

# **CONSOLIDATED STRATEGIC FLOOD RISK ASSESSMENT REPORT**

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## **FOR VARIATION No. 3 TO THE CORK CITY DEVELOPMENT PLAN 2022-2028**

### **ADDENDUM II TO THE STRATEGIC FLOOD RISK ASSESSMENT FOR THE CORK CITY DEVELOPMENT PLAN 2022-2028**

**for: Cork City Council**



Comhairle Cathrach Chorcaí  
Cork City Council

**by: CAAS Ltd.**



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# Section 1 Introduction

## 1.1 Scope

This is the Consolidated<sup>1</sup> Strategic Flood Risk Assessment (SFRA) Report for Variation No. 3 to the Cork City Development Plan 2022-2028. It provides the findings of the SFRA considerations undertaken with respect to Variation No. 3.

It forms Addendum II to the Stage 2 SFRA prepared for the Cork City Development Plan 2022-2028.

The report follows the SFRA methodology detailed in, and should be read in conjunction with, the Cork City Development Plan 2022-2028 Stage 2 SFRA Report, which is available alongside the Development Plan<sup>2</sup>.

## 1.2 The City Development Plan

The Cork City Development Plan 2022-2028, provides for sustainable development and proper planning within the administrative area of Cork City Council.

The Cork City Development Plan 2022-2028 was subject to Stage 2 SFRA that, inter alia, informed the land use zoning provided for by the Plan and facilitated the integration of various provisions into the Plan that contribute towards flood risk management and drainage in the city. A selection of measures contained in the Plan relating to flood risk management and drainage are provided below.

All projects under the Development Plan when varied will continue to need to demonstrate compliance with the provisions of the existing Development Plan relating to flood risk management and drainage.

City Development Plan measures relating to land use zoning and flood risk management and drainage include those reproduced as follows:

### **Chapter 11 “Placemaking and Managing Development”, “Flood Risk Assessment and Land Use Zoning”**

Paragraph No. 11.262

The Flood Zones identified by the Strategic Flood Risk Assessment (refer to the SFRA report that accompanies the Plan) should be used in line with the requirements provided for by the Flood Guidelines for land uses in Flood Zones A and B.

Paragraph No. 11.263

Land use zoning objectives provided by this Plan are subject to the following conditions:

- (1) Undeveloped land in Flood Zone A that is the subject of any zoning objective are only zoned for and shall only be developed for water compatible uses as identified in the Guidelines.
- (2) Undeveloped land in Flood Zone B that is the subject of any zoning objective are only zoned for and shall only be developed for water compatible or less vulnerable uses as identified in the Guidelines.
- (3) With respect to lands that have already been developed in Flood Zone A or B the potential conflict (between zoning and highly or less vulnerable development in Flood Zone A and between zoning and highly vulnerable development in Flood Zone B) will be avoided by applying the following zoning approach, subject to the exception areas set out in (iii) below:
  - (i) Cork City Council will facilitate the appropriate management and sustainable use of these areas. This will mean generally limiting new development, but facilitating existing development uses that may require small scale development such as small extensions. Development proposals within these areas shall be accompanied by a detailed Flood Risk Assessment, carried out in accordance with The Planning System and Flood Risk Assessment Guidelines and Circular PL 2/2014 (or as updated), which shall assess the risks of flooding associated with the proposed development. Where development proposals submitted to the Planning Authority relate to existing buildings or developed areas, the sequential approach cannot be used to locate them in lower-risk areas and the Justification Test will not therefore apply. Proposals seeking to change the use of existing buildings from a less vulnerable use to a use that would be more vulnerable to

<sup>1</sup> Updated following the making of the Variation.

<sup>2</sup> Including at <https://www.corkcity.ie/en/cork-city-development-plan/>

the effects of flooding may not be permissible in areas of elevated flood risk, whilst some change of use proposals not increasing the vulnerability to the effects of flooding or small scale extensions to such buildings will be considered on their individual merits but are acceptable in principle. An existing dwelling or building that is not located within an area at risk of flooding but has a large rear garden / curtilage that is located within Flood Zone A or B would not be suitable for a more in-depth residential development proposal which would propose a residential use within Flood Zone A or B.

- (ii) Proposals shall only be considered favourably where it is demonstrated to the satisfaction of the Planning Authority that they would not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities, or increase the risk of flooding to other locations and be in accordance with the proper planning and sustainable development of the area. The nature and design of structural and non-structural flood risk management measures required for development in such areas (see relevant Flood Risk Assessments - section below) will also be required to be demonstrated, to ensure that flood hazard and risk will not be increased. Measures proposed shall follow best practice in the management of health and safety for users and residents of the development.
- (iii) Exceptional areas are the already developed City Centre and Docklands areas, which have undergone Justification Tests and have been zoned for development, and established built-up areas of Cork City including suburban areas such as Model Farm Road / Carrigrohane Road area and Douglas. Future development in these areas will:
  - be subject to site-specific flood risk assessments;
  - comply with the flood risk management provisions of this Plan, including the structural and non-structural risk management measures outlined under Flood Risk Assessments below, and relevant measures contained in the Council's 2020 South Docks Drainage Strategy; and
  - will benefit from Flood Relief Schemes being progressed by the OPW.

Flood hazard and flood risk information is an emerging dataset of information. The flood risk mapping used by the Council may be altered in light of future data and analysis. Therefore, all landowners and developers are advised that Cork City Council accept no responsibility for losses or damages arising due to assessments of vulnerability to flooding of lands, uses and developments. Owners, users and developers are advised to take all reasonable measures to assess the vulnerability to flooding in a particular area, prior to submitting a planning application.

