

1 Appendix C.1 - Powys Flood Risk Review (Excluding the Brecon Beacons National Park Boundary)

1.1 Historical flooding

Powys has a history of recorded flood events caused by multiple sources of flooding. Significant flood events within the Powys County Council authority area (which have been taken from NRW's recorded flood extents dataset and Powys County Council records and reports on historical flood incidents) are recorded below in Table 1-1. Every effort has been made to include the most significant flood events within the county in Table 1-1, however the list is not exhaustive. Developers are encouraged to consult the LLFA and NRW about historical flood risk to a proposed development site. A summary of the spatial distribution of historical sewer flooding incidents by electoral ward are shown in Table 1-2.

Information from Powys LLFA indicates that there have been no incidents of groundwater flooding within Powys since the creation of the LLFA. Similarly, there have been no recorded incidents of flooding from artificial sources with the exception of a breach in a Untied Utilities asset in 2017, see Table 1-1 below.

Table 1-1 Flooding incidents by year

Year of flood event	Location	Flood Incident
April 1947	Boughrood	Channel capacity exceeded – no further details recorded.
April 1947	Glasbury to Hay-on-Wye	Channel capacity exceeded – no further details recorded.
April 1947	Letton Lakes	Channel capacity exceeded – no further details recorded.
April 1947	Riddings Brook	Channel capacity exceeded – no further details recorded.
April 1947	Glan-Llugwy Bridge	Channel capacity exceeded – no further details recorded.
April 1947	Knobley Brook	Channel capacity exceeded – no further details recorded.
April 1947	Unnamed Lugg tributary	Channel capacity exceeded – no further details recorded.
April 1947	Lugg at Preteigne & Hindwell	Channel capacity exceeded – no further details recorded.
April 1947	Summertil Brook	Channel capacity exceeded – no further details recorded.
April 1947	Burlingjobb to Kington	Channel capacity exceeded – no further details recorded.
January 1948	Upper Severn – Montgomery to Crew Green (south east of Llandrinio)	Channel capacity exceeded – no further details recorded.
December 1960	Upper Severn – Montgomery to Crew Green (south east of Llandrinio)	Channel capacity exceeded – no further details recorded.
December 1965	Builth Wells	Channel capacity exceeded – no further details recorded.
February 1990	Dyfi Junction, Dyfi Estuary	Overtopping of defences.

Year of flood event	Location	Flood Incident
October 1998	Near Newtown and Llandrindod Wells	Channel capacity exceeded – no further details recorded.
April 1998	Caersws	Flooding as a result of channel capacity exceedance of the Manthrig Brook – no further details recorded.
April 1998 and 2000	Knighton	Flooding as a result of channel capacity exceedance the Wylcwm Brook and River Teme – no further details recorded.
2000	Kerry	Flooding from channel capacity exceedance of the River Mule in combination with surface water flooding. Number of properties affected is unknown.
2000	Caersws	Flooding as a result of channel capacity exceedance of the Manthrig Brook. The recreation ground was reported to have flooded, however no detail on the number of properties affected are known.
2000	Llandinam	Flooding as a result of channel capacity exceedance of the River Severn and flooding from minor tributaries. Several properties were known to have been affected but exact numbers are not known.
Autumn 2000	Upper Severn – Montgomery to Crew Green (south east of Llandrinio)	Channel capacity exceeded – no further details recorded.
October 2000/ October 2001	Machynlleth	Flooding was caused by channel capacity exceedance of an ordinary watercourse. No other details are available.
February 2002	Upper Severn – Montgomery to Crew Green (south east of Llandrinio)	Channel capacity exceeded – no further details recorded.
2002	Llandrindod Wells	Channel capacity exceedance of the Arlais Brook caused flooding in Llandrindod Wells – no further details recorded.
February 2004	Upper Severn – Montgomery to Crew Green (south east of Llandrinio)	Channel capacity exceeded – no further details recorded.
December 2007	Llowes	Flooding as a result of channel capacity exceedance of an ordinary watercourse. No further information available.
July 2007	Tregynon	Channel capacity exceedance of the Bechan Brook causing flooding in the area. This was exacerbated by surface water flooding causing several properties to be internally flooded in the area.
September 2008	Ystradgynlais	Flooding as a result of channel capacity exceedance of the River Tawe in addition to surface water flooding.

