

Location: Clonaslee, Co. Laois		Unique ID: 250420 (from PFRA database)	
Initial OPW Designation	APSR <input checked="" type="checkbox"/>	AFRR <input type="checkbox"/>	IRR <input type="checkbox"/>
Co-ordinates	Easting: 231,896	Northing: 210,924	
River / Catchment / Sub-catchment	Clodiagh River / Brosna River / River Shannon		
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 The Clodiagh River meanders northwards from its source in the Knockachoorra Mountains through the village of Clonaslee. The Gorragh River passes to the east of Clonaslee before joining the Clodiagh River approximately 1.5 kilometres north of the village. The Gorragh River has established embankments along this section of waterway.</p> <p>The Clodiagh River is crossed by Main Street in the heart of Clonaslee and the river follows Chapel Street for a short distance. The Gorragh River is crossed by the R422 before entering the village.</p> <p>Flood Event Records There are no records of flood events for Clonaslee on floodmaps.ie.</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 APSR on the basis of predictive analysis and historical extents. Flooding in Village Centre - Major wedges outside of village but limited properties in those wedges - Village flooding adequate to maintain as APSR.</i></p> <p>LA comments <i>None.</i></p> <p>Meeting / discussion summary comments:</p> <p>OPW comments</p> <ul style="list-style-type: none"> Any flood risk is within the village and is a result of the Clodiagh River. It is at the end of the Brosna Drainage Scheme <p>LA comments</p> <ul style="list-style-type: none"> It is believed that there has been little or no flooding in the village. The river beds may have dried up in recent summers. There is possibly a history of flooding downstream of the village, particularly around the site of the Clonaslee WWTP.

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)
	WTP		25
	UWWTP		25
	Exchange		1
	TOTAL		934.85
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: 27/05/11		
		Time: 09:30		
Names of inspection team (including OPW/LA staff if present)		Alan Dew		
		James Murray		
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><u>Clodiagh</u> – PFRA mapping is considered to over-predict risk to the right bank upstream and downstream of Main Street culvert. Flood risk actually extends north along road due to gradient and likely bypass route from Main St culvert (rather than flood plain following river course away from road downstream of culvert).</p> <p><u>Gorragh</u> – PFRA mapping is considered to over-predict risk especially on left bank near culvert. The Main Street culvert capacity constraint would likely lead to the utilisation of floodplain on the left bank upstream of the culvert rather than causing areas downstream of the culvert to flood. Flood banks downstream of the culvert provide additional protection to adjacent areas.</p>			
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)
	Residential properties	<u>Clodiagh</u> - Adjacent to, and north of Main Street culvert	Yes	M
	Residential properties	<u>Gorragh</u> - Adjacent to Main Street culvert	Yes	M
	Commercial properties	<u>Clodiagh</u> – adjacent to Main Street culvert	Yes	M
	WWTW	<u>Clodiagh</u> – upstream of Main Street culvert, right bank	Yes	L
	Pumping station	<u>Gorragh</u> – right bank, downstream of Main Street culvert	Yes	L
	Road	Main Street	Yes	M
2.3 Local knowledge - on-site comments	No on-site comments.			
2.4 Comments on hydraulic constrictions (bridges, etc.) and conveyance routes	<p><u>Clodiagh</u> – The low soffit of the upstream entrance to the Main Street culvert would constrain high flows. Low points in the channel walls, particularly at the culvert headwall and also gaps in low wall running along the left bank upstream of the culvert, would lead to culvert being bypassed if sufficiently backed up.</p> <p><u>Gorragh</u> – The capacity of upstream culvert entrance is poor compared to channel capacity and is likely to act as a hydraulic constriction. This is</p>			

	exacerbated by a service running across the arches. If waters were to back up, the upstream flood plain would be likely to provide sufficient capacity rather than the culvert being bypassed. The OPW flood embankments downstream of the culvert (built to protect farmland) may not tie into the culvert fully.
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2.5 SVRS Assessment Matrix

Weightings:

A - x1 - reasonable expectation of flooding

B - x2 - high expectation of flooding

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 <input type="checkbox"/> Flood relief channel <input type="checkbox"/> Canal <input type="checkbox"/> Mill leat <input type="checkbox"/> Drainage channels / back drains <input type="checkbox"/>											
	Bridges and Culvert crossings											
	Single Arch bridge <input type="checkbox"/> Multi-Arch bridge <input checked="" type="checkbox"/> Single Span bridge <input type="checkbox"/> Multi-Span bridge <input type="checkbox"/> Box culvert(s) <input checked="" type="checkbox"/> Pipe culvert(s) <input type="checkbox"/> Arch Culvert(s) <input type="checkbox"/>											
	Culverted Watercourses (culvert length is greater than just a crossing)											
	Box culvert(s) <input type="checkbox"/> Pipe culvert(s) <input type="checkbox"/> Arch Culvert(s) <input type="checkbox"/> Irregular Culvert(s) <input type="checkbox"/>											
	Walls and Embankments											
	Embankment(s) <input checked="" type="checkbox"/> Raised wall(s) <input checked="" type="checkbox"/> Retaining wall(s) <input type="checkbox"/>											
	Control Structures – weirs, gates, dams											
	Fixed crest weir <input type="checkbox"/> Adjustable weir <input type="checkbox"/> Dam / Barrage <input type="checkbox"/> Sluice gates <input type="checkbox"/> Lock gates <input type="checkbox"/> Radial gates <input type="checkbox"/>											
	Storage											

	<p>On-line storage (natural) <input checked="" type="checkbox"/> On-line storage (artificial) <input type="checkbox"/> Off-line storage <input type="checkbox"/></p> <p>Outfalls</p> <p>Flapped outfall(s) into watercourse <input type="checkbox"/> Unflapped outfall(s) into watercourse <input type="checkbox"/> <i>i.e. from smaller watercourses, drains etc. into river / estuary / sea</i></p> <p>Tidal flap(s) <input type="checkbox"/> Tidal sluice(s) <input type="checkbox"/> <i>i.e. from main watercourse into estuary / sea</i></p> <p>Other</p> <p>Pumping Station <input checked="" type="checkbox"/> Erosion Protection <input type="checkbox"/> Sand Dunes <input type="checkbox"/></p> <p>Additional notes (if required):</p>
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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 checked="" type="checkbox"/>
	Individual property protection	<input 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 checked="" 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 type="checkbox"/>
	Localised works:	Defence raising <input type="checkbox"/> In-fill gaps <input checked="" 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: 934.85	
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			
Site Visit Designation	APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>			
Recommended Designation	APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>			
Summary Comments (if required)	<p>There are sufficient critical receptors at significant risk of fluvial flooding to warrant Clonaslee's recommended designation as an APSR.</p> <p>The following points of interest gathered during this process are noted below:</p> <ul style="list-style-type: none"> • The uncertainty over the PFRA mapping relates to a few 'spikes'. These do not affect the locations overall conclusion on flood risk. • There is a culverted section of watercourse in the centre of town that has a capacity significantly less than the main river channel. 			



Photo1: Clodiagh River culvert beneath Main Street looking downstream from the left bank.



Photo 2: Clodiagh River culvert beneath Main Street looking upstream from the left bank.



Photo 3: Upstream face of Main Street bridge over Gorragh River from the right bank.



Photo 4: Looking south towards Main Street bridge over the Clodiagh River, from the left bank.

