APPENDIX II
STRATEGIC FLOOD RISK ASSESSMENT

FOR THE

LONGFORD COUNTY DEVELOPMENT PLAN 2009-2015

VARIATION NO. 1

for: **Longford County Council**

Great Water Street,

Longford,

Co. Longford

by: **CAAS Ltd.**

2nd Floor, The Courtyard,

25 Great Strand Street,

Dublin 1

SEPTEMBER 2012

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Section 1 Introduction and Background

1.1 Introduction

Variation No. 1 does not provide for any significant increases in land zoned for development however it does provide for the phasing of already zoned lands, with the application of both Strategic Industrial and Residential Reserve objectives. Notwithstanding this, a desk-based Strategic Flood Risk Assessment was undertaken alongside the SEA of the Variation in order to contribute towards compliance of the County Development Plan as varied with the DEHLG Flood Guidelines.

1.2 EU Floods Directive

European Directive 2007/60/EC on the assessment and management of flood risks requires Member States to carry out a preliminary assessment by 2011 in order to identify the river basins and associated coastal areas at risk of flooding. For such zones, flood risk maps are required to be drawn up by 2013. Flood risk management plans focused on prevention, protection and preparedness must be established by 2015. The Office of Public Works has prepared Preliminary Flood Risk Assessment maps which identify areas where the risks associated with flooding might be significant. These areas, Areas for Further Assessment (AFAs), are where more detailed assessment is required to more accurately assess the extent and degree of flood risk.

1.3 DEHLG Flood Risk Management Guidelines

In 2009 the DEHLG published *The Planning System and Flood Risk Management* Guidelines for Planning Authorities. These are aimed at ensuring a more consistent, rigorous and systematic approach which will fully incorporate flood risk assessment and management into the planning system. Planning authorities are required to undertake flood risk identification, assessment and management processes as appropriate when preparing or varying Development Plans and other plans and in the consideration of applications for planning permission.

1.4 Information Considered

1.4.1 Flood Extents and Events Mapping

A flood event is the occurrence of recorded flooding at a given location on a given date. The Flood event is derived from different types of information (reports, photographs etc.). A flood event that has occurred more than once at a certain area is named a recurring flood event. Recorded flood event and extent information for the County sourced from the OPW is shown on Figure 1.1. Section 2 of this document includes, inter alia, the zoning maps of each of the Variation settlements with flood extent/event mapping overlain where relevant.

1.4.2 Preliminary Flood Risk Assessment Mapping

In compliance with the Floods Directive, the OPW has prepared Preliminary Flood Risk Assessment (PFRA) mapping. This dataset has been arrived at by:

- Reviewing records of floods that have happened in the past;
- Undertaking analysis to determine which areas might flood in the future, and what the impacts might be; and
- Extensive consultation with each local authorities and other Government departments and agencies.

This assessment has considered all types of flooding, including that which can occur from rivers, the sea and estuaries, heavy rain, groundwater, the failure of infrastructure, and so on. It has also considered the impacts flooding can have on people, property, businesses, the environment and cultural assets.

Areas where on-site inspection is required to investigate the issues more closely have also been identified and these investigations will be carried out as part of OPW Catchment Flood Risk Assessment and Management (CFRAM) Studies.

The PFRA is only a preliminary assessment, based on available or readily derivable information. Analysis has been undertaken to identify areas prone to flooding, and the risks associated with such flooding, but this analysis is purely indicative and undertaken for the purpose of completing the PFRA. The mapping has been developed using simple and cost-effective methods.

When it is finalised, the PFRA mapping and subsequently the mapping for areas of potentially significant risk which will arise out of CFRAM Studies which are scheduled to be produced by 2013 will be an important and primary input into future flood risk assessment studies.

The PFRA mapping should be used - in line with the provisions contained in the DEHLG Flood Guidelines - as follows (see Figure 1.2):

Indicative Flood Risk Zone A (Dark Blue):

- PFRA Fluvial 100[1]

Indicative Flood Risk Zone B (Light Blue):

- PFRA Fluvial 1000[2]

Section 2 of this document includes, inter alia, the zoning maps of each of the Variation settlements with indicative flood risk zones based on OPW PFRA mapping overlain.

With regard to pluvial and groundwater PFRA mapping, this mapping has been devised differently to the fluvial mapping and is likely to generally over-estimate the risk in comparison.

For groundwater flooding, it was determined that it would not be possible to develop model-based flood maps for groundwater emergence due to a lack of data, and so alternative methods were required based on, inter alia, the use of existing mapping of past groundwater flood events and the delineation of flood extents around turloughs based on an assumed height of flooding of 4m above the base elevation of the turlough. No specific event probability was generated for the Groundwater PFRA mapping and the mapping is likely to represent 'quite extreme events'. A Technical Report[3] available from the OPW describes the process for the development of these maps in detail.

For pluvial flooding, the process for developing the pluvial flood extent maps was based on 'dropping' various depths and intensities of rainfall over a range of durations, and modelling how that rainfall would flow over the land and, in particular, pond in low-lying areas. The rainfall events (depth, duration and intensity) were derived from the rainfall analysis undertaken by Met Eireann on behalf of the OPW for the Flood Studies Update research programme. The amount of rainfall that was absorbed by the ground or, in urban areas, drained by the urban storm-water drainage system, and hence deducted from the water that would flow overland and pond, was estimated. It must be noted however that process assumed a constant capacity of urban storm-water drainage systems and generally did not taken into account local drainage structures such as culverts through embankments or other local drainage that would not be

[1] Fluvial flooding in these areas is estimated by the model to have a 1% annual exceedance probability (AEP) or a 1 in 100 chance of occurring or being exceed in any year.
[2] Fluvial flooding in these areas is estimated by the model to have a 0.1% annual exceedance probability (AEP) or a 1 in 1000 chance of occurring or being exceed in any year.
[3] Preliminary Flood Risk Assessment, Groundwater Flooding, Mott Macdonald, 2010

resolved in the model used for the mapping at a national scale. A Technical Report[4] available from the OPW describes the process for the development of these maps in detail.

In addition to the above limitations, there are further intrinsic uncertainties associated with these flooding types e.g. pluvial flooding can be influenced by drains blocked with farm plastic, for example, and groundwater flooding can be influenced by tidal interactions. Taking this into account mapping of the following layers for each of the settlements is presented separately:

- PFRA Groundwater[5]
- PFRA Pluvial Indicative[6]
- PFRA Pluvial Extreme[7]

Where the probability of flooding from rivers is low (less than 0.1%, flood zone C) the developer should satisfy him or herself that the probability of flooding is appropriate to the development being proposed. This is provided for by Policy FLO4 which has been integrated into the Variation. Among other things, mapping including the OPW's Pluvial and Groundwater Preliminary Flood Risk Assessment mapping should be considered for this purpose.

1.4.3 Recommendations

Based on the mapping described above, recommendations with regard to zoning and future development are prescribed in Section 4 of this report.

[4] Flood Risk Assessment and Management Programme: National Pluvial Screening Project for Ireland – Rep EX6335/2.0, HR Wallingford, November 2010

[5] These areas are estimated by the model to be at risk of groundwater flooding however no specific event probability was generated for this flooding.

[6] Pluvial flooding in these areas is estimated by the model to have a 1% annual exceedance probability (AEP) or a 1 in 100 chance of occurring or being exceed in any year.

[7] Pluvial flooding in these areas is estimated by the model to have a 0.1% annual exceedance probability (AEP) or a 1 in 1000 chance of occurring or being exceed in any year.

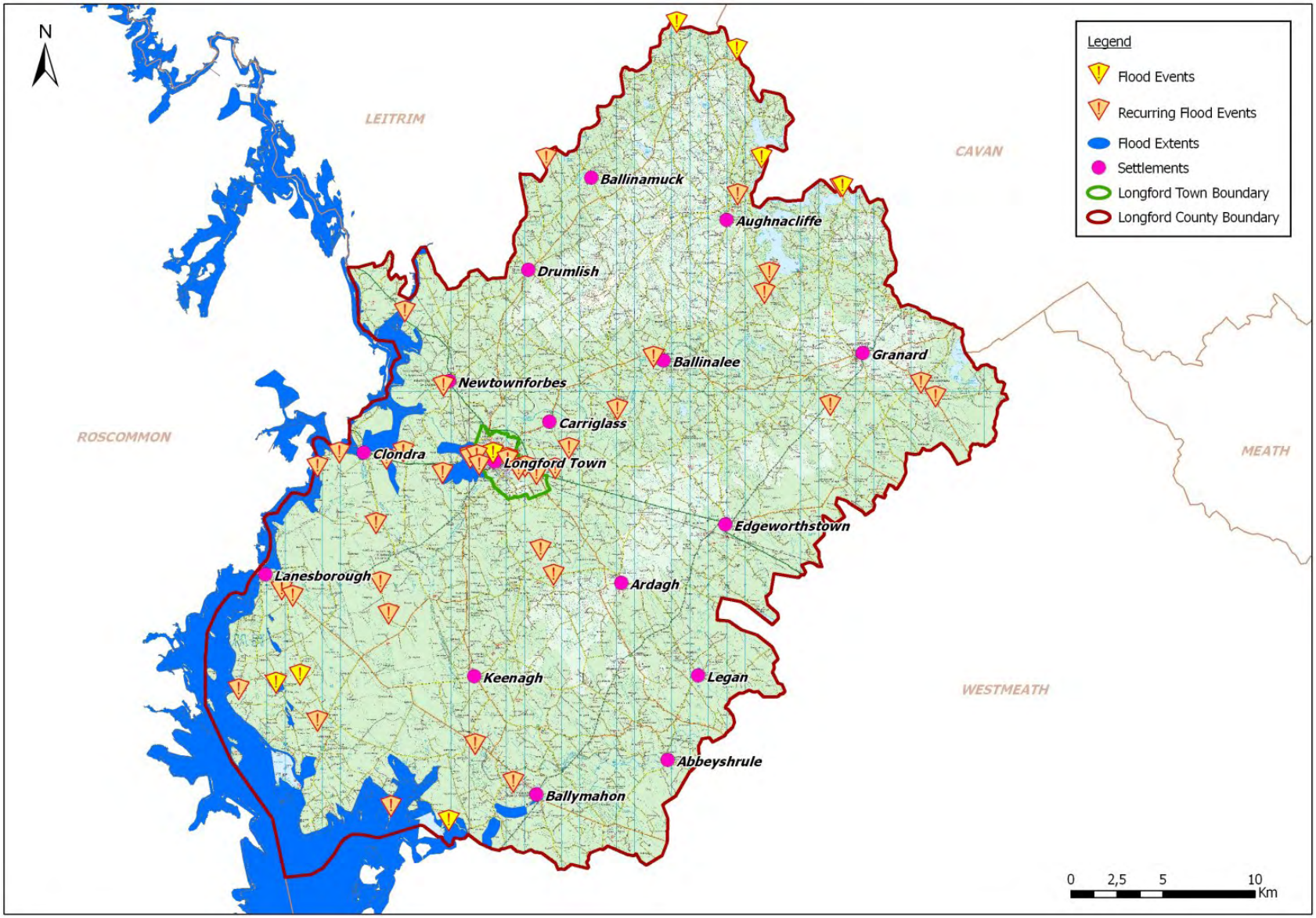


Figure 1.1 Flood Events and Extents
Source: OPW available at www.floodmaps.ie

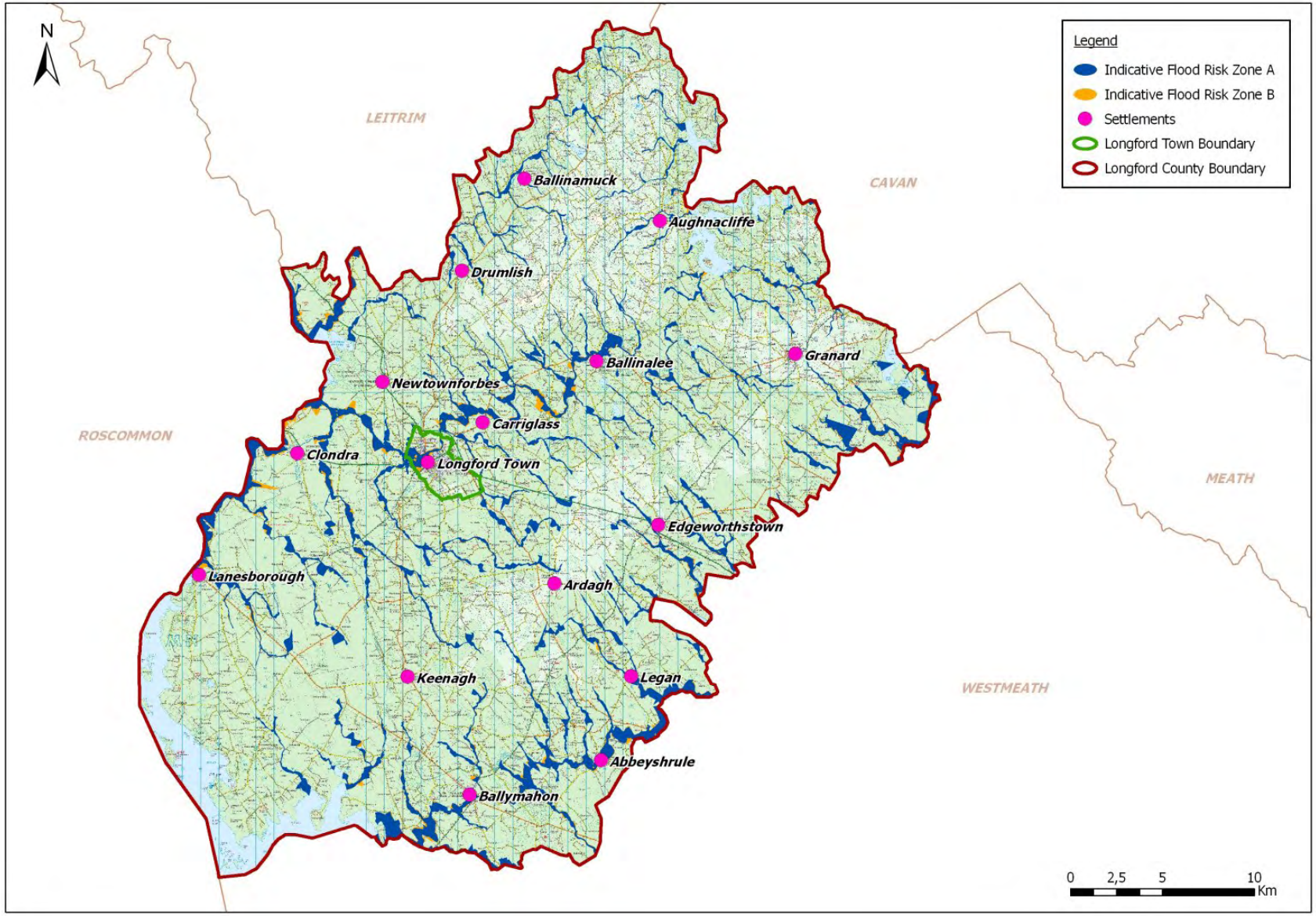


Figure 1.2 Indicative Flood Risk Zones based on PFRA Mapping
Source: OPW PFRA Mapping 2012