## **Chapter 11 "Placemaking and Managing Development", "Flood Risk Assessments"**

### **Paragraph No. 11.265**

The Council will have regard to the Planning System and Flood Risk Management Guidelines for Local Authorities (DEHLG and OPW 2009) when assessing planning applications. All significant proposals for development identified as being vulnerable to flooding will be required to provide a site-specific Flood Risk Assessment (FRA) in accordance with the Guidelines. A detailed site-specific FRA should quantify the risks, the effects of selected mitigation and the management of any residual risks.

### **Paragraph No. 11.266**

Assessments shall consider and provide information on the implications of climate change with regard to flood risk in relevant locations. The 2009 OPW Draft Guidance on Assessment of Potential Future Scenarios for Flood Risk Management (or any superseding document) and available information from the CFRAM Studies shall be consulted to this effect.

### **Paragraph No. 11.267**

In Flood Zone C, where the probability of flooding is low (less than 0.1%, Flood Zone C), site-specific Flood Risk Assessment may be required and the developer should satisfy themselves that the probability of flooding is appropriate to the development being proposed. This Development Plan's SFRA datasets and the most up to date CFRAM Programme mapping should be consulted by prospective applicants for developments in this regard and will be made available to Development Management processes in the Council.

### **Paragraph No. 11.268**

Further details are also included in Chapter 9 Environmental Infrastructure and Management.

### **Paragraph No. 11.269**

Applications for vulnerable development in flood risk zones, including within Flood Zones A and B in the City Centre and the Dockland areas and in areas at risk under the OPW's Mid-Range Future Scenario, shall provide details of structural and non-structural risk management measures to include, but not be limited to specifications of the following:

#### **(1) Floor Levels**

In areas of limited flood depth, the specification of the threshold and floor levels of new structures shall be raised above expected flood levels to reduce the risk of flood losses to a building, by raising floor heights within the building structure using a suspended floor arrangement or raised internal concrete platforms.

When designing an extension or modification to an existing building, an appropriate flood risk reduction measure shall be specified to ensure the threshold levels into the building are above the design flood level. However, care must also be taken to ensure access for all is provided in compliance with Part M of the Building Regulations.

Where threshold levels cannot be raised to the street for streetscape, conservation or other reasons, the design shall specify a mixing of uses vertically in buildings - with less vulnerable uses located at ground floor level, along with other measures for dealing with residual flood risk.

(2) Internal Layout

Internal layout shall be designed and specified to reduce the impact of flooding (e.g. living accommodation, essential services, storage space for provisions and equipment shall be designed to be located above the predicted flood level). In addition, designs and specifications shall ensure that, wherever reasonably practicable, the siting of living accommodation (particularly sleeping areas) shall be above flood level.

With the exception of single storey extensions to existing properties, new single storey accommodation shall not be deemed appropriate where predicted flood levels are above design floor levels. In all cases, specifications for safe access, refuge and evacuation shall be incorporated into the design of the development.

(3) Flood-Resistant Construction

Developments in flood vulnerable zones should specify the use of flood-resistant construction aimed at preventing water from entering buildings - to mitigate the damage floodwater caused to buildings.

Developments should specify the use of flood resistant construction prepared using specialist technical input to the design and specification of the external building envelope – with measures to resist hydrostatic pressure (commonly referred to as “tanking”) specified for the outside of the building fabric.

The design of the flood resistant construction shall specify the need to protect the main entry points for floodwater into buildings - including doors and windows (including gaps in sealant around frames), vents, air-bricks and gaps around conduits or pipes passing through external building fabric.

The design of the flood resistant construction should also specify the need to protect against flood water entry through sanitary appliances as a result of backflow through the drainage system.

Developments in flood vulnerable zones that are at risk of occasional inundation should incorporate design and specification for flood resilient construction which accepts that floodwater will enter buildings and provides for this in the design and specification of internal building services and finishes. These measures limit damage caused by floodwater and allow relatively quick recovery. This can be achieved by specifying wall and floor materials such as ceramic tiling that can be cleaned and dried relatively easily, provided that the substrate materials (e.g. blockwork) are also resilient. Electrics, appliances and kitchen fittings should also be specified to be raised above floor level, and one-way valves shall be incorporated into drainage pipes.

(4) Emergency Response Planning

In addition to considering physical design issues for developments in flood vulnerable zones, the developer shall specify that the planning of new development also takes account of the need for effective emergency response planning for flood events in areas of new development.

Applications for developments in flood vulnerable zones shall provide details that the following measures will be put in place and maintained:

- Provision of flood warnings, evacuation plans and ensuring public awareness of flood risks to people where they live and work;
- Coordination of responses and discussion with relevant emergency services i.e. Local Authorities, Fire and Rescue, Civil Defence and An Garda Síochána through the SFRA; and
- Awareness of risks and evacuation procedures and the need for family flood plans.

(5) Access and Egress During Flood Events

Applications for development in flood vulnerable zones shall include details of arrangements for access and egress during flood events. Such details shall specify that:

- Flood escape routes have been kept to publicly accessible land;
- Such routes will have signage and other flood awareness measures in place, to inform local communities what to do in case of flooding; and
- This information will be provided in a welcome pack to new occupants.

Paragraph No. 11.270

Further and more detailed guidance and advice can be found at <http://www.flooding.ie> and in the Building Regulations.

