

Location: Kilmallock, Co. Limerick		Unique ID: 240388 (from PFRA database)	
Initial OPW Designation	APSR <input checked="" type="checkbox"/>	AFRR <input type="checkbox"/>	IRR <input type="checkbox"/>
Co-ordinates	Easting: 161126	Northing: 127573	
River / Catchment / Sub-catchment	River Loobagh / 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>The River Loobagh (a tributary of the Maigue joining it south of Bruree) lies to the North and East of Killmallock. The Ahatrishnaun Stream joins the River Loobagh at the North of Killmallock in the townland of Ballycullane.</p> <p>To the west of the town is a large woodland with associated drains.</p> <p>The river is crossed by a road once to the north and twice to the south. The River is also crossed south east of Killmallock in Millmount by a railway track.</p> <p>Flood event records</p> <p>There are no floodmaps.ie flood event records</p> <p>Point to note from the Kilmallock LAP</p> <p><i>"In relation to dealing with flood risk in the plan area the reduction in the amount of land zoned for development i.e. the land formerly zoned for residential development in the flood plain of the Loobagh is now designated as a Special Control Area. Thus by reducing the potential development footprint of the plan and the associated impermeable surfaces has helped to minimise possible run off which could contribute to local flood risk."</i></p>
1.2 Relevant information on flooding issues from OPW and LA staff	<p>PFRA database comments (<i>in italics</i>):</p> <p>OPW comments <i>Designated ASPR on the basis of predictive analysis.</i></p> <p>LA comments</p> <ul style="list-style-type: none"> • Town centre not near the river. • Edge of town and sewerage treatment plant have flooded very important for planning. • Historical town. • All agreed La submission" WWTW the treatment system floods due to high river waters. • Housing estate near river. <p>Meeting / discussion summary comments:</p> <p>OPW comments</p> <ul style="list-style-type: none"> • WWTP at risk of flooding

	LA comments <ul style="list-style-type: none"> This area is known as a pinch-point due to flat lands and low houses. New sewage treatment works is proposed. This will lay a trunk sewer from existing STW u/s of this River Loobagh tributary. Limerick CoCo has experienced problems achieving the required dilution in this stream for the STW, indicating its moderate flow. The right bank of this tributary (new fire station and warehouses) is not prone to flooding.		
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)
	Monument (LV)		10
	Total:		603
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		X
	Level B Site Visit		

Stage 2: Site Inspection		Level A Assessment		
Date and Time of Inspection		Date: 29/03/11		
		Time: 16:15		
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"/>			
	General shape very reasonable with some potential discrepancies on unnamed stream at railway.			
2.2 Spot check ground-truthing of selected receptor vulnerability (also note any key receptors noted during visit that are not identified by PFRA)	Receptor Type	Location description (if not obvious)	Exists?	Overall Vulnerability / Risk (L / M / H)
	Abbey		Y	M - Potential for flood in area, but the Abbey itself is raised slightly
	School		Y	L - High up, not in flood plain
	WWTP x 2		Y	H
	New Fire Station constructed		Y	H
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	There are three main bridges. These become more restrictive as the river flows downstream. One arch on the 5-arch bridge (at the downstream end of the town) is blocked with soil. River / streams at the bottom of the valley have limited flat areas, and no clear alternative conveyance routes.			

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	X	X		100				200	X		
Property (small retail or business)	20				200				400			
Property (large retail or business)	50	X			500				1000			
Road or Rail Infrastructure	30				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	X			200				400			
Environmental Designated Site	20				200				400			
Hazardous Substances Site	50				500				1000			
Total SVRS									400			

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 ☐ Unflapped outfall(s) into watercourse ☐
i.e. from smaller watercourses, drains etc. into river / estuary / sea

	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 checked="" type="checkbox"/> Sand Dunes <input type="checkbox"/> Additional notes (if required): Housing estate on left bank and u/s of single arch bridge: There are some gabion-type defences at properties nearest the bridge. There are some walled defences on the left bank nearer the multi-arch bridge on Wolfe Tone Street. New apartments are in construction here (but appear abandoned) on left bank next to bridge. There is a low wall built here in front of apartments (block short wall) but this is not an effective defence.
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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 type="checkbox"/> Flood forecasting / warning <input type="checkbox"/> Change in Operating Procedures for water level control: <input type="checkbox"/> Public awareness campaign <input type="checkbox"/> Individual property protection <input checked="" type="checkbox"/> Land use management <input type="checkbox"/>
Structural measures	Strategic development management for floodplain development: <input 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 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 type="checkbox"/> Asset maintenance <input type="checkbox"/> Relocation of properties: <input type="checkbox"/> Improve existing defences: <input type="checkbox"/> (describe) Other (describe):

Outcomes

PFRA Designation	APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>				FRI Score: 603
Site Ground-truthing of PFRA Assessment (hazard mapping and receptors)	High Confidence (good)	Uncertain	Low Confidence (poor)	Not available	
	X				
Site Visit Review Score	400				
Recommended Designation	APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>				
Summary Comments (If required)	There are a number of (unprotected) properties and assets located on low ground, in the flood plain and therefore considered to be at potentially significant risk.				



Photo 1: Housing built on relatively low lying land next to the River Loobagh



Photo 2: 4 Arch bridge at the u/s end of town



Photo 3: Abbey relatively high on flood plain



Photo 4: 5 Arch bridge at d/s end of town with one arch blocked by soil

