Flooding and Water Related Casework

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1 April 2026 – Added link to WG Dear CPO Letter which provides a hyperlink to WG's TAN15 FAQs document and an updated 'Climate Change Allowances and Flood Consequence Assessments' Guidance Note (March 2026). 25 March 2026 – added link to superseded version of TAN 15 (2004). Amended chapter. Supersedes 'Water Related Planning Casework'.	

Key legislation and policy

Primary Legislation **Secondary Legislation**	Environmental Protection Act 1990 Water Resources Act 1991 Water Industry Act 1991 Environment Act 1995 Pollution Prevention and Control Act 1999 Water Act 2003 Flood and Water Management Act 2010 Water Act 2014 Water Supply (Water Quality) Regulations 2018 Private Water Supplies (Wales) Regulations 2017 The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 Contaminated Land (Wales) Regulations 2006 Environmental Permitting (England and Wales) Regulations 2016 Flood Risk Regulations 2009
National policy and guidance	• Planning Policy Wales (PPW12) • TAN15: Development, flooding and coastal erosion • WG Dear CPO Letter (26 March 2026) with links to TAN15 FAQs and 'Climate Change Allowances and Flood Consequence Assessments' • Water Strategy for Wales 2015 • Environment Strategy for Wales 2006

	• Environmental Permitting Guidance – Water Discharge Activities: December 2010 (Defra and WAG) • WG Circular 008/2018, Planning requirement in respect of the use of private sewerage in new development, incorporating septic tanks and small sewage treatment plants • Water Framework Directive Implementation in England and Wales: new and updated standards to protect the water environment – May 2014 (Defra and WAG)
Judgments	• None
Other guidance	• Ministerial Decisions 2156953 (Burry Port) and 2206500 (Ammanford) – both re. flood risk. • NRW has a range of internal and external guidance documents which may be referred to in their submissions.

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Introduction

1. This guide gives advice on issues relating to flooding as well as water supply, sewerage, sewage treatment and disposal, and the prevention of pollution of surface and underground waters, as they may arise in general planning casework. This guide is intended to assist Inspectors on flooding casework following the publication of the new Technical Advice Note (TAN) 15: Development, flooding and coastal erosion in March 2025 and also for Inspectors who may not be fully aware of water policy and the terms used.

2. The statutory water and sewerage undertakers in Wales deal with water supply and sewerage within their statutory areas. Natural Resources Wales (NRW) are responsible for policing and protecting the quality of inland, coastal and underground waters, for conserving and enhancing water resources, for licensing water abstractions and for consenting effluent discharges. They are also very much concerned with the prevention of flooding and have statutory powers to manage flood risk to existing properties and assets, whether this is from the sea or from rivers. NRW has responsibilities for 'main rivers' (watercourses designated as such on main river maps), whilst local authorities have responsibilities for non-main river watercourses, and Internal Drainage Boards (IDBs) are responsible for draining certain low-lying areas. Responsibility for dealing with surface water run-off from highways and from other hard-surfaced development varies from location to location; sewerage undertakers, local planning and highway authorities and NRW may all be involved.

3. The principal function of The Water Services Regulation Authority (OFWAT) is to regulate the financial affairs of the statutory water and sewerage undertakers in England and Wales. As part of that duty, OFWAT carries out a Periodic Review every five years when all water and sewerage undertakers have to submit their Asset Management Plans (AMPs) for approval. OFWAT sets the price limits ('K factors') that Companies can charge, but at a level that is intended to allow for their approved commitments, including all identified new schemes. Particularly on proposals for larger developments, it is sometimes stated that no money has been allocated for the necessary works in the current AMP determination. However, additional 'pass-through' funding may be authorised by OFWAT if the company can demonstrate that there are stringent planning requirements for a scheme. The company may need to make an appeal if it is to demonstrate that these requirements are met.

4. NRW's policies on such things as groundwater protection or drainage may be referred to in appeals. These are national policy documents. Some have been subject to some form of public consultation, but many have not or are in draft form. In planning casework they are most unlikely to carry the same weight as Development Plan policies. Inspectors need to be aware that NRW has its own Guidance for Pollution Prevention (GPP) documents (formerly known as Pollution Prevention Guidelines (PPGs)).

5. NRW also has a range of regional strategies and management plans (e.g. Coastal Management Plans, Catchment Abstraction Strategies) that look many

years ahead. Whilst policies in these various documents do not have the same weight as those in the statutory Development Plan, in most cases they have been subject to at least some public consultation process and can be given appropriate weight in reaching a decision.

Flooding

6. The consequences of flooding can be very serious and despite NRWs flood warning system, can result in loss of life. It places heavy demands on the emergency services and its consequences can be very expensive in financial terms. Following several national events in recent years, there is no longer certainty that home insurance (and therefore mortgages) will be available in the future in areas at risk from flooding, or where it is available it is likely to be subject to higher insurance premiums reflective of the risk.

7. Riverine (or fluvial) flooding results from high rainfall, or a rapid thaw of snow, generating run-off that cannot be accommodated in the river channel. Flooding from rivers poses a significant threat to many communities in Wales. In addition, Wales 'extensive coastline results in many areas facing significant risks from coastal flooding. Factors which contribute to coastal flood risk include storm surges which can cause sea levels to rise and inundate coastal areas and climate change contributes to rising sea levels and results in pushing water further inland during high tides. Storms in combination with extreme high tides can result in severe flooding. Localised flooding can occur practically anywhere as a result of heavy rainfall overloading the local drainage system, or possibly due to blockages of streams and culverts. With climate change, this type of flooding is predicted to become more commonplace and more severe.

8. Surface water flooding occurs when the quantity of water cannot pass downstream because of inadequate pipe or channel capacity, or quite often because of constrictions at bridges or culverts. Any constrictions that exist in rivers can be made much worse by trapped floating debris (such as tree branches). Sewers and other surface water drains can also become blocked by debris after a heavy rainfall event, but serious flooding as a result of inadequate drainage is more commonly caused by inadequate capacity in the system.

9. Groundwater flooding occurs when underground water levels rise above the surface. This is most likely to occur in low lying areas, particularly when underlain by impermeable strata. Here, water levels rise gradually during the winter and subside slowly during the summer. When such flooding occurs, it can take weeks or months to dissipate.

10. When river flooding occurs, built development within the flood plain will both impede the passage of flood water and at the same time reduce the capacity of the flood plain to store the volume of flood water. The storage of water in washlands reduces the volume which needs to be carried downstream until the peak flows subside, when the stored water can drain back into the normal river channel. Both the obstruction of water flows and the loss of storage capacity will raise flood water levels to some extent in the area, thereby increasing the severity of the flooding, and probably causing more properties to be flooded.

The obstruction of flood flows will increase water levels upstream, whilst the loss of storage will increase levels downstream.

11. During flood events, excess water will naturally flow downhill and will be diverted by fixed obstacles such as buildings. Even small changes in surface levels and materials can affect the flow and storage of water. Development of a site at risk of flooding, or near a risk, has potential to change the expected flow of water during a flooding event.

12. NRW has flood defence powers in relation to all designated main rivers, but there are also many non-main watercourses for which the local authority has powers under the Land Drainage Act 1991. Land drainage consents are required from NRW for developments on, over or under a river and close to a riverbank. These now fall within the scope of the Environment Permitting Regulations.

