



# Technical Guidance for Developers and Regulators

## Flood Risk and Surface Water Drainage Requirements

September 2023



## 1. Introduction

- 1.1. This technical guidance document is intended as supplementary guidance for the preparation of Flood Risk Assessments and the design of surface water drainage within the context of Sustainable Drainage Systems (SuDS) associated with new development within the Angus Council boundary.
- 1.2. This technical guidance is not intended to replace the consultation that developers and agents will require to initiate with the Planning Department or other statutory consultees.

## 2. Role of Local Authority Regarding Flooding and Drainage

- 2.1. **Responsible Authority Under the Flood Risk Management (Scotland) Act.** Angus Council has duties and powers to manage and, where achievable, reduce flood risk in their area. **The Flood Risk Management (Scotland) Act 2009** outlines the duties of the Local Authority.
- 2.2. **Roads Authority. The Roads (Scotland) Act 1984** gives local authorities powers and duties with regards to public roads. As summarised in the Scottish Government's "Surface Water Management Planning Guidance" (2018), a key aspect of the Roads (Scotland) Act 1984, is:  
*Section 21 refers to the need for consent for anybody other than a roads authority to build a new road. Where a developer is seeking to petition the roads authority, any proposed layout and construction of roads, including road and surface water drainage, must satisfy current design standards.*
- 2.3. **Planning Authority.** The Planning Authority makes decisions about future development and how development affects its surroundings. The **National Planning Framework (NPF4)** sets out national planning policies which reflect the Scottish Ministers' priorities for operation of the planning system and for the development and use of land.

**Local Planning Policies** are established by local authorities to guide and regulate land use and development within their jurisdictions. These policies are generally enforceable through the planning system and can have implications for developers and landowners.

The **Angus Local Development Plan (LDP)** and Supplementary Guidance outline the policies and guidelines that govern land use and development within the local authority area and are a material consideration in the planning process.

When assessing planning applications, local planning authorities are legally required to take into account relevant policies and guidance, **including those set out in the development plans** and will be considered in the decision-making process. To ensure consistency with our adopted development plans, if a proposed development does not conform to the policies outlined in the development plan, we may refuse planning permission based on that non-compliance.

### 3. Design Guidance and Reference Material

- 3.1. This section summarises the main legislation, policy and technical guidance that Angus Council expects developers and their consultants to follow when preparing a surface water Drainage Assessment (DA), Flood Risk Assessment (FRA), the design of Sustainable Drainage Systems (SuDS) and other drainage infrastructure. When preparing a design, it must be ensured that all guidance and other relevant documentation are clearly referenced in the submissions. These documents are subject to continual review and the applicant must ensure that the latest version of this document is used.
- 3.2. Essential reference material is summarised in the table below. An extended list is provided in Appendix D.
- 3.3. Where local policies pre-date NPF4, NPF4 requirements will take precedence.



<b>Subject area</b>	<b>Reference title</b>	<b>Organisation</b>
<b>All</b>	National Planning Framework (NPF) 4	Scottish Government
<b>Drainage</b>	C753: The SuDS Manual	CIRIA
<b>Drainage</b>	Sewers for Scotland	Scottish Water
<b>Drainage</b>	Standard advice note and process guidance: Surface Water Policy	Scottish Water
<b>Drainage</b>	Local Development Plan Policy PV15: Drainage Infrastructure	Angus Council
<b>Drainage</b>	Roads Design Standards	Angus Council
<b>Drainage</b>	National Roads Development Guide (including the SuDS Schedule)	SCOTS
<b>Flood risk</b>	Technical Flood Risk Guidance for Stakeholders	SEPA
<b>Flood risk</b>	Climate Change Allowances for Flood Risk Assessment in Land Use Planning	SEPA
<b>Flood risk</b>	Flood Risk and Land Use Vulnerability Guidance	SEPA
<b>Flood risk</b>	Position on Development Protected by a Flood Protection Scheme	SEPA
<b>Flood risk</b>	Flood Risk Standing Advice for Planning Authorities and Developers	SEPA
<b>Flood risk</b>	Flood Risk Checklist	SEPA
<b>Flood risk</b>	Position statement on elevated buildings in areas of flood risk	SEPA
<b>Flood risk</b>	Local Development Plan Policy PV12: Managing Flood Risk	Angus Council
<b>Flood risk</b>	Strategic Flood Risk Assessment (SFRA)	Angus Council
<b>Flood risk</b>	Local Flood Risk Management Plan: Tay Estuary and Montrose Basin	Angus Council
<b>Flood risk</b>	Shoreline Management Plan	Angus Council

