



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

3 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 an ongoing challenge for the Dublin Region. Climate change increases the frequency and duration of heavy rainfall events and storm surges, which 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*, which call for member states to undertake strategic flood risk assessments and to employ 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

3 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.

CASE STUDY



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



Photo Source: Fáilte Ireland / Brendan Lyon

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					
1	Implement <i>The Planning System and Flood Risk Management - Guidelines for Planning Authorities</i> (2009)	Ongoing	Planning & Strategic Infrastructure	# of projects following guidelines	
2	Undertake Strategic Flood Risk and SuDS Assessments for all LAPS, SDZs and development plans	Ongoing	Planning & Strategic Infrastructure	Assessments completed	
3	Finalise a SuDS policy in collaboration with all Fingal departments	Ongoing	Planning & Strategic Infrastructure	SuDS policy finalised	
4	Mid-term review of the Strategic Flood Risk Assessment (SFRA) for the County Development Plan	2019	Planning & Strategic Infrastructure	Review completed	
5	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	
6	Assess the feasibility of green roofs on all new Fingal public, operational and social buildings and provide where viable and appropriate	Ongoing	All Depts / Architects	Assessments completed and provided	
7	Update Council Emergency Response Plans to include flood event response	Ongoing	Corporate / Operations	Plans completed and updated yearly	
8	Develop template for extreme weather events to capture details, response and costs	2019-2020	Corporate / Finance	Template developed and issued	
9	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	
10	Develop a climate change impact GIS risk map with scenarios for the Dublin Region	2020	Climate Ireland, Environment and Transportation, multi-departmental	GIS map developed	
FLOOD DEFENCE					
11	Develop and implement Coastal Protection Plan for Portrane	2019-2020	OPW / Planning & Strategic Infrastructure	Plan produced and actions implemented	
12	Progress OPW flood protection scheme at Mill Stream Skerries	Ongoing	OPW / Climate Action	Project completed	
13	Progress OPW flood protection scheme at Bissett Strand and The Green Malahide Village	Ongoing	OPW / Climate Action	Project completed	
14	Progress OPW flood protection scheme at Portmarnock Bridge	Ongoing	OPW / Climate Action	Project completed	
15	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 / Climate Action	Schemes identified	



NO	ACTION	TIMEFRAME	LEAD DEPT(S)	INDICATORS	TARGET(S) IMPACTED
ACTIONS AWAITING BUDGET					
16	Develop a coastal monitoring programme to measure coastal erosion along the Fingal coast	2020	Coastal Liaison Group, Planning & Strategic Infrastructure	Monitoring programme set up	
17	Identify sites where flood defence features can be removed or relocated to increase flood capacity of rivers and estuaries	2019	Planning & Strategic Infrastructure	# of sites identified	
18	Restore St Ita's wetlands to maximise water attenuation capacity and nature conservation benefits	2020	Planning & Strategic Infrastructure	% of wetland restored	
19	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	Ongoing	Water Services, Operations, Planning & Strategic Infrastructure	Surface water system recorded on GIS layer	
20	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	Ongoing	Water Services, Operations, Planning & Strategic Infrastructure	Maintenance register created	
21	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		Planning & Strategic Infrastructure	Resources and programme in place	
22	Create a case study of SuDS at Local Area Plan level		Planning & Strategic Infrastructure	Case study complete	

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
- Planning System and Flood Risk Management Guidelines
- Water Framework Directive 2000/60/EC
- Water Services Strategic Plan (2015)