13. TAN 15: Development, Flooding and Coastal Erosion takes a risk-based approach, seeking to limit exposure to risk for most vulnerable development. It seeks to strike a balance between allowing communities to change and regenerate whilst ensuring flood risk remains a key consideration. The published document differs from the previous consultation version which was more prescriptive. **Inspectors should refer to the TAN itself for all casework and not rely on this guidance or any referred appendices**. WG's Dear CPO Letter dated 26 March 2026, which includes hyperlinks to TAN15 FAQs, might also be of relevance (**Dear Chief Planning Officer (CPO) Letter**).

14. The Dear CPO & Ministerial Statements published alongside the new TAN15 (2025) set out the Transitional Arrangements regarding the introduction of the new TAN 15 (2025) and the previous TAN 15 (2004). Essentially planning applications which have been registered and validated before the publication of the TAN (31 March 2025) should continue to be assed against the old (2004) edition of the TAN. The flooding guidance in the previous version of this ITM Chapter relating to the 2004 version of TAN 15 is contained at Appendix 1 for use in casework predating 31 March 2025 under the transitional arrangements.

15. A Procedural Matter should be used in relevant decisions to set out the situation and confirm that the appeal has been determined according to the transitional arrangements set out in the Ministerial Written Statement. Appropriate wording is as follows:

"*The Welsh Government published a new Technical Advice Note (TAN) 15: Development, Flooding and Coastal Erosion (2025) during the processing of the appeal/s. That document confirms that it should be read in conjunction with Planning Policy Wales (PPW) and the Welsh National Marine Plan and that it replaces TAN14: Coastal Planning (1998) and the previous TAN15: Development and Flood Risk (2004). However, the Ministerial Written Statement dated 31 March 2025, which accompanied the publication of the new TAN, confirms that there will be a transitional period for its implementation. Specifically, planning applications that were submitted and registered before the publication of the new TAN, such as those subject of these appeal/s, shall*

continue to be assessed against the previous version. I shall consider the appeal/s accordingly."

16. Inspectors may also wish to consider whether it would be appropriate, depending on the circumstances of your case to note the implications of TAN15 (2025).

17. From here on reference to TAN 15 is to the recently published 2025 version. TAN 15 refers to planning flood zones as set out in the Flood Map for Planning. Figure 1 of TAN 15 refers to each of the zones and the potential flood risk from rivers, the sea, surface water and small watercourses. The 'flood risk areas' are defined as Zones 1, 2 and 3 and the TAN 15 Defended Zone. Zone 1 has the least risk of flooding and Zone 3 the greatest. The TAN defines Defended Zones as areas benefitting from formal flood defences managed or maintained by Risk Management Authorities. Figure 1 of TAN 15 sets out in detail the definition of each flood zone, including an allowance for climate change.

18. Although flood defences reduce the risk of flooding, they do not eliminate it and development on sites located within such zones should not be allowed without further consideration of flood risk. In an event where defences are overtopped or breached the consequences of flooding can be severe. The TAN 15 Defended Zones are served by defences which provide protection from sea or river flooding, or in some cases both. However, some areas within this zone may be vulnerable to other sources of flood risk which should be considered.

19. The Flood Map for Planning (FMfP) will be updated every 6 months by NRW. Further information on changes to the FMfP is provided from paragraphs 4.8-4.14 of TAN 15. Challenges to the FMfP should be made via the challenge process to NRW and are unlikely to be significant considerations in our casework.

20. Welsh Government policy on Development and Flood Risk is at paragraphs 6.6.22 – 6.6.29 of PPW12. It refers to the climate emergency increasing the risk of flooding in the future due to sea-level rises, increased storminess and more intense rainfall. It advocates a precautionary approach of positive avoidance of development in areas of flooding from the sea or from rivers. Reference is also made to surface water flooding affecting choice of location and the layout and design of schemes which should be considered at an early stage in formulating development proposals.

21. PPW12 acknowledges the unsustainability of the continued construction of hard engineered flood defences and the need to take a strategic approach to flood risk. It advocates a move away from flood defence and mitigation of the consequences of new development in areas at risk of flooding towards a more positive avoidance of such development. It notes that built development in undeveloped areas of floodplain should be wholly exceptional and limited to essential transport and utilities infrastructure.

22. TAN 15: Development, flooding and coastal erosion provides further policy advice on development and flood risk in relation to development plans and planning applications.

TAN 15 Principles for development plan and development management purposes

23. TAN 15 adopts a risk-based approach in respect of development in areas at risk of flooding and coastal erosion. When considering the risk associated with flooding and coastal erosion, the term 'risk' encompasses the following
    1. The likelihood of an event happening; and
    2. The impact that will result if flooding or coastal erosion occurs.

24. The TAN acknowledges that many communities are located in areas at higher risk from flooding, but these communities must be allowed to adapt, change, and regenerate in the knowledge of the latest scientific evidence. In light of this, reference is made to new development and redevelopment, defined as follows:

    - New development - Any development on greenfield land
    - Redevelopment - Any development on previously developed land as defined in Planning Policy Wales

25. Section 9 of TAN 15 identifies development vulnerability categories as follows, with further details contained within Figure 4 of the TAN:

    - Highly vulnerable development, where the occupants have limited ability to decide about the risks to life and property associated with flooding and where their ability to manage those risks is limited. Includes, amongst other uses, all residential uses and emergency services;
    - Less vulnerable development, where the ability of occupants to decide if risks and consequences are acceptable is greater than that in the highly vulnerable category. Development types include but are not limited to, general industrial, employment, commercial and retail development; and
    - Water compatible development, developments which are required to be located near water by virtue of their nature, and developments which are resilient to the effects of occasional flooding, such as boatyards, marinas and flood defences.

26. Reference is also made to larger mixed-use schemes being considered under different vulnerability categories to help maximise use of a site. However, paragraph 9.7 notes that all small developments including single dwellings, should be considered under a single category. As such, gardens, access and driveways of a dwelling should be flood free and therefore all fall under the highly vulnerable category.

27. TAN 15 refers to Future Wales and acknowledges that parts of the growth areas identified in Future Wales are in Zones 2 or 3. It advises that any strategic regeneration proposals in areas of flood risk must be fully justified by the Local Development Plan (LDP) and supported by Strategic Flood Consequences Assessments (SFCA).

28. Paragraph 10.5 of TAN 15 advises where a strategy of an LDP is affected by flood risk then the plan must contain appropriate measures to mitigate and defend areas at highest risk informed by a SFCA. Any LDP with policies or proposals affected by flood risk should incorporate appropriate flood mitigation measures in the Infrastructure Plan. Section 10 of TAN 15 (paragraph 10.8 onwards) sets out the main flood risk considerations when allocating sites for development in LDPs depending on the flood risk category.

29. TAN 15 Section 10 also contains advice on considering flood risk for planning applications located in each of the defined zones, advice is also given based on whether the site is greenfield or brownfield and the vulnerability category of the proposed development. Appendix 2 contains two flow diagrams showing the key principles when considering cases in line with the TAN. **Please note these have been prepared by other parties and are only intended to be a helpful starting point and all cases should be tested against the TAN and it should remain to be read in its entirety**.

