre in Limerick City and the lack of alternative, available sites.

The land falls into two separate ownerships including Dunnes Stores and Mary Hannon. We confirm that Valley Healthcare Infrastructure Investment Fund ICAV has the necessary consent from the property owners to make this submission.

2.0 BACKGROUND

2.1 Location of Site

The subject land is located partially within and partially adjoining the Jetland District Centre. Situated off the Ennis Road, the site is accessed off an internal access road that was constructed to serve the Jetland Shopping Centre and adjoining retail park (see Figure 1.0).



Figure 1.0 Location of the Proposed Development Site

The proposed site is neighboured by the Jetland Shopping Centre to the north and the Vue Cinema to the east. The site is adjoined by greenfield land to the south, and a residential property to the west. Comprising 1.6 hectares in area, the front of the site is brownfield in nature with extensive hardcore material characterising the site. The land to the rear is greenfield in nature, dominated by mature hedgerows to the west.

The site is generally flat with a slight fall in levels from north to south. The levels vary from 3mAOD to the northeast of the site down to 1.5mAOD along the southern edge of the site. The existing road which borders the site to the north is at a level of approximately 2.8mAOD.

There is a small drainage ditch located to the east of the site, which flows southwards towards the River Shannon. There is an existing OPW drain located in the south-eastern corner of the site and as such, the site is located in benefiting lands (which indicates that the site is subject to flooding or inadequate drainage).

The site is serviced with a surface water and gravity foul sewer along with a potable water supply. There is a stormwater gravity sewer situated northeast of the site, where it continues south east and discharges into a drainage ditch. There is also a 750mm gravity

foul sewer running through the site. This foul sewer is part of the Limerick City Main Drainage.

The site is well serviced by the 343, 346 and 302 bus routes from Limerick City Centre and surrounding areas. All of these routes, located on the Ennis Road, are within walking distance of the site. The 343 and 302 routes operate every 20-30 minutes during peak commuter times. All bus stops are within easy walking distance of the site including:

- 302 City Centre to Caherdavin: 600 m
- 343 Limerick to Ennis: 350 m
- 346 Limerick to Whitegate: 350 m

2.2 Flood Risk Assessment

A detailed Site-Specific Flood Risk Assessment (SSFRA) has been undertaken by Punch Consulting in order to assess potential flood risk to the site. The SSFRA is provided in Appendix 1.0. The subject land has been screened, scoped and assessed for flood risk in accordance with 'The Planning System and Flood Risk Management Guidelines – DoEHLG-2009'.

The SSFRA reviewed the Office of Public Works (OPW) Flood Hazard Mapping website, which holds a record of historic flood events. A review of the database indicated that there have been historical instances of flooding in an area adjacent to the site, but not within the subject site. The site itself, however, is indicated as being in lands **marked as "Arterial Drainage Schemes Benefited Lands"**.

The CFRAM mapping indicates that there is a 0.1% AEP Coastal Flood Extent on the site and that the site is located in a '**Defended Area**'. As such the flood extents shown are coastal and the site is shown in Flood Zone B for coastal flooding. The site is not indicated as being subject to pluvial flooding. Based on this assessment of the CFRAMS flood mapping, the flood level is assumed to be 2.5mAOD for the 0.1% AEP Coastal Flood Extent and 4.7mAOD for the extent of the Defended Area.

However, **in consideration of the findings of the SSFRA, and in the context of 'The Planning System & Flood Risk Management Guidelines – 2009'** which adopts a precautionary approach and discounts flood defences, the site is elevated to Flood Zone A in an undefended scenario. Section 5.0 of this submission further addresses the flood status of the land and demonstrates why the subject land should nonetheless be zoned for a development purpose, in this specific instance.

3.0 DEVELOPMENT PLAN PROVISIONS

The land on which the development is proposed is currently zoned as 5B District Centre to the north, R2 for Residential Use to the south, and 6A Public Open Space in the east in the current Limerick City Development Plan 2010-2016. Refer to Figure 2.0 below.



Figure 2.0 Existing Landuse Zonings - Limerick City Development Plan 2010 - 2016



Figure 3.0 Proposed Landuse Zonings - Draft Limerick Development Plan 2021 - 2027

Within Chapter 14 of the current City Development Plan one of the key objectives is to *"promote development within the District Centre at Jetland so as to broaden its use mix"*. The diversification of district centres to perform as more than just retail centres is also promoted. In this regard **Objective ZO.5 (B)** seeks *"to provide for and/or improve district centres as mixed use centres, with a primary retail function which will also act as a focus*

for a range of services". It is considered that these are important objectives which should also be promoted in the Draft Plan.

In contrast to the current Development Plan, the Draft Limerick Development Plan 2022 to 2028 is proposing a change of zoning to Agriculture as shown in Figure 3.0, whilst maintaining the public open space zoning to the east. Whilst the current Development Plan proposes a link road running north-south through the site, the provision for such a road does not appear to have been included in the Draft Plan.

It is submitted to the planning authority that the approach proposed in the Draft Plan, which includes the provision of agricultural zoning in the middle of Limerick city, surrounded by residential development to the south, east and west and by a district centre to the north, is not promoting a viable landuse and is not making the most efficient use of scarce urban land, particularly given its location just 1,900m from the zoned city centre.

4.0 PROPOSED DEVELOPMENT

4.1 Development Proposal

The proposal, which is at an advanced stage of design, seeks to provide for a HSE sponsored Primary Care Centre (PCC) on the site with additional services provided by TUSLA. The layout of the proposed development is indicated in Figure 4.0. In addition to the provision of a PCC, the development proposal also incorporates a significant access road into the site which also has the potential of providing access to lands to the rear of the site.

The proposed development seeks to deliver a primary care facility that will accommodate significant health and social care services for the city of Limerick outside of the hospital setting. The proposed development will facilitate a multidisciplinary group of health and social care professionals who work together to deliver local accessible health and social services, for the benefit of the community. The development will provide for significant community infrastructure within the north western side of the city, on a site in the heart of an established District Centre, proximate to other existing services and facilities.

The proposed PCC is intended to function as a headquarters for the Ballynanty, Thomond and Westbury Community Healthcare Network, serving a population of approximately 37,000 people. The community of Ballynanty is served by a primary care centre on Kings Island with the community of Westbury served by a small centre at the front of Westbury Estate. The proposed development, as well as functioning as a headquarters for these smaller centres, will also serve the Thomond community with a population of circa 12,500 people.



Figure 4.0 Proposed Site Layout Plan

The following services shall be provided in the PCC, including:

- Public Health Nursing
- Schools Nursing
- Community Medicine
- Physiotherapy (adult and paediatric)
- Occupational Therapy (adult and paediatric)
- Speech and Language Therapy (adult and paediatric)
- Dietetics (adult and paediatric)
- Podiatry
- Ophthalmology
- Audiology (adult and paediatric)
- Dental services
- Vaccination scheme
- Psychology
- Counselling

4.2 Need & Suitability of the Site

Primary care is the first of the six frameworks for change set out in the National Health Strategy, which seeks to rebalance the emphasis from secondary care to primary care. These services provide first level contact that is fully accessible by self-referral and have a strong emphasis on working with communities and individuals to improve health and social well-being. The object of the HSE is to configure primary, community and continuing care services to deliver optimal and cost effective results.

The HSE seeks to advance Primary Care solutions using both the public and private sector **(HSE and GP's)** on an integrated basis. The private sector provides of the primary care infrastructure (the building) with the HSE taking fixed term leases for their portion of the facilities.

The HSE has identified locations for Primary Care Teams and primary care buildings. The locations, which includes the subject site, takes into consideration spatial factors, GP populations and community integrity having regard to:

- Population sizes;
- Existing travel patterns;
- Existing social, cultural and service links;
- Availability of GPs in local areas;
- Natural GP affiliations;
- Existing GMS patterns;
- Public transport system;
- Existing and future road system; and
- Areas of high deprivation including RAPID.

To determine the most appropriate delineation for Primary Care Team catchments, workshops were held by the Projects Office throughout the entire country. These

workshops included individuals with valuable local knowledge from a wide range of disciplines including public health nurses, general practitioners, therapy professionals, and mental health professionals. Primary Care Team catchments arising from the workshops have been finalised, and the subject site on the northern side of Limerick has been identified as the most suitable location to serve the catchment area.

Relocation of the proposed PCC to an alternative site is not a process that can occur immediately or easily. An alternative site would need to go through a lengthy evaluation process, including evaluation of all factors detailed above.

4.3 Supporting National & Regional Policy

There is significant national and regional policy supporting the creation of healthy communities and providing the necessary services to deliver. The National Planning Framework (NPF) published in February 2018 sets out a strategic development strategy for the country up to 2040. Amongst its key messages is the need to provide the highest possible quality of life for people and communities via well designed and managed built and natural environments. The NPF recognises the importance of facilitating and creating healthy communities.

The NPF provides for a number of National Policy Objectives (NPO) which must be adhered to in the advancement of development throughout the State. National Policy Objective 26 seeks to ***"support the objectives of public health policy including Healthy Ireland and the National Physical Activity Plan, though integrating such policies, where appropriate and at the applicable scale, with planning policy"***

The proposed development of a Primary Care Centre in the north western suburbs of Limerick City has been identified as necessary to ensure the provision of an integrated primary health facility with the necessary services and support structure to provide medical and community services to immediate population and the wider catchment area.

Further, the development is provided on a brownfield site, within an identified District Centre thus contributing to the objectives in the Plan in respect of Compact Growth and facilitating development in a sequential manner closest to existing services and facilities.

Similarly, the Regional Spatial and Economic Strategy for the Southern Region (RSES) is a strategic plan and investment framework to shape the future development of the Southern region to 2031 and beyond.

The RSES recognises that in the face of lifestyle induced illnesses and an ageing population there is an increased urgency in the provision of primary health care centres and home care provision. The strategy notes that educative and primary health-care intervention focused approaches, allow gains, both in terms of lifestyle adjustments and tertiary care avoidance, leading to a more cost-efficient and an ultimately less burdened health-care system. **It states that** *"gaps in the national healthcare infrastructure, in particular the*

demand and capacity for primary care, acute care and social care services need to be addressed to meet this objective”.

The National Development Plan (NDP) 2018-2027 details a range of health care infrastructure investment. The RSES supports this investment programme including infrastructure and facilities that facilitate the transition of patients to the most appropriate care settings ranging from acute care to primary and community services.

The RSES identifies a number of regional policy objectives (**RPO's**) which must be adhered to in planning for the spatial development of the region and the county. In this regard, RPO177 **seeks** *“to improve access to Quality Childcare, Education, and Health Services through initiatives and projects under the National Development Plan (NDP) 2018-2027”*. Further, RPO178 also seeks the **“delivery of better universal health services including mental health, at all levels of service delivery”**.

The proposed development seeks to deliver in relation to both RPO 169 and RPO 170 through the provision of a state of the art primary medical facility serving the north western suburb of Limerick City and the surrounding community.

5.0 MATERIAL CONSIDERATIONS

There are a number of material considerations put forward which, it is submitted, will need to be considered by the planning authority, in respect of zoning on the subject land.

The recently published Draft Development Plan Guidelines by the Department of Housing, Local Government and Heritage clearly state that **“planning authorities should approach the development plan with a clear focus on the delivery of expected development outcomes”**. Valley Healthcare Infrastructure Investment Fund ICAV has already delivered **(are in the process of constructing) PCC's in Sixmilebridge, Ennis and Listowel** and are about to lodge a planning application on the subject site. Should planning permission be granted, construction of a PCC will commence immediately on the site, thereby ensuring delivery of necessary medical supporting facilities which are needed in the area.

5.1 Flooding

Section 2.2 of this report establishes that the subject site is located within Flood Zone A in an undefended scenario and is located within Flood Zone B when flood defences are taken into consideration. Irrespective, in consideration of the flood consideration and in reference to **‘The Planning System and Flood Risk Management Guidelines – DoEHLG-2009’**, it is submitted that the land should not be automatically de-zoned as a result.

The JBA flood mapping as provided in the Draft Plan is a preliminary set of mapping prepared for Limerick City and County Council. As per Section 2.3 of the SFRA in the Draft Plan, the definition of the Flood Zones is based on an undefended scenario and does not take into account the presence of any flood protection structures such as flood walls or

embankments. Hence, the flood extents shown are a worst-case scenario based on all flood defences in Limerick not being operational and ignored entirely. We acknowledge that this approach is undertaken in strict compliance with the Guidelines.

The CFRAM maps identify a flood defence embankment located approximately 900m south **of the site along the Shannon Estuary. This embankment is part of the OPW's Shannon North Embankments Scheme.** The embankments are legacy structures which were constructed historically to protect agricultural lands and were not designed to modern day engineering standard. The CFRAMS mapping indicates that the existing embankments may provide a certain standard of protection in the 1% AEP event. It must also be noted that Limerick City and County Council has appointed RPS Consulting Engineers to work on the Limerick City and Environs Flood Relief Scheme (FRS). Although the delivery of this project is unlikely to be completed in the short term, the completed FRS will offer more reliable flood defence for the site in the future.

The OPW released the Flood Risk Management Plan for the Shannon Upper & Lower, River Basin 25/26, which assesses the effect of a failure in flood defences on the surrounding area. The OPW has identified two potential breach locations within the embankments, located approximately 1.5km south of the site (refer to SSFRA for precise locations). The findings of the Flood Risk Management Plan were mapped by Punch Consulting and the findings suggest any overland flows resulting from a potential breach to the flood defences along the northern bank of the Shannon will not encroach on the subject site. This fact is significant in the context of assessing the suitability of land for development in the context of residual risk and indicates that flood levels on the land are unlikely to increase in the event of a breach.

Justification Test

Because a residual risk of flooding remains the sequential approach and the Justification Test applies to this defended area. The proposed development is for a Primary Care Centre. Table 3.1 of the Planning System and Flood Risk Management Guidelines does not specifically classify this type of development vulnerability. The closest classification is that of *'Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions'* which is categorised as a Less Vulnerable Development.

In order to explore the issue further, regard is had to comparable UK Guidelines where four vulnerability classes are listed as opposed to the three adopted in the Planning System and Flood Risk Management Guidelines. They allow for highly vulnerable, more vulnerable, less vulnerable and water compatible classifications. Medical Practices are specifically **referred to in the UK Guidelines and are attributed to the additional class of "more vulnerable development"**.

