

Location: Killaloe, Co. Clare / Ballina, Co. Tipperary		Unique ID: 253055 (from PFRA database)	
Initial OPW Designation	APSR <input checked="" type="checkbox"/>	AFRR <input type="checkbox"/>	IRR <input type="checkbox"/>
Co-ordinates	Easting: 170180	Northing: 172822	
River / Catchment / Sub-catchment	River Shannon and tributaries / 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 Shannon flows in a southerly direction through Killaloe (right bank) and Ballina (left bank).</p> <p>Flood Event Records</p> <p>Four flood records are listed in floodmaps.ie. The main flood event recorded was the 1954 event on the Shannon. Other events include the 1999 and 1994/1995 flooding. Flooding was predominantly from the Shannon, however flooding from tributaries has also been recorded.</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. Also affects Co. Clare side Approved – APSR</i></p> <p>LA comments <i>Critical road infrastructure – Bridge over Shannon with regional road R463, Head difference of 1 metre between upstream and downstream faces during last winter's flooding. Most of town on high ground, some commercial properties (marina and Hotel) close. Bridge is a critical road infrastructure with high water difference during some flood events. (Ballina in Tipperary)</i></p> <p>Meeting / discussion summary comments:</p> <p>LA comments</p> <ul style="list-style-type: none"> • Ballina is situated in a basin. • There may also be some surface water issues here. • The WWTW just south of Ballina may be at risk. • Main Street Bridge linking Killaloe and Ballina is a critical crossing of the Shannon. There is no other crossing nearby. • There is a history of flooding at this location.

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)	
	UWWTP	2.5	
	Arch_Local	10.1	
	Arch_Regional	20	
	Monument_LV	101	
	Total	2166.7	
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: 02/06/11	
		Time: 09:00	
Names of inspection team (including OPW/LA staff if present)		Mathieu Valois	
		James Miurray	
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	The Main Street bridge crossing the river Shannon would be a constriction to flow during floods.		
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>	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 type="checkbox"/>	Raised wall(s) <input type="checkbox"/>	Retaining wall(s) <input checked="" 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			
On-line storage (natural) <input checked="" type="checkbox"/>	On-line storage (artificial) <input type="checkbox"/>	Off-line storage <input type="checkbox"/>	
Outfalls			
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):
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 checked="" type="checkbox"/> Individual property protection <input checked="" type="checkbox"/> Land use management <input checked="" 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 checked="" type="checkbox"/> Channel works <input type="checkbox"/> Floodplain <input checked="" 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 checked="" type="checkbox"/> Relocation of properties: <input checked="" type="checkbox"/> Improve existing defences: <input type="checkbox"/> (describe) Other (describe):

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



Photo1: River Shannon at Killaloe / Ballina.



Photo 2: Structure on upstream face of bridge at Killaloe / Ballina.



Photo 3: View of right bank (Killaloe), downstream of bridge.



Photo 4: Right bank upstream of Bridge.