30. A greater emphasis is placed on sites being identified in the LDP for development. Paragraph 10.22 confirms that no new highly vulnerable development on greenfield land should be permitted in Zone 3 and that Welsh Ministers must be notified of any such proposal a planning authority intends to approve.

31. Section 11 of TAN 15 contains the acceptability considerations. A full understanding of the potential risks and consequences will be required to inform any decision and a Flood Consequences Assessment (FCA), which is appropriate to the nature and scale of the proposed development, must be undertaken. Further details on the technical requirements of an FCA are provided at Figure 2 of the TAN, as supplemented by WG's **Dear Chief Planning Officer (CPO) Letter** dated 26 March 2026 which includes a hyperlink to the guidance document entitled 'Climate Change Allowances and Flood Consequences Assessments'.

32. In all circumstances, the following conditions should be met:

    - No increase in flooding elsewhere
    - Occupiers aware of flood risk
    - Escape/evacuation routes present
    - Flood emergency plans and procedures agreed and in place
    - Flood resistant and resilient design
    - Acceptable consequences for type of use (see detailed guidance from paragraphs 11.5 onwards)

33. Further guidance is provided on acceptable flooding frequency thresholds for different types of development (Figure 5) and maximum values for depth of flooding and velocity of floodwaters (Figure 6). Paragraph 11.8 indicates that the thresholds set out in Figure 5 may be applied with more flexibility for redevelopment, changes of use, conversions and extensions, where the ability to substantially redesign a development is limited. A Flood Hazard Matrix is

provided at Figure 7 which should be used to assess how hazardous a flood event may be to different people.

34. Section 12 relates to coastal risks of erosion and flooding. TAN 15 places emphasis on Development Plans to indicate which parts of the coast can be developed, should be maintained in their current form or should be left to nature. Shoreline Management Plans should set out long-term policy frameworks for the management of coastal risks and defences and should be reflected in Development Plans. When making decisions on development proposals within coastal areas, decision makers should fully consider whether there are risks to the development arising from coastal erosion or flooding. The Flood Map for Planning incorporates areas shown on the National Coastal Erosion Risk Map to be at risk of erosion. Development should not be permitted in these areas.

35. TAN 15 Section 13 contains guidance on resilient design and advises Strategic and detailed Flood Consequences Assessments should provide advice on which measures offer the best and most appropriate protection from flooding. Reference is also made to the integration of SuDS in developments which achieve multiple positive outcomes, by combining crucial drainage and flood defence assets with green infrastructure and high-quality public realm. Further information on the relevant changes in TAN 15 regarding SuDS are contained in the respective ITM Chapter.

36. Section 15 of the TAN contains further considerations for planning applications. Reference is made to consultation and NRW and the Lead Local Flood Authority (LLFA) should be consulted on all planning applications for development in Zone 2, Zone 3 or the TAN 15 Defended Zones. Paragraph 15.2 clarifies that the flooding consequences associated with new highly vulnerable development in Zone 3 (Rivers and Sea) are not acceptable and there is no requirement for NRW to provide advice on this type of proposal. The LLFA are to advise on surface water/ small watercourses flooding risks.

37. Paragraph 15.5 refers to sites falling in two or more flood zones. Each proposed land use should be assessed against the relevant flood zone in accordance with the criteria within the TAN. If the proposal in part or in its entirety does not comply with the requirements of the TAN, the planning application should be refused.

38. Specific guidance on householder extensions and developments is contained at paragraphs 15.6 and 15.7. The remaining sections of the chapter contains further guidance on open space, recreation and agricultural land (paragraph 15.8); caravan and camping sites (paragraph 15.9); canals and other artificial water bodies (paragraph 15.11); developer contributions (paragraph 15.13) and Environment Impact Assessment (paragraph 15.17).

Water Supply

39. In Wales water is supplied by the statutory undertakers: Dŵr Cymru Welsh Water and Severn Trent Water (which also provide sewerage and sewage

disposal services); or by Hafren Dyfrdwy, a water-only company which supplies the Wrexham and Chester areas in the River Dee catchment. Formerly known as Dee Valley Water, the company was taken over by Severn Trent Water in 2018. There are also a considerable number of Private Water Supplies where a private individual or firm operates their own water source, e.g. an abstraction from a river, well or borehole.

40. A supply of potable (drinkable) quality water is available from the mains of the statutory water undertaker for the area, and under Section 45 of the Water Industry Act 1991 (WIA), the owner or occupier of a building can requisition a domestic water supply connection if a suitable water main exists. If a private water supply is to be provided, the Local Authority is obliged by the WIA to satisfy itself as to the wholesomeness and sufficiency of the water. The Water Supply (Water Quality) Regulations 2000 prescribe the standards of wholesomeness for water supplied for domestic and food production purposes, and private water supplies are regulated by the Private Water Supplies (Wales) Regulations 2017.

41. The provision of a water supply should be taken into account in any major development arising through the Development Plan process. However, acting on advice from the Water Undertakers, Local Planning Authorities have occasionally placed embargoes on unplanned development because of a lack of suitable public water supplies. Possible reasons for this may include the distance to public water mains, or inadequacies in capacity of the source works, the water treatment works, service reservoirs, pumping installations or water mains. Inspectors should be aware however that a main can be requisitioned under S41 of the WIA, subject to a financial contribution if the scheme would incur a deficit. If major works are required, the cost could be prohibitive for a small development, and a good quality private water supply may overcome the problem. If the water supply is in dispute, it will be necessary to have regard to the obligations placed on the Local Authority and the Water Undertaker by the WIA, and possibly also by other legislation.

42. A licence is required to abstract water from above or below ground (except for very small quantities, such as the supply for one house). NRW manages the overall water resources for Wales and determines licence applications under the terms of the Water Resources Act 1991 as amended by the Water Act 2003.

43. Water Undertakers have a duty to promote the efficient use of water, and they now produce Water Efficiency Plans. Among other things, they encourage the use of water saving and recycling schemes both in industry and in the home. Such schemes can show considerable financial benefits for some industrial users, whilst water metering, the installation of water saving appliances and the recycling of greywater or rainwater are also becoming common in new residential schemes. Recycled water may need treatment, even though it is usually only to be reused for such purposes as flushing toilets or garden watering, and Inspectors should be satisfied that sound operation and maintenance procedures will be provided.

Sewerage

44. Sewerage is the transfer of wastewater by sewers, which may be pipes or open channels. 'Drain' and 'sewer' are defined in S219(1) of the WIA. To all intents and purposes, a single curtilage is served by a drain, whereas a sewer collects the drainage from more than one curtilage. Surface water sewers, or storm sewers, collect and convey rainwater. Foul sewers convey domestic sewage and wastewater, together with trade effluents, for treatment at waste water treatment works (WWTWs). Modern sewerage employs 'separate' systems, so that surface water from roofs and paved areas is excluded from the foul flows conveyed for treatment. Older systems were generally 'combined', and any sewer may suffer infiltration by groundwater.