## 4. Flood Risk Assessments

### 4.1. Definition of flood risk.

4.1.1. A flood risk area is as currently defined in NPF4 (particularly Policy 22 and Annex F), with respect both to source and frequency of flooding. The NPF4 definitions are:

- **Flood risk area or at risk of flooding.** *For planning purposes, at risk of flooding or in a flood risk area means land or built form with an annual probability of being flooded of greater than 0.5% which must include an appropriate allowance for future climate change.*

*This risk of flooding is indicated on SEPA's future flood maps or may need to be assessed in a flood risk assessment. An appropriate allowance for climate change should be taken from the latest available guidance and evidence available for application in Scotland. The calculated risk of flooding can take account of any existing, formal flood protection schemes in determining the risk to the site.*

*Where the risk of flooding is less than this threshold, areas will not be considered 'at risk of flooding' for planning purposes, but this does not mean there is no risk at all, just that the risk is sufficiently low to be acceptable for the purpose of planning. This includes areas where the risk of flooding is reduced below this threshold due to a formal flood protection scheme.*

- **Flooding from all sources.** *Includes:*

*Watercourse /Fluvial Flooding – caused by excessive rainfall or snow melt within a limited period, which overwhelms the capacity of the watercourse or river channel, particularly when the ground is already saturated. It can also arise as a result of the blockage of a channel and/or associated structures such as small bridges and culverts;*

*Pluvial Flooding – occurs when rainwater ponds or flows over the ground (overland flow) before it enters a natural or man-made drainage systems (e.g. a river or sewer/drain). It can also occur when drainage systems are at full capacity. It is often combined with sewer flooding and groundwater flooding;*

*Sewer Flooding – occurs when the sewerage infrastructure has to deal with loads beyond its design capacity. This occurs most often as a result of high intensity rainfall events;*

*Groundwater Flooding – occurs when the water table rises above ground level. In Scotland this is most commonly associated with the movement of water through sands and gravels, often connected to the rise and fall of river levels; and*

*Coastal Flooding – occurs as a result of high tide, storm surge and wave activity raising the level of the sea above adjoining land.*

4.1.2. All development proposals must meet NPF4 requirements for flood risk. NPF4 Policy 22 states that:

*a) Development proposals at risk of flooding or in a flood risk area will only be supported if they are for:*

- i. essential infrastructure where the location is required for operational reasons;*
- ii. water compatible uses;*
- iii. redevelopment of an existing building or site for an equal or less vulnerable use; or.*
- iv. redevelopment of previously used sites in built up areas where the LDP has identified a need to bring these into positive use and where proposals demonstrate that long-term safety and resilience can be secured in accordance with relevant SEPA advice.*

*The protection offered by an existing formal flood protection scheme or one under construction can be taken into account when determining flood risk.*

*In such cases, it will be demonstrated by the applicant that:*

- all risks of flooding are understood and addressed;*
- there is no reduction in floodplain capacity, increased risk for others, or a need for future flood protection schemes;*
- the development remains safe and operational during floods;*
- flood resistant and resilient materials and construction methods are used; and*
- future adaptations can be made to accommodate the effects of climate change.*

*Additionally, for development proposals meeting criteria part iv), where flood risk is managed at the site rather than avoided these will also require:*

- the first occupied/utilised floor, and the underside of the development if relevant, to be above the flood risk level and have an additional allowance for freeboard; and*
- that the proposal does not create an island of development and that safe access/egress can be achieved.*

*b) Small scale extensions and alterations to existing buildings will only be supported where they will not significantly increase flood risk.*

*c) Development proposals will:*

- i. not increase the risk of surface water flooding to others, or itself be at risk.*
- ii. manage all rain and surface water through sustainable urban drainage systems (SUDS), which should form part of and integrate with proposed and existing blue-green infrastructure. All proposals should presume no surface water connection to the combined sewer;*
- iii. seek to minimise the area of impermeable surface.*

*d) Development proposals will be supported if they can be connected to the public water mains. If connection is not feasible, the applicant will need to demonstrate that water for drinking water purposes will be sourced from a sustainable water source that is resilient to periods of water scarcity.*

*e) Development proposals which create, expand or enhance opportunities for natural flood risk management, including blue and green infrastructure, will be supported.*





## 4.2. Flood Risk Assessment Requirements

4.2.1. Flood Risk Assessments (FRAs) are required for all applications where there is likely to be a risk of flooding from any source of flooding defined in NPF4. Typically, the requirement for an FRA will be triggered where the site meets one of the criteria listed below, but this is not an exhaustive list and the Council may request an FRA depending upon individual circumstances. The criteria are:

- The online SEPA Flood Maps identify flooding at, or nearby, the site from any source.
- Historic flooding has been recorded in the area.
- The proposed development is close to a potential source of flooding.

