



Powys Local Development Plan (2011-2026)

Supplementary Planning Guidance

Land Drainage and Flooding

WORKING DRAFT

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1. Introduction

1.1 This guidance supplements the flood risk and land drainage related policies of the Powys Local Development Plan (LDP) (2011-2026), which was adopted by Powys County Council on the 17th of April 2018, and has been prepared to assist decision-making on planning applications within the Powys LDP area. This guidance does not apply to areas of the County of Powys located within the Brecon Beacons National Park Authority area (BBNP).

1.2 This Supplementary Planning Guidance (SPG) is intended to be read alongside the relevant policies of the LDP (see section eight), along with any other related adopted SPG.

1.3 The topography of the plan area has meant that historically a large number of settlements and main transport routes are located in valleys at important river crossings; as a result of this a number of settlements are constrained by flood risk. Planning policy directs development away from flood plains and aims to prevent development proposals from increasing levels of flood risk. The Policies in the LDP require development proposals to consider the following:

- the risk from all sources of flooding (therefore not just the flood risk from rivers and the sea);
- the incorporation of surface water drainage systems that seek to control surface water as near to its source as possible; and
- where possible to incorporate measures that reduce an existing flood risk.

1.4 Flood risk is influenced by climate change, changes in land use and changes in land management practices. The planning system has the ability to make a difference in responding to climate change, influencing land use and encouraging measures to be introduced that can reduce existing flood risk.

1.5 The benefits of considering land drainage in a sustainable manner within the layout of a development proposal, is that a drainage system can be used which slows down and reduces the quantity of surface water runoff from the developed area to manage downstream flood risk. Further benefits from sustainable drainage systems include improved water quality and provision for amenity spaces and biodiversity.

2. Purpose of the guidance

2.1 The purpose of this guidance is to:

- Supplement the policies set out in the LDP by providing more detailed guidance.
- Assist and guide those proposing and designing new developments and submitting a planning application. To ensure development proposals don't increase flood risk and incorporate sustainable surface water drainage systems.
- Provide detail on what needs to be considered and submitted for varying types of development proposal, in order for the Council to consider flood risk and drainage in the determination of planning applications against LDP policy.

2.2 This SPG provides guidance on:

- What drainage is and how it relates to flood risk.
- Relevant LDP policies relating to flood risk and land drainage.
- How policies in the LDP relating to drainage should be implemented.
- How Sustainable Drainage Systems (SuDS), SuDS Approval, The National SuDS Standards for Wales relate to the planning process.
- What is required to be submitted as part of a planning application.

3. Status of the guidance

3.1 This SPG has been produced to support the policies in the Powys LDP (2011 – 2026). The guidance within the SPG has had regard to relevant national planning policy and other available guidance and information.

3.2 This SPG has been prepared in accordance with the Council's approved Protocol for Preparation and Adoption of SPG (June 2018), which includes a Community Involvement Scheme. It has been subject to a six-week public consultation stage undertaken xxxxxx. A summary of the responses received to the public consultation along with an explanation as to how the responses have been addressed can be found within the Consultation Statement. The Council adopted this SPG on the xxxxxx. *This paragraph will be completed at a later date.*

3.3 This SPG is a material consideration in the determination of planning applications.

4. Flood Risk within the Powys LDP area

4.1 The Powys LDP area has a varied topography of upland plateau, rolling ridges and hills with sharply incised valleys that lead down to narrow twisting valley floors, which follow the rivers Severn, Vyrnwy, Tanant, Wye, Usk, Irfon, Ithon, Dyfi, Teme, Tawe and the Lugg along with other smaller watercourses.

4.2 The topography of the plan area has meant that historically a large number of settlements and main transport routes are located in valleys at important river crossings; as a result of this a number of settlements are constrained by flood risk. Whilst the flooding of rivers and coastal waters is a natural process which plays an important role in shaping the environment it is difficult to predict and the consequences can be very significant. Flooding can place lives at risk, cause considerable personal trauma and result in extensive damage to property, whilst also causing severe disruption to communications and the economy.

4.3 Flooding is recognised as one of the biggest natural hazards affecting the safety and sustainability of communities across Wales. Evidence suggests that changes in our climate will result in heavier and more regular rainfall, stormier weather events and rising sea levels. These factors are likely to increase the impact and frequency of flooding.

4.4 Following the widespread flooding that took place across England and Wales in 2007, where 55,000 homes and businesses were flooded, the Pitt Review published a series of recommendations. Within the recommendations was a change in approach to flood risk management towards a more sustainable integrated method and away from traditional hard engineering solutions, with a need to develop better resilience to climate change and a clarification of roles and responsibilities. The recommendations influenced the content of a series of measures contained within legislation that subsequently came into force, more information on the current legislative context is provided in the next section.

4.5 Flooding as a hazard involves the consideration of the potential consequences of flooding, together with the likelihood of an event occurring. National and local planning policy directs development away from flood plains (as identified in Technical Advice Note 15) and aims to prevent development proposals from increasing levels of flood risk. The Policies in the LDP concur with this and require development proposals to consider the following:

- the risk from all sources of flooding (therefore not just the flood risk from rivers and the sea);
- the incorporation of surface water drainage systems that seek to control surface water as near to its source as possible; and
- where possible to incorporate measures that reduce an existing flood risk.

4.6 Flood risk is influenced by climate change, changes in land use and changes in land management practices. Land use planning therefore, has the ability to make a difference in responding to climate change, influencing land use and encouraging measures to be introduced that can reduce existing flood risk. The benefit of considering land drainage in a sustainable manner within the layout of a development proposal is that a drainage system can be used which slows down and reduces the quantity of surface water runoff from the developed area to manage downstream flood risk. It will also then reduce the risk of that runoff causing pollution. More information on the requirement to incorporate sustainable drainage systems within development proposals, and the potential benefits, is detailed

further on in this document, together with other measures that can be taken to reduce flood risk.

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5. Sources of Flooding and Flood Risk in the Powys LDP Area

- Flooding from Main Rivers and Ordinary Watercourses

5.1 Flooding occurs from rivers, streams and other natural or culverted watercourses when the capacity of the river channel or culvert is exceeded, or flow blocked. The situation is often worsened when, for example, heavy rain falls on an already waterlogged catchment. Debris impeding the water flow through the channel may also exacerbate the situation and lead to overspill. When fluvial, or river, flooding occurs it may create a deep, fast flowing inundation with the potential to cause extensive damage in developed areas.

5.2 Some watercourses are defined as '*Main River*' – where Natural Resources Wales (NRW) have responsibility, whilst all other watercourses are termed as an '*Ordinary Watercourse*' - where Powys County Council has responsibility as the Lead Local Flood Authority.

5.3 *Main Rivers* - are usually larger streams and rivers, but also include smaller watercourses of strategic drainage importance. A main river is defined as a watercourse shown on a main river map, and can include any structure or appliance for controlling or regulating the flow of water in, into or out of the main river. NRW is the competent authority for managing flood risk from main rivers and has powers to carry out main river flood defence works. Main rivers are designated by the Welsh Government and DEFRA.

5.4 The main rivers that flow through Powys include the Severn, Vyrnwy, Tanant, Wye, Usk, Irfon, Ithon, Dyfi, Tawe and the Lugg. In some areas fluvial flooding from these sources is the main source of flood risk; this includes the settlements of Llanidloes, Newtown, Meifod and Builth Wells.

- Coastal Flooding

5.5 This form of flooding can occur from a combination of high tides and stormy conditions. Powys is a predominantly landlocked county with only the upper Dyfi estuary and Machynlleth that have the potential to be at risk from this type of flooding. The current level of risk is very low but this could change if sea levels rise as predicted with climate change and any changes are made to the flood defences in the area.

- Surface Water Flooding

5.6 Surface water flooding is the product of concentrated rainfall that, by creating a high volume of runoff, overwhelms the drainage capacity of local sewerage and drainage systems. Surface water flooding, as a result of its localised nature, is often difficult to predict and incidents may be masked by the impact of Main River flooding or inter-relate with ordinary watercourse flooding.

5.7 Surface water flooding issues can be exacerbated by the development of greenfield sites, for example, the replacement of agricultural land with impermeable surfaces that increase the rate and volume of surface runoff. Towns within Powys that are most susceptible to this type of flooding include Welshpool, Talgarth and Newtown.

- **Sewer Flooding**

5.8 Sewers can become overwhelmed by heavy rainfall, which can cause flooding. The likelihood of flooding depends on the capacity of the local sewerage system. Land and property can be flooded with water contaminated with raw sewage as a result. Rivers can also become polluted by sewer overflows.

- **Groundwater Flooding**

5.9 Groundwater flooding occurs when water levels in the ground rise above surface level. It is most likely to occur in areas underlain by permeable rocks, called aquifers. These can be extensive, regional aquifers, such as chalk or sandstone, or may be more local sand or river gravels in valley bottoms underlain by less permeable rocks.

5.10 There is no local information on historic groundwater flooding, which suggests that the risk of groundwater flooding in Powys is low.

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6. Further Information and Resources on Flood Risk in the Powys LDP area.

6.1 It is important when considering proposals for a new development (of any type) that they are located in an area that is not at risk from flooding. The development of land in areas at risk from flooding not only puts the new development at risk but can also effectively remove natural flood storage / attenuation areas causing flood risk elsewhere from the displaced water.

