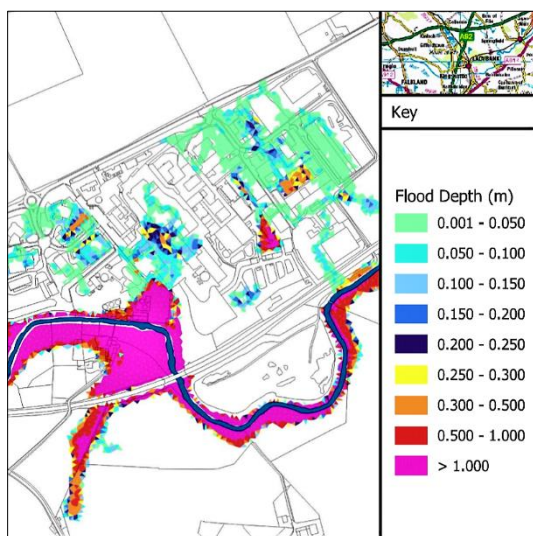
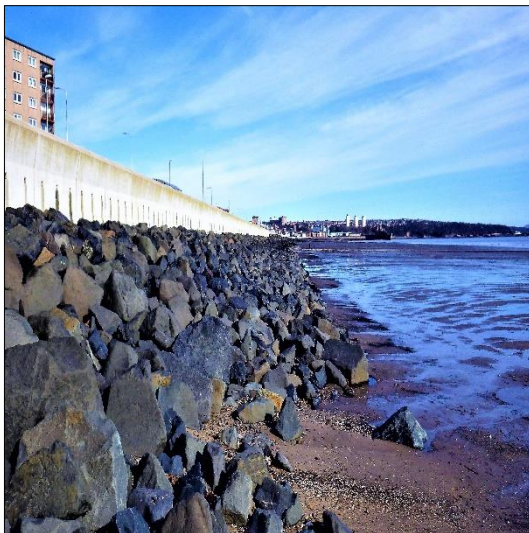


DESIGN CRITERIA GUIDANCE ON FLOODING AND SURFACE WATER MANAGEMENT PLAN REQUIREMENTS



| VERSION | STATUS | DATE | PRODUCED | CHECKED | AUTHORISED |
|---------|----------|----------|----------|----------|------------|
| 2.1 | APPROVED | 02/05/22 | R Haynes | R Haynes | R Speirs |

REVISION TABLE

| Revision Number | Date of Issue | Note |
|-----------------|---------------|---|
| 1.0 | 26/05/2004 | Valid from 26/05/2004 Original document developed by the Fife Flood Liaison and Advice Group (FLAG) to set out the nature of the problems generally and in Fife in particular, the standards we have adopted in relation to the control of flooding, and associated protection measures, along with the information required to ensure these standards are met. |
| 2.0 | 17/11/2020 | Valid from 01/01/2021 Restructured to accommodate changes in Legislation, reference material and science. |
| 2.1 | 22/04/2022 | Valid from 02/05/2022 Updated formatting Updated Climate Change figures |

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1 INTRODUCTION

Flooding is a natural phenomenon and many parts of Scotland have a legacy of development at risk of flooding from watercourses, the sea, groundwater and inadequate drainage. Recent research indicates that climate change will significantly increase the risk of flooding due to changes in precipitation and rising sea levels. Already, since the mid-1980s, Scotland has seen an increase in the number of floods and high flow levels on many rivers. The latest science also predicts a sea level rise of 0.85-0.86m¹ by 2100 for the Fife region. It is therefore imperative that flooding, flood risk and flood risk management are primary concerns for all development.

As a result of the increased risk of flooding, the Scottish Government has developed a policy over the last ten years based on the principles of avoidance, awareness, assistance and alleviation. In June 2009, the Scottish Parliament enacted the Flood Risk Management (Scotland) Act 2009 to implement the European Directive 2007/60/EC (the Flood Directive) and modernise flood risk management in Scotland. The Act provides the framework for a sustainable and risk-based approach to flood risk management considering flooding from all sources. The Scottish Planning Policy (SPP) published by the Scottish Government provides a national framework on which Fife planning policy is based.

This supplementary guidance document on flooding and surface water management has been prepared by Fife Council to inform developers, their consultants and all stakeholders involved in the planning process in relation to flooding and surface water management of the requirements of Fife Council. It is based on existing legislation, planning policy, technical guidance and best practice. Compliance with this guidance will serve to meet the requirements of SPP, the Council's Local Development Plan and assist in the efficient processing of a developers' application.

Surface water management should be taken out of pipes as far as possible. The use of well-designed landscape-based SuDS should be a priority as it provides multiple benefits, including biodiversity enhancement and attractive landscape features.

¹ [LUPS-CC1-v2](#): Climate change allowances for flood risk assessment in land use planning

2 AIM

This document is intended as supplementary guidance for the area of Fife in respect of existing national legislation regarding flooding and surface water drainage (see Ch7). It also aims to encourage and promote an increased awareness, understanding and knowledge in flooding and surface water management issues of everyone involved in the development process and thus makes Fife a safer place to live, work and visit.

Fife Council is the Planning Authority and has statutory duties under the Flood Risk Management Scotland Act 2009 to reduce the risk of flooding. As part of these duties Fife Council must not permit development which has the potential to increase flood risk. This document outlines the requirements of Fife Council and includes pro-forma for Self-Certification and independent checking organisation.

It should be noted that there is a presumption against development within a site where flooding occurs during a 1 in 200 year event (plus current allowances for climate change). This is in line with Fife Council's FIFEPlan (adopted on 21 September 2017) Policy No 12 "Flooding and Water Environment".

