



North Ayrshire Council
Comhairle Siorrachd Àir a Tuath

DRAINAGE, SUSTAINABLE URBAN DRAINAGE SYSTEMS & FLOODING: PROCEDURE NOTE FOR PROSPECTIVE DEVELOPERS

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This document will be periodically updated to reflect the most up-to-date understanding on Flood Risk Management matters, site drainage and SuDS. This document should be considered **UNCONTROLLED** when printed.

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1. INTRODUCTION

- 1.1 The purpose of this Procedure Note is to communicate the expectations that applicants for planning permission should meet when applying for consent for development that includes the provision of SUDS, the development of surface water infrastructure, and/or where the proposal is at risk of flooding or is likely to result in an increase in flood risk elsewhere.
- 1.2 This Procedure Note should be read in conjunction with all relevant provisions of the North Ayrshire Local Development Plan, including the Environmental Report and relevant Planning Guidance, to ensure that new development within North Ayrshire provides a positive contribution to the management of flood risk and the quality of the green network. Prospective developers are encouraged to engage with North Ayrshire Council (NAC), Scottish Water and SEPA (where relevant) at the earliest opportunity to ensure that their proposals are formulated in accordance with all relevant criteria
- 1.3 To discuss matters relating to drainage, SuDS and flooding, prospective developers should contact NAC Flooding by emailing flooding@north-ayrshire.co.uk or by telephoning 01294 310000.

2. FLOOD RISK MANAGEMENT STRATEGY AND LOCAL FLOOD RISK MANAGEMENT PLAN

- 2.1 North Ayrshire Council falls within the Ayrshire Local Plan District, which is an administrative area, devised for flood risk management purposes, comprising of North, South and East Ayrshire Councils. The National Flood Risk Assessment (2011), the Local Flood Risk Management Strategy, published by the Scottish Environmental Protection Agency (SEPA) in December 2015, and the Local Flood Risk Management Plan, published by North Ayrshire Council as the lead local authority in June 2016, have been produced for the Ayrshire Local Plan District and will be revised on a 6-yearly cycle.
- 2.2 Section 41 of the Flood Risk Management (Scotland) Act 2009 requires Flood Risk Management Strategies and Local Flood Risk Management Plans to be taken into account by 'every public body and office-holder in exercising any function so far as affecting a flood risk management district'. When determining planning applications, local authorities must, in accordance with the Flood Risk Management Act, consider the compatibility of proposals with the FRM Strategy and Local FRM Plan.

2.3 The Cycle 1 Flood Risk Management Strategy

2.3.1 The three local authorities together with SEPA, Scottish Water, and other organisations with an interest in flood risk management contributed to the production of the Cycle 1 Ayrshire Flood Risk Management Strategy. The purpose of the strategy was to identify levels of flood risk within Potentially Vulnerable Areas (PVAs) and a series of co-ordinated objectives, actions, and priorities for the management of flood risk in the Ayrshire Local Plan District. 18 PVAs and one candidate PVA were identified within the Ayrshire Local Plan District in 2011 by SEPA's National Flood Risk Assessment.

2.3.2 The identified actions, studies, works and schemes within the Ayrshire Flood Risk Management Strategy (2015) were subject to national prioritisation, which included a cost-benefit appraisal to ensure that they represent the most effective arrangement to address flooding in high risk areas. The strategy is available online at: <http://apps.sepa.org.uk/FRMStrategies/ayrshire.html>

2.3.3 The following 8 PVAs fall wholly or partly within the North Ayrshire Council Local Authority Area:

- Noddsdale Water (PVA No. 12/01)
- Great Cumbrae (Candidate PVA No. 12/02)
- Largs to Stevenston (PVA No. 12/03)
- Upper Garnock Catchment (PVA No. 12/04)
- Kilwinning (PVA No. 12/05)
- River Irvine and Annick Water Catchments (PVA No. 12/06)
- Irvine to Troon (PVA No. 12/07)
- Isle of Arran (PVA No. 12/08)



Figure 1: Potentially Vulnerable Areas within the Ayrshire Local Plan District

2.4 Local Flood Risk Management Plan

- 2.4.1 The Ayrshire Local Flood Risk Management Plan identifies the programme for the implementation of the identified actions and priorities of the Ayrshire Flood Risk Management Strategy over a six-year planning cycle (2016 to 2022) and provides clarity on the co-ordination of activities and funding sources for the delivery of actions. The plan is available on the flooding pages of the North Ayrshire Council's website (<https://www.north-ayrshire.gov.uk/community-safety/flood-risk-management-plan.aspx>).