45. Storm sewage is taken to be that amount of wastewater which, as a result of rain, snowmelt or infiltration, is over and above the normal daily dry weather levels expected in the system. Combined sewer overflows (CSOs) are used to relieve the sewerage system of excessive flows in wet weather and are designed to discharge to streams/rivers, or the sea/estuaries. These discharges are regulated by consents or environmental permits, issued by NRW. However, frequent overflows (or breaches of the consent/permit conditions) may indicate that the sewerage system is more commonly overloaded and cannot satisfactorily accept any further connections.

46. Each sewerage undertaker (in Wales Dŵr Cymru Welsh Water and Severn Trent Water) has a duty to provide an effective system of sewers in its area, and these sewers become public sewers to which the owners/occupiers of premises, and the owners of private sewers, have a right to connect (except trade effluent discharges which require the undertaker's consent). Owners/occupiers may also requisition a sewer or, in circumstances where environmental problems would otherwise arise, the undertaker may be obliged to provide one.

47. A sewerage undertaker cannot refuse to allow connection, or dictate where such a connection should be made, on the grounds that some part of the sewerage system is overloaded (see Barratt Homes Ltd v Dŵr Cymru Cyfngedig). However, planning permission can be refused on the basis that the existing sewerage system is unable to cope with the wastewater flows likely to be generated by the proposed development. This may be because of limitations in the size of the pipes, in the flow rating of pumping stations, or in the capacity of the WWTW that is served by the system.

48. Careful consideration should be given to permitting any development that would drain to a public sewer in situations where there is clear evidence to show that the sewerage system is overloaded, or where policies indicate that the limited capacity which remains is reserved for essential development. In themselves, decisions to allow small developments might have little impact on the quality and frequency of discharges from the system, but accumulatively such decisions can have significant effects.

49. The sewerage undertaker may have long term plans for works to improve the system, but priorities change and the works themselves may take a long time to complete. A condition to the effect that development should not be occupied until such works have been carried out should only be attached if there is a firm indication that the works are likely to go ahead in the foreseeable future. Inclusion of a project in the water company's AMP may provide the necessary reassurance, but a signed contract is better. Certainly, Inspectors should be cautious of any arrangement whereby newly constructed housing would be left vacant pending completion of the improvements. An agreement (S106 TCPA) between the developer and the undertaker might overcome the difficulty. Alternatively, planning permission might be subject to a planning condition that development should not begin until the undertaker's scheme is complete; in such a case, consideration should be given to the likelihood of the scheme being carried out within a certain timescale and to the potential consequences that might arise if this did not happen.

50. In circumstances where the undertaker is unable to provide sufficient sewerage or sewage treatment capacity to serve a proposed development, the developer might suggest use of a private package treatment plant; in such cases NRW's view of the proposals would be an important consideration. If the package plant is to remain in single ownership, it is reasonably likely that the quality and quantity of effluent from it can be effectively regulated by NRW. However, if ownership is to be shared amongst occupiers of a housing development, for example, it is difficult for NRW to enforce the conditions of the discharge consent, and proper maintenance and operation of the plant cannot be assured. If a joint management company is proposed, there should be specific and legally binding arrangements in place to ensure effective control of the plant before permission for the development is granted.

Sewage Treatment and Disposal

51. All foul sewage needs an appropriate disposal system, and it is WG policy that any development discharging domestic sewage should connect to the public sewerage system where it is reasonable to do so (PPW12 paragraph 6.6.21). Non-mains foul drainage and the use of private sewage treatment facilities should only be considered when it is not feasible to connect to a main sewer on account of cost and/or practicability. Assessment of the suitability of any private facilities should focus on the likely effects on the environment, amenity and public health and should demonstrate acceptable arrangements for long-term management and maintenance of the facilities.

52. If the planning authority is not satisfied that the arrangements are suitable, this failure would normally be sufficient to justify refusal of planning permission. Welsh Government Circular 008/2018, Planning requirement in respect of the use of private sewerage in new development, incorporating septic tanks and small sewage treatment plants, provides guidance for the consideration of new development in areas with no public sewerage system. It lists a number of particular factors to be considered:

- contravention of recognised practices;

- adverse effect on water sources/resources;
- health hazard or nuisance;
- damage to controlled waters;
- damage to the environment or amenity;
- overloading the existing capacity of the area;
- absence of suitable outlets;
- unsuitable soakage characteristics;
- high water table (from records/observations of “rest water levels”);
- rising ground water levels;
- flooding; and
- maintenance plan.

Septic Tanks

53. Private sewage treatment/disposal facilities will comprise septic tanks, cesspools or some type of small treatment plant. Septic tanks have been widely used in the past for rural properties and provide a degree of physical and biological treatment. They retain most of the solids, which then have to be removed by tanker from time to time, and they discharge partially treated effluent which percolates into the ground by means of a network of infiltration field drains. These should be designed taking into account the results of ground percolation tests carried out in accordance with BS 6297: 2007 – Code of practice for the d*esign and installation of drainage fields for use in wastewater treatment*. Sewage discharges to the groundwater (or to surface water) may also require a discharge consent from NRW under the Water Resources Act 1991, depending on the rate of discharge.

54. In considering possible “damage to the environment and amenity”, particular care should be taken to avoid damage to SSSIs, AONBs and public open spaces, bearing in mind also that a proliferation of septic tank discharges can cause considerable harm to the water environment. The presence of aquifers and Source Protection Zones around groundwater abstraction points for water supply may also be critical, as it is NRW policy that discharges to the ground should not be permitted in Inner Source Protection Zones, which may extend some distance around public water supply sources.

55. Provision of a septic tank to serve a single dwelling is permitted development, under the terms of Class E, Part 1 of Schedule 2 to the General Permitted Development Order 1995 (GPDO), subject to certain capacity and location criteria. In other circumstances, planning permission is needed, and Inspectors should have good evidence that the ground has adequate soakage characteristics and that an appropriate area of land for the percolation system can be provided within the Appellant’s control before such permission is granted.

Cesspools

56. Unlike septic tanks, cesspools provide no treatment for the sewage and are merely holding tanks with no outlets. Consequently, they have to be emptied

frequently, typically weekly or monthly, depending on their capacity and rate of filling. This compares with septic tanks which only need emptying every few years.

57. Properly installed watertight cesspools, from which the effluent is frequently removed and taken away for treatment, can provide a technically acceptable means of foul sewage disposal. However, if not operated properly, environmental, amenity and public health problems can occur as a result of frequent overflows due to poor maintenance, irregular emptying, lack of suitable vehicular access for emptying and lack of capacity. It is also not unknown for cesspools to become damaged (deliberately or otherwise) and to leak. Thus, similar considerations to those for septic tanks should be taken into account before allowing a development that would drain to a cesspool. Cesspools are often only considered acceptable as a last resort, e.g. where non-mains sewerage has to be provided within an Inner Source Protection Zone where no effluent discharges to the aquifer are acceptable.

58. BS 6297:2007 gives advice on the design of small STWs, septic tanks and cesspools and, where appropriate, their associated infiltration systems. Amongst other matters, it recommends a minimum distance of 15m to a dwelling or 25m if more than one dwelling is drained. It also recommends consideration of the prevailing wind direction and the adequacy of the vehicular access for tankers.