Year of flood event	Location	Flood Incident
2008	Kerry	Flooding from channel capacity exceedance of the River Mule in combination with surface water flooding.
January 2010/October 2010	Llowes	Flooding as a result of channel capacity exceedance of an ordinary watercourse. No further information available.
October 2010	Presteigne	Flooding as a result of channel capacity exceedance of the Clatter Brook. No further information available.
May 2012	Cwmbach/ Glasbury/ Llowes	9 residential properties experienced internal flooding due to an ordinary watercourse (name unknown) exceeding channel capacity. Flooding exacerbated by debris blockage on the watercourse.
August 2012	Ystradgynlais	Flooding as a result of channel capacity exceedance of the River Tawe in addition to surface water flooding.
December 2012	Llanfyllin (Brook Street and High Street)	Internal flooding at 7 residential and 3 commercial properties. Internal flood depths were recorded of 0.2m. Main source of flooding was from the Nant Abel which was exacerbated by a blockage on an upstream culvert inlet (specific location unknown).
July 2013	Kerry	Flooding from channel capacity exceedance of the River Mule in combination with surface water flooding.
September 2016	Ystradgynlais	Internal flooding of 12 residential and 3 commercial properties in the area. Maximum flood depth was 0.15m. Flood water came close to the threshold at 30 other residential properties, but no internal flooding was experienced. Source of flooding was reported to be from channel capacity exceedance of ordinary watercourses (no watercourse names given). This in combination with surface water runoff and sewer surcharges exacerbating flooding in the area.
13 th January 2017	Llanrhaeadr y Mochnant	A breach in United Utility's large diameter aqueduct (Lake Vrynwy to Liverpool water supply) affect Llanrhaeadr y Mochnant on the 13 th Jan 2017, when 3 properties were recorded as being internally flooded and several others affected.
May 2018	Welshpool	Flooding as a result of channel capacity exceedance of an unnamed watercourse flowing through the town centre. Surface water flooding also contributed to the problem. Damage was reported to the hospital and several properties in the area.
June 2019	Welshpool	Same flood sources as the May 2018 event detailed above. The town hall and several businesses were reported to have flooded.
February 2020	Knighton	Flooding as a result of channel capacity exceedance the Wylcwm Brook and River Teme. Several roads in the town were flooded. It is unknown whether any properties were flooded.

Year of flood event	Location	Flood Incident
February 2020	Pool Quay	Flooding as a result of channel capacity exceedance of the Guilsfield Brook.
February 2020	Llanelwedd and Builth Wells	Flooding from channel capacity exceedance of the River Wye. The Royal Welsh Showground and several shops and petrol stations in the area were affected by flood waters. The A470 and A483 were closed due to flood water.
February 2020	Knighton	Flooding as a result of channel capacity exceedance the Wylcwm Brook and River Teme, causing property flooding.
February 2020	Llandinam	Channel capacity exceedance of the River Severn and several minor tributaries causing flooding in Llandinam. The A470 was reported to have flooded along with at least 4 properties.
August 2020	Ystradgynlais	Flooding as a result of channel capacity exceedance of the River Tawe in addition to surface water flooding. Flooding was reported to be flashy in nature with flood waters as deep as 600mm in some properties.
February 2021	Glasbury	Flooding in Glasbury as a result of the River Wye and associated tributaries exceeding channel capacity.
February 2022	Llandrindod Wells	Channel capacity exceedance of the Arlais Brook caused flooding in Llandrindod Wells – no further details recorded.
February 2022	Llanfyllin	Flooding as a result of channel capacity exceedance of the River Cain in addition to several tributaries. This was recorded as causing flooding to properties in the area but numbers are unknown.
November 2022	Ystradgynlais	Flooding as a result of channel capacity exceedance of the River Tawe in addition to surface water flooding. 50 properties were reported to have internally flooded in the area.