3 FLOOD RISK ASSESSMENT

Flooding is a material consideration at the planning stage of a development and is required from the outset (i.e. at planning permission in-principle stage). The Flood Risk and Planning Flow Chart (Figure 1), illustrates when a Flood Risk Assessment (FRA) is required for review, acceptance and records. Completed FRA certification as per [Appendix 3](#), and [Appendix 4](#) shall be submitted with the Application.

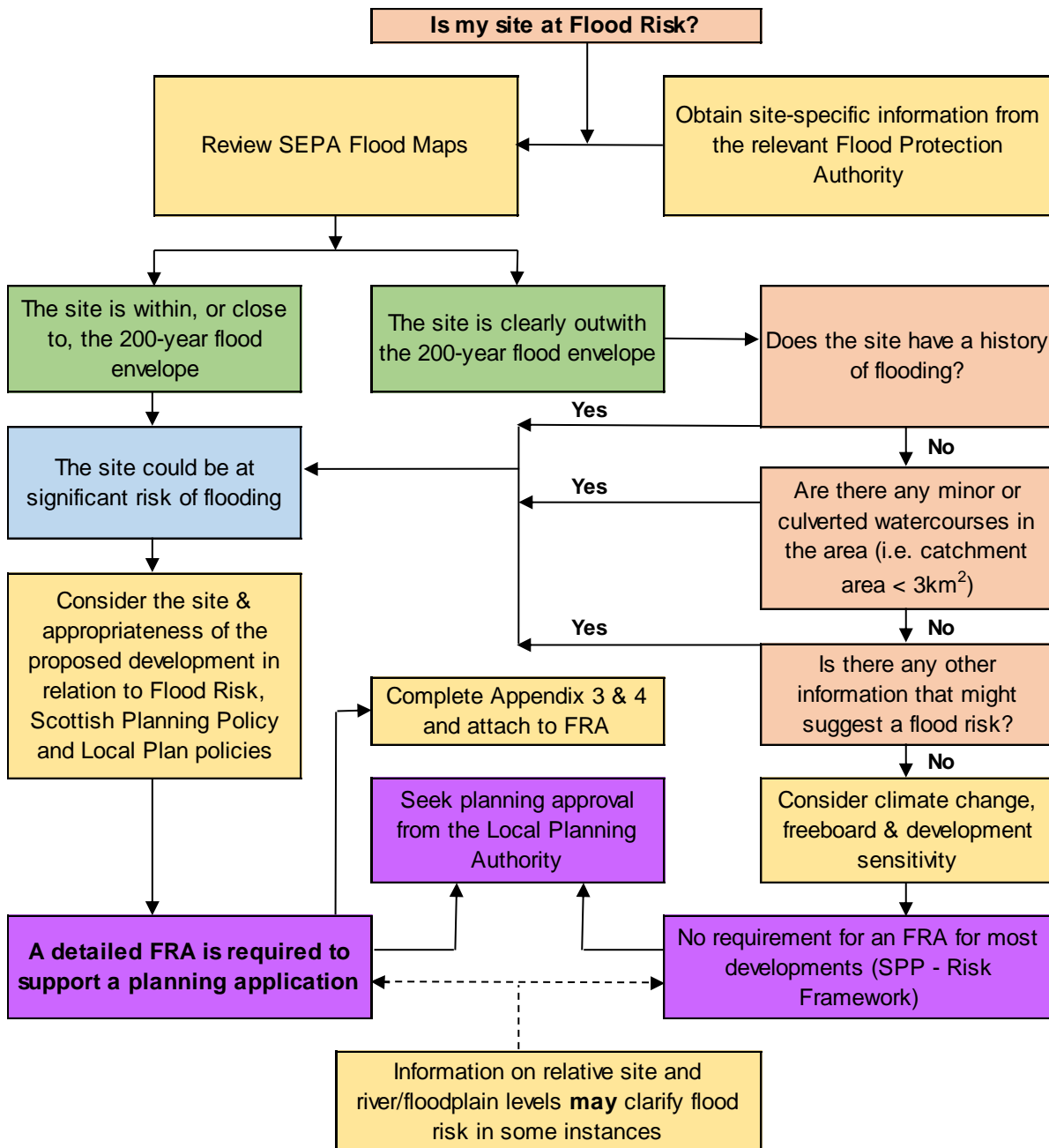


Figure 1: Flood Risk and Planning Flow Chart

In addition, an FRA is also required in the following circumstances:

1. Construction of a new watercourse,
2. Construction of a structure over or adjacent to a watercourse,
3. Development in or adjacent to a flood bank or any flood control structure or constraint,
or
4. Construction adjacent to coastal waters and/or below the 6mAOD contour.

At present SEPA Guidance [LUPS-CC1-v2](#) contains redefined River Basin Regions applicable to your assessment. Table 1 below contains the Peak River Flow allowances to be used:

Table 1: Peak river flow allowances by River Basin Region

| River Basin Region | Total Change to the year 2100 |
|--------------------|-------------------------------|
| Forth | 56% |
| Tay | 53% |

The extent of a 1 in 200 year flood event must be a minimum of 300mm below the lowest garden ground level and 600mm below the lowest property finished floor level (FFL).

An FRA should be carried out with reference to CIRIA 624 and in accordance with the Reporting Requirements for Flood Risk Assessments issued by SEPA. Copies can be obtained from the SEPA website - www.sepa.org.uk. The FRA must also be submitted to SEPA by the developer for agreement.

4 SURFACE WATER MANAGEMENT PLAN (SWMP)

SWMPs are required for **ALL** Applications except those detailed in Section 4.2. The purpose of the SWMP is to enable Fife Council to be satisfied, before recommending an application for approval, that the criteria within this guidance have been met.