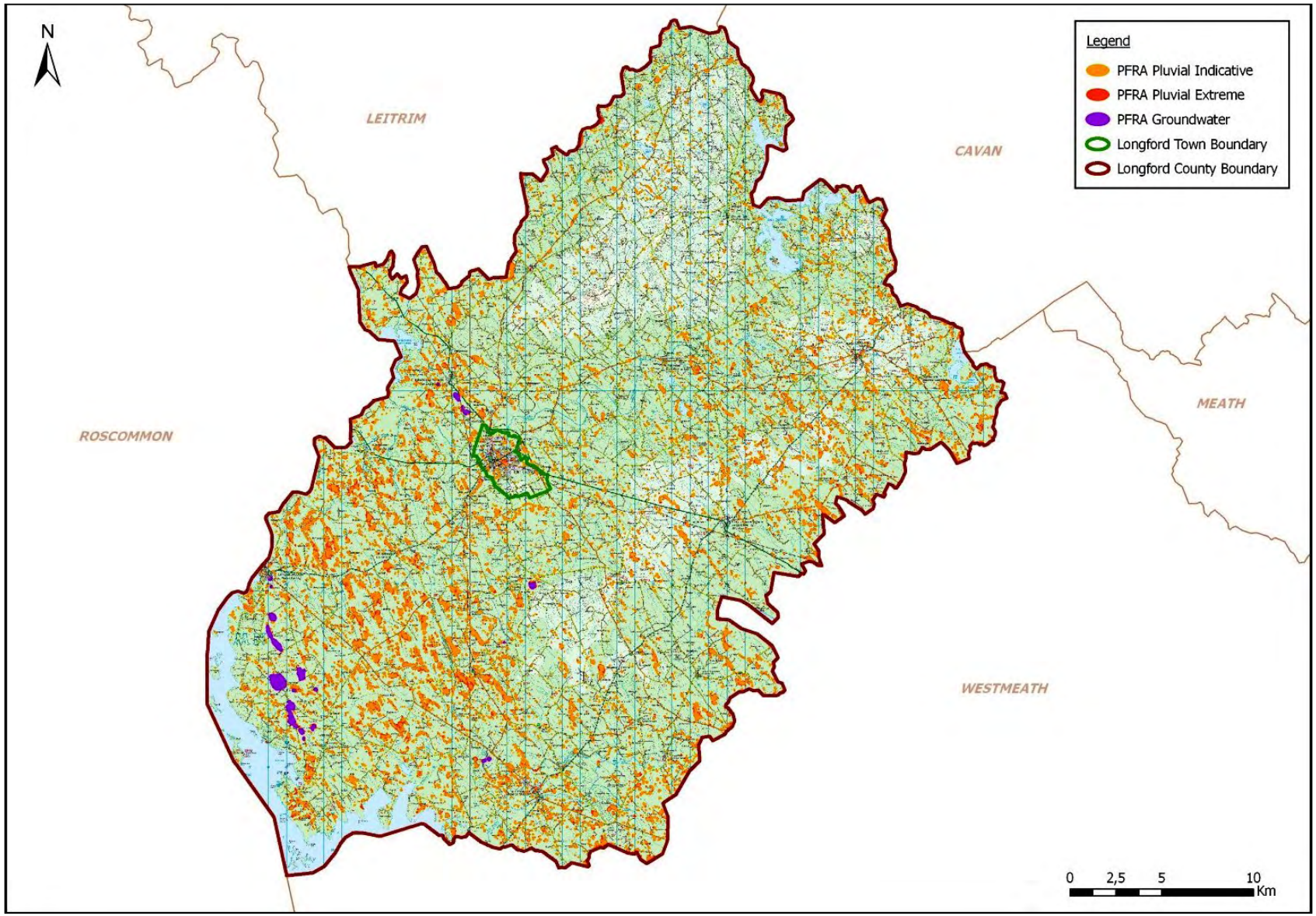


Figure 1.3 Pluvial and Groundwater Flooding
Source: OPW

Section 2 Settlement Zoning and Indicative Flood Risk Zones

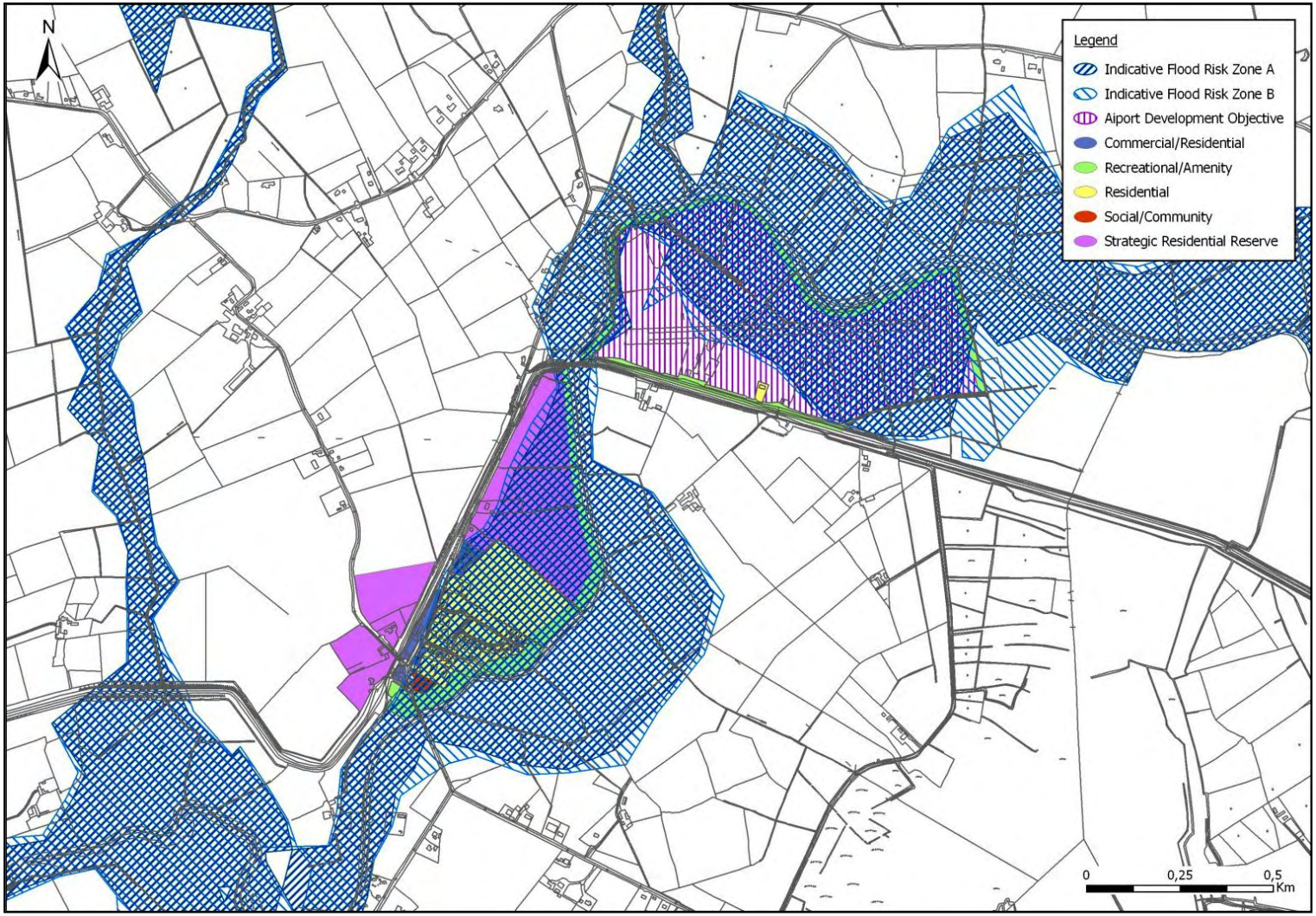


Figure 2.1 Abbeyshrule: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

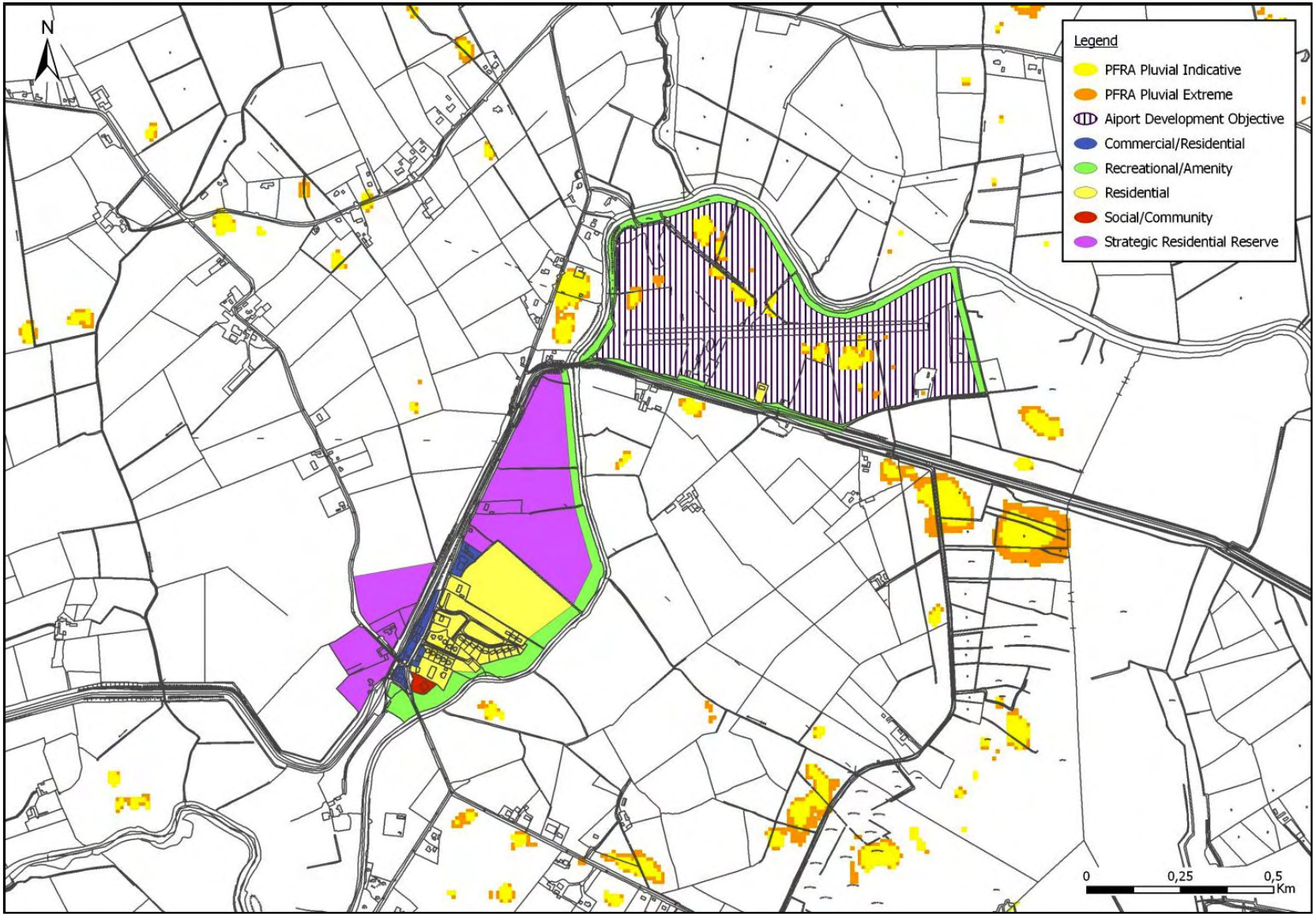


Figure 2.2 Abbeyshrule: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

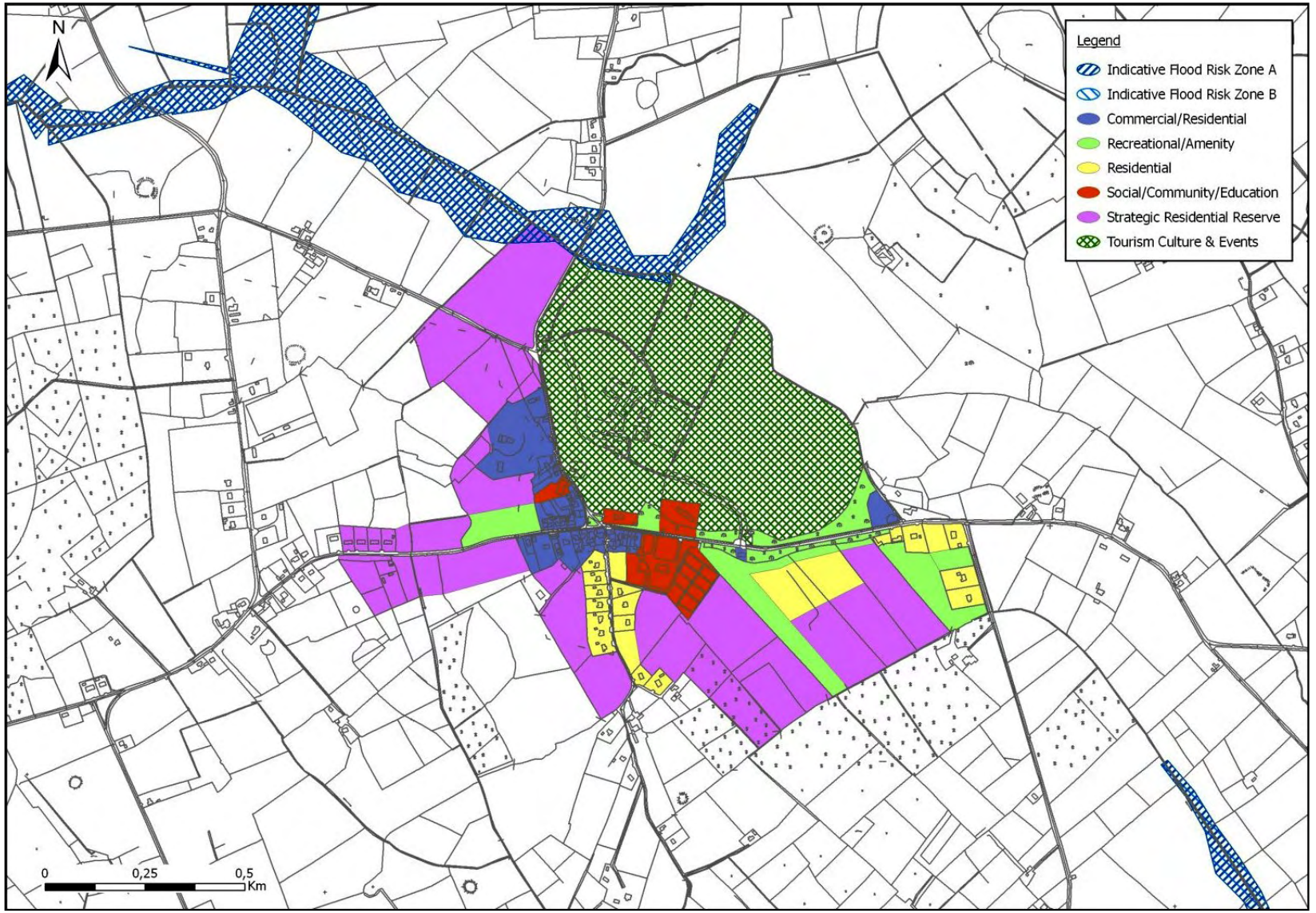


Figure 2.3 Ardagh: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

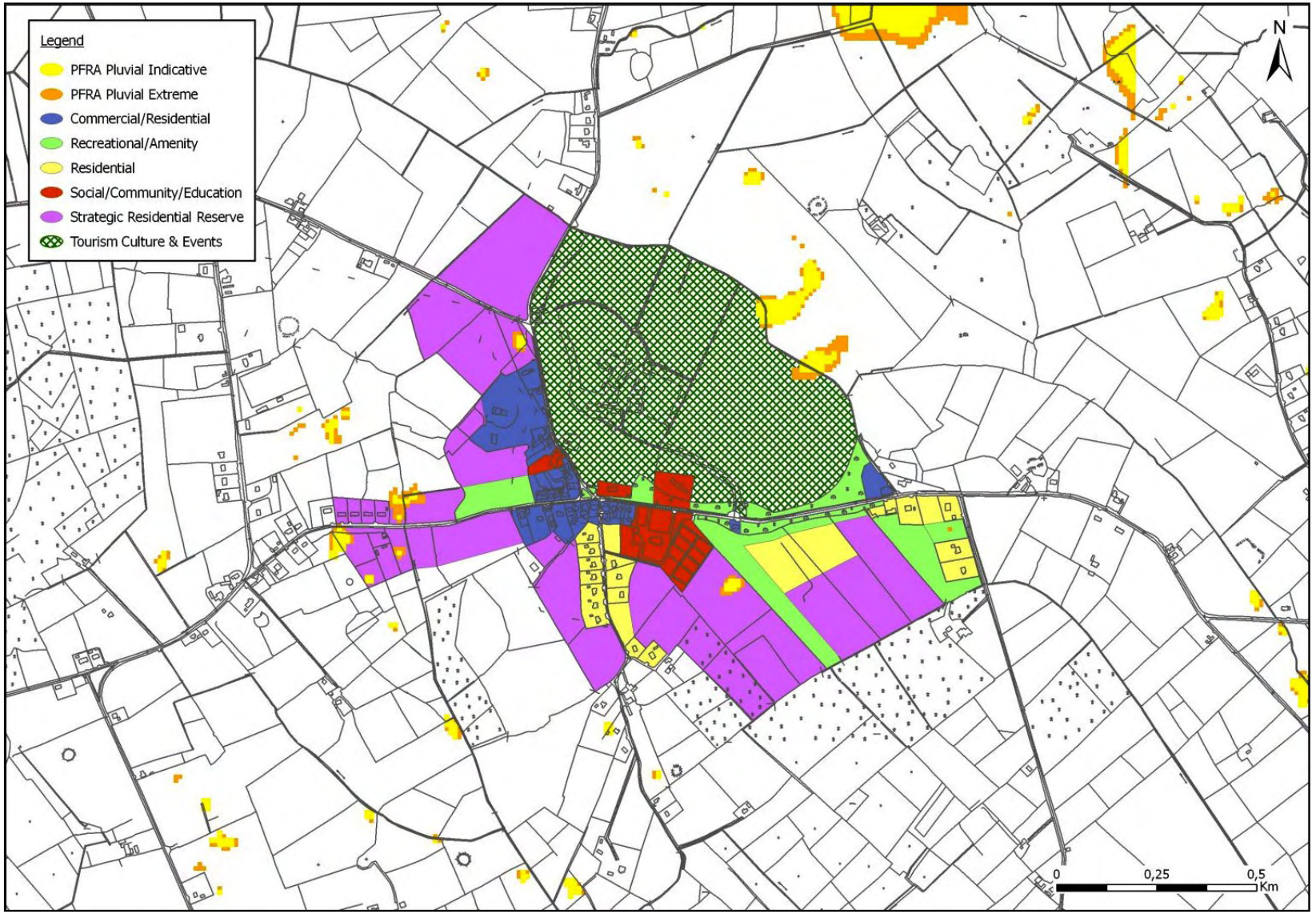


Figure 2.4 Ardagh: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

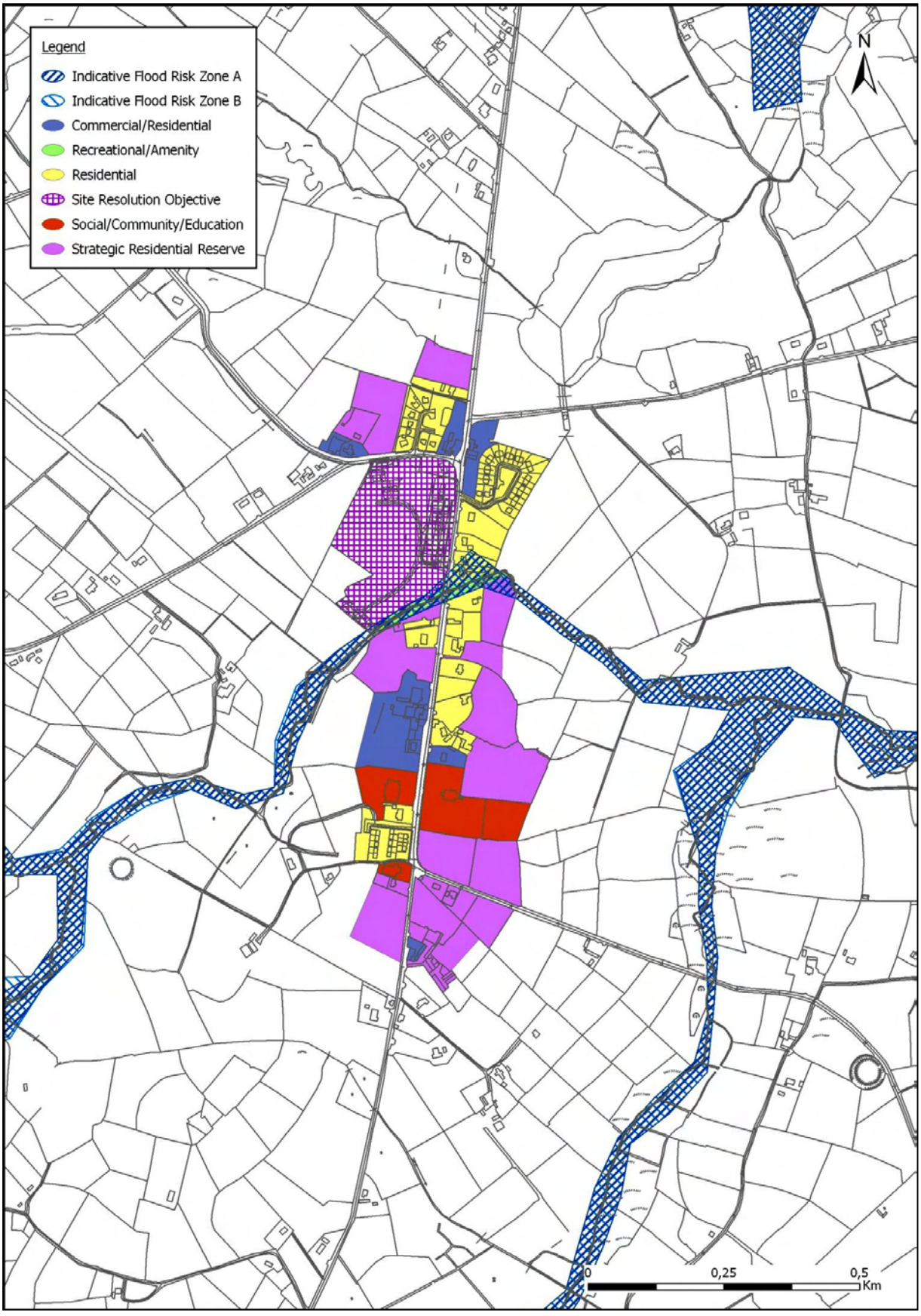


Figure 2.5 Aughnacliffe: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

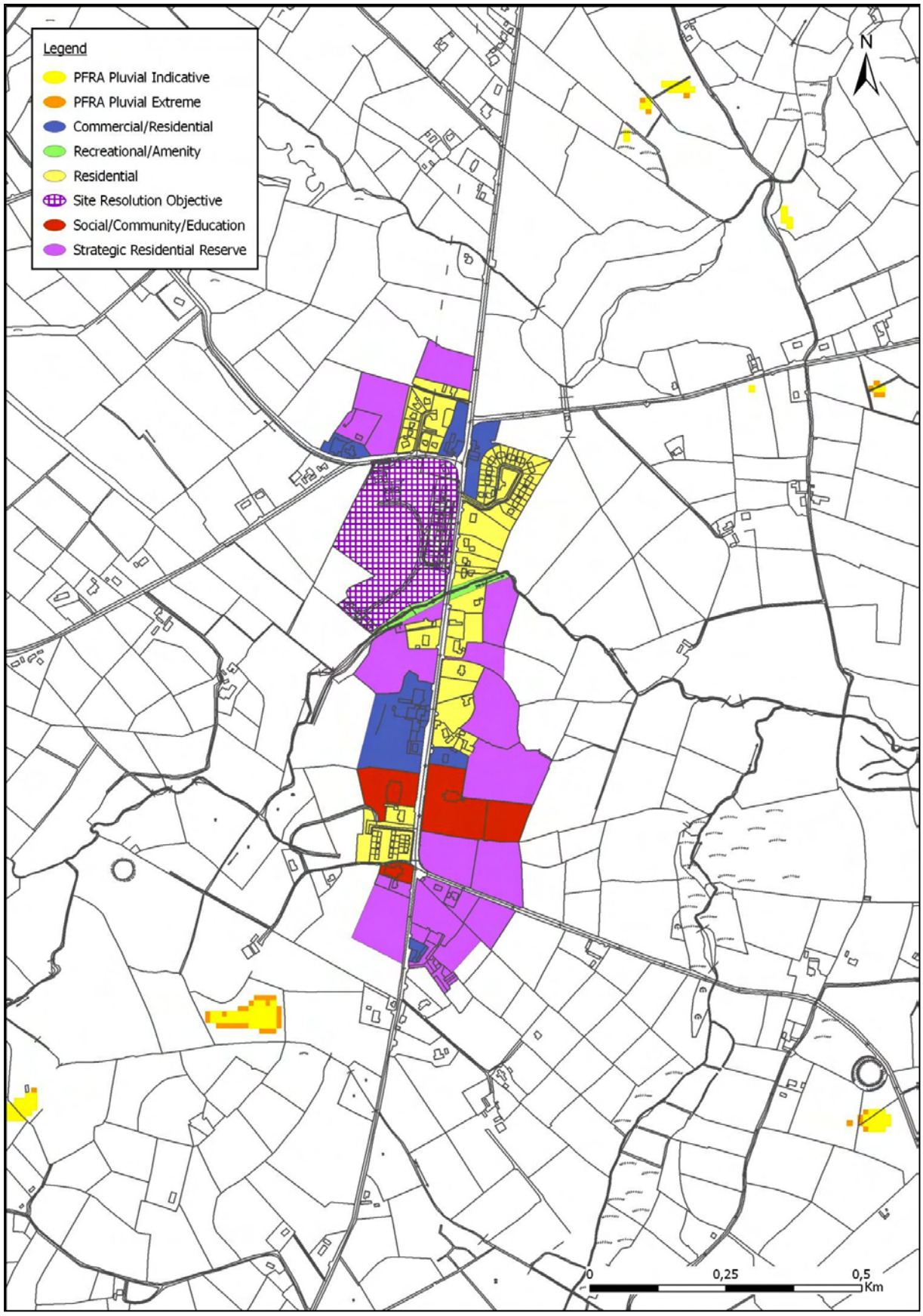


Figure 2.6 Aughnacliffe: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

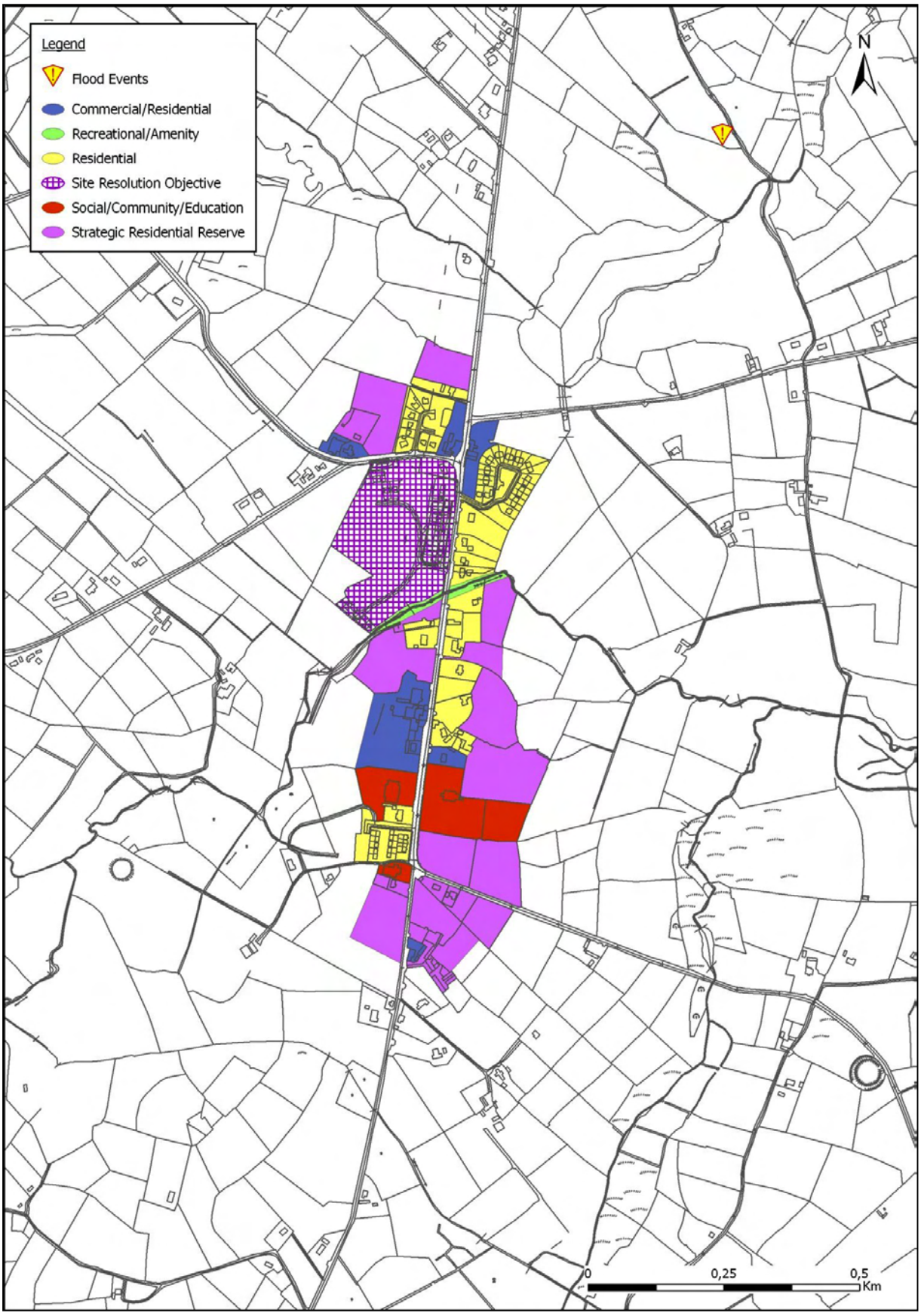


Figure 2.7 Aughnacliffe: Flood Events and Extents
Source: OPW available at www.floodmaps.ie