6.2 Applicant's should note that in determining the location of areas of river and coastal flood risk, and the acceptability of development proposals within it, the key maps for planning policy purposes are those specified in **Technical Advice Note (TAN) 15.**

6.3 The following resources can assist in determining when a site is within an area of flood risk and can provide information to help determine the most appropriate drainage system for a development site (e.g. by identifying soil types, geology, neighbouring flood risk, sensitive water bodies etc...).

- **Natural Resources Wales - Long Term Flood Risk Maps**

6.4 The Natural Resource Wales website provides a comprehensive map of flood risk which can be viewed in three ways using the following link:

<https://naturalresources.wales/floodriskmap?lang=en>:

- **Basic Map View** – Provides information on the long term risk of flooding from Rivers and Sea, Surface Water or Reservoirs.
- **Detailed Map View** – Intended for people, businesses or organisations who need to know more in-depth flood risk information about their area. This provides further layers such as Flood Warnings, Shoreline Management Plans, Flood depth, velocity and hazard. This may be to support a planning application, create a flood plan or just to find out more.
- **Development Advice Map** - The Development Advice Map is for land use planning purposes. It should be used alongside Planning Policy Wales and Technical Advice Note (TAN) 15 to direct new development with respect to Main River and coastal flood risk. Together, they form a precautionary framework to guide planning applications. This map is key in determining whether a development proposal accords with National and LDP policies. *A draft revised TAN 15 has been prepared and is out for consultation, this paragraph will be updated once the revised TAN 15 has been adopted.*

- **Lle Website**

6.5 The Lle Geo-Portal has been developed as a partnership between Welsh Government and Natural Resources Wales. Lle serves as a hub for data and information covering a wide spectrum of topics, but primarily around the environment. There are two

elements to the website; a catalogue for downloading datasets and a map where environmental data can be viewed. The site contains a number of WFS and WMS feeds which can be used to supply data directly into individual GIS systems. Whilst, the map <http://lle.gov.wales/map#m=-3.159,51.47832,7&b=europa> is particularly useful when looking at where proposals are located in association with areas of flood risk and environmental designations, the same datasets can also be viewed and downloaded from here <http://lle.gov.wales/home>.

6.6 The website includes datasets on the following:

TAN 15 Development Advice Maps *(these will be removed when revised TAN 15 adopted)*

Floodmap: Flood Storage Areas
Floodmap: Flood Zone 2
Floodmap: Flood Zone 3
Flood Map: Areas Benefiting from Flood Defences
Flood Map: Spatial Flood Defences without attributes
Historic Flood Outlines
Main Rivers
Source Protection Zones (SPZ)
Special Areas of Conservation (SAC)
Special Protection Areas (SPA)
Sites of Special Scientific Interest (SSSI)

- **British Geological Survey - UK Soil Observatory (UKSO) Map Viewer**

6.7 The UKSO map viewer can be used by anyone to explore what is already known about UK soils. A large quantity of soil datasets (mostly as maps) are available, including soil type and a wide range of physical, chemical and biological properties. Each partner organisation has contributed data covering a mix of these topics. Users can also view the data within their own mapping software or apps. When determining soil type on a development site MySoil data resource may be particularly useful. To access the viewer, use the following link: <http://mapapps2.bgs.ac.uk/ukso/home.html> then add the MySoil layer.

- **Powys County Council Stage 2 Strategic Flood Consequences Assessment (SFCA)**

6.8 The purpose of the SFCA was to provide an overview of the level of flood risk for thirty Candidate Sites that were considered for development and inclusion within the Powys Local LDP. Additionally the SFCA provides the evidence base for the policies within the Powys LDP relating to flood risk and land drainage.

6.9 As part of the SFCA detailed studies were carried out in the following settlements: *Abermule, Castle Caereinion, Churchstoke, Forden, Four Crosses, Howey, Kerry, Llanrhaeadr-ym-Mochnant, Llanyre, Newtown, Presteigne, Rhayader and Tregynon.*

6.10 To access the data which is included within the appendices of Stage 2 of the SFCA (EB19) use the following link: <https://en.powys.gov.uk/article/5429/Supporting-Documents>

- **Susdrain**

6.11 Susdrain provides a range of resources for those involved in delivering sustainable drainage systems (SuDS). The susdrain website www.susdrain.org provides up-to-date guidance, information, case studies, videos, and photos that help to underpin the planning, design, approval, construction and maintenance of SuDS. Created by CIRIA, susdrain is an independent and authoritative platform that can be used by anyone involved in delivering sustainable drainage.

- **CIRIA SuDS Manual (2015)**

6.12 The SuDS Manual (2015) published by CIRIA provides guidance that covers the planning, design, construction and maintenance of SuDS to assist with their effective implementation within both new and existing developments. It provides advice on how to maximise amenity and biodiversity benefits, and deliver the key objectives of managing flood risk and water quality. The manual also provides supporting information that covers topics such as materials, landscape design, maintenance, community engagement and costs and benefits.

6.13 The information presented in the publication is a compendium of good practice, based on existing guidance and research both in the UK and internationally, and the practical experience of the authors, project steering group and industry. A copy of the document can be accessed for free from the CIRIA website: <https://www.ciria.org>.

- **SuDS Wales**

6.14 The National Surface Water Management and SuDS Group (previously known as the SuDS Working Party for Wales) has been set up as a multi organisation group to support the implementation of solutions to tackle surface water issues in Wales and encourage collaborative working. It is also intended to be used as a platform to share best practice and emerging information in relation to the delivery of an effective surface water management programme. The website can be accessed at: <https://www.SuDSwales.com/>, care needs to be taken using this resource that the contents are up to date.

7. Legislative and Policy Context

International Legislation

The EU Water Framework Directive (WFD) 2000/60/EC

7.1 The Water Framework Directive has been described as the most substantial piece of EC water legislation to date; it was published in 2000 and transposed into Welsh law in December 2003. The Directive applies to all surface water bodies and groundwater, including lakes, streams, rivers and canals. Its overall objective is to establish a strategic framework (that is based on river basins) for managing surface water and groundwater through common objectives and principles; these include contributing towards mitigating the effects of floods and droughts.

The EU Floods Directive 2007/60/EC

7.2 The EU Floods Directive on the assessment and management of flood risks came into force November 2007. This Directive requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and, assets and humans at risk, in these areas, and to take adequate and coordinated measures to reduce the flood risk.

National Legislation

Flood Risk Regulations (2009)

7.3 The purpose of the Flood Risk Regulations is to implement the requirements of the European Floods Directive. As detailed above, the aim of the Directive is to provide a consistent approach to managing flood risk across Europe. It establishes three stages of activity that include assessing areas at risk from flooding, mapping them, and producing a management plan. These three stages take place within a six year flood risk management cycle. In addition to this, the Flood Risk Regulations define new responsibilities for flood risk management which are consistent with the Flood and Water Management Act (2010):

- **Natural Resources Wales:** the competent authority for managing risk from main rivers, the sea and large raised reservoirs.
- **Lead Local Flood Authority (Powys County Council)** – responsible for managing local flood risk in particular from ordinary watercourses, surface runoff and groundwater.

The Flood and Water Management Act (2010)

7.4 The Flood and Water Management Act (FWMA) received Royal Assent on the 8th April 2010, with different sections of the Act coming into force in Wales at different times. It aims to improve both flood risk management and the way that water resources are managed. The Act defines clear roles and responsibilities and instils a more risk-based approach. Local authorities are given the lead role in managing local flood risk (from surface water, ground water and ordinary watercourses) while the strategic overview role, for all

flood risk is undertaken by Natural Resources Wales. The FWMA, also establishes that flood risk will be managed in Wales through a National Strategy supported by a Local Strategy for each Lead Local Flood Authority area.

7.5 Schedule 3 of the FWMA provides a framework for the approval and adoption of surface water systems serving new developments. The Welsh Government introduced five statutory instruments to implement this requirement. ***The statutory instruments made it a requirement from the 7th January 2019 for all new developments of more than one dwelling, or where the construction area is 100 square metres or more, to dispose of surface water through a sustainable drainage system (SuDS).***

7.6 The Welsh Government produced two documents: *Sustainable Drainage (SuDS) Statutory Guidance (2019)* and *“Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems (2019)”* which outline the process and standards to be applied.

7.7 All applications for SuDS need to be submitted to and approved by the **SuDS Approval Body (SAB)** which is a separate consenting process to the planning application process. Developers cannot commence works until both types of the permission have been granted. In order for a SuDS application to be granted approval it needs to demonstrate compliance with the Statutory SuDS Standards. The standards contain:

- A set of Principles, which need to be applied in the design of the surface water drainage scheme, and
- Six standards, numbered S1 to S6:
 - S1 – Runoff destination
 - S2 – Surface Water Runoff Hydraulic control
 - S3 - Water Quality
 - S4 – Amenity
 - S5 – Biodiversity
 - S6 – Construction, Operation and Maintenance

National Strategy for Flood and Coastal Erosion Risk Management in Wales (November 2011).

7.8 The purpose of this strategy is to set out the Welsh Government’s policies on flood and coastal erosion risk management and to establish a delivery framework that meets the needs of Wales both now and in the future. The Welsh Government is required to develop, maintain and apply this strategy under the Flood and Water Management Act 2010. The document provides detailed information on the roles and responsibilities of all those involved and how they should work together.

7.9 Within the strategy four objectives have been identified:

- Reducing the impacts on individuals, communities and businesses from flooding and coastal erosion.
- Raising awareness of and engaging people in the response to flood and coastal erosion risk.
- Providing an effective and sustained response to flood and coastal erosion events.
- Prioritising investment in the most at risk communities.