4.1 Sustainable Drainage System (SuDS)

The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR) requires that a Sustainable Drainage System (SuDS) is installed for all new developments where surface water discharges to ground or water to prevent pollution, with the exception of runoff from a single dwelling or discharge to coastal waters.

For single dwellings, where no surface water treatment is required, surface water attenuation must be provided in line with the criteria set up in this guidance.

That is unless written consent has been provided as part of the planning application confirming that Scottish Water will accept the surface water discharge from the development into their drainage system at a discharge rate agreed with Scottish Water. The attenuation storage must still accommodate the flood return period set up in this guidance.

There are many ways to provide sustainable surface water drainage solutions, for example:

- **Swales** - Broad, shallow channels covered by grass or other suitable vegetation. Swales attenuate the surface water flow and allow time for filtration and sedimentation into sub-surface soil in areas where soil porosity is suitable.
- **Filter Strips** - These are wide, gently sloping areas of grass or other dense vegetation that slow and treat runoff from adjacent impermeable areas.
- **Filter Drains** - Filter drains are trenches that are filled with permeable material such as gravel. They work by providing capacity for attenuation. Surface water from paved areas flows into the trenches, is filtered and conveyed to other parts of the site. A perforated pipe may be built into the base of the trench to collect and convey the water.
- **Infiltration Devices** - Dispose of surface water runoff into the ground. Both groundwater and ground conditions must be suitable to receive the volume and quality of water anticipated.
- **Permeable Surfaces** - Allow rainwater to pass through the surface into an underlying storage layer, where water is stored before infiltration into the ground. They can be designed to fit in with a variety of settings e.g. permeable paving or gravel surfaces in car parks, garden paths.
- **Infiltration Basins** - Depressions created within the site to store runoff and allow filtration into the ground below.
- **Extended Detention Basins** - These are normally dry, though they may have small permanent pools at the inlet and outlet. They are designed to detain larger runoff volumes than infiltration basins as well as providing water quality treatment.
- **Ponds and Pools** - Small but permanent water bodies which provide temporary storage for additional storm runoff above normally expected water levels. Wet ponds may provide amenity and wildlife benefits and a sedimentation process to reduce pollution to watercourses. Water may be retained for as long as 2 or 3 weeks.
- **Constructed Wetlands** - These are ponds with shallow areas and wetland vegetation to improve pollutant removal and enhance wildlife habitat. They may also be landscaped to provide amenity value.
- **Green Roof Systems** - Cover a building's roof (or walls) with vegetation. They are laid over a drainage layer, with other layers providing protection, waterproofing and insulation. Sedum rather than grass can minimise maintenance.
- **Below Ground Storage** - Enables retention of water for irrigation of green infrastructure.

A full listing of SuDS units, including siting, technical and maintenance details, is available in C753: The SuDS Manual (2015) linked in Ch 7.

4.2 Development not requiring flood protection authority approval

The following categories of development will not typically require a SWMP, but the best available option for surface water drainage is expected to be demonstrated:

- Alteration and small-scale extension proposed on an existing hardstanding area that has existing positive drainage in place.
- Alteration and extension proposed on a permeable area under 50m².
- Changes of use not involving new buildings or hard surfacing.
- Where the submission forms part of a larger development for which a sustainable drainage system has already been accepted for the larger development area and was submitted for Planning Permission after Nov 2016.

4.3 Planning Permission in Principle (PPP)

[Appendix 7](#) to be submitted with the PPP Application

| Point | Description |
|-----------------------|---|
| | <p>Information to be provided by the developer</p> <p>(This list is not exhaustive and additional information may be requested as required)</p> |
| 4.3.1 | <p>An outline drainage plan/sketch showing the proposed drainage network and the location of the connection into either the public sewer network or discharge to a watercourse.</p> |
| 4.3.2 | <p>Preliminary calculations for any SuDS/attenuation volume required.</p> <p>The proposed discharge rate from a development site should be in accordance with Fife Council requirements. Fife Council require a discharge rate to be no greater than the lesser of:</p> <ul style="list-style-type: none"> • 1 in 5 year greenfield runoff rate • 4.0 l/s/ha <p>Lesser of 1 in 2 year greenfield runoff rate or 3.3 l/s/ha if discharged to an existing flood sensitive/culverted watercourse or piped drainage system. Sensitive watercourses list as detailed below.</p> <p>In order to attain the flow rates above, the 1 in 200 year post development critical storm plus climate change (39%) for the application site is to be attenuated within the surface water drainage system.</p> |
| 4.3.3 | <p>A Simple Index Approach (SIA) to check the suitability of proposed SuDS components in mitigating water quality risks to receiving waterbodies.</p> |
| 4.3.4 | <p>Where it is proposed to discharge surface water to a Scottish Water system the developer shall provide written evidence of Scottish Water’s approval of the surface water drainage connection into their network at the rate agreed with Scottish Water.</p> |
| 4.3.5 | <p>Completed SuDS certification as per Appendix 1 and Appendix 2</p> <p>(For single dwelling only, Appendix 1 is required)</p> |