1.2 Fluvial

The main watercourses within the Powys Local Authority area (excluding the Brecon Beacons National Park) are:

- Bechan Brook
- Guilsfield Brook
- River Cain
- River Dovey
- River Honddu
- River Ithon
- River Irfon
- River Lugg
- River Tanat
- River Severn
- River Teme
- River Vrynwy
- River Wye

These watercourses are all classified as NRW Main Rivers. Maps showing the extent of the flood outlines from the NRW FMfP – Rivers in Powys County are provided in Appendix C.2.

The River Severn is the longest river in the UK and rises at Plynlimon in the Cambrian Mountains. It flows in a general north easterly direction via settlements in Powys such as Newtown and Welshpool, before flowing into the county of Shropshire just north of Crew Green (south east of Llandrinio). The River Severn flows in a general southerly direction before flowing into the Severn Estuary and discharging into the Bristol Channel.

The floodplain of the River Severn is the most extensive floodplain within Powys, with FMfP Flood Zones 2 and 3 forming areas within close proximity to the watercourse, and extending into areas such as Newtown, Welshpool, Llanidloes, Llandinam Caersws and Abermule. The areas at highest fluvial flood risk are those locations in the north east of Powys, where multiple tributaries converge with the River Severn.

NRW fluvial flood defences are located along the River Severn in, Newtown and Caersws. NRW fluvial flood defences are located in the lower reach of the Afon Trannon, which is a small tributary of the River Severn to the west of Caersws. NRW defences are found along the River Severn north of Welshpool at Pool Quay and Llandrinio. These fluvial flood defences are believed to provide a standard protection of less than 1 in 100 years, and do not form a TAN-15 Defended Zone. NRW fluvial flood defences are located in Newtown and do form a TAN-15 Defended Zone.

The River Vrynwy is one of the River Severn's main tributaries and is sourced from Lake Vrynwy in the north of Powys. It flows in a general south easterly direction and converges with the River Seven just north of Crew Green (south east of Llandrinio). The floodplain of the River Vrynwy is fairly confined within close proximity to the watercourse in the upper reaches. Where the River Banwy converges in the middle reach, near to Meifod, FMfP Flood Zone 2 and 3 are extensive and the fluvial flood risk here is greatest.

NRW fluvial flood defences with a standard protection believed to be less than 1 in 100 years are present to the south of Meifod, where the fluvial flood risk is shown to be high. NRW fluvial flood defences are also located in a long stretch along the River Severn between Haughton and Haim (right bank) and Lane Farm to Upper Farm (Criggion) (left bank). Additionally, defences exist north of Four Crosses, near Rhandregynwen. Although fluvial flood defences are present in these areas, settlements behind the defences are not classified as TAN-15 Defended Zones.

The River Tanat is sourced near to the Cynriau Nod Mountain, north of Lake Vrynwy, and flows in a general easterly direction to Llanyblodwel before flowing south and converging with the River Vrynwy near to Llansantffriad-ym-Mechain. There is some associated fluvial flood risk including in the settlements of Llangynog and Penybontfawr, associated with this

watercourse; however, FMfP Flood Zone 2 and 3 are predominantly present within close proximity to the watercourse and are confined to the existing floodplain. The Afon Eirth is a tributary to the River Tanat, and an NRW fluvial flood defence is present at Llangynog.

The River Banwy is a tributary of the River Vyrnwy, rising to the north of Nant-y-Dugod and flowing in a general easterly direction for approximately 19km before converging with the River Vyrnwy.