Planning Policy Wales Edition 10 (December 2018)

7.10 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales.

7.11 In relation to flood risk PPW states that planning authorities should adopt a precautionary approach of **positive avoidance of development in areas of flooding from the sea or from rivers**. Whilst, in terms of surface water flooding, PPW states that planning authorities should be aware of the risk of surface water flooding, usually caused by heavy rainfall, and ensure developments are designed and planned to minimise potential impacts. Development should not cause additional run-off, which can be achieved by controlling surface water as near to the source as possible by the use of SuDS.

7.12 Paragraph 6.6.16 states that “**Planning authorities should secure better management of drainage and surface water so as to tackle these issues by:**

- **ensuring sustainable drainage systems are incorporated into development enabling surface water to be managed close to or at source;”**

Technical Advice Note (TAN) 15 – Development and Flood Risk (2004)

7.13 TAN 15 supplements the policy set out in Planning Policy Wales in relation to development and flooding. It advises on development and flood risk and provides a framework within which risks arising from river and tidal flooding and from additional run-off from development in any location, can be assessed.

7.14 Similarly to Planning Policy Wales, this TAN advises caution in respect of new development in areas at high risk of flooding by setting out a precautionary framework to guide planning decisions. The overarching aim of this is to **direct new development away from those areas at high risk from flooding**.

7.15 Development advice maps have been drawn up for the whole of Wales; these maps identify different zones that represent different levels of risk from flooding, and therefore lend to different planning actions. Surface water approach. *A draft revised TAN 15 has been prepared and is out for consultation, this paragraph will be updated once the revised TAN 15 has been adopted.*

Building Regulations Part H (2010)

7.16 Part H of the Building Regulations covers the requirements for drainage and waste disposal and came into effect in 2002, amended 2010. Sustainable drainage is the preferred option in a drainage hierarchy, with discharge into a sewer as the last and least preferred option, for dealing with rainwater from the roof of the buildings and paved areas around the building. Section 3 gives guidance on the design of surface water drainage systems.

Local Policy

Local Flood Risk Management Strategy (April 2014)

7.17 The Flood and Water Management Act (2010) placed a duty on Powys County Council to prepare a Local Flood Risk Management Strategy that sets out how the Council will proactively seek to minimise flood risks and prepare communities.

7.18 The Strategy is seen as the building block for flood and coastal erosion risk management in Powys and works towards understanding and managing flood risk within the County. The aim of the Strategy is to highlight the roles and responsibilities of the various organisations which contribute to managing flood risk within Powys, and what householders and businesses need to do to protect their properties from the consequences of flooding.

7.19 As a Lead Local Flood Authority (LLFA), Powys County Council principally looks to tackle 'local flood risk', i.e. flooding from surface water, groundwater and ordinary watercourses such as ditches and streams. The strategy sets out the steps to be taken to improve knowledge of flood risk and ways to work better with organisations and the public to reduce those risks, whilst aiming to balance the need of communities, the economy and the environment.

7.20 The Council is in the process of preparing a Flood Risk Management Plan (FRMP) which represents the next step in the authority's flood risk planning and builds on the 2014 Local Flood Risk Management Strategy. This FRMP will set out appropriate objectives for the management of flood risk within the areas covered by the plan. The objectives focus on reducing the adverse consequences of flooding for human health, the environment, cultural heritage and economic activity.

7.21 To do so, the FRMP will highlight the areas most at risk from surface water and ordinary watercourse flooding in Powys, draw conclusions from these risks and set out the measures that will be taken over the following six years to mitigate these risks and make those areas and communities more resilient.

Flood Risk Management Plans – Flood Risk from Main Rivers and the Sea

7.22 Natural Resources Wales (NRW) and the Environment Agency (EA) are responsible for producing FRMPs at a river basin district level for communities at risk of flooding from main rivers and the sea. The plan area of Powys falls across the Severn River Basin District and the Western Wales River Basin District and is therefore covered by the two FRMPs. The FRMP for the Severn River Basin District is produced jointly between NRW and the EA, whilst the FRMP for the Western Wales River Basin District is produced by NRW.

7.23 Each FRMP helps to deliver the requirements of the Welsh Government's National Flood and Coastal Erosion Risk Management Strategy in Wales by setting out the measures to manage flood risk now and in the future. The FRMPs also aim to: help develop and promote a better understanding of flood and coastal erosion risk, provide information about the economic and environmental benefits to inform decision makers and identify communities with the highest risk of flooding so that investment can be targeted at those in most need.

Local Development Plan (LDP) Policies

7.24 The policies in the Powys LDP, relating to flood risk and land drainage, include content which reflects the Local Planning Authorities responsibilities detailed in the legislation and guidance above. In some cases actions emerged through subsequent documentation such as River Basin Management Plans, Catchment Flood Management Plans, the Powys Preliminary Flood Risk Assessment and Local Flood Risk Management Strategy.

7.25 The [Powys LDP Strategic Flood Consequence Assessment \(Stages 1 and 2\)](#) together with the [Pollution and Flooding topic paper](#) provide further detail on how the LDP Policies, relating to flood risk and land were established. The next section describes the policies in detail.

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8. Powys Local Development Plan – Land Drainage and Flood Risk

8.1 The aims of the LDP with regards to flood risk and land drainage are set out primarily in LDP Objectives 4 and 5. To achieve these objectives, the plan contains a number of development management policies. Each of the policies in the LDP are supported by a reasoned justification that contains an explanation behind the policy, provides guidance, and or expands on the purpose of the policy or its aims. The reasoned justification to each of the policies listed below has not been repeated in this guidance; users should refer to the LDP where the reasoned justification should be considered alongside the policy to inform a development proposal.

LDP Objective 4 – Climate Change and Flooding

To support the transition to a low carbon and low waste Powys through all development, including the reduction of waste to landfill and by directing development away from high flood risk areas and, where possible, to reduce or better manage existing flood risk for communities, infrastructure and business.

LDP Objective 5 – Energy and Water

To support the conservation of energy and water and to generate energy from appropriately located renewable resources where acceptable in terms of the economic, social, environmental and cumulative impacts.

In particular, to:

- i. Contribute to the achievement of the Water Framework Directive targets in Powys.
- ii. Deliver the county's contribution to the national targets for renewable energy generation.

8.2 Development Management Policy DM5 is the specific policy in the plan in relation to flood risk from the sea and rivers. The policy aligns with national guidance directing development away from high risk areas, and ensuring that development proposals do not increase flood risk elsewhere. Furthermore, the policy requires where possible, for floodplains to provide water storage to reduce flooding in the catchment, this could include measures such as strategic tree planting and woodland management within a floodplain.

Policy DM5 – Development and Flood Risk

Development proposals must be located away from tidal or fluvial flood plains unless it can be demonstrated that the site is justified in line with national guidance and an appropriate detailed technical assessment has been undertaken to ensure that the development is designed to reduce / avoid the threat and alleviate the consequences of flooding over its lifetime. In addition the development must not increase flood risk elsewhere, and shall where possible allow floodplains to provide water storage to reduce flooding in the catchment, unless:

- 1. The development is of a very minor nature such as an extension to a dwelling;
or**
- 2. There is an overriding need in the public interest for the development.**

8.3 The key policy in the plan relating to flood prevention and land drainage is Development Management Policy DM6. This policy differs from Policy DM5 in that it requires development proposals to consider all forms of flood risk, which includes surface water flooding. It also requires satisfactory provision to be made for land drainage in all developments and includes additional requirements for proposals that are near a watercourse or within an area of floodplain. Further guidance regarding the implementation of this policy is given in section nine of this SPG.

Policy DM6 – Flood Prevention Measures and Land Drainage

Development proposals must avoid unnecessary flood risk by assessing the implications of development within areas susceptible to all types of flooding; any development that unacceptably increases risk will be refused.

Proposals near a watercourse or within an area of floodplain must comply with the following:

- 1. In areas identified at risk of flooding (fluvial, tidal, surface water and groundwater) or where a watercourse has insufficient channel capacity, opportunities to improve existing flood risk by using Sustainable Drainage Systems (SuDS), wetlands or other agreed and appropriate measures are investigated and implemented wherever possible.**
- 2. Where possible, opportunities are taken on previously developed land to make space for water by reinstating the functional floodplain.**
- 3. Opportunities to make space for water by undertaking restoration and enhancement as part of the development, are identified and implemented.**
- 4. Actions are taken to de-culvert wherever possible. Where this is not possible, an assessment of the structural integrity of the culvert, with any required remedial work, should be carried out prior to the development. A maintenance schedule should be developed for all culverts to ensure regular clearance, and**
- 5. Any developments located adjacent to a watercourse should leave an appropriate undeveloped buffer strip, maintaining the watercourse and the immediate riparian zone as an enhancement feature and allowing for routine maintenance. The width of any buffer strip should be agreed with the relevant authorities on a site by site basis. Such sites should have a maintenance strategy for clearing and maintaining the channel, with particular regard to structures such as trash screens and bridges.**

Satisfactory provision shall be made for land drainage in all developments and this should include consideration of the use of Sustainable Drainage Systems (SuDS).

8.4 To make the best use of a site, which maximises viability and incorporates the principles of “Placemaking”, as advocated by PPW, there should be a holistic approach to the planning and design of development and spaces, focussing on positive outcomes. To do this Policy DM6 should be applied with consideration to, and in conjunction with, the following LDP policies:

- Policy DM2 – The Natural Environment
- Policy DM3 – Public Open Space
- Policy DM13 – Design and Resources

The next section provides detailed guidance on each criterion.