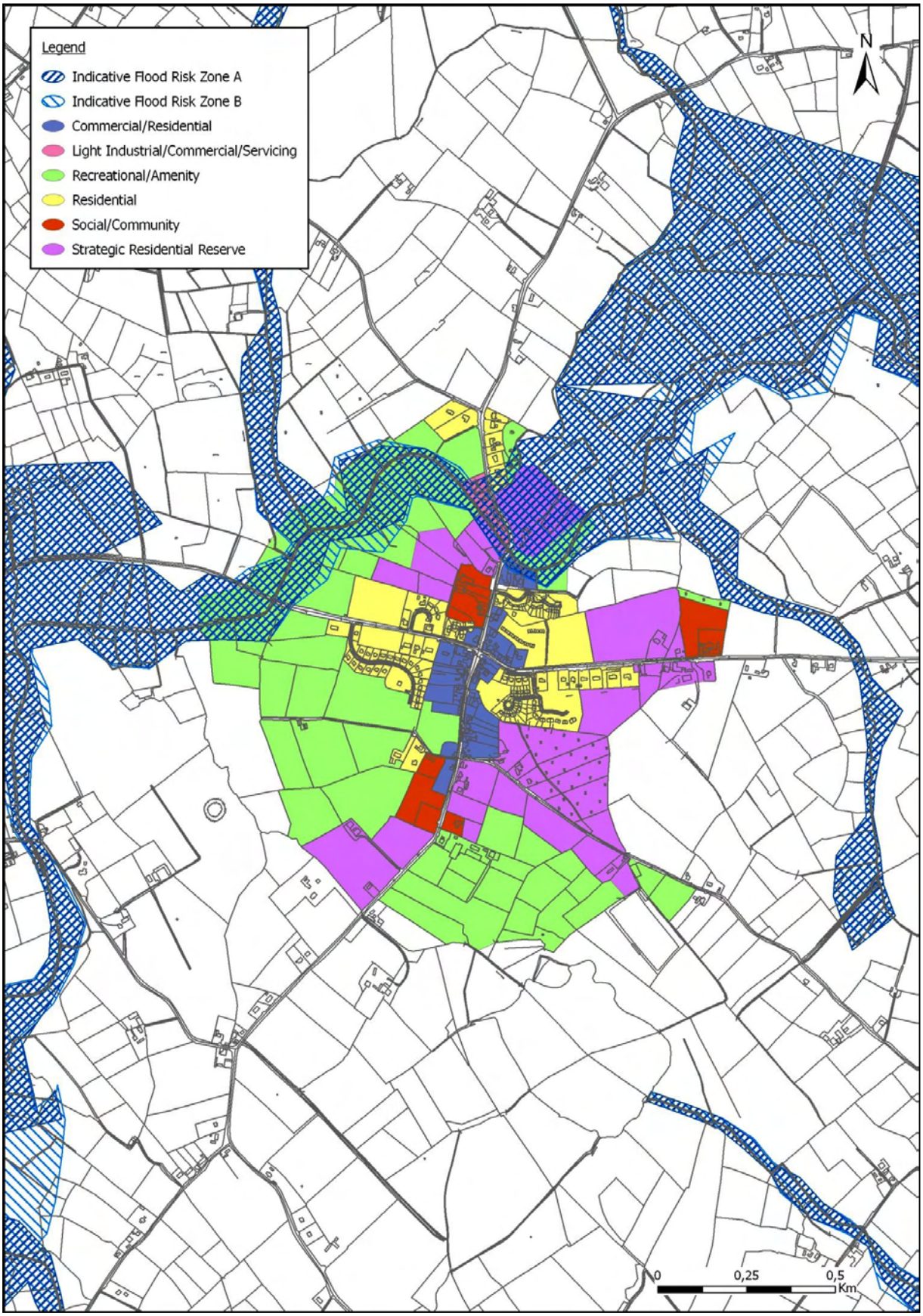


Figure 2.8 Ballinalee: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

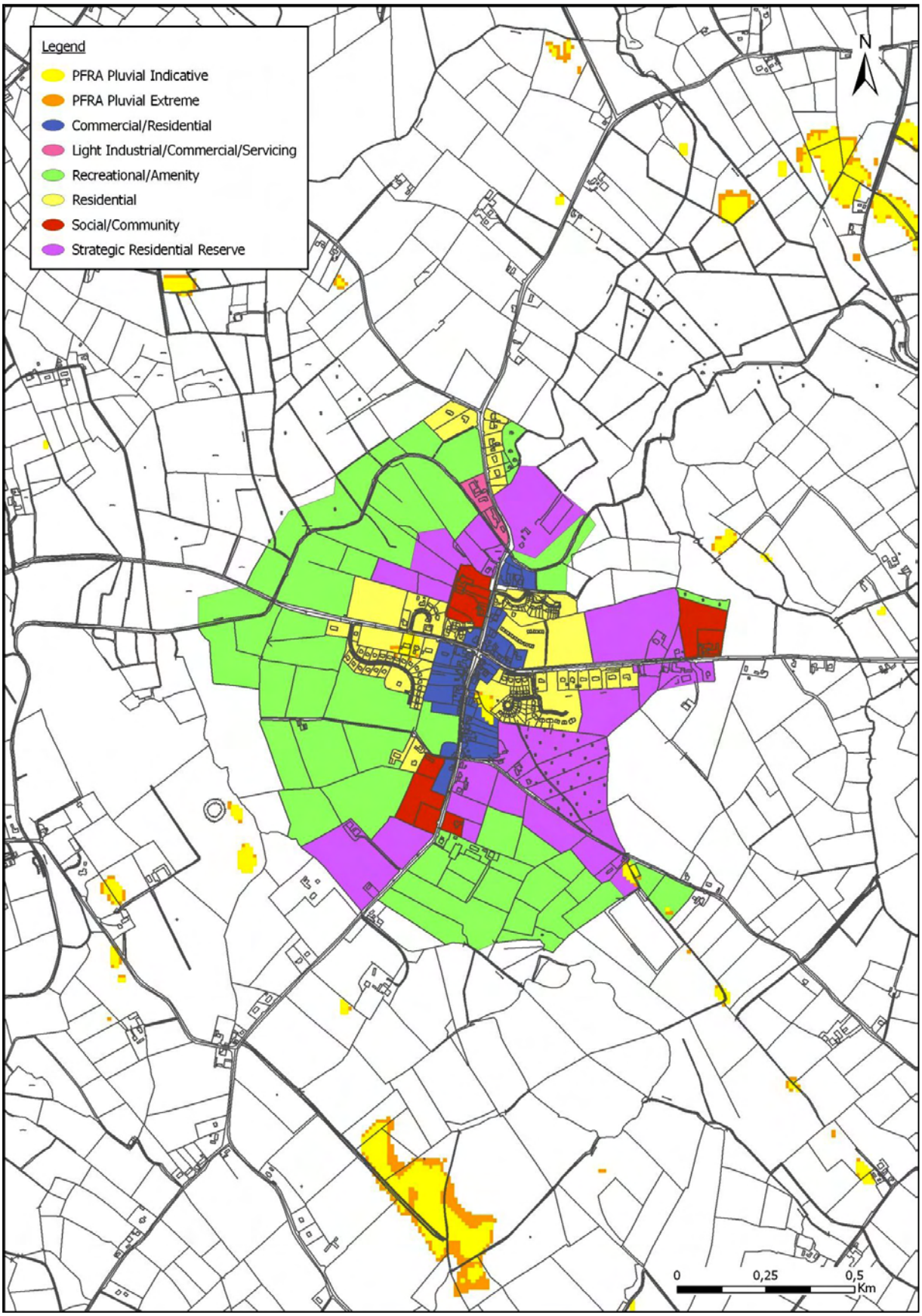


Figure 2.9 Ballinalee: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

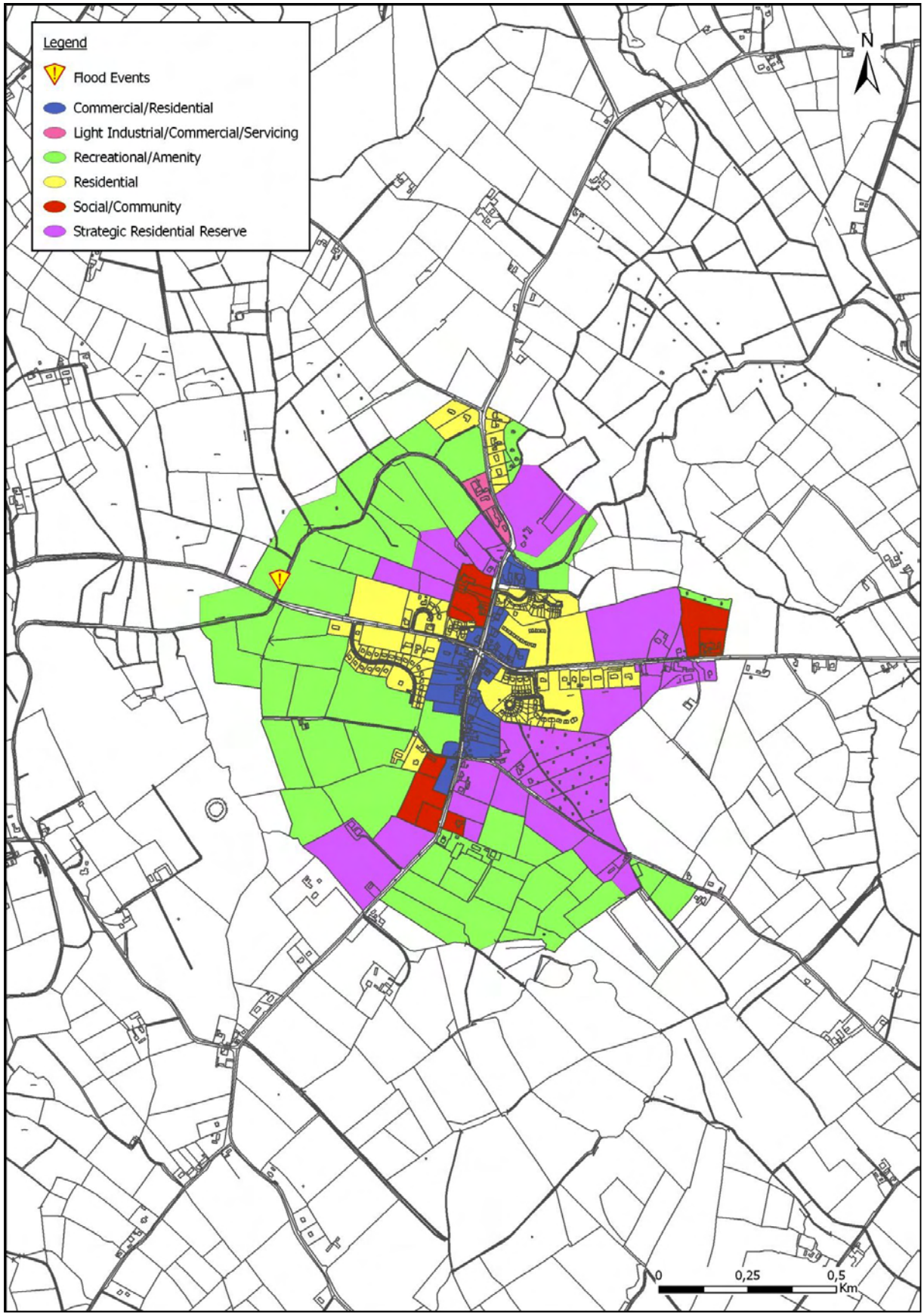


Figure 2.10 Ballinalee: Flood Events and Extents
Source: OPW available at www.floodmaps.ie