4.2.2. All development proposals must meet NPF4 requirements for flood risk. The development should not result in an increase in vulnerability under SEPA's Land Use Vulnerability Classes.

4.2.3. FRAs must be undertaken in accordance with the most recent version of SEPA's Technical Flood Risk Guidance for Stakeholders and must include a completed SEPA Flood Checklist. FRAs must also be undertaken in accordance with the most recent versions of other relevant SEPA guidance including:

- SEPA Climate Change Allowances for Flood Risk Assessment in Land Use Planning.
- SEPA Flood Risk and Land Use Vulnerability Guidance.
- SEPA Position on Development Protected by a Flood Protection Scheme.
- SEPA Flood Risk Standing Advice for Planning Authorities and Developers.

4.2.4. In undertaking an FRA, the Council should be consulted to provide historical flood information.

## 4.3. Finished Floor Levels and Freeboard

4.3.1. Freeboard should ideally be 0.6 m as per NPF4. The NPF4 definition of freeboard is:

*Freeboard is the difference between the design flood level and either the finished floor levels, solum level, or deck level of a specific development. It is a safety margin designed to allow for the uncertainties involved in flood estimation and physical factors that cannot be assessed and vary between sites e.g., post construction settlement and wave action. In many cases an adequate freeboard allowance is 600mm above the design flood level (in some situations a more detailed assessment of appropriate freeboard will need to be carried out).*

4.3.2. Sewers for Scotland guidance on building over or near a sewer should also be applied to development near culverted watercourses.

4.3.3. With the exception of small-scale extensions to existing properties, new developments located behind a flood protection scheme must have their finished floor level set to at least the NPF4 design flood plus an allowance for freeboard. An up to date estimate of the design flood must be made and used in the assessment. Discharge to a watercourse through flood protection scheme infrastructure is not permitted without design approval from the Council.

4.3.4. The Council supports SEPA's position on stilted developments.

4.3.5. Flood resistant and resilient materials and construction methods should be used.

#### 4.4. Access and Egress

4.4.1. The FRA must demonstrate that safe and flood-free access and egress to the site can be maintained during the design flood event as defined in NPF4: *For planning purposes, at risk of flooding or in a flood risk area means land or built form with an annual probability of being flooded of greater than 0.5% which must include an appropriate allowance for future climate change.*

#### 4.5. Watercourse Buffer Strips

4.5.1. Buffer strips, for enhancement of the watercourse and necessary maintenance, must also be provided.

4.5.2. SEPA's Water Environment Planning Background Paper provides the recommended minimum buffer strip widths, based on the width of the watercourse and this is summarised in the table below. However, these widths will be dependent on the site conditions. The buffer strip should be measured from the top of the bank and the minimum widths stated below are required on each side of the watercourse. The applicant must provide sufficient justification for why the recommended buffer strip cannot be provided.

Width of watercourse (measured between the top of the banks)	Minimum width of buffer strip (measured from either side of the watercourse top of bank)
<1 m	6 m
1 to 5 m	6 to 12 m
5 to 15 m	12 to 20 m
>15 m	20 m +

### 5. Surface Water Drainage Assessments

#### 5.1. Drainage Assessment Requirements

5.1.1. Under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 surface water drainage must be discharged by means of a SuDS (there are exceptions for single house dwellings or discharges to coastal waters). The SuDS shall avoid pollution of the environment. SuDS should be selected in accordance with the CIRIA SuDS Manual C753.