## **Chapter 12 “Land Use Zoning Objectives”, “Permitted Uses”**

Paragraph No. 12.7

Further to Plan provisions relating to flood risk management under other parts of this Plan (including paragraph no’s. 11.261 to 11.267 and paragraph no’s. 12.21 to 12.23), permissible uses within flood zones A or B in areas that have not passed the Justification Test (i.e. those areas outside of Cork City Centre and the North and South Docklands) shall be constrained to those “water compatible” and “less vulnerable” uses as appropriate to the particular flood zone (please refer to the accompanying Strategic Flood Risk Assessment document).

### **Objective 12.1 Land Uses and Flooding Objective**

To Facilitate the appropriate management and sustainable use of Flood Zones A and B identified by the Strategic Flood Risk Assessment.

Other City Development Plan measures relating to flood risk management and drainage are provided on Table 1.1.

**Table 1.1 Existing Plan measures relating to flood risk management in advance of the making of Variation No. 3**

| Plan Ref.                                                                       | Provision from Plan, as varied                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategic Objective 4: Climate and Environment</b>                           | <p>To support transition to a low-carbon, climate-resilient and environmentally sustainable future. To support the circular economy. Cork City Council is committed to the implementation of measures to support the achievement of national policies and targets for climate mitigation, including the Government's policy under Ireland's Transition to a Low Carbon Energy Future 2015-30 and Climate Action Plan 2019, National Mitigation Plan, National Adaptation Framework: Planning for a Climate Resilient Ireland. At the time of preparation of this Plan, the Government agreed to advance the Climate Action and Low Carbon Development (Amendment) Bill 2021 to support Ireland's transition to Net Zero and achieve a climate neutral economy by 2050.</p> <p>Proposals for new development in Cork City will strive to reduce carbon footprints by carbon emission reductions, sustainable energy consumption, sustainable transport, use of renewable energy sources, green construction methods including passive solar design, and flood risk mitigation and adaptation and use of nature-based solutions, through design, layout, implementation and operation.</p> <p>A statement commensurate with the nature and scale of the development proposal will be required to accompany planning applications demonstrating how climate resilience has been considered and implemented at all stages in the development process.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Paragraph 9.5</b><br><b>Assessment of Development in Areas of Flood Risk</b> | <p>The Planning System and Flood Risk Management: Guidelines for Planning Authorities (2009) , subsequently amended under Department of Environment, Community and Local Government Circular PL2/2014 , outline how the aim of flood risk management is to minimise the level of flood risk to people, business, infrastructure and the environment through the identification and management of existing and potential future flood risks. The Guidelines recommend a sequential approach to spatial planning, promoting avoidance rather than justification and subsequent mitigation of risk. The guidelines define the Justification Test as an assessment of whether a development proposal within an area at risk of flooding meets specific criteria for proper planning and sustainable development and demonstrates that it will not be subject to unacceptable risk nor increase flood risk elsewhere. The Justification Test should be applied only where development is within flood risk areas that would be defined as inappropriate under the screening test of the sequential risk-based approach. Cork City Council will adopt a precautionary approach, namely to avoid development in floodplains, wetlands and coastal areas prone to flooding and so preserve these natural defences that hold excess water until it can be released slowly back into river systems, the sea or seep into the ground. Where flood risk is an issue, applicants will generally be required to carry out a site specific Flood Risk Assessment (apart from minor developments, where such an approach would not be justified). Policy in relation to the incorporation of measures such as Sustainable Urban Drainage Systems (SUDS) to reduce surface runoff is outlined above and should be incorporated in so far as possible to reduce risks.</p> <p><b>Coastal Change</b></p> <p>A National Coastal Change Management Strategy Steering Group was set up in 2020 to scope out an approach for the development of a national coordinated and integrated strategy to manage the projected impact of coastal change to our coastal communities, economies, heritage, culture and environment. Cork City Council supports the preparation of the strategy and will consider its findings when published and how it may impact its functional area. In the interim consideration will be given to areas that may be at risk or vulnerable to coastal erosion or coastal change, including change associated with climate change.</p> |
| <b>Paragraph 9.6</b><br><b>Coastal Change</b>                                   | <p>A National Coastal Change Management Strategy Steering Group was set up in 2020 to scope out an approach for the development of a national coordinated and integrated strategy to manage the projected impact of coastal change to our coastal communities, economies, heritage, culture and environment. Cork City Council supports the preparation of the strategy and will consider its findings when published and how it may impact its functional area. In the interim consideration will be given to areas that may be at risk or vulnerable to coastal erosion or coastal change, including change associated with climate change.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Objective 9.6</b><br><b>Storm Water</b>                                      | <p>To provide adequate storm water infrastructure in order to accommodate the planned levels of growth within the plan area and to ensure that appropriate flood management measures are implemented to protect property and infrastructure.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Objective 9.8</b><br><b>Flood Protection</b>                                 | <p>To protect, enhance and manage the City's floodplains, wetlands and coastal habitat areas that are subject to flooding as vital 'green infrastructure' which provides space for storage and conveyance of floodwater, enabling flood risk to be more effectively managed and reduce the need to provide flood defence infrastructures. Cork Council will also require that all proposed flood protection or alleviation works will be subject to Appropriate Assessment to ensure there are no likely significant effects on the integrity, defined by the structure and function, of any European Sites and that the requirements of Article 6 of the EU Habitats Directive are met.