2.5 Flood Risk Management & Development Proposals

- 2.5.1 While development proposals should be formulated to ensure that they are compatible with the identified actions of the Flood Risk Management Strategy and the Local Flood Risk Management Plan, most development, regardless of whether it is located in a PVA, has a role to play in improving water quality, the management of flood risk and the quality of the green network. The following sections of this Procedure Note identifies the principles, policy and process relating to drainage, SuDS and flood risk that developers are required to address when formulating development proposals. The extent to which prospective developers accord with the substance of this Procedure Note will inform the view of North Ayrshire Council's Flooding Team when responding to planning consultations, noting that the position of the Local Flood Authority, in turn, is a material consideration in the determination of planning applications.

3. FLOOD RISK SCREENING

- 3.1 Applicants are required to undertake a screening exercise to consider the scale of flood risk at the application site and the impact that may conceivably arise elsewhere as a consequence of their development proposals, taking account of all sources of flooding, as described below:
1. Fluvial – where either natural or culverted watercourses exceed their channel / culvert capacity, thereby allowing water to flow on to the flood plain. The flood plains can be natural or developed. Scottish Planning Policy identifies the functional flood plain as those areas with 0.5% or greater annual probability of river or coastal flooding.
 2. Coastal – where seawater level exceeds the normal tidal range, thereby allowing water to flood low-lying areas at and around the coastline. The astronomic tide, storm surges, wave effects, bathymetry and the performance of FRM assets can all act to influence the scale of coastal flooding. As with fluvial flooding, the coastal flood plain is defined as those areas, whether ‘natural or developed’, with a 0.5% or greater annual probability of coastal flooding. SEPA’s Coastal Flood Maps are based on the astronomical tide level plus a surge factor, but do not include wave action or wave overtopping.
 3. Pluvial – where rainfall events result in increased overland flow. Run-off eventually reaches watercourses, the coast or is intercepted by infrastructure.
 4. Drainage – as with culverted watercourses, this is where the capacity of a piped system or surface features, does not have sufficient capacity to convey run-off.
 5. Failure of Flood Risk Management Assets – where the performance of assets such as coastal defences is compromised resulting in flooding to areas that are normally protected.
 6. Groundwater - It is considered that groundwater flooding in Scotland is likely to be a flooding mechanism that contributes or is linked to other sources of flooding, such as fluvial or surface water, on a local scale during heavy rainfall events as opposed to separate distinctive events. Groundwater has the potential to extend the duration or extent of flooding in low-lying areas.

3.2 The purpose of the screening exercise is to:

- identify where an application for planning permission relates to a development that is likely to result in a material increase in the number of buildings at risk of being damaged by flooding. In instances where this is likely, SEPA must also be consulted in accordance with 'SEPA – Planning Authority Protocol (Policy 41)', which is available online at: <https://www.sepa.org.uk/media/136143/sepa-planning-authority-protocol-41.pdf>). Note that an FRA may also be required where other factors indicate heightened risk more generally, not limited to buildings.
- identify where there may be access/egress constraints as a result of flood risk around and within the application site as well as the capacity of the site to enable and/or maintain a safe and flood free route to exit proposed built form.
- inform the requirement for planning applications to be accompanied by a sufficiently detailed Flood Risk Assessment to facilitate the determination of the application.

3.3 Prospective developers are strongly encouraged to complete the Flood Risk Screening Cover Sheet, provided in Appendix A of this document, and submit to the Council **prior** to submitting an application for planning permission. This will provide an opportunity for developers to verify their assumptions on flood risk at and around the application site in conjunction with NAC Flooding.

3.4 Please note that the Flood Risk Screening Form is different from the Flood Risk Assessment Checklist, which applicants must complete when submitting a Flood Risk Assessment to SEPA. The checklist is available

3.5 The flood risk screening exercise is envisaged to be, predominantly, a desktop exercise informed by publicly available information. There is no requirement to undertake the screening exercise where the requirement for a Flood Risk Assessment has already been identified via the development planning process or where directed by council officers. Note that applicants will also be required to demonstrate, where appropriate, that their proposals are compatible with the flood risk strategy and local flood risk management plan regardless of the outcome of the flood risk screening process.

3.6 The following sources of information will assist in the screening process:

- SEPA flood hazard maps, available on SEPA's website (<http://map.sepa.org.uk/floodmap/map.htm>);
- the locations of flood defences, which are recorded on the Scottish Flood Defence Asset Database (SFDAD) and available online at <https://www.scottishflooddefences.gov.uk/> (Note: the locations of coastal protection assets are available by contacting NAC Flooding);
- The extent of culverted and natural watercourses, available via inspection of sufficiently detailed Ordnance Survey maps or by contacting North Ayrshire Council and Scottish Water (see below);
- Scottish Water asset plans (details of approved providers are available by contacting Scottish Water);
- British Geological Survey, available at <http://www.bgs.ac.uk>;
- ground levels, available from topographical surveys or by accessing the Scottish Public Sector LiDAR Dataset, available at <https://data.gov.uk>, and;
- The register of historical flood events held and updated by NAC Flooding.