4.4 Full Planning Application

Appendix 8 to be submitted with the FULL Application

| Point | Description |
|------------------------------|--|
| | <p>Information to be provided by the developer</p> <p>(This list is not exhaustive and additional information may be requested as required)</p> |
| <p>4.4.1</p> | <p>A drainage layout showing the proposed drainage network and the location of the connection into either the public sewer network or discharge to a watercourse.</p> <p>Outline details of any attenuation features and details of any flow control including overflow arrangements in case of blockage.</p> |
| <p>4.4.2</p> | <p>The proposed discharge rate from a development site should be in accordance with Fife Council requirements. Fife Council require a discharge rate to be no greater than the lesser of:</p> <ul style="list-style-type: none"> • 1 in 5 year greenfield runoff rate • 4.0 l/s/ha <p>Lesser of 1 in 2 year greenfield runoff rate or 3.3 l/s/ha if discharged to an existing flood sensitive/culverted watercourse or piped drainage system. Sensitive watercourses list as detailed below.</p> <p>In order to attain the flow rates above, the 1 in 200 year post development critical storm plus climate change (39%) for the application site is to be attenuated within the surface water drainage system.</p> <p>On sites where surface water run-off is received from adjacent higher ground, it will also be necessary for developers to demonstrate that this additional volume of storm water has been considered when complying with the Council’s design criteria.</p> |
| <p>4.4.3</p> | <p>Calculations of any SuDS/attenuation volume required either by hydraulic modelling software or by hand. If using software outputs for all underground pipework including rainfall data, manhole and pipe schedules (to mAOD), a pipe surcharge report for all underground pipe connections must be included. The manholes in the calculation should be cross-referenced to the drainage drawing to enable interpretation. The results should show the 1 in 200 year return period events plus climate change (39%).</p> <p>Dry pedestrian access must be maintained at all times during events up to the 1 in 200 year return period plus climate change (39%). Where flooding is predicted on the road this must be no greater than 300mm depth of ponding to permit access by emergency vehicles.</p> <p>Should the calculations be undertaken by hand then account must be taken of the staged discharge relationship which applies to orifices and vortex flow control devices. In order to provide a conservative estimate, a halved discharge rate must be applied when calculating the required storage volume.</p> <p>Example discharge calculation:</p> <p>The proposed discharge rate from site is 3 l/s. If using hand calculations, then a discharge rate of 1.5 l/s must be applied across the duration of the storm to take account of storage which has not been accounted for due to varying discharge at varying head.</p> |

| | |
|-------------------------------|--|
| <p>4.4.4</p> | <p>If a soakaway is proposed, then adequacy of the soil (ground investigations) and other investigations (i.e. porosity tests) will be required to demonstrate that a 1 in 200 year return period plus climate change event (39%) can be accommodated without presenting a flood risk to property and that it can drain in a suitable time to accommodate successive events. Note that any soakaway should be a minimum of 5m away from any building and plot boundary.</p> <p>Subsoil porosity testing for proposed infiltration devices should be undertaken in line with the requirements of BRE Digest 365 or similar recognised methodology (to be confirmed by the developer prior to submission of any calculations). Note: Subsoil porosity testing must be undertaken as close as possible to the proposed location of each infiltration device/component to ensure that the results are representative. If a porosity test is deemed to be too remote from the proposed location, the test results may be refused, and the test may require to be re-done.</p> |
| <p>4.4.5</p> | <p>Pre-development and post-development flow path diagrams must be identified on separate drawings. This can be achieved by taking the existing site survey and over-marking arrows to denote falls and then completing the same with the post-development arrangement. This should include runoff entering from outwith the site, from unpaved areas within the site and from paved areas during rainfall events which exceed the capacity of the drainage system. Simply submitting an un-annotated topographical survey is not sufficient.</p> <p>The purpose of these drawings is twofold. Firstly, to understand if there is any significant re-direction of surface water flows to surrounding land and secondly to identify if surface water will flow towards property entrances.</p> |
| <p>4.4.6</p> | <p>A Simple Index Approach (SIA) to check suitability of the proposed SuDS components in mitigating water quality risks to receiving waterbodies.</p> |
| <p>4.4.7</p> | <p>Assessment of the maximum groundwater level at the location of any underground attenuation features to demonstrate that the base of these features will remain above the groundwater level and to confirm the viability of the proposed feature (as detailed within C753).</p> |
| <p>4.4.8</p> | <p>Where it is proposed to discharge surface water to a Scottish Water system the developer shall provide written evidence of Scottish Water’s approval of the surface water drainage connection into their network at the rate agreed with Scottish Water.</p> |
| <p>4.4.9</p> | <p>Confirmation of who will adopt/vest and maintain the surface water network outwith property boundaries, including any SuDS as per Appendix 5.</p> <p>Responsibility for maintenance of a SuDS within property boundaries rests with the property owner. Developers shall provide confirmation on how they intend to make homeowners aware of the burden of responsibility and whether there will be an allowance for setting up factoring arrangements to manage maintenance.</p> <p>At present there is no Section 7 agreement, as described within the Sewerage (Scotland) Act 1968, in place between Scottish Water and Fife Council, see 4.6 Adoption/Vesting of SuDS.</p> |
| <p>4.4.10</p> | <p>A maintenance schedule for all proposed SuDS, to include a detailed list of activities and timescales. The maintenance schedule should comply with the CIRIA SuDS Manual.</p> |

| | |
|-------------------------------|--|
| <p>4.4.11</p> | <p>Confirmation of Construction Status SuDS compliance.</p> <p>It is a legal requirement that all development sites, on commencement of construction, have a full Construction Status SuDS in place, managed and maintained throughout the construction process by the Site Manager(s). It is the Site Manager’s responsibility to ensure that this Construction Status SuDS is fully compliant with the relevant legislation (currently CAR/GBR10).</p> |
| <p>4.4.12</p> | <p>Completed SuDS certification as per Appendix 1 and Appendix 2</p> <p>(For single dwelling only, Appendix 1 is required)</p> |

Applications for developments which include civil infrastructure must demonstrate that the 1000 year plus climate change event (39%) does not pose a flood risk to property or development. Should a site flood during a 1 in 1000 year plus climate change event (39%) then the 1 in 200 year plus climate event (39%) flood volume must be retained on site with the remaining volume allowed to discharge unrestricted from site provided it does not pose a flood risk to property within or outwith the site.

