



FLOOD RESILIENCE





OVERVIEW

10 MAIN RIVERS:

WARD, DELVIN, TOLKA,
SLUICE, MAYNE, SANTRY,
BROADMEADOW,
BALLYBOUGHIL,
CORDUFF & LIFFEY

88 km

OF COASTLINE IN FINGAL



TARGET



A CLIMATE-RESILIENT
REGION

REDUCTION/MITIGATION
OF FLOOD RISKS
IN REGION

EXAMPLES OF MAIN ACTION TYPES

Protect and conserve wetlands,
floodplains and coastal areas



Increase flood capacity of
rivers and estuaries



Prepare a maintenance
register for the entire
surface water system



Update Council Emergency
Response Plans to include
flood event response



Finalise a SuDS policy



Develop a coastal monitoring
programme to measure coastal erosion



STAKEHOLDERS TO WORK WITH AND INFLUENCE

OFFICE OF
PUBLIC WORKS

GENERAL
PUBLIC

ENVIRONMENTAL
GROUPS



GOVERNMENT
DEPARTMENTS

COMMUNITY
GROUPS

DEVELOPERS



Control and manage surface water, mitigate against flooding and to protect and improve water quality in the County while allowing for sustainable development and improve water quality in line with the Water Framework Directive and Eastern River Basin Management Plan.

- Fingal Development Plan 2017-2023

Flooding is a key climate risk facing the Dublin Region. Climate change is expected to increase the frequency and/or intensity of heavy rainfall events and storm surges, which would increase the risk of flooding in vulnerable areas of the County.

Together with the Office of Public Works and neighbouring local authorities, FCC is actively working to implement projects and programmes that align with the *EU Floods Directive* and *Water Framework Directive*. The Floods Directive calls for member states to undertake strategic flood risk assessments and to identify flood risk management measures. Flood maps have been prepared for future climate scenarios, and the proposed community-scale measures are set out in the Flood Risk Management Plans (www.floodinfo.ie).

Additional local measures can include nature-based solutions such as integrated wetlands, green infrastructure and Sustainable urban Drainage Systems (SuDS), with an emphasis on nature-based solutions to be used in adaptation and mitigation responses to achieve resilience.

FLOOD RISK MANAGEMENT



In response to the Floods Directive, Fingal County Council, along with Meath County Council and the Office of Public Works (OPW) completed a catchment based flood risk assessment and management study of 19 rivers and streams in the Fingal East Meath area, the Fingal East Meath Flood Risk Assessment and Management Study (FEM-FRAMS). The core objectives of the Study include:

- a) The development of maps for the existing and potential flood hazard and risk areas within the study catchment.
- b) The development of an economically, socially and environmentally appropriate long-term strategy (a Flood Risk Management Plan) for the Fingal and East Meath study area and associated SEA

- Fingal Development Plan 2017-2023

In partnership with the Office of Public Works (OPW) and neighbouring local authorities, FCC is working to adapt areas that are vulnerable to flooding by using comprehensive flood-risk mapping. FCC is looking at measures that include nature and have multiple benefits beyond flood defence, such as providing new spaces for recreation and habitats for wildlife. Based on flood maps developed by the OPW and FCC, the Council has identified areas such as Portrane, the Broadmeadow River, the Tolka River and the Santry River that will benefit from solutions involving green infrastructure, integrated wetlands and tree planting.

The Council is working with a range of stakeholders including Irish Water in the management of flooding across the local authority area.



Fingal Coastal Liaison Group

The Fingal Coastal Liaison Group was established in October 2016. It is comprised of councillors, Council staff and community members from Rush, Portrane and Sutton. These areas are at risk of coastal erosion and flooding and members of the group work to:

- Discuss and address concerns of communities living in the areas
- Make recommendations to management to address coastal flooding and erosion
- Facilitate community participation in coastal and natural resource management
- Support the development of joint projects that are related to coastal management
- Provide best practice advice based on current scientific knowledge
- Incorporate latest knowledge of climate change into coastal planning

FLOOD DEFENCE

While flood alleviation using nature-based solutions is FCC's preferred response, there are certain areas of the County that are not suited to soft solutions. Therefore, FCC is building physical flood defences that take into consideration current and future risks; Fingal is reviewing with the OPW where physical flood defences are required, and a priority list for their development. Additionally, FCC is actively researching alternatives to the physical flood defences, namely policy tools such as zoning to restrict further development in areas at risk.