3.7 Depending on the scale and nature of a proposal, applicants may be required to submit additional information to support their application. If the Local Development Plan or pre-application consultation has identified that you require to submit a Flood Risk Assessment and / or that your drainage strategy must contain a Drainage Impact Assessment (refer to Chapter 6 of this document), you should endeavour to submit the information with the application to avoid a delays on the validation and/or determination of your application.

3.8 For further information, guidance on the national standards for validation and determination of planning applications, published by Heads of Planning Scotland (HoPS), is available at:

<https://hopscotland.files.wordpress.com/2013/03/hops-validation-determination-guidance-280317.pdf>

Note: that under current legislation, planning authorities are able to serve a notice requesting such information as is felt necessary and that failure to submit the requested information can result in your application being refused.

4. FLOOD PROBABILITY

- 4.1 The Annual Probability (AP) of flooding is the statistical chance that a flood of a certain magnitude, which - in turn - affects a certain area or areas within a catchment, will occur in any given year. It is expressed in terms of flood event, return period or as an annual probability expressed as a percentage.
- 4.2 The greater the magnitude of the flood event, the greater the return period and, consequently, the lower the probability of the event occurring in any one year.
- 4.3 For example, the 1 in 30 year flood event for a particular catchment (also termed as the flood event with a 30 year return period or the event with a 3.33% chance of occurring in any one year) will affect a smaller area when compared with, say, the 1 in 200 year flood. The areas affected by the 1 in 30-year event, meanwhile, are likely to flood more frequently than those areas only affected by the larger but less likely 1 in 200-year flood.
- 4.4 It is possible that due to topography (i.e. where a floodplain is bounded by steeply sloping ground), the extent of the inundated areas may not change significantly. In this scenario, the depth of flood water will be greater where the return period of the flood event is greater.
- 4.5 The chance of a experiencing, for example, a 1 in 200 year event remains the same for any given year. Therefore, if an area experiences a 200-year flood in one year, the chance of experiencing this again in the next year is exactly the same (i.e. 0.5%). The following table shows the probability of experiencing a certain flood event over different time periods.

Time Period (years)	Recurrence Interval [Annual Probability]			
	1 in 50yr [2%] (%)	1 in 100yr [1%] (%)	1 in 200yr [0.5%] (%)	1 in 1000yr [0.1%] (%)
1	2	1	0.5	0.1
10	18	10	5	1
20	33	18	10	2
50	64	39	22	5
70	76	50	30	7
100	87	63	39	10
200	98	87	63	18

Table 1: Annual Probability of occurrence for different flood events over a time frame of up to 200 years.

4.6 Flood Risk and Land Use Vulnerability

4.6.1 SEPA's view and the view of NAC Flooding on the appropriateness of a development proposal shall be informed by the flood risk at and around the site and the 'vulnerability classification' of the proposed land use.

4.6.2 An outline acceptable match between flood risk and land use vulnerability classification is set out in Table 2 of SEPA's Flood Risk and Land Use Vulnerability Guidance. The full guidance document is available online at: <https://www.sepa.org.uk/media/143416/land-use-vulnerability-guidance.pdf>

4.6.3 Applicants are advised to take account of SEPA's Flood Risk and Land Use Vulnerability Guidance when formulating their proposals (i.e. prior to applying for planning permission) to ensure that their proposed development constitutes an acceptable match between Land Use Vulnerability and the annual probability of flooding at and around the application site.

4.7 Flood Protection Schemes

4.7.1 While flood protection schemes help to reduce the level of flood risk to, primarily, existing properties, North Ayrshire Council's position on the appropriateness of development behind an existing or planned scheme in a built up area will be informed by SEPA Planning Information Note 4 ('SEPA Position on development protected by a Flood Protection Scheme', published on the 3rd of July 2018 and available online at:

<https://www.sepa.org.uk/media/306610/planning-information-note-4-sepa-position-on-development-protected-by-a-flood-protection-scheme.pdf>

4.7.2 Any protection offered by **informal** flood defences will not be taken into account when considering the appropriateness of development behind or benefitting from them. Such proposals will, instead, be considered within the context of the SPP risk framework as if the scheme did not exist. A definition on formal and informal protection schemes, is provided below:

Formal flood protection schemes are those which have been/are being promoted through relevant legislation (i.e. Flood Prevention (Scotland) Act 1961 (as amended in 1997), the Flood Risk Management (Scotland) Act 2009 or Coast Protection Act 1949). Informal flood defences are proposals that have been/are being brought forward outwith this legislation.

