

Location: Clara, Co. Offaly		Unique ID: 250418 (from PFRA database)	
Initial OPW Designation	APSR <input checked="" type="checkbox"/>	AFRR <input type="checkbox"/>	IRR <input type="checkbox"/>
Co-ordinates	Easting: 225500	Northing: 232500	
River / Catchment / Sub-catchment	River Brosna / Brosna / 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</p> <p>The River Brosna flows through Clara and runs south westerly to the river's confluence with the River Shannon at Shannon Harbour.</p> <p>The River Brosna is crossed by the N80 (Charlsetown bridge) and also the Clara Bridge, within the town.</p> <p>Flood Event Records</p> <p>There are records of six flood events for Clare on floodmaps.ie. The records are mostly Offaly County Council meeting minutes and references to press articles.</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>Designated APSR on the basis of predictive analysis. Wedge, but probably still >250 - Approved as APSR</i></p> <p><i>LA comments</i> <i>Sluice gates, 2008</i></p> <p>Meeting / discussion summary comments:</p> <p>OPW comments</p> <ul style="list-style-type: none"> • The mill races at Clara are a significant issue. Some are used for power generation. • Fredrick Street in the village centre is known to have flooded. • The basement of Kilrice house may have flooded. <p>LA comments</p> <ul style="list-style-type: none"> • Offaly County Council have no major flood risk concerns at Clara. • There was planning permission for a hotel upstream of the village which had a localised flood risk study attached. Planning was not given – outcome of study unavailable. • There are three weirs in Clara; the central weir is used as part of a private power generation station. Control of water levels is at the owner's discretion and may be an issue. • Privately owned and operated mill races (three) on the Brosna in general may be an issue.

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)
	Arch_Regional		131
	Total		585.4
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 B Assessment	
Date and Time of Inspection		Date: 14/04/11	
		Time: 10:00	
Names of inspection team (including OPW/LA staff if present)		Peter Smyth	
		James Murray	
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>Hydraulically very complex through Clara with at least two, possibly three, mill race systems as well as several bridges and overflow structures.</p> <p>Mill race downstream of Clara House and Clara Bridge is formed as the River Brosna flows over a fixed crest weir.</p> <p>Power is generated from the mill race adjacent to River Street, upstream of Clara bridge. The overflow structure at this mill race is complex.</p> <p>There is potentially a further mill race upstream of the village centre, but this could not be confirmed on-site due to access restrictions.</p> <p>There are several bridges through the village. The river channel is at a skew to some of the bridges, with all likely to act as hydraulic constrictions during extreme flow conditions.</p>		
2.6 Defence Assets			
Formal and Informal Flood Defence Assets <i>(include effective and ineffective assets to inform asset survey and potential mitigation measures)</i>	<p>Open Channel Watercourses</p> <p>Man-made river channel <input type="checkbox"/> Flood relief channel <input type="checkbox"/> Canal <input type="checkbox"/></p> <p>Mill leat <input checked="" type="checkbox"/> Drainage channels / back drains <input type="checkbox"/></p> <p>Bridges and Culvert crossings</p> <p>Single Arch bridge <input type="checkbox"/> Multi-Arch bridge <input checked="" type="checkbox"/></p> <p>Single Span bridge <input type="checkbox"/> Multi-Span bridge <input checked="" type="checkbox"/></p> <p>Box culvert(s) <input type="checkbox"/> Pipe culvert(s) <input type="checkbox"/> Arch Culvert(s) <input type="checkbox"/></p> <p>Culverted Watercourses (culvert length is greater than just a crossing)</p> <p>Box culvert(s) <input type="checkbox"/> Pipe culvert(s) <input type="checkbox"/> Arch Culvert(s) <input type="checkbox"/> Irregular Culvert(s) <input type="checkbox"/></p> <p>Walls and Embankments</p> <p>Embankment(s) <input type="checkbox"/> Raised wall(s) <input checked="" type="checkbox"/> Retaining wall(s) <input type="checkbox"/></p> <p>Control Structures – weirs, gates, dams</p> <p>Fixed crest weir <input checked="" type="checkbox"/> Adjustable weir <input type="checkbox"/> Dam / Barrage <input type="checkbox"/></p> <p>Sluice gates <input checked="" type="checkbox"/> Lock gates <input type="checkbox"/> Radial gates <input type="checkbox"/></p> <p>Storage</p> <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>		

	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> 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): Natural storage is in a reservoir downstream of the village. Capacity appears to be low.
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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 checked="" type="checkbox"/> Change in Operating Procedures for water level control: <input checked="" 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 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 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 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): Remove all controlling features i.e. Mill races

Outcomes

Recommended Designation	APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>
Summary Comments (if required)	Clara has a history of flooding. The PFRA mapping predicts an ongoing significant flood risk with this conclusion being supported by both the Local Authority and the OPW. Clara was confirmed as an APSR following a desk based assessment, with no on-site verification required.