Protecting Fingal's 88 kilometres of coastline, which is home to villages, valuable natural heritage and beaches that provide recreation for residents, is a high priority for the Council. The Irish Coastal Protection Study (ICPS) Phase 3 – North East Coast and the Dublin Coastal Flooding Protection Project (DCFPP) investigated the impacts of storm surges and sea level rise on the coast, and this resulted in the production of maps showing coastal flood risk, which are now being used to inform policy and planning along the coast, with a focus on the deployment of nature-based solutions.



CASE STUDY

Rogerstown Estuary – Climate Smart Conservation

As a special area of conservation under the EU Habitats Directive, the Rogerstown Estuary is rich in biodiversity and is a key recreation area. However, it is prone to flooding and in recent years, the barriers built originally to reclaim the land for agricultural purposes have failed, resulting in the lower areas of the estuary flooding at high tide. Rather than repairing the barriers, FCC decided to follow a 'Let it Flood' approach. By removing the barriers, the estuary is now able to flood naturally with the tide and during storms. The results of this approach have been positive; sites upstream from the estuary are protected from flooding and biodiversity has improved in the area, with some new species arriving and protected species thriving.

CASE STUDY



Portrane Coastal Defence

Coastal erosion is a key climate risk facing many coastal communities in Ireland. Most of the Fingal coast comprises of soft sediment such as dunes, beaches and soft cliffs, which are very vulnerable to damage by storms and rising sea levels. FCC has been actively working to address coastal erosion risk through coastal defence projects along the Fingal coast. Dealing with the erosion of the dunes and beaches at Portrane and Rush is a priority for FCC as many homes are at risk. At present, FCC is considering several options to defend the coast at Portrane and Rush, such as:

- Beach supplementation and groynes
- Seawalls
- Coastal retreat



FLOOD RESILIENCE



NO	ACTION	TIMEFRAME	LEAD DEPT(S)	INDICATORS	TARGET(S) IMPACTED
ACTIONS CURRENTLY BUDGETED					
FLOOD RISK MANAGEMENT					
F1	Implement <i>The Planning System and Flood Risk Management - Guidelines for Planning Authorities</i> (2009)	Ongoing	Planning & Strategic Infrastructure	# of projects following guidelines	
F2	Undertake Strategic Flood Risk and SuDS Assessments for all LAPS, SDZs and development plans	Ongoing	Planning & Strategic Infrastructure	Assessments completed	
F3	Finalise a SuDS policy in collaboration with all Fingal departments	Ongoing	Planning & Strategic Infrastructure	SuDS policy finalised	
F4	Mid-term review of the Strategic Flood Risk Assessment (SFRA) for the County Development Plan	2019	Planning & Strategic Infrastructure	Review completed	
F5	Protect and conserve floodplains, wetlands and coastal areas subject to flooding through available policy instruments	Ongoing	Planning & Strategic Infrastructure	Map of areas to be protected, # of hectares protected	
F6	Assess the feasibility of green roofs on all new Fingal public, operational and social buildings and provide where viable and appropriate	Ongoing	All Departments / Architects	Assessments completed and provided	
F7	Update Council Emergency Response Plans to include flood event response	Ongoing	Corporate / Operations	Plans completed and updated yearly	
F8	Develop template for extreme weather events to capture details, response and costs (including ecosystem services/natural capital costs) for all major climate events	2019-2020	Corporate / Finance	Template developed and issued	
F9	To engage with the Fingal Coastal Liaison Group with the integration of adaptation strategies into planning policies, etc.	Ongoing	Planning & Strategic Infrastructure	# of meetings held each year	
F10	Develop a climate change impact GIS risk map with scenarios for the Dublin Region	2020	Climate Ireland / Environment / all Departments	GIS map developed	
F11	Archaeological and heritage assets to form part of all climate risk assessments including opportunities for integration of cultural heritage in adaptive mitigations, e.g. green infrastructure, cycle ways, nature-based solutions, etc.	Ongoing	Planning & Strategic Infrastructure	Assets included in risk assessments	



NO	ACTION	TIMEFRAME	LEAD DEPT(S)	INDICATORS	TARGET(S) IMPACTED
F12	Identify projects and opportunities for collaboration with relevant stakeholders to assess and prioritise cultural heritage sites vulnerable to climate change	Ongoing	Planning & Strategic Infrastructure	# of projects participated in	

FLOOD DEFENCE






The following flood defence actions will incorporate nature-based solutions and biodiversity enhancement measures where possible:

F13	Develop and implement Coastal Protection Plan for Portrane	2019-2020	OPW / Planning & Strategic Infrastructure	Plan produced and actions implemented	
F14	Progress OPW flood protection scheme at Mill Stream Skerries	Ongoing	OPW / Water Services & Environment	Project completed	
F15	Progress OPW flood protection scheme at Bissett Strand and The Green Malahide Village	Ongoing	OPW / Water Services & Environment	Project completed	
F16	Progress OPW flood protection scheme at Portmarnock Bridge	Ongoing	OPW / Water Services & Environment	Project completed	
F17	Continued engagement with the OPW to progress further studies of areas within Fingal at risk of flooding, and development of suitable schemes such as Strand Road Sutton and Santry	Ongoing	OPW / Water Services & Environment	Schemes identified	

ACTIONS AWAITING BUDGET

F18	<i>Develop a coastal monitoring programme to measure coastal erosion along the Fingal coast</i>	2020	<i>Coastal Liaison Group, Planning & Strategic Infrastructure</i>	<i>Monitoring programme set up</i>	
F19	<i>Identify sites where flood defence features can be removed or relocated to increase flood capacity of rivers and estuaries</i>	2019	<i>Planning & Strategic Infrastructure</i>	<i># of sites identified</i>	
F20	<i>Restore St Ita's wetlands to maximise water attenuation capacity and nature conservation benefits</i>	2020	<i>Planning & Strategic Infrastructure</i>	<i>% of wetland restored</i>	
F21	<i>Record on a GIS layer the Council surface water system and make it available to all relevant staff from Operations & Planning. This must include all SuDS systems and flood embankments</i>	Ongoing	<i>Water Services, Operations, Planning & Strategic Infrastructure</i>	<i>Surface water system recorded on GIS layer</i>	
F22	<i>Prepare a maintenance register for the entire surface water system within the County, including SuDS, pipes and culverts to aid proactive maintenance, alleviate flooding and maintain water quality</i>	Ongoing	<i>Water Services, Operations, Planning & Strategic Infrastructure</i>	<i>Maintenance register created</i>	



NO	ACTION	TIMEFRAME	LEAD DEPT(S)	INDICATORS	TARGET(S) IMPACTED
F23	Identify and put in place the resources to develop and promote SuDS, including: Promote and encourage community involvement in the retrofit of SuDS in existing developments, maintaining community rain gardens, discourage hard paving in gardens and retrofit raingardens / water butt installations	2020	Planning & Strategic Infrastructure	Resources and programme in place	 
F24	Create a case study of SuDS at Local Area Plan level	2020	Planning & Strategic Infrastructure	Case study complete	
F25	Carry out a Climate Change Risk Assessment of Fingal's Cultural Heritage to identify and survey the architectural and archaeological heritage sites and designed landscapes	2020	Planning & Strategic Infrastructure	Risk Assessment completed	
F26	Develop maintenance and condition survey programmes for Council owned historic buildings and ancient monuments that are informed by climate change impacts	2020	Planning & Strategic Infrastructure	Programmes completed	

EXAMPLES OF RELEVANT LEGISLATION/POLICIES/GUIDANCE

- Arterial Drainage Acts
- Catchment-Based Flood Risk Management Plans (CFRMP)
- Dublin Bay Biosphere Biodiversity Conservation and Research Strategy 2016-2020
- Eastern Catchment Flood Risk Assessment and Management (CFRAM) Study 2011-2016
- EU Floods Directive 2007/60/EC
- Fingal Development Plan 2017-2023 (Objectives DW03; GIM25; NH53; NH54; NH56; NH57; NH58; NH67; NH68; SW01; SW04; SW07; WQ02)
- Fingal Biodiversity Action Plan 2010-2015
- Fingal Local Economic and Community Plan (LECP) 2016-2021 (Actions A85; A91; A 92; A102)
- Greater Dublin Strategic Drainage Study
- National Landscape Strategy for Ireland 2015-2025
- OPW's Irish Coastal Protection Strategy Study (ICPSS)
- OPW's website www.floodinfo.ie, which is a useful public information source for assessing current and future scenarios of flood risk
- OPW flood maps for both current and future climate change scenarios
- The Planning System and Flood Risk Management Guidelines for Planning Authorities, November 2009
- Water Framework Directive 2000/60/EC
- Water Services Strategic Plan (2015)