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Objective 9.9</b><br><b>Flood Protection Schemes</b>                         | <p>To work with the Office of Public Works (OPW) in the progression and completion of Flood Risk Management Plans and flood relief schemes including the Lower Lee Flood Relief Scheme (LLFRS), schemes in Blackpool, Glanmire / Glashaboy, Douglas / Togher and other schemes that may be developed during the period of the plan.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Objective 9.10</b><br><b>Development in Flood Risk Areas</b>                 | <p>(a) To restrict development in identified flood risk areas, in particular flood plains. All new development proposals shall comply with the requirements of the Planning System and Flood Risk Management –Guidelines for Planning Authorities (2009) and Department of Environment, Community and Local Government Circular PL2/2014, in particular through the application of the sequential approach and the Development Management Justification Test.</p> <p>(b) All significant proposals for development identified as being vulnerable to flooding will be required to provide a site specific Flood Risk Assessment to identify potential loss of floodplain storage and proposals for the storage or attenuation (e.g. SUDS) of run-off discharges (including foul drains) to ensure development does not increase the flood risk in the relevant catchment.</p> <p>(c) Adopt a river catchment approach to rivers entering the City, practicing natural flood management wherever practical and appropriate.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Paragraph 10.108</b>                                                         | <p>Cork City Council has prepared a South Docks Drainage and Levels Strategy (2022) to inform the development of the City Docks (hereafter referred to as "the Strategy"). The objective of the Strategy is to provide a long-term placemaking vision that is flexible, environmentally responsible and climate- resilient, particularly to potential changes in sea level and rainfall intensity.</p> <p>The Strategy is based on a sustainable urban drainage solution (<i>SUDS</i>) approach to provide the drainage network and conveyance and mitigation of water. The aim is to provide water features on Centre Park Road and Monahan's Road that form an integral part of the urban landscape. The Strategy was finalised in Q3</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Plan Ref.               | Provision from Plan, as varied                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|                         | 2022.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Paragraph 10.109</b> | <p>The Strategy provides an integrated landscape and sustainable blue-green drainage concept design, combining a number of key components:</p> <ul style="list-style-type: none"> <li>• Marina Park /Atlantic Pond, the strategic park of landscape and recreational significance to the South Docks and wider area. The Park is designed to accommodate significant flood storage (c.72,000 cubic metres including c. 43,000 at the Atlantic Pond / surrounds, c. 24,000 within the park and c5,500 at the Pairc Uí Chóimh all weather pitch storage cells);</li> <li>• The Kennedy Spine Park that will provide flood storage for c.1500 cubic metres of flood storage integrated into a park that will combine soft and hard landscapes reflecting the vision for this key piece of public open space;</li> <li>• An east-west green spine along Centre Park Road (West of Marquee Road), incorporating an open swale that is designed to accommodate c.2,300 cubic metres of flood storage; An east-west green spine along Monahan Road, incorporating an improved drainage channel/open swale designed to accommodate c.4,900 cubic metres of flood storage;</li> <li>• The Strategy sets out the full schedule of the strategic flood storage locations for the South Docks.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Paragraph 10.110</b> | <p>The Strategy provides the following (Refer to Map in Chapter D in Volume 2: Mapped Objectives: which provides a summary of proposed infrastructure measures in the South Docks Drainage and Levels Strategy):</p> <ul style="list-style-type: none"> <li>• An infrastructure strategy to ensure that the South Docks is resilient to flood risk and climate change;</li> <li>• Drainage catchments that reflect the capacity of the network to deal with pluvial (rainfall) runoff;</li> <li>• A surface water drainage network based upon SuDS / nature-based solutions, including conveyance by grey infrastructure.</li> <li>• A perimeter flood protection from tidal and fluvial (river) flood risks, including a transition from the standard perimeter defence of 4.35m OD at the proposed Kent Station Bridge to the proposed flood protection levels at Albert Quay East, to be delivered as part of the Cork Docklands to City Centre Road Improvement Scheme.</li> <li>• Minimum ground (public realm and streets) level and building finished floor levels (FFLs) with proposed ground levels as close to existing ground levels as possible, while mitigating against pluvial (rainfall) flood risk.</li> <li>• Public strategic (regional) flood storage <del>will need to be</del> provided across a number of locations in the South Docks, as set out above.</li> <li>• Site acquisition as required to deliver elements of the strategy that are located in private ownership.</li> <li>• The Strategy indicates that there may be a requirement for a surface water pumping station in the vicinity of Atlantic Pond area in the future to ensure the necessary adaptation plans are in place to mitigate the risks presented by climate change., It is estimated that with a total site area of a total of c.250sqm will be required to accommodate this pumping station infrastructure. The Strategy identifies a possible locations for this facility on the proposed extension to the Atlantic Pond area. However this is indicative only the location, for the pumping station will be identified when required, in response to the prevailing climate change.</li> </ul> |
