

<b>Location: Edgeworthstown, Co. Longford</b>		<b>Unique ID: 260460</b> (from PFRA database)	
<b>Initial OPW Designation</b>	<b>APSR</b> <input checked="" type="checkbox"/>	<b>AFRR</b> <input type="checkbox"/>	<b>IRR</b> <input type="checkbox"/>
<b>Co-ordinates</b>	<b>Easting: 225,826</b>	<b>Northing: 271,930</b>	
<b>River / Catchment / Sub-catchment</b>	<b>Black River / River Inny / Owenacharra River / Shannon</b>		
<b>Type of Flooding / Flood Risk</b> (identify all that apply)	<b>Fluvial non-tidal</b> <input checked="" type="checkbox"/> <b>Fluvial tidal</b> <input type="checkbox"/> <b>Coastal</b> <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> The Black River flows through the town of Edgeworthstown. The Black River is crossed by several roads, most notably the Ballymahon Road and Longford Road.</p> <p><b>Flood Event Records</b> There are no records of flood events for Edgeworthstown on floodmaps.ie.</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>Designated APSR on the basis of predictive analysis. Extends beyond town boundary. Edge of town - APSR needs to extend beyond zoning and town boundary</i></p> <p><b>LA comments</b> <i>No flooding in 2009. Potentially re-assess. Not significant channels.</i></p> <p><b>Meeting / discussion summary comments:</b></p> <p><b>OPW comments</b></p> <ul style="list-style-type: none"> <li>• May form part of the OPW maintenance scheme for the River Inny.</li> <li>• The main area for new developments has been in the north west.</li> </ul> <p><b>LA comments</b></p> <ul style="list-style-type: none"> <li>• WWTW possibly at risk of flooding downstream of town centre</li> <li>• A factory (C&amp;D Pet Foods) is at risk of flooding</li> <li>• Town is strategic for planning, due to rail and road links to Dublin. Further developments in the town are therefore likely.</li> <li>• Not aware of any flooding along the minor watercourse in the south-west of the APSR boundary.</li> </ul>

<b>1.4 PFRA Data</b>			
<b>1.4.1 PFRA hazard mapping</b>	<b>PFRA mapping available in GIS layer:</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	<b>PFRA mapping included on FRR map:</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<b>1.4.2 Summary of Principal Receptors</b>	<b>Type</b>	<b>FRI score (if available)</b>	
	UWWTP	25	
	Arch_Regional	10	
	Monument_LV	20	
	<b>TOTAL</b>	<b>638.2</b>	
<b>1.7 Stage 1 Evaluation</b>	<b>Aspect</b>	<b>Clearly APSR</b>	<b>Uncertain</b>
	<b>Flood History (1.1)</b>		<b>X</b>
	<b>OPW / LA Information (1.2)</b>		<b>X</b>
	<b>PFRA Evaluation (1.4)</b>	<b>X</b>	
	<b>Overall Desktop Evaluation</b> (if any above aspect is uncertain then overall designation is uncertain)		<b>X</b>
<b>1.8 Proposed level of assessment for Stage 2 site visits</b>	<b>Level A Site Visit</b>	<b>X</b>	
	<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: 24/05/11</b>		
		<b>Time: 12:30</b>		
<b>Names of inspection team (including OPW/LA staff if present)</b>		<b>Alan Dew</b>		
		<b>James Murray</b>		
<b>2.1 Ground-truthing of Hazard Mapping</b>	<b>Fluvial non-tidal <input checked="" type="checkbox"/> Fluvial tidal <input type="checkbox"/> Coastal <input type="checkbox"/> Not available <input type="checkbox"/></b>			
	Flood risk to the right bank of the Black River through the town centre is considered to have been over-estimated by the PFRA mapping. The bank levels observed on-site are considered to restrict the potential flood plain on right bank and substantially reduce the number of properties potentially at risk on the left bank.			
<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>
	WWTP	Downstream of N4, right bank		M
	Residential properties	New development at Abhainn Glas, upstream of N4 & adjacent to tributary culvert on N55.		M
	Commercial properties	Upstream of Longford Road culvert		M
<b>2.3 Local knowledge - on-site comments (OPW, LA and any info volunteered by local residents during visit)</b>	Opel Garage employee (Longford Road) - he had only known the river to flood at the Longford Road culvert once, after debris built up in the channel. Other than that occasion, he had never seen the river level significantly higher than that observed during the site inspection.			