Under the UK Guidelines, developments classified as "more vulnerable" are considered acceptable in the equivalent of Flood Zones B and C, with justification being required if they are located in the equivalent of Flood Zone A.

As the development will not provide critical patient care or overnight care it is suggested **that the development could be classified as "Less Vulnerable"**. This would apply the same classification and zone criteria as the UK Guidelines. This has also been an accepted precedent in the Kilmallock Primary Care Centre granted permission under P1745 and Croom Primary Care Centre granted permission under P171150.

As the site is located in Flood Zone A and considered "Less Vulnerable," development can only be permitted if the development complies with the requirements of the Justification Test as described in the Guidelines. In this instance the Plan-making Justification Test (Box 4.1) is the relevant test to be used at the plan preparation and adoption stage where it is intended to zone or otherwise designate land which is at moderate or high risk of flooding. Table 1.0 below details why zoning must be considered on the subject lands and demonstrates why zoning of the site would be in full compliance with the Justification Test and the Planning System and Flood Risk Management Guidelines.

Further, Section 4.4 of the SSFRA details a number of measures that are proposed for the development design as a precautionary approach to the risk of flooding on the site. The SSFRA concludes that the proposed development is at a low risk of flooding and is deemed appropriate provided the residual risk of coastal flooding is addressed by implementing the mitigation measures set out in the report. This includes providing a finished floor level for the proposed building of 5.50m AOD (0.5% AEP flood level + 500mm climate change allowance + 300mm freeboard), providing a sufficient surface water drainage network, providing water compatible construction where appropriate and providing an emergency plan for evacuation of the site in the extreme event of a combined coastal extreme flood and failure of the existing or future River Shannon flood defences.

The SSFRA concludes that with the implementation of the said measures, the site will be at low risk of flooding and will not increase the risk of flooding to any adjacent or nearby area.

Criteria to be Addressed	Planning Response
<p>The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.</p>	<p>Limerick has been identified in the National Planning Framework (NPF) as one of the five cities in the country which is the subject of a Metropolitan Area Strategic Plan. This emphasises the Metropolitan Area’s national importance, for significant additional growth. This is echoed in the Regional Spatial and Economic Strategy for the Southern Region, which mentions that the Limerick Shannon Metropolitan area is “a key economic driver for the region and Ireland”. Limerick has been identified for significant population growth in the NPF along with an objective that 50% of that future growth be located within the city and its suburbs. (NPO2a).</p>
<p>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 and, in particular:</p>	<p>The City is located at a pivotal point on the Atlantic Economic Corridor. The NPF and RSES confirms that Limerick has the potential to generate and be the focus of significant employment and housing growth.</p> <p>The subject site is located within an existing District Centre and is the only remaining gap site with road frontage which remains to be developed. Objective ZO.5 (B) of the existing Development Plan seeks “to provide for and/or improve district centres as mixed use centres, with a primary retail function which will also act as a focus for a range of services”. The focus in the Jetland District Centre to date is on retail provision. Development on the subject site will offer the diversity of mix necessary to provide for a range of services. This will further strengthen the role and function of the District Centre.</p>

- b. Comprises significant previously developed and/or under-utilised land.

A significant part of the site, fronting the link road, is brownfield in nature, comprising extensive hardcore material. The remainder of the site (to the rear) is greenfield. Having regard to development surrounding the site to the north, east and further west and south, the subject site is under-utilised particularly given its location within a built up business district. It is submitted to the planning authority that there is no other beneficial use for this land, particularly having regard to its location and juxtaposition within the existing built form.
- c. Is within or adjoining the core of an established or designated urban settlement.

The subject site is located within a designated district centre, in the heart of a built-up business district. It is the only remaining gap site which is capable of being developed with immediate road frontage.
- d. Will be essential in achieving compact and sustainable urban growth.

The subject site is located within a designated area of the city identified for growth, surrounded by extensive residential and commercial development. The site is fully serviceable with a gravity foul sewer (part of Limerick Main Drainage) running through the site and a surface water connection available on the road fronting the site. The site is also served by public transport located just 300m from existing bus stops on the Ennis Road. According to the Draft LSMATS the Ennis Road will become a Bus Connects route, linking the District Centre to the city centre with a bus every 10 minutes.
- e. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or

There is no other alternative site available in the north western suburbs of Limerick City, surrounded by residential development, accessible by public transport with the ability to create synergies with other services and facilities, that can be developed. This is the only remaining site within the

<p>adjoining the core of the urban settlement.</p> <p>A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment</p>	<p>Jetland District Centre that can be developed, which can deliver the diversity of uses currently advocated in the Development Plan.</p> <p>Not only has a SFRA been carried out as part of the SEA, but so too has a SSFRA which examines the specific characteristics of the site and its specific development proposal to provide for a PCC. Importantly, as already detailed in Section 5.1 of this report, any overland flows resulting from a potential breach to the flood defences along the northern bank of the Shannon will not encroach on the subject site. Notwithstanding, Section 4.4 of the SSFRA details a number of measures that are proposed for the development design as a precautionary approach to the risk of flooding on the site.</p>
--	---

Table 1.0 Justification Test (Box 4.1 of Guidelines)

The Limerick City Development Plan 2010 – 2016 identified various strategically located urban centres and particularly district centre areas whose continued growth and development is/was encouraged in order to bring about compact and sustainable urban development and more balanced regional development. The Jetland Centre was one such area in Limerick city. This is the only site that remains undeveloped in the centre and which is capable of immediate development. Therefore, in full consideration of the Planning System and Flood Risk Management Guidelines, the subject site complies with Box 4.1 Justification Test of the Guidelines and it is submitted that the subject lands should be appropriately zoned to accommodate development.

5.2 Planning for Compact Growth & Sequential Development

The National Planning Framework (NPF) seeks to achieve more compact and sustainable growth through consolidating a greater share of future development within the existing built footprint of settlements, to include new homes, businesses and amenities. The NPF sets national targets for brownfield/infill housing development in cities (50%) to support the regeneration of existing urban areas. NPF compact growth objectives together with Town Centres First principles are focused on the reuse of previously developed buildings and land and building up 'infill' sites, especially those that are centrally located in settlements at all scales.

SPPR DPG 7 of the Draft Development Plan Guidelines states that,

"Planning authorities shall adopt a sequential approach when zoning lands for development, whereby the most spatially centrally located development sites in settlements are prioritised for new development first, with more spatially peripherally located development sites being zoned subsequently".

The subject site is within a designated District Centre, within walking distance of services and facilities. The land is accessible with adequate water services and facilities. The principle of developing this land has always been acceptable, with the land zoned for district centre use and residential use in previous development plans. The zoning of this land would complete development within the District Centre with the provision of a new PCC for the benefit of the immediate and wider community.

The development plan process has a strategic role to play in facilitating new development and investment in settlements so that it can support the provision of services in areas of greatest demand. The HSE has identified that there is a demand and need for a PCC at this location

Zoning the subject land for mixed use purposes, as an extension to the existing District Centre will ensure that a portion of new development reflects the compact growth and town centres first agenda, which is also a key dynamic in addressing climate change, through reducing dependence on car-based transport, the extent of green-field land consumption and costly and inefficient infrastructure provision and use. In this instance, the development plan is provided with an opportunity to deliver a framework for development, which ensures a close correlation between facilitating a PCC on land with infrastructural capacity whilst also ensuring that a substantial element of future growth within a designated centre.

6.0 THE REQUEST

To change the zoning on 1.6 hectares of land from agricultural and recreation & open space use to mixed use, commensurate with its location within the Jetland District Centre.

Friday 03rd September 2021

Draft Limerick County Development Plan 2022 – 2029

To whom it may concern,

I can confirm that the Health Service Executive (HSE) is fully supportive of this submission on the draft Limerick County Development Plan 2022-2028 by HRA Planning on behalf of Valley healthcare Infrastructure Investment Fund ICAV.

As part of its remit to deliver Primary Care services and to progress the Sláintecare Implementation Strategy and Action Plan the HSE has adopted a population based approach for service delivery. Community Healthcare Networks (CHNs) have now been established nationally as the basis to provide primary healthcare services to the general population of Ireland. Healthcare services are to be provided based on these population networks and their associated geographical areas. To enable this service approach requires the appropriate location of the physical infrastructure within each network area. In Limerick City the relevant Healthcare Network (CHO3-8) has a population of approximately 37,000 people and covers an area that includes Kings Island, Ballynanty and Thomond/Ennis Road. This particular location within the Jetland District Centre is intended to provide the main accommodation base for health service delivery for this Network and would complement existing established infrastructure elsewhere within the Network area. It is therefore required to provide a base not only for the primary care team directly serving the immediate general population of in excess of 12,600 people but also to act as the network hub for the provision of additional network healthcare services for the wider population of 37,000 people within the network. The intended space for TUSLA is the second component of a considered overall TUSA property strategy for Limerick City to best serve the local population which also includes a development on HSE lands at St Joseph's Hospital, Mulgrave Street, Limerick.

The HSE are strongly supportive of a change in zoning to facilitate development of this much needed Primary Care Centre for Limerick City, which, as already outlined is intended as the headquarters for the local Community Healthcare Network. Following a detailed site selection process undertaken by the HSE, the subject site was deemed the most suitable by the HSE, having regard to its location adjoining an extensive resident population, access to public transport and the synergies that could be developed with neighbouring commercial operations in the District Centre. The alternative site options put forward as a result of the process undertaken by the HSE were generally not of an equivalent standard in terms of meeting the various criteria for a suitable Primary Care Centre for this specific area of the city. Also, there would be a considerable time delay arising should the HSE need to recommence the entire process with no guarantee of a successful outcome that an alternative suitable site option might result that could be subsequently successfully delivered.

For these reasons, we would strongly support the request made for a change in zoning on the subject lands from agricultural and recreation & open space use to mixed use, commensurate with its location within the Jetland District Centre.

Yours faithfully,



Joe Hoare
Assistant National Director HSE
Capital & Estates – West

Jetland PCC, Ennis Road

Site Specific Flood Risk Assessment

191177-PUNCH-XX-XX-RP-C-001

September 2021

Document Control

Document Number: 191177-PUNCH-XX-XX-RP-C-001

Status	Rev	Description	Date	Prepared	Checked	Approved
S2	P01	Draft Issue	17/08/2021	A. Baker	D. Egan	J. Tiernan
S2	P02	LCCC Development Plan Submission Issue	03/09/2021	A. Baker	D. Egan	J. Tiernan

Table of Contents

Document Control.....	i
Table of Contents	ii
1 Introduction.....	1
1.1 Background.....	1
1.2 Existing Site	1
1.3 Nature of the Proposed Development	2
2 Relevant Guidance	3
2.1 The Planning System and Flood Risk Management Guidelines	3
2.2 Local Area Plan	4
2.3 Land Zoning	6
2.4 Flood Risk Management Plan	7
3 Flood Risk Identification	0
3.1 Existing Hydrogeological Environment	0
3.2 Topographical Survey	0
3.3 Site Walkover	2
3.4 Site Geology.....	2
3.5 Groundwater Flooding.....	3
3.6 Review of Existing Surface Water Infrastructure	3
3.7 Review of Historic Mapping	5
3.8 History of Flooding	6
3.9 Preliminary Flood Risk Assessment Mapping.....	8
3.10 CFRAMS Mapping.....	9
3.11 Existing Flood Defences	11
3.12 Breach Analysis	11
3.13 Draft Strategic Flood Risk Assessment	14
3.14 Estimate of Flood Zone.....	16
4 Flood Risk Assessment.....	17
4.1 Sources of Flooding	17
4.2 Site Vulnerability.....	17
4.4 Flood Mitigation Measures	19
5 Development Management Justification Test.....	20
6 Conclusions	0
Appendix A Site Visit Images	A-I
Appendix B OPW Historic Flood Events Record	B-I

Appendix C CFRAMS Mapping..... C-I

1 Introduction

1.1 Background

PUNCH Consulting Engineers were appointed by Valley Healthcare Fund, to carry out a Site-Specific Flood Risk Assessment for the proposed development in Jetland, Ennis Road, Limerick.

The assessment is carried out in full compliance with the requirements of “The Planning System & Flood Risk Management Guidelines” published by the Department of the Environment, Heritage and Local Government in November 2009.

The proposed site layout is detailed in a series of planning drawings provided by John Halligan Architects in the planning documentation.

1.2 Existing Site

The site location is shown in Figure 1-1 below. The proposed site is bordered by the Jetland Shopping Centre to the north, the Vue Cinema to the east, greenfield land to the south, and a residential property to the west. The site is approximately 0.5 hectares and is a current brownfield site. There are no existing buildings, but the site is partially covered in hardcore. The site is generally flat with no sloping areas.



Figure 1-1: Location of the Proposed development (site boundary indicated in red)

1.3 Nature of the Proposed Development

The proposed development comprises of a new primary care centre and car parking area. An extract from the site layout is included in Figure 1-2.



Figure 1-2: Site Layout

2 Relevant Guidance

2.1 The Planning System and Flood Risk Management Guidelines

In September 2008, “The Planning System and Flood Risk Management” Guidelines were published by the Department of the Environment, Heritage and Local Government in Draft Format. In November 2009, the adopted version of the document was published.

The Flood Risk Management Guidelines give guidance on flood risk and development. The guidelines recommend a precautionary approach when considering flood risk management in the planning system. The core principle of the guidelines is to adopt a flood risk sequential approach to managing flood risk and to avoid development in areas that are at risk. The sequential approach is based on the identification of flood zones for river and coastal flooding. The guidelines include definitions of Flood Zones A, B and C, as noted in Table 2-1 below. It should be noted that these do not take into account the presence of flood defences, as there remain risks of overtopping and breach of the defences.