| <b>Paragraph 10.112</b> | <p><b>Minimum Ground Levels and Finished Floor Levels</b></p> <p>It is necessary to marginally increase localised ground (public realm and roads) levels at low points to between 0.85m OD and 1.0m OD to facilitate an effective gravity system and achievable storage volumes for flood events up to High End Risk Future Scenario (HEFS).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Paragraph 10.113</b> | <p>To ensure that the proposed buildings within the South Docks achieve the appropriate standard of protection from flooding, it is proposed to set minimum finished floor levels (FFL) at least 300mm above the predicted relevant High-End Future Scenario flood event, taking account of two types of flooding:</p> <ul style="list-style-type: none"> <li>• A pluvial flood event, where stormwater discharges from the South Docks are “tide locked”</li> <li>• Tidal inundation from the River Lee in the event of a breach in the polder defence.</li> </ul> <p>The standard of protection to be provided is summarised as follows:</p> <ul style="list-style-type: none"> <li>• Pluvial flood protection designed to a standard of 1%AEP, assuming +40% rainfall intensity, due to climate change.</li> <li>• Tidal flood protection designed to a standard of 0.5%AEP, assuming +1.05m sea-level rise due to climate change.</li> </ul> <p>The recommended finished floor levels throughout the South Docks are summarised in Figure 10.10. Flood defence for the North Docks will be achieved through the setting of appropriate building finished floor levels for new developments, designed to withstand sea-level rise of up to 0.5m due climate change, in alignment with OPW document The Planning System and Flood Risk Management Guidelines.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Paragraph 10.114</b> | <p>Finished floor levels within Figure 10.10 are recommendations only. Planning applications for new development both within the South Docks and the North Docks will still need to demonstrate compliance with the provisions of the OPW Guidelines by means of a Site Specific Flood Risk Assessment.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Paragraph 10.115</b> | <p>Notwithstanding the provisions of paragraph 10.114 above, within the polder defended polder areas of South Docklands, the finished floor level for Highly Vulnerable Development shall be +1.9mOD. This is required to mitigate the residual flood risk arising from a breach of the polder defence during 0.5%AEP tidal flood level, including appropriate allowances for climate change, and freeboard.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Paragraph 10.116</b> | <p>It is envisaged that minimum FFLs along the quayside would be set at or above the proposed polder defence level of +3.85m to +4.35m OD, except for the western end of Kennedy Quay which transitions to Albert Quay East. At this location a minimum FFL of +3.85m OD will be accommodated due to constraints imposed by existing streetscapes.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Paragraph 10.117</b> | <p><b>Development Management Controls</b></p> <p><b>SuDS and Site run-off</b></p> <p>It is proposed that all private developments, except waterfront developments, will provide on-site storage for surface water, to prevent overwhelming of the capacity of the proposed public system during extreme events and thus share the burden of providing the necessary surface water storage volume, which can be designed and provided through many storage mitigation techniques. Waterfront developments can discharge directly into the River Lee unattenuated. The gradual implementation of the private storage will incrementally reduce the pressure on the public drainage system, thus providing flexibility in the relative timing of the delivery of both public and private sector developments and infrastructure.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Paragraph 10.118</b> | <p>It is proposed that there will be a <del>split</del> shared responsibility for surface water storage between private and public lands by requiring all developments to limit discharges to the public system to an absolute maximum of 68l/s/ha (approximately 50% of design peak brownfield runoff rate for critical storm event) irrespective of tidal phase.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Plan Ref.                                      | Provision from Plan, as varied                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Paragraph 10.119</b>                        | Development proposals will be required to demonstrate how this discharge limit will be achieved, and include calculations for the volume of onsite storage to be provided. The proposals should seek to present storage solutions that are in line with Sustainable Urban Drainage System and Nature Based Solutions Principles (see Objective 9.4: Sustainable Urban Drainage Systems and para. 11.258).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Paragraph 10.120</b>                        | <b>Basements and Structural Design Strategies</b><br>Based on the findings of the Hydrogeology Desk Study (November 2021) completed as part of the Strategy, maintaining the aquitard function provided by the existing alluvium soil layer has been identified as a key requirement of the proposed redevelopment of the South Docks. It is however recognised, that the nature of the ground conditions and anticipated type and height of the buildings will mean that piling, and potentially basements, will be required in many instances. Where it is necessary for such structures to penetrate the alluvium layer, the detailing of the foundations, basements and piling will need to ensure that no new flow paths are created and that an equivalent aquitard function is maintained post-development. Structural design strategies that do not penetrate the alluvium later will be the preference for structural design solutions and departure from this approach will require justification. |
| <b>Development Management Paragraph 11.216</b> | 11.216 Development proposals should integrate green and blue infrastructure measures to offset peak flood flows including the following options:<br>(1) Nature-based solutions and “slow-the-flow” initiatives.<br>(2) Incorporation of SUDS to limit runoff from existing and new development.<br>(3) Wetland enhancement on floodplains.<br>(4) Native tree planting and landscaping schemes.<br>(5) Green roofs and green walls<br>(6) Rainwater harvesting and rainwater boxes.<br>(7) Natural banks, water dykes and water squares.<br>(8) Natural flood management techniques.                                                                                                                                                                                                                                                                                                                                                                                                                         |