The River Wye is another of the River Severn's main tributaries and rises in Plynlimon in the Cambrian Mountains. The River Wye principally flows alongside the A470 in a southerly direction, passing via settlements such as Rhayader, Newbridge on Wye, and Builth Wells. Fluvial flood risk in these reaches is fairly confined to the watercourse, with Flood Zones 2 and 3 present within close proximity to the river. At Llyswen, the River Wye flows in a general easterly direction, crossing into Herefordshire at Hay on Wye. It then flows south and forms the border between England and Wales, converging with the River Severn south of Chepstow. The floodplain of the River Wye is extensive, and FMfP Flood Zone 2 and 3 are present, with fluvial flood risk being dominant between Glasbury and Hay on Wye. NRW fluvial flood defences are present in Glasbury providing a standard protection of less than 1 in 100 years, although not generating a TAN-15 Defended Zone.

The River Ithon is a major tributary of the River Wye. It rises to the south of Dolfor, flowing generally south alongside the A483 before converging with the River Wye just south of Newbridge on Wye. The River Ithon has a series of its own tributaries along its course, although fluvial flood risk is fairly confined to the watercourse corridor.

The River Irfon is another main tributary of the River Wye, rising in the Cambrian Mountains and flowing in a general southerly direction to Llanwrtyd Wells before diverging in a north easterly direction where it converges with the River Wye at Builth Wells. Fluvial flood risk along the River Irfon is confined to the river corridor, with FMfP Flood Zone 2 and 3 present. NRW fluvial flood defences are present in Llanwrtyd Wells and Beulah, providing a standard protection to a minimum of 1 in 100 years. As a result of these flood defences, these areas are both classified as TAN-15 Defended Zones.

The River Elan (not identified as an NRW Main River) rises on the eastern flank of Pen y Deunant in Ceredigion, prior to flowing in a westerly direction to the reservoirs found in Elan Valley, Rhayader. It converges with the River Wye to the south of Newbridge on Wye. There is fluvial flood risk associated with the reservoirs in this area, although the risk is predominantly confined to within the water body. Additionally, the River Elan itself has FMfP Flood Zone 2 and 3 present, however due to the steep topography in this area the fluvial flood risk is confined to the watercourse corridor.

The River Dovey is sourced from the lake of Creiglyn Deifi in the neighbouring county of Gwynedd and enters the county of Powys at Aberangell, flowing in a general south westerly direction before discharging into the sea at Aberdyfi. It forms the boundary between Powys and Gwynedd, crossing into Ceredigion west of Morben. Fluvial flood risk is present in the lower reach, with FMfP Flood Zone 2 and 3 present up to 500m from the watercourse, creating a reasonably extensive floodplain.

The River Lugg rises near to the village of Llangunllo, central Powys, and flows in a general south easterly direction towards Presteigne, before flowing into the county of Herefordshire. FMfP Flood Zone 2 and 3 are present within close proximity to the watercourse; therefore, flood risk is shown to be reasonably confined.

Summertil Brook rises near to Llanfihangel, in the south eastern area of Powys. It is not identified as an NRW Main River; however, is shown to be a cause of historical fluvial flooding in the Powys LPA area as shown in Table 1-1. It flows in an easterly direction via New Radnor to Womaston, before converging with the Hindwell Brook. FMfP Flood zone 2 and 3 are present within 300m of the watercourse; therefore, presenting the highest level of risk to nearby villages and small settlements.

The River Teme rises in Dolfor to the south of Newtown in Mid Wales before flowing in a south easterly direction towards the Wales/ England boarder at Felindre. The river forms the Wales/ England boundary until it reaches Knighton and flows outside the county boundary towards Bucknell.

The River Cain rises in the north of the county close to LLanfyllin before flowing in a easterly direction towards Llansantffraidd-ym-Mechain where it joins the River Vyrnwy.

The River Honddu rises close to Upper Chapel in Mid Wales, before flowing in a southerly direction towards Brecon. Flood Zones 2 and 3 are largely confined to the river channel along this stretch of watercourse until the river converges with the River Usk at Brecon.

The Bechan Brook rises in Tregynon before flowing in a south easterly direction towards Newtown where it converges with the River Severn. Flood Zones 2 and 3 are largely confined to the river channel, expanding at the River Severn confluence.