It may be impossible for single house dwellings or small developments to achieve the allowable greenfield runoff discharge rate as the orifice size required to control such discharge may be susceptible to blockages. In these instances, the developer should contact the Flooding, Shoreline & Harbours team in order to agree a suitable discharge rate. The agreed figure will be dependent on factors such as the size of the watercourse to which you will be discharging to and the susceptibility of the area to flooding.

The Council will not accept any SuDS/underground attenuation storage located within the 1 in 200 year flood plain as during flood events the performance of the SuDS/underground attenuation storage will be compromised by flood water and could potentially lead to more extreme flooding of the site.

All SuDS for new developments within Fife shall be designed in accordance with Scottish Water’s design guide, Sewers for Scotland and the C753 SuDS Manual, current editions (unless otherwise agreed with Fife Council). Written confirmation of this will be required from Scottish Water.

The developer should also note that the presence of existing drains in the vicinity of the application site increases the risks of pollution occurring. The developer should therefore follow the guidance provided in SEPA’s Pollution Prevention Guidance Notes which are available on their website www.netregs.org.uk.

SEPA must be consulted regarding the proposed SuDS serving the application site. The developer may also be required to obtain a license from SEPA as part of the Controlled Activities Regulations.

[Sensitive watercourses list](#)

- Cairneyhill – Torry Burn
- Dunfermline – Lyne Burn, Mowbray Burn, Bellyeoman Burn
- Inverkeithing - Inverkeithing Burn, Keithing Burn, Brankholm Burn, Whinny Burn
- Kirkcaldy – Den Burn, Tiel Burn
- Kinglassie – Lochty Burn
- East Wemyss – Kingslaw Burn
- Leven – Scoonie Burn
- Cupar – Lady Burn
- St Andrews – Kinness Burn, Lumbo Burn, Cairnsmill Burn, Swilken Burn

(The list is not exhaustive and additional watercourses may be specified, i.e. sensitive watercourse tributaries)

4.5 Further Information

All information detailed within this guidance is required to be provided as part of the Planning Application submission. Failure to do so will delay the application being registered by the Planning Authority. Fife Council will not condition Planning Approvals to allow drainage and flood risk information to be submitted after planning permission has been granted.

4.6 Adoption/Vesting of SuDS

Fife Council will only adopt SuDS features that deal with surface water from public roads and any SuDS proposed for adoption should be clearly indicated on plans submitted for Road Construction Consent. Every site is specific, and it is essential for developers to enter into discussion about the maintenance responsibility during the pre-application stage with relevant bodies such as Scottish Water and Fife Council.

Scottish Water has no statutory duty to drain roads, footpaths/footways out with the curtilage of premises; groundwater or to accept land drainage connections, however Scottish Water is negotiating agreements to manage surface water using shared facilities including sewer pipes, public roads drainage and any SuDS measures. These agreements are being made pursuant to Section 7 of the Sewerage (Scotland) Act 1968. There is not currently a Section 7 agreement in place between Scottish Water and Fife Council. Until such time that a formal agreement is in place, developers shall provide details regarding the long-term maintenance requirements and responsibilities of any SuDS features within their development.

There may be elements of the proposed SuDS serving the application site that Scottish Water will be unwilling to adopt (land drainage from adjacent higher ground for example).

In order to ensure that the proposed SuDS serving the application site operates at its optimum efficiency, it is essential that regular maintenance is carried out. The developer should ensure that the proposed SuDS serving the application site is designed and constructed to enable adoption for future maintenance by Scottish Water or some other suitable organisation in perpetuity. The developers should follow [National Roads Development Guide](#) and [Fife Council Transportation Development Guidelines](#).

See [Appendix 9](#) for Prospectively adoptable SuDS/drainage components.

[Appendix 5](#) - Confirmation of future maintenance of Sustainable Drainage Apparatus shall be provided as part of the full planning application and [Appendix 6](#) - Confirmation of Sustainable Drainage System Constructed to Current Best Practice shall be provided post development once the SuDS is constructed.

5 COMPLIANCE CERTIFICATE REQUIREMENTS

5.1 Sustainable Drainage Design Compliance Certificate

In addition to providing confirmation that the proposed SuDS serving the application site is to the satisfaction of both Scottish Water and SEPA, Fife Council require the developer, or their suitably qualified Agent, to certify that the proposed SuDS serving the application site has been designed in accordance with CIRIA C753: The SuDS Manual 2015 and Sewers for Scotland current edition by providing:

- a Sustainable Drainage Design Compliance Certificate in accordance with the attached pro-forma in [Appendix 1](#); and
- a Sustainable Drainage Design Independent Check Certificate in accordance with the attached pro-forma in [Appendix 2](#).

The design and independent check certificates cannot be signed by the same signatory. The signatory may be an employee within the same company holding the appropriate qualifications and who has not been involved in the design.

In relation to the design of the proposed SuDS, evidence of suitable professional indemnity insurance must be provided to the Council's Economy, Planning and Employability Services, prior to formal approval being granted by the Council.

The Council require that professional indemnity insurance is maintained at the level of **£5 million pounds** for each and every claim. Evidence will take the form of a copy of the insurance policy, certificate of insurance and evidence that all premiums are paid up to date.

5.2 Flood Risk Assessment Compliance Certificate

Where a Flood Risk Assessment is submitted, Fife Council require the developer, or their suitably qualified Agent, to certify that the Flood Risk Assessment has been prepared in accordance with the reporting requirements for Flood Risk Assessments issued by SEPA by providing:

- a Flood Risk Assessment Compliance Certificate in accordance with the attached pro-forma in [Appendix 3](#); and
- A Flood Risk Assessment Independent Check Certificate in accordance with the attached pro-forma in [Appendix 4](#).

The design and independent check certificates cannot be signed by the same signatory. The signatory may be an employee within the same company holding the appropriate qualifications and who has not been involved in the design.

