

<b>Location: Carrigahorig, Co. Tipperary</b>		<b>Unique ID: 255469</b> (from PFRA database)	
<b>Initial OPW Designation</b>	<b>APSR</b> <input type="checkbox"/>	<b>AFRR</b> <input checked="" type="checkbox"/>	<b>IRR</b> <input type="checkbox"/>
<b>Co-ordinates</b>	<b>Easting: 190461.2</b>	<b>Northing: 201451.6</b>	
<b>River / Catchment / Sub-catchment</b>	<b>Carrigahorig Stream / River Shannon (Lough Derg)</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</b> (include review of Floodmaps.ie)	<p><b>River Flow Path</b> Carrigahorig is located near the banks of Lough Derg. Minor watercourses flowing into the Lough are located near to and pass through the village.</p> <p><b>Flood Event Records</b> There are records on floodmaps.ie of 2 events in December 1954 and December 1968.</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><i>OPW comments</i></b> <i>Not designated APSR as failed to reach predictive analysis threshold. Historic 4, but only 2 dated floods - Only road flooding</i></p> <p><b><i>LA comments</i></b> <i>N65 Nov 09, road closed for some time, disruption caused. No properties at risk. Road floods.</i></p> <p><b>Meeting / discussion summary comments:</b></p> <p><b>LA comments</b></p> <ul style="list-style-type: none"> <li>▪ Road flooding is an issue (economic impact). Long diversion required in the event of flooding.</li> <li>▪ No properties at risk.</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>	
	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>
	<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: 01/06/11</b>		
		<b>Time: 13:45</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>			
	PFRA flood extents generally good as predominant flood risk is sourced from Lough Derg to the west.			
<b>2.2 Spot check ground-truthing of selected receptor vulnerability</b>  (also note any key receptors noted during visit that are not identified by PFRA)	<b>Receptor Type</b>	<b>Location description (if not obvious)</b>	<b>Exists?</b>	<b>Overall Vulnerability / Risk (L / M / H)</b>
	Road	N65, north of village	Yes	H
<b>2.3 Local knowledge - on-site comments</b>  (OPW, LA and any info volunteered by local residents during visit)	<p>Local resident indicated the flooding in the past has been restricted to the N65 to the north-west of the village, and that the village has not been directly affected.</p> <p>Commercial operation at former mill site confirmed by resident to be disused.</p>			
<b>2.4 Comments on hydraulic constrictions (bridges, etc.) and conveyance routes</b>	<p>At times of very high flows in Carrigahorig Stream, the N65 road bridge at the upstream end of the village may present a potential constraint to flows. The culvert may be bypassed via the right bank, with the likely conveyance route being via the N65 alignment before re-entering downstream of the weir and/or meeting the likely area of flooding from Lough Derg to the west of the village.</p> <p>The weir (~2m in height), and various mill races which are present downstream of the N65 road bridge, are not considered to present significant hydraulic constraints as any high flows would be limited by the bypassing of the upstream N65 road bridge.</p>			

## 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				200			
Property (small retail or business)	20				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>0</b>			

## 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 ☐ Flood relief channel ☐ Canal ☐  
Mill leat ☒ Drainage channels / back drains ☐

### Bridges and Culvert crossings

Single Arch bridge ☐ Multi-Arch bridge ☐  
Single Span bridge ☐ Multi-Span bridge ☐  
Box culvert(s) ☒ Pipe culvert(s) ☐ Arch Culvert(s) ☐

### Culverted Watercourses (culvert length is greater than just a crossing)

Box culvert(s) ☐ Pipe culvert(s) ☐ Arch Culvert(s) ☐ Irregular Culvert(s) ☐

### Walls and Embankments

Embankment(s) ☒ Raised wall(s) ☒ Retaining wall(s) ☐

### Control Structures – weirs, gates, dams

Fixed crest weir ☒ Adjustable weir ☐ Dam / Barrage ☐  
Sluice gates ☐ Lock gates ☐ Radial gates ☐

### Storage

On-line storage (natural) ☒ On-line storage (artificial) ☐ Off-line storage ☐

### Outfalls

Flapped outfall(s) into watercourse ☐ Unflapped outfall(s) into watercourse ☐  
i.e. from smaller watercourses, drains etc. into river / estuary / sea  
Tidal flap(s) ☐ Tidal sluice(s) ☐  
i.e. from main watercourse into estuary / sea

	<b>Other</b> Pumping Station <input type="checkbox"/> Erosion Protection <input type="checkbox"/> Sand Dunes <input type="checkbox"/> <b>Additional notes (if required):</b>
<b>2.8 Initial Potential Mitigation Measures</b>	
<b>Non-structural measures</b>	Planning and Development control <input 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 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 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 type="checkbox"/> Embankments <input type="checkbox"/> <b>Localised works:</b> Defence raising <input checked="" 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>

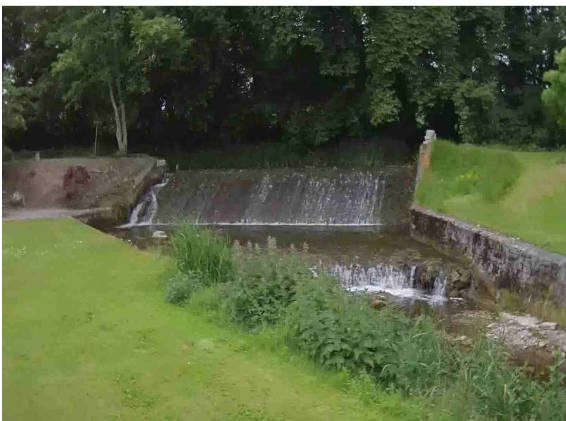
<b>Outcomes</b>				
<b>PFRA Designation</b>	APSR <input type="checkbox"/> not an APSR <input checked="" type="checkbox"/> IRR <input type="checkbox"/>		<b>FRI Score:</b> Not scored	
<b>Site Ground-truthing of PFRA Assessment (hazard mapping and receptors)</b>	<b>High Confidence (good)</b>	<b>Uncertain</b>	<b>Low Confidence (poor)</b>	<b>Not available</b>
	X			
<b>Site Visit Review Score</b>	0			
<b>Recommended Designation</b>	APSR <input type="checkbox"/> not an APSR <input checked="" type="checkbox"/> IRR <input type="checkbox"/>			
<b>Summary Comments (if required)</b>	No properties are considered to be at risk of fluvial flooding either from Carrigahorig Stream or Lough Derg.			



**Photo 1:** N65 road bridge looking downstream from the right bank.



**Photo 2:** Looking upstream on the right bank of Carrigahorig Stream adjacent to the weir.



**Photo 3:** Carrigahorig Stream weir looking upstream.



**Photo 4:** Minor road bridge over Carrigahorig Stream downstream of the weir, looking downstream.