9. Detailed Guidance on Policy DM6 – Flood Prevention Measures and Land Drainage

Development proposals must avoid unnecessary flood risk by assessing the implications of development within areas susceptible to all types of flooding; any development that unacceptably increases risk will be refused.

9.1 Development proposals must avoid areas at high risk from fluvial and coastal flooding unless schemes are in accordance with Policy DM5 and TAN 15. Policy DM6 differs from Policy DM5 in that it requires all forms of flood risk to be taken into consideration, this includes surface water and sewerage flooding. It is essential therefore that applicants refer to the '*Detailed Map View*' (see paragraph 6.4) on the NRW website and engage early on in the process with the sewerage undertakers, where there are plans to connect. This will help to establish if the site is at risk from all sources of flooding, including surface water. It will also help establish if there are any issues in the capacity of existing sewerage systems, where there are plans to connect.

9.2 When the development proposal is within an area susceptible to surface water flooding (high and medium risk areas) a Flood Consequences Assessment (FCA) will need to be conducted, primarily to ensure the development does not increase the flood risk elsewhere. Details will need to be provided on how the risk is to be managed and measures should be taken within the drainage system to reduce flood risk on and off the site. If the flood risk cannot be managed and/or it increases flood risk elsewhere this may lead to the planning application being refused.

Proposals near a watercourse or within an area of floodplain must comply with the following:

9.3 The following criteria need to be considered for any development proposals within an area of flood plain or near a watercourse (note: this is only where proposals meet the justification tests in TAN 15).

1. In areas identified at risk of flooding (fluvial, tidal, surface water and groundwater) or where a watercourse has insufficient channel capacity, opportunities to improve existing flood risk by using Sustainable Drainage Systems (SuDS), wetlands or other agreed and appropriate measures are investigated and implemented wherever possible.

9.4 This criterion to the policy applies to areas of flood risk, or where a watercourse (associated with the site) has insufficient channel capacity. The purpose of the policy is to reduce flood risk on and off the site and is most likely to be realised through the use of SuDS or a change in land management practices. Further information on SuDS is provided in section 12 of this guidance.

9.5 A watercourse is defined as any natural or artificial channel above or below ground through which water flows, such as a river, brook, beck, ditch, mill stream or culvert.

2. Where possible, opportunities are taken on previously developed land to make space for water by reinstating the functional floodplain.

9.6 This criterion will be particularly relevant when it comes to the redevelopment of previously developed land in areas of flood risk. Any development proposals in areas of

flood risk will need to meet the tests set out in TAN 15 to be acceptable, and should be accompanied by a Flood Consequences Assessment (FCA). The FCA should assist in identifying how the site should be redeveloped, allowing decisions on where buildings are best located and the identification of areas most at risk.

9.7 Consideration should be given in the areas at most risk from flooding, to the removal of impermeable surfaces and the introduction of natural vegetation where possible. This approach could incorporate and fulfil other planning requirements, such as biodiversity enhancement and informal open space.

9.8 In most cases the redeveloped site will need to incorporate SuDS and require SAB approval. It would be beneficial therefore, for the FCA to include a conceptual drainage design strategy. A conceptual drainage design strategy will be able to assist in the design of a sustainable drainage system that demonstrates no increased flood risk elsewhere, accords with statutory standards and considers the introduction of natural / impermeable services.

9.9 Any existing site infrastructure within the site should be documented and mapped. It will be important to understand the location and capacity of existing drainage, as this can help to determine if there is infrastructure that could or should be reused in the SuDS scheme. Other buried infrastructure, such as utilities and other services, will also need to be located and considered particularly with respect to access for inspection and maintenance.

3. Opportunities to make space for water by undertaking restoration and enhancement as part of the development, are identified and implemented.

9.10 **Near a water course** - Where a watercourse runs adjacent to the proposed development it should be included within the red line application site. At the design stage measures should be taken to incorporate any water courses within the scheme, allowing sufficient space within the site, as required. Details will need to be provided on how the water course relates to the proposed drainage system for the site, and how the watercourse can be restored (if necessary) and enhanced, where practical.

9.11 This approach will help in the achievement of the Water Framework Directive's overarching objectives, reduce flood risk and enhance / prevent the deterioration of biodiversity.

9.12 **Within an area of flood plain** – The definition of flood plain used in the LDP is where water flows in times of flood, it does therefore include all types of flooding. Development in areas at high risk from flooding should be avoided unless in accordance with the tests set out in TAN15.

9.13 Where sites include areas of flood risk, particularly from surface water flooding, plans should be made within the design of the development to utilise, restore (where applicable) and enhance existing drainage features. This may include features such as wetland areas, ponds and ditches. The restoration and enhancement of such features may improve flood risk, whilst their removal may lead to an increase in flood risk on or off the site.

4. Actions are taken to de-culvert wherever possible. Where this is not possible, an assessment of the structural integrity of the culvert, with any required remedial work, should be carried out prior to the development. A maintenance schedule should be developed for all culverts to ensure regular clearance.

9.14 Culverts are artificial water channels that can vary considerably from narrow pipes through to large, square-sided channels. They can be constructed from a range of materials including concrete, plastic, stone, metal etc. Although often designed to improve local flood risk, culverts can themselves exacerbate flooding. This is because they can restrict water flow and thereby cause ponding of water near the entrance to the culvert or become blocked/partially obstructed by debris that has washed into them. Screens designed to prevent debris entering a culvert, unless well-designed and maintained, can also cause blockages which heighten flood risk. Flood risk issues associated with culverts may become more pronounced if, under climate change, more extreme rainfall events are experienced.

9.15 Development proposals should avoid using culverts unless strictly necessary, with actions being taken to de-culvert water courses, where possible. Where the development proposal intends to discharge surface water into a watercourse that is culverted downstream, a S106 agreement may be sought to enable de-culverting or towards remedial work. Guidance should be sought from the Council's Land Drainage team early on in the preparation stages for development proposals affecting a culverted watercourse.

5. Any developments located adjacent to a watercourse should leave an appropriate undeveloped buffer strip, maintaining the watercourse and the immediate riparian zone as an enhancement feature and allowing for routine maintenance. The width of any buffer strip should be agreed with the relevant authorities on a site by site basis. Such sites should have a maintenance strategy for clearing and maintaining the channel, with particular regard to structures such as trash screens and bridges.

9.16 Any landowner with land adjoining, above or with a watercourse running through it, has certain rights and responsibilities. In legal terms they are known as a 'riparian owner'. The responsibilities and requirements include:

- Letting water flow through the land without any obstruction, pollution or diversion which affects the rights of others.
- Keeping the banks clear of anything that could cause an obstruction and increase flood risk, either on the land or downstream if it is washed away. Responsibility for maintaining the bed and banks of the watercourse and the trees and shrubs growing on the banks.
- Leaving a development-free edge on the banks next to a watercourse. This allows for easy access to the watercourse in case any maintenance or inspection is required.
- Keeping any structures, such as culverts, trash screens, weirs and mill gates, clear of debris.

9.17 Further information can be found in "[A guide to your rights and responsibilities of riverside ownership in Wales](#)" (NRW, 2017).

9.18 Criterion five of Policy DM6, detailed above, acknowledges these responsibilities and requires details for their facilitation to be included within the planning application for a development proposal. This is important as it enables specialist input on the appropriateness of undeveloped buffer strips (based on local conditions) and maintenance strategies from the relevant flood risk management authorities. It would also be beneficial to consider maintenance buffers and strategies alongside other planning requirements, such as those relating to biodiversity, amenity space and green infrastructure. Maintenance strategies

should consider land ownership responsibilities beyond the construction phase. Where a water course forms part of a sustainable drainage system it should be aligned to the maintenance plan submitted for SAB approval.

Satisfactory provision shall be made for land drainage in all developments and this should include consideration of the use of Sustainable Drainage Systems (SuDS).

9.19 All development proposals need to make satisfactory provision for land drainage regardless of whether approval is required from the Sustainable Drainage Approval Body (SAB). Schemes not requiring SAB approval are those which have a construction area of less than 100 metres squared, or a residential development involving only a single dwelling (single dwellings with a construction area of 100 metres squared or more will require SAB approval). Where development proposals don't require SAB approval a sustainable drainage system may still be the best solution for the drainage of surface water within the site, therefore the use of SuDS should be considered.

9.20 Any plans to work on or near a watercourse need to be discussed with the relevant risk management authority as early as possible, in some cases further consents (such as a flood risk activity permit or ordinary watercourse consent) may be required before works can commence. It is worth noting that both permanent and temporary works affecting a watercourse may need consent. Temporary works could include damming or partial damming of a watercourse to allow permanent work such as the installation of a bridge. The relevant risk management authorities are:

Powys County Council - is the Local Land Drainage Authority, they should be contacted for works concerning **an ordinary watercourse** which is: a river, stream, ditch, drain, cut, dyke, sluice and passage through which water flows and which does not form part of a main river, **unless** the watercourse is within an **Internal Drainage District**.

Natural Resources Wales - to be contacted for works relating to a **main river**. A main river is legally defined as a watercourse that is shown on a **main river map**.

Natural Resources Wales - to be contacted for works relating to an ordinary watercourse within an Internal Drainage District. The LDP area includes the Powysland Internal Drainage Board which covers land and watercourses within the communities of Bausley with Criggion, Berriew, Forden, Guilsfield, Llandrinio, Llandysilio, Meifod, Montgomery, Trewern and Welshpool.