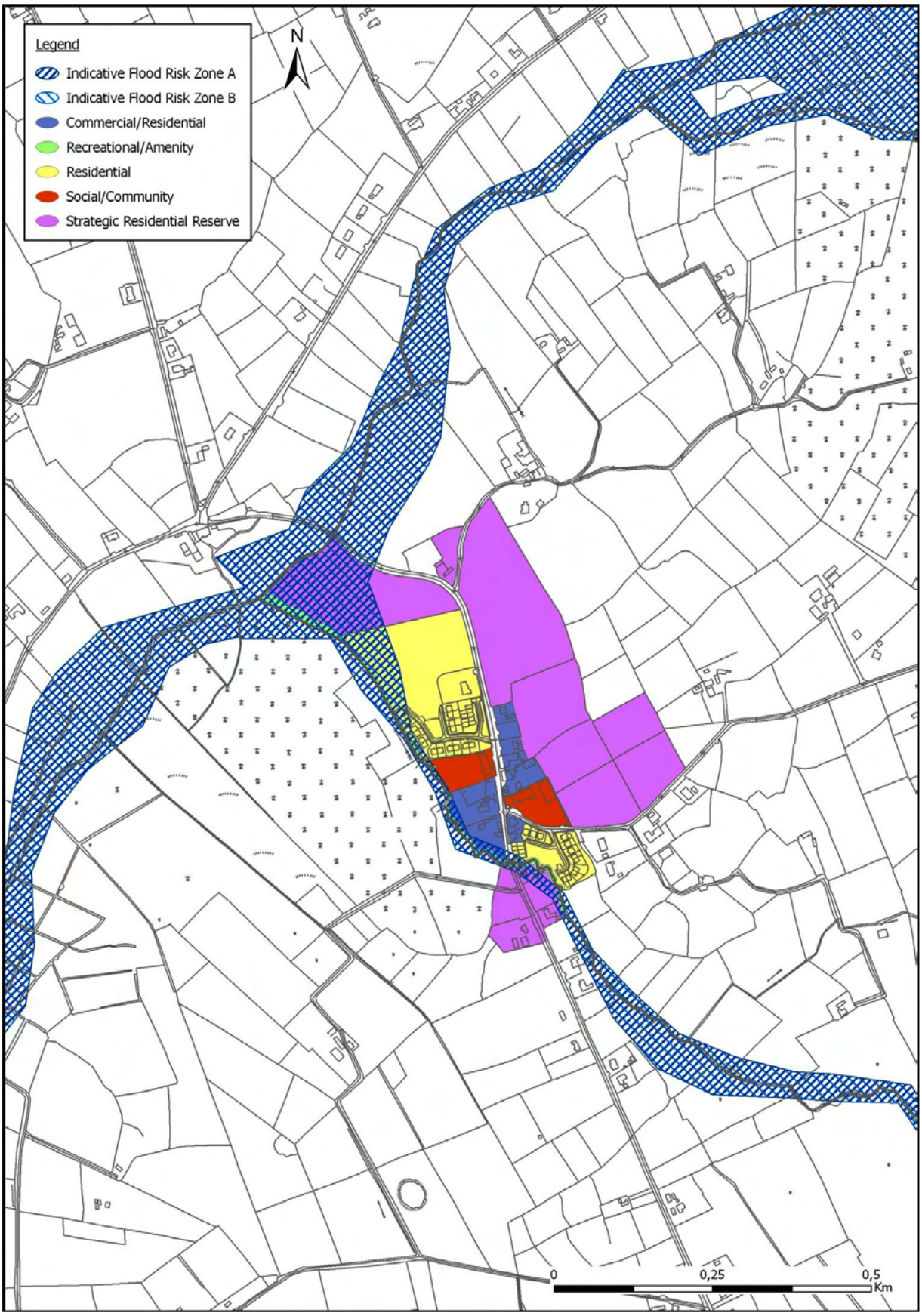


Figure 2.11 Ballinamuck: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

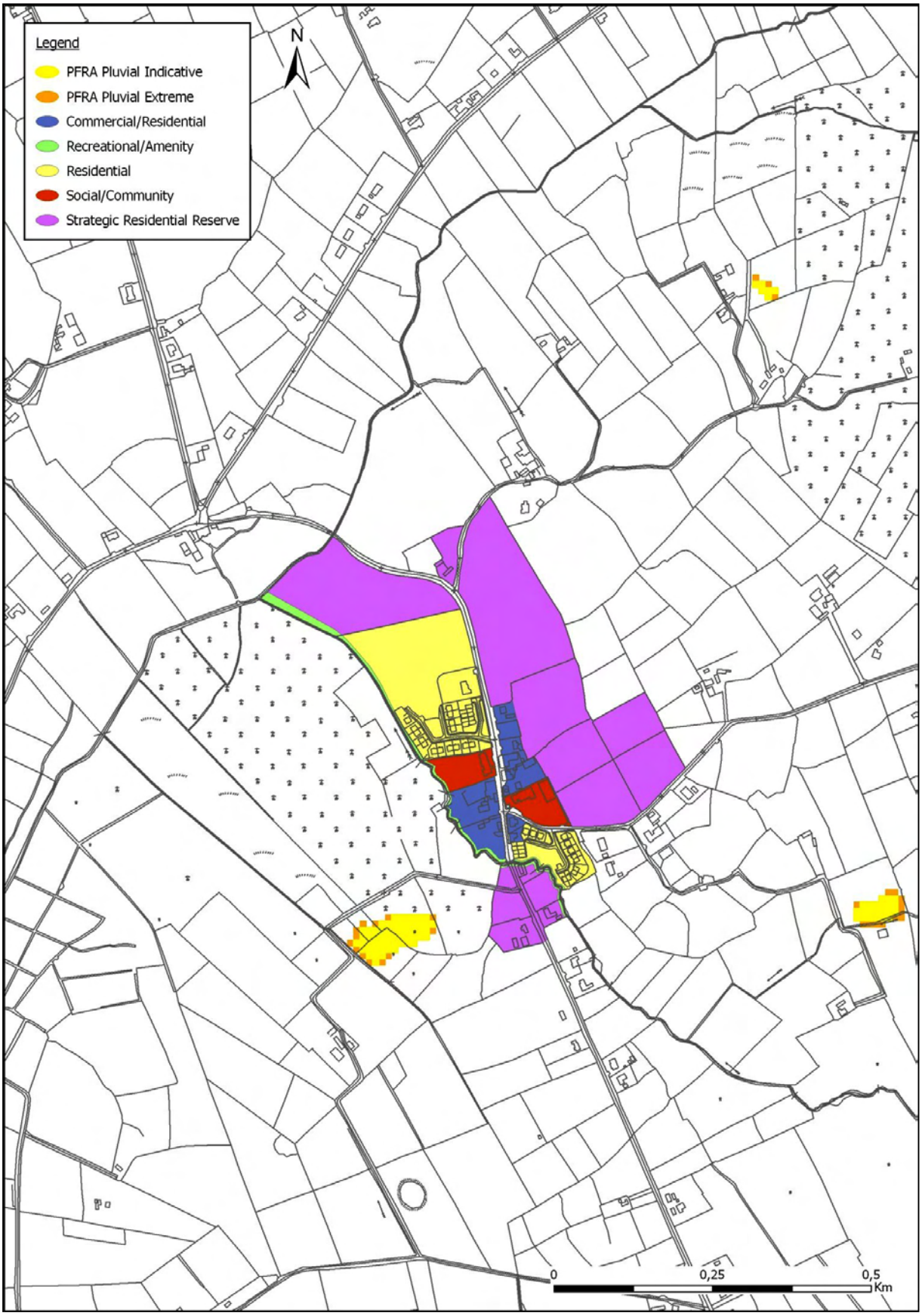


Figure 2.12 Ballinamuck: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

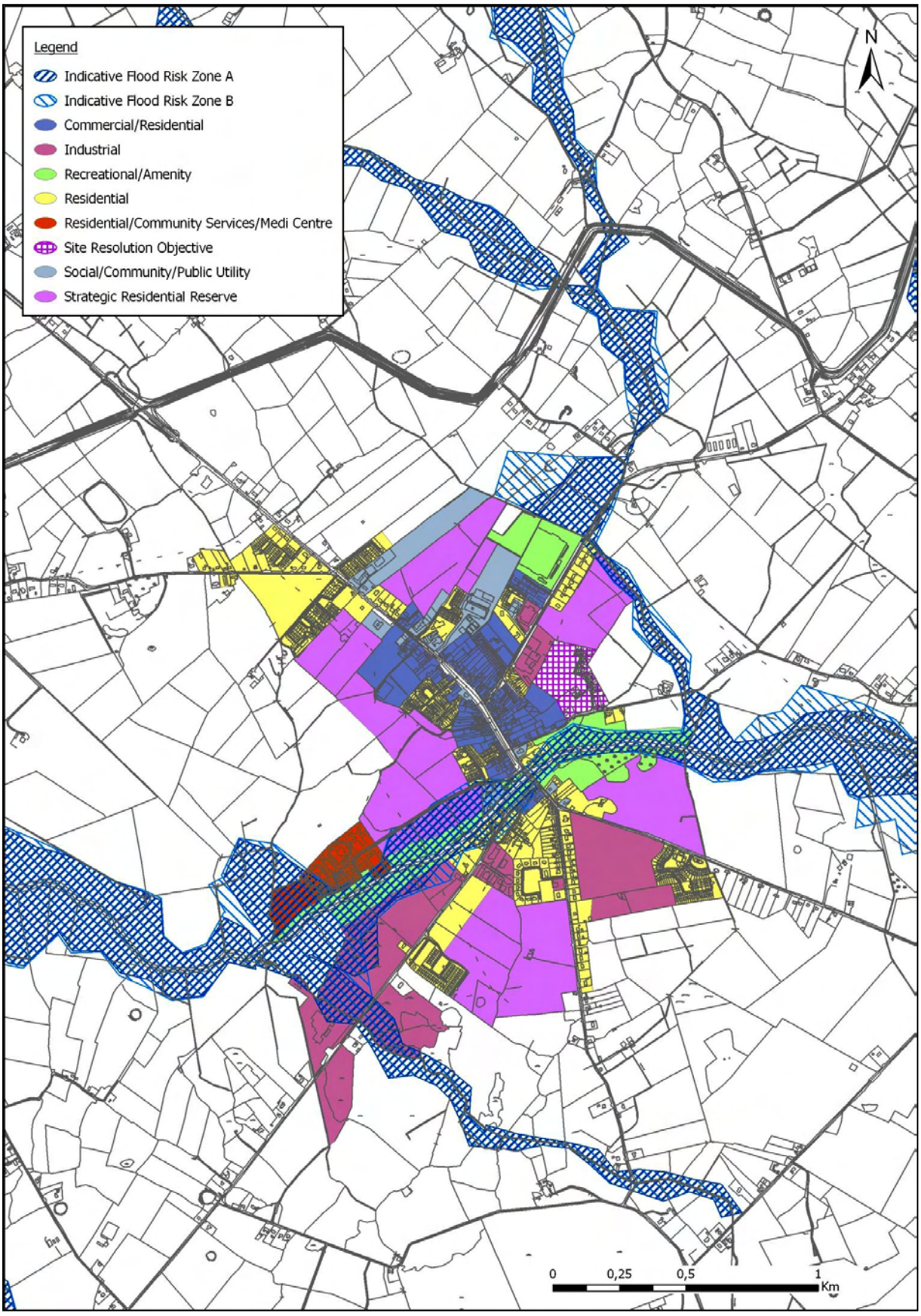


Figure 2.13 Ballymahon: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

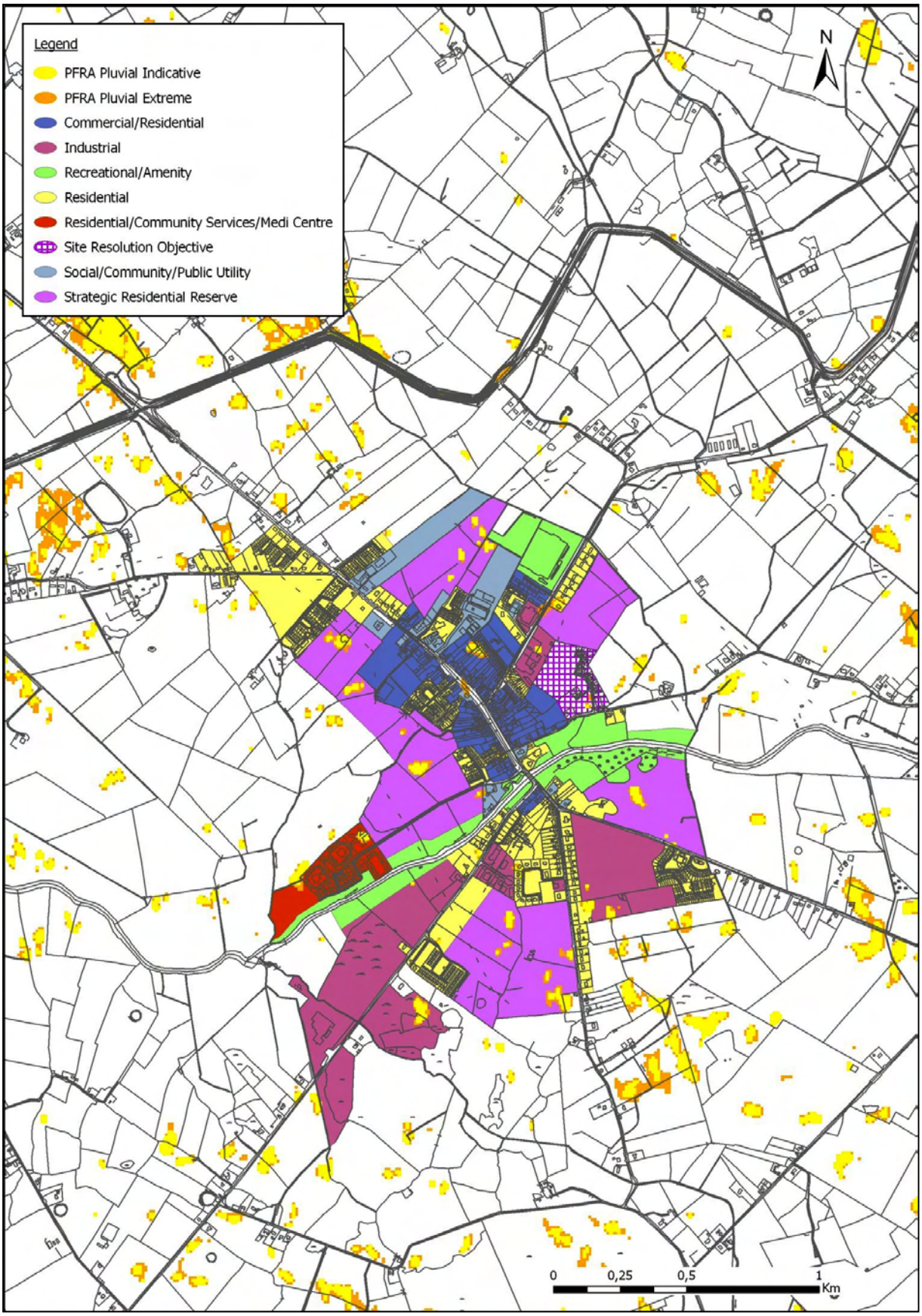


Figure 2.14 Ballymahon: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

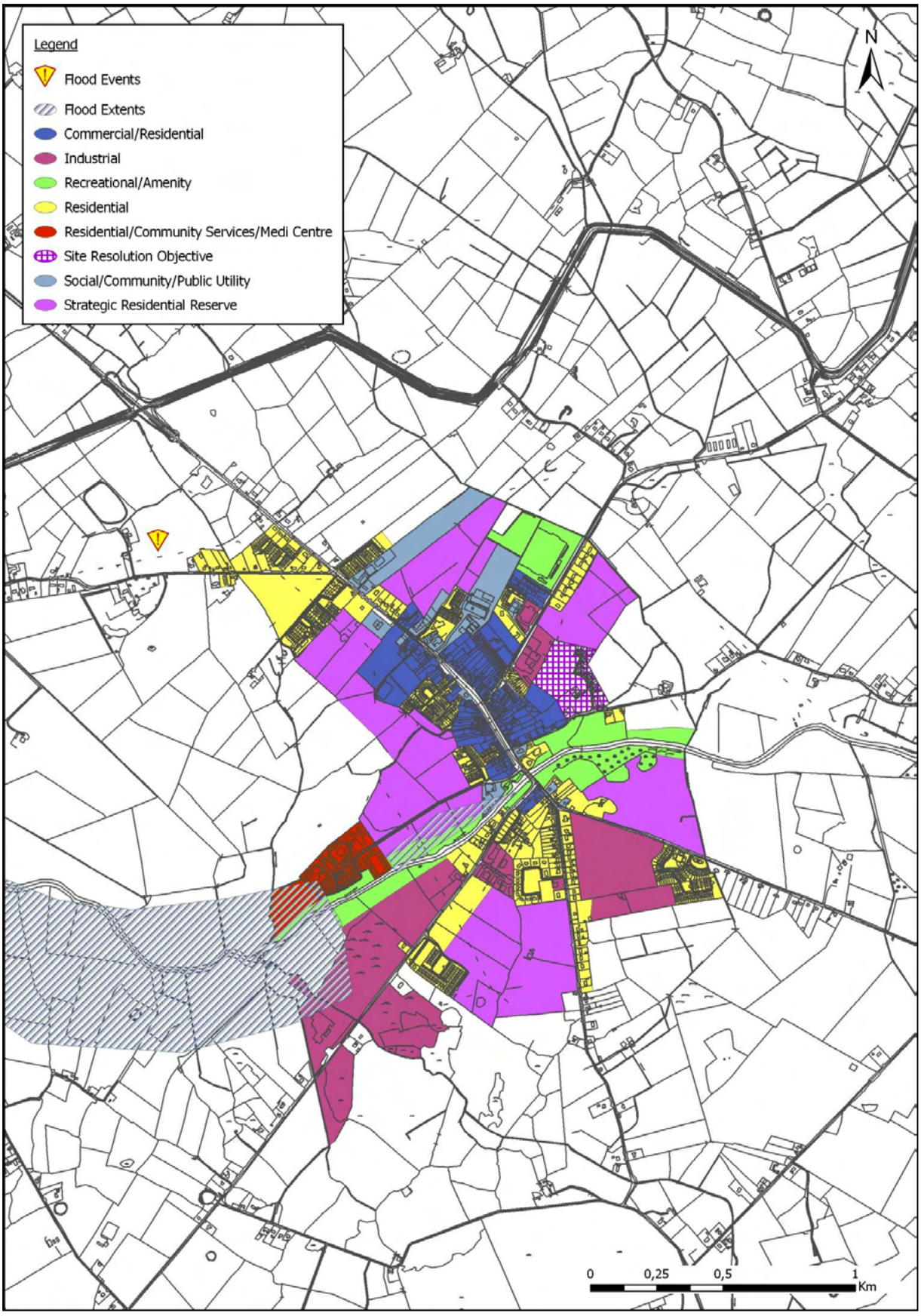


Figure 2.15 Ballymahon: Flood Events and Extents
Source: OPW available at www.floodmaps.ie

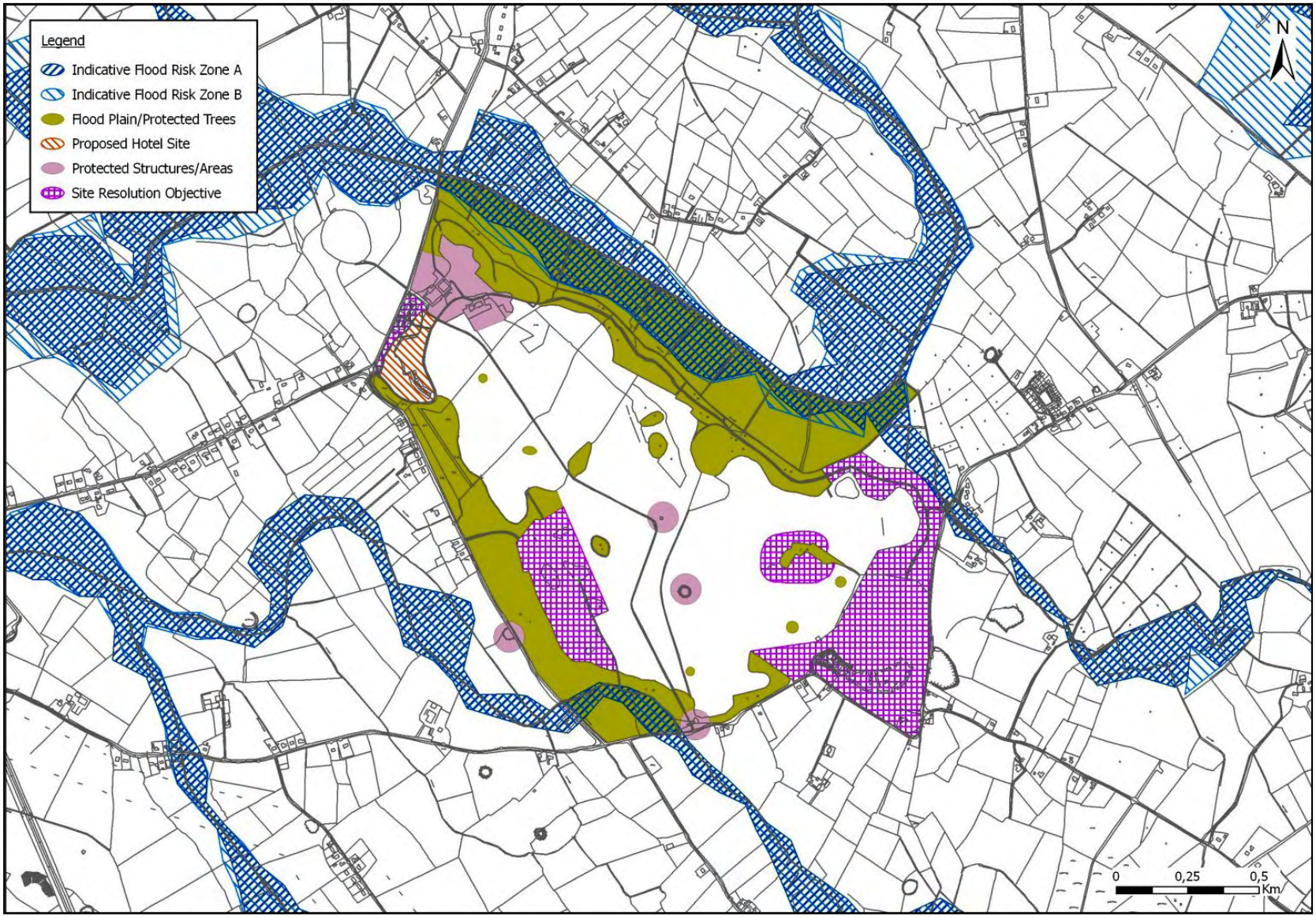


Figure 2.16 Carrickglass: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

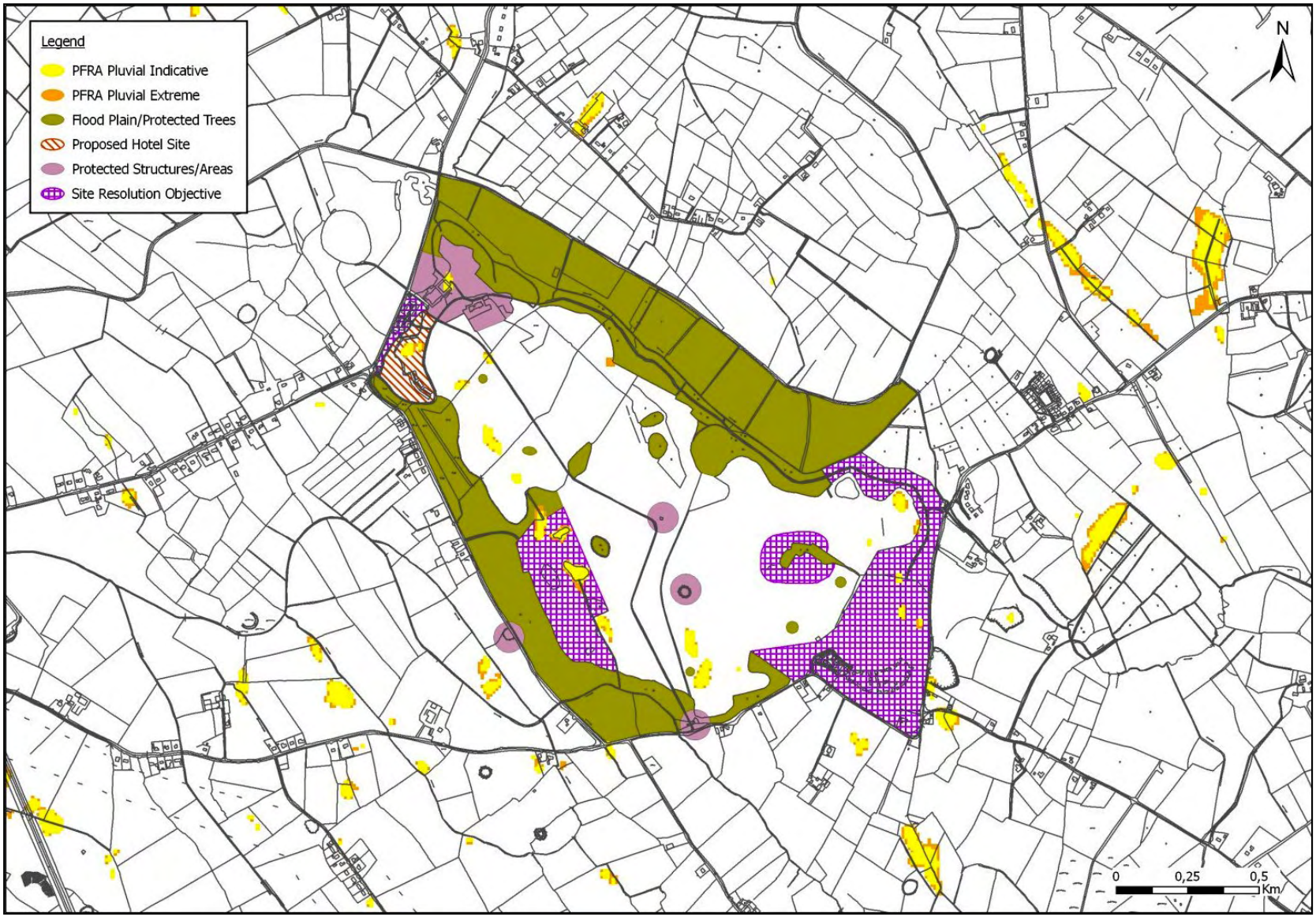


Figure 2.17 Carrickglass: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

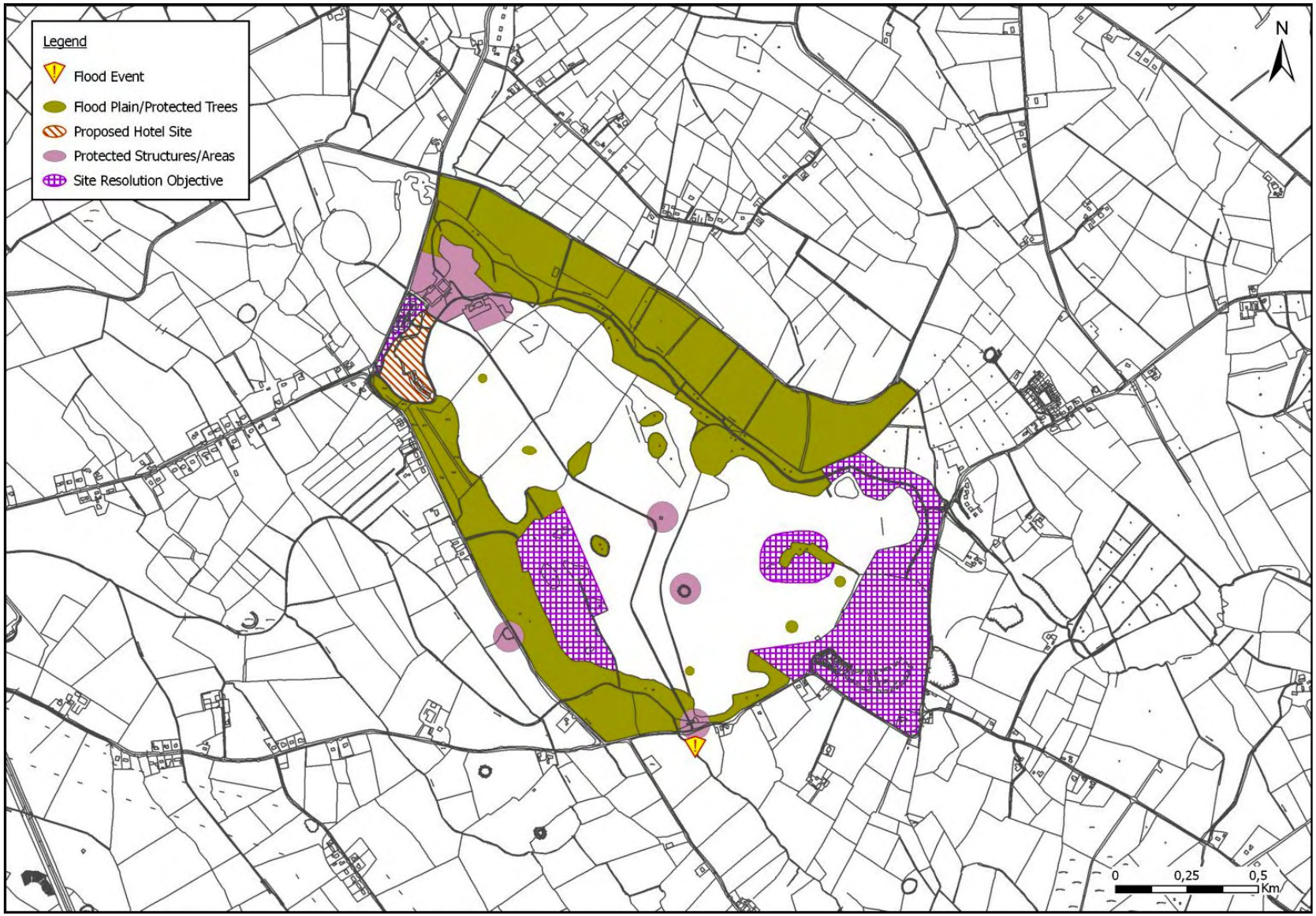


Figure 2.18 Carrickglass: Flood Events and Extents
Source: OPW available at www.floodmaps.ie