## 1.3 Variation No. 3

### 1.3.1 Background and Context

Following the approval of the Revised National Planning Framework (‘NPF’) in April 2025, Government published the ‘NPF Implementation: Housing Growth Requirements Guidelines for Planning Authorities’ in July 2025 (‘the Guidelines’) which set housing demand requirements for each local authority to 2040. There was no baseline uplift in housing growth requirement targets for Cork City Council in the Guidelines, but a provision of up to 50% additional provision applies.

Updating development plans cross the country is crucial to realising these housing growth requirements. Cork City Council intends to seek a two-year extension to the Cork City Development Plan 2022-2028 (‘City Development Plan’), extending the plan period from August 2028 to December 2030, and made the amendments to the City Development Plan set out in Variation No. 3 in order to secure the objectives of the Guidelines and give effect to the housing growth requirements and additional provision to 2030.

The Guidelines require all local authorities to carry out a settlement capacity audit to identify zoned serviced and serviceable lands with residential development potential to cater for the housing growth requirement figures in all relevant settlements and to specify enabling infrastructure required. Cork City Council followed the methodology used for the city capacity study carried out to inform the current Cork City Development Plan 2022-2028 (‘City Development Plan’), and its section 15(2)1 two-year progress report in 2024, to establish that there is approximately 450 hectares of zoned residential land identified in the Core Strategy with the potential to deliver approximately 22,500-36,000 dwellings at densities of 50 and 80 dwellings per hectare (dph), and depending on assumptions. ‘Un-zoned’ lands in strategic locations that could contribute toward the sustainable, transport-oriented development of the city were also assessed.

To further inform Variation No. 3, Cork City Council carried out a non-statutory consultation inviting submissions from interested parties for recommendations for lands to be zoned for residential development that meet the criteria of the Guidelines, as well as the City Development Plan objectives for compact growth, transport-oriented development, serviceability and deliverability. Through this robust multi-stage process, Cork City Council determined that approximately 250 to 280 hectares of additional land for residential purposes are required to secure the objectives of the Guidelines to 2030.

As required under the Guidelines, a report from the Chief Executive setting out the development capacity of existing zoned lands and demonstrating the means by which it is proposed to secure the objectives of these Guidelines is published on the Cork City Council website.

### **1.3.2 Purpose of Variation No. 3**

The main purpose of Variation No. 3 is to accelerate housing delivery and to align the City Development Plan with the Guidelines, but the Variation also seeks to amend the rural housing policy in order to align with updated Census data and includes minor amendments to update the City Development Plan in relation to Ministerial Guidelines issued since the adoption of the Plan in 2022.

### **1.3.3 Scope and Structure of Variation No. 3**

Variation No. 3 comprises text and mapping changes to two of the four volumes of the City Development Plan, and consists of the following:

#### **Part A: Volume 1: Written Statement**

1. Mapping and Miscellaneous
  - 1.1. Amendments to Chapter 2
  - 1.2. Amendments to Chapter 3
  - 1.3. Amendments to Chapter 10
  - 1.4. Amendments to Chapter 11
  - 1.5. Amendments to Chapter 12
  - 1.6. Amendments to Appendix 1
2. Rural Housing Policy
  - 2.1 Amendments to Chapter 3  
(\* different amendments to "1.2" above)
  - 2.2 Amendments to Chapter 6
  - 2.3 Amendments to Chapter 11  
(\* different amendments to "1.4" above)

#### **Part B: Volume 2: Mapped Objectives**

1. Zoning Amendments
2. Designation of "Long Term Strategic Development Lands"

### **1.3.4 Iterative SFRA/Variation-Preparing Process**

Land use zoning contained within the Variation has been informed by an iterative SFRA process, including both: the delineation of flood risk zones; and future climate scenario risk areas (mid-range as well as high end). The detailed Variation preparation process undertaken by the Planning Department combined with specialist input from the SFRA process facilitated zoning that helps to avoid inappropriate development being permitted in areas of elevated flood risk.

Furthermore, written SFRA provisions have been integrated into the Variation as detailed under Section 2.

## Section 2 Consideration of Flood Risk and Variation No. 3

The land use zoning and objectives provided for by the Variation have taken into account environmental considerations, including those relating to flood risk.

### 2.1 Present Day Flood Risk – Flood Zones

In order to confirm Flood Zones at the sites where Variation No. 3 identifies changes to the existing Plan's land use zoning, the methodology followed by the existing SFRA was followed. Available historical and predictive (present day and future scenario) indicators, including those identified within the main SFRA, were reviewed and were taken into account by the Council.

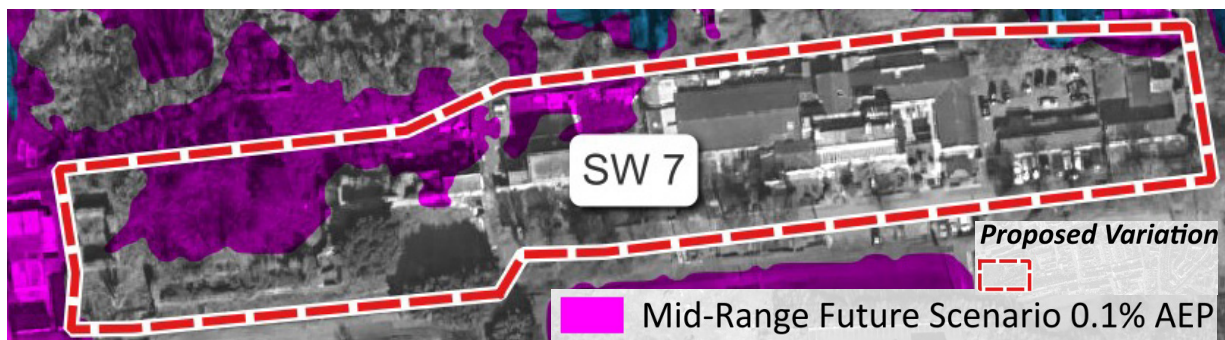
All sites where land use zoning has been changed under the Variation are situated within Flood Zone C. This is the Flood Zone with the lowest flood risk. The uses permissible / open for consideration under the varied Land use Zoning Objectives for these sites are considered to be appropriate to this Flood Zone. All projects under the Development Plan when varied will continue to need to demonstrate compliance with the provisions of the existing Development Plan relating to flood risk management and drainage.

