

Location: Croom, Co. Limerick		Unique ID: 240381 (from PFRA database)	
Initial OPW Designation	APSR <input checked="" type="checkbox"/>	AFRR <input type="checkbox"/>	IRR <input type="checkbox"/>
Co-ordinates	Easting: 151000	Northing: 141500	
River / Catchment / Sub-catchment	River Maigue & tributary / Maigue Catchment		
Type of Flooding / Flood Risk (identify all that apply)	Fluvial non-tidal <input checked="" type="checkbox"/> Fluvial tidal <input type="checkbox"/> Coastal <input type="checkbox"/>		

Stage 1: Desktop Review	
1.1 Flood History (include review of Floodmaps.ie)	<p>River Flow Path</p> <p>Tributaries of the Maigue River (Camoge and Morningstar rivers) merge approx 1km u/s of Islandmore and 1.8km u/s of Croom centre.</p> <p>The Maigue is crossed u/s of Croom at Islandmore; in Croom by the Bridge St bridge; and also d/s of Croom by the N20.</p> <p>There is a small tributary that joins the Magiue around 1km downstream of Croom.</p> <p>Flood event records</p> <p>Flood event records are associated with a single event in August 1986 (extreme heavy rainfall), resulting in laneway flooding u/s of Bridge St bridge, and flooding at Islandmore Estate.</p>
1.2 Relevant information on flooding issues from OPW and LA staff	<p>PFRA database comments (<i>in italics</i>):</p> <p><i>OPW comments</i> <i>Residential flooding from Maigue CDS</i></p> <p><i>LA comments</i> <i>Flooded- back lane floods- small town</i></p> <p>Meeting / discussion summary comments:</p> <p>OPW comments</p> <p>LA comments</p> <ul style="list-style-type: none"> Not aware of any significant issues in Croom Islandmore House u/s of the town is currently being refurbished. No known flood incidents here.

1.4 PFRA Data			
1.4.1 PFRA hazard mapping	PFRA mapping available in GIS layer:		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	PFRA mapping included on FRR map:		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1.4.2 Summary of Principal Receptors	Type		FRI score (if available)
	Garda Station (d/s of bridge on right bank)		2.5
	Health Care (Hospital)		0.25
	UWWTP		2.5
	Monuments(LV)		82
	Total:		835.05
1.7 Stage 1 Evaluation	Aspect	Clearly APSR	Uncertain
	Flood History (1.1)		X
	OPW / LA Information (1.2)	X	
	PFRA Evaluation (1.4)	X	
	Overall Desktop Evaluation (if any above aspect is uncertain then overall designation is uncertain)	X	
	1.8 Proposed level of assessment for Stage 2 site visits	Level A Site Visit	
Level B Site Visit		X	

Stage 2: Site Inspection		Level A Assessment		
Date and Time of Inspection		Date: 29/03/11		
		Time: 09:00		
Names of inspection team (including OPW/LA staff if present)		Iain Blackwell		
		Kelly Kasperczyk		
2.1 Ground-truthing of Hazard Mapping	Fluvial non-tidal <input checked="" type="checkbox"/> Fluvial tidal <input type="checkbox"/> Coastal <input type="checkbox"/> Not available <input type="checkbox"/>			
	<p>General shape appears reasonable although some extents of extreme events appear exaggerated, notably the extent on the right bank of the Maigue.</p> <p>Floodplain between tributary on right bank and the Maigue appears to be realistic.</p>			
2.2 Spot check ground-truthing of selected receptor vulnerability	Receptor Type	Location description (if not obvious)	Exists?	Overall Vulnerability / Risk (L / M / H)
(also note any key receptors noted during visit that are not identified by PFRA)	Garda station	Right bank d/s of bridge	Y	L
	Hospital	On tributary to Maigue, NE of Croom centre	Y	L
	Houses and small businesses / retail	Near bridge in centre	Y	M
2.3 Local knowledge - on-site comments (OPW, LA and any info volunteered by local residents during visit)	No on site comments.			
2.4 Comments on hydraulic constrictions (bridges, etc.) and conveyance routes	<p>Five-arch bridge over the Maigue in the town centre.</p> <p>Several small weirs upstream of the bridge.</p> <p>No clear other conveyance routes. However, if overtopping occurs over the right bank, water may flow along the road on the right bank, parallel to the river, just downstream of the bridge, before returning to the river.</p> <p>On the tributary that flows into the Maigue just downstream of Croom, there is a bridge crossing by the hospital which is a significant restriction (this is approximately 0.8km NE of Croom town centre). Two more bridge / culvert crossings are upstream of the hospital, near a few residential properties.</p>			

2.5 SVRS Assessment Matrix

Weightings:

A - x1 - reasonable expectation of flooding

B - x2 - high expectation of flooding
or flooding is tidal (any risk)

