Herefordshire Council

Herefordshire Council Planning Applications: Flood Risk & Drainage Checklist

This document provides a list of the information that, in general, must be submitted for review by Herefordshire Council in relation to flood risk drainage.

Applications are classified as follows:

- Outline (O)
- Full (F)
- Reserved Matters (R)
- Discharge of Conditions (DoC)

The information required to be submitted will vary depending on the type of application and the nature and size of the application. The checklist has been prepared in reference to a typical Major application or a site with more than 6 houses. Major applications include sites of more than 1 Hectare or a Building of more than 1000m^2.

Reference is also made to applications for less than 6 houses or other Non-Major development for outline or full applications, for which, less detailed information is required. Because this class of development includes low scale projects such as building extensions and single houses, the list of entries on the Checklist needing attention under the Non-Major classification has been narrowed down. The greyed out entries therefore provide an indication of the core items that need to be considered for low scale Non-Major applications and Major applications.

Please note that we require fairly detailed information for Outline applications as we have to ensure that there is a viable solution for managing surface water runoff and mitigating the risk of fluvial flooding prior to advising the Council that planning permission can be granted, with further information included as part of suitably worded planning conditions.

The information required for Discharge of Conditions and/or Reserved Matters will be dependent upon the information requested at the full and/or outline planning stage. Some or all of the information listed could be required at the Discharge of Conditions stage.

All developments must meet the site-specific requirements of The Council in their role as Local Planning Authority, Lead Local Flood Authority and Land Drainage Authority. Pre-application advice and consultation with the Council is advised for all applications.

This checklist is for guidance only. The information required will be dependent on the site specifics.

• = *information is required*

1) Identifying the need for a Flood Risk Assessment

Information Required	O	F
Confirmation of the site area in hectares or square metres	•	•
Confirmation and supporting justification of the site's location in the present-day Flood Zone 1, Flood Zone 2 or Flood Zone 3	•	•
If the site is within close proximity to Flood Zone 2 or 3 (or lies within Flood Zone 2 or 3): confirmation and supporting justification of the site's location in the future Flood Zone 1, Flood Zone 2 or Flood Zone 3 taking the potential effects of climate change into account[1]	•	•
Confirmation and supporting justification of whether the site's location is in an area identified to be at risk of flooding from surface water runoff or other notable source of flood risk	•	•
Identification of all designated main rivers within 20m of the site boundary	•	•
Identification of all ordinary watercourses and land drains within 20m of the site boundary	•	•

2) Completing a Flood Risk Assessment

Please note that a Flood Risk Assessment (FRA) (prepared in accordance with National Planning Policy Framework (NPPF) and Environment Agency (EA) Standing Advice) must support the planning application for any development:

- Located in Flood Zone 2 or Flood Zone 3[2].
- With a site area greater than 1 hectare.
- Located in an area identified to be at significant risk of flooding from other sources, including surface water flood risk or flood risk from minor watercourses with unmapped flood extents.

This is summarised in Table 2:

Table 1: Scenarios requiring a FRA

	Within Flood Zone 3	Within Flood Zone 2	Within Flood Zone 1
Site area less than 1ha	FRA required	FRA required	FRA not required*
Site area greater than 1ha	FRA required	FRA required	FRA required

**except for changes of use to a more vulnerable class, or where they could be affected by other sources of flooding*

Required for Non-Major Applications

Detailed modelling should be used where possible and appropriate to the location, size and nature of the development. As a general guide and in the absence of modelling, Applicants can increase the 1 in 100 annual probability flood extent by c.10m and/or increase the 1 in 100 annual probability flood level by 600mm to provide an estimate of likely climate change effects.

[2] Note that Herefordshire Council may also request an assessment of flood risk where the development is indicated to be at risk of flooding when the potential effects of climate change are taken into account.

