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| Location: Kildimo New, Co. Limerick | | Unique ID: 240385 (from PFRA database) | |
| Initial OPW Designation | APSR <input checked="" type="checkbox"/> | AFRR <input type="checkbox"/> | IRR <input type="checkbox"/> |
| Co-ordinates | Easting: 145250 | Northing: 152750 | |
| River / Catchment / Sub-catchment | Unnamed tributary of the Maigue / Maigue Catchment | | |
| 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 | |
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| 1.1 Flood History (include review of Floodmaps.ie) | <p>River Flow Path</p> <p>An unnamed stream west of the town merges with a stream from Bleach Lough (approx 1.5km north of the town), and then joins the River Maigue north of the townland of Faha.</p> <p>A series of drainage channels are located north of the village, draining an unnamed tributary of the River Maigue, flowing through Faha (northeast of Kildimo New).</p> <p>The River Maigue flows in a broadly northerly direction, approximately 2.5km to the east of Kildimo New. The Maigue is tidal along this reach, meandering for several kilometres before discharging to the Shannon Estuary.</p> <p>Flood event records</p> <p>There are no flood event records available for Kildimo New.</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</p> <ul style="list-style-type: none"> <i>Development in Flood Plain</i> <p>LA comments</p> <ul style="list-style-type: none"> <i>No comments</i> <p>Meeting / discussion summary comments:</p> <p>OPW comments</p> <ul style="list-style-type: none"> Properties believed to be at risk are to the north of Kildimo New, not in the centre. Embankments designed for agricultural land protection (local material, no foundation, steep sides, narrow crest) Significant issue with a breach. <p>LA comments</p> <ul style="list-style-type: none"> No significant issues known in this area (at village or towards embankments) Any issues in the village tend to be associated with lack of local drainage and bad piping; but nothing significant. |

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| 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 | 10 | |
| | Monument_LV_Weighted_T_E | 30.1 | |
| | Total: | 1414.79 | |
| 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 | | |
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| Date and Time of Inspection | | Date: 13/04/11 and 08/09/11 | | |
| | | Time: 18:00 and 10:00 | | |
| Names of inspection team (including OPW/LA staff if present) | | Iain Blackwell (13/04/11) | | |
| | | Kelly Kasperczyk (13/04/11) | | |
| | | Iain Blackwell (08/09/11) | | |
| | | Peter Smyth (08/09/11) | | |
| 2.1 Ground-truthing of Hazard Mapping | Fluvial non-tidal <input type="checkbox"/> Fluvial tidal <input checked="" type="checkbox"/> Coastal <input type="checkbox"/> Not available <input type="checkbox"/> Hazard map extends to the northeast of Kildimo New – this appears to be reasonable, following the topography indicated by the DTM maps. Kildimo New itself does not fall within the extents of the PFRA flood hazard extents. | | | |
| 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) |
| | Residential properties | Various – main properties under consideration are in the housing estate at the eastern end of the village. | Y | L |
| 2.3 Local knowledge - on-site comments (OPW, LA and any info volunteered by local residents during visit) | No on site comments (13/04/11) Discussion with local resident who has lived there for many years, living adjacent to the drain / small watercourse at the western end of Kildimo New. There have never been any issues with flooding in the area to his knowledge. (08/09/11) | | | |
| 2.4 Comments on hydraulic constrictions (bridges, etc.) and conveyance routes | No major restrictions observed in Kildimo New on the two drains / minor watercourses which cross the N69, flowing from south to north. There are culverts at both locations, but upstream catchments are extremely small (less than around 1km ²) and culvert capacities appear adequate. | | | |

| 2.5 SVRS Assessment Matrix | | | | | | | | | | | | |
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| 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 | x | | | 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 | | | | 200 | | | | 400 | | | |
| Environmental Designated Site | 20 | | | | 200 | | | | 400 | | | |
| Hazardous Substances Site | 50 | | | | 500 | | | | 1000 | | | |
| Total SVRS | | | | | | | | | 100 | | | |
| 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 type="checkbox"/> Single Span bridge <input type="checkbox"/> Multi-Span bridge <input type="checkbox"/> Box culvert(s) <input type="checkbox"/> Pipe culvert(s) <input type="checkbox"/> Arch Culvert(s) <input checked="" 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 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"/> | | | | | | | | | | | |