Table 2-1: Flood Zone Designation

Flood Zone	Type of Flooding	Annual Exceedance Probability (AEP)
Flood Zone A	Coastal	Less than a 1:200 (0.5% AEP) year event
	Fluvial	Less than a 1:100 (1% AEP) year event
Flood Zone B	Coastal	Greater than a 1:200 (0.5% AEP) and less than a 1:1000 (0.1% AEP) year event
	Fluvial	Greater than a 1:100 (1% AEP) and less than a 1:1000 (0.1% AEP) year event
Flood Zone C	Coastal	Greater than a 1:1000 (0.1% AEP) year event
	Fluvial	Greater than a 1:1000 (0.1% AEP) year event

Once a flood zone has been identified, the guidelines set out the different types of development appropriate to each zone. Exceptions to the restriction of development due to potential flood risks are provided for through the use of the **Justification Test**, where the planning need and the sustainable management of flood risk to an acceptable level must be demonstrated. This recognises that there will be a need for future development in existing towns and urban centres that lie within flood risk zones, and that the avoidance of all future development in these areas would be unsustainable.

A three staged approach to undertaking an FRA is recommended:

Stage 1: Flood Risk Identification - Identification of any issues relating to the site that will require further investigation through a Flood Risk Assessment;

Stage 2: Initial Flood Risk Assessment - Involves establishment of the sources of flooding, the extent of the flood risk, potential impacts of the development and possible mitigation measures;

Stage 3: Detailed Flood Risk Assessment - Assess flood risk issues in sufficient detail to provide quantitative appraisal of potential flood risk of the development, impacts of the flooding elsewhere and the effectiveness of any proposed mitigation measures.

This report addresses the requirements for Stage 2.

2.2 Local Area Plan

The proposed site is covered by the Limerick City Development Plan.

The Limerick County Development Plan 2010-2016 states the following with regards flood risk:

Policy WS.9: Flood Risk

It is the policy of Limerick City Council to ensure that development should not itself be subject to an inappropriate risk of flooding nor should it cause or exacerbate such a risk at other locations.

- *Development that is sensitive to the effects of flooding will generally not be permitted in flood prone or marginal areas. Preventing such development, where flooding would result in significant hardship, financial losses or costs, will avoid increasing the existing level of risk and will protect the proposed new development from the human (stress and ill-health, for example) and financial costs of flood events. It will also eliminate or reduce expenditure on flood protection measures and compensation.*
- *Appropriately designed development, which is sensitive to the effects of flooding, may be permissible in flood plains provided it does not reduce the flood plain area or otherwise restrict flow across floodplains. (Examples of such development might include park areas, sports pitches, certain types of industry, warehousing, etc. designed to be flood resistant and/or insensitive. Such development should only be permitted provided it incorporates adequate measures to cope with the ever-existent flood risk, e.g. adequate drainage systems, safety measures, emergency response facilities and/or warning and response systems and where it is considered that flooding would not result in significant hardship/financial loss or cost.)*
- *Development must so far as is reasonably practicable incorporate the maximum provision to reduce the rate and quantity of runoff.*
 1. *e.g.: Hard surface areas (car parks, etc.), should be constructed in permeable or semipermeable materials.*
 2. *On-site storm water ponds to store and/or attenuate additional runoff from the development should be provided.*
 3. *Soak-aways or french drains should be provided to increase infiltration and minimise additional runoff.*
- *Such sustainable design/construction measures are desirable in most areas and essential in floodplains, areas liable to flooding, and areas where the conveyance capacity of watercourses is marginal. In all of these cases development that reduces the rate of absorption or increases the rate of runoff increases the risk of flooding of lands and properties downstream.*
- *For developments adjacent to watercourses of a significant conveyance capacity any structures (including hard landscaping) must be set back from the edge of the watercourse to allow access for channel clearing/maintenance. (A setback of 5m-10m is required depending on the width of the watercourse).*
- *Development consisting of construction of embankments, wide bridge piers, or similar structures will not normally be permitted in or across flood plains or river channels. (Such structures restrict/obstruct flow and increase the risk of flooding to property and land upstream. If it is considered necessary, in exceptional cases, to permit such structures, they should be designed to minimise and/or compensate for any potential negative effects).*

All new development must be designed and constructed to meet the following minimum flood design standards:

- *For Urban areas or where developments (existing, proposed or anticipated) are involved- the 100-year flood;*
- *For Rural areas or where further developments (existing, proposed or anticipated) are not involved - the 25-year flood;*
- *Along the Coast and Estuaries - the 200-year tide level; Where streams open drains or other watercourses are being culverted - the minimum permissible culvert diameter is 900mm (Access should be provided for maintenance as appropriate.)*

The application of higher design standards may be appropriate in certain cases where the level of risk and/or uncertainty warrant it e.g. hospitals or other emergency services, main roads, chemical plants, cultural repositories, areas of karst etc.

A Flood Impact Assessment and proposals for the storage or attenuation of run-off discharges (including foul drains) to ensure the development does not increase the flood risk in the relevant catchment must accompany planning applications for development of areas exceeding 1 hectare.

A certificate from a competent person as agreed with the Water Services Department of Limerick City Council with a minimum of €2m Professional Indemnity Insurance that the development will not contribute to flooding within the relevant catchment, must accompany planning applications for development of areas of 1 hectare or less.

The Draft Limerick Development Plan dated 2022 to 2028 is now available and states the following regarding flood risk:

Policy CAF P5: Managing Flood Risk

It is a policy of the Council to protect Flood Zone A and Flood Zone B from inappropriate development and direct developments/land uses into the appropriate lands, in accordance with ‘The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009’ (or any superseding document) and the guidance contained in Development Management Standards. Where a development/land use is proposed that is inappropriate within the Flood Zone, then the development proposal will need to be accompanied by a Development Management Justification Test and site specific Flood Risk Assessment in accordance with the criteria set out under ‘The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009’ and Circular PL2/2014 (as updated/ superseded). In Flood Zone C, the developer should satisfy themselves that the probability of flooding is appropriate to the development being proposed and should consider the implications of climate change.

Objective CAF O20: Flood Risk Assessments

It is an objective of the Council to require a Site-specific Flood Risk Assessment (FRA) for all planning applications in areas at risk of flooding (coastal/tidal, fluvial, pluvial or groundwater), where deemed necessary. The detail of these Site-specific FRAs (or commensurate assessments of flood risk for minor developments) will depend on the level of risk and scale of development. A detailed Site-specific FRA should quantify the risks, the effects of selected mitigation and the management of any residual risks. The assessments shall consider and provide information on the implications of climate change with regard to flood risk in relevant locations.

Objective CAF O22: Cooperation with Other Agencies

It is an objective of the Council to work with other bodies and organisations, as appropriate, to help protect critical infrastructure, including water and wastewater, within Limerick, from risk of flooding. Any subsequent plans shall consider, as appropriate any new and/or emerging data, including, when available, any relevant information contained in the CFRAM Flood Risk Management Plans and as recommended in the SFRA for the Draft Plan.

Objective CAF O23: Flood Relief Schemes

It is an objective of the Council to support and facilitate the development of Flood Relief Schemes as identified in the CFRAM 10 Year Investment Programme.

Objective CAF O24: Minor Flood and Mitigation Works and Coastal Protections Schemes

It is an objective of the Council to support and facilitate the Office of Public Works Minor Flood and Mitigation Works and Coastal Protections Schemes.

Objective CAF O25: Strategic Flood Risk Assessment

It is an objective of the Council to have regard to the recommendations set out in the Draft Strategic Flood Risk Assessment prepared to support the Draft Plan.

2.3 Land Zoning

The land on which the development is proposed is currently zoned as M3 for district, neighbourhood centre in the north, R2 for existing residential in the south, and 6A for public open space in the east in the current Limerick City Development Plan 2010-2016. Refer to **Figure 2-1** below.

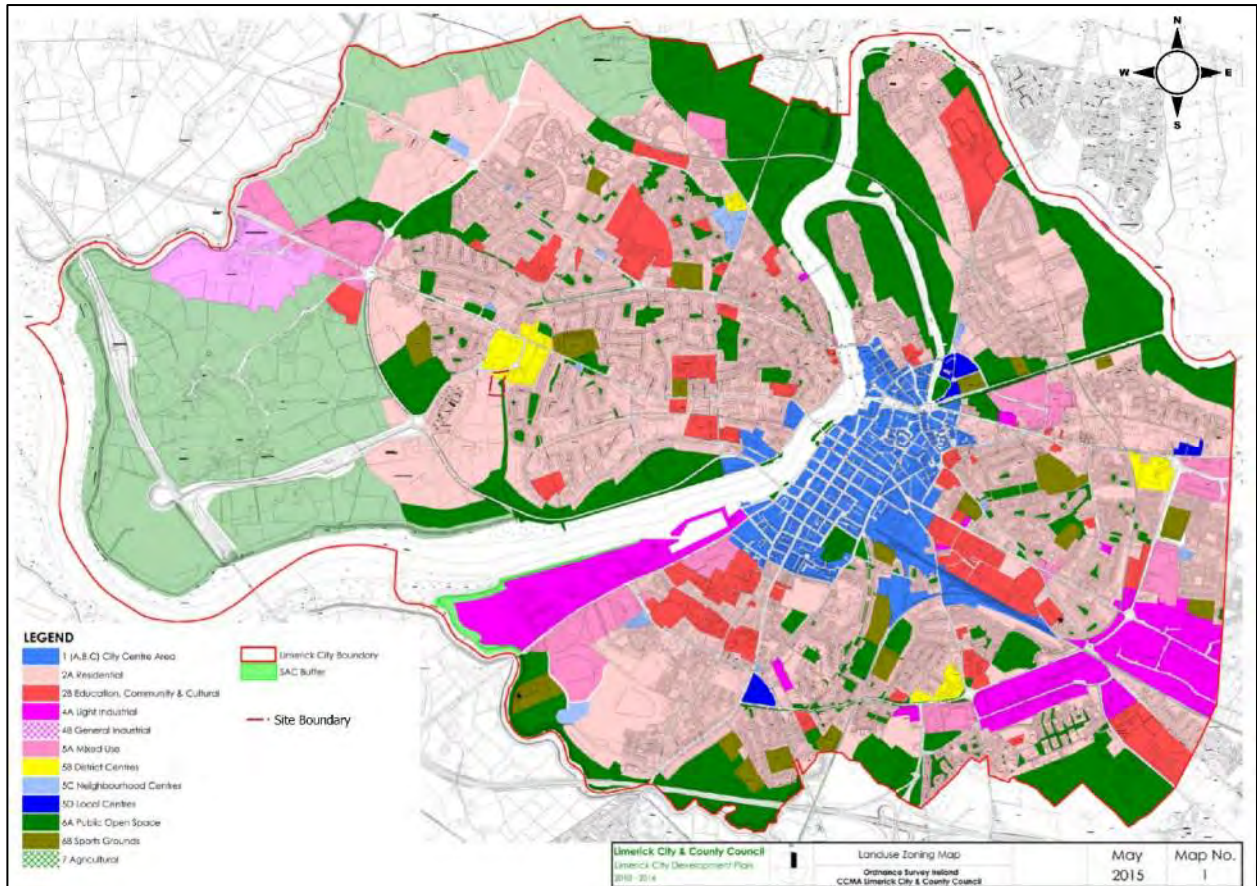


Figure 2-1: Land Use Zoning Map - Limerick City Development Plan 2010-2016The Draft Limerick Development Plan dated 2022 to 2028 is proposing a change of zoning to Agriculture as shown in Figure 2-2 below. Note that this is only a DRAFT document and has not been formally adopted at the current time.

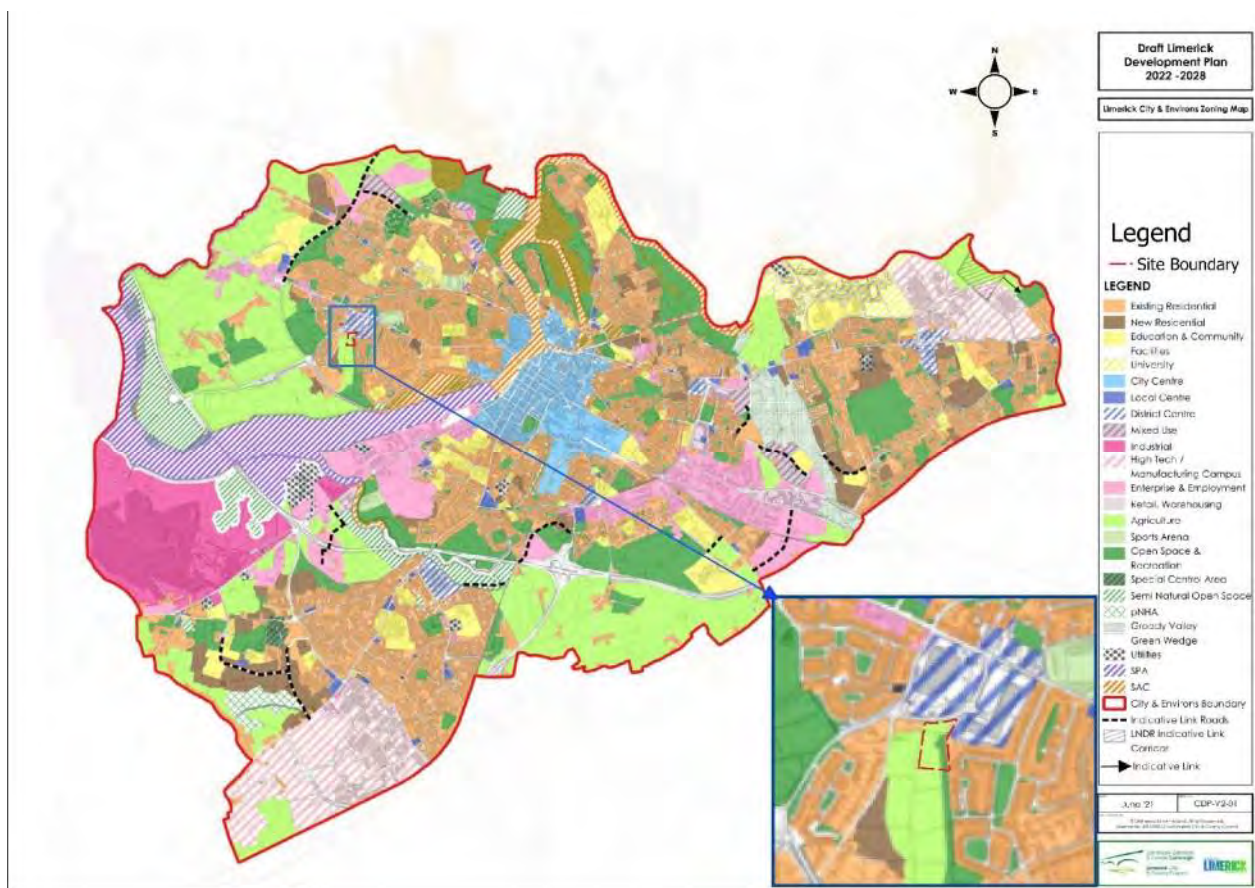


Figure 2-2: Land Use Zoning Map - Draft Limerick Development Plan 2022-2028

2.4 Flood Risk Management Plan

The OPW publish Flood Risk Management Plans detailing the feasible range of flood risk management measures proposed for their respective river basins. The Flood Risk Management Plan for the Shannon Estuary North & Mal Bay River Basin was published by the OPW on 19/02/2018 and is valid for the period 2018-2021. The plan lists current flood management measures in place and potentially viable Flood Relief Works. There are a number of measures proposed in the plan which will improve flooding in the surrounding area but it is unclear whether they will provide a specific benefit to the site.