Information Required	O	F
Assessment of Flood Zone 2 and 3 taking the effects of climate change into account, including predicted flood depths for the 1 in 100 and 1 in 1000 annual probability events[3]	•	•
Assessment of fluvial flood risk from other watercourses in close proximity (c.20m) to the site including those with no mapped flood extent, and taking the effects of climate change into account	•	•
Assessment of mapped surface water flood risk	•	•
Assessment of flood risk associated with potential overland flow from adjacent steeply sloping land	•	•
Assessment of groundwater flood risk	•	•
Assessment of flooding from surface water, foul water and highway sewers	•	•
Assessment of flood risk from any other manmade sources, including reservoirs, ponds, detention basins etc.	•	•
Summary of historic flooding records and anecdotal evidence	•	•
Detailed information regarding predicted flood extents, flood depths and flood hazard for a range of return period events and taking climate change into account for all identified sources of flood risk		•

3) Management of flood risk

This table should be completed if the site is identified to be at risk of flooding from any of the sources considered above.

Information required	O	F
Assessment of the acceptability of the development within the identified Flood Zone, in accordance with the Sequential and Exception Tests outlined in the National Planning Policy Framework	•	•
Assessment of availability of safe access and egress routes, and consideration of dry islands	•	•
Demonstration of how a sequential approach has been taken to locate development in the lowest risk areas of the site	•	•
Summary of how the assessment of flood risk will influence the layout and design of the proposed development, including but not limited to proposed resilience and resistance measures; natural overland flow routes; and demonstration that there is sufficient space within the development to accommodate mitigation	•	•
Summary of how the development will ensure no increased risk to people, property or infrastructure elsewhere, for example through the provision of floodplain compensation, and demonstration that there is sufficient space within the development to accommodate mitigation	•	•
Detailed description of how the development has been made *resistant* to flood risk as far as practicable, for example through raising floor levels		•
Where necessary, detailed description of how the development has been made *resilient* to flood risk, for example through the provision of safe access and egress or flood response plan		•

Required for Non-Major Applications

[3] Climate change must be considered in accordance with the EA's updated recommendations published in March 2016.

Detailed description and, where necessary, supporting calculations of how the development does not increase flood risk to people, property or land elsewhere, for example calculations of flood compensation storage[4]		•
Assessment of how a safe access route(s) to Flood Zone 1 (not including dry islands) would be achieved from the development, taking flood hazard and climate change into account		•
Demonstration that the future maintenance of watercourses and ditches has been considered in the building layout	•	

The following information will be required as part of **Discharge of Conditions**:

Detailed drawings clearly demonstrating the inclusion of agreed flood mitigation, resilience and resistance measures into the development layout
Provision of a flood warning and evacuation plan. This should be discussed with the Herefordshire Emergency Planners.

4) Surface Water Management Strategy

A surface water management strategy should be submitted that includes the following information:

Information required	**O**	**F**
Demonstration that the SuDS hierarchy has been considered in accordance with NPPF and justification for the proposed method of surface water management and discharge, including justification for the use of pumped systems (if required)	•	•
Drawing illustrating natural surface water flow paths through the site, noting that natural flow paths should be retained as far as practicable within a development layout	•	•
Drawing to illustrate how post-development surface water runoff will be conveyed through the site to the proposed discharge point(s) and demonstration that sufficient space is available within the site to provide appropriate attenuation or infiltration storage	•	•
Drawing to illustrate that attenuation structures are not located within an area at risk of fluvial flooding up to the 1 in 100 annual probability event and taking the effects of climate change into account, unless it can be demonstrated that the capacity of the drainage system will not be reduced and that any loss of fluvial flood storage can be compensated for elsewhere without increasing risk to people, property or infrastructure	•	•
Description and drawing of any proposed phasing of the surface water drainage system should the proposed development site be developed in stages	•	•
In particular for steeply sloping sites, consideration of how surface water that exceeds the capacity of drainage features will be managed within the site up to and including the 1 in 100 annual probability event to ensure no	•	•

Required for Non-Major Applications

[4] Further consultation with Herefordshire Council is likely to be required for development located within Flood Zone 2 and 3 and/or that requires the crossing or diversion of a watercourse to agree the information that must be submitted with the application.