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| | <p>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></p> <p>Tidal flap(s) <input type="checkbox"/> Tidal sluice(s) <input type="checkbox"/> <i>i.e. from main watercourse into estuary / sea</i></p> <p>Other Pumping Station <input type="checkbox"/> Erosion Protection <input type="checkbox"/> Sand Dunes <input type="checkbox"/></p> <p>Additional notes (if required): Embankments are northeast of Kildimo New on left bank of the River Maigue. There is very little in the way of flood defence related assets in Kildimo New which is a reflection of the absence of watercourses in the village (apart from minor drains on the east and west fringes). These drains are not considered to present any significant flood risk.</p> |
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2.8 Initial Potential Mitigation Measures

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| 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 | <p>Strategic development management for floodplain development: <input checked="" type="checkbox"/> <i>(integration of measures into strategic development proposals)</i></p> <p>Storage: On-line <input type="checkbox"/> Off-line <input checked="" type="checkbox"/></p> <p>Flow diversion: Flood relief channel <input type="checkbox"/> Flood relief culvert <input type="checkbox"/></p> <p>Increase conveyance: Bridge works <input type="checkbox"/> Channel works <input type="checkbox"/> Floodplain <input type="checkbox"/></p> <p>Flood defences: Walls <input type="checkbox"/> Embankments <input checked="" type="checkbox"/></p> <p>Localised works: Defence raising <input checked="" type="checkbox"/> In-fill gaps <input type="checkbox"/> Trash screen <input type="checkbox"/></p> <p>Maintenance works: Culvert / channel clearance <input type="checkbox"/> Asset maintenance <input checked="" type="checkbox"/></p> <p>Relocation of properties: <input type="checkbox"/></p> <p>Improve existing defences: <input checked="" type="checkbox"/> (describe) Possible improvements on the Maigue embankments would reduce the (low) risk of flooding by possible strengthening / reprofiling, making the best use of the existing significant embankments.</p> <p>Other (describe):</p> |

| Outcomes | | | | |
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| PFRA Designation | APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/> | | FRI Score: 1414 | |
| Site Ground-truthing of PFRA Assessment (hazard mapping and receptors) | High Confidence (good) | Uncertain | Low Confidence (poor) | Not available |
| | X | | | |
| Site Visit Review Score | 100 | | | |
| Recommended Designation | APSR <input type="checkbox"/> | not an APSR <input checked="" type="checkbox"/> | IRR <input type="checkbox"/> | |

**Summary Comments
(if required)**

The River Maigue and tributaries are not considered to pose significant flood risk at Kildimo New village, although there is conceivably a very low risk.