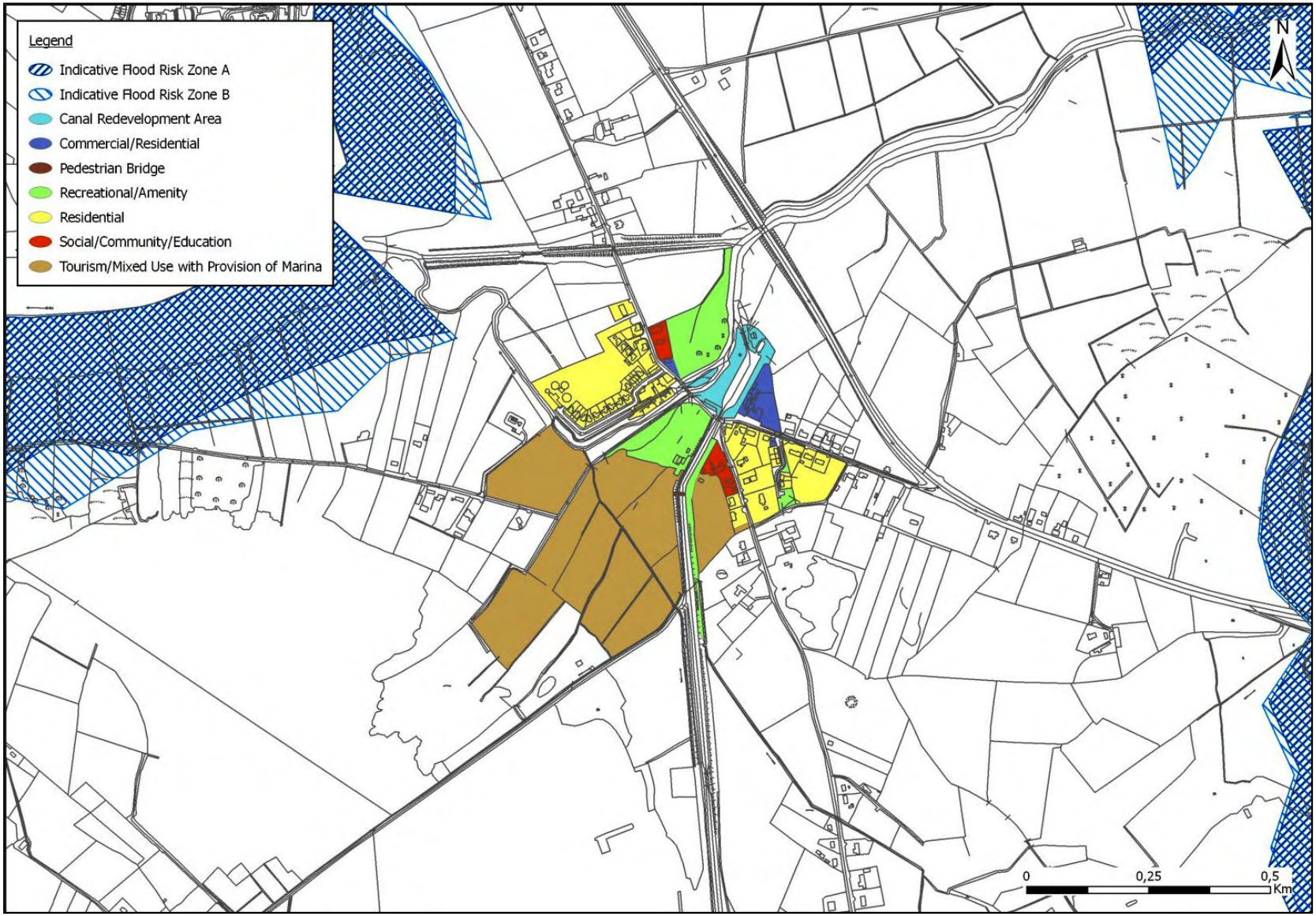


Figure 2.19 Clondra: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

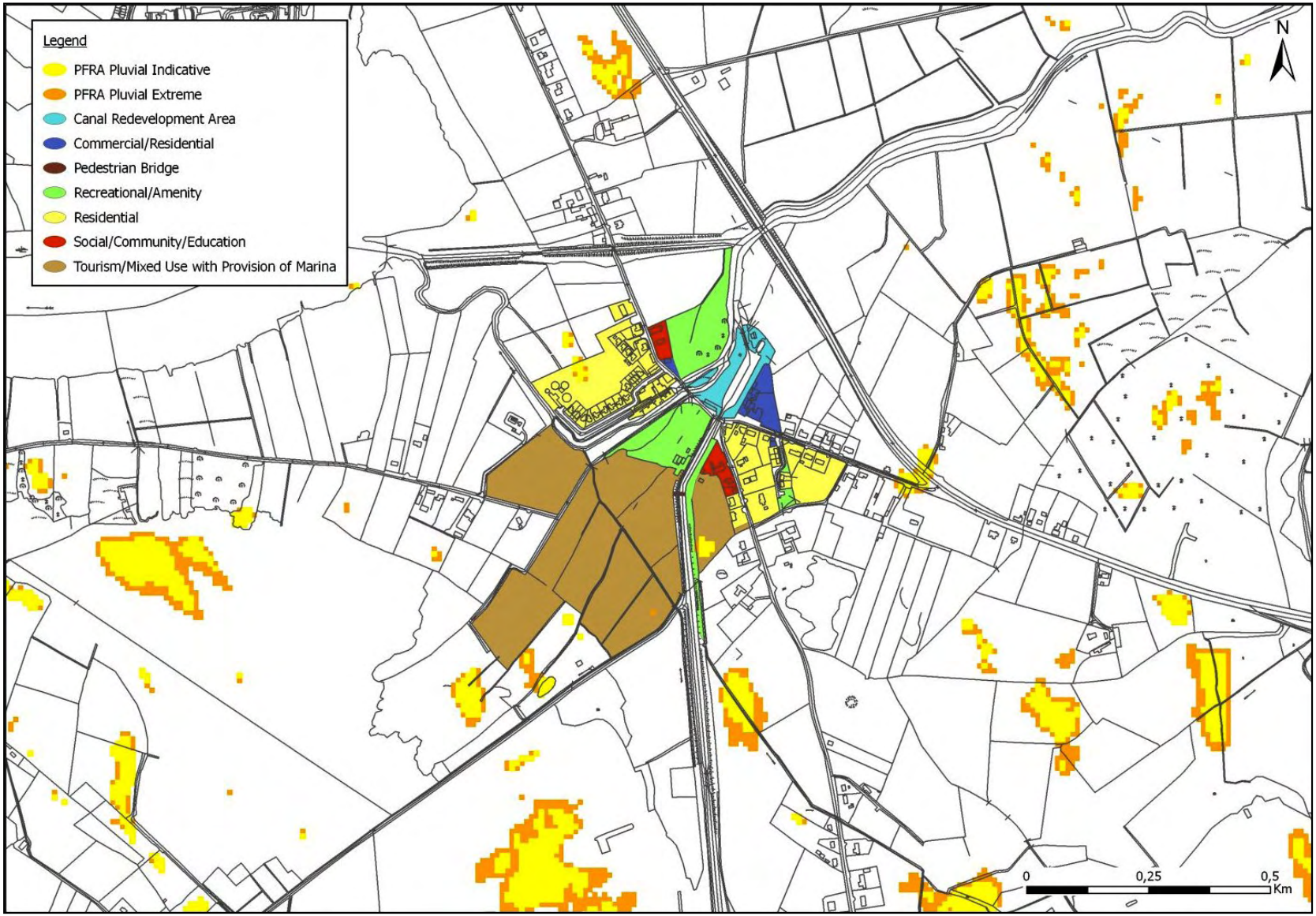


Figure 2.20 Clondra: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

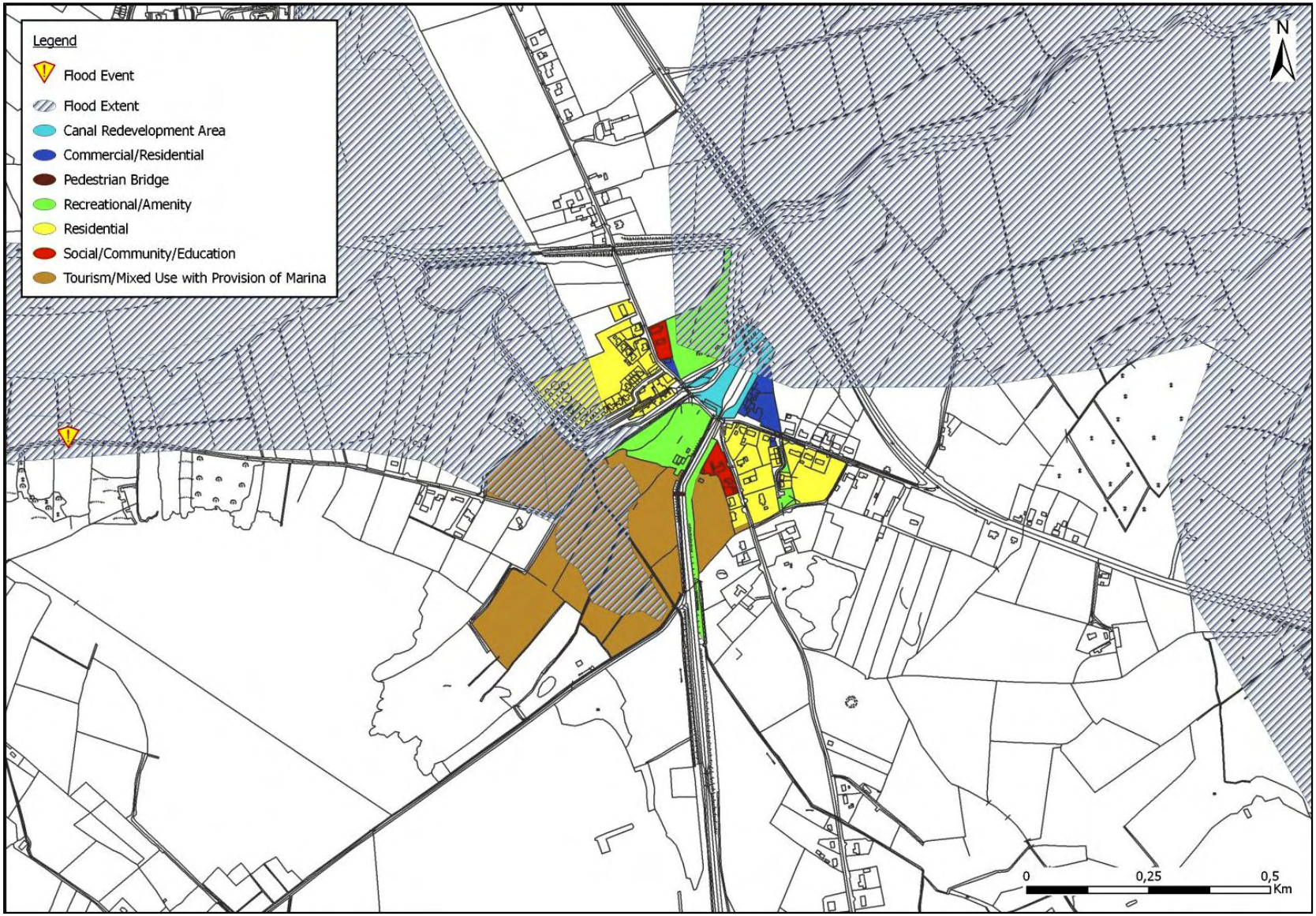


Figure 2.21 Clondra Flood Events and Extents
Source: OPW available at www.floodmaps.ie

