

Location: Adare, Co. Limerick		Unique ID: 240364 (from PFRA database)	
Initial OPW Designation	APSR <input checked="" type="checkbox"/>	AFRR <input type="checkbox"/>	IRR <input type="checkbox"/>
Co-ordinates	Easting: 146500	Northing: 146750	
River / Catchment / Sub-catchment	River Maigue		
Type of Flooding / Flood Risk (identify all that apply)	Fluvial non-tidal <input checked="" type="checkbox"/> Fluvial tidal <input checked="" 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 River Maigue borders the east and north of the town. A small unnamed tributary (watercourse A) of the Maigue flows through the centre of town, merging with the Maigue north of the town at the rear of the Manor Court Estate (next to WWTP).</p> <p>The river is tidal up to around the weir at the existing N21 road bridge in Adare.</p> <p>Flood Event Records</p> <p>Seven flood records are listed in floodmaps.ie mainly associated with tidal embankment breaches near Islandea (d/s of Adare) and in the vicinity of the railway bridge.</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 LA comments. Residential flooding, large number of houses protected by opw defences</i></p> <p>LA comments <i>(am) Embankment protecting well under high tide level.(pm) All agreed</i></p> <p>Meeting / discussion summary comments:</p> <p>OPW comments</p> <ul style="list-style-type: none"> • There are large areas of benefiting land (green area on GIS layer). • Estate close to river has flooded. • Significant embankments – green on GIS layer. • Lots of land drains for agricultural purposes, dug essentially to provide storage of surface water. • Embankment construction was for agricultural land protection, and embankments have been there for around 50 years. • Tidal limit of the Maigue is just upstream of Adare. • Mixed fluvial and tidal problem. • There are numerous back drains at the Adare scheme, draining land behind the embankments. • Development pressure south of river. • Hole in embankment u/s of school. • Raised embankment by Manor Court Estate.

	LA comments <ul style="list-style-type: none"> The northwest corner of Manor Court housing estate is known to flood approx every 2 years. This is mainly on the roads and at present is seen as a more of a nuisance. The adjacent sewage treatment works was recently upgraded. A proposal to pump sewage from Adare, through Patrickswell and on to Limerick has not progressed. This has not flooded, but is currently protected by the embankments. Proposed development at Blackabbey has planning permission and can proceed if funded. However, the current planning permission may have expired. 		
1.4 PFRA Data			
1.4.1 PFRA hazard mapping	PFRA mapping available in GIS layer: PFRA mapping included on FRR map:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1.4.2 Summary of Principal Receptors	Type WWTP Monuments Total:	FRI score (if available) 25 24 (LV) 1888.09	
1.7 Stage 1 Evaluation	Aspect Flood History (1.1) OPW / LA Information (1.2) PFRA Evaluation (1.4) Overall Desktop Evaluation (if any above aspect is uncertain then overall designation is uncertain)	Clearly APSR X X X X	Uncertain
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: 13/04/11	
		Time: 10:00	
Names of inspection team (including OPW/LA staff if present)		Iain Blackwell	
		Kelly Kasperczyk	
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	10-arch bridge on the Mague, next to the School and Church could potentially act as a restriction during significant fluvial flows as the arches are not large compared to the channel cross-sectional area. The tributary (watercourse A) is culverted twice in the town (twin culverts) for various road / access crossings.		
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 checked="" type="checkbox"/> Bridges and Culvert crossings Single Arch bridge <input type="checkbox"/> Multi-Arch bridge <input checked="" type="checkbox"/> Single Span bridge <input checked="" 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"/> 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 checked="" type="checkbox"/> Raised wall(s) <input type="checkbox"/> Retaining wall(s) <input type="checkbox"/> Control Structures – weirs, gates, dams Fixed crest weir <input checked="" 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 type="checkbox"/> On-line storage (artificial) <input type="checkbox"/> Off-line storage <input type="checkbox"/> Outfalls Flapped outfall(s) into watercourse <input checked="" 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): Most FD assets in Adare are associated with the River Maigue. There is an additional tributary which flows through the centre of town and into the Maigue from the left bank which also has embankments and crossings / culverts associated with it. Some of these embankments are not effective as they are not tied into high ground (or other defences).
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 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 checked="" 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 checked="" type="checkbox"/> Embankments <input checked="" type="checkbox"/> Localised works: Defence raising <input checked="" type="checkbox"/> In-fill gaps <input checked="" 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 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)	Significant number of properties located behind the River Maigue Embankments along a tidal reach.