unacceptable flood risk to the development and no increased flood risk to people, property and infrastructure elsewhere		
Demonstration that consideration has been given to the flow of water from outside of the site boundary (for example from steeply sloping land and groundwater springs) that could overwhelm the capacity of the proposed drainage system		•
Drawing illustrating the proposed surface water drainage system including location of SuDS features, manholes, external pipework, attenuation features, pumping stations (if required) and discharge locations		•
Confirmation that the system will be designed to prevent any flooding of the site in all events up to an including the 1 in 30 annual probability storm event with supporting preliminary calculations		•
Description and drawing demonstrating the management of surface water runoff during events that may temporarily exceed the capacity of the drainage system, such as temporary exceedance of gullies during events greater than the 1 in 5 annual probability event, up to the 1 in 30 annual probability event[5]		•
Description and drawings demonstrating the management of surface water runoff during events greater than the 1 in 30 annual probability event that may exceed the capacity of the drainage system up to the 1 in 100 annual probability event with climate change (including assessment of where water is likely to emerge) and noting that surface water should be retained within the site boundary and not pose risk to the development		•
Clarification if attenuation structures are to be provided partly or wholly above adjacent ground level (i.e. above ground storage), and proposed design and construction methodology for any above ground attenuation features		•
Assessment of potential failure of above-ground attenuation features, including assessment of residual risks to downstream receptors, and proposed mitigation and management measures		•
Confirmation of the proposed methods of treating surface water runoff to ensure no risk of pollution is introduced to groundwater or watercourses both locally and downstream of the site, especially from proposed parking and vehicular areas. This applies only to Major Development, 10 houses or more.		•
Demonstration that appropriate access is available to maintain SuDS features (including pumping stations)		•
Identification of the Development Risk Rating to establish a strategy for management of the first 5mm of rainfall (or 'first flush') in order to promote infiltration / evaporation /evapotranspiration, and with focus on the removal of pollutants. Demonstration of adherence to the required stages needed to form the Treatment Train.		•
Confirmation of proposed adoption and maintenance arrangements for the surface water drainage system	•	•
Confirmation of agreement in principle of proposed adoption and maintenance arrangements for the surface water drainage system including funding arrangements		•

Required for Non-Major Applications

[5] Note that this is likely to only be required for major development unless the development is located on a steeply sloping site

The following information will be required as part of **Discharge of Conditions**:

Detailed construction drawings of the proposed surface water drainage system, including details of proposed treatment systems, attenuation features (including appropriate freeboard) and overflow structures for on-ground or above-ground storage[6]
Calculations to demonstrate that the proposed surface water drainage system has been designed to prevent the surcharging of any below ground drainage network elements in all events up to an including the 1 in 2 annual probability storm event
Calculations to demonstrate that the proposed surface water management system will prevent any flooding of the site in all events up to an including the 1 in 30 annual probability storm event
Calculations and detailed drawings to demonstrate the management of surface water that exceeds the capacity of the drainage system (including temporary exceedance of features such as gullies during events greater than the 1 in 5 annual probability event) up to the 1 in 30 annual probability event and 1 in 100 annual probability event[5]
Confirmation that the adoption and maintenance of the surface water drainage system has been agreed with the relevant authority
Maintenance Plan for all proposed drainage features that are to be adopted and maintained by a third party management company[7]. This should allocate ownership of respective elements of the SuDS to jointly owned plots of land, or identify pipework that is jointly owned.
Conveyancing Plan identifying property ownership. Where a third party management company is proposed, jointly owned land parcels are to be identified as communal land owned by all affected residents.
For individual plots a Maintenance Plan (drawing) showing the proposed drainage features that are to be adopted and maintained by landowners

The following additional information should be provided if the Applicant proposes to <u>infiltrate surface water runoff to ground</u>.

Information required	**O**	**F**
Summary of likely ground conditions including likely soil permeability, contamination risks, superficial and bedrock geology, depth to groundwater and proximity to a Source Protection Zone	•	•

The following information will be required as part of **Discharge of Conditions**:

Infiltration rates at the location(s) and proposed depth(s) of any proposed infiltration structure(s), undertaken in accordance with BRE Digest 365 methodology[8]. The location of the tests should be shown on a plan.