5.1.2. All development proposals must have surface water drainage which meets the requirements of NPF4, per NPF4 Policy 22 items c to e:

c) *Development proposals will:*

- i. not increase the risk of surface water flooding to others, or itself be at risk.*
- ii. manage all rain and surface water through sustainable urban drainage systems (SUDS), which should form part of and integrate with proposed and existing blue-green infrastructure. All proposals should presume no surface water connection to the combined sewer;*
- iii. seek to minimise the area of impermeable surface.*

d) *Development proposals will be supported if they can be connected to the public water mains. If connection is not feasible, the applicant will need to demonstrate that water for drinking water purposes will be sourced from a sustainable water source that is resilient to periods of water scarcity.*

e) *Development proposals which create, expand or enhance opportunities for natural flood risk management, including blue and green infrastructure, will be supported.*

5.1.3. The following categories of development will **not** require a drainage assessment, but the best available option for surface water drainage must still be demonstrated:

- Single house dwelling.
- Extension of building or hardstanding area under 100 square metres.
- Changes of use not involving new buildings or hard surfacing.
- Where the submission forms part of a larger development for which a DA has already been accepted. However, for completeness the original DA should accompany the DA for that specific phase.

5.1.4. In all other cases a Drainage Assessment (DA) must be supplied to inform the design of the surface water drainage system. The DA must be prepared in line with best practice guidance within the CIRIA SuDS Manual C753 and design calculations must be aligned with Sewers for Scotland (published by Scottish Water) including where appropriate design storms, runoff coefficients and urban creep allowances. Parameter values published in Sewers for Scotland 4<sup>th</sup> Edition are summarised in the table below (note that these values may be subject to change), together with climate change per current SEPA guidance:

Parameter	Value to be used
Runoff coefficient in hardstanding areas	100%
Additional increase in the paved surface area (urban creep)	10% (unless this would produce a figure greater than 100% of the total site area).
Climate change uplift on rainfall	39%
Design storm	1:30 year plus climate change (no flooding to occur in any part of the site).
Sensitivity check design storm	1:200 year plus climate change (no property flooding and exceedance flood volumes contained within the site)

5.1.5. The scope of the DA may be proportional to the scale and complexity of the development. However, it should provide the information described in the following section on Surface Water Drainage Design.

5.1.6. Irrespective of the size of design storm used in the drainage design, the finished floor levels of new properties must be set above the predicted surface water exceedance level to at least the NPF4 design flood (the 0.5% annual probability flood which must include an appropriate allowance for future climate change) plus an allowance for freeboard. Where practically feasible, the freeboard should be 0.6 m in accordance with NPF4. Dispensations will only be approved by exception where it can be demonstrated that 0.6m is not achievable and shall be no less than 300mm.

## **6. Surface Water Drainage Design**

### **6.1. Drainage Layout**

6.1.1.A drainage layout drawing should be provided showing the existing and proposed drainage network and the location of any proposed discharge (e.g. to a watercourse).

6.1.2.The information submitted on the drainage layout must be consistent with any submitted drainage calculations including:

- If manholes are present, the drainage layout drawing should include manhole references that cross-reference those used in the drainage calculations.
- Amounts of permeable and impermeable area.
- Attenuation storage volume.
- Proposed post development flow and volume amounts.
- Consistent elevation datum (e.g. mAOD).

6.1.3.Any exceedance flows must be retained on site and not cause or exacerbate flooding to existing or proposed property on the site. For this purpose, an exceedance flow is defined as the flow resulting from any storm larger than the storm used in the surface water drainage design, up to and including the NPF4 design flood.

6.1.4.Pre-development and post-development overland flow path diagrams must be identified on separate drawings.

### **6.2. Attenuation**

6.2.1.If discharging surface water directly to coastal waters (excluding transitional waters such as estuaries) attenuation for water quantity purposes is not required, but the discharge must still meet all SEPA water quality requirements and relevant legislation including the Bathing Waters (Scotland) Regulations 2008. Additionally, a discharge located below Mean High Water Springs may also require a Marine Scotland licence.

6.2.2.Attenuation is not required for single house dwellings but is advised as a precautionary measure for flood mitigation.

6.2.3.In all other cases, attenuation is required. The proposed discharge rate from a development site should be no greater than the greenfield runoff rate and volume.

6.2.4.Where it is not reasonably practicable to constrain the rate and volume of runoff in accordance with the above, the runoff shall be restricted to the 1 in 2 year greenfield runoff rate or at a rate that does not adversely affect flood risk.

6.2.5.The surface water must be attenuated on site.

6.2.6.The volume of storage provided by the attenuation structure must be clearly documented.



6.2.7.If hand calculations are used, then a halved discharge rate must be applied when calculating the required storage volume. This approximation is required in order to take account of the staged discharge relationship which applies to orifices and vortex flow control devices.