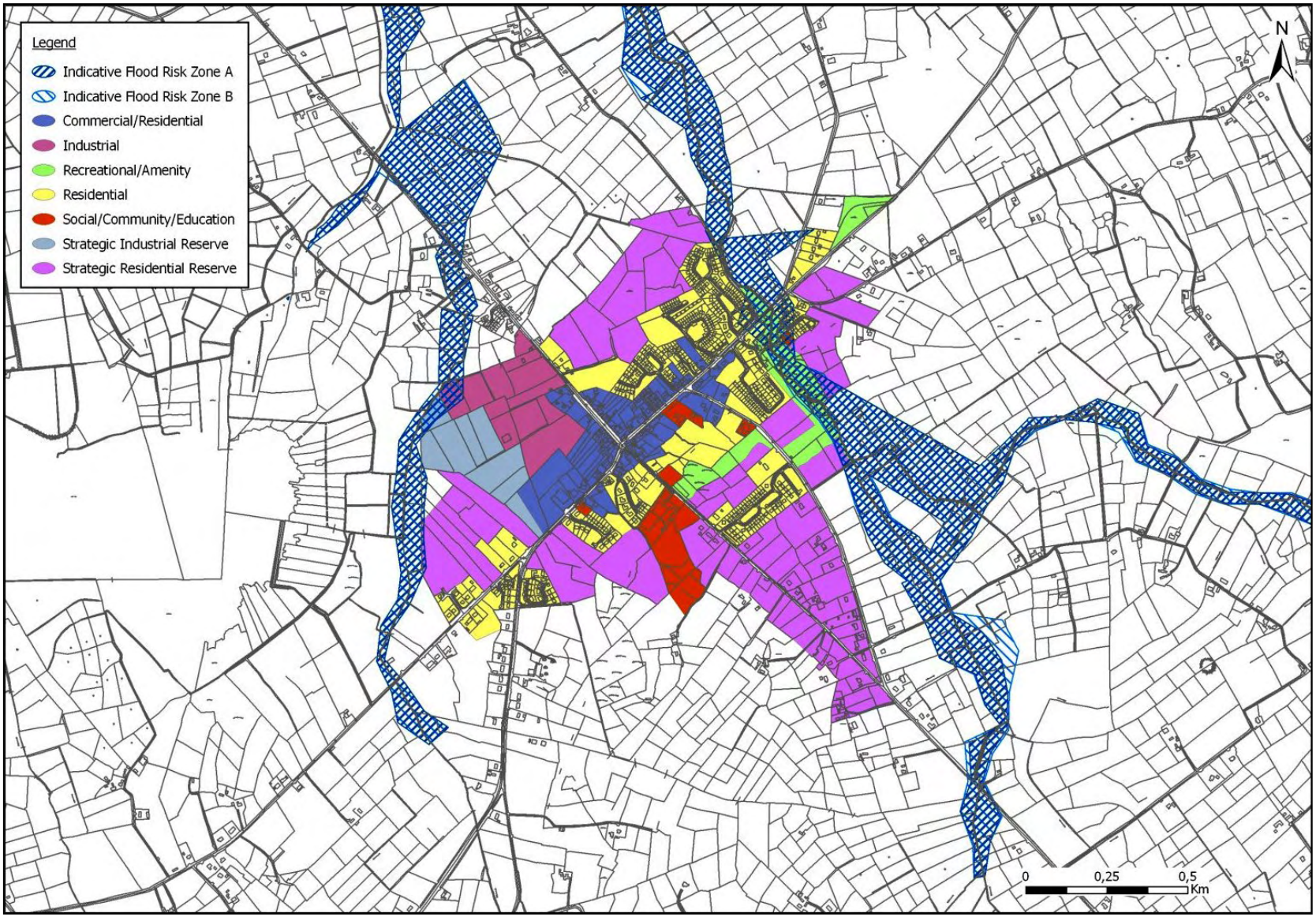


Figure 2.22 Drumlish: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

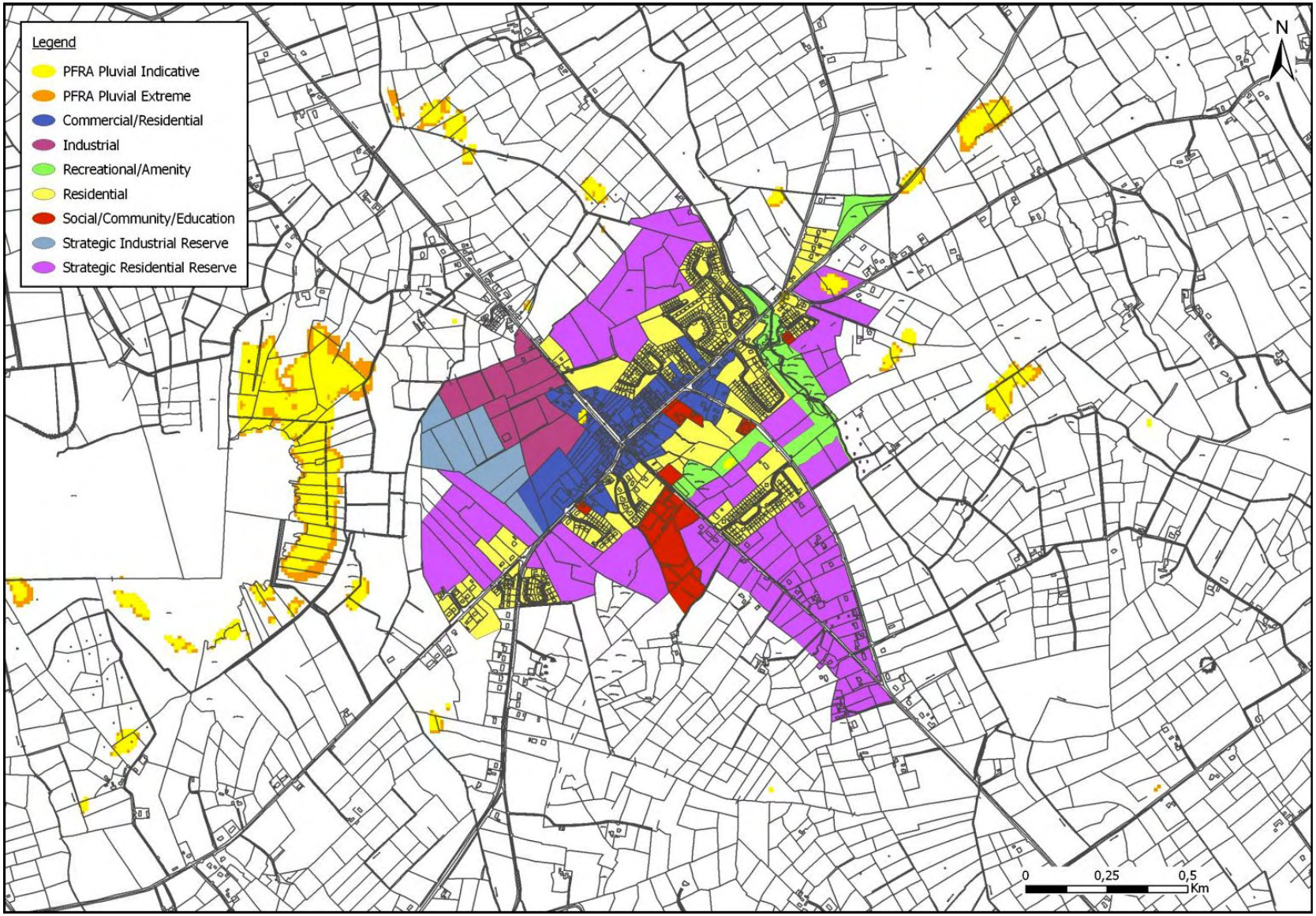


Figure 2.23 Drumlish: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

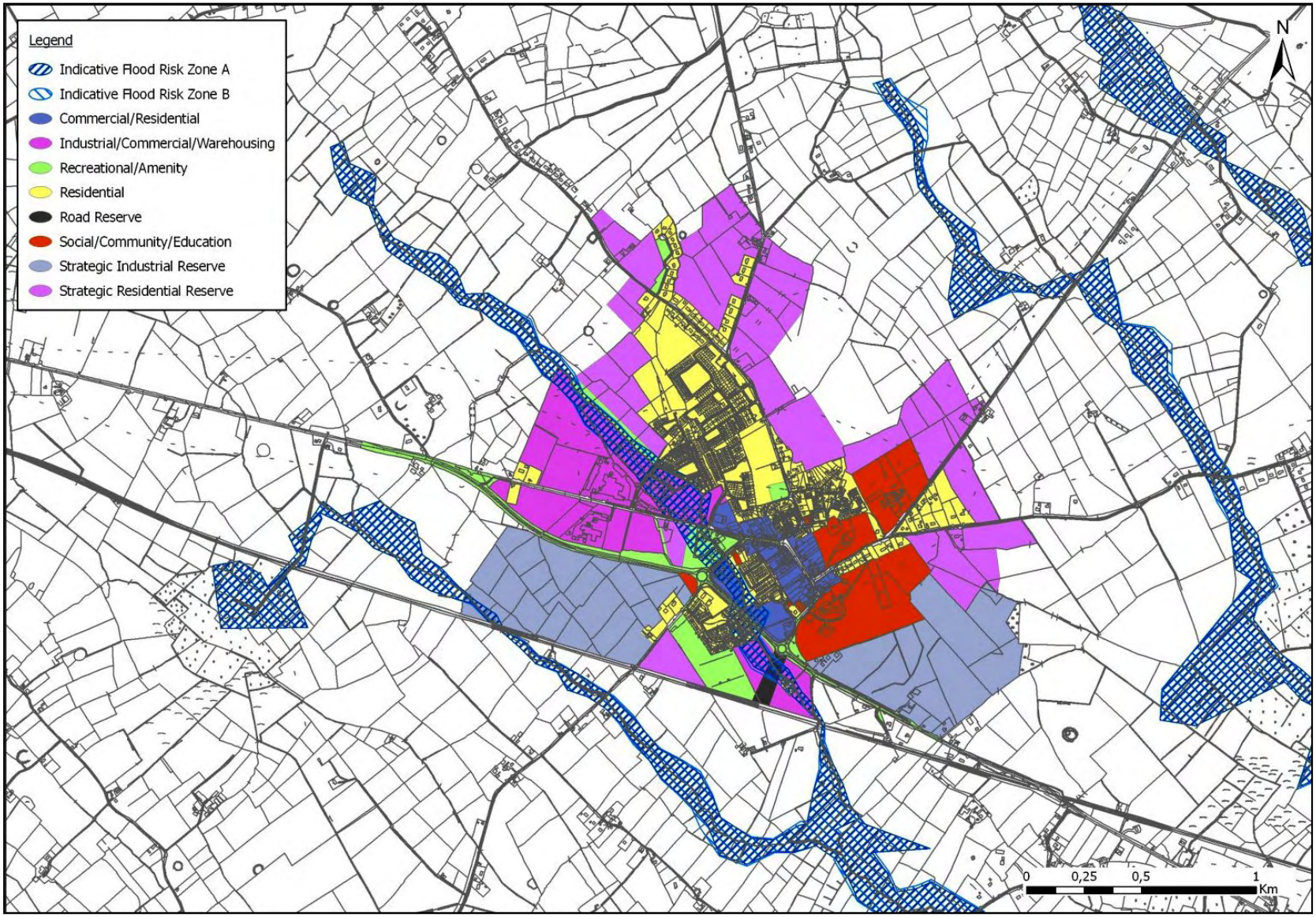


Figure 2.24 Edgeworthstown: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

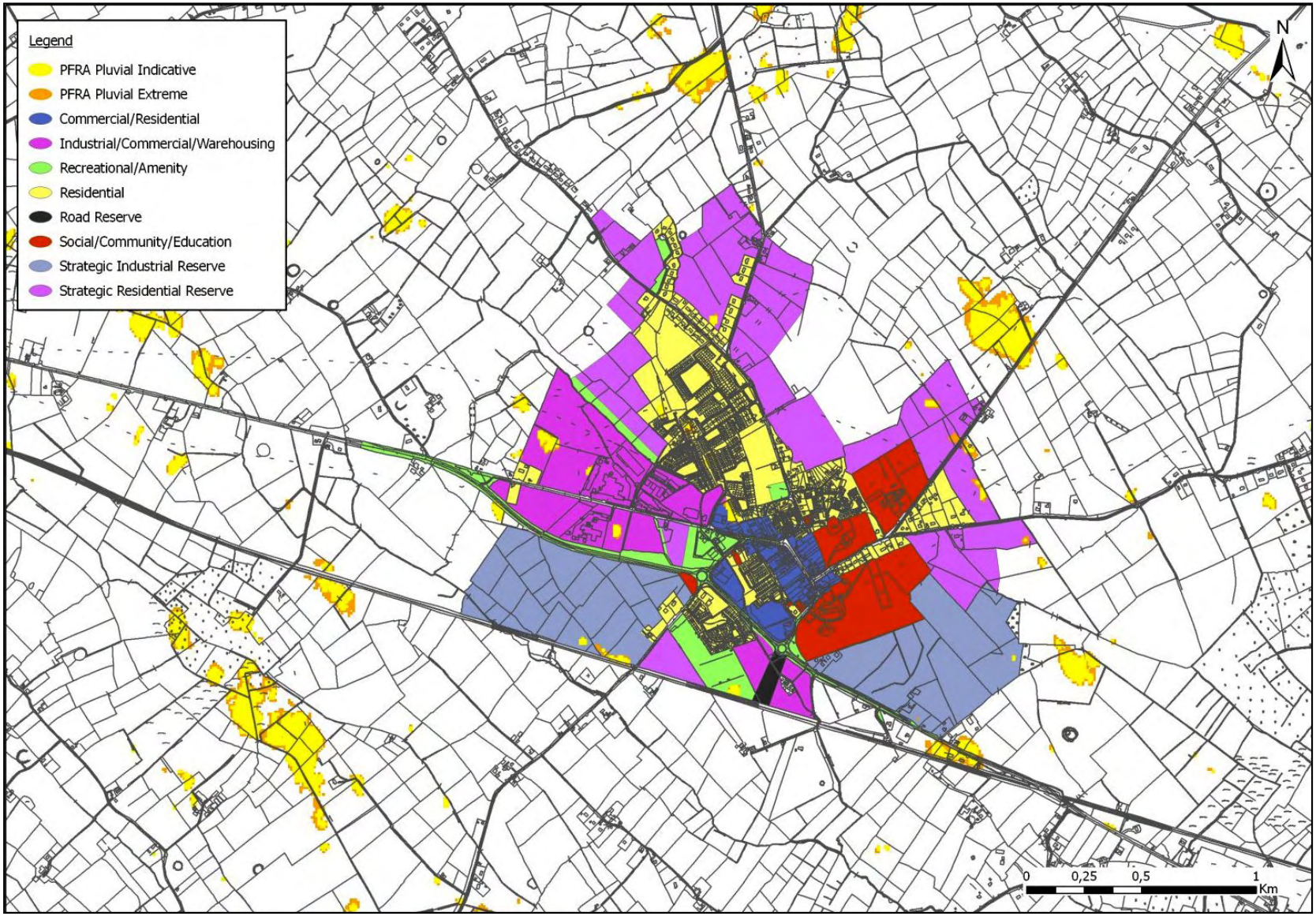


Figure 2.25 Edgeworthstown: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

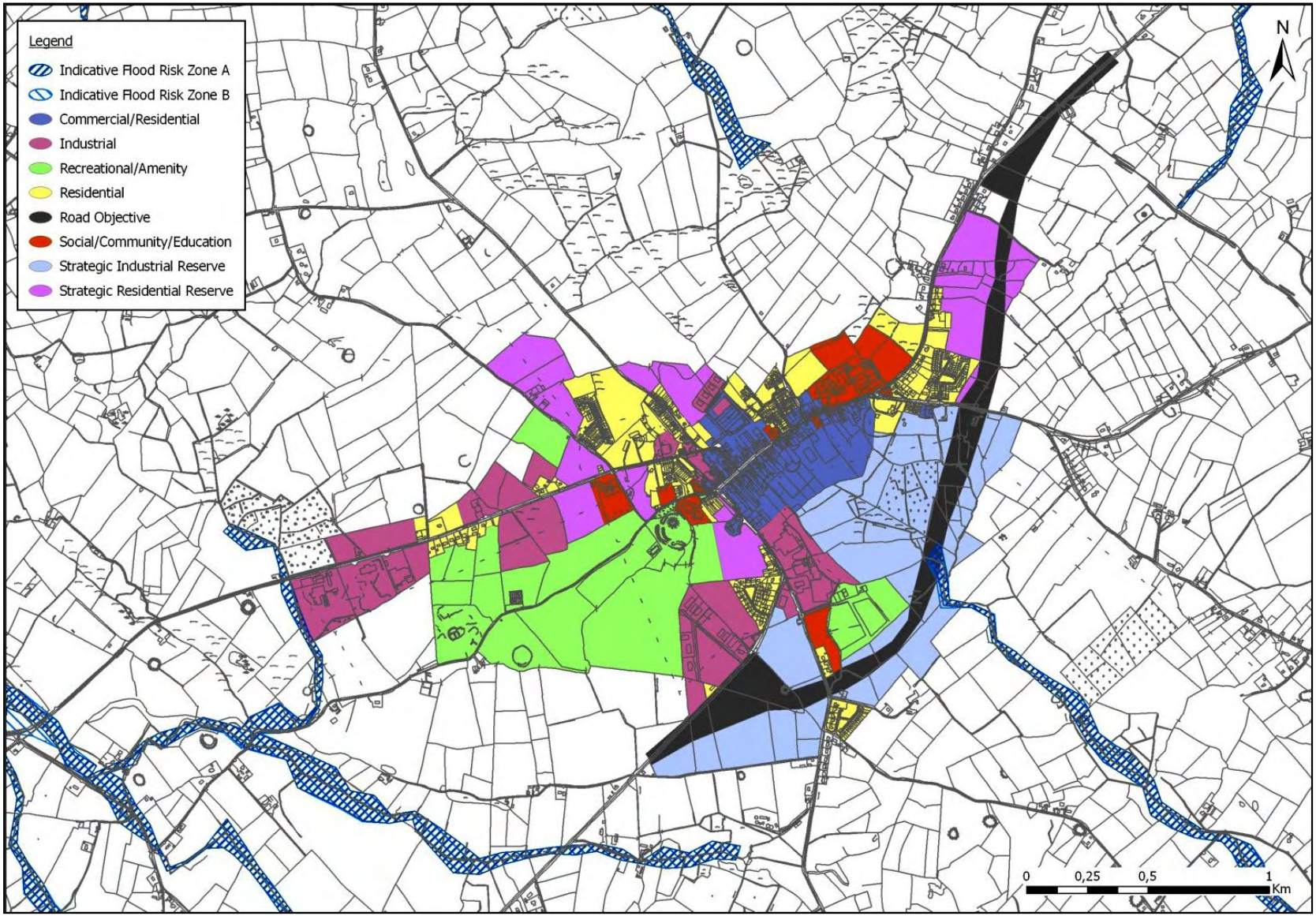


Figure 2.26 Granard: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

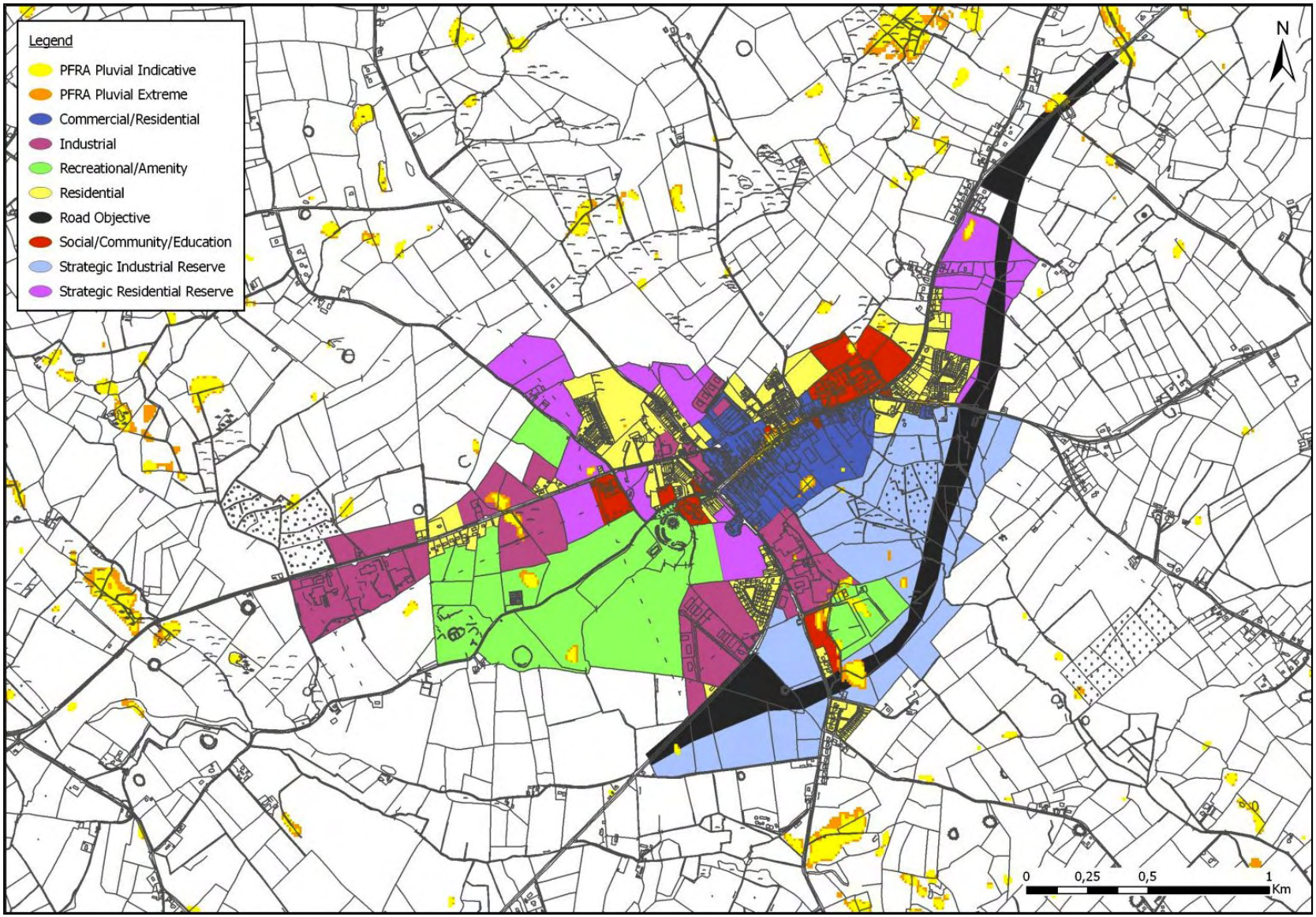


Figure 2.27 Granard: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

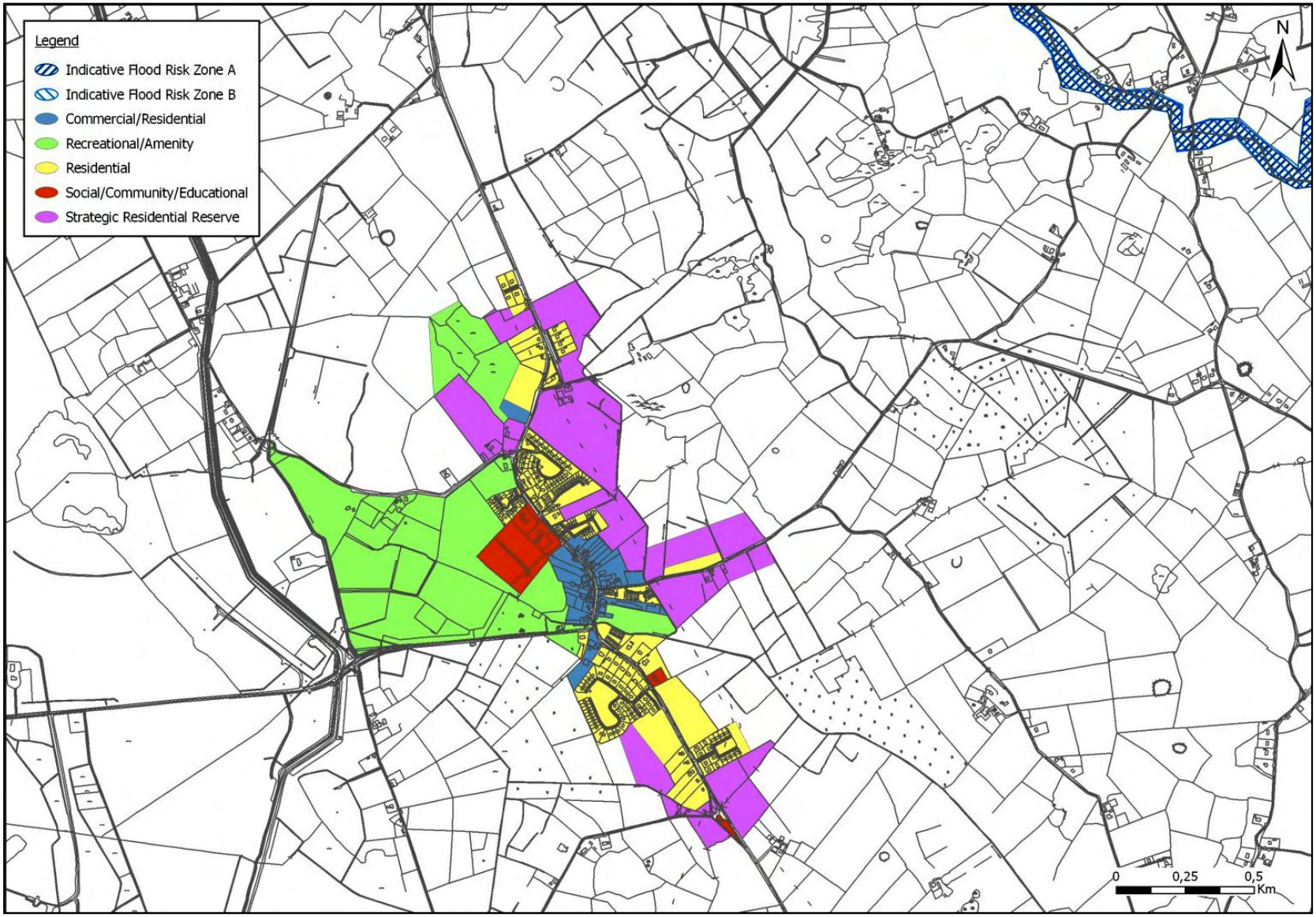


Figure 2.28 Keenagh: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

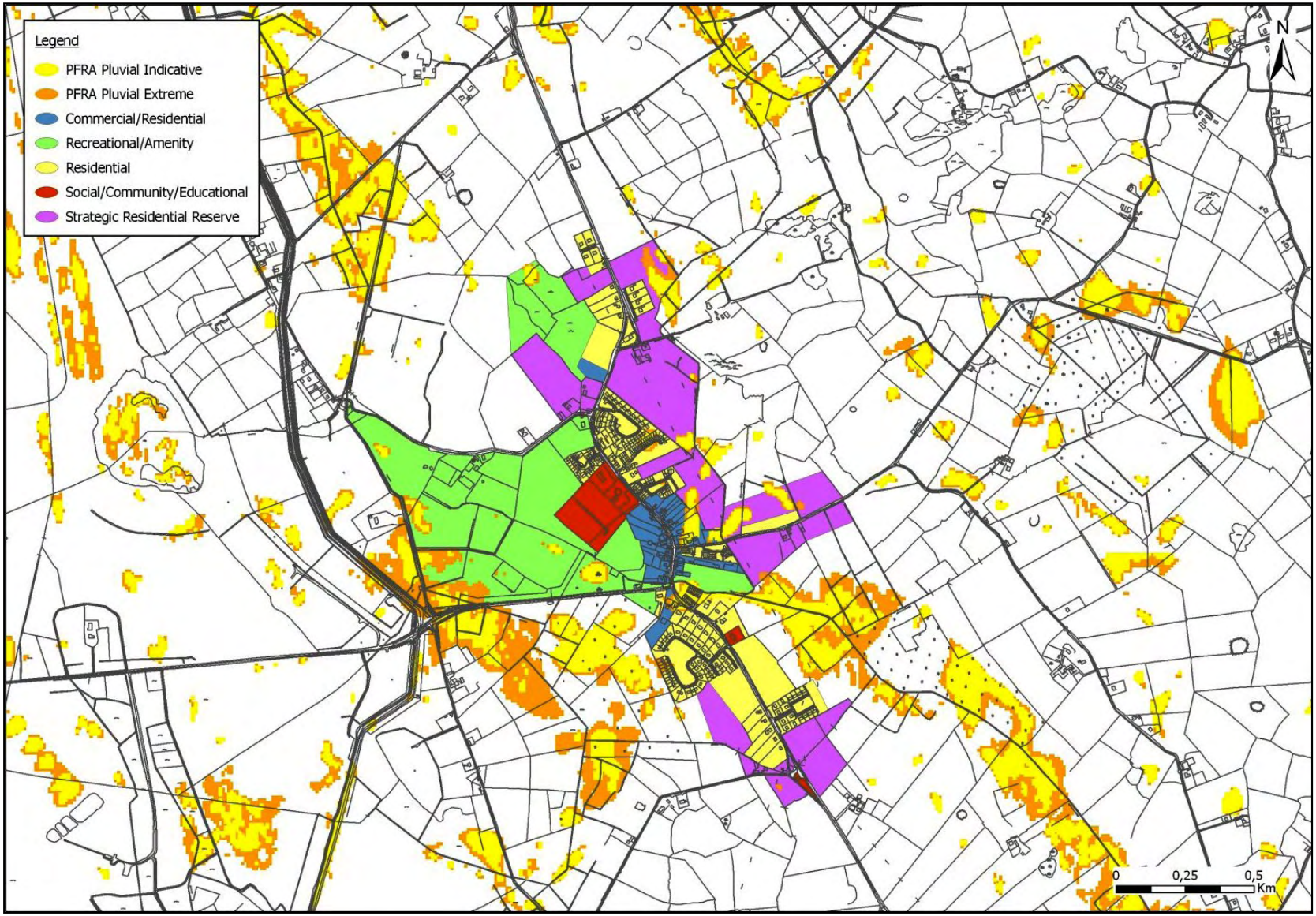


Figure 2.29 Keenagh: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

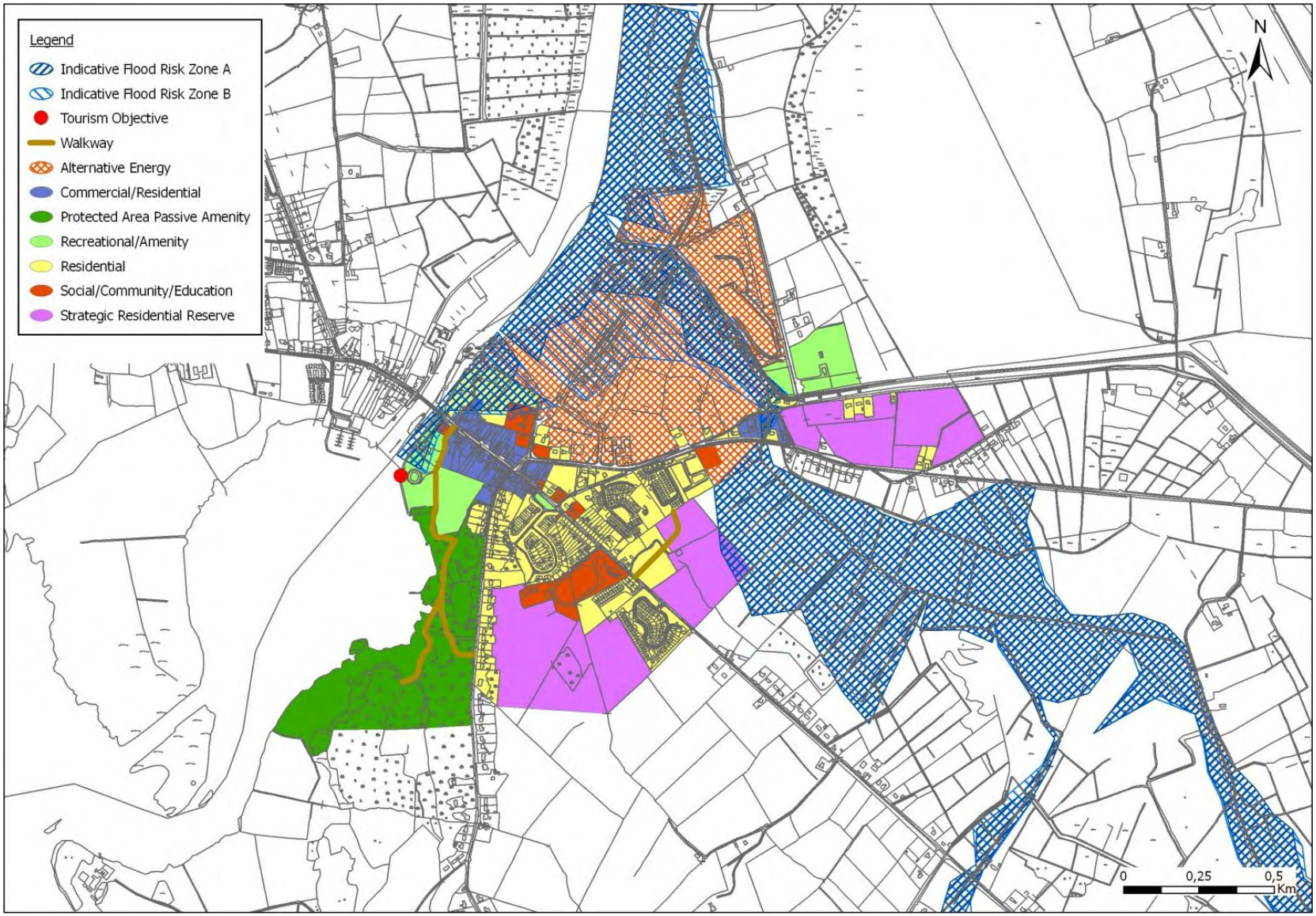


Figure 2.30 Lanesborough: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

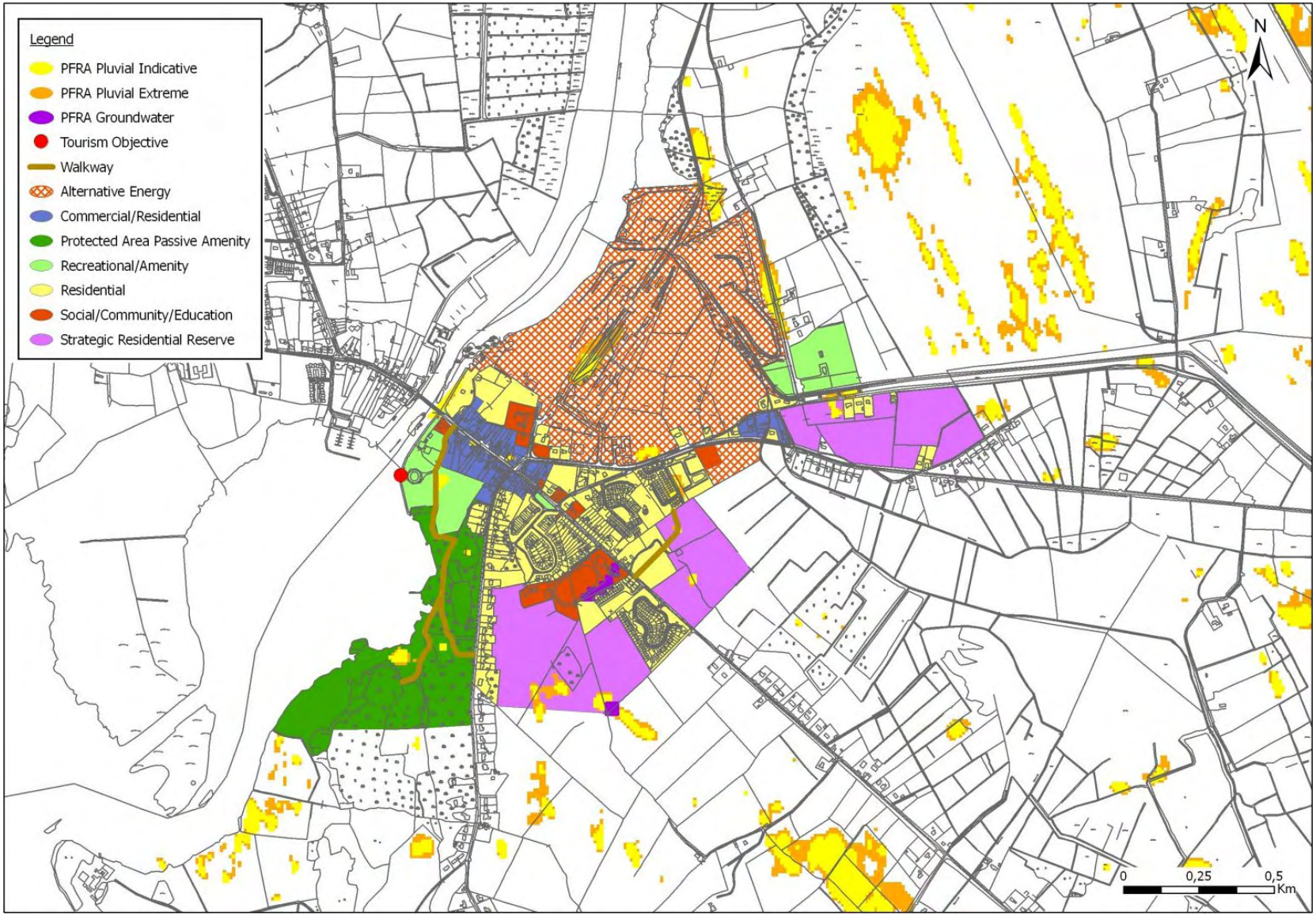


Figure 2.31 Lanesborough: Pluvial and Groundwater PFRA Mapping
Source: OPW PFRA Mapping 2012