5.3 Condition of Planning Consent

It should be noted that compliance with Scottish Water's standards/criteria and any measures required by SEPA regarding SuDS and compliance with the requirements of this guidance note, including submission of design and check certification together with an approved inspection and maintenance regime, will be made a condition of any planning consent issued for the application site.

5.4 Disclaimer

This document is for information purposes only and is a statement of Fife Council's requirements in relation to flooding and surface water drainage. Developers will be required to satisfy themselves as to the current statutory and/or legal requirement.

6 GLOSSARY/ABBREVIATION

- **Attenuation** - Reduction of peak flow by spreading it over a longer period of time
- **BRE** - Building Research Establishment
- **CIRIA** - Construction Industry Research and Information Association
- **FFL** - Finished Floor Level
- **Floodplain** - Land adjacent to a watercourse that would be subject to repeated flooding under natural conditions up to the 0.5% AP (200 year) return period.
- **Flood Risk Management (Scotland) Act 2009** - A more sustainable and modern approach to flood risk management, supersedes Flood Prevention (Scotland) Act 1961 and Flood Prevention and Land Drainage (Scotland) Act 1997
- **FRA** - Flood Risk Assessment
- **Groundwater** - Water that has percolated into the ground; it includes water in both the unsaturated zone and the water table
- **Greenfield Run-off** - This is the surface water run-off regime from a site before development, or the existing site conditions for a brownfield redeveloped site through the attenuation of run-off by way of SuDS
- **Ha** - Hectares
- **mAOD** - metres above ordnance datum
- **Return Period** - The theoretical return period is the inverse of the probability that the event will be exceeded in any one year. For example, a 10-year flood has a 1/10 = 0.1 or 10% chance of being exceeded in any one year and a 50-year flood has a 0.02 or 2% chance of being exceeded in any one year.
- **Risk Assessment** - Is the determination of quantitative or qualitative value of risk related to a specific situation and a recognised threat (also called hazard)
- **SEPA** - Scottish Environment Protection Agency
- **SEPA Flood Maps** - Details areas of land in Scotland estimated to be at risk of flooding from rivers, the sea and surface water with an annual probability of 0.5% (1 in 200) or greater
- **Soakaway** - A subsurface structure into which surface water is conveyed to allow infiltration into the ground
- **SPP** - Scottish Planning Policy
- **SuDS** - Sustainable Drainage System or Sustainable urban Drainage System. A sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques
- **Watercourse** - All means of conveying water except a water main or sewer
- **Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR)** - A set of regulations that control activities which may affect Scotland's water environment
- **MICRODRAINAGE** - A software tool to design and analyse drainage systems

7 REFERENCE MATERIAL FOR DESIGN

This section lists the main national legislation and technical guidance that Fife Council expects developers and their consultants to follow when preparing a Surface Water Management Plan (SWMP), Flood Risk Assessment (FRA), design of Sustainable Drainage Systems (SuDS) and other drainage infrastructures. The list below is not exhaustive and developers must ensure that all guidance and other relevant documentation is clearly referenced in their submissions.

Many of these documents are subject to frequent revision, and developers should ensure that they are using the current versions.

When preparing a design, the developer shall make reference to the following:

7.1 Scottish Government documents

- [Flood Risk Management \(Scotland\) Act 2009](#)
- [Current version of Scottish Planning Policy](#)
- [Planning Advice Note 51: Planning, Environmental Protection and Regulation](#)
- [Planning Advice Note 61: Planning and Sustainable Urban Drainage Systems](#)
- [Planning Advice Note 79: Water and Drainage](#)
- [Online Planning Advice on Flood Risk \(updated June 22, 2015\)](#)
- [The Water Environment and Water Services \(Scotland\) Act 2003](#)
- [The Water Environment \(Controlled Activities\) \(Scotland\) Regulations 2011](#)
- [Roads \(Scotland\) Act 1984](#)
- [Planning etc \(Scotland\) Act 2006](#)
- [Delivering Sustainable Flood Risk Management](#)
- [Surface Water Management Planning Guidance](#)

7.2 Scottish Environment Protection Agency documents

- [Land Use Planning Systems SEPA Guidance Note No8](#)
- [Scottish Environment Protection Agency Policy No 41: Development at Risk of Flooding: Advice and Consultation](#)
- [Water Environment \(Controlled Activities\) \(Scotland\) Regulations 2011 \(As amended\) \(“the Controlled Activities Regulations”\)](#)
- [WAT – RM – 09 Modification to CAR Authorisations](#)
- [WAT – RM – 08 Sustainable Urban Drainage Systems \(SuDS or SuD Systems\)](#)
- [WAT – SG – 12 General Building Rules for Surface Water Drainage Systems](#)
- [WAT – SG – 39 Point Source Regime Definitions and Scope](#)
- [BRE.365 – Soakaway Design](#)
- [SEPA Ponds, Pools and Lochans - Guidance on the Good Practise in the Management and Creation of Small Waterbodies in Scotland](#)
- [SEPA Technical Flood Risk Guidance for Stakeholders](#)
- [SEPA Climate Change Allowances for Flood Risk Assessment in Land Use Planning](#)
- [SEPA Flood Maps](#)
- [Any other general SEPA guidance available](#)

7.3 SuDS Working Party Document

- [Drainage Assessment: A Guide for Scotland](#)