6.2.8.If hydraulic modelling software is used, then the following outputs should be included:

- Confirmation that the calculations are consistent with the latest version of Sewers for Scotland. This includes runoff coefficient, climate change allowance and allowance for urban creep (as defined per 5.1.4, above).
- Details of the design rainfall used, including FEH version (currently FEH22), depth and duration. This should be supplied for all design storms used.
- Manhole and pipe sizing and levels to mAOD. Manholes should be labelled in a consistent manner with the drainage layout to allow for ease of cross reference.
- Surcharge and flood reports.
- Exceedance flow routes.

6.2.9.With regards to ponds and detention basins, a safe mechanism for overtopping within these features should the design capacity be exceeded during extreme rainfall events must be demonstrated. Overtopping of these features must not lead to flooding of property or critical infrastructure and preferential flood flow paths should be identified in the event of overtopping.

6.2.10. The SuDS should also be designed to ensure that:

- there should be no exceedance from the proposed SuDS for up to and including the 1 in 30 year critical rainfall event inclusive of a 39% uplift for climate change;
- there should be no surface water flooding from the proposed SuDS to the proposed buildings, or outwith the site for up to and including the 1 in 200 year critical rainfall event inclusive of a 39% uplift for climate change.

6.2.11. The CIRIA C753 SuDS Manual recommends managing runoff on the surface. Above ground SuDS should therefore be used to provide surface water attenuation and treatment. Above ground SuDS features allow for easier maintenance and identification of potential reductions in storage capacity or blockages. Underground storage will generally not be accepted, unless the applicant can demonstrate robust reasons why above ground measures are not feasible<sup>1</sup>.

6.2.12. Information should be provided on the anticipated drain down time for any attenuation facilities. The SuDS Manual notes that storage should drain down from full to empty within 24 to 48 hours. If the drain down time is more than 24 hours, then long duration events should be assessed to ensure that the storage is not overwhelmed by long periods of rainfall or consecutive high intensity storm events.

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<sup>1</sup> With respect to soakaways, a clear demonstration must be made that above ground measures are not feasible. Soakaways will generally not be suitable for large developments but may be acceptable for small developments such as individual plots. The adequacy of soil (ground investigations) and other investigations (i.e., porosity tests) will be required to demonstrate the proposals are feasible, prior to determination. The applicant must demonstrate the soakaway can manage the design storm event without posing a flood risk to properties (neighbouring and proposed) and that it can drain in a suitable time to accommodate successive events. The soakaway must not be located within 5 metres of building foundations. Where soakaways are to be managed within the public realm a minimum factor of safety of 10 must be applied (per CIRIA C753) and there must be a clearly managed route for exceedance events which does not increase flood risk to other properties.

### **6.3. Discharge location**

6.3.1. Discharge locations for the drainage system must be identified and the applicant must confirm approval in principle from the owner. As per NPF4, and Scottish Water's Surface Water Policy (Standard advice note and process guidance) all proposals should presume no surface water connection to a combined sewer. Under rare circumstances where discharge to a public sewer is proposed, then confirmation that Scottish Water will accept the flows must be included with the application.

6.3.2. If discharging to a watercourse or culvert, then the capacity of that receiving body must be confirmed and a neutral or better effect upon flood risk demonstrated.

### **6.4. Drainage of Roads Within a New Development**

6.4.1. Roads are drained either by off-the-edge diffuse drainage to grass filter strips and swales or stone filled filter trenches, or by point collection in gullies and other off-lets for discharge to sewers, trenches, swales, etc.

6.4.2. Gullies are commonly used in the urban situation, and these need to be spaced out to adequately collect water without allowing substantial quantities to remain on the road surfaces. Tables and graphs are available in industry accepted drainage design publications to ensure appropriate gully spacings for various road widths and gradients. Gully spacing and locations should be in accordance with NRDG 3.4.9 Road Drainage and SUDS, (b) Gully Spacing. However, Scottish Water advise that whilst gullies have been utilised commonly in the past that in future they should only be used as a last resort.

6.4.3. Things to watch out for in gully positioning include making sure that they are located at the uphill toe of ramps and other vertical deflections of the road surface, that they conflict as little as possible with vehicle accesses to properties, and that there is some provision for overflow from the road surface at low areas (especially at road ends), when gully blockage or inability to cope with a greater-than-design storm may cause ponds to form to the detriment of nearby properties.

