

Validation Requirements for Flood Risk and Surface Water Drainage

The following document highlights the Flood Risk and Surface Water drainage information that the Development Control Section within Leeds City Council Flood Risk Management requires applicants to submit in relation to the various stages of the planning application process. This information should be in accordance with our Minimum Development Control Standards for Flood Risk which can be accessed via the following link:

<https://www.leeds.gov.uk/docs/Minimum%20development%20control%20standards%20for%20flood%20risk.pdf>

If applicants have any concerns or require additional guidance, they should e mail FRM@leeds.gov.uk with the title Validation Requirements – Pre Application Advice and FRM will seek to respond within five working days.

Minor Developments and Change of use requirements:

If the development is for a simple change of use, or minor i.e. less than 250m², then a plan¹ showing the existing/proposed drainage connections would be required along with the relevant approval. Please refer to our Minimum Development Control Standards.

If your development site is in either Flood Zone 2 or 3 of the Environment Agency Flood Risk Map for Planning, then the applicant will need to submit a Flood Risk Statement outlining the risks and proposed mitigation measures. For further information please refer to the EA's standing advice:

<https://www.gov.uk/guidance/flood-risk-assessment-standing-advice>

Large Minor and Major Developments

Developments outside of the criteria above will require a Surface Water Drainage Assessment to be provided. In addition, for sites within Flood Zone 2 or 3 at risk of flooding from rivers or the sea, in Flood Zone 1 if the development introduces a more vulnerable land use and is subject to other sources of flooding, or in Flood Zone 1 and development is greater than 1 ha in size, then a Flood Risk Assessment will also be required which should include details of the proposed surface water management strategy.

The Table below outlines what information should be submitted for each stage of the application process. This information should be provided to enable Development Control to review the application in full and hopefully provide a faster decision. Where the information stated is not provided, then there is the possibility that the application may not be validated and it is the applicant's responsibility to ensure the relevant information is submitted in a suitable format.

¹ For small developments where less than 250m² of drained area and no attenuation required, then only a drainage plan showing pipe sizes, cover and invert levels and outfall location is required.

Documents/Information required	Pre Planning	Outline Planning	Full Planning	Reserved Matters	Condition Discharge
<p>Site Location Site Location Plan at a suitable scale showing the boundary and area of the application site, together with the OS grid reference and post code.</p>	✓	✓	✓		
<p>Flood Risk Assessment Required for all sites that fall into the following categories:</p> <ul style="list-style-type: none"> - Flood Zone 1 at risk of flooding from rivers or the sea that are 1 ha in size or greater, - Flood Zones 2 and 3 at risk of flooding from rivers or the sea, - land which has been identified by the Environment Agency as having critical drainage problems; - land identified in a strategic flood risk assessment as being at increased flood risk in future; - land that may be subject to other sources of flooding (including surface water), where its development would introduce a more vulnerable use.² 	✓	✓	✓		
<p>Existing Site Characteristics Details of how the site currently drains. This can be an OS/LIDAR contoured map or where available, a site specific topographic survey. The plan should show all existing watercourses and current overland flow arrows.</p> <ul style="list-style-type: none"> a. Location of nearest drainage assets – The location of any existing watercourses and private and public sewers or highway drains within or adjacent to the site. Where details of any existing drainage systems and areas drained are available, then these should also be shown on the plan. b. Sources of existing flood risk – An initial review of existing known flood risks should be provided based on information available from GOV.UK flood maps and other publicly available sources (e.g. river modelling data). c. Details of existing ground conditions – Information regarding existing ground conditions should be provided from site specific ground investigation reports and supported by publicly available information, such as the BGS database to assist in reviewing the use of SuDS infiltration features. . d. Groundwater and Aquifer Protection- A review should be undertaken from the BGS database and EA and DEFRA Magic Map in relation to the existing ground water profile and the presence of any groundwater source protection zones. 	✓	✓	✓		