Required for Non-Major Applications

[6] Note that detailed drawings and calculations will be needed for any features that will store water above adjacent ground level and that these drawings must include any required mitigation measures to manage residual flood risk to downstream receptors in the event of system failure

[7] Note that further information will be needed if Herefordshire Council are to adopt and maintain part or all of the proposed drainage system, and further consultation with Herefordshire Council will be required

Required for Non-Major Applications

Trial pit/borehole logs demonstrating that the depth to groundwater below the base of any proposed infiltration structure(s) is greater than 1m at the location(s) and proposed depth(s) of the proposed infiltration structure(s)
Calculations that demonstrate that the half-drain time of any storage structures is less than 24 hours during the 1 in 10 annual probability event
Calculations that demonstrate infiltration features have been sized to accommodate a 1 in 10 annual probability storm event without flooding[9]. Calculations to demonstrate that there is sufficient storage in pipes, manholes and on the surface to accommodate a 1 in 30 annual probability storm event.
Drawings that illustrate all point source soakaways are located greater than 5m from building foundations
Demonstration that any non-point source soakaways located within 5m of building foundations are appropriate with regard to local geology and stability/subsidence risks
Drawings that illustrate all soakaways are located greater than 2m from U-Class Service Roads and 3m – 6m from A,B,C class roads with regard to local geology, topography and stability/subsidence risks

The following additional information should be provided if the Applicant proposes to discharge surface water runoff to a watercourse or sewer.

Information required	**O**	**F**
Results of infiltration tests undertaken in accordance with BRE Digest 365 methodology to demonstrate that infiltration is not a viable means of surface water discharge[10]. The location of the tests should be shown on a plan At some small sites if there are known difficulties with infiltration the LLFA may elect to postpone this this as a requirement under Discharge of Conditions		●
Confirmation of the proposed feature into which surface water discharge is proposed and the relevant authority from which consent will be required	●	●
Calculation of existing greenfield runoff rates, calculated using the methods outlined in The SuDS Manual 2015, for (at minimum) the 1 in 1 and 1 in 100 annual probability events	●	●
Calculation of current runoff rates (if not a 100% greenfield site), calculated using the methods outlined in The SuDS Manual 2015, for (at minimum) the 1 in 1 and 1 in 100 annual probability events	●	●
Confirmation of proposed post-development discharge rates and estimated attenuation requirements for (at minimum) the 1 in 1 and 1 in 100 annual probability events, taking the effects of climate change into account[11]	●	●

[8] If infiltration is the only viable means of surface water discharge at this location and there is some uncertainty regarding likely infiltration rates, the information may be required at an earlier stage to support the approval of the planning application.

[9] Noting that the drainage system as a whole must still have sufficient capacity to prevent flooding during the 1 in 30 annual probability event.

[10] If infiltration testing demonstrates that infiltration is a viable means of surface water discharge, the Applicant is expected to submit a revised drainage strategy that promotes infiltration.

Required for Non-Major Applications

[11] The management of surface water runoff should be in accordance with the Non-Statutory Technical Standards for Sustainable Drainage Systems with consideration given to all events between the 1 in 1 and 1 in 100 annual probability events.

At some very small sites outside areas with known flooding problems and where attenuation may prove to be impractical due to blockage risk the LLFA may elect to waive this requirement		
Calculation of approximate storage volumes that will be required to manage the peak rate and volume of surface water runoff in accordance with the Non-Statutory Technical Standards for Sustainable Drainage Systems. A range of storms should be assessed to identify the critical storm, including the 6 hour storm during a 1 in 100 annual probability event, and taking the effects of climate change into account	●	●
Detailed calculation of existing greenfield runoff rates, calculated using the methods outlined in The SuDS Manual 2015, for the 1 in 1, Qbar, 1 in 30 and 1 in 100 annual probability events		●
Detailed calculation of current runoff rates (if not a 100% greenfield site), calculated using the methods outlined in The SuDS Manual 2015, for the 1 in 1, Qbar, 1 in 30 and 1 in 100 annual probability events		●
Detailed calculation and demonstration that the proposed rate of surface water discharge in the 1 in 1, Qbar, 1 in 30 and 1 in 100 (with an allowance for climate change) annual probability events will not exceed the equivalent pre-development runoff rates[12]		●
Detailed calculation and demonstration that the proposed volume of surface water discharge in the 1 in 1, Qbar, 1 in 30 and 1 in 100 (with an allowance for climate change) annual probability events will not exceed the equivalent pre-development runoff volumes[12] and that any increase in runoff volume leaving the site for the 1 in 100 (with climate change), 6 hour storm event is managed in accordance with The SuDS Manual 2015.		●
Detailed calculation of attenuation volumes to manage the peak rate and volume of surface water runoff in accordance with the Non-Statutory Technical Standards for Sustainable Drainage Systems. A range of storms should be assessed to identify the critical storm, including the 6 hour storm during a 1 in 100 annual probability event, that includes appropriate freeboard and takes the effects of climate change into account		●
Summary of any works required outside of the application site boundary, especially works that will affect third party land	●	●
Details of any off-site works, and agreement in principal with necessary landowners/consenting authorities to cross third party land and/or make a connection to the proposed watercourse/sewer		●