5. FLOOD RISK ASSESSMENT

5.1 On the identification of notable flood risk, a Flood Risk Assessment shall be undertaken in accordance with SEPA's Flood Risk Assessment checklist and technical guidelines, both documents are available online at:

<https://www.sepa.org.uk/media/159170/flood-risk-assessment-checklist.xls>

and

<https://www.sepa.org.uk/media/162602/ss-nfr-p-002-technical-flood-risk-guidance-for-stakeholders.pdf>

5.2 Notwithstanding the requirement for prospective developers to undertake a flood risk screening exercise, a Flood Risk Assessment will usually be required, but not be limited to, situations where:

- parts of the application site have or are close to having a 0.5% (or 1 in 200) risk of flooding annually or 0.1% (1 in 1,000) risk of flooding annually in the case of proposals for essential civil infrastructure;
- the proposed development is within or may otherwise affect the performance of the functional flood plain;
- the proposals directly or indirectly affect existing or proposed flood protection infrastructure (including measures to mitigate flood risk implemented by other developers);
- the proposed development falls within or is nearby areas of land that are known or suspected to flood.
- the vulnerability of the proposed land-use requires that flood risk needs to be considered;
- directed by Council Officers, ideally where the applicant has initiated pre-application discussions.

5.3 Where a FRA is required, either through consultation with SEPA, the screening exercise, the provisions of the Local Development Plan or where directed by Council Officers, the assessment shall be undertaken and certified by an appropriately qualified individual or organisation. The FRA must identify appropriate mitigation measures that must either be implemented by amending the proposals or implementable by complying with conditions that will be appended to any planning consent. Note that there is a presumption that planning conditions relating to flood risk and drainage matters will be used to address particular details that cannot be finalised until other consents are granted, such as the Scottish Water approvals and any associated further actions. Planning applications should, therefore, be accompanied by supporting material that demonstrates:

- that the compatibility of the proposed flood risk mitigation measures (if any), surface water drainage infrastructure and wastewater system with the overall proposals, and
- that any subsequent discharging of planning conditions will be unlikely to result in any substantive revisions to the proposals (i.e. that the principles of the drainage strategy will endure regardless of any further actions associated with the approval of matters specified in planning conditions).

5.4 In a limited number of small scale residential applications (i.e. extensions to dwellings, development involving the construction of less than 4 dwellings, etc) that are likely to be at risk of flooding or increase the probability of flooding elsewhere, the FRA can take the form of a 'Flood Statement'. The statement should identify the necessary flood risk mitigation measures and be completed by an appropriate engineer who is able to assess flood risk. Prospective Developers should seek the views of the Council on where a FRA may take the form of a Flood Statement.

5.5 Climate Change

5.5.1 Flood Risk Assessments must make allowance for climate change in accordance with SEPA's guidance on 'Climate Change Allowances for Flood Risk Assessment in Land Use Planning', issued in April 2019 and available online at: https://www.sepa.org.uk/media/426913/lups_cc1.pdf

6. SURFACE WATER DRAINAGE

6.1 Surface Water Drainage Strategy

6.1.1 Site surface water drainage can have a profound effect on the quality of the green network and the management of flood risk. Applicants are required to formulate a surface water drainage strategy that identifies, where applicable:

- the network, watercourse or waterbody where surface water will be discharged;
- water quality treatment requirements (refer to Paragraph 6.3 for the identification of appropriate SuDS features);
- the methods to manage in-curtilage, roads and open space drainage (note that developers may also require a Roads Construction Consent in the event that their proposals include the construction of a new road or the extension of an existing road. The Roads Construction Consent process will consider road drainage and the impact of the proposed development on the road network, early engagement is recommended to ensure that any requirements of the local roads authority is included in the applicant's Drainage Strategy);
- the location of cut-off drains to limit surface water run-off from one development to another and the features required for the serviceability of the features (note that cut-off drains should take the form of an open channel unless the applicant agrees a different approach with the NAC Flooding Team);
- Proportion of permeable, soft landscaped and 'green' areas expressed as a percentage - or percentages - of the application site area.
- Attenuation requirements;
- Attenuation measures;
- The parties responsible for future maintenance (refer to Chapter 7 of this document for further information), and;
- How the design has taken account of placemaking principles, including:
 - the relationship between the road hierarchy and SuDS typology,
 - the relationship between principal elevations and SuDS, which should provide appropriate passive surveillance and contribute to the perception of safety;

- the extent to which the proposed drainage strategy will positively contribute to the development of multifunctional green Infrastructure.

6.1.2 Note: the drainage strategy may take the form of an appropriately detailed and annotated drawing and an accompanying statement. In more complex instances, a separate report will be considered more appropriate. All drainage strategies must be clear on their assumptions and contain a section detailing the principles or details that are yet to be approved along with details of the approving organisation and the assumed timescales for this.