9.21 The following chapters provide more detailed information on land drainage, SAB Approval and the national SuDS Standards for Wales, together with an overview of the various SuDS components that can be incorporated within a drainage scheme. Following this the guidance includes an outline of the different stages that should be taken when developing a drainage scheme, for a development proposal, as part of a planning application, together with a list of what needs to be submitted.

10. Different Types of Drainage Systems

10.1 Land Drainage in the context of *Policy DM6 – Flood Prevention Measures and Land Drainage* is primarily concerned with the disposal of surface water (e.g. rain water) from a site.

10.2 Traditionally surface water systems were designed to convey surface water downstream as rapidly as possible, usually through a system of underground pipes. The disadvantage of this type of system is that it creates a higher concentration of flows within an area increasing the risk of flooding. A more sustainable approach to drainage is now preferred where the drainage system mimics the natural drainage of a site, managing surface runoff at or close to the surface and as close to its source as practicable, controlling the flow (volume and rate of runoff) and providing a range of additional benefits.

10.3 The different elements of a drainage system for a site will be dependent on the nature and scale of the development proposal. Larger residential and commercial schemes may need to consider how the drainage system for the site relates to both the public and highway drainage systems.

Public Drainage

10.4 There are three main types of public drainage (often termed “mains drainage”):

- **Foul Sewers** - The foul sewer carries used wastewater from dwellings and commercial buildings to a sewage works for treatment before being discharged into rivers or the sea.
- **Surface Water Sewers** - The surface water sewer carries uncontaminated rainwater (surface water) directly to a local river, stream or soak away.
- **Combined Sewer** – A combined sewers collects surface water and wastewater (from dwellings and commercial businesses). The combination of surface and wastewater is then transported to a sewage works for treatment where it is cleaned, treated and then discharged into rivers and the sea.

10.5 Legislation prohibits the discharge of surface water to foul sewers; additionally, surface water from new developments should not be discharged to combined systems because of the risk of pollution when combined systems overflow and because they increase the volume of contaminated water requiring transporting and treating.

10.6 In order to connect to a public sewer network for the discharge of surface water, consent is required from the sewerage undertaker (Section 104 adoption agreement) but SAB approval (where required) must be in place first. Priority should be given to the collection of rainwater for use, surface water infiltration to ground and the discharge of surface water runoff to a surface water body before seeking to discharge to a public sewer (SuDS Standard S1).

10.7 The LDP Policy relating to Foul Drainage is Policy DM13 criterion 12, also see paragraph 4.2.90 of the LDP written statement, further guidance is also provided in the Residential Design Guide SPG.

10.8 Public drainage is provided by two sewage undertakers in Powys, Hafren Dyfrdwy in the north and Dwr Cymru Welsh Water in the middle and south. Where it is not possible/feasible to connect to a public sewer for foul drainage, other options such as the use of a septic tank may be possible. The Council's Environmental Health Officers should be contacted for advice on acceptability. Whilst, proposals will also need to be in accordance with the criteria set out in *Welsh Government Circular 008/2018 - Planning requirements in*

respect of the use of private sewerage in new development, incorporating septic tanks and small sewage treatment plants.

Highway Drainage

10.9 Section 38 of the Highways Act 1980 provides that when planning consent has been granted for a new development, the highway authority has the power to adopt any new highways by agreement. This is the usual way of creating new highways that are maintainable at the public expense. The Act places a duty on highway authorities to maintain adopted highways at public expense under section 41. A section 38 adoption includes new roads that have been constructed as part of the development, along with associated infrastructure such as drains, lighting and supporting structures.

10.10 The conditions of a highway being adopted include:

- It must be of sufficient utility to the public; and
- It must be constructed (made up) in a satisfactory manner.

10.11 The highway authority for development proposals in the plan area will be Powys County Council. The Authority generally adopts highways where development proposals are for five dwellings or more and where the roads, and associated infrastructure, have been designed and constructed to a set standard.

10.12 Powys County Council, as the local highway authority, will usually adopt the associated highway drainage scheme for any highways adopted. For the purposes of highway adoption a highway drain should be designed and constructed with its sole purpose being to drain the highway (roads and pavements). Surface water from the remaining site should not enter highway drains.

10.13 Where SuDS features are to be used exclusively to drain the highway, the Council may consider adopting them as part of the publicly maintainable highway, but this will be determined on a case-by-case basis. Developers considering proposals that would require Powys County Council to adopt a SuDS feature as part of an adoptable highway should discuss proposals with the Council's highway team as soon as practicable.

10.14 Any drainage systems serving the highway will be assessed as part of the overall drainage strategy for the site. All surface water drainage and the use of SuDS needs to be considered and designed for the site as a whole.

Sustainable Drainage Systems

10.15 The primary purpose of SuDS is to mimic the natural drainage of a site, prior to development, by allowing rainfall to soak (infiltrate) into the ground where possible or by delaying discharges. By controlling surface water close to its source the rate of flow downstream is reduced, this in turn reduces flood risk. SuDS are not just about drainage, they take into consideration the management of water quantity, water quality and provision of amenity/biodiversity.

10.16 Paragraph 2 of Schedule 3 to the Flood and Water Management Act (2010) defines sustainable drainage as managing rainwater with the aim of:

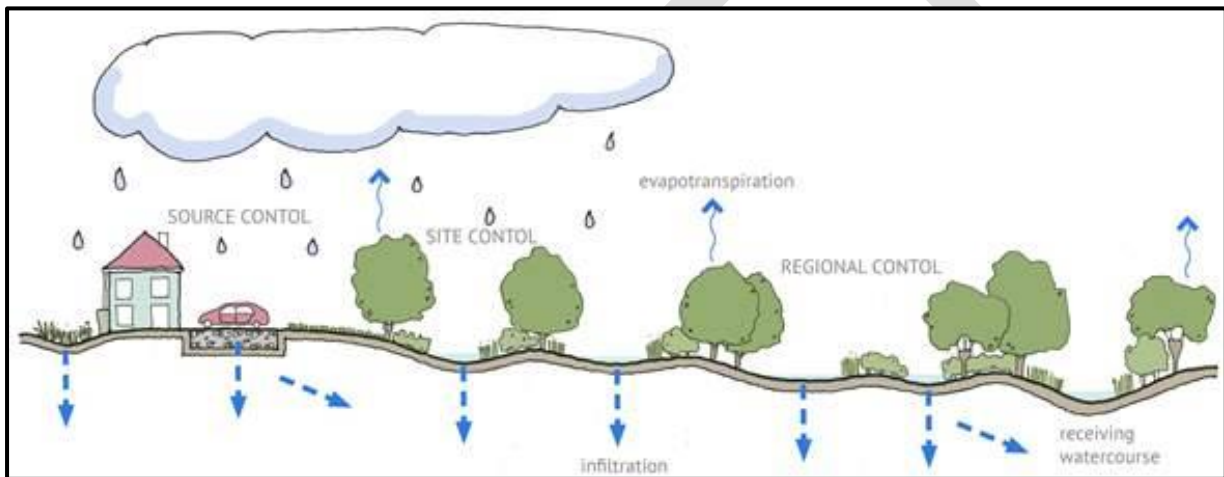
- Reducing damage from flooding,
- Improving water quality,
- Protecting and improving the environment,

- Protecting health and safety, and
- Ensuring the stability and durability of drainage systems.

10.17 SuDS can take many forms, both above and below ground. SuDS can use both landscaped features and harder engineering. Landscaped or softer engineered features include more natural components such as ponds, wetlands and shallow ditches. Harder or engineered components may include rainwater harvesting or permeable paving. In general terms, SuDS that are designed to manage and use rainwater close to where it falls, on the surface and incorporating vegetation, tend to provide the greatest benefits, especially when a combination of SuDS features are used in conjunction with each other.

10.18 SuDS can be visualised as a management train where different techniques are used in sequence to alter the flow, volume and quality of surface water runoff. Just as in a natural catchment, drainage techniques can be used in series to change the flow and quality characteristics of the runoff in stages.

Figure 1. SuDS Management Train



Source: <https://www.susdrain.org/delivering-SuDS/using-SuDS/SuDS-principles/management-train.html>

10.19 One of the key elements in the management train is to start with prevention, preventing the volume of runoff by reducing the amount of impermeable areas. If the water cannot be managed on site, only then should it be (slowly) conveyed elsewhere. This may be due to the water requiring additional treatment before disposal or the quantities of runoff generated being greater than the capacity of the natural drainage system at that point.

10.20 For larger sites the management train concept promotes the division of the area to be drained into sub-catchments with different drainage characteristics and land uses, each with its own drainage strategy. Dealing with the water locally not only reduces the quantity that has to be managed at any one point, but also reduces the need for conveying the water off the site.

10.21 Each SuDS component is likely to be suited to different site opportunities and constraints. In most cases a combination of components is required to provide the best results.

10.22 Shallow systems, where water is managed on the surface are often cheaper, easier to maintain and help overcome the challenges of managing surface water on contaminated sites. Further information is provided in sections 11 and 12 on SAB approval and different types of SuDS.

Early Consideration of Drainage

10.23 Drainage systems need to be considered at the earliest opportunity of site design to influence the layout of the roads, buildings and public open space. Taking this approach has benefits to viability and will allow the utilisation of natural site features. Planning of a new site layout should be informed by the topography and the requirements of surface water management systems to both effectively drain and treat the runoff.

