

Location: Monaster, Co. Limerick		Unique ID: 240390 (from PFRA database)	
Initial OPW Designation	APSR <input type="checkbox"/>	AFRR <input checked="" type="checkbox"/>	IRR <input type="checkbox"/>
Co-ordinates	Easting: 115250	Northing: 141000	
River / Catchment / Sub-catchment	Camoge River/ Maigue Catchment		
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)	River Flow Path <p>Located East of Croom. The Camoge River, a tributary of the River Maigue, runs south of the Monaster Townland.</p> Flood event records <p>There are no flood event records on floodmaps.ie for this area.</p>
1.2 Relevant information on flooding issues from OPW and LA staff	PFRA database comments (<i>in italics</i>): <p><i>OPW comments</i></p> <p><i>LA comments</i> <i>Further Investigation required, ribbon development impacted on. No local area plan</i></p> <p>Meeting / discussion summary comments:</p> <p>OPW comments</p> <ul style="list-style-type: none"> Probably a pluvial problem at the church and school to the north of the river. Not believed to be a problem from the River Camoge. Possibly some flood (pluvial) history there. <p>LA comments</p> <ul style="list-style-type: none"> Not aware of any flooding issues in this area.

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)
	Monument_LV_Weighted_F_E		154.1
	Total		235.2
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		X
	Level B Site Visit		

Stage 2: Site Inspection		Level A Assessment		
Date and Time of Inspection		Date: 29/03/11		
		Time: 12:00		
Names of inspection team (including OPW/LA staff if present)		Iain Blackwell		
		Kelly Kasperczyk		
2.1 Ground-truthing of Hazard Mapping	Fluvial non-tidal <input checked="" type="checkbox"/> Fluvial tidal <input type="checkbox"/> Coastal <input type="checkbox"/> Not available <input type="checkbox"/> Hazard mapping appears to be reasonable downstream of Monaster. In the vicinity of Monaster Bridge, the mapping appears to over-estimate the flooding extent, particularly on the right bank where it is shown crossing the road.			
2.2 Spot check ground-truthing of selected receptor vulnerability (also note any key receptors noted during visit that are not identified by PFRA)	Receptor Type	Location description (if not obvious)	Exists?	Overall Vulnerability / Risk (L / M / H)
	Monastery remains		Y	M
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	3-arch bridge next to the Monastery remains. One arch is blocked. Blockage of this bridge does not put any significant assets at risk of flood damage, although some of the monastery remains may be flooded.			

2.5 SVRS Assessment Matrix

Weightings:

A - x1 - reasonable expectation of flooding

B - x2 - high expectation of flooding
or flooding is tidal (any risk)

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	X			100				200			
Property (small retail or business)	20				200				400			
Property (large retail or business)	50				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				500				1000			
Critical Infrastructure (national importance)	250				1000				2000			
Cultural Heritage Site	20		X		200				400			
Environmental Designated Site	20				200				400			
Hazardous Substances Site	50				500				1000			
Total SVRS									50			

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 <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): Storage u/s of the multi-arch bridge on right and left banks.
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2.8 Initial Potential Mitigation Measures

Non-structural measures	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"/>
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 type="checkbox"/> Channel works <input type="checkbox"/> Floodplain <input type="checkbox"/> Flood defences: Walls <input 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):

Outcomes

PFRA Designation	APSR <input type="checkbox"/> not an APSR <input checked="" type="checkbox"/> IRR <input type="checkbox"/>		FRI Score: 235	
Site Ground-truthing of PFRA Assessment (hazard mapping and receptors)	High Confidence (good)	Uncertain	Low Confidence (poor)	Not available
		X		
Site Visit Review Score	50			
Recommended Designation	APSR <input type="checkbox"/> not an APSR <input checked="" type="checkbox"/> IRR <input type="checkbox"/>			
Summary Comments (if required)	There is potential for the Monastery remains to flood due to hydraulic restrictions observed on site. Limited residential properties in the area, most of which are on elevated ground on the right bank, east of the road than runs parallel to the river. These are no considered to be at risk.			