6.2 Drainage Impact Assessment

- 6.2.1 The drainage strategy must be submitted by the developer and include a Drainage Impact Assessment (DIA) where it is proposed to discharge surface water to a watercourse (including culverted watercourses), waterbody or to Scottish Water's drainage system. A DIA is not required when it is proposed to discharge surface water to coastal waters although the drainage strategy must consider appropriate water treatment measures, depending on the sensitivity of the location. A DIA will, therefore, be required for most major applications. The level of detail will be commensurate with scale/complexity of the proposals, the sensitivity / known characteristics of the receiving environment and the type of planning application (full planning permission, planning permission in principle etc).
- 6.2.2 Surface water discharges related to a development proposal must not be to the detriment of a watercourse/waterbody or piped drainage system in terms of the overall flow rate and/or water level. The interests of third parties, including riparian owners, and the owners of the land through which a private service runs, must be fully considered. This may require the developer to pursue formal legal agreements.
- 6.2.3 The maximum permissible discharge from any site will be no greater than the 1 in 2year Greenfield run-off equivalent, unless agreed otherwise with NAC Flooding. The assessment must clearly set out pre and post-development run-off rates to the relevant discharge point(s) and any mitigation required to comply with the maximum permissible discharge.
- 6.2.4 For developments that are to be constructed at different stages, or by different developers, a drainage masterplan covering the whole area of development must be submitted as part of the first planning application.

6.2.5 The Drainage Impact Assessment must demonstrate that the drainage proposals have been designed for exceedance. This means that the overflow path should have a limited impact on the proposed built form and the built form in other places. Details of the overflow path must be shown on the drainage strategy / Drainage Impact Assessment drawings.

6.2.6 All modelling and calculations must be carried out in accordance with industry best practice, self-certified by the designer, and subject to a check by an appropriately qualified individual who is professionally independent of the designer. The Council is not responsible for checking or verifying the drainage design or the DIA outcomes but for assessing the impact of the outcomes in terms of flood risk and water quality. The client / developer remains responsible for the implications of miscalculation or misrepresentation of the DIA findings.

6.3 SuDS

6.3.1 The purpose of a drainage strategy is, in part, to communicate the form of SuDS and to demonstrate that the impact of the proposed drainage arrangement in terms of flood risk and water quality have been fully considered.

6.3.2 At a more strategic level, all design briefs and regeneration strategies should reflect the position of the Local Development Plan, Scottish Planning Policy and SEPA, who advocate a managed reduction of the number of people living in functional flood plains. All masterplans, meanwhile, should demonstrate how the implementation of the drainage strategy (including SuDS features) contributes positively to the principles of sustainability, resilience and placemaking by, for example, being compatible with the development of the green network and the overall quality of the environment.

6.3.3 Within North Ayrshire, surface water drainage networks shall be designed to accept flows up to and including those associated with the 1 in 30 year flood event while any SuDS pond or basin shall be designed to have a holding capacity that will not be exceeded during the 1 in 200 year flood event + Climate Change. Additionally, **all SuDS ponds and basins must not be located on the functional flood plain.**

6.3.4 The Simple Index Approach (SIA) to assessing water quality management requirements has been developed on behalf of SEPA to support the implementation of the water quality management design methods set out in the SuDS Manual. The SIA tool is available online in Microsoft Excel format at: http://www.susdrain.org/resources/SuDS_Manual.html

6.3.5 The SIA tool should not be used in isolation. The SuDS Manual (available at: <http://www.scotsnet.org.uk/documents/NRDG/CIRIA-report-C753-the-SuDS-manual-v6.pdf>) suggests the type of information that should be discussed at **pre-application stage** and the information that should be provided when applying for both outline and full planning permission. While it is not the intention to replicate the full list of the recommendations, NAC consider it helpful to emphasise:

- the surface water policy of Scottish Water;
- the planning application validation requirements relating to proposals that include a new or amended private drainage system, and;
- that the drainage strategy should provide an evidence base for mitigation, which should then be implemented by the applicant and/or at the applicant's expense.

6.3.6 The foregoing matters are addressed in the following sections of this document.

6.4 Scottish Water

6.4.1 Early consultation with Scottish Water is essential to determine: attenuation requirements; the relevant design criteria; the steps necessary for SuDS and other features to be vested in the organisation. While final Scottish Water approval may not be forthcoming until after planning consent is granted, applicants must engage with Scottish Water via the pre-development application process. When approved, developers must submit any changes to the drainage design for the approval of NAC. This will be controlled by a Planning Condition where necessary. Additionally, **NAC must be party to any pertinent correspondence between the applicant and Scottish Water so that the Council has can be confident that the applicant's proposals are likely to be accepted without significant amendment.**

6.4.2 North Ayrshire Council is aware of Scottish Water's policy, which identifies the following 'preferred options' for the management of Surface Water:

- Preferred Option 1: Rainwater is stored and re-used;
- Preferred Option 2: Surface Water is drained into the soil;
- Preferred Option 3: Surface Water is drained to a watercourse;
- Preferred Option 4: Surface Water is drained to a surface water sewer; and,
- in exceptional cases, Option 5: Surface Water is drained to a combined sewer.