² NPPF July 2021 Section 167, Note 55

<ul style="list-style-type: none"> e. Details of existing and historic site use which may identify possible contamination issues which may influence the SuDS drainage design. f. Preliminary calculations of existing pre-development run off rate – An assessment should be provided of the existing permeable and impermeable areas (shown on a plan) together with a preliminary assessment based on the guidance set out within the Leeds CC Minimum Development Control Standards for Flood Risk of the existing discharge rate. g. Details and condition assessment of any existing structures on or adjacent the site, such as culverts, which a SuDS drainage strategy may rely on. 					
<p><u>Proposed Development Characteristics</u></p> <ul style="list-style-type: none"> a. Type of Development – General description of proposed development together with an indicative masterplan layout. b. Area of Development – Details of total site area proposed for development which post development impermeable areas calculated (and shown on a plan). It will also include an indication of how the various sub-catchments of the development site will be drained. c. Proposed Site Levels – Preliminary post development site ground levels shown on a plan. d. Details of any specific Flood Risk Mitigation measures proposed – Indicate if raised Finished Floor Levels (FFLs), flood compensatory storage or flood resilience/resistance measures are required. This should account for all sources of flooding but also any flood levels within the proposed SuDS drainage scheme. e. Details of any, amenity, ecological and bio-diversity mitigation measures proposed – Identify proposed open spaces and areas to be used for SUDs storage and conveyance features. f. Details of any proposed structures on or adjacent the site, such as culverts for site access. 	✓	✓	✓		
<p><u>Indicative Proposed Drainage Strategy</u></p> <ul style="list-style-type: none"> a. Review of SuDS options – Undertake a review based on the information available to define and identify the SuDS options that can be incorporated into the emerging site masterplan. b. For all Major applications a separate Conceptual SUDS Design Assessment should be undertaken to define the relevant SUDS design criteria to be adopted in draining the development and how it shall integrate with the proposed bio diversity proposals for the development. Also, the assessment shall include the reasoning for either including or excluding the associated SUDS features in accordance with the requirements of the NPPF and criteria set out within Paras 082 to 085 of PPG (Flood Risk & Coastal Change). c. Define the future climate change allowance factors to be adopted as agreed with the LLFA and based on the lifetime of the development which should be identified. 		✓	✓		

<p>d. Provide a conceptual surface water drainage plan with preliminary sizing, design calculations and location of on-site attenuation features. Note a review of the proposed levels and site topography shall be undertaken at this stage to verify if any proposed SuDS such as Swales, detention basins or attenuation ponds can be practically constructed.</p> <p>e. Confirm the proposed post development discharge rate and volumes of surface water– Provide initial calculations and assessments to justify the basis of the post development discharge rate and volumes to be agreed with the LLFA.</p> <p>f. Where the use of infiltration is proposed, then unless site permeability testing to BRE 365 or equivalent has been undertaken to demonstrate that infiltration is viable, an alternative drainage strategy to either a watercourse or sewer system shall be defined and the point of connection or outfall and proposed discharge rates defined.</p> <p>g. Where discharges from the development site outfalls to an existing private drainage system evidence must be provided to demonstrate that the private drainage system has the capacity to accept the additional flows and that the private drainage system also has a final positive outfall to a watercourse, balancing pond, public sewer or highway drain.</p> <p>h. Future Maintenance Requirements – Identify areas of drainage that are to be adopted and areas that are to remain private and define the mechanism for inspection and maintenance of all private drainage features over the lifetime of the development. A maintenance schedule and items to be maintained shown on a plan will be supplied.</p> <p>i. Identify how exceedance events in excess of the design storm will be dealt with - Identify future or existing overland flow paths for events in excess of the design storm event.</p> <p>j. Provide details of any phasing of the development and how the drainage strategy will incorporate these requirements.</p>					
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Detailed Drainage Assessment³

The Drainage Assessment shall include the following:

- a. A drawing showing the pre and post development impermeable areas, suitably annotated that relate to any drainage calculations.
- b. Calculations and any supporting survey/existing drainage record drawings and CCTV investigations to justify and demonstrate the existing and proposed discharge rate. Calculations of discharge runoff rate and volumes plus detailed information on sizing of SuDS drainage features will be provided.
- c. A drainage layout plan including SuDS features any associated manholes including cover and invert levels, proposed site levels, pipe sizes and gradients, all on-line controls, on and off line storage structures, water quality mitigation and outfall details.
- d. Full details of all proposed attenuation features and flow controls.
- e. Information (Micro Drainage or similar) shall be shown on a plan including all numbered nodes and drainage network model and details.
- f. A summary of results showing all the modelling criteria and summary network results for critical 50% AEP, 3.33% AEP and 1% AEP plus required climate change (CC) storm events showing maximum water level, flow and velocity. A plan will be supplied to show the extent and depth of any surface flooding anticipated. Comment will also be provided to show how freeboard has been provided to any finished ground floor levels of buildings or essential infrastructure (e.g. plant rooms).
- g. Urban creep should be incorporated into the drainage design ensuring that the appropriate allowance is included for the lifetime of the development. Refer to Table 8 in [Leeds CC Minimum Development Control Standards for Flood Risk](#).
- h. Plan showing overland exceedance routes in the event of a failure of the drainage system or storm event in excess of the 1% AEP plus required climate change storm event.
- i. An assessment of water quality mitigation proposed for the surface water flows in accordance with Section 26 of the SUDS Manual (C753) can be achieved during all phases of the development. The Simplified Index Approach may be appropriate for residential or commercial developments depending on anticipated type and number of traffic movements.
- j. Where relevant written confirmation from Yorkshire Water as to acceptance and agreed point of connection to the public sewer system for the proposed foul and surface water flows.
- k. Where the off-site drainage works cross third party land, then written approval shall be provided from the land owner or alternatively if a sewer requisition under Section 98 of the Water industry Act 1991 is to be considered, then written acceptance from Yorkshire Water confirming their acceptance that a requisitioned sewer shall be provided.

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<ul style="list-style-type: none"> l. Where the surface water is to discharge to a watercourse outside of the applicants ownership, then written confirmation as to acceptance of the proposed discharge rate from the riparian owner of the watercourse shall be provided. m. Copies of the Site Investigation report and infiltration testing results (BRE 365 or equivalent) which demonstrates the viability of designing an infiltration based drainage system.⁴ n. Where infiltration and the use of soakaways is to be adopted then full supporting calculations and drainage plans shall be provided as set out above. o. Details of which body will be responsible for vesting and maintenance of individual aspects of the drainage proposals including a management statement to outline the management goals and means of securing continuity of payment from all future owners of the site for the required maintenance. p. Description of inspection and maintenance schedule including plan showing all access points, easements and outfalls. q. Where required for major developments or phasing of minor developments, a plan showing each development plot (e.g. a development block of houses) which shows the allocation of surface water volume storage and discharge rate given to that plot as part of a wider overall drainage/SuDS strategy. r. A timetable for implementation of the drainage works including an assessment of any phasing of the development and how surface water run-off will be controlled during the construction process to prevent an increase of flood risk or pollution. 					
<p><u>Reserved Matters Application where the provision of the Drainage/SuDS information is relevant and impacts on the proposed layout</u></p> <ul style="list-style-type: none"> a. Drainage Plans showing the proposed foul and surface water drainage layout together with sufficient drainage design calculations to determine the size and location of the proposed SuDS features. b. Preliminary detailed layout plans of each SuDS feature to demonstrate that the finished site ground levels will allow the physical construction of each feature. c. Typical sections of each SuDS feature. d. A Drainage Assessment incorporating all of the above requirements. e. Plan and cross sections and all supporting calculations in respect of any flood storage areas or compensatory flood measures as determined within the outline planning conditions 				✓	

³ In respect to full planning applications, please note that it is now not acceptable to leave the details of the drainage design, including details of the proposed SuDS measures to a future planning condition. It is now required to provide the necessary drainage design and supporting calculations and investigations to demonstrate that the proposed development will comply both with the Leeds CC Minimum Development Control Standards for Flood Risk and also not increase the flood risk to any area outside of the application site, as part of the full planning application.

⁴ Where Soakaways are proposed then permeability testing to BRE 365 or equivalent must be undertaken and the supporting calculations provided.