6.4.4. Road drainage is usually designed for small magnitude storms such as the annual or 1 in 2 year return period storm, but systems should be able to handle larger events such as up to a 1 in 30 year storm without overflow because of storage in gullies, manholes, etc. Greater storms will cause water to flow/pond on the road surface. Such water may emanate from properties fronting the road as well as the road surface, but the flows and ponding can often be acceptable in managing the greater events without detriment to downhill properties or downstream watercourses and structures.

## 6.5. Treatment

6.5.1. Surface water must be adequately treated before discharging from the site.

6.5.2. The Simple Index Approach, as described in The SuDS Manual C753, should be used to demonstrate that surface water is being adequately treated via an appropriate treatment train. A spreadsheet which supports the Simple Index Approach is available from [https://www.susdrain.org/resources/SuDS\\_Manual.html](https://www.susdrain.org/resources/SuDS_Manual.html)

6.5.3. When discharging to a waterbody or the coast, the treatment measures must be authorised by SEPA under the Controlled Activities Regulations. Additionally, a discharge located below Mean High Water Springs may also require a Marine Scotland licence.

## 6.6. Adoption and Maintenance

6.6.1. Confirmation must be provided on who will adopt and maintain the surface water network, including any SuDS in perpetuity. Applicants must demonstrate an appropriate maintenance regime has been developed. The Council is not required to adopt any proposed SuDS scheme unless the scheme is only for road water for an adoptable road which meets RCC standards.

6.6.2. Pumped surface water drainage should be avoided. Pumped surface water drainage is only recommended if Scottish Water adopt it. If this is not possible, then the onus is on the developer to confirm that the property owners ensure a robust maintenance programme is adhered to. The Council cannot take responsibility for the rectification for any failure. Further information is available within Sewers for Scotland for design guidance on surface water pumping requirements.

## 6.7. Waste water

6.7.1. The Technical Guidance contained within this document pertains only to flood risk and surface water. Other parties such as Scottish Water and SEPA may require information on waste water proposals but review of such proposals is outwith the scope of this Technical Guidance. However, it is recognised that waste water can form an important part of a drainage assessment and additional information on waste water is provided in Appendix E.

## 7. Road Construction Consent (RCC)

7.1. Road Construction Consent (RCC) surface water drainage proposals must be fully compliant with the latest version of Sewers for Scotland and National Roads Development Guide (SCOTS, including the SuDS schedule therein) or any superseding Angus Council Road Standards.

7.2. The Designer must ensure that the design in relation to flooding and drainage is accurately translated into the completed works. The Design must ensure that no changes are made at the RCC stage which would pose a flood risk to proposed or neighbouring properties or would impact the effectiveness of the design submitted for planning approval.



## 8. Certification

- 8.1. The submission of an FRA, DA or other design documentation must mean that all reasonable skill, care and attention of a qualified and competent professional in this field has been applied in accordance with this Technical Guidance.
- 8.2. It is the responsibility of the author(s) to ensure that all detailed calculations and computations are technically accurate. The Council is reliant on the accuracy, completeness and timeliness of information submitted.
- 8.3. To provide confirmation to this effect, Appendix A contains self-certification documentation which must be completed and submitted in support of an application.
- 8.4. Where the application includes a DA or surface water drainage design, Appendices B (Confirmation of Future Maintenance of Surface Water Drainage/SuDS) and C (Drainage Assessment Checklist) must also be completed and returned.
- 8.5. Where the application includes a FRA, it must be accompanied by the latest version of SEPA's FRA Checklist.

## 9. Contact Details

The table below summarises key email contacts within the Council for queries.

Flooding Team	Road Construction Consent Queries	Planning Queries (General)
<a href="mailto:roads@angus.gov.uk">roads@angus.gov.uk</a>	<a href="mailto:rdsrcc@angus.gov.uk">rdsrcc@angus.gov.uk</a>	<a href="mailto:PLNProcessing@angus.gov.uk">PLNProcessing@angus.gov.uk</a>
Pete Morton <a href="mailto:MortoP@angus.gov.uk">MortoP@angus.gov.uk</a>	Andy Barnes <a href="mailto:BarnesA@angus.gov.uk">BarnesA@angus.gov.uk</a>	
Georgia Kirtsi-Mathieson <a href="mailto:Kirtsi-mathiesong@angus.gov.uk">Kirtsi-mathiesong@angus.gov.uk</a>	Colin White <a href="mailto:WhiteC@angus.gov.uk">WhiteC@angus.gov.uk</a>	
Andrew Brown <a href="mailto:BrownA@angus.gov.uk">BrownA@angus.gov.uk</a>		

## 10. Disclaimer

This document is for information purposes only of Angus Council's requirements in relation to flood risk and surface water drainage/SuDS design. Applicants will be required to satisfy themselves as to the current statutory and legal requirements in relation to SuDS, Drainage Impact and Flood Risk Assessments.

