



Flood Risk Management

COUNTY SUMMARY

COUNTY: DONEGAL

(Information correct as of 31/12/2017)

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1. OPW Capital Investment to 31 December 2017

MAJOR FLOOD RELIEF SCHEMES: 1995-2017

Historically, flood risk management focused on arterial drainage for the benefit of agricultural improvement. Arising from increasing flood risk, the Arterial Drainage Act, 1945, was amended in 1995 to permit the Office of Public Works (OPW) to implement localised flood relief schemes to provide flood protection for cities, towns and villages.

Some schemes have been carried out by the Local Authorities under their own powers using the Planning and Development legislative code. The OPW either works in association with the relevant Local Authorities or funds Local Authorities directly to undertake flood relief works.

COUNTY: DONEGAL

No.	Scheme At Design/Planning	Scheme At Construction	Scheme Completed	Properties Protected	Budget (€)	Current Status (or Completion Date)
1	Raphoe FAS	-	-	Anticipated over 200 properties	2.4m for OPW element	Engineering and Environmental consultants appointed in November 2017.

MINOR FLOOD MITIGATION WORKS AND COASTAL PROTECTION SCHEME: 2009-2017

The Minor Flood Mitigation Works & Coastal Protection Scheme (the “Minor Works Scheme”) was introduced by the Office of Public Works in 2009. The purpose of the scheme is to provide funding to Local Authorities to undertake minor flood mitigation works or studies to address localised flooding and coastal protection problems within their administrative areas. The scheme generally applies where a solution can be readily identified and achieved in a short time frame.

Under the scheme, applications are considered for projects that are estimated to cost not more than €750,000 in each instance. Funding of up to 90% of the cost is available from the OPW for approved projects. The commencement and progression of any works for which funding is approved is a matter for each Local Authority concerned.

COUNTY: DONEGAL			(Local Authority: Donegal County Council)	
No.	Project Location	Project Details	Approved Funding (€)	Year of Approval
1	Bundoran, Rogay beach (Coastal)	Rock fall protection	90,000	2010
2	Eastend, Bundoran	Placement of larger capacity pipes at several locations	27,000	2010
3	Cladyknit	Study	3,600	2010
4	Meenaniller	Study	7,200	2010
5	Ard na gCeapairi, R257	Replacement of existing 600mm pipe and stone culvert with box culvert and two manholes, together with road crossing and accommodation works on two dwellings	29,700	2010
6	Derrybeg	Bunding behind private dwelling	58,500	2010
7	Meenaniller, L-1363-2	Upgrading of 600mm pipe with 900mm pipe; Installation of 1200mm pipe; Culvert replacement.	73,044	2010
8	An Seascann Beag, L-1263	Replacement of O' Fearraigh Bridge & Fred Coll's Bridge	78,435	2010
9	Burnfoot River	Construct earthen embankment / Investigate underground drainage & upgrade where required	67,500	2010
10	Fahan Marina (Coastal)	Repair collapsed sea wall	18,000	2010
11	Inch Island Causeway (Coastal)	Strengthen existing wall & build new wall	54,000	2010
12	Main St. Rathmullen	To put a new road crossing 50m to the south at a higher level, and associated works	31,500	2011
13	Downings	Replacement of existing box culvert with larger box culvert. Reinstatement of parapet walls. Improvements to river channel	63,000	2011