The National Flood Asset Database (NFAD)¹ records flood infrastructure in Wales, including embankments, walls, flood gates, culverts, and debris screens. All RMA in Wales are encouraged to enter onto NFAD details of all assets that they are aware of, including privately owned assets. The NFAD is regularly updated to improve the accuracy of the data. However, at the moment NRW highlight the following issues with the database:

- some of the data may be inaccurate, out-of-date or missing
- some of the underground assets might not be known or recorded accurately
- information for Ceredigion is not shown
- Property Flood Resilience (PFR) schemes are not included

Fluvial Flood Risk & TAN-15

Due to the nature of the topography in Powys, flood plains for the larger rivers – River Severn and River Wye, are wide and flat, allowing water to cover large areas with areas downstream located within FMfP Flood Zone 2 and 3. Settlements such Built Wells and Caersws are mainly located within Flood Zone 3. In regard to other NRW Main Rivers that have been discussed, FMfP Flood Zone 2 and 3 are present although their floodplains are fairly confined and remain within close proximity to the watercourse; therefore, do not pose as great a risk to settlements.

In upland areas, such as the Cambrian Mountains and Brecon Beacons National Park area (which is discussed in detail in Appendix A.1) there is very little fluvial flood risk present, due to the valley like characteristics present such as the higher gradient of the topography. Consequently, the majority of these upland areas are located within Flood Zone 1.

Flood defences found along the River Severn, River Vyrnwy, River Wye, and River Irfon are maintained by NRW. As a result of these flood defences, parts of the fluvial flood plain are categorised as a TAN-15 Defended Zones. Therefore, all forms of development are possible subject to satisfying the requirements of the Justification Tests. The flood defences have a minimum 1% AEP event standard of protection.

New highly vulnerable development within undefended areas of Flood Zone 3 is not possible, as Flood Zone 3 is not suitable for highly vulnerable development. Less vulnerable development shall only be possible subject to the stringent Justification Tests outlined in TAN-15. Development in these areas shall be subject to site specific assessment and detailed flood modelling shall be required. Due to the lack of protection from NRW flood defences, any proposed development in an undefended area is likely to require flood mitigation considerations and may be more challenging to meet TAN-15 requirements.

1.3 Surface water and smaller watercourses

Maps showing the extent of the flood outlines for the surface water in Powys Local Planning Authority area are provided in Appendix C.2.

The NRW FMfP – Surface Water and Small Watercourses shows surface water flooding is predicted to follow topographical flow paths of existing watercourses or dry valleys.

Along the River Severn, River Wye, and River Vyrnwy, significant surface water flow paths are evident which characterise the floodplains and tributaries to these watercourses.

¹ <https://naturalresources.wales/flooding/managing-flood-risk/find-flood-defence-structures-near-you-the-national-flood-asset-database/?lang=en>

Welshpool, Newtown, and Caersws along the River Severn are the areas that appear to be at the greatest risk, with areas located in Flood Zone 3. Predominantly flood risk is located outside of the main settlements.

Surface water and small watercourse flooding is predicted to occur in urbanised areas such as Newtown and Builth Wells, with some localised areas located in Flood Zone 3, including road infrastructure.

Surface water flow paths within urban areas are shaped by urban infrastructure and topographic depressions. Surface water is channelled by the roads around settlements, pooling in areas of wide open spaces and topographic depressions.

Disposal of surface water runoff is a key consideration, whether a development site falls within a flood risk area or not. Intense development within a catchment could result in increased runoff which if not appropriately managed could result in increased flooding within and downstream of the study area.

New developments can also increase pressure on sewer systems and urban drainage. It is therefore important to manage the impact of developments in a sustainable manner. Whilst all proposed surface water drainage schemes of more than 1 house or where the construction area is of 100m² shall be required to comply with the Statutory Standards for SuDS in Wales and the discharge hierarchy, it is unlikely that any proposed development site shall be permitted to discharge surface water into the public sewerage system, even where priority levels 1-3 (rainwater harvesting, infiltration, and discharge to a waterbody) are not viable.

