

<b>Location: Leitrim Village, Co. Leitrim</b>		<b>Unique ID: 263853</b> (from PFRA database)	
<b>Initial OPW Designation</b>	APSR <input type="checkbox"/>	AFRR <input checked="" type="checkbox"/>	IRR <input type="checkbox"/>
<b>Co-ordinates</b>	<b>Easting: 195700</b>	<b>Northing: 304639</b>	
<b>River / Catchment / Sub-catchment</b>	<b>River Shannon / Shannon</b>		
<b>Type of Flooding / Flood Risk</b> (identify all that apply)	Fluvial non-tidal <input checked="" type="checkbox"/> Fluvial tidal <input type="checkbox"/> Coastal <input type="checkbox"/>		

<b>Stage 1: Desktop Review</b>	
<b>1.1 Flood History (include review of Floodmaps.ie)</b>	<p><b>River Flow Path</b></p> <p>Leitrim Village is adjacent to the River Shannon. The Ballinamore and Ballyconnell canal meets the Shannon, at Leitrim</p> <p>The canal is crossed by the R280 (Main Street) in the centre of Leitrim Village. A marina is located in Leitrim Village.</p> <p><b>Flood Event Records</b></p> <p>Two flood records are listed in floodmaps.ie, dated November 1999 and December 1954. Both events were associated with flooding from the Shannon.</p>
<b>1.2 Relevant information on flooding issues from OPW and LA staff</b>	<p><b>PFRA database comments (<i>in italics</i>):</b></p> <p><b>OPW comments</b> <i>Not designated APSR as failed to reach predictive analysis threshold. Extensive evidence provided by LA - recommend upgrade to APSR</i></p> <p><b>LA comments</b> <i>Flooding here affects commercial properties, residential properties and some roads. The village was cut off/closed in November 2009. The source is the river Shannon after very heavy rainfall. The frequency is approx every 5 years but not to the Novemb. 2 Pubs, 1 saved by sand bags. 1 fish and chip shop. 4 new houses, Filling Station. 2009 also impacted by burst SW pipe flooding at Creamery caused + 150mm. Maps showing lands liable to flooding in Leitrim village (2010) provided by LA. During Novemebr 2009 properties were flooded, R284 was closed (18/11/09), R280 was closed (20/11/09). Subsidence on local roads into Drumshambo canal.</i></p> <p><b>Meeting / discussion summary comments:</b></p> <p><b>OPW comments</b></p> <ul style="list-style-type: none"> <li>• Issues with the canal gates, flooded in November 2009.</li> <li>• Old Garda Station has a history of flooding.</li> </ul> <p><b>LA comments</b></p> <ul style="list-style-type: none"> <li>• Petrol station was flooded.</li> <li>• Hotel wasn't flooded.</li> <li>• New housing development by "Battle Bridge" on border with Roscommon, 6-7 houses affected.</li> <li>• Culvert blocked, outlet of Lough Brann. Levels rose, then culvert unblocked itself under pressure. Levels subsequently rose downstream by 150mm in 30 minutes.</li> </ul>

<b>1.4 PFRA Data</b>			
<b>1.4.1 PFRA hazard mapping</b>	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"/>
<b>1.4.2 Summary of Principal Receptors</b>	<b>Type</b>	<b>Number (approx.)</b>	<b>FRI score (if available)</b>
	Receptors not considered as part of the PFRA process.  FRI score not calculated in PFRA.		
<b>1.7 Stage 1 Evaluation</b>	<b>Aspect</b>	<b>Clearly APSR</b>	<b>Uncertain</b>
	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
<b>1.8 Proposed level of assessment for Stage 2 site visits</b>	<b>Level A Site Visit</b>	X	
	<b>Level B Site Visit</b>		