<p><b>2.4 Comments on hydraulic constrictions (bridges, etc.) and conveyance routes</b></p>	<p><u>Black River:</u></p> <ul style="list-style-type: none"> <li>▪ Culvert upstream of town centre beneath Abhainn Glas has a low soffit (~0.80m height x 1.50m width) potentially constraining high flows and presenting potential flood risk to C&amp;D Pet Foods wastewater / process storage lagoon on the right bank. The threshold level of the industrial unit is however considered too high to be affected.</li> <li>▪ A second culvert is located downstream of the probable re-entry point. This culvert is smaller than the culvert upstream (~0.80m width x 1.20m height). This culvert may present a further constraint to high flows.</li> <li>▪ The right bank at the confluence upstream of Longford Road forms a low point at the scrap metal / Opel garage operations on the right bank. It is probable that the conveyance route would inundate the storage areas rather than the unit itself.</li> <li>▪ The culvert at Longford Rd comprises a 1.80m pipe with comparable capacity to the upstream channel. Bypassing of this culvert is considered unlikely.</li> <li>▪ High flows within the park area downstream of Longford Rd are constrained by 2 no. vehicle bridges (both of which are culverted via 2 arches of ~0.50-0.70m width and 0.80m height) and Ballymahon Rd bridge (which is culverted via 2 box culverts of ~0.50m width and 0.80m height). The channel here is deep and wide and is likely to provide adequate conveyance at high flows. Floodplain available on right bank and it is considered that flood waters are unlikely to be able to bypass the Ballymahon Road culvert. The threshold level of the amenity building on the left bank is raised.</li> <li>▪ The N4 road is raised, and the Black River is culverted beneath the N4 via a culvert of good capacity (~2.00m height x 3.00m width box culvert) with no possibility of being bypassed. Properties on left bank upstream are raised slightly but may be at risk during extreme flood conditions.</li> <li>▪ The WWTW on the right bank, downstream on the N4, is at a low level immediately adjacent to river.</li> <li>▪ The culvert beneath the railway is of very good capacity. The roadway culvert immediately downstream has a low soffit (~0.50m height x 1.50m width box culvert) which may present a constraint.</li> </ul> <p><u>Tributary</u></p> <ul style="list-style-type: none"> <li>▪ The culvert beneath the N55 is likely to constrain high flows. There is good flood storage on the right bank upstream of the culvert.</li> </ul>
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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				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				200				400			
Environmental Designated Site	20				200				400			
Hazardous Substances Site	50				500				1000			
<b>Total SVRS</b>								<b>300</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 type="checkbox"/> Mill leat <input type="checkbox"/> Drainage channels / back drains <input type="checkbox"/>											
	<b>Bridges and Culvert crossings</b> 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 checked="" 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 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 checked="" 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>  Pumping Station <input type="checkbox"/> Erosion Protection <input type="checkbox"/> Sand Dunes <input type="checkbox"/>  <b>Additional notes (if required):</b></p>
<b>2.8 Initial Potential Mitigation Measures</b>	
<b>Non-structural measures</b>	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"/>
<b>Structural measures</b>	<b>Strategic development management for floodplain development:</b> <input type="checkbox"/> <i>(integration of measures into strategic development proposals)</i> <b>Storage:</b> On-line <input checked="" type="checkbox"/> Off-line <input type="checkbox"/> <b>Flow diversion:</b> Flood relief channel <input type="checkbox"/> Flood relief culvert <input type="checkbox"/> <b>Increase conveyance:</b> Bridge works <input type="checkbox"/> Channel works <input type="checkbox"/> Floodplain <input type="checkbox"/> <b>Flood defences:</b> Walls <input checked="" type="checkbox"/> Embankments <input checked="" type="checkbox"/> <b>Localised works:</b> Defence raising <input type="checkbox"/> In-fill gaps <input type="checkbox"/> Trash screen <input type="checkbox"/> <b>Maintenance works:</b> Culvert / channel clearance <input type="checkbox"/> Asset maintenance <input type="checkbox"/> <b>Relocation of properties:</b> <input type="checkbox"/> <b>Improve existing defences:</b> <input type="checkbox"/> (describe)  <b>Other (describe):</b>

<b>Outcomes</b>				
<b>PFRA Designation</b>	APSR <input type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>		FRI Score: 638.2	
<b>Site Ground-truthing of PFRA Assessment (hazard mapping and receptors)</b>	<b>High Confidence (good)</b>	<b>Uncertain</b>	<b>Low Confidence (poor)</b>	<b>Not available</b>
			X	
<b>Site Visit Review Score</b>	300			
<b>Recommended Designation</b>	APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>			
<b>Summary Comments (if required)</b>	There are sufficient critical receptors at significant risk of flooding within Edgeworthstown to warrant its designation as an APSR.			



**Photo 1:** Black River within the park area upstream of Ballymahon Road, viewed from the right bank looking downstream.



**Photo 2:** Black River looking upstream on the left bank, downstream of the N4 culvert, within recent development on the right bank.



**Photo 3:** Recent development on left bank of Black River, upstream of town centre at Abhainn Glas, looking downstream.



**Photo 4:** Recent development on left bank, downstream of the town centre, looking upstream.