10.24 The relationship between the various types of drainage infrastructure can be complex, for example, some highway drains may carry surface water from public sewers and some highway infrastructure discharges into public sewers. Understanding the role which the various types of infrastructure play is important in securing the best approach to avoid both flooding and diffuse pollution.

10.25 Whatever drainage options are proposed for a development, provisions should be in place for future maintenance in the short and long term, this will need to include an understanding of the adoption arrangements between the SAB, highways authority and sewerage undertaker.

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11. SuDS Approval and the National SuDS Standards for Wales

SuDS Approval from the SuDS Approval Body (SAB)

11.1 Schedule 3 of the Flood and Water Management Act (2010) provides a framework for the approval and adoption of surface water systems serving new developments. The Welsh Government introduced five statutory instruments to implement this requirement. The statutory instruments made it a requirement from the 7th January 2019 for all **new developments of more than one dwelling, or where the construction area is 100 square metres or more, to dispose of surface water through a sustainable drainage system (SuDS).**

11.2 This requirement includes all developments of over 100 square metres where the permeability of the ground has been altered. This may include agricultural buildings (that don't necessarily require planning consent) and single dwellings where the construction area exceeds the 100 square metres.

11.3 Where developments are required (by Schedule 3) to dispose of surface water through SuDS they need to comply with the '[Statutory Standards For Sustainable Drainage Systems – Designing, Constructing, Operating And Maintaining Surface Water Drainage Systems \(2018\)](#).' See paragraph 11.6 below.

11.4 Before development can commence an application detailing the SuDS to be used, within the development proposal, must be submitted and approved by Powys County Council, acting in its SuDS Approving Body (SAB) role. Further information on SAB approval and guidance on how to submit an application can be found on the Council's website: <https://en.powys.gov.uk/article/5578/Sustainable-Drainage-Approval-Body-SAB>

11.5 The SAB also has a duty to adopt systems that serve two or more properties, unless the system serves a site controlled by a single person or two or more persons together. Adoption will only take place once the SAB is satisfied that the SuDS have been built and function in accordance with the approved proposals, including any SAB conditions of approval.

Statutory SuDS Standards

11.6 The Statutory SuDS Standards are split into two types:

- Standard 1 (S1) – which is a Hierarchy Standard, and
- Standards 2 to 6 (S2 to S6) – which are Fixed Standards.

11.7 S1 comprises of five priority levels, which provide criteria for the prioritisation in the choice of runoff destination. Level one is the preferred level and should be met to the maximum extent possible, with lower levels used where appropriate justification is provided. Levels four and five should only be used in exceptional circumstances. Different levels maybe suitable for different parts of the site, and more than one level may be required to effectively drain the site to meet the requirements of the standards.

Table 1. Standard 1 - Priority Levels

S1. Surface Water Runoff Destination	
Priority Level 1	Surface water runoff is collected for use
Priority Level 2	Surface water runoff is infiltrated to ground
Priority Level 3	Surface water runoff is discharged to a surface water body

Priority Level 4	Surface water runoff is discharged to a surface water sewer, highway drain, or another drainage system
Priority Level 5	Surface water runoff is discharged to a combined sewer

11.8 Standards S2 to S6 do not have exception criteria and prioritised levels. They specify all the criteria that need to be met in order to show compliance to the standards. They are split between:

- Design standards which state the minimum design criteria that all SuDS should satisfy; and
- Standards which state how SuDS should be built, maintained and operated.

Table 2. Standards 2 to 6 Summary

SuDS Standards S2 to S6	
S2 – Surface Water Runoff Hydraulic control	The aim of S2 is to manage the surface water runoff from and on a site to protect people on the site from flooding from the drainage system for events up to a suitable return period, to mitigate any increased flood risk to people and property downstream of the site as a result of the development, and to protect the receiving water body from morphological damage.
S3 - Water Quality	S3 addresses the drainage design requirements to minimise the potential pollution risk posed by the surface water runoff to the receiving water body.
S4 – Amenity	S4 addresses the design of SuDS components to ensure that, where possible, they enhance the provision of high quality, attractive public space which can help provide health and wellbeing benefits, they improve liveability for local communities, and they contribute to improving the climate resilience of new developments.
S5 – Biodiversity	S5 addresses the design of SuDS to ensure, where possible, they create ecologically rich green and blue corridors in developments and enrich biodiversity value by linking networks of habitats and ecosystems together. Biodiversity should be considered at the early design stages of a development to ensure the potential benefits are maximised.
S6 – Construction, Operation and Maintenance	S6 deals with designing robust surface water drainage systems so they can be easily and safely constructed, maintained and operated, taking account of the need to minimise negative impacts on the environment and natural resources.

Planning and SAB Approval

11.9 The requirement for a development proposal to secure SAB approval (which is a separate consent to planning permission) **does not** remove the requirement for drainage to be considered within a planning application. Development proposals still need to comply with national and LDP policy, drainage is also considered as a material planning consideration.

11.10 The consideration of SuDS in the preparation of a planning application will make the best use of available land and can benefit the following by ensuring:

- SuDS Standard 5 - Biodiversity provision satisfies both SAB approval and planning requirements including LDP Policy DM2.
- SuDS Standard 4 - Amenity provision satisfies both SAB approval and planning requirements LDP Policy DM3 and DM13.
- All parts of the drainage system including discharge points are included within the red line application site.
- The longer term maintenance of all elements (that require it) of the development proposal can be considered together. This may be useful where the services of a management company are to be appointed.
- Natural features within the site are utilised preventing costly engineering solutions and reducing land-take.
- Where soil types vary across the site, SuDS features could be located on permeable soils to reduce the amount of SuDS components for storage required.
- The development proposal detailed in the planning approval is feasible and does not have to be revisited with an amendment to the planning application (resulting in delays and further costs).

11.11 SAB Approval and Planning Consent do not need to be secured at the same time, applicants may wish to secure one before the other. However, what is important is that the design of the SuDS scheme is considered at the earliest stage in the evolution of a development proposal with the involvement of the SAB and the LPA. Land drainage consultants should be employed for their services at the start of the process not the end. This approach will support place making and improve site viability.

11.12 Pre-application discussion with the SAB and the LPA can help to identify both the most appropriate scheme for the site and the most cost-effective way to integrate SuDS within the emerging development proposal. Both the SAB and the LPA offer a pre-application service, a discount can be made available where applicants request a joint pre-application between the two bodies.

12. *Designing SuDS*

12.1 All development proposals should consider the inclusion of SuDS regardless of whether SAB approval is required or not as they can be the most effective way of managing surface water in a sustainable way.

12.2 All development proposals on Greenfield sites will be expected to limit discharge rates and volumes to equivalent Greenfield runoff rates. Development proposals on previously developed land will be expected to limit discharge rates and volumes to levels expected on Greenfield sites as near as reasonably practicable.

Factors to take into consideration when selecting SuDS components.

12.3 Early assessment of the proposed site is essential when selecting SuDS. Powys County Council recommends that developers utilise the SAB and the LPA's pre-application advice services in order to identify constraints to the site (environmental or otherwise).

12.4 Factors that need to be considered, with regards to land drainage, include:

- The previous land use – run off rates, contaminants.
- The proposed land use – contaminants.
- Existing flood risk on the site (including from rivers and surface water).
- Existing flood risk downstream associated with any would-be receiving watercourses.
- Nearby sensitive sites such SSSIs, SACs, SPZs.
- Soil types.
- Topography.
- Existing natural drainage features.
- Existing public/highway drainage features and capacity.
- Any surface water draining on to the site from elsewhere.

12.5 Section six of this guidance details some of the resources that can be used to obtain some of the information required.

12.6 SuDS can be used on all sites, certain site constraints, such as the size of the site, contaminated soils or high groundwater levels may limit the use of certain types of SuDS, but it will not limit all. Instead of using infiltration it may be more appropriate to use storage SuDS and on small residential sites impermeable paving may be suitable. Where space may be an issue, consideration should be given to the use of multifunctional components such as, green roofs which can be used on the main or ancillary buildings.

Types of SuDS components

12.7 The selection below gives a brief guide to some of the SuDS components available, but for a detailed description it is recommended that applicants refer to the CIRIA SuDS Manual (C753) (2015) which explains in more detail the relevant technical information.

12.8 Each site will have its own opportunities and constraints, there will be no 'one size fits all' with regards to what SuDS components should be used. It is therefore essential that applicants have an understanding of the proposed site as early on in the life time of the development as possible.

Rainwater Harvesting – Rainwater harvesting systems collect and store water for reuse. They vary in size and may include treatment elements. Examples include water butts, and small ponds where the water can be reused for agricultural use. Formal rainwater harvesting systems can include the collection of water for toilet flushing for use in dwellings or public buildings.

Green Roofs – These are systems which are installed on the top of buildings and include a planted soil layer to create a living surface. Water is stored in the soil layer and absorbed by vegetation. Green roofs can be used for a variety of reasons including visual benefit, ecological value, enhanced building performance and the reduction of surface water runoff.

Green roofs can be divided into two main categories:

- Extensive roofs, which have low substrate depths (and therefore low loadings on the building structure), simple planting and low maintenance requirements; they tend not to be accessible.
- Intensive roofs (or roof gardens) these have deeper substrates (and therefore higher loadings on the building structure) that can support a wide variety of planting but which tend to require more intensive maintenance; they are usually accessible.