C - x5 - risk to life

Approx. Number	1 to 4				5 to 20				>20			
Weighting		A	B	C		A	B	C		A	B	C
Property (domestic)	10				100	X			200			
Property (small retail or business)	20	X			200				400			
Property (large retail or business)	50				500				1000			
Road or Rail Infrastructure	30	X			300				600			
Critical Infrastructure (local) [hospital, school, police/fire/ambulance station, substation, WTW/WWTW, gov bldg, other (specify)]	50	X			500				1000			
Critical Infrastructure (national importance)	250				1000				2000			
Cultural Heritage Site	20				200				400			
Environmental Designated Site	20				200				400			
Hazardous Substances Site	50				500				1000			
Total SVRS									200			

2.6 Defence Assets

Formal and Informal Flood Defence Assets

(include effective and ineffective assets to inform asset survey and potential mitigation measures)

Open Channel Watercourses

Man-made river channel ☐ Flood relief channel ☐ Canal ☐
Mill leat ☐ Drainage channels / back drains ☐

Bridges and Culvert crossings

Single Arch bridge ☐ Multi-Arch bridge ☒
Single Span bridge ☐ Multi-Span bridge ☐
Box culvert(s) ☐ Pipe culvert(s) ☒ Arch Culvert(s) ☐

Culverted Watercourses (culvert length is greater than just a crossing)

Box culvert(s) ☐ Pipe culvert(s) ☐ Arch Culvert(s) ☐ Irregular Culvert(s) ☐

Walls and Embankments

Embankment(s) ☐ Raised wall(s) ☒ Retaining wall(s) ☐

Control Structures – weirs, gates, dams

Fixed crest weir ☒ Adjustable weir ☐ Dam / Barrage ☐
Sluice gates ☐ Lock gates ☐ Radial gates ☐

Storage

On-line storage (natural) ☒ On-line storage (artificial) ☐ Off-line storage ☐

	Outfalls Flapped outfall(s) into watercourse <input checked="" type="checkbox"/> Unflapped outfall(s) into watercourse <input checked="" type="checkbox"/> <i>i.e. from smaller watercourses, drains etc. into river / estuary / sea</i> Tidal flap(s) <input type="checkbox"/> Tidal sluice(s) <input type="checkbox"/> <i>i.e. from main watercourse into estuary / sea</i> Other Pumping Station <input type="checkbox"/> Erosion Protection <input type="checkbox"/> Sand Dunes <input type="checkbox"/> Additional notes (if required):
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2.8 Initial Potential Mitigation Measures

Non-structural measures	Planning and Development control <input checked="" type="checkbox"/> Sustainable Urban Drainage Systems <input checked="" type="checkbox"/> Flood forecasting / warning <input checked="" type="checkbox"/> Change in Operating Procedures for water level control: <input type="checkbox"/> Public awareness campaign <input type="checkbox"/> Individual property protection <input type="checkbox"/> Land use management <input type="checkbox"/>
Structural measures	Strategic development management for floodplain development: <input checked="" type="checkbox"/> <i>(integration of measures into strategic development proposals)</i> Storage: On-line <input type="checkbox"/> Off-line <input type="checkbox"/> Flow diversion: Flood relief channel <input type="checkbox"/> Flood relief culvert <input type="checkbox"/> Increase conveyance: Bridge works <input checked="" type="checkbox"/> Channel works <input type="checkbox"/> Floodplain <input type="checkbox"/> Flood defences: Walls <input checked="" type="checkbox"/> Embankments <input checked="" type="checkbox"/> Localised works: Defence raising <input type="checkbox"/> In-fill gaps <input type="checkbox"/> Trash screen <input type="checkbox"/> Maintenance works: Culvert / channel clearance <input checked="" type="checkbox"/> Asset maintenance <input type="checkbox"/> Relocation of properties: <input type="checkbox"/> Improve existing defences: <input type="checkbox"/> (describe) Other (describe): The measures on the Mague and on the tributary would need to address separate issues. Flood storage possibilities between the tributary and the Mague would be reduced (or lost) if this land was developed.

Outcomes				
PFRA Designation	APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>		FRI Score: 835	
Site Ground-truthing of PFRA Assessment (hazard mapping and receptors)	High Confidence (good)	Uncertain	Low Confidence (poor)	Not available
		X		
Site Visit Review Score	200			
Recommended Designation	APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>			
Summary Comments (if required)	There is currently development pressure along tributary of the Mague next to the hospital (on the right bank of the Mague). This area appears to be an area potentially at risk of flooding, based on both the PFRA mapping and the on site inspections.			



Photo 1: Weir u/s of Croom town on the River Maigue



Photo 2: Looking u/s on the River Maigue weir on the left bank



Photo 3: Looking d/s at the six-arch bridge over the River Maigue



Photo 4: Looking u/s from the Croom Bridge at low properties at risk on the right bank



Photo 5: Looking u/s at the floodplain properties on the right bank on the River Maigue are approx 3 m higher



Photo 6: Water course looking d/s with a small bridge crossing adjacent to the Hospital



Photo 7: Looking d/s on the water course adjacent to the hospital, floodplain to be potentially used for development



Photo 8: U/s of the hospital, property at risk on the left bank