3 Flood Risk Identification

3.1 Existing Hydrogeological Environment

The existing hydrological environment is characterised primarily by the presence of the Shannon Estuary which is located approximately 1.1 km south of the proposed site. There is an OPW Embankment E1 along the Shannon Estuary to the south of the site (refer to Section 3.11 for further details). Running adjacent to the eastern boundary of the site is OPW Arterial Drainage Channel C1 which flows from the north to south. From a previous site visit it was noted that the C1 channel enters a piped section to cross below the Condell Road then enters another channel along the E1 Embankment and is culverted to pass through the E1 Embankment before it outfalls to the Shannon Estuary. OPW Arterial Drainage Channel C2 is located approximately 700m to the west of the site and also drains into the Shannon Estuary. The hydrological environment around the site is shown in Figure 3-1 below.



Figure 3-1: Hydrological Environment around the site with an Extract from OPW Arterial Drainage Mapping

3.2 Topographical Survey

A topographical survey of the site and its environs was completed by NCW Surveys in July 2021. The site was observed to be generally flat with a slight fall in levels from north to south across the site. The levels varied from 3mAOD to the northeast of the site down to 1.5mAOD along the southern edge of the site. The existing road which borders the site to the north is at a level of approximately 2.8mAOD.

There is an existing channel which flows from north to south along the eastern boundary of the site. The channel has an approximate invert of -0.32mAOD in the vicinity of the site. Several manholes were observed during the survey. These appear to be part of the existing foul sewer which traverses the site.

No existing surface water drainage was observed during the survey. An existing surface water sewer was observed in the road to the north of the site. An open drain was surveyed which crosses the site from west to east and joins the existing channel along the eastern boundary. The drain had an invert level ranging from 1.85m AOD at the western boundary to 0.51mAOD at the eastern boundary.



Figure 3-2: Contour map

3.3 Site Walkover

PUNCH Consulting Engineers visited the site on in May 2019 to assess the conditions and key features of the site, to establish any potential sources of flooding and to identify the likely routes of flood waters. Appendix A contains a selection of key images taken during the site visits.

The following was established from the site visit:

- a) The site is currently accessed from the existing road to the north of the site.
- b) The site is secured from the surrounding area by fencing.
- c) Portions of the site are currently covered in hardcore.
- d) There is an existing channel along the eastern boundary of the site.
- e) An existing foul sewer crosses the site from north to south
- f) The existing channel is culverted near the north-eastern corner of the site and a headwall was constructed where the culvert passes beneath the road.
- g) The site is generally flat and no major dips or depressions were noted.
- h) No marshy areas or areas of wet ground were noted on the site.

3.4 Site Geology

The geology of the site was reviewed using data from the Geological Survey of Ireland (available at www.gsi.ie). The soil type at the location of the proposed development is identified as marine/estuarine sediments as seen in Figure 3-3. The surrounding areas comprise mainly of made ground with small areas of deep well drained mineral (mainly basic) throughout.



Figure 3-3: Geology of the surrounding area (source: Geological Survey of Ireland (www.gsi.ie))

3.5 Groundwater Flooding

A review of the groundwater mapping shows that there is no groundwater flooding risk in this area. The proposed building does not have a basement, hence there is no risk of groundwater flooding into a basement.

3.6 Review of Existing Surface Water Infrastructure

Limerick City & County Council was contacted with regards existing surface water infrastructure in the vicinity of the site. Figure 3-4 b



elow is an extract from the existing drainage record drawing for the area. There appears to be a 750mm foul sewer and 600mm ductile iron waterline running adjacent to each other across the site. There are no existing stormwater drainage pipes shown on the records as being located in or around the site. However, it is noted from the surveys commissioned for the site that there is an existing surface water sewer located in the existing road bordering the site to the north. Refer to PUNCH Engineering Report for further details of stormwater drainage design proposals for the site.



Figure 3-4: Extract from existing drainage record drawing

3.7 Review of Historic Mapping

A review of the OSI Historical maps¹ was carried out. Figure 3-5 shows an extract from the 25-inch historic map for the site. The site is not indicated as “liable to flood” in the available historic OSI maps.



Figure 3-5: Extract from OSI historical 25-inch map

¹ Maps available: <http://map.geohive.ie/mapviewer.html>

3.8 History of Flooding

The Office of Public Works (OPW) Flood Hazard Mapping website holds a record of historic flood events. A review of the database indicated that there have been historical instances of flooding in an area adjacent to the site as shown in Figure 3-6 and Figure 3-7, see Appendix B for full report. Please note that this is not a guaranteed record of all flood events. The site itself is indicated as being in lands marked as “Arterial Drainage Schemes Benefited Lands”.

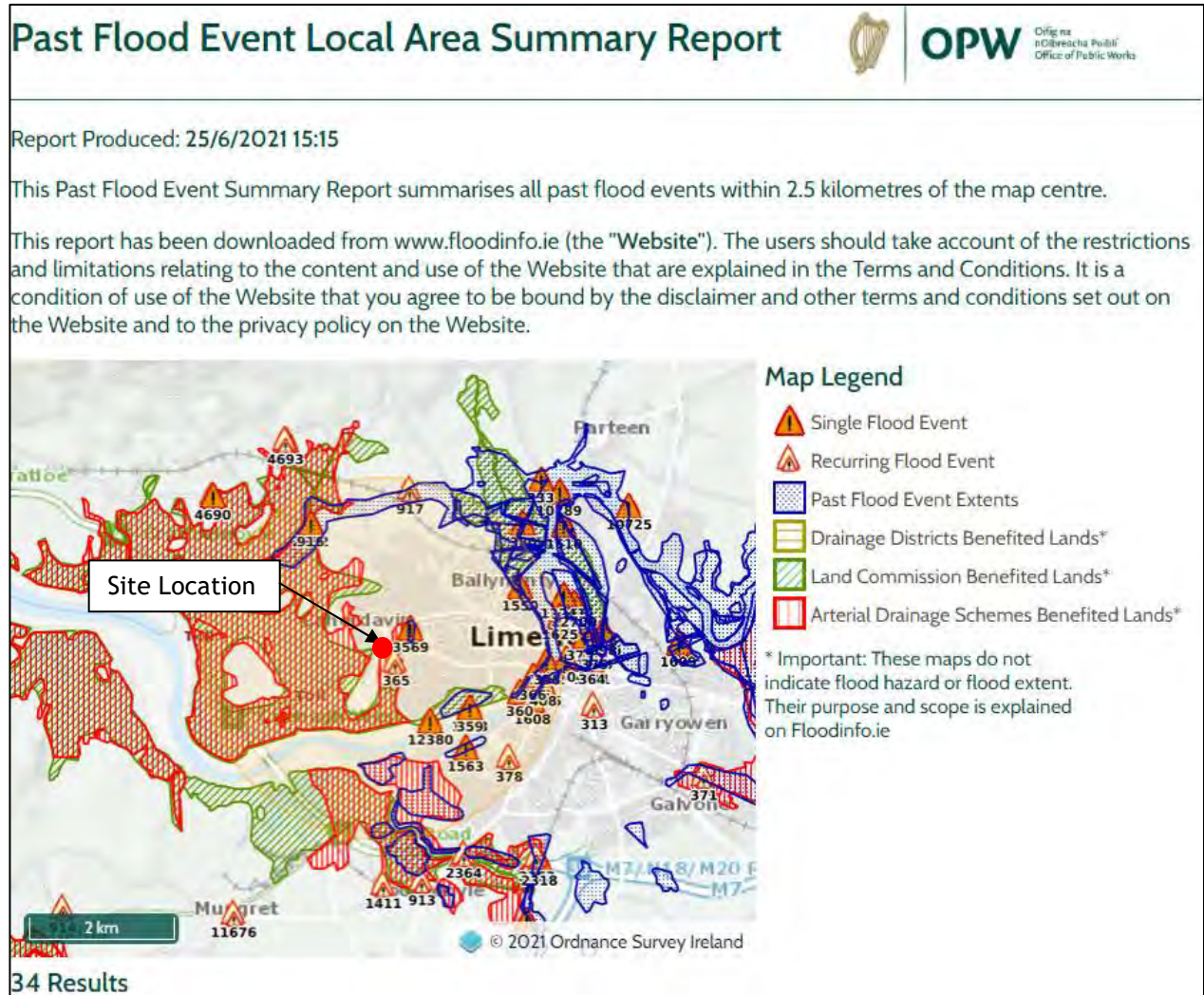


Figure 3-6: Extract from OPW Floodmaps Database Report (see Appendix B for full report)
<http://www.floodmaps.ie/index.aspx?ReturnUrl=%2fView%2fDefault.aspxb>

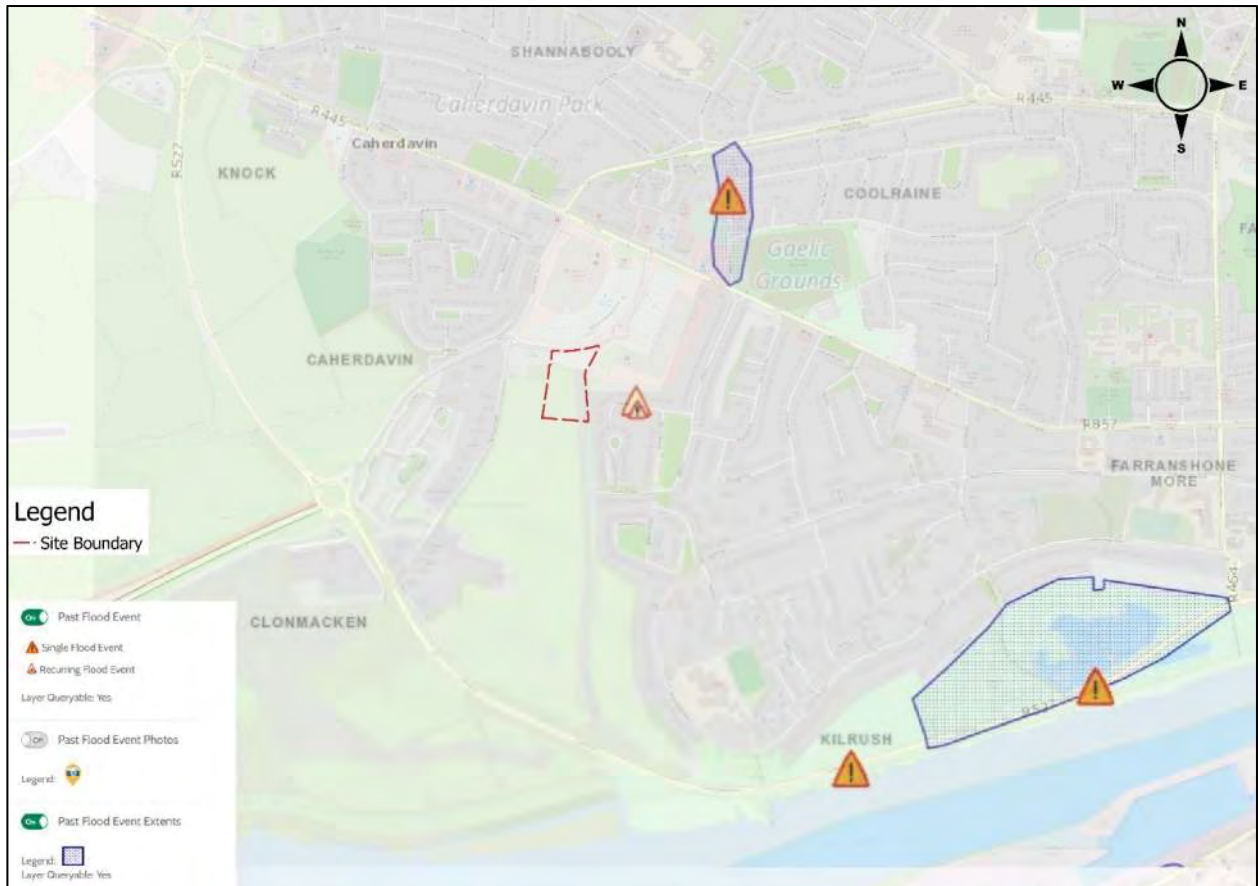


Figure 3-7: Zoomed in Map of Past Flooding Events

There is a record of several instances of flood events in the area, most notably the following:

Flooding Ashbrook Gardens (Reported 24th January 1995)

Flooding occurs in the back gardens of the existing houses in Ashbrook Gardens. The area in general is low lying and the water table is high. Houses are piled which suggest that ground conditions are poor. The underlying problem is that the permeable area in the back gardens is completely saturated. The installation of land drains may alleviate the problem.

There was no indication in the information reviewed that the flooding issue impacted the subject site.

3.9 Preliminary Flood Risk Assessment Mapping

The Catchment Flood Risk Assessment and Management Study (CFRAMS) is a national programme which to date has produced both a series of Preliminary Flood Risk Assessments (PFRA) which cover the entire country, as well as more detailed flood maps in certain catchments across the country.

Prior to the publication of the detailed CFRAMS flood mapping, a series of Preliminary Flood Risk Assessment (PFRA) maps were published. The PFRA flood zones in the local area are shown in Figure 3-8 below.