**APPENDIX A – SELF CERTIFICATION**

I certify that all reasonable skill, care and attention, as expected of a qualified and competent professional in this field, has been exercised in carrying out the Flood Risk Assessment / Drainage Assessment (*delete as appropriate*).

Name of development .....

Name of Developer .....

Planning application number .....

Road construction consent number .....

Signed .....

Name .....

Position held .....

Name and address of organisation .....

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Chartered Qualifications<sup>2</sup> .....

Date .....

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<sup>2</sup> E.g. CEng or CIWEM from an appropriate chartered institution

**APPENDIX B – CONFIRMATION OF FUTURE MAINTENANCE OF SURFACE WATER DRAINAGE/SUDS**

I hereby confirm that the future maintenance of the sustainable drainage detailed below, and on the approved drawing numbered ..... will be carried out in accordance with the attached maintenance schedule by the undernoted organisation.

Name of development .....

Name of Developer .....

Planning application number .....

Road construction consent number .....

Name and address of maintenance organisation (Incl. contact telephone number and email)

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Details of surface water drainage to be maintained

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.....  
.....

Signed .....

Name .....

Position held .....

Date .....

## APPENDIX C – DRAINAGE ASSESSMENT CHECKLIST

Planning application or RCC number

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	Item	Provided? (Y/N)	Submission Section Reference	If N comment reason
1	Location Plan.			
2	Pre-development overland flow path arrows for site and surrounding land.			
3	Area of impermeable surface in proposed development.			
4	Greenfield runoff calculations for impermeable area.			
5	Confirmation that attenuation is provided to the greenfield runoff rate*; *Subject to minimum 75mmØ flow control (~3 l/s)			
6	<ul style="list-style-type: none"> <li>• Hand calculations or</li> <li>• Hydraulic modelling outputs</li> </ul>			
7	Drainage drawing. Where manholes are present, the manholes should be labelled consistently with corresponding hydraulic modelling outputs.			
8	Post development flow paths for site and surrounding area (on separate plan to pre-development).			
9	Confirmation of who will adopt and maintain the surface water system including SuDS.			
10	Confirmation where the surface water ultimately discharges.			
11	Confirmation that SuDS treatment is included in the design in line with relevant guidance.			
12	If proposing to discharge surface water to a public sewer: confirmation that Scottish Water agree in principal to proposed connection.			

## APPENDIX D – EXTENDED LIST OF REFERENCE MATERIAL

The following is an extended list of reference material. These documents are subject to change and the latest versions should be used.

### I. Scottish Government

- Flood Risk Management (Scotland) Act 2009
- National Planning Framework (NPF) 4
- Online Planning Advice on Flood Risk
- Planning Advice Note 51: Planning, Environmental Protection and Regulation
- Planning Advice Note 61: Planning and Sustainable Urban Drainage Systems 2
- Planning Advice Note 79: Water and Drainage2
- The Water Environment and Water Services (Scotland) Act 2003
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended)
- Roads (Scotland) Act 1984
- Planning etc (Scotland) Act 2006
- Green Infrastructure: Design and Placemaking
- Delivering Sustainable Flood Risk Management (Second Edition - Feb 2019)
- Surface Water Management Planning Guidance (Second Edition September 2018)
- Surface Water Management Planning - A quick Start Guide (September 2018)

### II. Angus Council

- Local Development Plan
- Supplementary Guidance
- Local Development Plan Strategic Flood Risk Assessment
- Shoreline Management Plan
- Roads Design Standards

### III. Scottish Environment Protection Agency (SEPA)

- SEPA Policy No 41: Development at Risk of Flooding: Advice and Consultations
- SEPA Technical Flood Risk Guidance for Stakeholders
- SEPA Flood Risk Assessment Checklist
- SEPA Strategic Flood Risk Assessment: SEPA Technical Guidance to Support Development Planning
- SEPA Indicative Flood Maps
- Reservoir Inundation Map
- SEPA Water Level Data
- SEPA advice on Sustainable Drainage Systems (SuDS)
- Climate Change Allowance for Flood Risk Assessment in Land Use Planning
- Guidance for Pollution Prevention (formerly PPGs)
- Construction Site Licence
- Development Plan Guidance
- Standing Advice for Planning Authorities and Developers on Development Management Consultations
- Planning Background Paper: Flood Risk Natural Flood Management Handbook  
Other Guidance