Private STWs and Package Plants

59. Private Sewage Treatment works, in the form of package plants, use treatment processes that are much the same as those used at the bigger 'public' Sewage Treatment Works which are operated by the statutory undertakers. In principle, perfectly satisfactory effluents can be obtained. The most common package plants consist of Rotating Biological Contactors (RBCs) or High Performance Aerated Filter Units (HiPAF).

60. RBCs feature a cylindrical structure of plates three quarters of which is submerged in a tank of sewage, and which rotates on a horizontal axis such that the bacteria living on the plates are alternately in the liquid and then in the air. These bacteria treat the sewage and, together with a settlement facility within the unit, produce an acceptable quality of effluent for discharge to a watercourse or into ground suitable for it to soak away (via infiltration drains).

61. A HiPAF has settlement zones before and after a filter unit, in which the submerged filter media is artificially aerated. This provides a suitable environment for similar bacteria to treat the sewage to a quality acceptable for discharge to the environment. Both types of plant can be quite compact and can therefore be easily covered over, which is an advantage in visual terms and in the reduction of offensive odours, though they cannot be airtight because air is needed for the treatment processes.

62. Where a private treatment plant is proposed to serve development which will always remain in one ownership (e.g. a factory), it is feasible for NRW to issue

the necessary discharge consent and then monitor and enforce the effluent quality in future. However, where such a plant is proposed for a housing development, which would eventually be dispersed among many different ownerships, there can be difficulties in ensuring proper future maintenance of the plant and the enforcement of the discharge consent. In this case the Inspector needs to be satisfied that a specific and legally binding arrangement will be put in place to ensure effective control and operation of the plant for the lifetime of the development. This could be by arrangements for it to be adopted by a responsible body (e.g. the statutory undertaker or the Council) or by the establishment of a management company with the necessary capabilities and financial provisions.

Public STWs

63. ‘Public’ Sewage Treatment Works are provided and operated by the statutory undertakers (DCWW and Severn Trent Water in Wales). They have traditionally been designed to screen all incoming flows to remove gross solids and then to accept up to three times the dry weather flow of sewage for full treatment. When sewage flows are higher, between three and six times dry weather flow is usually given partial treatment by some form of settlement in storm water tanks, before discharge to the receiving watercourse, and that retained in the storm water tanks after the storm has passed would usually be returned to the head of the works for full treatment. When even higher flows occur (i.e. more than six times dry weather flow), its high dilution by rainwater renders it acceptable for discharge directly to a watercourse via storm water overflows. Nowadays, for larger works this simplistic approach (based on multiples of the dry weather flow) is often replaced by prescribed formulae (taking account of the proportions of domestic and industrial content) but the principles are the same.

64. The final effluent discharge, storm overflows and any other discharges from a Sewage Treatment Works are subject to discharge consents, which specify limits on flows and water quality, depending on the quality and use of the receiving watercourse. Conditions for final effluent, generally specify the 'Upper Tier' requirements (i.e. the concentrations which must not be exceeded in any sample) and the 'Look-up Table' requirements (which stipulate the concentration which must not be exceeded in a statistical analysis of a number of samples). In most cases such limits will be specified for biological oxygen demand (BOD – sometimes called biochemical oxygen demand) and the suspended solids (SS) and ammonia content of the final effluent. Other standards for parameters such as metals, pesticides, nutrients or colour may be required at certain works where their catchment is particularly subject to such pollutants (e.g. due to industrial discharges from certain processes). BOD is a measure of the amount of dissolved oxygen needed by aerobic biological organisms to break down the organic material present in the water, and so is a measure of the amount of organic compounds present in the water.

65. Most sewage treatment works comprise a sequence of treatment processes across the site. Preliminary treatment at the works inlet removes grit, and screens remove the larger solids. Sedimentation tanks then provide Primary Treatment to clarify the raw sewage by facilitating the settlement of suspended

solids. This is followed by a biological Secondary Treatment stage where aerobic bacteria in activated sludge or percolating filters reduce the Biological Oxygen Demand (BOD) of the sewage and normally convert much of the ammonia to nitrate. These stages are typically followed by Final Settlement Tanks where organic material resulting from the biological stage settles out.

66. In some cases, Tertiary Treatment is also required to enable lower discharge consent standards to be met. Examples of tertiary processes include Nitrifying Filters, to further reduce concentrations of ammonia, Sand Filters/Grass Plots/Gravel Clarifiers to further reduce suspended solids and BOD, and Ultra Violet light/Microfiltration/Chlorination to disinfect the effluent.

67. Some modern Sewage Treatment Works, whilst operating on similar principles, have less physical separation between the various processes and so occupy a smaller footprint. In some cases, the works may be totally or partially enclosed, which reduces the impact of the works, though odour control will still be an important consideration if the facility is sited close to footpaths, housing or areas where people work.

68. All sewage treatment works produce sludge from their various stages of treatment, and this is removed and usually processed at a number of central sites. The sludge is treated to reduce its water content (which accounts for most of its weight and volume, typically 90-95%) and to remove pathogens. A combination of mechanical dewatering (e.g. pressing/squeezing) and aerobic or anaerobic digestion is generally used where limited land area is available, whilst in rural areas air drying and composting is sometimes the simplest approach. Energy can be recovered by the production of methane gas in the anaerobic digestion process.

69. Another modern innovation is the use of Constructed Wetlands (or Reed Beds) to treat the wastewater from small communities with a population equivalent of up to one or two thousand. They can be used for the treatment of domestic sewage, highway run-off, water from airports and construction sites, leachate from landfill sites and waste water from various agricultural and industrial processes. They can provide the main treatment process, preceded only by preliminary screening and a little settlement, or they may be used as a tertiary stage to polish the final effluent.

70. Treatment is provided in shallow gravel or earth filled beds planted with vegetation, usually Phragmites Australis reeds. Effluent flows mostly horizontally through or over the surface of the bed, past the roots of the reeds, to an outlet where it discharges to the receiving watercourse. It is essentially a biological process in which complex chemical and microbial interactions occur and, if properly designed and maintained, can produce very satisfactory effluent. These systems are relatively easy to construct, operate and maintain and, although they often need more land than a conventional works, the ‘natural look’ of growing reeds may be a visual benefit in planning terms.

71. As with the sewerage system, a sewage treatment works has only limited capacity, and any surplus capacity may need to be reserved for 'essential

development' or development already granted planning permission. In such cases, it may appear that to allow just one or two dwellings would not significantly affect the water environment, but accumulatively such decisions can have considerable effects. The advice under “Sewerage” above in regard to arrangements to overcome STW shortcomings is also applicable.

Surface Water Drainage and SuDS

72. The creation of impermeable hard surfaced areas, where none existed before, reduces the opportunity for rainfall to percolate into the ground and increases the rate of run-off from the land. This increases the risk of flooding (and pollution) of the downstream catchment as a result of overloaded rivers and sewers. Sustainable Drainage Schemes (SuDS) seek to mimic natural drainage arrangements through systems designed to store water, slow its flow and encourage its infiltration into the ground. Available techniques vary in complexity from water butts through to engineered wetlands. The most appropriate arrangement is determined by the nature of the site and the development proposed. Whatever system is used, its long-term effectiveness will depend on proper management and maintenance, for which funding will be required.