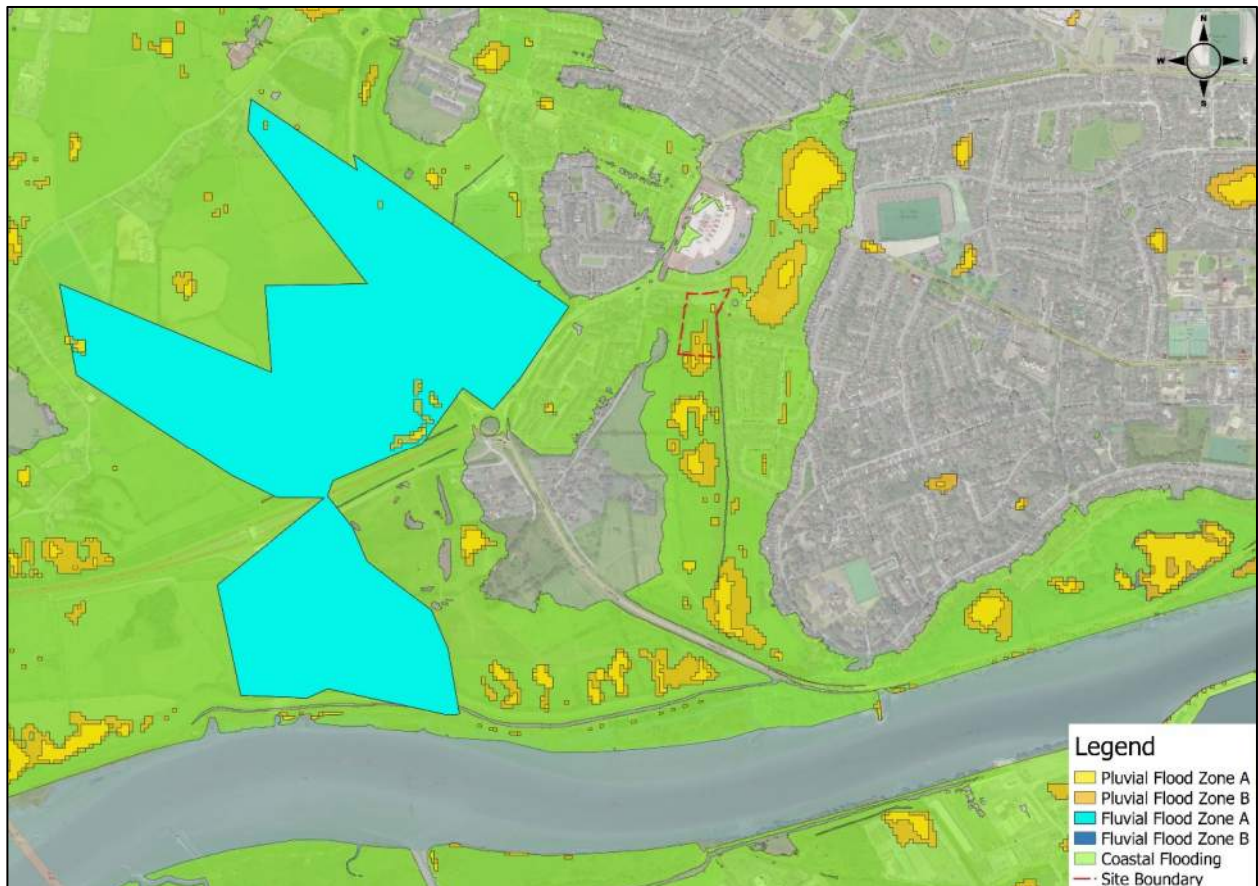


Figure 3-8: PFRA flood zone map indicating extents of preliminary flood zones

The PFRA mapping shown above indicates the entire site designated as Preliminary Flood Zone A. It must be noted that the River Shannon is tidally influenced in the area. As such the flood extents shown are coastal and the site is shown in Flood Zone A for coastal flooding. The site is not indicated as being subject to pluvial flooding.

It is noted that the PFRA modelling is a high-level study which uses a coarse ground to represent the topography of the country and does not take existing flood defences into account. As such PFRA fluvial, pluvial and coastal flood extents are to be utilised as an initial assessment only.

3.10 CFRAMS Mapping

As part of the CFRAMS programme, mapping is available online for public viewing, and the local area has been assessed as part of the Shannon CFRAMS. The OPW has published detailed flood hazard mapping for the area based on results from the CFRAMS. This includes flood extent and flood depth mapping for a number of return periods for fluvial and coastal flood events. The CFRAMS assessment in this area is based on hydraulic modelling of the River Shannon and its tributaries.

Figure 3-9 below is an extract from the relevant Shannon CFRAMS fluvial flood map and Figure 3-10 overleaf is an extract from the relevant Shannon CFRAMS coastal flood map for the area surrounding the proposed development site. Full CFRAMS maps for the area are included in Appendix C of this report.

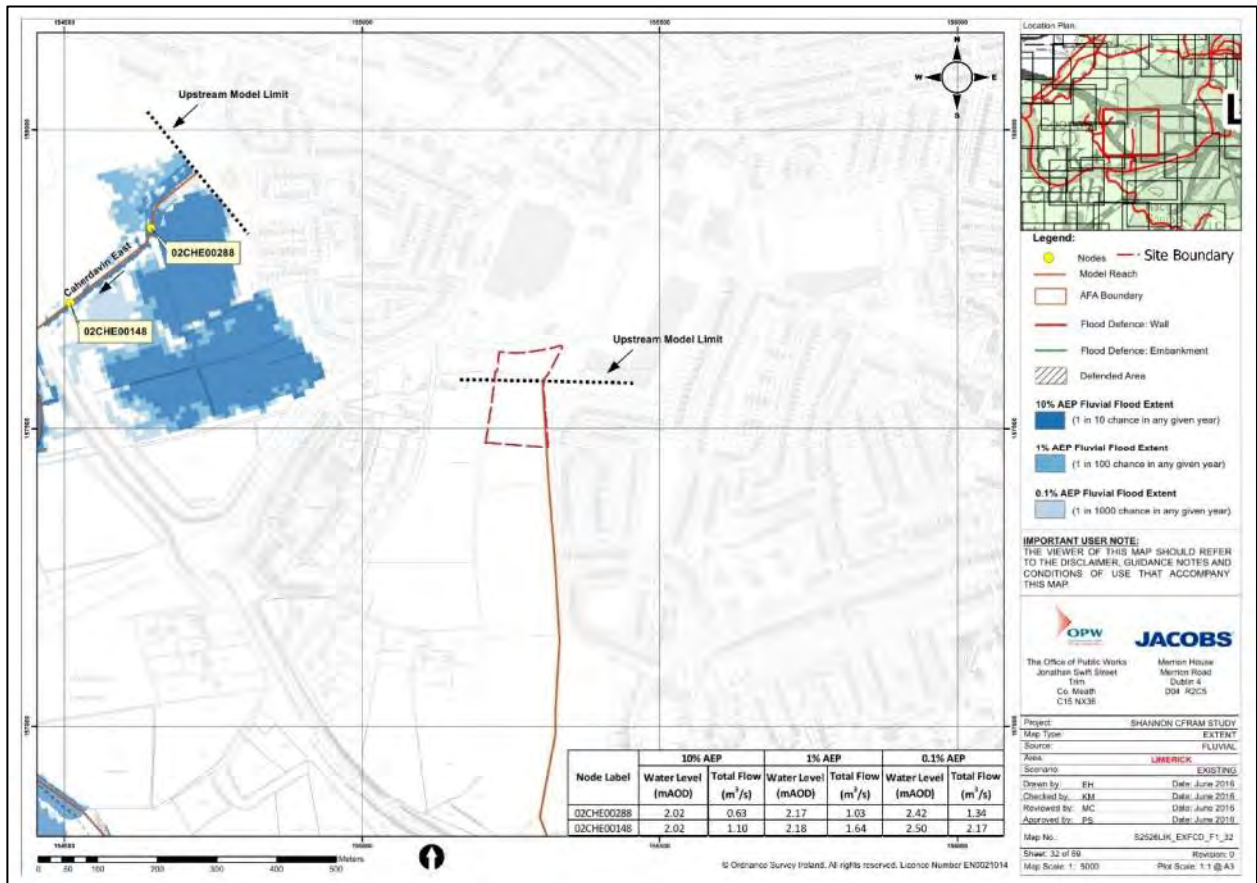


Figure 3-9: Extract from the CFRAMS fluvial map for the area (site indicated in red) 'Maps available: <http://www.floodinfo.ie/map/floodmaps/?X=6919597.223688143&Y=-959644.9352880842&Z=15>

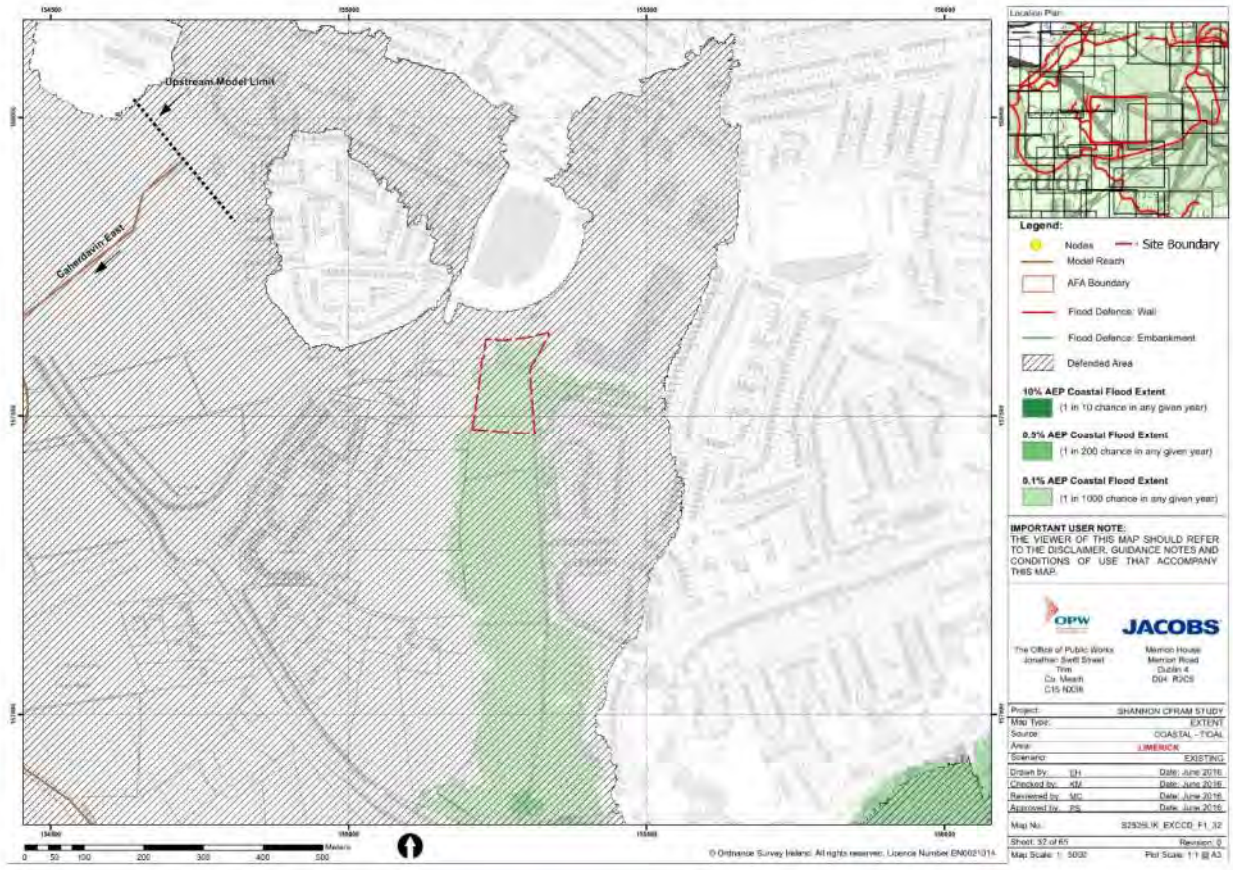


Figure 3-10: Extract from the CFRAMS coastal map for the area (site indicated in red)

The CFRAM mapping indicates that there is a 0.1% AEP Coastal Flood Extent noted on the site and that the site is located in a 'Defended Area'.

The maps do not indicate the flood level associated with this flood extent. Therefore the OPW CFRAM flood mapping was imported into AutoCAD and overlaid with the recent topographical survey levels taken on the site. The extent of the Flood Zone could then be compared to the ground levels to estimate the 0.1% AEP Coastal Flood Extent at the site for the mapping. Based on this assessment of the CFRAMS flood mapping, the flood level is assumed to be 2.5mAOD for the 0.1% AEP Coastal Flood Extent and 4.7mAOD for the extent of the Defended Area.

LCCC has advised that the 0.1% AEP Coastal Flood Extent shown is the predicted flood level at the site during a breach of the flood defences along the River Shannon fully functional.

The 0.5% AEP flood level at the CFRAMS node nearest the site along the River Shannon is 4.7mAOD, this level ignores the presence of flood defences altogether and also corresponds to the extent of the Defended Area noted on the mapping.

3.11 Existing Flood Defences

The CFRAM maps shown in Figures 3-9 and 3-10 identify a flood defence embankment located approximately 900m south of the site along the Shannon Estuary. This embankment is part of the OPW's Shannon North Embankments Scheme. The embankments are legacy structures which were constructed historically to protect agricultural lands and were not designed to modern day engineering standard. The CFRAMS mapping indicates that the existing embankments may provide a certain standard of protection in the 1% AEP event.

It must also be noted that Limerick City and County Council has appointed RPS Consulting Engineers to work on the Limerick City and Environs Flood Relief Scheme (FRS). Although the delivery of this project is unlikely to be completed prior to this proposed development opening, the completed FRS will offer more reliable flood defence for the site in the future.