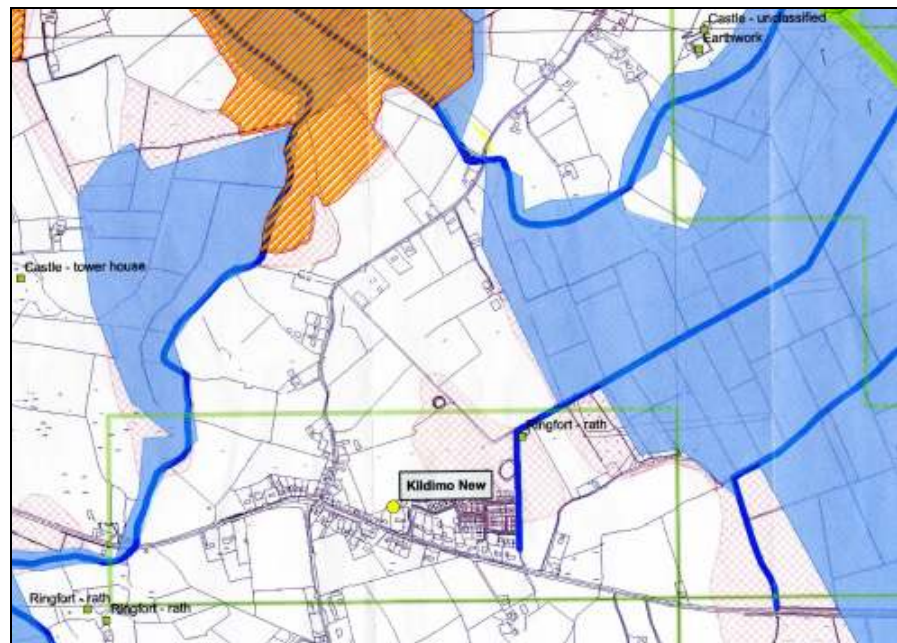
There is no record of flooding of properties from the overtopping of the embankments. A basic analysis of historic water levels at the gauge at Ferry Bridge (2.5km east) shows that the event on 01-Jan-02 is likely to be around the 2% AEP event, and did not result in any flooding. Assuming a breach in the embankment of 1m below the embankment crest and 500m wide (**considered to be a major, and very unlikely breach scenario**) during a similar water level event as the 01-Jan-02 event (approximately 3.98m (Malin Head)) indicates that no properties in Kildimo New are likely to be flooded. The lowest properties in Kildimo New are those at the northeast edge of the housing estate at the eastern end of Kildimo New. The ground level in this area is estimated to be around 3.2m (Malin Head) with property thresholds being slightly higher.

The reason the flood risk associated with a major breach of the Maigue embankment is low at Kildimo New is due to the very large storage capacity on the tidal flood plain between Kildimo New and the River Maigue. This area is estimated to be at least 5km² (in the immediate locale), at a level typically around 1.5m (Malin Head), and therefore has a huge capacity to store flood water.

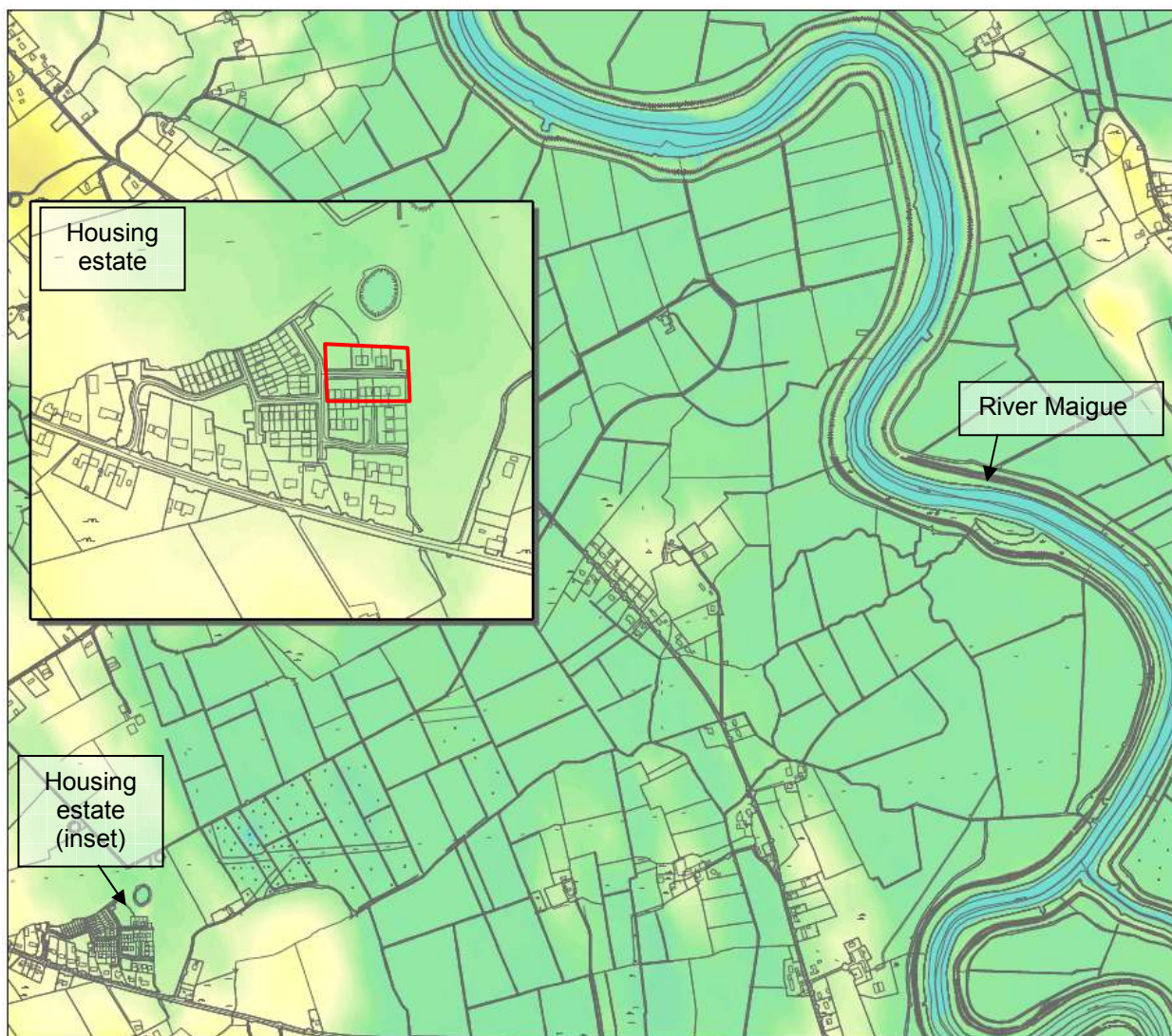
The flood mapping extents appear reasonable, reflecting the topography of the area, with Kildimo New itself being located on slightly raised ground. This is apparent from the flood mapping shown below, where the blue shaded area is from the PFRA mapping, strongly reflecting the location of the low lying land. The plan on the following page shows a colour coded relief plan of the area between Kildimo New and the River Maigue.

