Location: Lissan West, Co. Clare		Unique ID: 270478 (from PFRA database)	
Initial OPW Designation	**APSR** ☒	**AFRR** ☐	**IRR** ☐
Co-ordinates	**Easting: 134500**	**Northing: 172500**	
River / Catchment / Sub-catchment	**Minor tributary to River Fergus / Fergus / Shannon Estuary**		
Type of Flooding / Flood Risk (identify all that apply)	**Fluvial non-tidal** ☒ **Fluvial tidal** ☒ **Coastal** ☐		

Stage 1: Desktop Review

1.1 Flood History (include review of Floodmaps.ie)

River Flow Path

The River Fergus flows north to south, east of the townland of Lissan West. There is an extensive network of drains in the area, with one main stream flowing west to east, flowing into the River Fergus east of the Townland of Lissan West.

Flood event records

There are no flood records listed for the townland of Lissan West.

1.2 Relevant information on flooding issues from OPW and LA staff

PFRA database comments *(in italics)*:

OPW comments
12 Historic floods - 102 Properties reported as flooding - Predictive almost 250 - Linked to Clarecastle???

LA comments

Meeting / discussion summary comments:

OPW comments

- This area is made up of areas of reclaimed land, and therefore is effectively storage.
- A sluice on the right bank of the River Fergus failed some time between 1997 and 1999. No properties were flooded, but water reached west to the industrial estate.
- The PFRA hazard extents are considered to be fairly accurate.
- Clarecastle (north of Lissan West) has some history of residential / commercial flooding, which is tidally influenced.

LA comments

- Area not known to have any flooding problems

<table>
<tr><td colspan="4">1.4 PFRA Data</td></tr>
<tr><td>1.4.1 PFRA hazard mapping</td><td colspan="3">PFRA mapping available in GIS layer: Yes ☒ No ☐
PFRA mapping included on FRR map: Yes ☒ No ☐</td></tr>
<tr><td rowspan="2">1.4.2 Summary of Principal Receptors</td><td colspan="2">Type</td><td>FRI score (if available)</td></tr>
<tr><td colspan="2">Monument_LV_Weighted_T_E
Total</td><td>40
246.87</td></tr>
<tr><td rowspan="5">1.7 Stage 1 Evaluation</td><td>Aspect</td><td>Clearly APSR</td><td>Uncertain</td></tr>
<tr><td>Flood History (1.1)</td><td></td><td>X</td></tr>
<tr><td>OPW / LA Information (1.2)</td><td></td><td>X</td></tr>
<tr><td>PFRA Evaluation (1.4)</td><td></td><td>X</td></tr>
<tr><td>Overall Desktop Evaluation
(if any above aspect is uncertain then overall designation is uncertain)</td><td></td><td>X</td></tr>
<tr><td rowspan="2">1.8 Proposed level of assessment for Stage 2 site visits</td><td colspan="2">Level A Site Visit</td><td>X</td></tr>
<tr><td colspan="2">Level B Site Visit</td><td></td></tr>
</table>

Stage 2: Site Inspection	Level A Assessment
Date and Time of Inspection	**Date: 07/06/11** **Time: 16:40**
Names of inspection team (including OPW/LA staff if present)	**Iain Blackwell** **Lewis Maani**

2.1 Ground-truthing of Hazard Mapping	**Fluvial non-tidal** ☒ **Fluvial tidal** ☒ **Coastal** ☐ **Not available** ☐ Flood mapping appears to be a good representation. The outline follows the topography well in Lissan West.			
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)**
	Industrial Estate	Along left bank approximately 50m from road through Lissan West.	Yes	L
	Monument	Not seen		
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	No significant hydraulic restrictions although there is weed growth along the watercourse. There is a short culverted section of a land drain just upstream of its confluence with the main stream. The area is low-lying and provides a vast storage area.			