COUNTY: DONEGAL		(Local Authority: Donegal County Council)		
No.	Project Location	Project Details	Approved Funding (€)	Year of Approval
14	Elmwood Downes, Letterkenny	Provide storm drain & connection manholes Connect drain to existing storm system Provide land drainage at embankment	16,000	2012
15	Glen Road, Carvery, Burnfoot	Construct bund along existing river and tributary Construct 450mm diameter overflow pipe Construct ramp across house access River cleaning and associated works	16,200	2012
16	Downings Beach(coastal)	Rock armour protection to base of damaged embankment- restore embankment with granular material	45,000	2013
17	Magherawarden Burn, Portsalon (coastal)	To direct stream away from the dunes	20,000	2013
18	Pairc an Grainan, Burnfoot	To construct 25m shuttered wall at sewerage treatment plant To reshape corner of embankment to provide better flow	4,050	2013
19	Milford (Drumbern)	To divert 600m of drainage to opposite side of road, increase size of outlet pipe & construct manhole	5,000	2013
20	Rasheeny Culvert,Ballyliffen	Replace 3 pipes with a box culvert	13,500	2013
21	Bridgend	Install additional drainage pipes & ancillary works	34,200	2013
22	Foxwood	Clear vegetation for approximately 850m Minor widening of river & sweetening of corners for approximately 850m Increase height of embankment behind houses	18,000	2014
23	Ballindrait	Construct new twin 900mm sluice Regrade, clean and/or widen existing channel Construct 900mm diameter bypass culvert	45,900	2014
24	Lifford- N15	Provision of 3 cattle grids or gully systems & new 900mm diameter pipe for approx 45m Cleaning existing open drains & stream and create new open drains as required Road crossing of national primary road(length 13m)	54,000	2014
25	Chapel Street, Carndonagh	Removal of existing undersized culvert & replace with upsized box culvert, channel improvements & maintenance to the stream	16,290	2014
26	Glack, Inch Island	Construct a new 900mm or 1050mm pipe culvert & construct an inlet headwall & a self cleaning grid	24,300	2014
27	Lower Mount Merrion, Milford	Clean open drain	1,800	2016

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No.	Project Location	Project Details	Approved Funding (€)	Year of Approval
28	Sloddan Port to Binbane Head (to include Pollan Strand, Ballyliffin & Five Fingers Strand) (Coastal)	Coastal Erosion Risk Management Study	76,500	2016
29	Inver (Coastal)	Installation of rock armour to protect the existing falling sea wall	36,000	2016
30	Inishfree Bay (coastal)	Coastal Flooding and Erosion Risk Management Study	76,500	2016
31	Ecclesiastical Graveyard, Inver, Glebe	Installation of 60m rock armour along the Eany Water River bank to protect the old graveyard and ecclesiastical remains	13,500	2016
32	Portnoo to Dooey Point	Coastal Flooding and Erosion Risk Management Study	76,500	2017
			1,194,719	

2. Maintenance carried out under Arterial Drainage Act, 1945

The OPW has statutory responsibility for and carries out a programme of Arterial Drainage Maintenance. These maintenance works relate to arterial drainage schemes completed by the OPW under the Arterial Drainage Acts 1945, with the primary purpose to improve the drainage of agricultural lands. Local Authorities are responsible for the maintenance of Drainage Districts, which were completed up to 1943.

The OPW's annual Arterial Drainage Maintenance Works Programme protects 260,000 hectares (650,000 acres) of agricultural lands and comprises 11,500km (7,150 miles) of river channel and approximately 800km (500 miles) of embankments.

COUNTY: DONEGAL				
Completed Scheme		County(s)	Duration of Works	Benefitting Area (Acres)
Abbey	(Small Scheme)	Donegal	1964 – 1967	900
Burnfoot/Skeoge	(Small Scheme)	Donegal	1968 – 1970	400
Deel & Swillyburn	(Small Scheme)	Donegal	1957 – 1961	3,500
Cloonburn	(Small Scheme)	Donegal	1967 – 1968	400
Swilly etc.	(Estuarine Embankment Scheme)	Donegal	1961 – 1968	3,200

3. Proposed Measures in Flood Risk Management Plans

The OPW has now studied and assessed flood risk in Ireland, focussing on 300 areas of potentially significant risk throughout the country.

Flood Maps have been created for each of these communities to describe existing and potential flood risk. The OPW has now published Flood Risk Management Plans which set out, for these communities, how it is proposed to manage the assessed flood risk through investment in flood relief schemes and other policy measures. The Plans also set out measures in place and under consideration that can manage flood risk in other parts of the county.

The following tables set out the communities in this County that are covered by the Flood Risk Management Plans and provides an indication of the proposed flood relief schemes contained in the Plans for these communities.

In some instances, a technically viable flood relief scheme has been identified, however, a more detailed assessment of the costs and benefits will be completed to determine if the proposed Scheme is feasible.

For other communities, there is a relatively low level of flood risk from rivers and/or the sea, and no structural flood relief measures are therefore proposed at this time. The current level of risk will be reviewed, along with all areas, on a regular basis into the future.

In addition to the implementation of proposed flood relief schemes, funding will continue to be available for localised projects under the Minor Works Scheme.