73. It is now Welsh Government policy (PPW12 paragraph 6.6.17 onwards) that new developments of more than one dwelling or where the area covered by construction works equals or exceeds 100 square metres require approval from the SuDS approval body (SAB) before construction can commence. Schedule 3 of the Flood and Water Management Act 2010 establishes SABs in local authorities and gives those bodies responsibility for approving and adopting the approved drainage systems. The new system was introduced in Wales by a Commencement Order in May 2018, which gave effect to Schedule 3 of the 2010 Act. All development subject to planning applications made on or after 7 January 2019 is subject to the new requirement for SuDS approval.

74. Further guidance on SuDS appeals is provided in a separate chapter.

Water Pollution

75. Further advice concerning phosphates and riverine Special Areas of Conservation (SAC) is provided in the Habitats Regulations Assessment ITM Chapter which also contains links to other guidance provided by NRW and Welsh Government. In terms of Marine SACs further guidance is presently provided in PEDW Advice Note 4 2025 (dated 14/08/2025).

76. The planning considerations should take into account any potential for pollution, but only to the extent that it may affect the current and future uses of land. Whilst certain specified waste management activities need planning permission, as a prerequisite to the grant of an environmental permit by NRW, much time can be saved by pursuing the necessary approvals in parallel.

77. The need for compliance with EU water legislation should be considered in the preparation of development plans and may be material to the consideration of

individual planning applications. Amongst EU water legislation, the Water Framework Directive (2000/60/EC) is notable in that it provides the main driver for protecting and enhancing water quality in the environment. Statutory River Basin Management Plans are to be produced which have a direct bearing on land use planning. They include assessment of the status of water bodies, and the Water Framework Directive generally precludes the authorisation of projects where they would cause deterioration of the status of the water body or jeopardise the attainment of good status, though derogation may be sought as a last resort. Where there is risk of a development affecting water body status developers should provide sufficient information to support a Water Framework Directive Assessment. The Water Environment (Water Framework Directive)(England and Wales) Regulations 2017 is the latest implementation legislation.

78. The Directive applies to artificial and modified water bodies as well as to natural ones. Where human activities have significantly changed the shape, form and characteristics of the water environment they are designated as either Artificial Water Bodies (AWB) or Heavily Modified Water Bodies (HMWB), and they include reservoirs, raised flood banks and dredged channels. Mitigation measures may be required to reduce the impacts of activities on the ecology of the water body.

River Waters

79. Surface water bodies are subject to classification for ecological quality and chemical quality. Ecological quality encompasses: biological elements (flora, fauna, etc.; hydro-morphological elements (water flow, depth, etc.; physico-chemical elements (transparency, dissolved oxygen, pH, etc.; and specific pollutants within the UK Environmental Quality Standards (e.g. metals, organic compounds). Chemical status is based on assessing compliance with standards for priority substances and other Environmental Quality Standards (e.g. mercury and benzene). Ecological and chemical status are then combined, and the lowest scoring element determines the water body's overall status.

80. On the positive side, river water quality may be of particular importance in development plan considerations, as it can influence developers' approaches to use of the adjoining land. For example, water of poor quality has no recreational appeal and developers will turn their backs on it. On the other hand, water of high quality may become a major feature of a development. Contact water sports become possible, and restaurants, bars and cafes are attracted to the waterside.

81. NRW is responsible for maintaining and improving the quality of all controlled waters which include groundwater, surface water and some coastal waters. NRW's consent is required for the discharge of potentially polluting material to a surface watercourse or to groundwater. NRW also has powers to serve anti-pollution works notices on a relevant person, if it considers that pollution of controlled waters is occurring or is likely to occur.

82. Diffuse sources of pollution such as nitrates and pesticides applied in the course of agriculture, and various chemical compounds derived from vehicles on major roads can, in total, have just as damaging an effect on water pollution as the more clearly identified point sources. However, because of the national actions required to control them, it is unusual for such diffuse sources of pollution to be major considerations in planning appeals.

83. NRW discharge consents are designed to prevent the deterioration of river water quality and to achieve the requirements of statutory water quality objectives, including those that flow from EU Directives. It is also important to prevent the escape of potential pollutants, such as oil, into surface water drains as these frequently discharge uncontrolled into nearby watercourses. Fuel oils and other stored substances which could harm water quality should therefore be kept within a suitable bund to prevent spillage being washed into the surface water system or directly into the receiving watercourse. A suitably constructed bunded area also serves to protect groundwater from the effects of spillage.

Groundwaters

84. The Water Framework Directive requires all groundwaters to achieve good status in terms of both quantity (i.e. affects of abstraction on it) and chemical status. It also requires that any upward trend in the concentration of any pollutant be identified and reversed.

85. Chemical pollution of an aquifer can be almost impossible to remedy, and water abstractions from the aquifer may have to be stopped, which may involve high cost alternative supplies being sought. The escape of leachate from landfill sites and other areas of contaminated land may, therefore, be of major concern, though the potential for new contamination to arise is generally controlled through the Environmental Protection Act 1990 and the Environmental Permitting (England and Wales) Regulations 2016.

86. Land that is already contaminated may be voluntarily remediated as part of a redevelopment project. It may also be subject to compulsory remediation (see Statutory Guidance on Contaminated Land issued in 2006 in Wales) where there is “significant risk of significant harm” from contaminants present on the site through an identified pollutant linkage to a receptor. Local Authorities are responsible for this regulation, except when the land is defined as a “Special Site” which includes any that might affect controlled waters, in which case NRW becomes the enforcing authority.

87. With the introduction of this regime and the encouragement to redevelop previously developed land, Inspectors should be aware that detailed site investigation may be necessary to identify possible contamination on a site before there is any certainty over what remedial action will be required. This is particularly the case for land previously used for industrial purposes. Accordingly, that information may be necessary before outline permission is granted, unless it is very clear that the proposed use will be acceptable. The degree of remediation required is dependent on the new land use proposed, with residential use requiring more measures than industrial use. The

assessment takes into account the source (or sources) of pollution, the potential linkage path and the nature of the receptor.

88. These considerations are particularly pertinent where NRW has identified Source Protection Zones around significant groundwater abstractions. Zone 1, the Inner Source Protection Zone, is defined as within 50 days travel time for groundwater to the source and, as biological decay does not provide sufficient protection against pollution within that time, polluting discharges should be avoided within the Zone. Zone 2, the Outer Source Protection Zone, represents 400 days travel time and is subject to less onerous restrictions, although it is NRW policy to avoid pollution risks so far as possible. Zone 3 is the rest of the aquifer catchment where certain types of waste disposal may be acceptable, subject to proper containment.

Other Relevant Manual Chapters

89. The following other chapters of the Manual may be of relevance:

- Water Related Specialist Casework, which covers topics such as appeals on abstraction licences, discharge consents and land drainage consents, and Drought Orders/Permits.
- Sustainable Drainage (SuDS) Appeals
- Habitats Regulations Assessment.

Appendix 1

TAN15: Development and Flood Risk (2004) – Guidance from the earlier ITM chapter relating to the previous version of the TAN to be used for those cases under the transitional arrangements.