7.4 CIRIA Documents

- [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 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 C687: Planning for SuDS – Making it happen](#)
- [CIRIA C688: Flood Resilience and Resistance for Critical Infrastructure](#)
- [CIRIA C698: Site Handbook for the Construction of SuDS](#)
- [CIRIA C713 Retrofitting to Manage Surface Water](#)
- [CIRIA C724: Creating Water Sensitive Places](#)
- [CIRIA C737 Structural and geotechnical design of modular geocellular drainage systems](#)
- [CIRIA C753: The SuDS Manual 2015](#)
- [CIRIA C762: Environmental Good Practice on Site – Pocket Book](#)
- [CIRIA C786: Culvert, Screen and Outfall Manual](#)
- [CIRIA R156: Infiltration Drainage – Manual of Good Practice](#)

7.5 Scottish Water Documents

- [Sewers for Scotland current edition and to such other documents, statutory guidance and/or legislation as are in force at the date of the submission.](#)

7.6 Other Reference Documents

- [Sustainable Urban Drainage System for Roads](#)
- [DEFRA – Flood Risk Assessment Guidance for New Development](#)
- [UKCP18](#)
- [DEFRA FCDPAG3 October 2006 Supplementary Note on Climate Change Impacts](#)
- [Fife Local Development Plan](#)
- [BS EN 1610:2015 Construction and testing of drains and sewers](#)
- [Institute of Hydrology Report 124](#)
- [Flood Estimation Handbook](#)

8 CONTACT DETAILS

Flooding, Shoreline & Harbours

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Planning/Road Construction Consent

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Fife Council

Economy, Planning & Employability Services

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Glenrothes

KY7 5LT

Appendix 1 - SuDS Design Compliance Certificate

I certify that all the reasonable skill, care and attention to be expected of a qualified and competent professional in this field has been exercised in designing the sustainable drainage system for the below named development in accordance with CIRIA C753: The SuDS Manual 2015, the current edition of Sewers for Scotland and Fife Council's – Design Criteria Guidance Note on Flooding and Surface Water Management Plan Requirements.

ePlanning Reference No.....

Planning Application No. (completed by Fife Council Planning Service)

Roads Construction Consent No. (completed by Fife Council Planning Service)

Name of Development

Name of Developer

Name and Address of Designers Organisation.....

.....

.....

.....

Name of Designer.....

Position Held.....

Engineering Qualifications².....

Signed

Date

Drawing No's relative to this certificate

.....

.....

.....

² Minimum Qualification - Incorporated Engineer or equivalent from an appropriate Engineering Institution.

Appendix 2 - SuDS Design – Independent Check Certificate

I certify that all the reasonable skill, care and attention to be expected of a qualified and competent professional in this field has been exercised in the below named development with a view to securing that:

1. It has been designed in accordance with CIRIA C753: The SuDS Manual 2015, Current Edition of Sewers for Scotland, Fife Council – Design Criteria Guidance Note on Flooding and Surface Water Management Plan Requirements.
2. It shall be accurately translated into construction drawings and schedules.
3. I hereby confirm that I hold professional indemnity insurance for £5 million pounds.

ePlanning Reference No.

Planning Application No. (completed by Fife Council Planning Service)

Roads Construction Consent No. (completed by Fife Council Planning Service)

Name of Development.....

Name of Developer.....

Name and Address of Checker's Organisation

.....

.....

.....

Name of Checker.....

Position Held.....

Engineering Qualifications³

Signed

Date

³ Minimum Qualification - Incorporated Engineer or equivalent from an appropriate Engineering Institution.

Appendix 3 - Flood Risk Assessment - Compliance Certificate

I certify that all the reasonable skill, care and attention to be expected of a qualified and competent professional in this field has been exercised in carrying out the Flood Risk Assessments and preparing the Flood Risk Assessment Report for the below named development in accordance with the Reporting Requirements for Flood Risk Assessments issued by SEPA.

ePlanning Reference No.....
Planning Application No. (completed by Fife Council Planning Service)
Roads Construction Consent No. (completed by Fife Council Planning Service)
Name of Development.....
Name of Developer.....

Name and Address of Designers Organisation
.....
.....
.....

Name of Designer.....
Position Held.....
Engineering Qualifications⁴
Signed
Date.....

⁴ Minimum Qualification - Incorporated Engineer or equivalent from an appropriate Engineering Institution.

Appendix 4 - Flood Risk Assessment – Independent Check Certificate

I certify that all the reasonable skill, care and attention to be expected of a qualified and competent professional in this field has been exercised in checking the Flood Risk Assessments for the below named development with a view to ensuring that it has been accurately translated into the Flood Risk Assessment Report.

ePlanning Reference No.....

Planning Application No. (completed by Fife Council Planning Service)

Roads Construction Consent No. (completed by Fife Council Planning Service)

Name of Development.....

Name of Developer.....

Name and Address of Checker's Organisation.....

.....

.....

.....

Name of Checker.....

Position Held.....

Engineering Qualifications⁵.....

Signed

Date

⁵ Minimum Qualification - Incorporated Engineer or equivalent from an appropriate Engineering Institution.

Appendix 5 - Confirmation of future maintenance of SuDS Apparatus

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

Planning Application No. (completed by Fife Council Planning Service)

Roads Construction Consent No. (completed by Fife Council Planning Service)

Name of Development.....

Name of Developer.....

Name and address of maintenance organisation (including contact telephone number and e-mail address)

.....
.....
.....

Telephone: Email:.....

Details of sustainable drainage apparatus to be maintained:

.....
.....
.....
.....

Signed

Name

Position Held

Name of Organisation.....

Date

Appendix 6 – Confirmation of SuDS Constructed to Current Best Practice

I hereby confirm that the Sustainable Drainage System as detailed below and on the approved construction drawing numbered has been constructed in accordance with the current best practice as checked by the undernoted organisation and **a copy of the Health & Safety File is provided along with this certificate.**

Planning Application No.....

Roads Construction Consent No.....

Name of Development.....

Name of Developer.....

Name and address of maintenance organisation (including contact telephone number and e-mail address)

.....
.....
.....