3.12 Breach Analysis

As part of the CFRAM Study, a breach analysis was carried out to assess the potential flood extents in the event of a breach failure as part of the Preliminary Options Report for the Unit of Management (UoM) 25 and 26 (2016). In May 2018 the OPW released the Flood Risk Management Plan for the Shannon Upper & Lower, River Basin 25/26. A number of locations on the tidal reaches of the Shannon were analysed as part of this to assess the effect of a failure in flood defences on the surrounding area. PUNCH have reviewed the mapping prepared as part of this assessment and identified the 2 breach locations most likely to impact the site. Both breaches were located to the south of the site as shown in Figure 3-11. Figure 3-12 shows the nearest relevant breach to the west of the site and Figure 3-13 shows the nearest breach to the east.



Figure 3-11: Breach Location Map

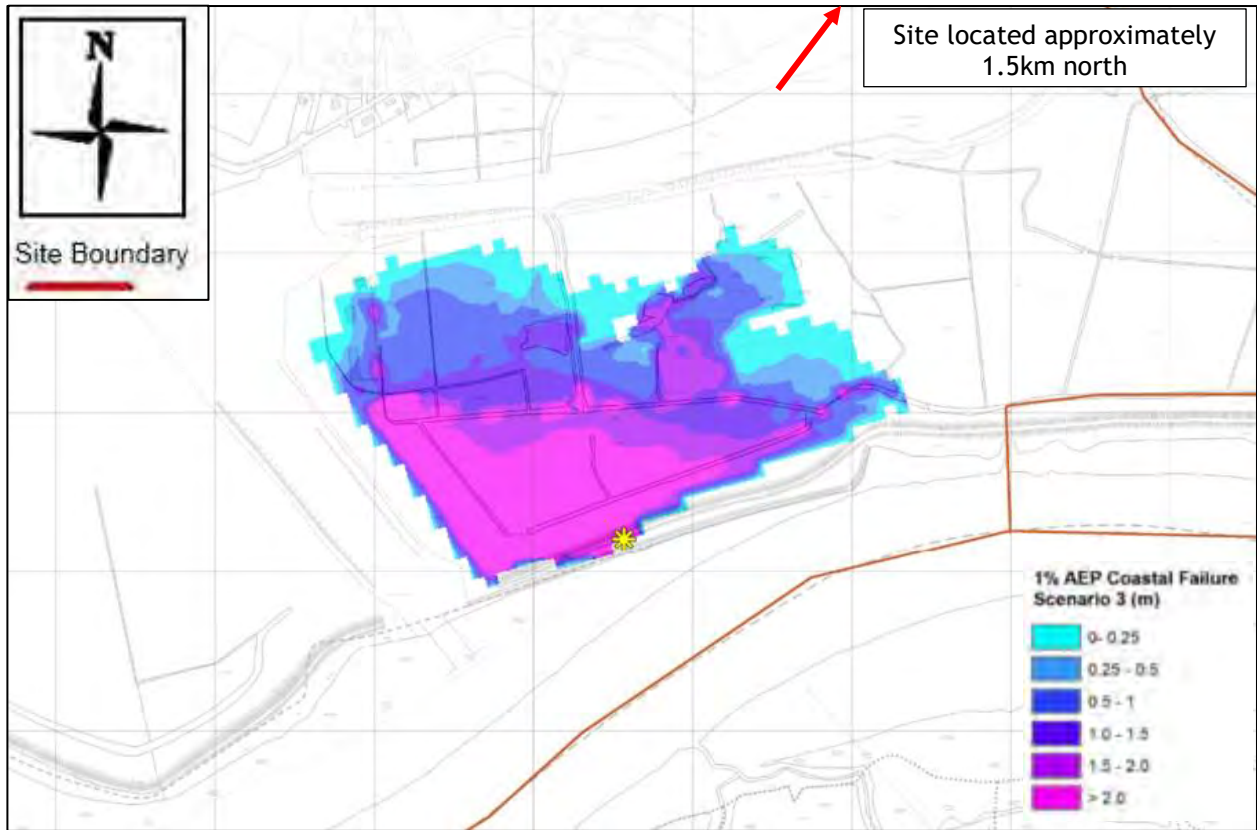


Figure 3-12: 1% AEP Coastal Failure Scenario Flood Extents from breach on River Shannon flood embankments

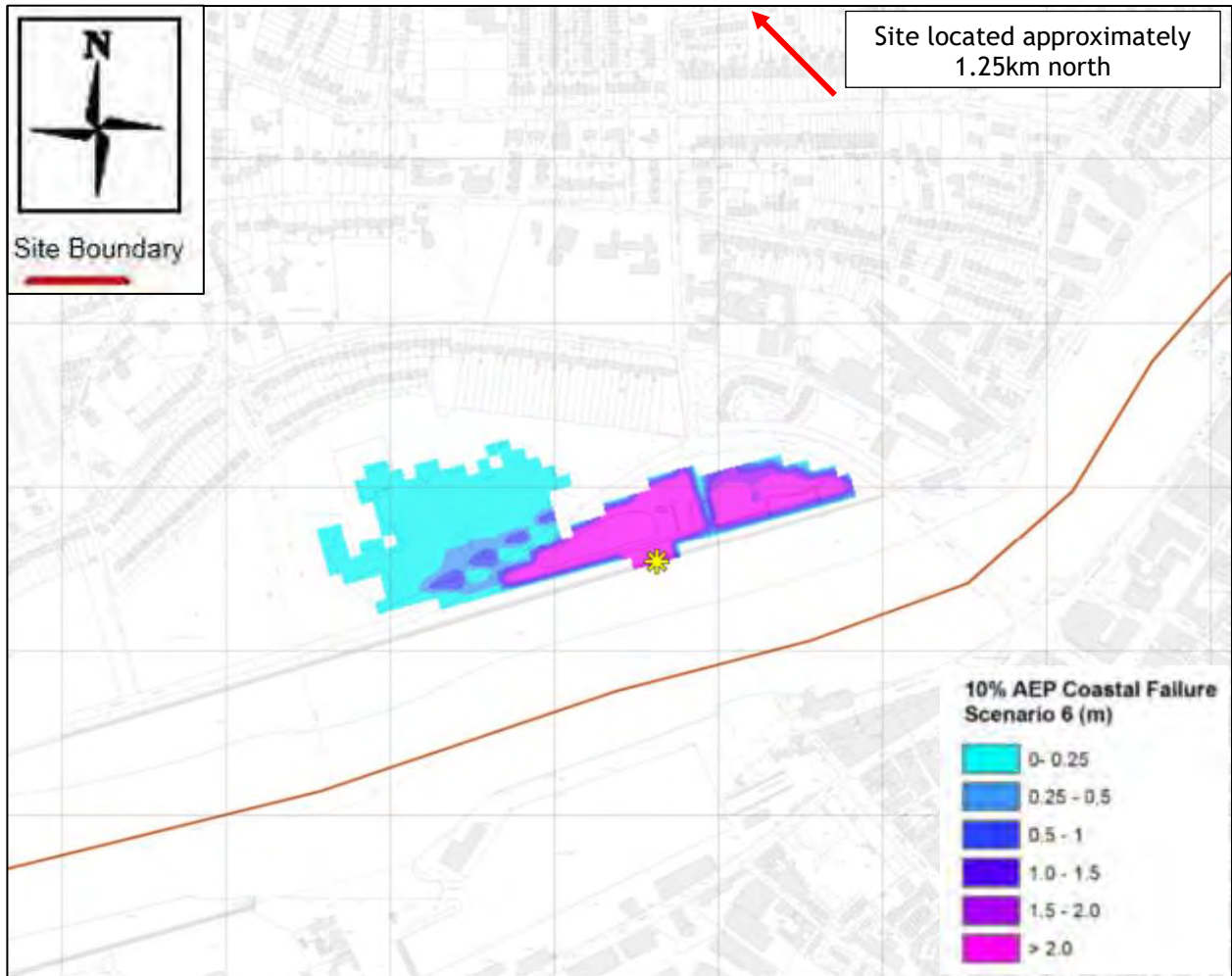


Figure 3-13: 10% AEP Coastal Failure Scenario Flood Extents from breach on River Shannon flood embankments

It appears from the results shown in the mapping that any overland flows resulting from a potential breach to the flood defences along the northern bank of the Shannon will not encroach on the subject site. The flood extents from a potential breach are contained within the existing Flood Zone A (green areas) located adjacent to the river. The proposed site is located approximately 1.5km north of the defence and is not shown as been subject to flows in the event of a breach assessed. As the flood mechanism is tidal and the embankments are legacy structures the proposed development will include an evacuation plan to prevent any risk however unlikely that may occur as a result of a breach.

3.13 Draft Strategic Flood Risk Assessment

The Draft Strategic Flood Risk Assessment dated 26th June 2021 and prepared by JBA Consulting as a part of the Draft Limerick Development Plan 2022-2028 provides guidance for the integration of flood risk management into the development strategy for Limerick City and County.

In the report, flooding maps are provided for Limerick City and other settlements in Limerick County as shown below in Figure 3-14.

According to the mapping in Figure 3-14, the site is located in Flood Zone A.

JBA mapping is a preliminary set of mapping prepared for Limerick City and County Council. As per Section 2.3 of the SFRA, the definition of the Flood Zones is based on an undefended scenario and does not take into account the presence of any flood protection structures such as flood walls or embankments. Hence, the flood extents shown are a worst-case scenario based on all flood defences in Limerick not being operational and ignored entirely.

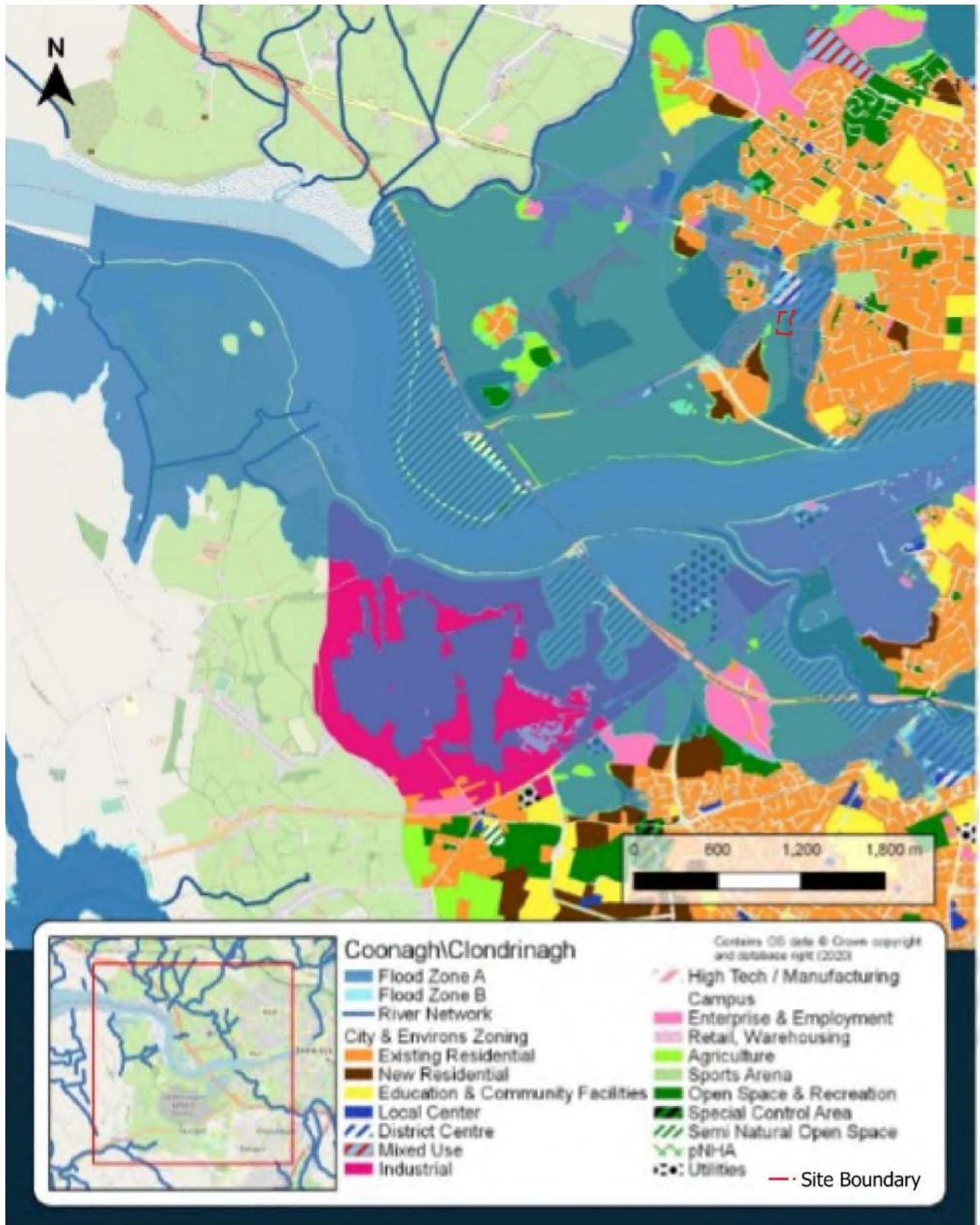


Figure 3-14: JBA Draft Strategic Flood Risk Assessment

3.14 Estimate of Flood Zone

PUNCH Consulting Engineers have reviewed the available information as outlined in the above sections. The site is not indicated as being at risk of fluvial or pluvial flooding

The existing flood defences are no doubt providing a high level of protection to the site from coastal flooding.

With the worst-case breach of the existing defences the site would be classified as Flood Zone B.

However, the FRMG advise that food zones ignore the presence of defences. Therefore we must concluded that the site is located in Flood Zone A for coastal floodplains.

4 Flood Risk Assessment

4.1 Sources of Flooding

When carrying out a Flood Risk Assessment, one should consider all potential risk and sources of flood water at the site. In general, the relevant flood sources are:

Fluvial Flooding

Fluvial flooding is the result of a river exceeding its capacity and excess water spilling out onto the adjacent floodplain. The proposed site is located approximately 1.1km from the River Shannon. While the River Shannon is a source of flooding in Limerick, the site is located in an area of Limerick where the River Shannon is tidally influenced and as such the flood mechanism is tidal and not fluvial. A review of the CFRAMS fluvial mapping for the Shannon tributaries in the area does not indicate a fluvial flood risk. The site is deemed not to be at risk of fluvial flooding.