<b>Stage 2: Site Inspection</b>		<b>Level A Assessment</b>		
<b>Date and Time of Inspection</b>		<b>Date: 28/04/11</b>		
		<b>Time: 12:00</b>		
<b>Names of inspection team (including OPW/LA staff if present)</b>		<b>Mathieu Valois</b>		
		<b>James Murray</b>		
<b>2.1 Ground-truthing of Hazard Mapping</b>	<b>Fluvial non-tidal</b> <input checked="" type="checkbox"/> <b>Fluvial tidal</b> <input type="checkbox"/> <b>Coastal</b> <input type="checkbox"/> <b>Not available</b> <input type="checkbox"/>			
	PFRA hazard mapping seems accurate. May have overestimated flooding off the left bank of the canal downstream of the bridge.			
<b>2.2 Spot check ground-truthing of selected receptor vulnerability (also note any key receptors noted during visit that are not identified by PFRA)</b>	<b>Receptor Type</b>	<b>Location description (if not obvious)</b>	<b>Exists?</b>	<b>Overall Vulnerability / Risk (L / M / H)</b>
	Some small retail, mainly bars and a petrol station	Near the canal bridge in Leitrim Village	Yes	Medium
	Housing estates	Situated to the north west of the village which have been constructed in the floodplain	Yes	Medium
<b>2.3 Local knowledge - on-site comments (OPW, LA and any info volunteered by local residents during visit)</b>	No on-site comments.			
<b>2.4 Comments on hydraulic constrictions (bridges, etc.) and conveyance routes</b>	Bridge at canal likely contributed to canal breaking it's banks and flooding of the local pubs and fast food outlet.			

2.5 SVRS Assessment Matrix												
<b>Weightings:</b> <b>A - x1 - reasonable expectation of flooding</b> <b>B - x2 - high expectation of flooding</b> <b>C - x5 - risk to life</b>												
Approx. Number	1 to 4			5 to 20				>20				
Weighting		A	B	C		A	B	C		A	B	C
Property (domestic)	10				100				200	X		
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				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			
<b>Total SVRS</b>									<b>250</b>			
2.6 Defence Assets												
<b>Formal and Informal Flood Defence Assets</b> <i>(include effective and ineffective assets to inform asset survey and potential mitigation measures)</i>	<b>Open Channel Watercourses</b> Man-made river channel <input type="checkbox"/> Flood relief channel <input type="checkbox"/> Canal <input checked="" type="checkbox"/> Mill leat <input type="checkbox"/> Drainage channels / back drains <input type="checkbox"/>											
	<b>Bridges and Culvert crossings</b> Single Arch bridge <input checked="" type="checkbox"/> Multi-Arch bridge <input type="checkbox"/> Single Span bridge <input type="checkbox"/> Multi-Span bridge <input type="checkbox"/> Box culvert(s) <input type="checkbox"/> Pipe culvert(s) <input type="checkbox"/> Arch Culvert(s) <input type="checkbox"/>											
	<b>Culverted Watercourses</b> (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"/>											
	<b>Walls and Embankments</b> Embankment(s) <input type="checkbox"/> Raised wall(s) <input checked="" type="checkbox"/> Retaining wall(s) <input type="checkbox"/>											
	<b>Control Structures – weirs, gates, dams</b> 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"/>											
	<b>Storage</b> On-line storage (natural) <input type="checkbox"/> On-line storage (artificial) <input type="checkbox"/> Off-line storage <input type="checkbox"/>											
	<b>Outfalls</b> 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>											