The 2004 version of TAN 15 is available via iShare:
https://documents.hf.wales.gov.uk/id:A62256150/document/versions/published

TAN15 2004 Assessment Framework

1. TAN15 expresses the aims of the precautionary framework as being:

   - to direct new development away from areas which are at a high risk of flooding; and
   - where development has to be considered in high risk areas, only those developments which can be justified on the basis of the tests in Sections 6 (justification) and 7 (flooding consequences) are to be located in such areas.

2. Operation of the precautionary principle is governed by the designation of flood zones on the Welsh Government's Development Advice Maps (DAMs), which are reviewed periodically, and the definition of the vulnerability of different types of development to flooding. Section 4 of TAN15 describes the Flood Zones:
   - Zone A (no risk of flooding);
   - Zone B (sedimentary deposits indicate historical flooding and the need to check the current risks); and
   - Zone C (within the 0.1% flood risk area for river, tidal or coastal flooding).
   - Zone C is further divided into C1 (developed areas of the floodplain served by significant flood defence infrastructure) and C2 (areas of the floodplain without significant flood defence infrastructure).

3. Section 5 of TAN15 allocates the various types of development to one of three categories:
   - Emergency services, which need to be operational and accessible at all times;
   - Highly vulnerable development, where the occupants have limited ability to decide about the risks to life and property associated with flooding and where their ability to management those risks is limited (particularly residential premises); and
   - Low vulnerable development, which is generally taken to be industrial premises and land uses of similar limited consequences.

4. Given the historical pattern of development alongside rives, it is inevitable that much of it falls within Zone C areas. In these circumstances, it is recognised that further urban development should not be completely precluded, particularly bearing in mind the benefits of redeveloping previously used land. However, any new development allowed will not be free from risk, even if protected by flood defences, and the decision maker has to make a balanced judgement based on the tests in Sections 6 and 7 of TAN15.

5. Section 6 makes it clear that highly vulnerable development and development for emergency services should not be permitted in Zone C2. It then sets out the justification test and says that all other new development should only be permitted in Zones C1 and C2 if it is justified in that location. By implication, the same test applies to proposals for highly vulnerable and emergency services development in Zone C1. The criteria refer to local authority regeneration initiatives and strategies and to employment objectives required to sustain an existing settlement, and this is taken to include development plan strategies. They also refer to compliance with PPW aims, including the use of previously developed land, and to consideration of the consequences of flooding.

6. Section 7 makes it clear that, if development meets the test in Section 6, that justification will be in the knowledge that the development will flood and will need to be planned accordingly, and Section 7 and Appendix 1 of TAN15 provide guidance on the assessment of flooding consequences. The judgement on whether a development should proceed or not will depend on whether the consequences of flooding can be managed down to an acceptable level for the type of development concerned. For example, it is not sensible to allow further residential development in a flood risk area if flood warnings cannot be provided and safe access/egress cannot be achieved.

7. In such circumstances, a flood consequences assessment (FCA) has to be carried out to examine the risks and mechanisms of flooding and its likely consequences. The scope and level of detail of an FCA should be appropriate to the size and scale of the proposed development, and more advice on FCAs is provided in Appendix 1 of TAN15. It lists the following matters to be addressed:

   - Likely mechanisms of flooding;
   - Likely sources of flooding;
   - Depths of flooding throughout the site;
   - Speed of inundation of the site;
   - Rate of rise of floodwaters throughout the site;
   - Velocities of floodwaters across the site;
   - Overland flood routes;
   - Effects on access to/from the site and on other infrastructure, such as sewerage and sewage disposal;
   - Impacts on natural heritage; and
   - Impacts on flood risks for neighbouring properties and elsewhere on the flood plain.

8. Appendix 1 also provides guidance on acceptability criteria, including acceptable flooding frequency thresholds for different types of development and indicative maximum values for depth of flooding, rate of rise of floodwaters, speed of inundation and velocity of floodwaters. Ministerial decisions have confirmed the importance placed on meeting all of these various criteria. Section 9 summarises the policy requirements and acceptability criteria for different types of development in the various Zones, and Sections 10 and 11

provide particular guidance on considerations for preparation of development plans and in determining applications for planning permission.

9. TAN15 allows for several exceptions to its framework approach. Firstly, it makes exceptions for minor householder development, such as minor extensions and alterations, unless they have direct effects on a watercourse. Secondly, developments which by their nature have to be in waterside locations, such as boat yards and marinas, do not have to be justified in that location but are still subject to the FCA test. Thirdly, changes of use only require FCAs where they would result in a change from a low vulnerability use to a high vulnerability use. And finally, areas of public open space are likely to be acceptable on land at risk of flooding, although any ancillary buildings (even any subject to prior approval procedures) should be subject to the consequences test in Section 7 of TAN15.

10. Ministerial decisions have confirmed the intention that there should be an “in principle” presumption against highly vulnerable development in Zone C2 and that the policy does not allow a risk assessment to justify such development. They have also confirmed WG’s sustainable objective of moving away from flood defence and mitigation in areas of flood hazard to the positive avoidance of development in such areas. These have clarified how the TAN15 framework is to be applied.

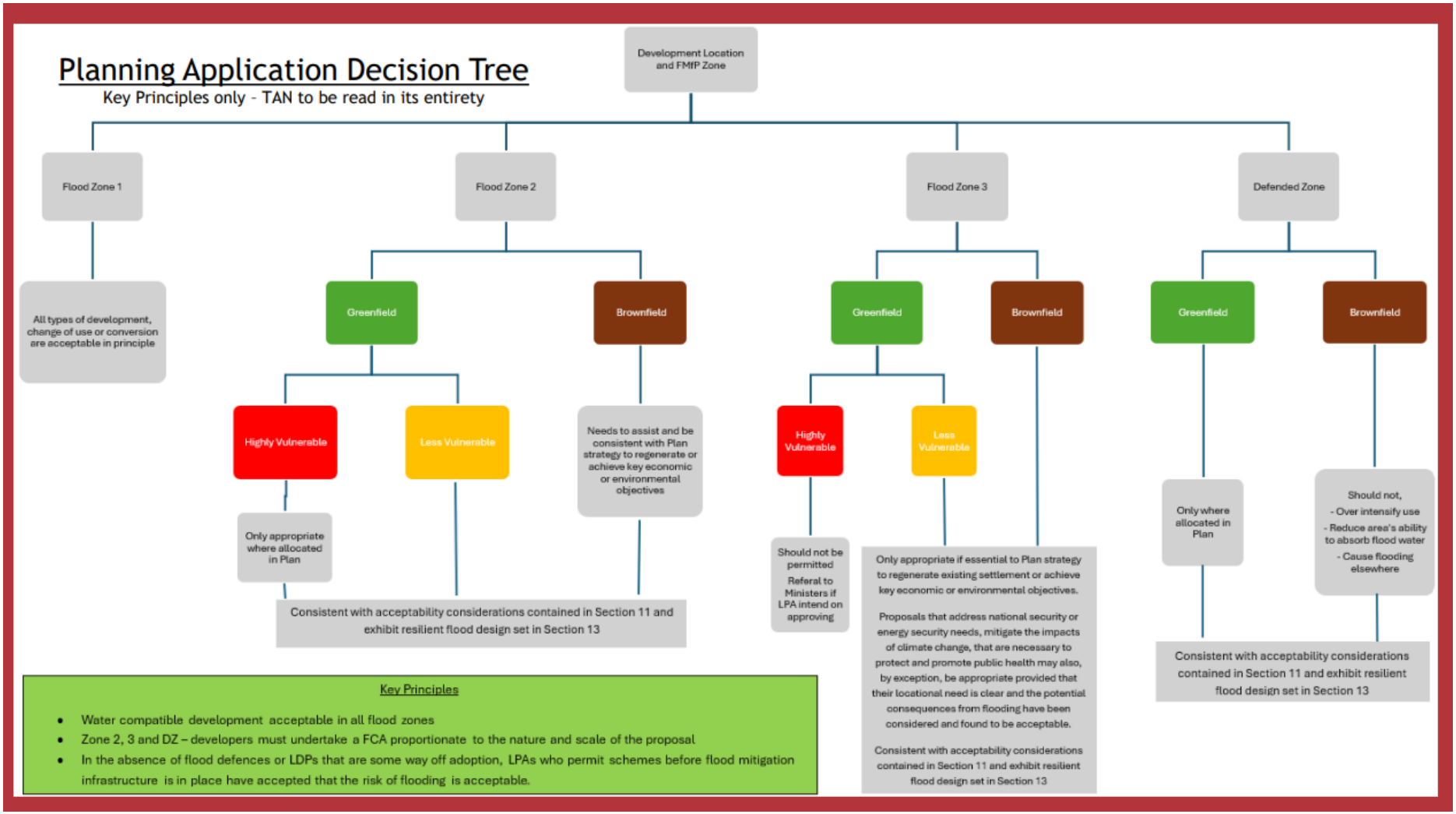
11. NRW provides expert advice on flood risks, and planning authorities (and Inspectors) should have good reasons for not following its advice. However, Ministerial decisions have made it clear that that advice cannot always be relied upon and that it needs to be carefully scrutinised. NRW will advise on the FCA and will comment on flooding risks and consequences and on the suitability of any mitigation measures proposed by the developer. However, it is up to the planning authorities to balance all factors in reaching decisions on development proposals.