It is noted that in the event of a breach of the Maigue embankments, the townland of Faha, north-east of Kildimo New, could be considered to be at potentially significant risk. However, this is well outside the APSR boundary for Kildimo New.

The FRI score of 1414 is derived largely from residential and commercial properties that are dispersed over a wide area, and NOT located in Kildimo New.



On the basis of the above analysis, whilst there is some flood risk, it is not considered to be significant, and therefore, it is recommended that Kildimo New is NOT designated as an APSR.



This plan shows the relief of the local area, with the green showing the lowest lying land. Ground levels across much of the floodplain (from the NHDM) are typically 1.5m (Malin Head); ground levels at the lowest point on the housing estate are around 3.2m (Malin Head). This area is within the red boundary shown on the inset plan above.



Photo 1: Looking u/s from N69 bridge crossing at the only watercourse in Kildimo New (extreme eastern end of the village). Kildimo New is located on high ground relative to the low lying area to the northeast. (image from Google)



Photo 2: Properties on housing estate on eastern edge of New Kildimo.



Photo 3: Eastern edge of housing estate (looking south towards N69). Properties are located on ground typically 0.8-1m higher than land immediately to the east.



Photo 4: New Kildimo Looking d/s from the culvert crossing on the N69 at the eastern edge of the village. Property in the distance is on the edge of the housing estate. Minor watercourse is located adjacent to the trees on the left.



Photo 5: Road crossing of culvert for minor watercourse west of Kildimo New (outside the village). No significant flood risk posed by this watercourse.



Photo 6: Watercourse downstream of crossing (shown in Photo 5) located in rural area with only a few properties located nearby (not at significant risk).



Photo 7: River Maigue from the left bank (top of embankment) northeast of Kildimo New.



Photo 8: Low lying land behind the Maigue embankment on the left bank, northeast of Kildimo New near Faha. Ground level here is estimated to be around 1.5 to 2.0m below the ground level at the housing estate.