Surface Water Flood Risk & TAN-15

All development types are permissible in FMfP Flood Zone 2 and 3 for Surface Water and Small Watercourse flooding provided that the acceptability criteria in TAN-15 can be met. Development in these areas shall be subject to site specific assessment which should consider flow pathways, potential ground levelling for topographic depressions and how SuDS can be used to manage surface water flows across a development site. Developers should consult the LLFA for any specific knowledge related to surface water and small watercourse flooding at a proposed development site. Where there is localised surface water flooding, developments should be located outside of Zones 2 and 3 where possible.

1.4 Groundwater flood depths

The bedrock geology across Powys LPA area is predominantly comprised of Mudstone, Siltstone, and Sandstone. Mudstone tends to have low porosity and permeability whilst sandstone is regarded as more permeable and allows for the storage and movement of groundwater. As a result, upward percolation of groundwater and subsequent flooding should be considered in these areas.

Areas of superficial deposits in Powys LPA area are limited and predominantly present around the Main Rivers of the county such as the River Wye and River Severn. The superficial deposits are largely Alluvium which is comprised of Clay, Silt, and Sand. In the northern area of Powys there are records of superficial deposits classified as Till which is deemed to generally be permeable. The variation of superficial deposits across the county suggests that groundwater flooding could present a localised risk to some areas. Maps showing the indicative groundwater flood depth in Powys are provided in Appendix C.2. The map also assesses the risk of groundwater emergence and not of resulting groundwater flooding. For groundwater flooding to occur it is often necessary for groundwater to have nowhere to go without ponding and flooding an area first.

The majority of the county, particularly in the south, has groundwater that is at least 5m below the ground surface or lower. Along the River Wye, from Newbridge on Wye to Hay on Wye, groundwater levels are shown to be between 0.5m and 5m below ground surface, with some areas with groundwater level either at or very near (within 0.025m) to the ground surface. In the north of the county, particularly along the River Seven and River Vyrnwy, and within close proximity to other NRW Main Rivers, there are extensive areas that have groundwater levels either at or very near (within 0.025m) to the ground surface, and in the more upstream catchments groundwater levels are between 0.5 and 5m below the ground

surface. These locations where groundwater is modelled as being close to the surface are within close proximity to a water course where high groundwater might be expected.

A high-risk groundwater zone does not automatically preclude the use of infiltration techniques for Sustainable Drainage Solutions (SuDS), although they are less likely to be suitable. A site-specific assessment of the potential for infiltration techniques shall always be required by the SAB.

Groundwater Flood Risk & TAN-15

TAN-15 does not specific any requirements for groundwater flood risk, other than the risk of groundwater flooding should be considered as part of an FCA. However, it would be advisable to locate developments away from areas where groundwater is less than 0.025m below the ground surface without further groundwater monitoring and detailed assessment being undertaken.

1.5 Sewer flooding

DCWW and Hafren Dyfrdwy are responsible for sewer infrastructure across the study area and recording sewer flooding incidents.

DCWW and Hafren Dyfrdwy have provided detail of historical incidents and active risk areas. Historical flooding incidents are recorded relating to public foul, combined, or surface water sewers. These records display the number of properties that experience internal and/or external flooding. A summary of the spatial distribution of historical sewer flooding incidents by electoral ward is summarised in Table 1-2. Wards that cross the boundary between Powys and the Brecon Beacons National Park are also included in this table. Wards recorded as having 'no data' are not listed in Table 1-2. This data shows that the ward with the highest number of flood incidents is Tawe-Uchaf.

DCWW and Hafren Dyfrdwy are working to reduce the number of sewer flood incidents by investing in maintenance and improvements of the sewer network.

DCWW and Hafren Dyfrdwy have not provided any information regarding the predicted flood risk from the sewerage network.