### 2.2 Future Climate Risk Scenario Areas

Some areas beyond Flood Zones A and B are identified as being at risk under Mid-Range and High-End Future Climate Risk Scenario Area Mapping

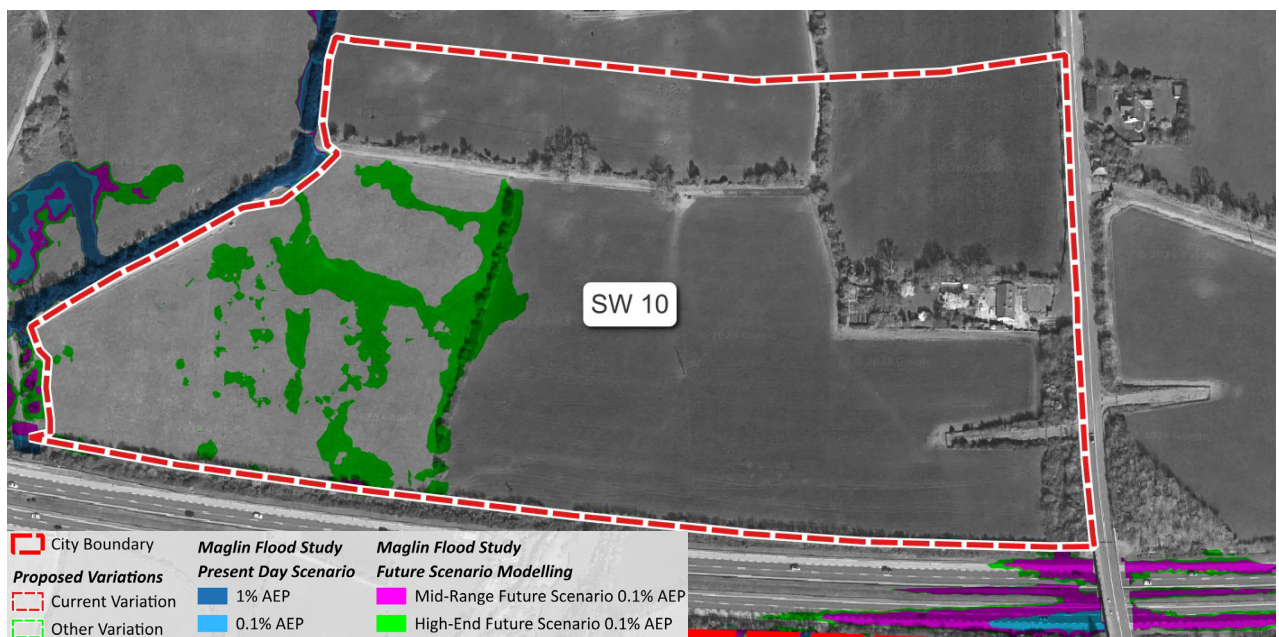
Most sites where land use zoning has been changed under the Variation are situated outside of these areas.

The zoning of Site SW 7 Lands adjacent to Ballingcollig GAA grounds has been amended from ZO 15 Public Open Space to ZO 1 Sustainable Residential Neighbourhoods, reflecting existing development. Western parts of this site identified as being at risk under Mid-Range Future Climate Risk Scenario (OPW) as shown on Figure 2.1 below. Any future development at this site would need to comply with the provisions of the existing Plan, as varied (refer to Section 1.2 of this report).



**Figure 2.1 Mid-Range Future Climate Risk Scenario Area at Site SW 7 Lands adjacent to Ballingcollig GAA grounds**

The zoning of Site SW 10 Ballincollig (north of N22, west of Maglin Road) has been amended from ZO 20 City Hinterland + Long Term Strategic Development Land to ZO 2 New Residential Neighbourhoods, reflecting existing development. Western parts of this site identified as being at risk under High-End Future Climate Risk Scenario (MWP for Cork City Council, South Ballincollig Drainage Study, 2021) as shown on Figure 2.2 below. Any future development at this site would need to comply with the provisions of the existing Plan, as varied (refer to Section 1.2 of this report). Furthermore, the Variation provides the following amendment as part of Site-Specific Objective 7 that applies to these lands "(ii) Strategic flood risk assessment analysis has identified areas of elevated flood risk under a high-end future climate risk scenario on these lands on these lands; such areas shall be excluded from development and used only for compatible SuDS or flood-resilient functions. This limitation shall take primacy over any other related land use zoning provision. All development proposals on the remainder of the lands shall be accompanied by a site-specific Flood Risk Assessment in accordance with the Flood Risk Management Guidelines."



**Figure 2.2 High-End Future Climate Risk Scenario Area at Site SW 10 Ballincollig (north of N22, west of Maglin Road)**

## 2.3 Flood Risk Management and Drainage related provisions from the Variation, including those arising from Submissions

Table 2.1 provides written provisions that have been integrated into the Variation that relate to flood risk management and drainage.