- IV. SuDS Working Party
  - Water Assessment and Drainage Assessment Guide
  
- V. Susdrain
  - Range of Resources Regarding SuDS
  
- VI. Construction Industry Research and Information Association (CIRIA)
  - CIRIA C532: Control of Water Pollution From Construction Sites - Guidance for Consultants and Contractors
  - CIRIA C582: Source Control Using Constructed Pervious Surfaces. Hydraulic, Structural and Water Quality Performance Issues
  - CIRIA C609: Sustainable Drainage Systems. Hydraulic, Structural and Water Quality Advice
  - CIRIA C624: Development and Flood Risk - Guidance for the Construction Industry
  - CIRIA C625: Model Agreements for Sustainable Water Management Systems
  - CIRIA C635: Designing for Exceedance in Urban Drainage - Good Practice
  - CIRIA C680: Structural Designs of Modular Geocellular Drainage Tanks
  - CIRIA C687: Planning for SuDS - Making it Happen
  - CIRIA C688: Flood Resilience and Resistance for Critical Infrastructure
  - CIRIA C689: Culvert Design and Operation Guide
  - CIRIA C698: Site Handbook for the Construction of SuDS
  - CIRIA C713: Retrofitting to Manage Surface Water
  - CIRIA C720: Culvert Design and Operation Guide: Supplementary Technical Note on Understanding
    - Blockage Risks
    - CIRIA C753: The SuDS Manual
    - CIRIA C762: Environmental Good Practice on Site - Pocket Book
    - CIRIA R156: Infiltration Drainage - Manual of Good Practice
  
- VII. Scottish Water
  - Sewers for Scotland 4th Edition
  - Standard advice note and process guidance: Surface Water Policy
  
- VIII. Other
  - BRE Digest 365 Soakaway Design (2016)
  - BRE Digest 523 Flood-Resilient Building: Parts 1 and 2
  - DEFRA - Flood Risk Assessment Guidance for New Development UKCP18
  - DEFRA FCDPAG3 October 2006 Supplementary Note on Climate Change Impacts
  - BS EN 1610: 2015 Construction and Testing of Drains and Sewers
  - Institute of Hydrology Report 124
  - Flood Estimation Handbook
  - SuDS for Roads
  - SUDS for Roads Whole Life Costs Tool
  - Design Manual for Roads and Bridges
  - Dynamic Coast
  - TAYplan
  - Manual of Contract Document for Highway Works
  - SCOTS National Roads Development Guide

## APPENDIX E – WASTE WATER

1. Where the development will lead to the production of waste water, the submission must include a section on foul water drainage. The preferred option for dealing with foul drainage is for it to connect to the public foul drainage system and the assessment will examine the availability of public sewers to carry waste water from the development and should include copies of all correspondence with Scottish Water including their approval in principle to connect to the local network.
2. Any discharge to existing networks should not increase the occurrence of flooding or surcharging to the existing sewer network. Consideration should also be given for the potential for effluent to discharge during severe storm events in to adjacent watercourses via combined sewer overflows and the impact this may have on the receiving watercourse.
3. The submission should also address what measures are in place to ensure that during construction there will be no cross connections leading to contamination of surface water sewers.
4. When a public sewer is currently not available in the vicinity of the development the developer should first discuss with Scottish Water the possibility of extending the public sewer to carry foul water to an existing public wastewater treatment plant. If such provision is clearly demonstrated as not being a viable option and the development is of significant scale to warrant it, the developer will need to consider providing a new foul sewerage system to adoptable standard and consult with Scottish Water on the acceptability of the system. It is SEPA's stated preference that the drainage system and treatment plant are publicly maintained.
5. If the development is small scale or remote from an existing public sewage system, then a private discharge of sewage effluent to land or controlled waters (including rivers, lochs, groundwater and coastal water) will be required. In this situation SEPA prefers discharge to land via a properly designed soakaway system and such a discharge will require authorisation under CAR.
6. If a proposed development is reliant on private foul water provisions, then the long term maintenance requirements and ownership of the proposed foul water system should be addressed in the submission. For multiple-house developments the long term sustainability and in particular the liability of shared systems should be considered as part of the drainage assessment process.