Table 1-2 Sewer Flooding Incidents by Electoral Ward: inclusive of wards that cross the boundary between Powys and the Brecon Beacons National Park

Electoral Ward	Number of sewer flooding incidents
Tawe Uchaf	42
Newtown North	14
Llandrindod North	10
Llanyre with Nantmel	10
Machynlleth	10
Ynyscedwyn	9
Aber-craf and Ystradgynlais	9
Builth	9
Disserth and Trecoed with Newbridge	9
Llanafanfawr with Garth	7
Hay	6
Llandrinio	6
Gwernyfed	4
Maescar and Llywel	4
Newtown West	3
Welshpool Llanerchydol	3
Glantwymyn	3

Llanwrtyd Wells	3
Rhiwcynon	2
Welshpool Gungrog	2
KerryED	2
Knighton with Beguildy	2
Llandinam with Dolfor	2
Llandrindod South	2
Llanfair Caereinion and Llanerfyl	2
Llangyniew and Meifod	2
Llangors with Bwlch	1
Talgarth	1
Newtown Central and South	1
Presteigne	1
Rhayader	1
Banwy, Llanfihangel and Llanwddyn	1
Churchstoke	1
Ithon Valley	1
Llanbrynmair	1
Llanelwedd	1
Llanidloes	1
Llanrhaeadr-ym-Mochnant and Llansilin	1
Llansantffraid	1

Flood Risk from Sewers & TAN-15

TAN-15 does not specify any requirements for sewer flood risk, other than that it should be considered as part of an FCA. The LLFA and DCWW and or Hafren Dyfrdwy should be consulted to provide specific advice on any known history of sewer flooding and any remedial action taken.

1.6 Flooding from artificial sources

Artificial sources of flooding include reservoirs within and upstream of the county which could pose a flood risk to Powys LPA area. Maps showing the potential flood risk from reservoirs are provided in Appendix C.2. The reservoirs which pose a flood risk to the county are:

- Caban Coch
- Claerwen
- Craig Goch
- Dol-y-Mynach
- Garreg Ddu
- Llyn Clywedog
- Llyn y Mynydd
- Llyn Cwmanell
- Pen-y-Garreg
- Shelve Pool
- Vyrnwy

The NRW FMfP – Reservoirs mapping indicates that areas located within the Llyn Clywedog and Vyrnwy extents are identified as the areas most affected due to a reservoir breach or overtopping. This includes areas such as Llanidloes, Newtown and Welshpool. Further south, settlements located along the River Wye at risk from reservoir breach in Elan Valley are Builth Wells and Hay on Wye.

The failure of a reservoir can cause catastrophic damage due to the sudden release of large volumes of water. Reservoirs in the UK have an excellent safety record, and NRW is the enforcement authority for the Reservoirs Act 1975 in England and Wales. All large reservoirs must be inspected and supervised by reservoir panel engineers. It is assumed that these reservoirs are regularly inspected, and essential safety work is carried out. Therefore, these reservoirs present minimal risk.

TAN-15 highlights that any development in the inundation catchment of a reservoir may change a reservoir’s risk category. Any potential implications for reservoir owners or operators, such as allocating development in inundation areas, should be raised by the planning authorities openly and constructively.

1.7 Changes in understanding of flood risk

FCERM Capital Investment

Powys County Council has a programme of FCERM investment projects that are likely to go into construction in the next 5 years. These schemes focus on surface water and ordinary watercourse flooding (not main river source) within these communities. These are for:

- Brecon
- Builth Wells
- Caersws
- Crickhowell
- Glangrwyney
- Glasbury
- Guilsfield Brook
- Gurnos (Ystradgynlais)
- Knighton
- Llanfyllin
- Llangammarch Wells
- Lowes
- Machynlleth
- Penybont
- Plasnewedd (Llanfechain)
- Pontfaen (Knighton)
- Sennybridge
- Severn/Vyrnwy Confluence

Future FMfP Improvements

The locations listed below are covered by existing detailed NRW flood models which are expected to be incorporated into the Flood Map for Planning through future routine updates. NRW have not provided an indication of the timescales for these updates.

- Brecon
- Builth Wells
- Crickhowell
- Glasbury
- Hay on Wye
- Meifod
- Severn in Powys
- Vyrnwy