6.4.3 The Council will be supportive of an appropriate mix of management options where the discharge to a surface water sewer (i.e. Option 4) is not considered to have sufficient drainage capacity. The suitability of Option No. 4 and No 5 is a matter for Scottish Water to approve.

6.4.4 While Scottish Water's Sewers for Scotland specification requires surface water attenuation up to and including the 1 in 30 year flood event, applicants must demonstrate that their proposals will be resilient up to and including the 1 in 200 year event when applying for Planning Permission (excluding Planning Permission in Principle). This information is also required to be submitted when applying for Roads Construction Consent (RCC) (See Appendix C for further information on the required submissions for RCC applications).

6.5 Private Drainage

6.5.1 To validate a planning application that involves a connection to an existing private drainage system, the connection point to system should be clearly annotated on a plan. The connection must be shown as being within land under the control of the applicant.

6.5.2 Similarly where proposals seek to create a completely new private drainage system or alter/upgrade an existing system, full details of the system should be shown on the drawings accompanying the application. The system must be shown as being within land under the control of the applicant.

6.5.3 A Drainage Strategy (including a Drainage Impact Assessment) will usually be required for all applications that involve a discharge to a private drainage system. Private drainage is considered to be any system that is not vested in Scottish Water and may include Council owned or controlled assets.

6.5.4 A legal agreement will be required to establish a connection to a private drainage system that is outside or partly outside of the application site / the control of the applicant. Legal agreements should also define arrangements for the future maintenance of the system. While it is not necessary to provide details of legal agreements when applying for planning permission, any Drainage Strategy / Impact Assessment must demonstrate that the proposals will not be at risk of flooding, or increase the risk of flooding in other places, taking account of the constraints of the private drainage system.

6.5.5 Where the assumptions of the Drainage Strategy / Impact Assessment cannot be secured by legal agreement, it is the developer's responsibility to notify NAC Planning and seek further appropriate consent and/or approval.

6.6 Connecting to Culverted Watercourses

6.6.1 Surface water sewers are Scottish Water assets, therefore the regulatory body for connection is Scottish Water when developers are seeking connection. The agreements must be part of the planning application documents. Culverted watercourses can have multiple ownership, they can be (a) fully private, (b) fully owned by the Local Authority or (c) shared ownership between Local Authority and private owners(s).

6.6.2 If the culverted watercourse is under full Local Authority ownership the regulatory body for connection is the Local Authority when developers are seeking connection. The developer needs to provide a full capacity/condition assessment and must quantify the volume of surface water they intend to discharge when seeking approval for connection.

6.6.3 If the Culverted watercourse is partially or fully under private ownership the Local Authority is not in the position to approve connection requests. Private legal agreement would need to be reached with every owner(s) between the discharge point to the final outfall for this to be acceptable.

6.7.1 Road Surface Water

6.7.1 Road drainage can be discharged to:

- (a) Roads drainage (via a development SUDs system) that connects to a Scottish Water system – relevant approvals are required from Scottish Water and must be provided as part of the planning application.
- (b) Roads drainage (via a development SUDs system) that connects to an open watercourse only - relevant approvals are required from the Local Authority and will be assessed on a case by case basis
- (c) Roads drainage (via a development SUDs system) that connects to a culverted watercourse fully in local authority ownership – as per Section 6.6.2.
- (d) Roads drainage (via a development SUDs system) that connects to an open watercourse that at some point is culverted through private ground – The Local Authority cannot approve connection as per Section 6.6.3
- (e) Roads drainage (via a development SUDs system) that connects to private drainage system - The Local Authority cannot approve connection as per Section 6.6.3.

6.8. Future-Proofing

6.8.1 Proposals will be expected to make appropriate allowance for both urban creep and climate change. There is an expectation that drainage proposals will also take account of the climate change allowances referred to in Part 5.5 of this document. Climate change will have ramifications for 'additional' attenuation storage (i.e. over and above that required by Scottish Water, flood flow-paths, the design of access/egress routes and freeboard allowances / finished floor levels).