The following information will be required as part of **Discharge of Conditions**:

Consideration of the risk of water backing up the drainage system from any proposed outfall and how this risk will be managed without increasing flood risk to the site or to people, property and infrastructure elsewhere, noting that this also includes failure of flap valves
Consideration of the risk of flooding following failure of any on-site pumping stations and how this risk will be managed without increasing flood risk to the site or to people, property and infrastructure elsewhere
Confirmation that an agreement has been made with the necessary landowners/consenting authorities to cross third party land and/or make a connection to the proposed watercourse/sewer
Construction details of any proposed outfall structures to an ordinary watercourse. The flow of water in the watercourse should not be affected.

[12] Note that betterment for pre-developed sites is expected as close to greenfield rates as practicable.

Completed application for Ordinary Watercourse Consent from Herefordshire Council for any proposed discharge to an ordinary watercourse

5) Foul Water Management Strategy

A foul water management strategy should be submitted that includes the following information:

Information required	**O**	**F**
Demonstration that the availability, suitability and capacity of the public sewerage system has been explored in consultation with the relevant authority and that connection to this system is promoted above any other management methods	●	●
If no suitable public foul water sewerage is present, summary of the proposed method of treating and disposing of foul water effluent	●	●
If no suitable public foul water sewerage is present, drawing illustrating the proposed location of on-site treatment and disposal systems	●	●
If infiltration to ground is proposed, summary of likely ground conditions including likely soil permeability, contamination risks, superficial and bedrock geology and depth to groundwater	●	●
If infiltration to ground is proposed, results of infiltration tests undertaken in accordance with Building Regulations Part H and groundwater depth to demonstrate that infiltration is a viable means of foul water discharge[13], [14]		●
Drawing illustrating the proposed foul water drainage system including location of manholes, external pipework, discharge locations and (if applicable) on-site treatment system		●
Summary of any works required outside of the application site boundary, especially works that will affect third party land. The route of any affected ditch systems should be shown on a plan.	●	●
Details of any off-site works, and agreement in principal with necessary landowners / consenting authorities to cross third party land and/or make a connection to the proposed sewer/watercourse		●
Confirmation of proposed adoption and maintenance arrangements for the foul water drainage system including funding arrangements	●	●
Confirmation of agreement in principle of proposed adoption and maintenance arrangements for the foul water drainage system		●

The following information will be required as part of **Discharge of Conditions**:

If discharge to the public sewerage system is proposed, confirmation that this has been agreed with the relevant authority
Detailed construction drawings of the proposed foul water drainage system and (if applicable) proposed on-site treatment system

Required for Non-Major Applications

[13] Note that infiltration associated with discharge form septic tanks or package treatment plants must be calculated in accordance with Building Regulations Part H

[14] If infiltration is the only viable means of foul water discharge at this location and there is some uncertainty regarding likely infiltration rates, the information may be required at an earlier stage to support the approval of the planning application.

If a pumping station is proposed, consideration of the risk of flooding following failure of any on-site pumping stations and how this risk will be managed. Foul sewage is a risk to health and so localised flooding adjacent to domestic property should be avoided.
Confirmation that an agreement has been made with the necessary landowners/consenting authorities to cross third party land and/or make a connection to the proposed sewer/watercourse
If discharge to a watercourse is proposed, consideration of the risk of water backing up the drainage system from any proposed outfall and how this risk will be managed.
If discharge to an ordinary watercourse is proposed, construction details of any proposed outfall structures to the watercourse. The flow of water in the watercourse should not be affected.
If discharge to an ordinary watercourse is proposed, completed application for Ordinary Watercourse Consent from Herefordshire Council
Confirmation that the adoption and maintenance of the foul water drainage system has been agreed with the relevant authority
Maintenance Plan for all proposed drainage features that are to be adopted and maintained by a third party management company