Telephone: Email:.....

Details of sustainable drainage apparatus to be maintained:

.....
.....
.....

Signed

Name

Position Held

Name of Organisation.....

Date

Appendix 7 - Planning Permission in Principle Checklist

| Point | Description | Provided Y (Yes), N (No), N/A |
|-----------------------|---|-------------------------------------|
| 3.0 | Flood Risk Assessment. | |
| 4.3.1 | An outline drainage plan/sketch. | |
| 4.3.2 | Preliminary calculations for any attenuation volume required. | |
| 4.3.3 | Confirmation of the SuDS treatment train. | |
| 4.3.4 | Written evidence of Scottish Water’s approval of the surface water drainage connection into their network at the rate agreed with Scottish Water. | |
| 4.3.5 | Completed SuDS certification as per Appendices 1 and 2. (For single dwelling, only Appendix 1 is required) | |

Appendix 8 - Full Planning Application Checklist

| Point | Description | Provided Y (Yes), N (No), N/A |
|-----------------------|---|-------------------------------------|
| 3.0 | Flood Risk Assessment. | |
| 4.4.1 | A drainage layout. | |
| 4.4.2 | Confirmation of discharge rate. | |
| 4.4.3 | Calculations for any attenuation volume required. | |
| 4.4.4 | Soakaway information (i.e. ground investigation, porosity test). | |
| 4.4.5 | Pre-development and post-development flow path diagrams. | |
| 4.4.6 | Confirmation of the SuDS treatment train. | |
| 4.4.7 | Assessment of the maximum groundwater level at the location of any underground attenuation features is applicable. | |
| 4.4.8 | Written evidence of Scottish Water’s approval of the surface water drainage connection into their network at the rate agreed with Scottish Water. | |
| | | |

| | | |
|------------------------|---|--|
| 4.4.9 | <p>Confirmation of who will adopt and maintain the surface water network, including any SuDS as per Appendix 5.</p> | |
| 4.4.10 | <p>A maintenance schedule for all proposed SuDS, to include a detailed list of activities and timescales.</p> | |
| 4.4.11 | <p>Confirmation of Construction Status SuDS compliance.</p> | |
| 4.4.12 | <p>Completed SuDS certification as per Appendices 1 and 2. (For single dwelling, only Appendix 1 is required)</p> | |

Appendix 9 – Prospectively adoptable SuDS/drainage components

| Technique | Description | Adoptable Y (Yes) / N (No) |
|-----------------------------------|---|-------------------------------|
| SuDS components | | |
| Bioretention area | Vegetated area for collecting and treating runoff before discharging downstream, or to the ground via infiltration. | Y |
| Detention basin | Dry depression designed to store water for a specific retention time. | Y |
| Filter drain | Linear drain/trench filled with a permeable material, often with a perforated pipe in the base of the trench. | Y |
| Filter strip | Vegetated strip of gently sloping ground draining water evenly from an impermeable area and filtering out particulates. | Y |
| Infiltration basin | Depression that stores and disposes of water via infiltration of surface water into the ground. | Y |
| Infiltration trench | As filter drain but allowing infiltration through trench base and sides. | Y |
| Permeable concrete block pavement | A surface which drains through voids between concrete blocks. | N |
| Pond | Depression used for storing and treating water, with a permanent pool, bankside emergent and aquatic vegetation. | Y |
| Porous asphalt | An asphalt material used to make pavement layers pervious, with open voids to allow water to pass through. | N |
| Sand filter | Treatment device using a sand bed as a filter medium providing treatment of runoff. | N |
| Swale | Shallow vegetated channel that conveys or retains flow. The vegetation filters particulates. | Y |
| Wetland | As a pond, but the runoff flows slowly and continuously through aquatic vegetation. Shallower than a pond. | Y |
| Pre-treatment | | |
| Gullies | Collection points in the road pavement to allow surface water to enter the drainage system. | Y |
| Oil separator | Prefabricated proprietary system used to remove any spilled oils or hydrocarbons from surface runoff. | N |

| Technique | Description | Adoptable Y (Yes) / N (No) |
|-------------------------------------|--|-------------------------------|
| Silt trap | Often referred to as a catch-pit, it is a chamber constructed within a piped system located at regular intervals, at changes in direction and gradient and often prior to discharge of a piped system to a SuDS component. Provision is made for collection of the silt by a sump which provides a permanent wet well. | Y |
| Proprietary systems | | |
| Filtration systems | These are designed to remove sediments, oil & grease, metals, organics and nutrients. There are various filter media which are used, and it is typically found in cartridge form. | N |
| Hydrodynamic systems | Hydrodynamic systems are designed to remove floated debris, sediments and other associated pollutants from surface water. | Y |
| Prefabricated bio retention systems | Prefabricated bio-retention systems are used to remove dissolved and ultra-fine pollutants from surface water runoff and can also provide small volumes of attenuation and flow reduction. | N |
| Vegetated swale | A vegetated swale is similar to a traditional swale, described above, however they have thick vegetation covering the side slopes and base. | Y |
| Storage/Attenuation | | |
| Modular system storage | Modular systems are used for the underground storage, attenuation and infiltration of surface water runoff. These systems typically have a crate-like structure. | N |
| Tank storage | Tank storage is used for the underground storage, attenuation and infiltration of surface water runoff. There are many different types of tanks available, ranging from large pipes up to 4m diameter, to arched chambers and cube structures. | N |

No part of an underground storage system shall be constructed below a prospectively adoptable road (this includes carriageway, footways, verges and service strips) nor be within the 45° zone of influence measured from the rear of the prospectively adoptable road/car park/footpath.

Fife Council will adopt SuDS features that deal with surface water from public roads only.

All the above is subject to discussion and approval from Fife Council.