- 6.8.2 Drainage proposals that are not considered to make sufficient allowance for Urban Creep will be considered unacceptable without the identification of appropriate mitigation measures. Mitigation must be identified by the applicant's Drainage Strategy and may include, for example, the restriction of permitted development rights to preclude the introduction of built form, impermeable surfaces etc. without further planning consent. The applicant's drainage strategy should, therefore, include a section on 'Future-Proofing' to identify actions to preserve the proper function of proposed infrastructure. All identified actions must then be implemented by the applicant and/or at the applicant's expense.
- 6.8.3 The Flooding Team will be supportive of proposals that implement the recommendations of the 'Guidance on the permeable surfacing of front gardens', published by the Department for Communities and Local Government (2008). Where the performance of a proposed drainage system will depend on the resilience of 'soft' measures such as rain gardens, etc., the applicant must demonstrate that these features will be appropriately safeguarded by, for example, a Deed of Conditions. While NAC does not require sight of such legal agreements when making decisions on planning applications, we may need a commitment that appropriate agreements will be in place. Note: Deeds of Conditions are required to be submitted when applying for Roads Construction Consent (refer to Appendix C of this document).

Note: a Building Warrant may be required where in-curtilage attenuation/treatment of surface water is proposed.

7. MAINTENANCE / ADOPTION

7.1 Agreements between highway and local authorities: section 7 of the Sewerage (Scotland) Act 1968).

7.1.1 A Memorandum of Understanding (MOU) between Scottish Water and North Ayrshire Council outlines the principles of working together to minimise the costs to roads authorities, Scottish Water and developers when proposing new residential development. Under these principles the surface water drained from the roads and the curtilage of houses within the development will be accommodated within a shared system, with the maintenance agreement, under Section 7 of the Sewerage (Scotland) Act 1968, setting out the obligations that fall to the two authorities on adoption of the system. Note that there is a programme to identify the likelihood of similar maintenance agreements being applied to legacy SuDS features, while separate guidance is being produced to cover the scale and scope of the agreements for new commercial and industrial development.

7.1.2 Under the terms of the MOU, the Local Authority will have ultimate responsibility for ***ensuring*** the maintenance of the 'above ground' assets of the shared system. The maintenance and inspection operations will, however, be implemented by a land manager / factor appointed, in the first instance, by the developer on behalf of the owners or prospective owners of properties within the proposed development.

7.1.3 Planning applications must, therefore, be accompanied by a copy of the maintenance and inspection schedule. This schedule will normally be underpinned by a deed of conditions that, for example, sets out the contribution that each property owner will make towards the future maintenance of the above-ground assets.

7.1.4 Where the finalised Deed of Conditions omits the maintenance of land included in the maintenance and inspection schedule submitted to support a planning application, it is the applicant's responsibility to notify NAC Planning, NAC Flooding and Scottish Water and to seek appropriate consent / approval.

7.1.5 Note: both Scottish Water and North Ayrshire Council must formally adopt the surface water system before assuming the associated obligations for 'below ground' assets and that Scottish Water will require transfer of land title before adoption.

- 7.1.6 The maintenance of debris screens, open culverts and watercourses within new developments must be carried out by the land manager / factor at regular intervals. This must be reflected in any maintenance schedule that must be submitted to the Council for approval. Maintenance Schedules should include, but will not be limited to, the following activities:
- Clearance of debris from screens
 - De-littering of embankments
 - Removal of debris from the watercourse channel / cut-off drains
 - Grass cutting during the growing season
 - Maintenance of a service strips and access ways that, in turn, facilitate the maintenance and monitoring of watercourse channels, cut-off drains, outfalls, filter drains and other SuDS infrastructure.
- 7.1.7 Maintenance schedules must be devised to address invasive species and to take account of the bird nesting season, the presence of protected species and wildlife / habitat conservation sites, including freshwater and saltwater habitats.
- 7.1.8 NAC Flooding expects that maintenance responsibilities shall fall to a party that is recorded on the Property Factors Register. Registration is compulsory for residential property and land managers whether they are private sector businesses, local authorities or housing associations operating in Scotland. When registered, North Ayrshire Council and third parties can readily contact a Property Factor to discuss and report maintenance concerns.