The Plans also set out those non-structural measures in place or proposed, for example Flood Forecasting, which benefit all at risk communities and properties. The Interdepartmental Flood Policy Co-ordination Group will continue its work now greatly informed by the wealth of knowledge in the Plans to bring forward further feasible proposals for Government's consideration to support and assist households and communities through non-structural flood risk management and mitigation measures.

COUNTY: DONEGAL					
AREA NAME	Existing Scheme in Place	Scheme in Construction, Design or Pending	New Scheme Proposed in the Plans	Potential Scheme subject to further assessment.	No Scheme Proposed as Community at Low Risk or Scheme Not Viable
Ardara					√
Ballybofey / Stranorlar			√		
Bridge End					√
Bunbeg Derrybeg				√	
Buncrana & Luddan			√		
Bundoran & Environs					√
Burnfoot				√	
Carndonagh			√		
Carrowkeel (Kerrykeel)			√		
Castlefinn			√		
Clonmany					√
Convoy				√	
Donegal			√		
Downies (Downings)			√		
Dunfanaghy			√		
Dungloe					√
Glenties			√		
Killybegs			√		
Killygordon					√
Letterkenny			√		
Lifford			√		
Malin					√
Moville				√	
Newtown Cunningham					√
Raphoe		√			
Rathmelton (Ramelton)			√		
Rathmullan			√		

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AREA NAME	Existing Scheme in Place	Scheme in Construction, Design or Pending	New Scheme Proposed in the Plans	Potential Scheme subject to further assessment.	No Scheme Proposed as Community at Low Risk or Scheme Not Viable
Tullaghan					√

No.	Proposed Scheme	Properties Protected	Further Information on Proposed Scheme
1	Ballybofey / Stranorlar	59	The proposed measure consists of hard defences and improvement of channel conveyance. At risk properties affected by the River Finn and on the tributaries where it has been found to be the lowest cost option would be protected by a series of flood embankments and walls. These Hard Defences would protect to the 1% AEP flood event with an average height of 1.66m and a total length of 687m. At risk properties on the tributaries where Improvement of Channel Conveyance was found to be the lowest cost method will be protected by widening and lowering of the watercourse where restrictions are causing out of bank flooding.
2	Buncrana & Luddan	32	The proposed measure consists of a series of sea walls, flood embankments and flood walls. The hard defences will provide an SoP of 0.5% AEP for coastal flood events, and an SoP of 1% AEP for fluvial flood events with an average height of 1m and a total length of 1.6km.
3	Carndonagh	42	The proposed measure consists of using storage areas providing a combined volume of 66,310m ³ on the Ballywilly Brook along with a series of embankments and walls along the Donagh River. Improvement of channel conveyance would protect properties impacted by flooding from the Carndonagh watercourse and hard defences would protect properties impacted by flooding from the Glennagannon River. These combined measures provide protection to a 1% AEP fluvial event.
4	Carrowkeel (Kerrykeel)	13	The proposed measure for Kerrykeel AFA that may be implemented after project-level assessment and planning or exhibition and confirmation might include physical works. The proposed measure consists of removing a restrictive bridge structure.
5	Castlefinn	35	The proposed measure consists of a series of flood embankments and walls. These hard defences would protect to the 1% AEP fluvial event with an average height of 1.85m and a total length of 797m. The hard defences option would also require a number of culverts through flood defences to be constructed including non-return valves.
6	Donegal	73	The proposed measure for Donegal AFA that may be implemented after project-level assessment and planning or exhibition and confirmation might include physical works. The proposed measure consists of storage and a series of flood embankments and walls. These hard defences would protect to the 1% AEP flood event with an average height of 0.9m and a total length of 2.4km.
7	Downies (Downings)	4	The proposed measure for Downings AFA that may be implemented after project-level assessment and planning or exhibition and confirmation might include physical works. The proposed measure consists of a series of flood embankments and flood walls.