Coastal Flooding

Coastal flooding is the result of sea levels which are higher than normal and result in sea water overflowing onto the land during high tides or storm surges. The site is located 1.1km from the Shannon Estuary which is tidally influenced and is located in an area which is protected by the Shannon North Flood Embankments. From a review of the available information, the site is considered to have a low residual risk of coastal flooding due to the existing flood embankment defences located on the Shannon River.

Pluvial Flooding

Pluvial Flooding is the result of rainfall-generated overland flows which arise before run-off can enter any watercourse or sewer. It is usually associated with high-intensity rainfall. There are no areas within the site which may be subject to pluvial flooding due to their naturally low depressions. Also, the provision of a suitable surface water drainage system for any proposed development on the site will mitigate against any possible pluvial flood risk as a result of the impermeable areas associated with the development.

Groundwater Flooding

Groundwater flooding occurs when the level of the water stored in the ground rises as a result of prolonged rainfall. From a review of the available information, there is no risk of groundwater flooding at the site and the development does not include any proposals for basements.

4.2 Site Vulnerability

The proposed development is for a Primary Care Centre. Table 2-1 of the Planning System and Flood Risk Management Guidelines does not specifically classify this type of development vulnerability. The comparable UK Guidelines apply four vulnerability classes as opposed to the three adopted in the Planning System and Flood Risk Management Guidelines. They allow for highly vulnerable, more vulnerable, less vulnerable and water compatible classifications. Medical Practices are specifically referred to in the UK Guidelines and are attributed to the additional class of “more vulnerable development”.

Under the UK Guidelines, developments classified as “more vulnerable” are considered acceptable in the equivalent of Flood Zones B and C, with justification being required if they are located in the equivalent of Flood Zone A. As the development will not provide critical patient care or overnight care we would suggest that the development could be classified as “Less Vulnerable”. This would apply the same classification and zone criteria as the UK Guidelines. This has also been an accepted precedent in the Kilmallock Primary Care Centre granted permission under Planning Grant 1745 and Croom Primary Care Centre granted permission under Planning Grant 171150.

Table 4-1: Matrix of Vulnerability versus Flood Zone to indicate Justification Requirement

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water-compatible development	Appropriate	Appropriate	Appropriate

As the site is located in Flood Zone A and considered “Less Vulnerable,” development can only be permitted if the development complies with the requirements of the Justification Test as described in the guidelines. Box 5.1 of the Justification Test has been completed and is presented in Section 5 of this report.

4.3 Climate Change

To mitigate against the residual risk of flooding to the site it is proposed to set the Finished Floor levels of the development above the flood level with an allowance for climate change. Table 4-2 replicated Table 5-3 of the DRAFT SFRA which gives guidance on the recommended finished floor levels for new developments. The site is located in a tidal, defended area. As the flood defence embankment along the River Shannon north bank is a legacy structure it cannot be confirmed whether climate change was accounted for and therefore a climate change allowance will be included in setting the development floor levels.

Table 4-2: LCCC DRAFT SFRA Table 5-3: Recommended minimum finished floor levels.

Scenario	Finished floor level to be based on
Fluvial, undefended	1% AEP flood + climate change (as Table 5-2) + 300mm freeboard.
Tidal, undefended	0.5% AEP flood + climate change (as Table 5-2) + 300mm freeboard (or 500mm where there is a risk of storm surge and wave action).
Fluvial, defended	1% AEP flood + 300mm freeboard. Climate change does not need to be included, provided it is included in the defence height or adaption plan for the scheme. Where a breach model has been developed to further understand risks, FFL may be set based on model outputs.
Tidal, defended	0.5% AEP flood + 300mm freeboard (or 500mm where there is a risk of storm surge and wave action). Climate change does not need to be included, provided it is included in the defence height or adaption plan for the scheme. Where a breach model has been developed to further understand risks, FFL may be set based on model outputs.

Based on the information above it is proposed to set the development finished floor levels above the 0.5% AEP flood level + freeboard + climate change. The proposed site is located over 1km from the Shannon and as such there is no risk of storm surge or wave action at the site. Therefore, the 300mm value for freeboard will be used. The minimum Finished Floor level for the development will be set to a level of 5.50mAOD.

4.4 Flood Mitigation Measures

The following measures are proposed for the development design as a precautionary approach to the risk of flooding on the site:

1. The finished floor level for the proposed buildings will be set to a minimum of 5.50mAOD. This figure has been chosen based on guidance specified within the DRAFT SFRA and is made up of the 0.5%AEP flood level + 500mm climate change allowance + 300mm freeboard. This will mitigate against any potential residual flood risk to the site.
2. The proposed undercroft parking level and entrances to the upper levels will be set to a minimum of 3.30mAOD. This figure has been chosen based on the 0.1%AEP flood level from the CFRAMS flood map overlaid with the topographic survey of 2.50mAOD + 500mm climate change allowance + 300mm freeboard. This minimum entrance level will ensure access and egress from the parking area in the event of an emergency during a flood event.
3. The proposed development will have dedicated surface water drainage. All surface water flows generated within the development will be captured by this network which has been designed for a 1 in 100-year storm event with a 10% allowance for climate change. The proposed surface water drainage system will mitigate against any pluvial flood risk at the development.
4. PUNCH Consulting Engineers recommend that an emergency plan for the development is put in place. While the details of this plan will be the responsibility of the proprietor, PUNCH Consulting Engineers recommend that consideration be given to the shutting down of services such as gas, water and electricity, upon receipt of a flood warning. As the flood mechanism in the area is tidal there will be forewarning of a flood event which will likely result from high tides in the Shannon Estuary. The evacuation plan should include proposals for people to leave the site in advance of a significant flood event. The 'Less Vulnerable' nature of the development also means this can be facilitated appropriately.
5. In the unlikely event that the building cannot be evacuated in response to a flood event, the building will provide a place of safe refuge during floods due to the level set above the 0.5%AEP undefended flood level + 500mm climate change allowance + 300mm freeboard. Emergency access can be provided from the north with the flooding source approaching from the south.
6. A high-water level alarm should be installed to aid identification of evacuation requirements.
7. The development should include water compatible construction where relevant. This will include features such as hard floors at ground level and sockets set at high level along walls.
8. As part of the site maintenance plan, all future proprietors should inspect all road gullies in the vicinity and report any blockages to the Local Authority and/or Irish Water. The proprietor should also inspect all surface water drainage within the site, in particular following heavy rain which may cause debris to obstruct stormwater inlets.

With the implementation of the above measures the site will be at low risk of flooding and will not increase the risk of flooding to any adjacent or nearby area.

5 Development Management Justification Test

Chapter 5, Box 5.1 of the Planning System Flood Risk Management Guidelines for Planning Authorities sets out that all of the following criteria must be satisfied in order to meet the development management Justification Test. Table 5-1 contains PUNCH Consulting Engineers response to each of the items in Box 5.1 and it is concluded that the proposed development complies with the requirements of the development management Justification Test.

Table 5-1: Justification Test Box 5.1

	Item	Response
1.0	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.	Refer to the planning report which accompanies this application.
2.0	The proposal has been subject to an appropriate flood risk assessment that demonstrates:	
2.1	The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk.	<p>There are number of potential aspects to consider when assessing if the proposed development will increase the flood risk elsewhere. Of concern to this project are:</p> <ul style="list-style-type: none"> i. Loss of Flood Storage; ii. Diversion of flood waters; iii. Increased runoff from the proposed development. <p>The flooding mechanism in the area is coastal (the site is only subject to flooding in the extreme event of a breach in existing flood defences). It is not necessary to compensate for the loss of any coastal flood storage.</p> <p>The flood flows are from the existing channel and ground levels around this channel will be maintained at the existing ground levels as much as possible. Flow paths in extreme flood events will have the same flow pattern as existing.</p> <p>The proposed runoff rate from the proposed development will be less than the existing runoff rate as attenuation will be provided as part of the proposed drainage system which will limit the discharge rate to below the existing greenfield runoff rate from the site.</p>
2.2	The development proposal includes measures to minimise flood risk to people,	The principle measure taken to minimise the flood risk to people, property, the economy and

	<p>property, the economy and the environment as far as reasonably possible.</p>	<p>the environment is to ensure that the buildings do not flood during any flood events up to the 1:200-year event with climate change and freeboard accounted for. While there is flooding within the site of the proposed development (undefended scenario) during this event, the ground floor of each building will be appropriately set above this level of flooding.</p> <p>The site lies within the defended coastal flood zone. In the event of a major breach in coastal flood defences, a large portion of the surrounding area would be subject to coastal flooding. PUNCH Consulting Engineers recommend that a suitable flood evacuation plan is in place to minimise flood risk to people, property, the economy and the environment in the event of a breach in flood defences.</p>
<p>2.3</p>	<p>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.</p>	<p>The proposed FFL of the building is above the worst-case (undefended) 1:200-year flood level including allowance for climate change and freeboard which ensures that the building will not be inundated by flood waters during such an extreme event. It is noted that, due to the nature of the catchment, flood events at the site are tidal in nature and extreme events will be possible to predict and manage a response.</p> <p>Funding has been secured for the Limerick City and Environs FRS which will provide additional security to the flood protection at the site in the future.</p> <p>Refer to Section 4.4 for mitigation measures proposed to manage the residual flood risk at the site.</p>
<p>2.4</p>	<p>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.</p>	<p>Refer to the planning report which accompanies this application.</p> <p>It is PUNCH Consulting Engineers opinion that the proposed development complies with item 2.4.</p>

6 Conclusions

PUNCH Consulting Engineers were appointed by Valley Healthcare Fund to carry out a Site-Specific Flood Risk Assessment for the proposed development in Jetland, Ennis Road, Limerick.

This Site-Specific Flood Risk Assessment has been carried out in accordance with “*The Planning System & Flood Risk Management Guidelines*” published by the Department of the Environment, Heritage and Local Government in November 2009 and the Limerick City Local Area Plan.

A review of the flood risk in the area was carried out as the site is located near the Shannon Estuary.

Flood Maps produced as part of the CFRAMS were consulted to establish the Flood Zone. It was determined that the proposed development site is currently located in Flood Zone A for coastal flooding. The site is located in an area that is shown as being a defended zone and as such residual risk of flooding was addressed.

Breach assessments of the existing flood defences show that the site is at low risk of flooding.

As the proposed development is deemed ‘Less Vulnerable’ and located in a Flood Zone A, the Justification Test was applied, and it is concluded that the proposed development complies with the requirements of the development management Justification Test.

The proposed development is at a low risk of flooding and is deemed appropriate provided the residual risk of coastal flooding is addressed by implementing the measures discussed in Section 4.4: Flood Mitigation Measures. This includes providing a finished floor level for the proposed building of 5.50m AOD (0.5% AEP flood level + 500mm climate change allowance + 300mm freeboard), providing a sufficient surface water drainage network, providing water compatible construction where appropriate and providing an emergency plan for evacuation of the site in the extreme event of a combined coastal extreme flood and failure of the existing or future River Shannon flood defences.

With the implementation of the said measures, the site will be at low risk of flooding and will not increase the risk of flooding to any adjacent or nearby area.

Appendix A Site Visit Images



Image 1: View from northern boundary looking south



Image 2: Picture of OPW Arterial Drainage Channel and headwall



Image 3: Picture of norther boundary of the site



Image 4: Northern boundary looking southwest



Image 5: Looking towards southern boundary



Image 6: Overgrown nature of OPW channel

Appendix B OPW Historic Flood Events Record

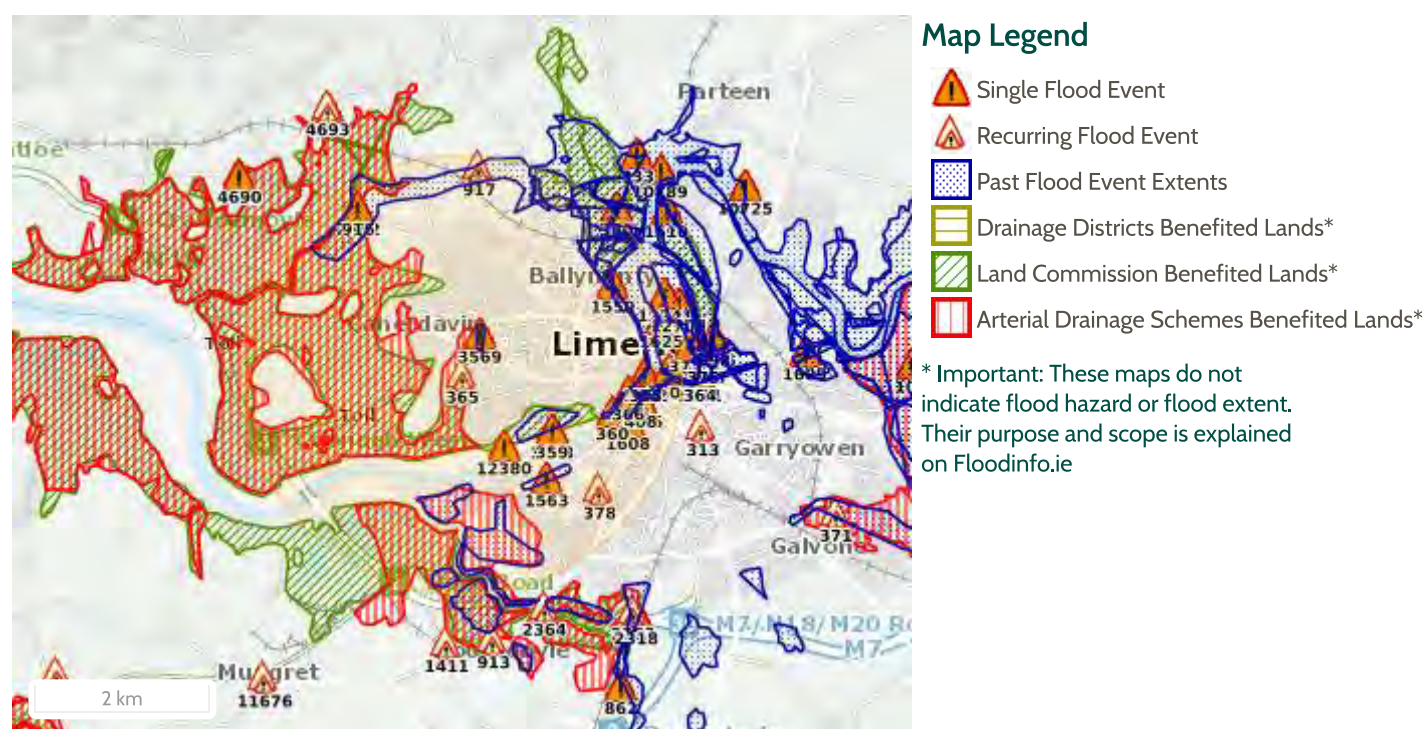
Past Flood Event Local Area Summary Report



Report Produced: 3/9/2021 14:29





















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.