Photo 1: Main bridge over the River Maigue in Adare looking d/s



Photo 2: Adare Castle and weir looking u/s from main bridge in Adare



Photo 3: River Maigue embankment (left bank), d/s of main bridge



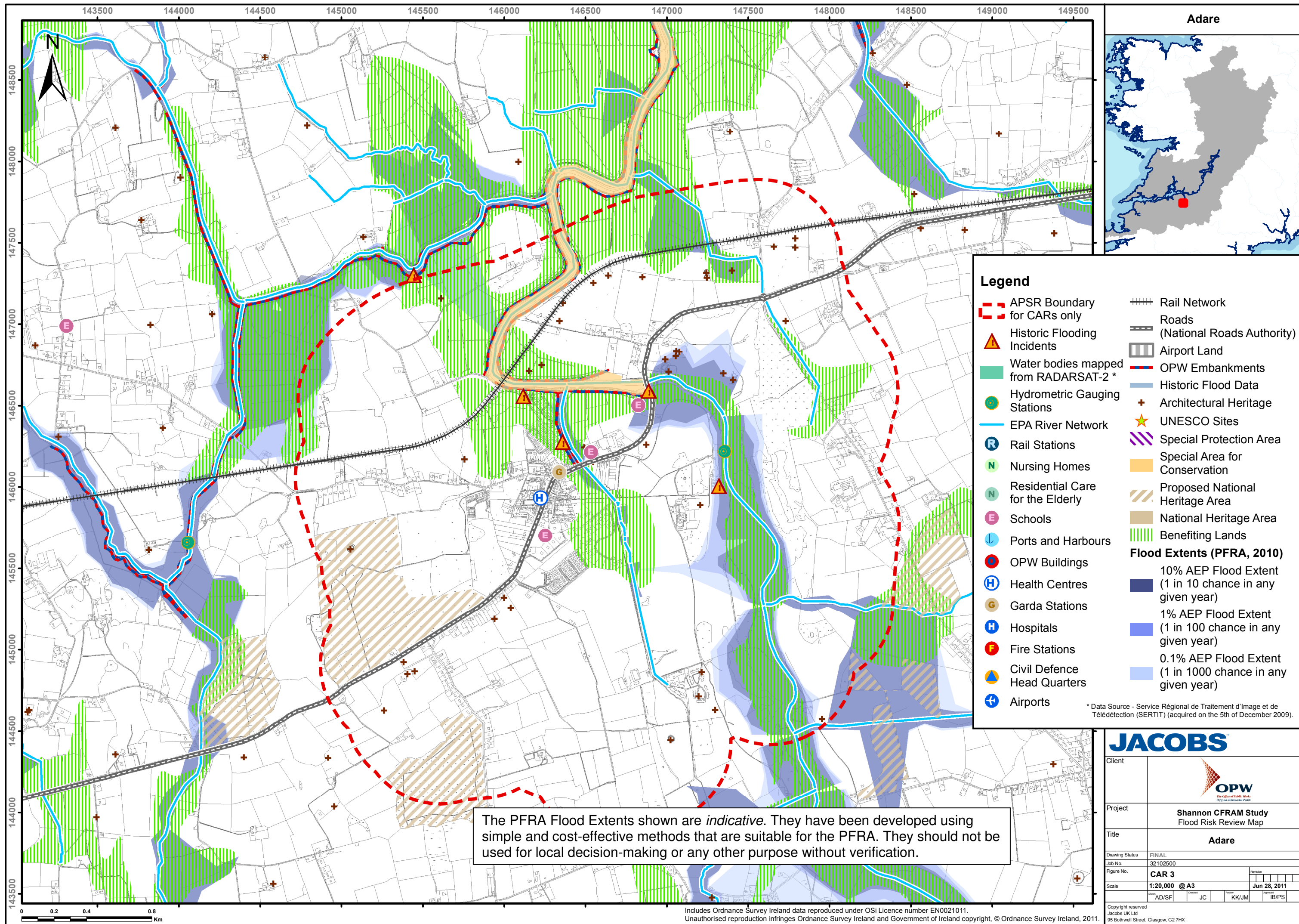
Photo 4: Typical drainage outfall through the Maigue embankments




Photo 5: River Maigue embankment (left bank) protecting properties behind



Photo 6: Embankment adjacent to small tributary on left bank of the River Maigue



JACOBS

Client			
Project	Shannon CFRAM Study Flood Risk Review Map		
Title	Adare		
Drawing Status	FINAL	Job No.	32102500
Figure No.	CAR 3	Scale	1:20,000 @ A3
Scale	1:20,000 @ A3	Author	AD/SF
		Checked	JC
		Drawn	KK/JM
		Reviewed	IB/PS
Copyright reserved Jacobs UK Ltd 95 Bothwell Street, Glasgow, G2 7HX			