Infiltration Systems - infiltration systems are designed specifically to collect and store runoff allowing it to infiltrate the ground. They can include soakaways, infiltration trenches, infiltration blankets and infiltration basins.

Proprietary Treatment Systems – these are manufactured products that remove specified pollutants from surface water runoff. They are especially useful where site constraints preclude the use of other methods.

Filter Strips – these are wide, gently sloping areas of grass or other dense vegetation designed to drain runoff evenly from impermeable areas whilst at the same time filtering out silt and other particulates.

Filter Drains – filter drains, also known as ‘French Drains’ are shallow trenches filled with stone/gravel, often with a perforated pipe that allows for either infiltration directly into the ground or for the surface water to travel along the pipe to an outfall.

Swales - swales are shallow, flat bottomed, vegetated open channels designed to convey, treat and often attenuate surface water runoff. When incorporated into site design, they can enhance the natural landscape and provide aesthetic and biodiversity benefits. Swales can be ‘wet’ where water is designed to remain permanently at the base of the swale or ‘dry’ where water is only present within the channel after rainfall events.

Bioretention systems – these include **rain gardens** and are shallow planted depressions that allow runoff to pond temporarily on the surface before filtering through vegetation and underlying soils for collection or infiltration. They are particularly effective in delivering interception and can also provide:

- attractive landscape features that are self-irrigating and fertilising
- habitat and biodiversity

The flexibility in design of these features means that there are very few sites where they cannot be included within the surface water drainage system.

Trees – Trees can be planted within a range of infiltration SuDS components to improve their performance, as root growth and decomposition increase soil infiltration capacity. Alternatively they can be used as standalone features within soil-filled tree pits (it is important that these are properly engineered), tree planters or structural soils.

Trees and their planting structures provide benefits to surface water management in the following ways:

- **Transpiration** – This is the process by which water, taken in from the soil by tree roots, is evaporated through the pores or stomata on the surface of leaves.
- **Interception** – Leaves, branches and trunk surfaces intercept (store and allow the water to evaporate) and absorb rainfall, reducing the amount of water that reaches the ground.
- **Increased infiltration** - Root growth and decomposition of leaf litter increases the soil infiltration rate and capacity.
- **Phytoremediation** – In the process of drawing water from the soil, trees also take up trace amounts of harmful chemicals, including metals, organic compounds, fuels and solvents that are present in the soil. Inside the tree, these chemicals are then transformed into less harmful substances, used as nutrients and/or stored in roots, stems and leaves.

Trees can provide additional benefits for biodiversity, green infrastructure, urban cooling and air pollution.

Pervious pavements - Pervious pavements include pavements suitable for pedestrian and/or light traffic use (such as parking), which allow rainwater to infiltrate through the surface and into the underlying structural layers. The water is then either temporarily stored beneath the overlying surface before use, infiltrated to the ground beneath, or discharged downstream in a controlled manner.

There are two types of pervious pavements that are defined on the basis of the surfacing materials:

- **Porous pavements** - infiltrate surface water across the entire surface material, for example reinforced grass or gravel surfaces, porous concrete and porous asphalt etc.
- **Permeable pavements** - have a surface that is formed of material that is itself impervious to water, but the materials are laid to provide void space through the surface to the sub-base.

Detention Basins - Detention basins are landscaped depressions that are normally dry except during and immediately following storm events. During a rainfall event, runoff drains to a landscaped depression with an outlet that restricts flow, so that the basin fills and provides attenuation.

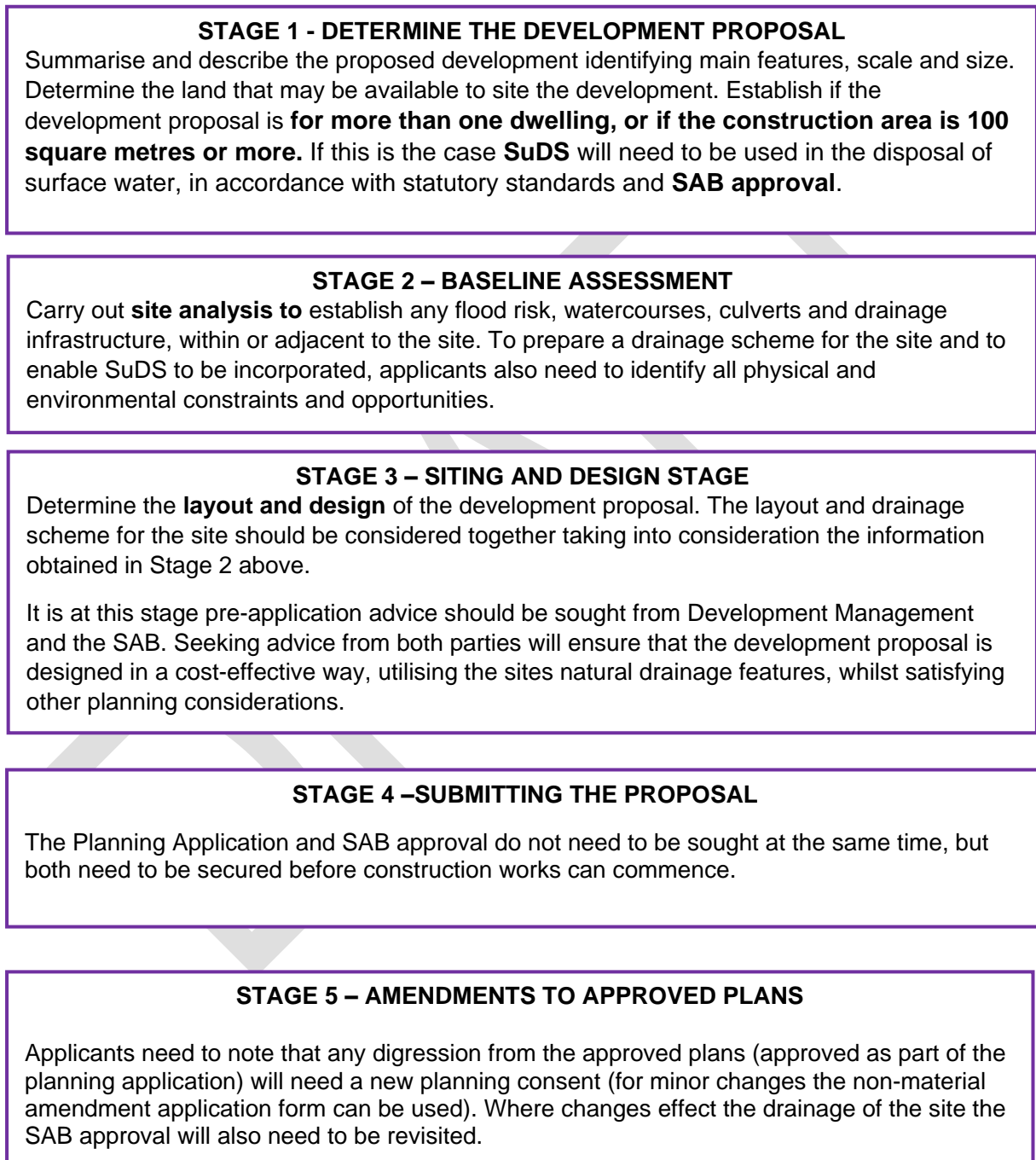
Detention basins can be vegetated depressions (that can provide treatment when designed to manage regular flows or hard landscaped storage areas that will tend not to provide any treatment).

Ponds and Wetlands - Ponds and wetlands are features with a permanent pool of water that provide both attenuation and treatment of surface water runoff, where the volume of water increase after periods of heavy rainfall. Where vegetation covers 75% of the feature's surface they are usually referred to as wetlands. Both ponds and wetlands should provide for amenity and biodiversity benefits.

13. Implementation of LDP Flood Risk and Land Drainage Policies

13.1 Figure 2 below identifies the stages which should be followed for all developments where there are flood risk and/or land drainage considerations. All development proposals will need to consider whether the site is at risk from flooding, this can be done by referring to the NRW website: <https://naturalresources.wales/floodriskmap?lang=en>:

Figure 2. Key stages to follow for developments with flood risk and land drainage considerations.



Stage 1 – Determining the Development Proposal

13.2 In the first instance, applicants should put together a summary of the proposal involving a description of the proposed development identifying the main features, such as location, type, uses, scale and size. This should be accompanied by a preliminary plan or sketch of the site and surrounding context.

13.3 Consideration needs to be given as to whether the construction area is over 100 square metres, or the development is for more than one dwelling. Where this is the case SuDS approval will need to be secured in addition to the planning application. SuDS will need to be incorporated within the drainage scheme of the development and accord with the ['Statutory Standards For Sustainable Drainage Systems – Designing, Constructing, Operating And Maintaining Surface Water Drainage Systems \(2018\).'](#)

Stage 2 – Baseline Assessment

13.4 Initially applicants should establish if the site is within an area of flood risk (see page 9). Where the site is within an area of flood risk, checks should be made to ensure the development proposal complies with TAN 15 and LDP Policy DM6. Proposals for highly vulnerable development (as defined in TAN 15) in areas at high risk from flooding will not be feasible as the planning application is likely to be refused.

13.5 There may be instances where the development proposal is within an area of flood risk but is considered acceptable by the guidance in TAN 15. This would only be after a Flood Consequences Assessment (FCA) has been prepared (in accordance with the guidance in TAN 15) and considered acceptable. It would be beneficial for the FCA to include a conceptual drainage design strategy. This can assist in the selection and design of SuDS components for the site and can be used to demonstrate no increased flood risk elsewhere.