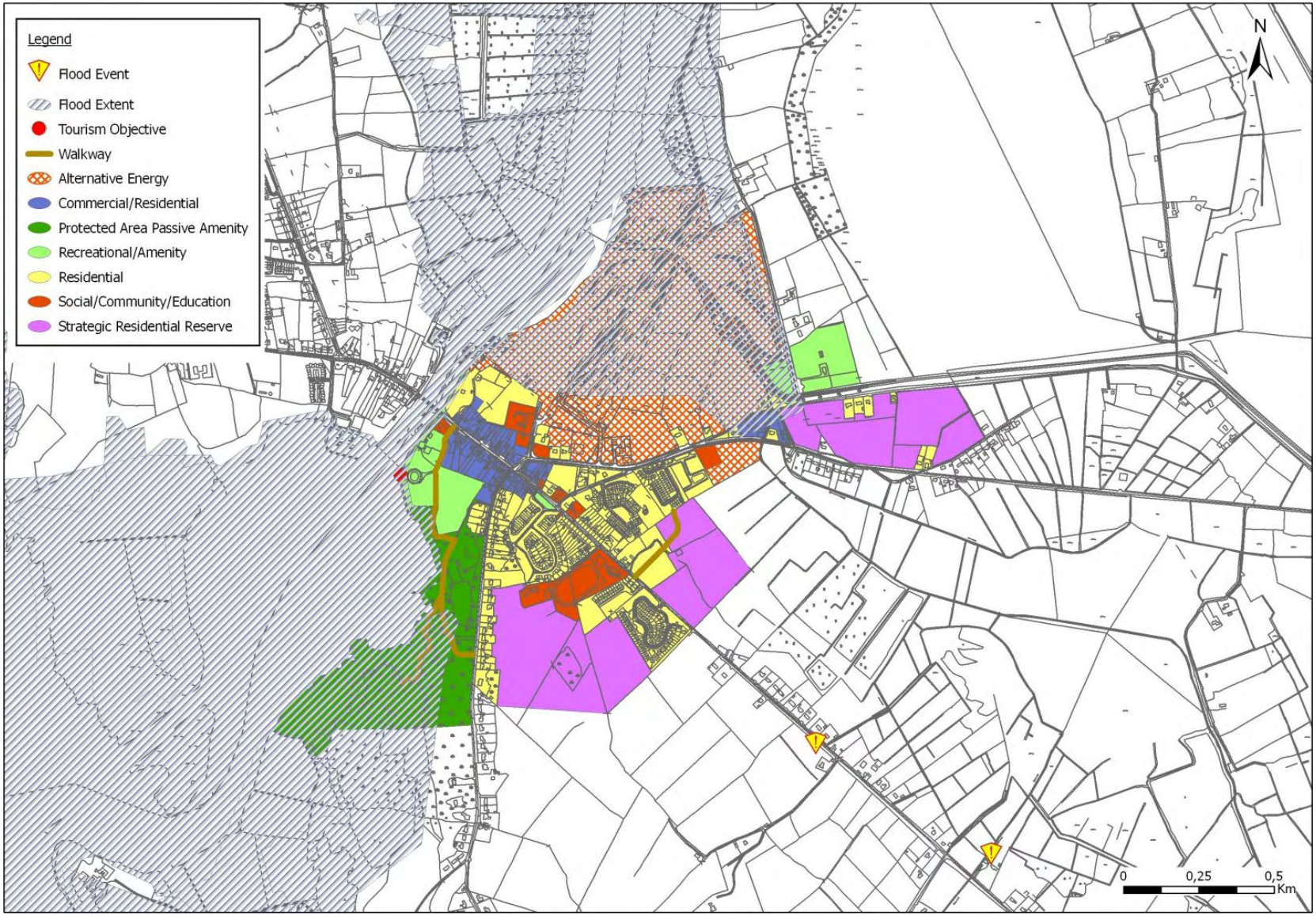


Figure 2.32 Lanesborough Flood Events and Extents
Source: OPW available at www.floodmaps.ie

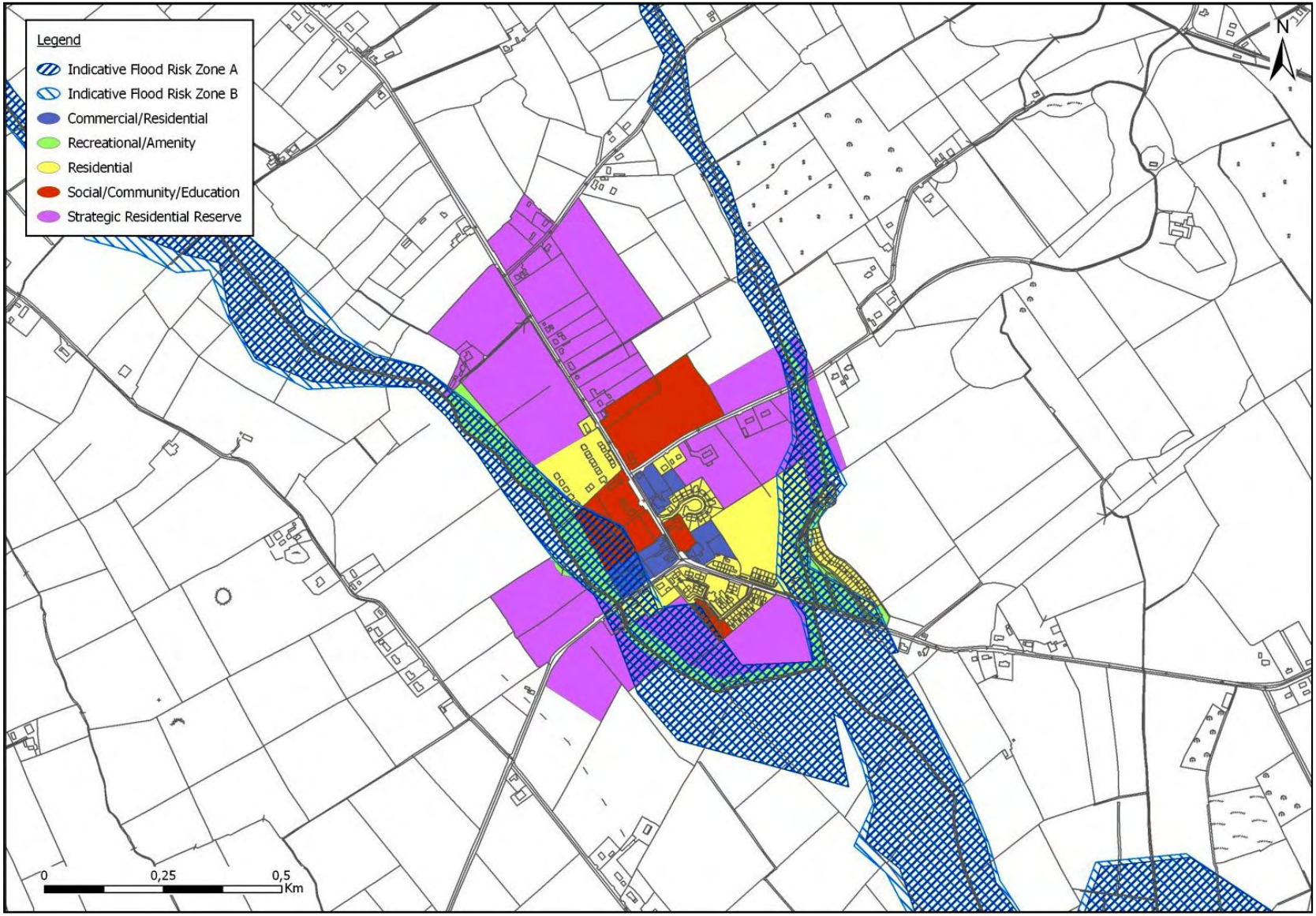


Figure 2.33 Legan: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

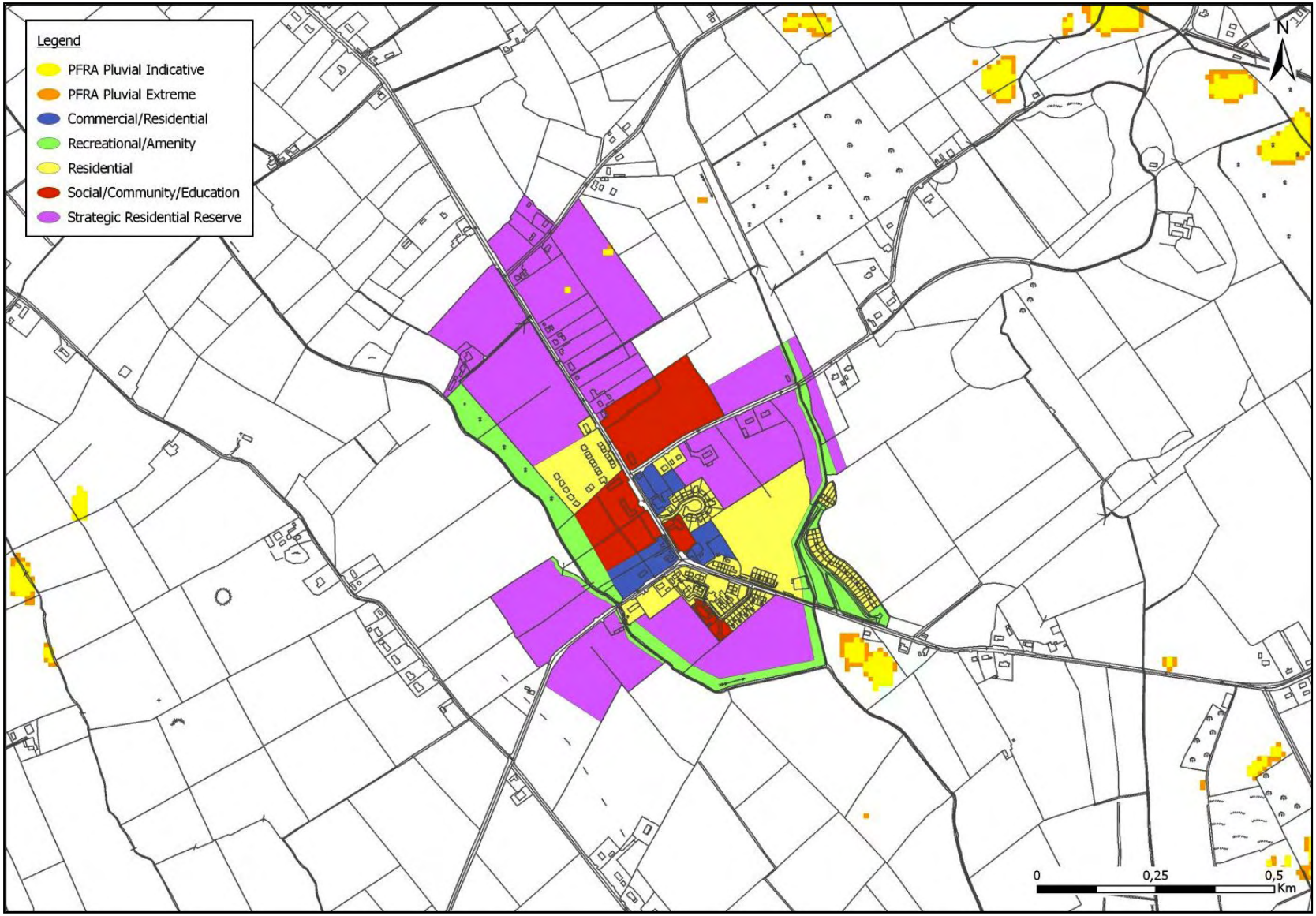


Figure 2.34 Legan: Pluvial PFRA Mapping
Source: OPW PFRA Mapping 2012

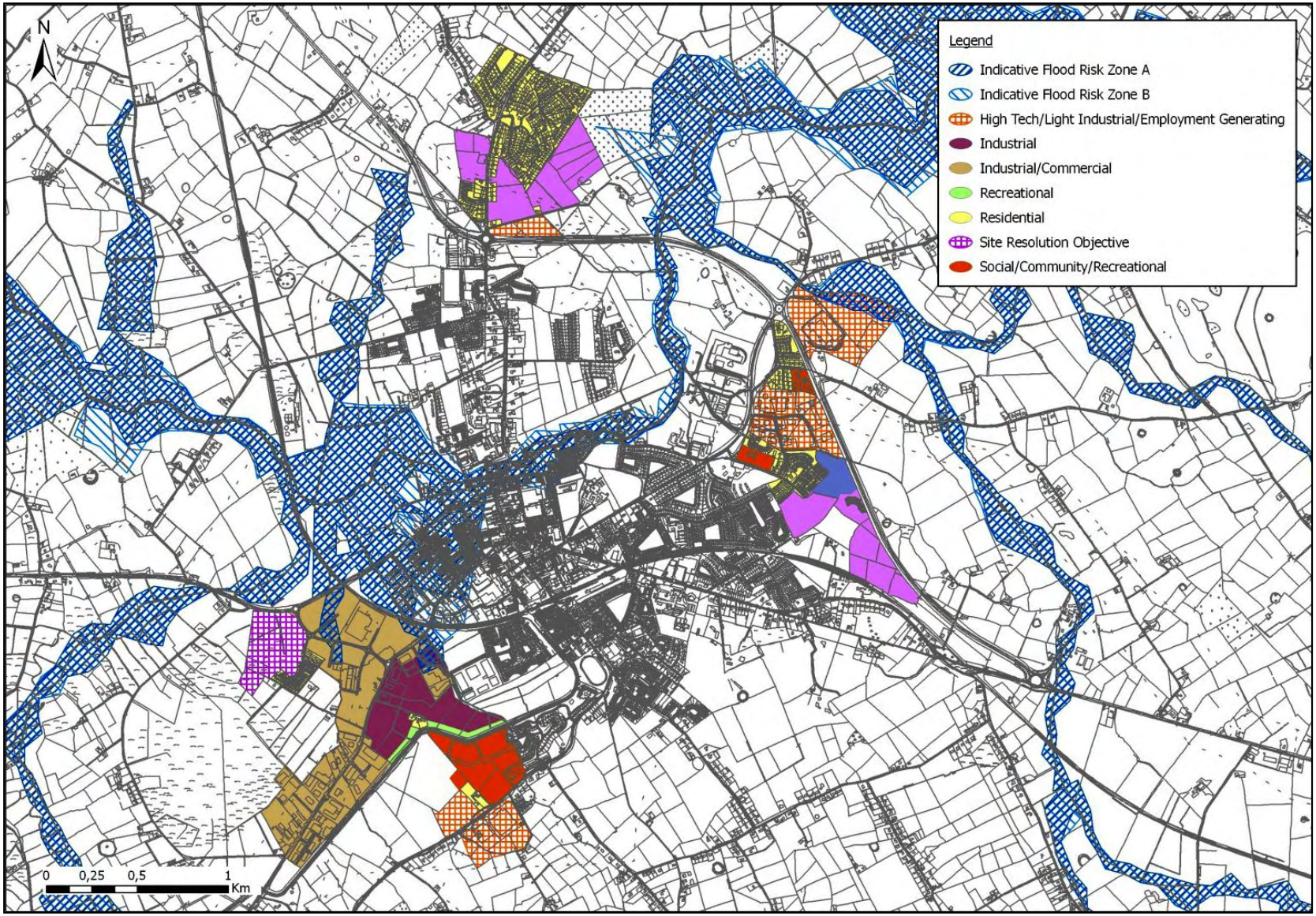


Figure 2.35 Longford Environs: Indicative Flood Risk Zones A and B
Source: OPW PFRA Mapping 2012

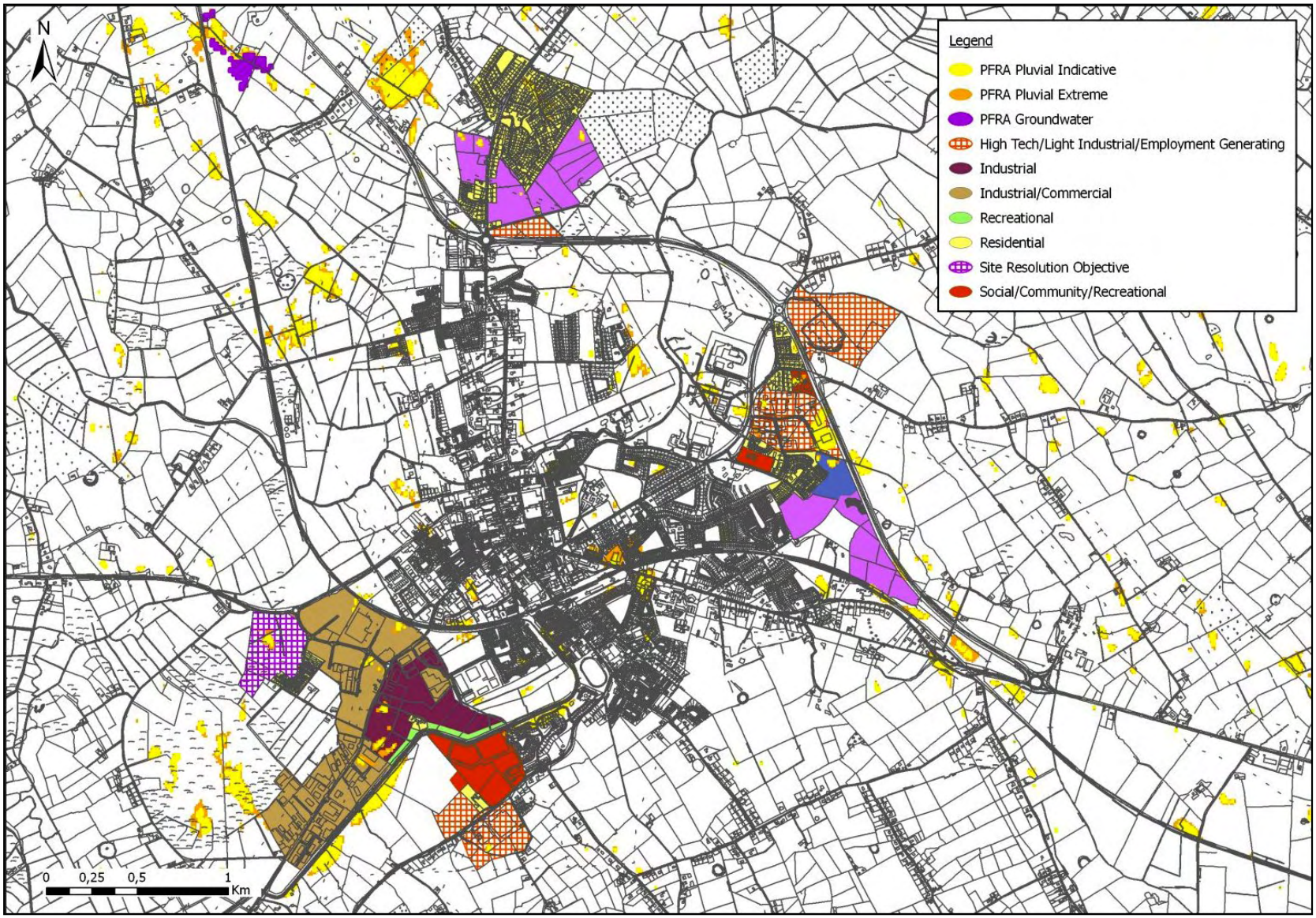


Figure 2.36 Longford Environs: Pluvial and Groundwater PFRA Mapping
Source: OPW PFRA Mapping 2012

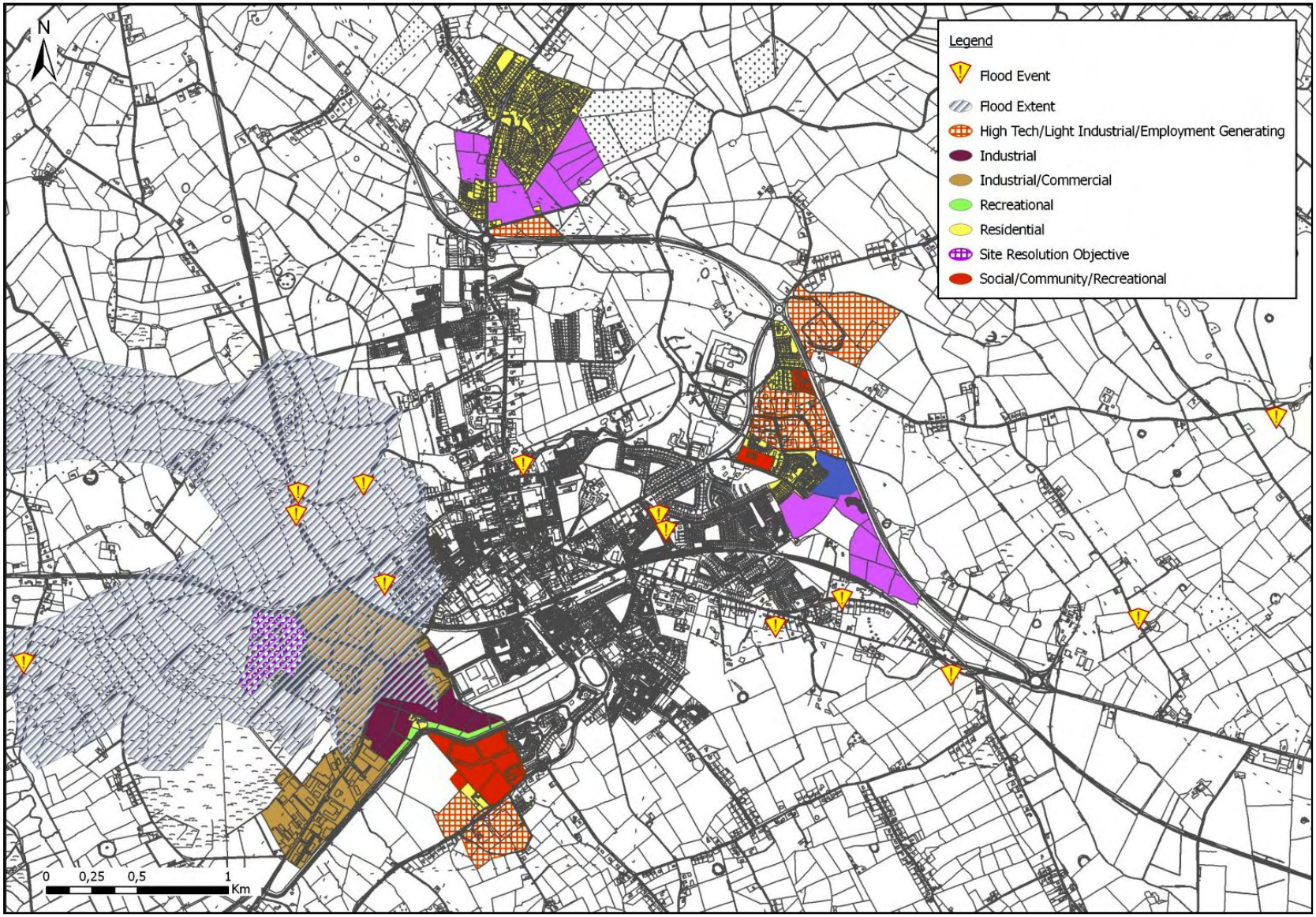


Figure 2.37 Longford Environs: Flood Events and Extents
Source: OPW available at www.floodmaps.ie