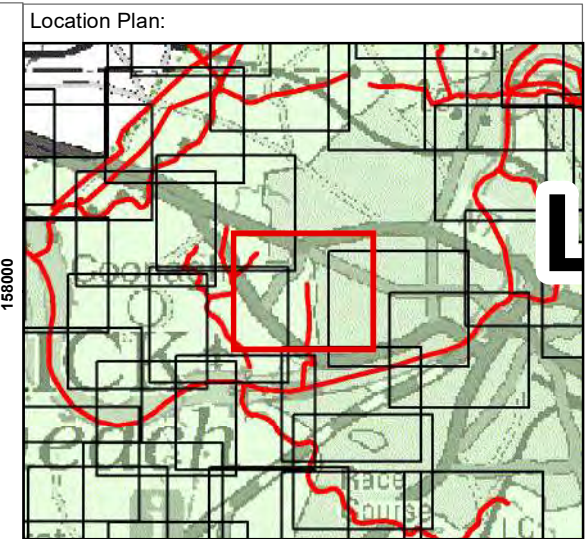
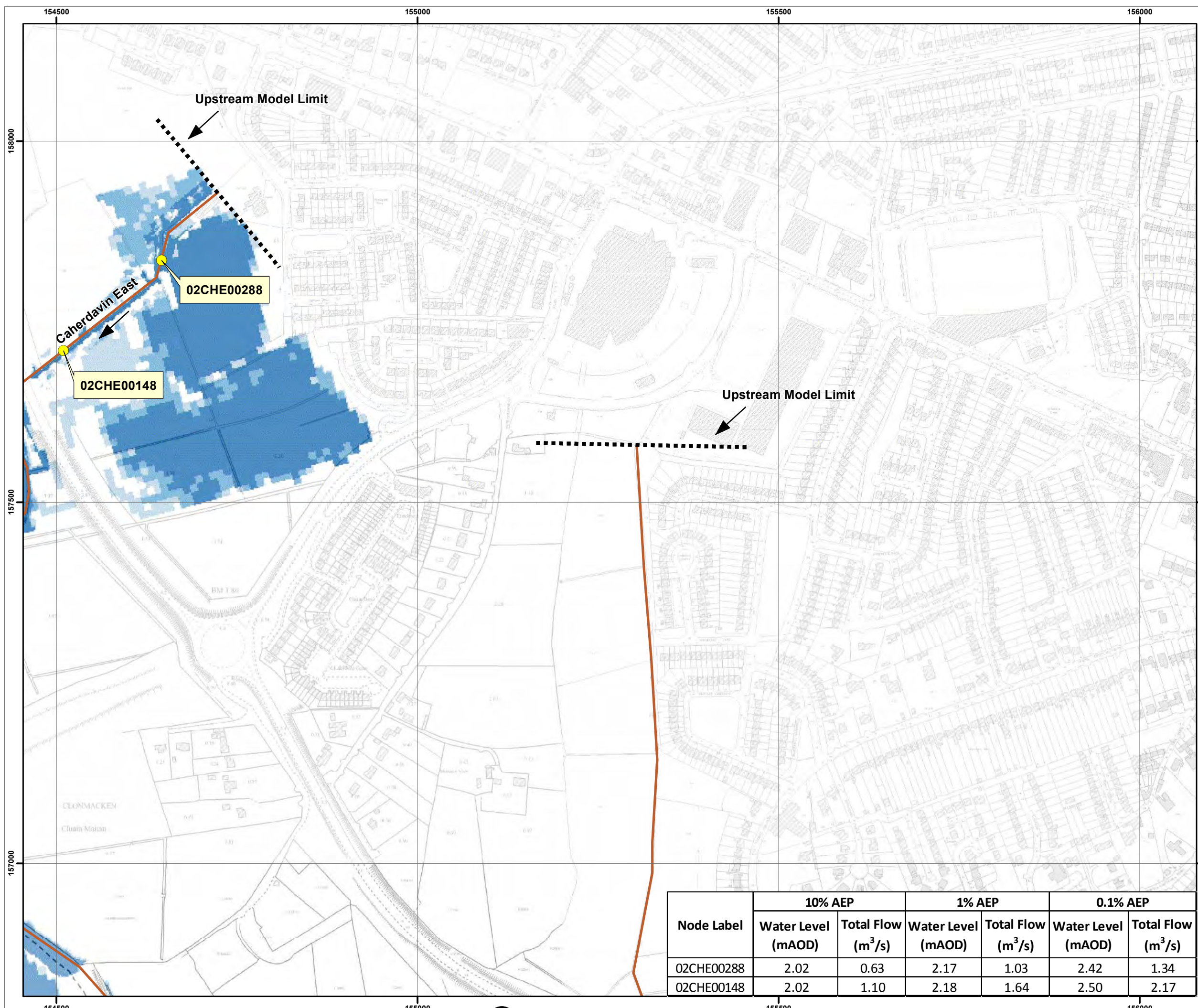
37 Results

Name (Flood_ID)	Start Date	Event Location
1. Quinn Pool Limerick recurring (ID-917) Additional Information: Reports (2) Press Archive (0)	n/a	Approximate Point
2. Shannon Dock Road Limerick Dec 1999 (ID-301) Additional Information: Reports (5) Press Archive (1)	25/12/1999	Area
3. Limerick Feb 2002 - Killely (ID-1550) Additional Information: Reports (1) Press Archive (0)	11/02/2002	Approximate Point
4. Ballynaclough River Limerick Dec 1999 (ID-1986) Additional Information: Reports (3) Press Archive (0)	25/12/1999	Area
5. Shannon Ballynanty Killeely Limerick Dec 1999 (ID-316) Additional Information: Reports (2) Press Archive (1)	25/12/1999	Area
6. Corbally St Mary's Pk Limerick Dec 1999 (ID-311) Additional Information: Reports (10) Press Archive (2)	25/12/1999	Area

	Name (Flood_ID)	Start Date	Event Location
7.	 Clancy's Strand Harry's Mall Limerick Dec 1999 (ID-315) Additional Information: Reports (20) Press Archive (3)	23/12/1999	Area
8.	 Raheen Dooradoyle, Limerick Feb 1990 (ID-541) Additional Information: Reports (1) Press Archive (0)	01/02/1990	Area
9.	 Ashbrook Gardens Limerick Recurring (ID-365) Additional Information: Reports (1) Press Archive (0)	n/a	Approximate Point
10.	 Clancy's Strand Limerick Feb 2002 (ID-358) Additional Information: Reports (10) Press Archive (0)	11/02/2002	Exact Point
11.	 Shannon Condell Road Limerick Feb 2002 (ID-359) Additional Information: Reports (3) Press Archive (0)	11/02/2002	Approximate Point
12.	 OCallaghans Strand Limerick Feb 2002 (ID-360) Additional Information: Reports (3) Press Archive (0)	11/02/2002	Exact Point
13.	 Clancy's O'Callaghan's Strand Limerick Jan 1995 (ID-366) Additional Information: Reports (2) Press Archive (1)	17/01/1995	Approximate Point
14.	 South Circular Road St Mary's Limerick Recurring (ID-378) Additional Information: Reports (1) Press Archive (0)	n/a	Exact Point
15.	 Clancy's Strand Limerick Jan 1994 (ID-406) Additional Information: Reports (6) Press Archive (0)	26/01/1994	Exact Point
16.	 Clancy's Strand Limerick 17/10/2001 (ID-407) Additional Information: Reports (1) Press Archive (0)	17/10/2001	Exact Point
17.	 Sarsfield St Arthur's Quay Limerick City Feb 1990 (ID-408) Additional Information: Reports (8) Press Archive (0)	21/02/1990	Approximate Point
18.	 Meelick Bridge Limerick recurring (ID-916) Additional Information: Reports (3) Press Archive (0)	n/a	Approximate Point
19.	 Limerick Dock Rd Jan 1995 (ID-1563) Additional Information: Reports (1) Press Archive (0)	25/01/1995	Approximate Point
20.	 Limerick City Clancy's Strand Feb 1990 (ID-1602) Additional Information: Reports (2) Press Archive (0)	01/02/1990	Approximate Point
21.	 Limerick Condell Road Feb 1990 (ID-1603) Additional Information: Reports (2) Press Archive (0)	01/02/1990	Approximate Point
22.	 Limerick Adjacent Courthouse undated (ID-1604) Additional Information: Reports (1) Press Archive (0)	n/a	Approximate Point
23.	 Clancy O'Callaghan's Strand Limerick Feb 1997 (ID-1606) Additional Information: Reports (4) Press Archive (0)	10/02/1997	Approximate Point
24.	 Condell Road Limerick Feb 1997 (ID-1607) Additional Information: Reports (2) Press Archive (0)	10/02/1997	Approximate Point
25.	 Dock Road Bishops Quay Limerick Feb 1997 (ID-1608) Additional Information: Reports (3) Press Archive (0)	10/02/1997	Approximate Point
26.	 St Mary's Park Limerick Feb 2002 (ID-1625)	11/02/2002	Approximate Point

Name (Flood_ID)	Start Date	Event Location
Additional Information: Reports (1) Press Archive (0)		
27.  Custom House Quay Sarsfield St Limerick Feb 2002 (ID-1626)	11/02/2002	Approximate Point
Additional Information: Reports (2) Press Archive (0)		
28.  Killard Redgate Dec 1999 (ID-2452)	27/12/1999	Exact Point
Additional Information: Reports (3) Press Archive (0)		
29.  Corrib Drive Limerick Oct 1995 (ID-3569)	24/10/1995	Approximate Point
Additional Information: Reports (1) Press Archive (0)		
30.  Shannon Lower Feb 1990 (ID-127)	01/02/1990	Area
Additional Information: Reports (6) Press Archive (15)		
31.  Glenagross Limerick Dec 1999 (ID-320)	25/12/1999	Area
Additional Information: Reports (2) Press Archive (1)		
32.  Shannon December 1954 (ID-3)	01/12/1954	Area
Additional Information: Reports (4) Press Archive (16)		
33.  Verdant Place Limerick Dec 1999 (ID-1985)	25/12/1999	Area
Additional Information: Reports (3) Press Archive (0)		
34.  Shannon Westfields Limerick Dec 1999 (ID-299)	25/12/1999	Area
Additional Information: Reports (3) Press Archive (2)		
35.  Corrib Drive Limerick Dec 1999 (ID-297)	25/12/1999	Area
Additional Information: Reports (3) Press Archive (1)		
36.  Shannon Adjacent Dock Road Limerick Dec 1999 (ID-302)	25/12/1999	Area
Additional Information: Reports (3) Press Archive (1)		
37.  Limerick City 3rd January 2014 (ID-12380)	03/01/2014	Approximate Point
Additional Information: Reports (1) Press Archive (0)		

Appendix C CFRAMS Mapping



- Legend:**
- Nodes
 - Model Reach
 - AFA Boundary
 - Flood Defence: Wall
 - Flood Defence: Embankment
 - Defended Area
- 10% AEP Fluvial Flood Extent**
 (1 in 10 chance in any given year)
- 1% AEP Fluvial Flood Extent**
 (1 in 100 chance in any given year)
- 0.1% AEP Fluvial Flood Extent**
 (1 in 1000 chance in any given year)

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

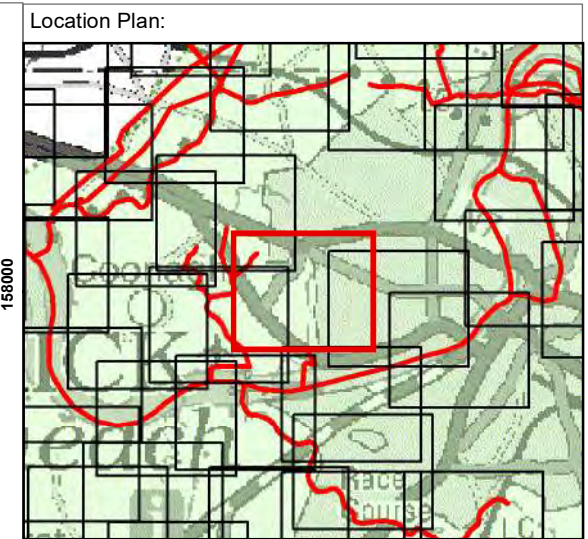


The Office of Public Works
 Jonathan Swift Street
 Trim
 Co. Meath
 C15 NX36

Merrion House
 Merrion Road
 Dublin 4
 D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	FLUVIAL
Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH
Date:	June 2016
Checked by:	KM
Date:	June 2016
Reviewed by:	MC
Date:	June 2016
Approved by:	PS
Date:	June 2016
Map No.:	S2526LIK_EXFCD_F1_32
Sheet: 32 of 59	Revision: 0
Map Scale: 1: 5000	Plot Scale: 1:1 @ A3

Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)
02CHE00288	2.02	0.63	2.17	1.03	2.42	1.34
02CHE00148	2.02	1.10	2.18	1.64	2.50	2.17



- 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)

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



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

Merrion House
 Merrion Road
 Dublin 4
 D04 R2C5

Project:	SHANNON CFRAM STUDY
Map Type:	EXTENT
Source:	COASTAL - TIDAL
Area:	LIMERICK
Scenario:	EXISTING
Drawn by:	EH
Checked by:	KM
Reviewed by:	MC
Approved by:	PS
Date:	June 2016

Map No.:	S2526LIK_EXCCD_F1_32
Sheet:	32 of 65
Map Scale:	1: 5000
Plot Scale:	1:1 @ A3
Revision:	0