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				100				200			
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				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			
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 ☐

<table>
<tr><td></td><td>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
Other
Pumping Station ☐ Erosion Protection ☐ Sand Dunes ☐
Additional notes (if required):
There is a tidal sluice / outfall from the stream where it flows into the River Fergus approximately 800m east of Lissan West.</td></tr>
<tr><td colspan="2">2.8 Initial Potential Mitigation Measures</td></tr>
<tr><td>Non-structural measures</td><td>Planning and Development control ☒
Sustainable Urban Drainage Systems ☐
Flood forecasting / warning ☐
Change in Operating Procedures for water level control: ☐
Public awareness campaign ☐
Individual property protection ☐
Land use management ☐</td></tr>
<tr><td>Structural measures</td><td>Strategic development management for floodplain development: ☐
(integration of measures into strategic development proposals)
Storage: On-line ☐ Off-line ☐
Flow diversion: Flood relief channel ☐ Flood relief culvert ☐
Increase conveyance: Bridge works ☐ Channel works ☐ Floodplain ☐
Flood defences: Walls ☐ Embankments ☐
Localised works: Defence raising ☐ In-fill gaps ☐ Trash screen ☐
Maintenance works: Culvert / channel clearance ☒ Asset maintenance ☒
Relocation of properties: ☐
Improve existing defences: ☐ (describe)

Other (describe):</td></tr>
</table>

<table>
<tr><th colspan="5">Outcomes</th></tr>
<tr><td>PFRA Designation</td><td colspan="2">APSR ☒ not an APSR ☐ IRR ☐</td><td colspan="2">FRI Score:</td></tr>
<tr><td rowspan="2">Site Ground-truthing of PFRA Assessment (hazard mapping and receptors)</td><td>High Confidence (good)</td><td>Uncertain</td><td>Low Confidence (poor)</td><td>Not available</td></tr>
<tr><td>X</td><td>x</td><td></td><td></td></tr>
<tr><td>Site Visit Review Score</td><td colspan="4">50</td></tr>
<tr><td>Recommended Designation</td><td colspan="4">APSR ☐ not an APSR ☒ IRR ☐</td></tr>
<tr><td>Summary Comments (if required)</td><td colspan="4">The PFRA mapping reflects the topography of the area, with low-lying land adjacent to the small watercourse. All the properties along the road through Lissan West are higher than the surrounding lower lying land by approximately 2m along and are not considered to be at risk.
The large industrial units to the west along the left bank are also on higher ground, although these are slightly lower than the residential properties to the east.
The comment in the PFRA database: “12 Historic floods - 102 Properties reported as flooding - Predictive almost 250 - Linked to Clarecastle???” is confirmed as NOT being related to Lissan West, as there are only five residential properties in Lissan West – none of which are shown to be at risk in the PFRA mapping. Mapping extracts are shown below:
 
 
Overall the flood risk in Lissan West is very low, and this site should not be considered to be an APSR.</td></tr>
</table>

Photo 1: Properties located on the eastern side of the road. The small watercourse is located approximately 100m west of the road at this location

Photo 2: Low lying land adjacent to watercourse and industrial unit on the far side of the watercourse

Photo 3: Industrial Units on the left bank, at a higher elevation than the right bank flood plain. Watercourse is overgrown with vegetation

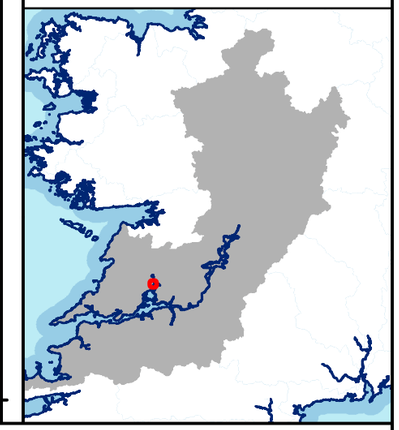
Photo 4: Looking upstream on the watercourse. The right bank (on left of photo) is seen to be lower than the left bank

Photo 5: Expansive floodplain upstream of Lissan West providing vast areas for natural storage

134000 134500 135000

173000 172500 172000

Lissan West



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).

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.

0 0.05 0.1 0.2 Km

JACOBS

Client	OPW The Office of Public Works Oifig na nOibreacha Poiblí
Project	**Shannon CFRAM Study** Flood Risk Review Map
Title	**Lissan West**
Drawing Status	FINAL
Job No.	32102500
Figure No.	**CAR 38**
Revision	
Scale	**1:5,000 @ A3**
	Jun 28, 2011
Drawn	AD/SF
Checked	JC
Review	KK/JM
Approved	IB/PS