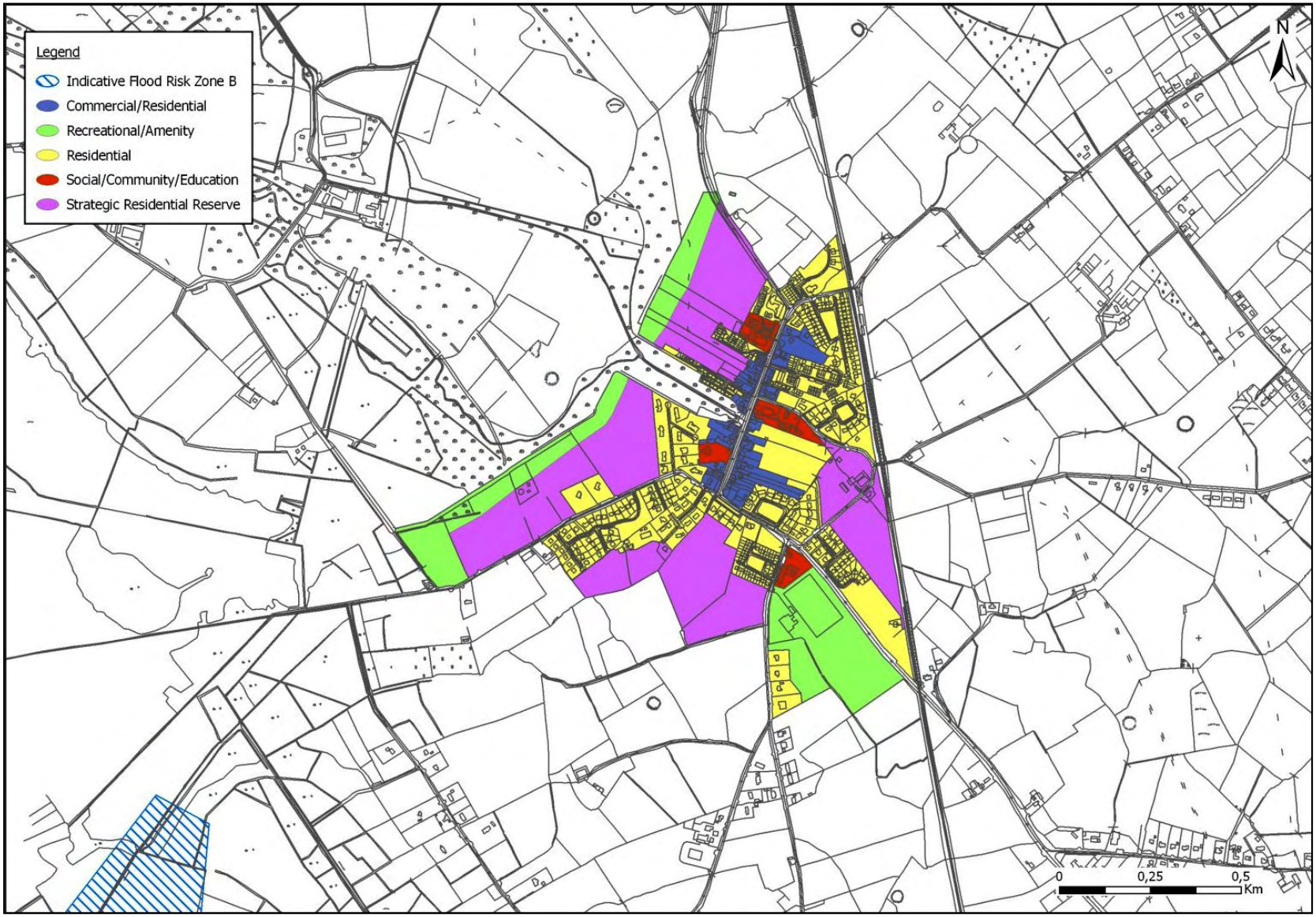


Figure 2.38 Newtownforbes: Indicative Flood Risk Zone B
Source: OPW PFRA Mapping 2012

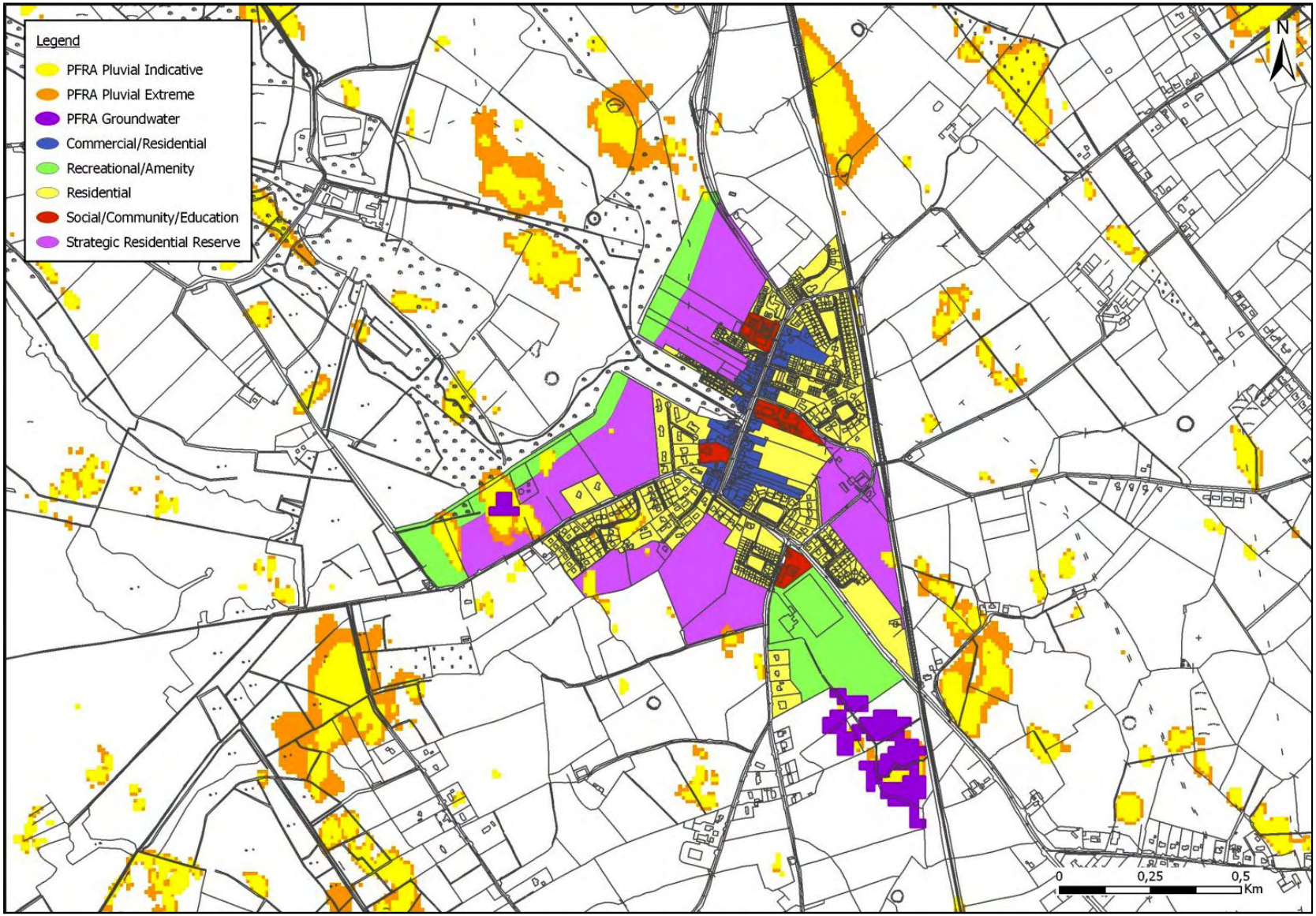


Figure 2.39 Newtownforbes: Pluvial and Groundwater PFRA Mapping
Source: OPW PFRA Mapping 2012

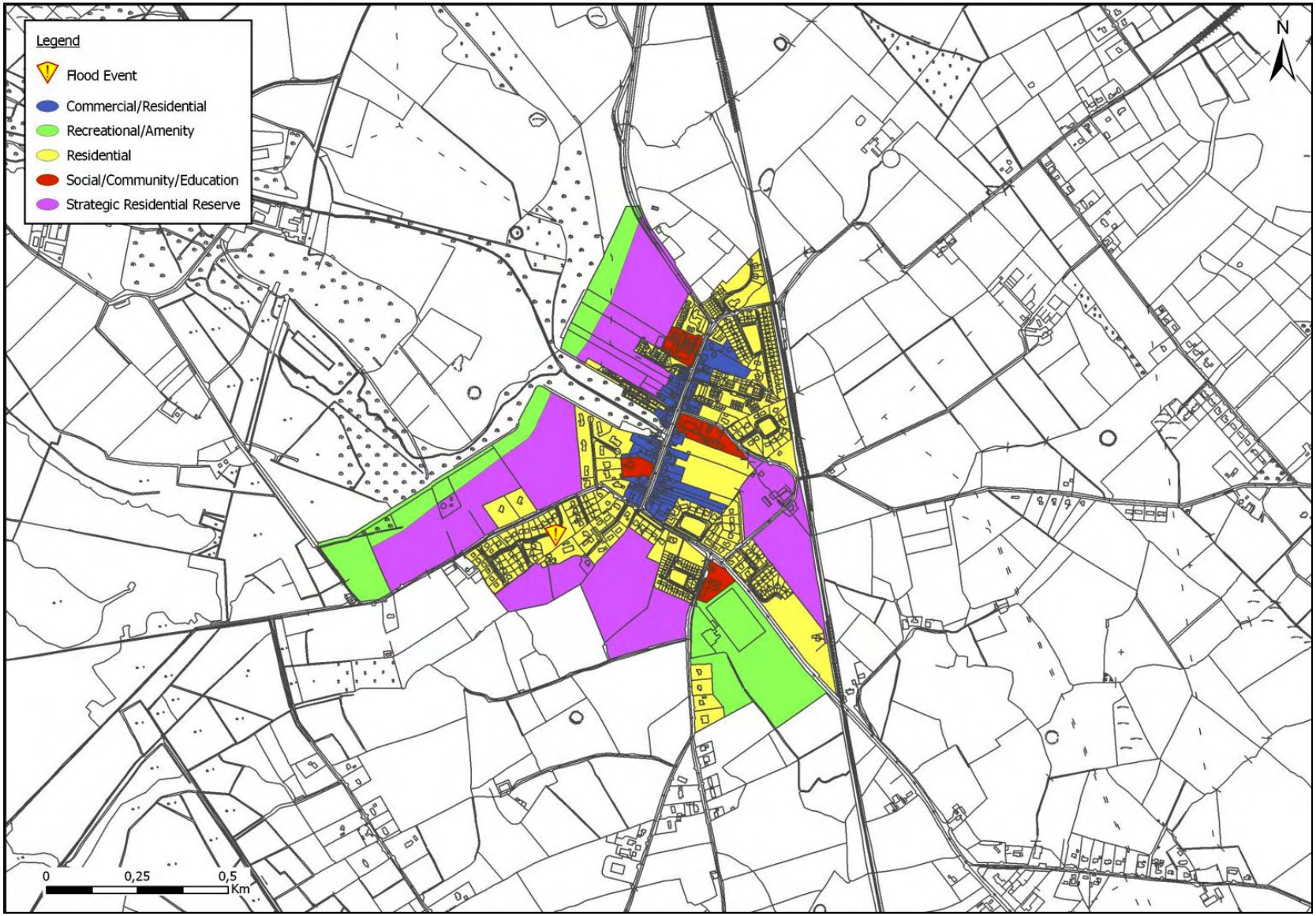


Figure 2.40 Newtownforbes: Flood Events and Extents
Source: OPW available at www.floodmaps.ie

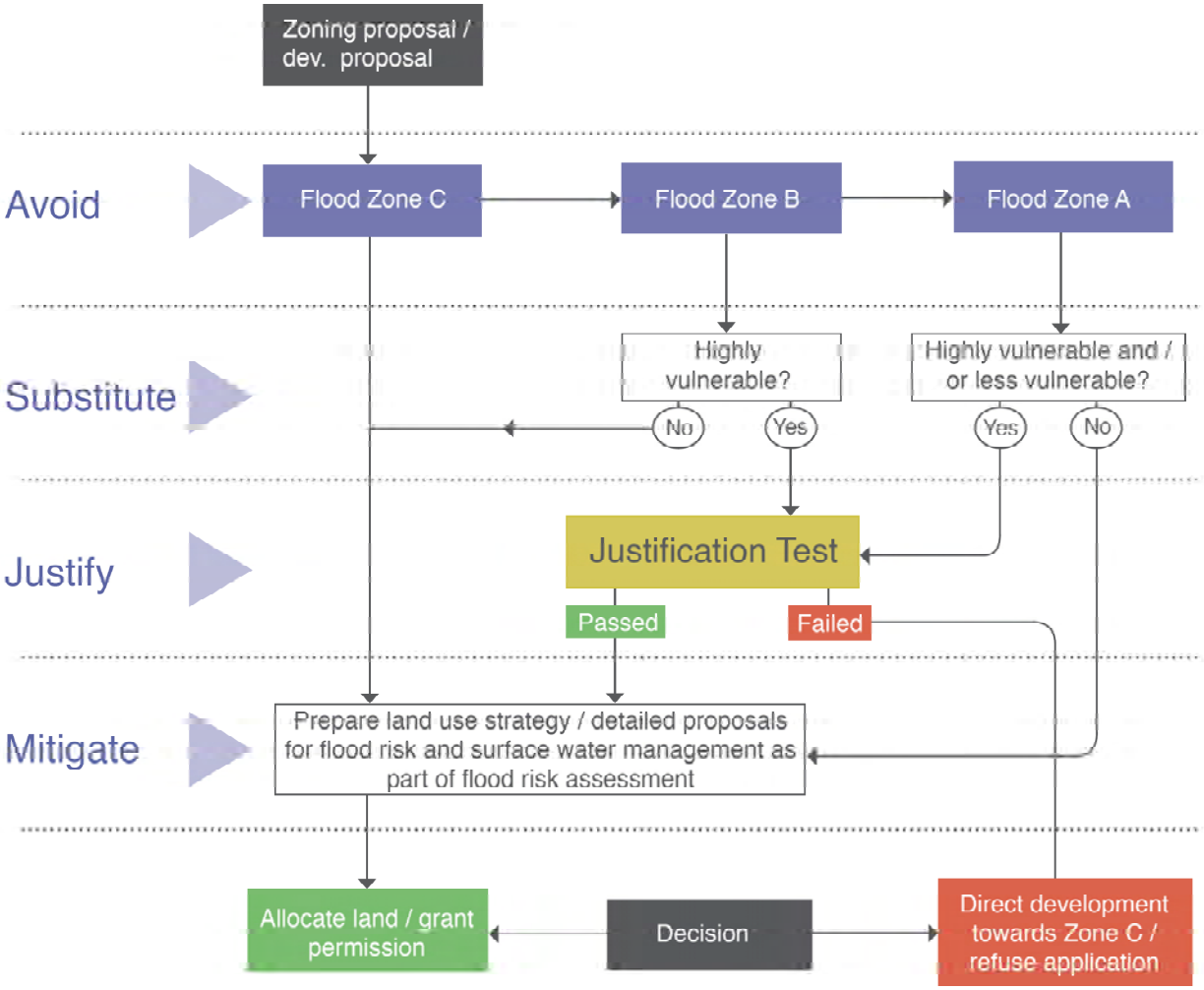
Section 3 Related Provisions from the Guidelines

Related Provisions contained in the DEHLG Flood Guidelines for Indicative Flood Zones A and B

- The Sequential Approach, including the Justification test -

The key principles of the risk-based sequential approach (see below) to managing flood risk in the preparation of plans are set out in Chapter 3 of the DEHLG Flood Guidelines and should be followed for the zoning under the Variation. These principles are:

- Avoid development in areas at risk of flooding. If this is not possible, consider substituting a land use that is less vulnerable to flooding. Only when both avoidance and substitution cannot take place should consideration be given to mitigation and management of risks.
- Inappropriate types of development that would create unacceptable risks from flooding should not be planned for or permitted.
- Exceptions to the restriction of development due to potential flood risks are provided for through the use of a Justification Test, where the planning need and the sustainable management of flood risk to an acceptable level must be demonstrated.



Sequential Approach Process[8]

[8] Flood Zone C covers all areas outside of Zones A and B

In summary, the **planning implications** for each of the flood zones are:

Zone A - High probability of flooding. Most types of development would be considered inappropriate in this zone. Development in this zone should be avoided and/or only considered in exceptional circumstances, such as in city and town centres, or in the case of essential infrastructure that cannot be located elsewhere, and where the Justification Test has been applied. Only water-compatible development, such as docks and marinas, dockside activities that require a waterside location, amenity open space, outdoor sports and recreation, would be considered appropriate in this zone.

Zone B - Moderate probability of flooding. Highly vulnerable development, such as hospitals, residential care homes, Garda, fire and ambulance stations, dwelling houses and primary strategic transport and utilities infrastructure, would generally be considered inappropriate in this zone, unless the requirements of the Justification Test can be met. Less vulnerable development, such as retail, commercial and industrial uses, sites used for short-let for caravans and camping and secondary strategic transport and utilities infrastructure, and water-compatible development might be considered appropriate in this zone. In general however, less vulnerable development should only be considered in this zone if adequate lands or sites are not available in Zone C and subject to a flood risk assessment to the appropriate level of detail to demonstrate that flood risk to and from the development can or will adequately be managed.

Zone C - Low probability of flooding. Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast) but would need to meet the normal range of other proper planning and sustainable development considerations.

Table 1 overleaf classifies the vulnerability of different types of development while Table 2 identifies the appropriateness of development belonging to each vulnerability class within each of the flood zones as well as identifying what instances in which the Justification Test should be undertaken. Inappropriate development that does not meet the criteria of the Justification Test should not be considered at the plan-making stage or approved within the development management process.

Vulnerability class	Land uses and types of development which include*:
Highly vulnerable development (including essential infrastructure)	Garda, ambulance and fire stations and command centres required to be operational during flooding; Hospitals; Emergency access and egress points; Schools; Dwelling houses, student halls of residence and hostels; Residential institutions such as residential care homes, children's homes and social services homes; Caravans and mobile home parks; Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility; and Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.
Less vulnerable development	Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions; Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans; Land and buildings used for agriculture and forestry; Waste treatment (except landfill and hazardous waste); Mineral working and processing; and Local transport infrastructure.
Water-compatible development	Flood control infrastructure; Docks, marinas and wharves; Navigation facilities; Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location; Water-based recreation and tourism (excluding sleeping accommodation); Lifeguard and coastguard stations; Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms; and Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan).
*Uses not listed here should be considered on their own merits	

Table 1 Classification of vulnerability of different types of development

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water-compatible development	Appropriate	Appropriate	Appropriate

Table 2 Vulnerability Classes and Flood Zones

The **Justification Test** which is referred to as part of the Sequential Approach is an assessment of whether a development proposal within an area at risk of flooding meets specific criteria for proper planning and sustainable development and demonstrates that it will not be subject to unacceptable risk nor increase flood risk elsewhere.

The justification test should be applied only where development is within flood risk areas that would be defined as inappropriate under the screening test of the sequential risk based approach outlined above. This Justification Test is shown on the table below

Where, as part of the preparation and adoption or variation and amendment of a development/local area plan[1], a planning authority is considering the future development of areas in an urban settlement that are at moderate or high risk of flooding, for uses or development vulnerable to flooding that would generally be inappropriate as set out in Table 3.2, all of the following criteria must be satisfied:

1 The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.

2 The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and, in particular:

- (i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement[2];
- (ii) Comprises significant previously developed and/or under-utilised lands;
- (iii) Is within or adjoining the core[3] of an established or designated urban settlement;
- (iv) Will be essential in achieving compact and sustainable urban growth; and
- (v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.

3 A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.

N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment.

Table 3 Justification Test

Section 4 Recommendations

4.1 Policy Recommendations

The following policy-related recommendations were integrated into the Variation:

Amend Policy FLO 3 as follows:

The Council shall ~~have regard to the provisions of the guidelines issued by the DoEHLG regarding flooding~~ implement the recommendations and provisions of the DEHLG's 2009 Guidelines for Planning Authorities entitled *The Planning System and Flood Risk Management* (and any subsequent update) in the operation of its duties.

Insert new Policy FLO4 as follows:

Where the probability of flooding from rivers is low (less than 0.1%, flood zone C) the developer should satisfy him or herself that the probability of flooding is appropriate to the development being proposed. Among other things, mapping including the OPW's Pluvial and Groundwater Preliminary Flood Risk Assessment mapping should be considered for this purpose.

4.2 Recommendations related to Zoning

Current zoning overlaps with PFRA Zones A and B and events/extents recorded by OPW at certain locations in the settlements of Ballymahon, Lanesboro and Longford (Southern) Environs.

Scenario No.	Scenario	Abridged Recommendations from the Departmental Guidelines
1	PFRA Mapping Zone A present	If zoning provides for development that is not water compatible then [in the absence of ground-truthing] the zoning should be removed or a justification test should be undertaken in order to assess whether the zoning meets specific criteria for proper planning and sustainable development and demonstrates that it will not be subject to unacceptable risk nor increase flood risk elsewhere. For development that is not water compatible in this zone, the justification test requires that <u>all of the following criteria (extracted from the Flood Management Guidelines) must be satisfied</u>: 1. The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended. 2. The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and, in particular: i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement[9]; ii. Comprises significant previously developed and/or under-utilised lands; iii. Is within or adjoining the core[10] of an established or designated urban settlement; iv. Will be essential in achieving compact and sustainable urban growth; and v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement. 3. A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment.

[9] In the case of Gateway planning authorities, where a number of strategic growth centres have been identified within the overall area of the authority, the Justification Test may be applied for vulnerable development within each centre.

[10] The core area of a city, town or village which acts as a centre for a broad range of employment, retail, community, residential and transport functions.

Scenario No.	Scenario	Abridged Recommendations from the Departmental Guidelines
2	PFRA Mapping Zone B present	If zoning provides for development that is highly vulnerable[11] then [in the absence of ground-truthing] the zoning should be removed or a justification test should be undertaken in order to assess whether the zoning meets specific criteria for proper planning and sustainable development and demonstrates that it will not be subject to unacceptable risk nor increase flood risk elsewhere. For development that is not water compatible in this zone, the justification test requires that <u>all of the following criteria (extracted from the Flood Management Guidelines) must be satisfied</u>: 1. The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended. 2. The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and, in particular: i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement; ii. Comprises significant previously developed and/or under-utilised lands; iii. Is within or adjoining the core of an established or designated urban settlement; iv. Will be essential in achieving compact and sustainable urban growth; and v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement. 3. A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment.

[11] Highly vulnerable development: Garda, ambulance and fire stations and command centres required to be operational during flooding; Hospitals; Emergency access and egress points; Schools; Dwelling houses, student halls of residence and hostels; Residential institutions such as residential care homes, children's homes and social services homes; Caravans and mobile home parks; Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility; and Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.

In the settlements of Abbeyshrule, Ardagh, Aughnacliffe, Ballinalee, Ballinamuck, Ballymahon, Carrickglass, Drumlish, Edgeworthstown, Granard and Legan certain locations are part of the PFRA Zone A/B but no flood risk has been identified by OPW flood extent/event mapping or the Council at these locations. This is also the case in the Longford (Northern) Environs at lands that are already built upon.

In the settlements of Clondra and Newtownforbes flood risk has been identified by OPW flood extent/event map or by the Council but no flood risk identified by PFRA mapping.

In the settlement of Keenagh there are no OPW flood extent/events identified nor is there any risk identified by the PFRA mapping.

Scenario No.	Scenario	SFRA Recommendation
3	PFRA Mapping Zone A/B but no flood risk identified by LCC/OPW flood extent/event map	It would be premature to exclude zoning in this Variation based on the PFRA mapping. However, given that these maps are in the public domain, it would be prudent to include a note for every town plan affected that: Preliminary Flood Risk Assessment mapping from the Office of Public Works is available indicating flood risk in parts of this town - see associated Strategic Environmental Assessment Environmental Report which accompanies the Variation. It should be noted however, that there is no flood events recorded by the OPW at these (or some of these) locations or local knowledge of same. This mapping is currently being assessed, updated and improved. In the interim, as a precaution, landowners in areas so indicated should satisfy themselves prior to the making of any planning application of the potential of flooding on these sites.
4	Flood risk identified by LCC/OPW flood extent/event map but no flood risk identified by PFRA	It would be prudent to include a note for every town plan affected that: Preliminary Flood Risk Assessment mapping from the Office of Public Works is available that does not indicate flood risk in this town - see associated Strategic Environmental Assessment Environmental Report which accompanies the Variation. However, OPW flood event data and local knowledge is available indicating flood risk in areas of this town. Landowners in areas indicated as per the OPW Flood Event Data Mapping should satisfy themselves prior to the making of any planning application of the potential of flooding on these sites.