No.	Proposed Scheme	Properties Protected	Further Information on Proposed Scheme
			The hard defences will provide an SoP of 0.5% AEP for coastal flood events and an SoP of 1% AEP for fluvial flood events. The hard defences have an average height of 1m and a total length of 0.3km.
8	Dunfanaghy	37	The proposed measure for Dunfanaghy AFA that may be implemented after project-level assessment and planning or exhibition and confirmation might include physical works. The proposed measure consists of a series of flood walls, raising of the deck level of Dunfanaghy pier and ‘tanking’ of three properties. These measures will provide a 0.5% AEP SoP for coastal flood events. The flood walls are required to be an average height of 1.0m and a total length of 200m. The Dunfanaghy pier would require approximately 850m ² of raising by an average of 900mm. Additionally, a structural survey of the existing wall would be required to ensure it is fit for purpose as a flood defence.
9	Glenties	8	The proposed measure for Glenties AFA that may be implemented after project-level assessment and planning or exhibition and confirmation might include physical works. The proposed measure consists of a series of flood embankments and walls and land use management. These measures will provide a 1% AEP SoP. One location would consist of 67m of flood walls between 1m and 1.8m high and tanking of two existing building walls. The second location would consist of 139m of flood embankment 0.8m high (average). Land use management would be applied to the catchments in order to mitigate any adverse effects from constructing the hard defences on a protected species. The freshwater pearl mussels’ habitat is located downstream in the Owenea River. Land use management would be assessed to identify land use features that would reduce surface water runoff. Consequently, there would be flood risk reduction juxtaposed with a reduced sediment and pollutant load entering the protected watercourses.
10	Killybegs	49	The proposed measure for Killybegs AFA that may be implemented after project-level assessment and planning or exhibition and confirmation might include physical works. The proposed measure consists of a series of flood walls and road raising. These hard defences will provide an SoP of 1% AEP for fluvial flood events and 0.5% for coastal flood events, at a total length of 1.3km and an average height of 1m.
11	Letterkenny	41	<p>The proposed measure for Letterkenny AFA that may be implemented after project-level assessment and planning or exhibition and confirmation might include physical works. The proposed measure consists of a series of flood walls and embankments, along with the replacement of a footbridge on the Cullion watercourse. The hard defences will provide an SoP of 0.5% AEP for coastal flood events and an SoP of 1% AEP for fluvial flood events. The hard defences have an average height of 1.4m and a total length of 3.8km. The replacement of the footbridge will have a minimum soffit level of 6.5mOD Malin. The proposed measure would also involve extending and raising existing flood defences where they are found to have insufficient height/length to prevent flooding. It is assumed that existing flood defences can be extended, the required extension height and associated base width was determined.</p> <p>The proposed measure relies on flood protection being provided by some existing embankments that were constructed to provide protection to agricultural land, and that were not constructed to the modern engineering standards that would be applied now when providing urban flood protection. A detailed geotechnical structural and stability assessment of the existing</p>

No.	Proposed Scheme	Properties Protected	Further Information on Proposed Scheme
			embankments was not undertaken as part of the CFRAM study, but should be undertaken as part of the project-level assessment in progressing this measure.
12	Lifford	78	The proposed measure consists of a series of flood embankments and walls. These Hard Defences would protect to the 1% AEP fluvial event with an average height of 2.1m and a total length of 2.6km. The proposed measure would also require raising two local roads in the northern part of the AFA. The proposed measure relies on flood protection being provided by some existing embankments that were constructed to provide protection to agricultural land, and that were not constructed to the modern engineering standards that would be applied now when providing urban flood protection. A detailed geotechnical structural and stability assessment of the existing embankments was not undertaken as part of the CFRAM study, but should be undertaken as part of the project-level assessment in progressing this measure.
13	Rathmelton (Ramelton)	30	The proposed measure for Ramelton AFA that may be implemented after project-level assessment and planning or exhibition and confirmation might include physical works. The proposed measure consists of a series of flood embankments with revetment protection, walls, demountable barriers along the quays and a flood gate located on Shore Road. These hard defences would protect to the 0.5% AEP coastal event and 1% AEP fluvial flood event with an average height of 1.4m and a total length of 797m. At risk properties would also be protected by installing a trash screen upstream of a bridge which is susceptible to blockage.
14	Rathmullan	21	The proposed measure for Rathmullan AFA that may be implemented after project-level assessment and planning or exhibition and confirmation might include physical works. The proposed measure consists of a series of flood embankments, walls and improvement of channel conveyance. This combination would protect to the 1% AEP fluvial flood event and 0.5% AEP coastal flood events. An average height of 2m and a total length of 281m will be required. The Improvement of Channel Conveyance consists of 71m of upgraded culvert.