12. When considering the risks of flooding of a site which is close to the Flood Zone boundaries on a DAM, it should be remembered that those lines are not fixed but may vary over time as more information on flood events becomes available. Thus, although TAN15 provides a framework for the consideration of flood risks and consequences in the different zones, it is inevitably a simplistic approach. In reality, the risks of flooding vary with topography and there is little difference between sites of 0.99% and 1.01% risk even though they lie on different sides of the 1% risk line.

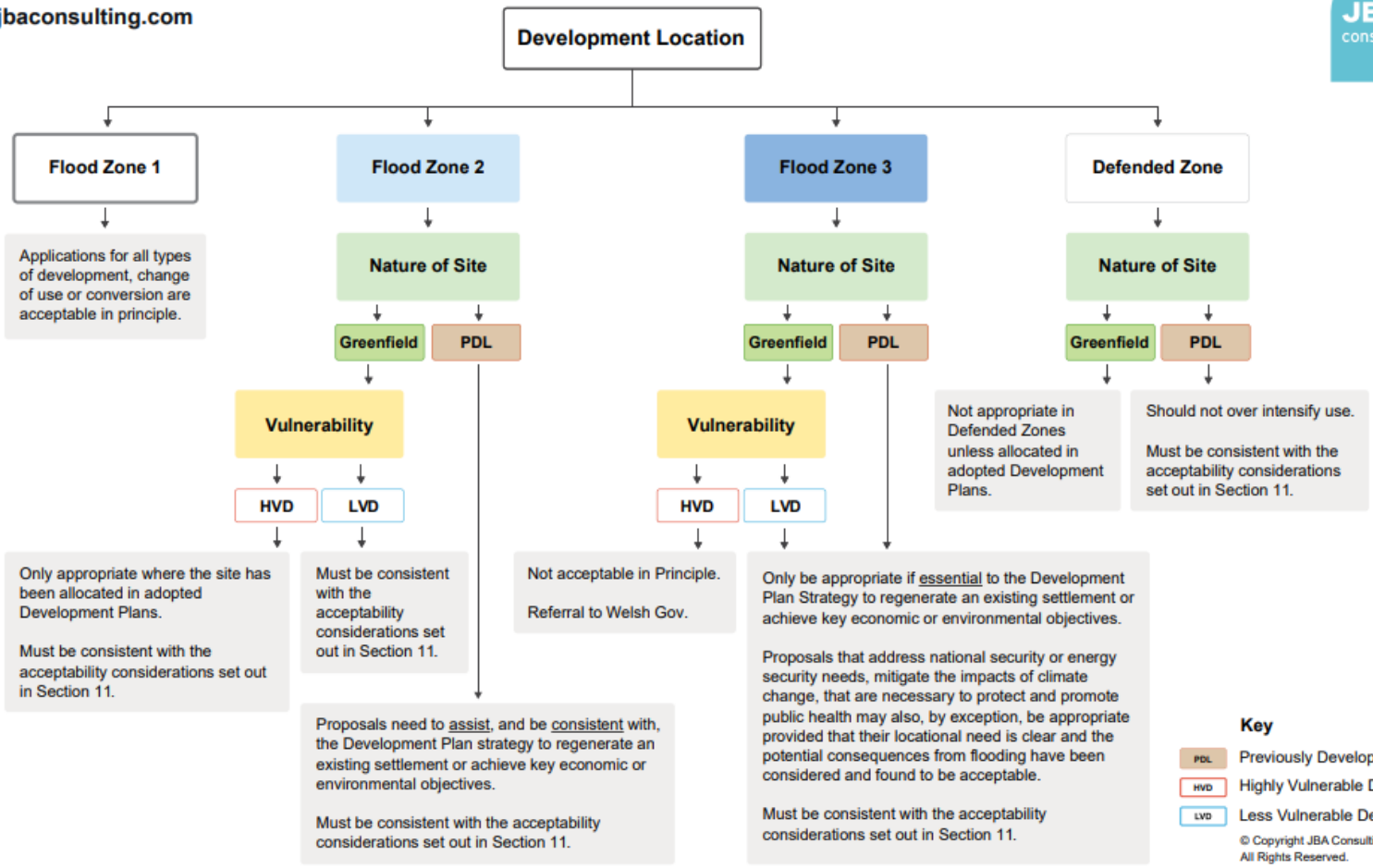
13. It is understood that TAN15 is to be reviewed in the foreseeable future and may move from its present precautionary approach to a risk-based approach. However, until that occurs, the present TAN15 retains its full policy support.

Appendix 2

TAN 15 flow diagrams prepared by other parties. **These are not endorsed as entirely accurate or to be used in place of reading the TAN in full and are an initial starting point only.**



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Footnotes:

1. Defended Zone requirements supplant Flood Zone 2 and 3 requirements.

2. Water Compatible Development is acceptable in all flood zones.

3. The decision tree is for Planning Applications and NOT Local Development Plan allocations.

4. The decision tree is applicable to flood risk from rivers and the sea flood zones only. We understand that it does not apply to surface water and small watercourse flood risk.

5. Whilst every effort has been made to ensure the accuracy of this diagram, JBA Consulting cannot guarantee how TAN15 will be interpreted by others. Opinions may differ.