Photo1: Downstream face of Bridge at Clara



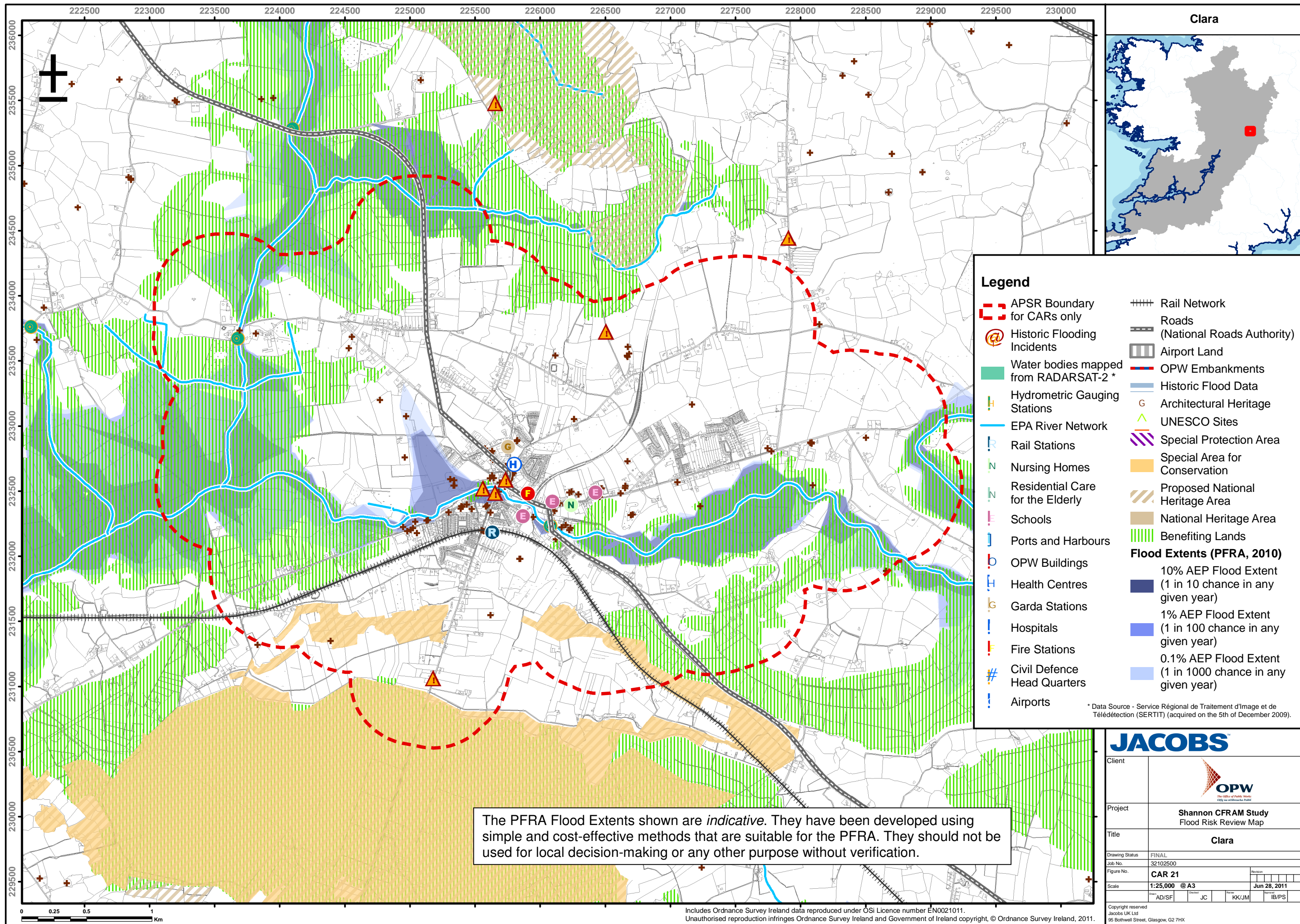
Photo 2: Inlets to central mill race. The River Brosna divides the mill race which travels at both sides of the river. The river can be seen in the centre of the photograph.




Photo 3: River Brosna immediately downstream of the central mill race.



Photo 4: Weir at downstream mill race



JACOBS

Client			
Project	Shannon CFRAM Study Flood Risk Review Map		
Title	Clara		
Drawing Status	FINAL		
Job No.	32102500		
Figure No.	CAR 21		
Scale	1:25,000 @ A3		
Drawn	AD/SF	Checked	JC
Drawn	KK/JM	Checked	IB/PS
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