Photo 1: Archaeological remains of Monastery



Photo 2: Archaeological remains of Monastery from bridge u/s



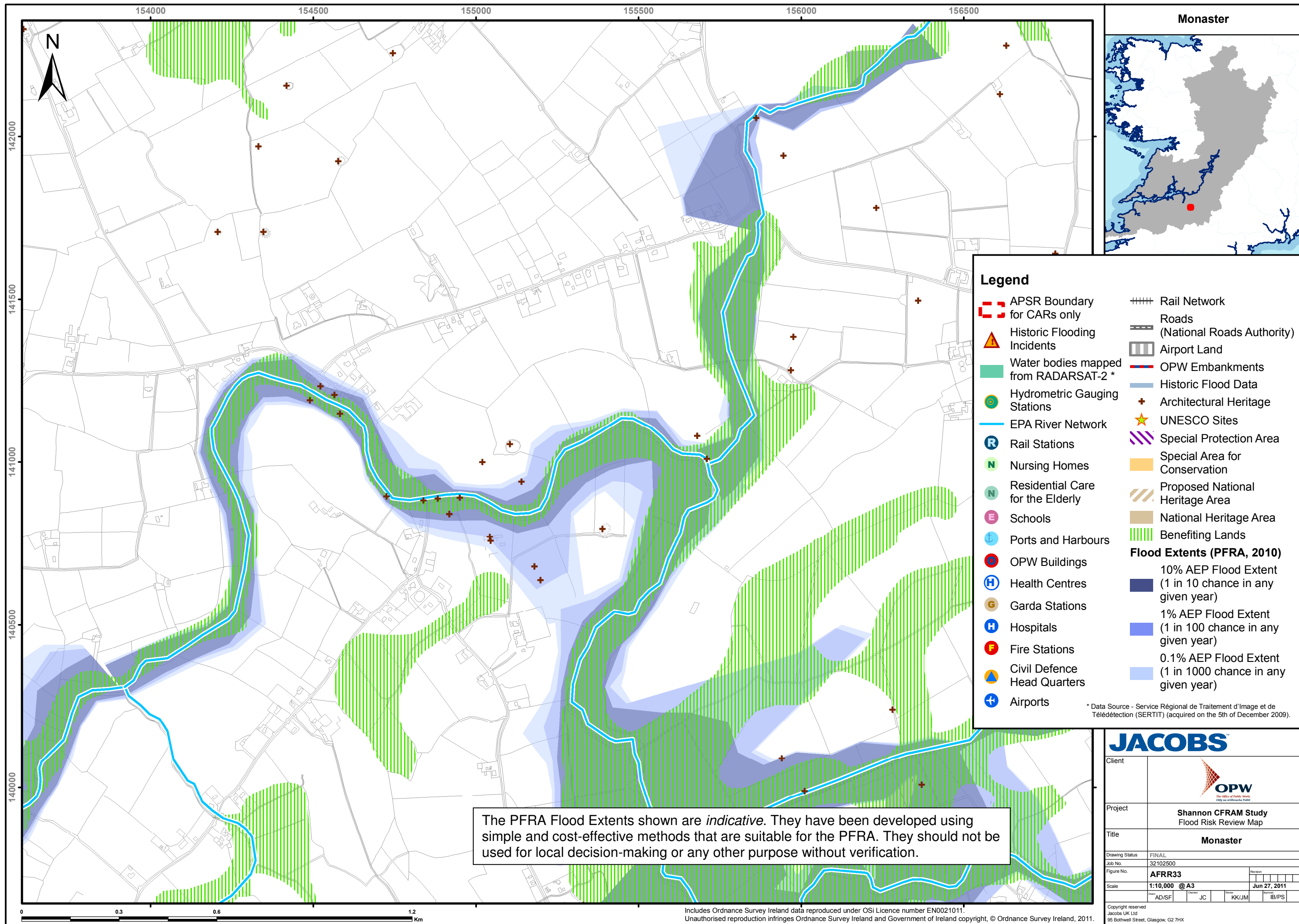
Photo 3: Multi-Arch Bridge u/s of Archaeological remains



Photo 4: View of river downstream of bridge



Photo 5: Housing raised well above flood plain of road



The PFRA Flood Extents shown are *indicative*. They have been developed using simple and cost-effective methods that are suitable for the PFRA. They should not be used for local decision-making or any other purpose without verification.

Legend

APSR Boundary for CARs only

Historic Flooding Incidents

Water bodies mapped from RADARSAT-2 *

Hydrometric Gauging Stations

EPA River Network

Rail Stations

Nursing Homes

Residential Care for the Elderly

Schools

Ports and Harbours

OPW Buildings

Health Centres

Garda Stations

Hospitals

Fire Stations

Civil Defence Head Quarters

Airports

Rail Network

Roads (National Roads Authority)

Airport Land

OPW Embankments

Historic Flood Data

Architectural Heritage

UNESCO Sites

Special Protection Area

Special Area for Conservation

Proposed National Heritage Area

National Heritage Area

Benefiting Lands

Flood Extents (PFRA, 2010)

10% AEP Flood Extent (1 in 10 chance in any given year)

1% AEP Flood Extent (1 in 100 chance in any given year)

0.1% AEP Flood Extent (1 in 1000 chance in any given year)

* Data Source - Service Régional de Traitement d'Image et de Télédétection (SERTIT) (acquired on the 5th of December 2009).

JACOBS	
Client	
Project	Shannon CFRAM Study Flood Risk Review Map
Title	Monaster
Drawing Status	FINAL
Job No.	32102500
Figure No.	AFRR33
Scale	1:10,000 @ A3
Drawn	AD/SF
Checked	JC
Reviewed	KK/JM
Approved	IB/PS
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