	<p><b>Other</b></p> <p>Pumping Station <input type="checkbox"/> Erosion Protection <input type="checkbox"/> Sand Dunes <input type="checkbox"/></p> <p><b>Additional notes (if required):</b></p>
<p><b>2.8 Initial Potential Mitigation Measures</b></p>	
<p><b>Non-structural measures</b></p>	<p>Planning and Development control <input checked="" type="checkbox"/></p> <p>Sustainable Urban Drainage Systems <input type="checkbox"/></p> <p>Flood forecasting / warning <input checked="" type="checkbox"/></p> <p>Change in Operating Procedures for water level control: <input type="checkbox"/></p> <p>Public awareness campaign <input checked="" type="checkbox"/></p> <p>Individual property protection <input type="checkbox"/></p> <p>Land use management <input checked="" type="checkbox"/></p>
<p><b>Structural measures</b></p>	<p><b>Strategic development management for floodplain development:</b> <input checked="" type="checkbox"/> <i>(integration of measures into strategic development proposals)</i></p> <p><b>Storage:</b> On-line <input type="checkbox"/> Off-line <input type="checkbox"/></p> <p><b>Flow diversion:</b> Flood relief channel <input type="checkbox"/> Flood relief culvert <input type="checkbox"/></p> <p><b>Increase conveyance:</b> Bridge works <input type="checkbox"/> Channel works <input type="checkbox"/> Floodplain <input checked="" type="checkbox"/></p> <p><b>Flood defences:</b> Walls <input type="checkbox"/> Embankments <input checked="" type="checkbox"/></p> <p><b>Localised works:</b> Defence raising <input type="checkbox"/> In-fill gaps <input type="checkbox"/> Trash screen <input type="checkbox"/></p> <p><b>Maintenance works:</b> Culvert / channel clearance <input type="checkbox"/> Asset maintenance <input type="checkbox"/></p> <p><b>Relocation of properties:</b> <input checked="" type="checkbox"/></p> <p><b>Improve existing defences:</b> <input type="checkbox"/> (describe)</p> <p><b>Other (describe):</b></p>

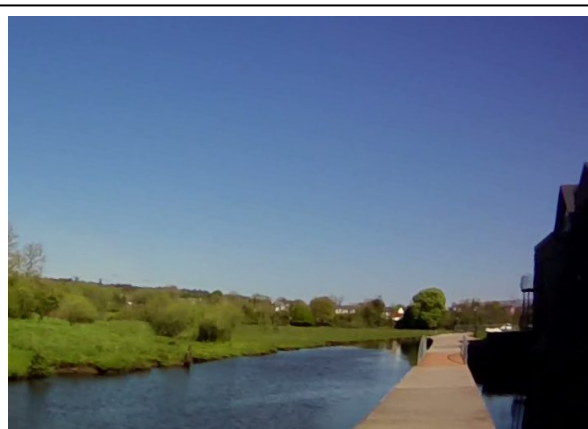
<p><b>Outcomes</b></p>				
<p><b>PFRA Designation</b></p>	<p>APSR <input type="checkbox"/> not an APSR <input checked="" type="checkbox"/> IRR <input type="checkbox"/></p>	<p><b>FRI Score: Not scored</b></p>		
<p><b>Site Ground-truthing of PFRA Assessment (hazard mapping and receptors)</b></p>	<p><b>High Confidence (good)</b></p>	<p><b>Uncertain</b></p>	<p><b>Low Confidence (poor)</b></p>	<p><b>Not available</b></p>
	<p>X</p>			
<p><b>Site Visit Review Score</b></p>	<p>250</p>			
<p><b>Recommended Designation</b></p>	<p>APSR <input checked="" type="checkbox"/></p>	<p>not an APSR <input type="checkbox"/></p>	<p>IRR <input type="checkbox"/></p>	
<p><b>Summary Comments (if required)</b></p>	<p>The reasons for the recommendation of Leitrim Village as an APSR are:</p> <ul style="list-style-type: none"> <li>• Historical evidence of flooding to a significant number of receptors.</li> <li>• Recently constructed development within a recognised floodplain.</li> </ul>			



**Photo 1:** Bridge over canal in Leitrim Village



**Photo 2:** Marina at Leitrim Village



**Photo 3:** View of canal to Leitrim Village from the Shannon



**Photo 4:** View of the Shannon from the Canal to Leitrim Village