**Table 1.1 Flood Risk Management provisions from the Variation integrated at Proposed Variation Stage**

| Reference                                                                                                    | Variation Provision                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ballyvolane East and West 10.301D</b>                                                                     | Strategic flood risk assessment analysis has identified areas of high probability flood risk on these lands; such areas shall be excluded from development and used only for compatible SuDS or flood-resilient functions. This limitation shall take primacy over any other related land use zoning provision. All development proposals on the remainder of the lands shall be accompanied by a site-specific Flood Risk Assessment in accordance with the Flood Risk Management Guidelines.                                                                                                                                        |
| <b>Site-Specific Objective 6</b><br>Location: Greenfields Road, Ballincollig                                 | Site area: 12.4 Ha<br>Zoning: ZO 2 New Residential Neighbourhoods<br>Specific Objectives:<br>(i) Development shall be subject to a full assessment of environmental constraints including a site-specific flood risk assessment with appropriate avoidance, mitigation and design measures incorporated, as required.                                                                                                                                                                                                                                                                                                                 |
| <b>Site-Specific Objective 7</b><br>Location: Maglin, South Ballincollig (north of N22, west of Maglin Road) | Site area: 9.8 Ha<br>Zoning: ZO 2 New Residential Neighbourhoods<br>Specific Objectives:<br>(ii) Strategic flood risk assessment analysis has identified areas of elevated flood risk under a high-end future climate risk scenario on these lands; such areas shall be excluded from development and used only for compatible SuDS or flood-resilient functions. This limitation shall take primacy over any other related land use zoning provision. All development proposals on the remainder of the lands shall be accompanied by a site-specific Flood Risk Assessment in accordance with the Flood Risk Management Guidelines. |
| <b>Site-Specific Objective 8</b><br>Location: Maglin, South Ballincollig                                     | Site area: 1.25 Ha<br>Zoning: ZO 8 Neighbourhood and Local Centres<br>Specific Objectives:<br>(ii) Development shall be subject to a full assessment of environmental constraints at Development Management stage including a site-specific flood risk, with appropriate avoidance, mitigation and design measures incorporated as required.                                                                                                                                                                                                                                                                                          |
| <b>Site-Specific Objective 9</b><br>Location: Maglin, South Ballincollig                                     | Site area: 0.7 Ha<br>Zoning: ZO 2 New Residential Neighbourhoods<br>Specific Objectives:<br>(ii) Development shall be subject to a full assessment of environmental constraints at Development Management stage including a site-specific flood risk, with appropriate avoidance, mitigation and design measures incorporated as required.                                                                                                                                                                                                                                                                                            |
| <b>Site-Specific Objective 16</b><br>Location: Ringwood, Blarney                                             | Site area: 24 Ha<br>Zoning: ZO 2 New Residential Neighbourhoods<br>Specific Objectives:<br>(vi) Development proposals shall be informed by the following <ul style="list-style-type: none"> <li>• a comprehensive archaeological assessment</li> <li>• a site-specific flood risk assessment, and provision of a SuDS-based surface water management and attenuation measures in accordance with best practice.</li> </ul>                                                                                                                                                                                                            |

Further to the original Proposed Variation and associated flood risk management provisions (refer to Table 2.1 above), a number of submissions were made on the Proposed Variation and associated documents during public consultation. Some of these submissions related to the SFRA and the integration of flood risk management considerations into the Variation. These submissions were responded to in the Chief Executive's Report prepared following public consultation, available at corkcity.ie. Various sites referenced in the submissions were confirmed to be within Flood Zone C. Notwithstanding this, the following additional text was added to the original Proposed Variation by way of amendment:

SE 2, Site-Specific Objective 1:

"(vi) The drainage strategy to inform development on these lands shall take a nature-based solutions led approach to maximise site resilience in relation to the management of surface water."

SW 3, Site-Specific Objective 19:

"(ii) A site-specific flood risk assessment is required for any proposal for development on this site, which should take account of impacts on the Glasheen River, both upstream and downstream of the site, including the channel crossing the N40 which runs through the site."

"(iii) Any application for development at this site shall demonstrate that access requirements are preserved for the maintenance of Drainage Districts."

SW 8, Neighbourhood Development Site 4:

"Any application for development at this site shall demonstrate that access requirements are preserved for the maintenance of Drainage Districts."

SW 9, Site Specific Objective 6:

"(ii)

Any application for development at this site shall demonstrate that access requirements are preserved for the maintenance of Drainage Districts."

SW 10, Site-Specific Objective 7:

"(iv)

Any application for development at this site shall demonstrate that access requirements are preserved for the maintenance of Drainage Districts."

SW 11, Site-Specific Objective 8:

"(iii)

Any application for development at this site shall demonstrate that access requirements are preserved for the maintenance of Drainage Districts."

SW 12, Site-Specific Objective 9:

"(iii)

Any application for development at this site shall demonstrate that access requirements are preserved for the maintenance of Drainage Districts."

"10.286A

The access strategy serving the lands zoned for New Residential development in Riverstown (to the south and east of the existing Glashaboy Heights housing development) shall provide for the following:

....

- A drainage strategy to inform development on these lands shall take a nature-based solutions led approach to maximise site resilience in relation to the management of surface water."

"11.269A

In complying with the flood risk management provisions of this Plan, including Paragraph 11.267 relating to Flood Risk Assessments within Flood Zone C, Drainage District benefitting areas and future climate scenario risk mapping shall be taken into account. Any structural and or non-structural flood risk management measures proposed shall take account of the specifications outlined at Paragraph 11.269 as relevant."

## **Section 3 Conclusion**

Taking into account the provisions integrated into the existing Cork City Development Plan 2022-2028, the SFRA undertaken to inform the City Plan, the changes included within Variation No. 3 and currently available information on flood risk, this SFRA Addendum demonstrates that the Plan, as varied, will continue to be consistent with the Flood Risk Management Ministerial Guidelines.