13.6 Development proposals in areas at high or medium risk of surface water flooding (identified in the Wales Flood Map) will also need to undertake an FCA, particularly to ensure the development does not increase flood risk elsewhere. Further information and advice may be sought from Powys County Council acting in its LLFA role.

13.7 The FCA should also be used to address the requirements of Policy DM6, particularly when it comes to seeking opportunities to reduce flood risk. Applicants may wish to delay the undertaking of an FCA until they have sought pre-application advice from the Council in case there are other planning matters that also need to be addressed; however, it will need to be submitted at the same time as the planning application.

13.8 The baseline assessment should provide information to demonstrate that the development proposal complies with LDP Policy DM6 and enables the most appropriate SuDS components for the site to be realised. Where SAB approval is not required, then it is at this stage the feasibility of using SuDS in the drainage scheme for the site should be considered.

13.9 Below is a list of what should be considered within the baseline assessment, however this is a guideline only, as there may be other local factors that need to be taken into consideration. Section six contains details of resources that can assist:

- Identification of any watercourses within or adjacent to the site.
- Flood risk within the site.
- Flood risk downstream associated with any would-be receiving watercourses.

- Topography.
- Existing site drainage including flow routes and discharge points.
- Areas of permeable and impermeable land on the existing site.
- Soil types across the site.
- Existing land uses.
- Location of any existing drainage infrastructure above and below ground.
- Local green infrastructure, habitats and biodiversity.
- Sewerage infrastructure capacity (where there are plans to connect).
- Any highway drainage systems that may be affected by the development proposal.
- Nearby environmental designations within the catchment that may be sensitive to pollutants carried in surface water.
- The location of any culverts.

13.10 It is also worthwhile for applicants who need SAB approval to familiarise themselves with the requirements relating to the different SuDS standards, including those in relation to amenity and biodiversity. Some of the standards overlap with the requirements that will need to be satisfied within the planning application process. Having a good understanding of both can help determine how one scheme can satisfy both approvals. It is therefore also recommended that applicants read the Biodiversity, Open Space and Residential Design Guide SPGs.

13.11 The SAB requires drainage proposals to be developed by a competent and suitability qualified professional, experienced in drainage/ SuDS / flood risk management design. It would be worthwhile and cost effective to employ the services of such a professional at this stage in the development process, rather than near the end of the design process.

Stage 3 – Siting and Design Stage

13.12 It is highly recommended that applicants enter into pre-application discussions with the LPA and the SAB early on within this stage. The pre-application service is seen as an important part of the planning process. Seeking pre-application advice at this stage will mean that all planning issues and requirements can be identified before the planning application is submitted. This will identify any significant constraints to development early on in the process, reduce timescales and enable the use of multi-functional open spaces.

13.13 Including the SAB in discussions can help significantly in ensuring a robust, cost effective and viable surface water management strategy and SuDS scheme design. The SAB will be able to assist in determining the optimum SuDS solution for the site and be able to give an indication of what may or may not comply with the National SuDS Standards. For further information on how and what to submit with regards to a SAB pre-application enquiry see: <https://en.powys.gov.uk/article/5581/How-do-I-see-SAB-approval>

13.14 It is also advisable to have early engagement with other affected stakeholders, such as the sewerage undertakers, where relevant. The information collected in Stage 2 should be submitted with any pre-application enquiries to enable a more detailed response, particularly from the SAB.

13.15 The information collected in Stage 2 should be utilised together with factors, such as the proposed extent of the development, likely building density, proposed land uses and changes to topography, to determine the most appropriate drainage scheme for the site.

13.16 The site layout should be influenced by the drainage scheme; however the Council acknowledges that drainage is one of a range of considerations that may influence the layout

and design of development. The Design and Access / Planning Statement included as part of the planning application provides an opportunity to explain how the different components, including drainage, have been considered.

13.17 For development proposals in an area of flood risk or near a watercourse consideration needs to be given with regards to the design and layout as to how the proposal complies with LDP Policy DM6. For detailed information on how this policy should be implemented see pages 19 to 22 of this guidance.

Stage 4 – Submitting the Proposal

13.18 Following Stages 1, 2 and 3, above, the application will be ready for submission to the LPA.

13.19 In addition to the standard validation requirements:
<https://gweddill.gov.wales/docs/desh/publications/170505section-7-annex-planningapplications-lists-of-validation-requirements-en.pdf>.

13.20 The information listed in the table below should be submitted for all applications as appropriate i.e. where a site includes areas of flood risk, has drainage implications or includes / is adjacent to a water course.

13.21 Applications with drainage implications may submit a copy of the SAB approval application (this can be in draft form if SAB approval is to be sought at a later date) in place of some of the requested information (as indicated below).

Table 3. Information to be submitted with a planning application

Information Required	Consideration
Details of any flood risk on the site.	Flood Risk
Flood Consequences Assessment (FCA) where required by TAN 15 (sections 10 and 11) or to assess flood risk associated with surface water flooding.	Flood Risk
A plan of the existing site , noting its topography <i>OR INCLUDE</i> COPY OF SAB APPLICATION	Drainage
A plan of the proposed site , noting its topography and proposed drainage arrangements , this should include an indication of the types of SuDS or other drainage systems to be used. This does not need to be a detailed design but should demonstrate that the system requirements have been considered and are achievable, and that all components are included within the red line area. <i>OR INCLUDE</i> COPY OF SAB APPLICATION	Drainage
Explanation on which parts of the Surface Water Discharge Hierarchy are to be used: 1. Collect for use 2. Infiltration 3. To a watercourse 4. To a surface water sewer 5. To a combined sewer	Drainage

Information Required	Consideration
<i>OR INCLUDE</i> COPY OF SAB APPLICATION	
<p>If 2 or 3 of the hierarchy above have been identified evidence should be provided that the site has a satisfactory point of discharge, this should be included within the red line area.</p> <p><i>OR INCLUDE</i> COPY OF SAB APPLICATION</p>	Drainage
<p>The location of any watercourses within or adjacent to the site. These should be included within the red line area. The application should include a statement on how the proposal complies with LDP Policy DM6, criterion 3 and 5, with details of a management strategy.</p>	LDP Policy DM6
<p>Details of any culverts within the site or to be used by the proposed drainage system. A statement should be submitted that details how the proposal complies with LDP Policy DM6, criterion 4.</p>	LDP Policy DM6
<p>Any amenity, biodiversity and landscaping plans that will form part of the SAB approval application. The submission of this information will improve consistency between the two processes.</p>	Consistency in approach between the two applications
<p>Details of any maintenance and adoption arrangements including for multifunctional areas of Open Space that have been designed to comply with LDP Policy DM3 and the national SuDS Standards.</p>	Consistency in approach between the two applications
<p>Details of any pre-application discussions that have taken place with the SAB.</p>	Consistency in approach between the two applications

Stage 5 – Amendments to Approved Plans

13.22 Once the planning application has been granted, SuDS approval gained, and all pre-commencement conditions from both consents have been discharged, works may commence. It needs to be remembered when looking to vary or amend the scheme from the approved plans, that a new planning consent will be required (a Section 73 application or a Non-Material Amendment may be possible) and the SAB approval revisited if the drainage is affected (this includes changes to the amount of impermeable surface area).

14. Monitoring and Review

14.1 The implementation of the LDP's flood risk and land drainage policies, through developments permitted and delivered under the LDP, will be monitored annually and reported in the LDP's Annual Monitoring Report (submitted to the Welsh Government by 31st October each year following adoption of the LDP). The process will monitor developments permitted within areas of flood risk. Particular attention will be given to highly vulnerable development within high risk areas, and whether the acceptability and justification tests in TAN 15 have been met. The Sustainable Development Indicators reported by Development Management to Welsh Government on an annual basis will also continue to monitor highly vulnerable development in areas of high flood risk.

14.2 The LDP's Strategic Environmental Assessment monitoring will monitor the longer-term effects of delivery and implementation of the LDP. It includes monitoring indicators that consider the status of water bodies' in the River Basin Management Plans with regards to water quality and quantity (when reviewed by NRW). Together with the total number of properties per annum that are within an area of flood risk by rivers or sea.

14.3 Planning applications permitted will be monitored by the SAB to identify any schemes that commence without securing SAB approval. Where such schemes are identified enforcement action will be taken by the SAB.

14.4 This SPG will be kept under review and, where necessary, updated to take into account changes in any relevant policy, guidance, evidence of circumstances, and in response to relevant issues raised with the SPG in practice.

GLOSSARY OF TERMS

Definition	Meaning
Attenuation	Reduction of peak flow and increased duration of a flow event
Green Infrastructure	Green and blue (i.e. water-based) natural and semi-natural spaces in the countryside and in and around towns and villages. Component elements include parks, private gardens, agricultural fields, hedges, trees, woodland, green roofs, green walls, canals, rivers and ponds. The term covers all land containing these features, regardless of ownership, condition or size.
Impermeable	Will not allow water to pass through it
Infiltration	The passage of surface water into the ground.
Permeability	A measure of the ease with which fluid can flow a porous medium.
Permeable surface	A surface that is formed of material that is itself impervious to water but, by virtue of voids formed through the surface, allows infiltration of water to the sub-base.
Pervious surface	A surface that allows inflow of rainwater into the underlying construction or soil.
SAB	SuDS Approval Body
Surface Water Runoff	Water flow (including flow from snow and other precipitation) over the ground surface which has not entered the drainage system.
SuDS	Sustainable Drainage System