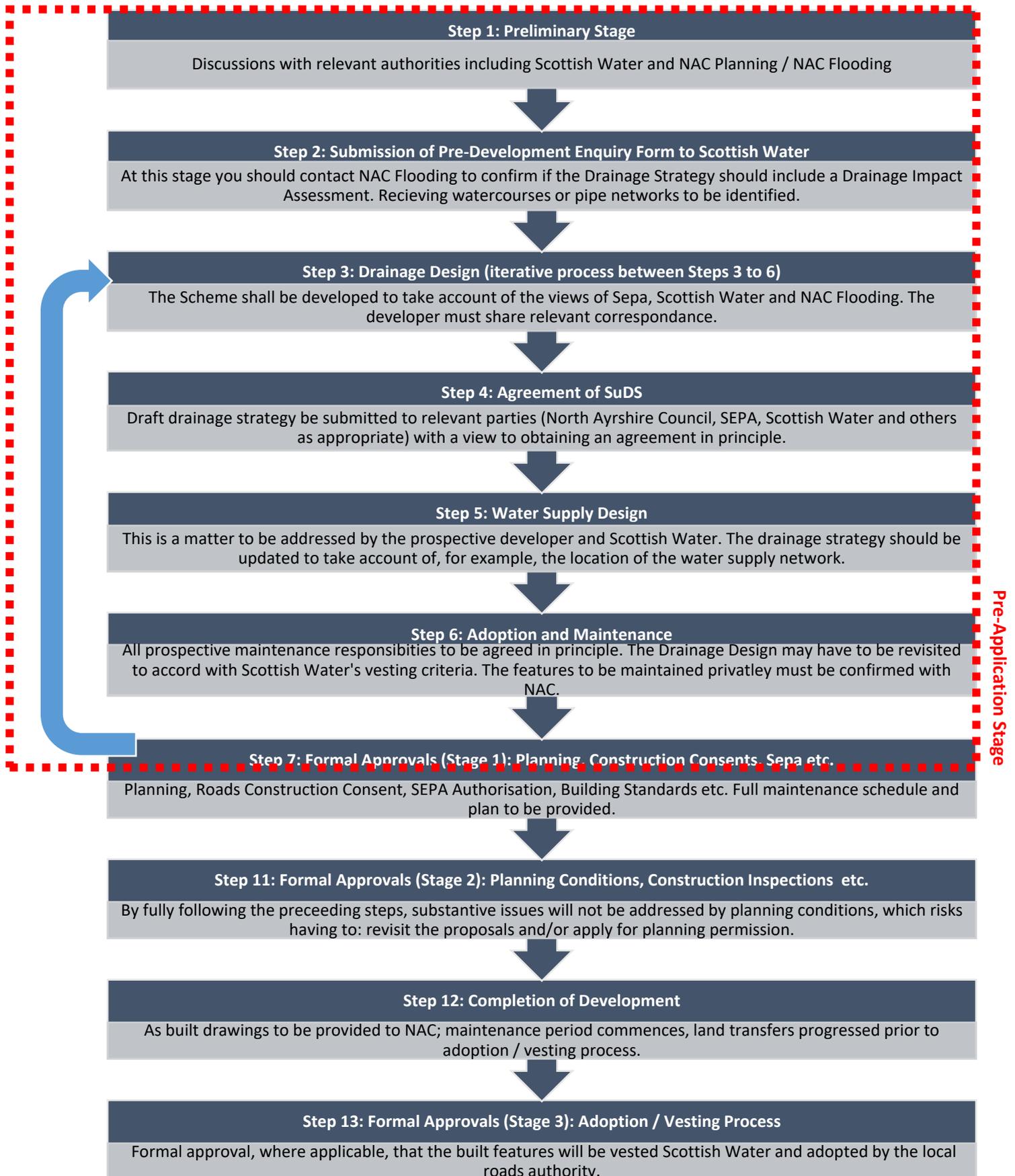
7.2 Approvals Process

7.2.1 The following flow chart demonstrates the sequence of actions to be initiated by the applicant when applying for planning permission. This step by step process may not be appropriate for most householder applications. In such instances, the NAC Planning Team will confirm an alternative approach.

7.3 Development Flowchart

7.3.1 The following flowchart and accompanying list (Paragraphs 7.3.2 to 7.3.4) demonstrates the level of detail that is required for different types of planning application and when this information should be submitted and, where necessary, revisited.

Pre-Application Stage



7.3.2 Pre-application discussion stage (non-statutory):

1. *Evidence that the initial development design proposals have considered the integration and linkage of the surface water management with street layouts, architectural and landscape proposals;*
2. *An assessment of strategic opportunities for the surface water management system to deliver multiple benefits for the site – this should be provided by the developer and should include the strategic use of public open space for SuDS;*
3. *Completion of Flood Risk Screening Exercise*
4. *Any potential local community impacts, health and safety issues or specific local community concerns and drainage approving body requirements that should be addressed by the detailed design; and*
5. *An agreed approach between all relevant parties on the design and maintenance of the surface water management features for the proposed site.*

7.3.3 Planning application in principle stage:

1. *Outline drainage strategy to identify all receiving watercourses or pipe networks and how existing flood risk is intended to be addressed.*
2. *FRA to be submitted, where required.*

7.3.4 Full planning application stage:

1. *Drainage Strategy and, where applicable, Drainage Impact Assessment to be submitted.*
2. *Details submitted to demonstrate that the design of each element has been undertaken in accordance with best practice (using detailed design checklists, where required) and that this design provides an acceptable level of water quality treatment, attenuation etc.*
3. *Interdisciplinary check to ensure that all elements are compatible and that flood risk and water quality matters within and around the site have been addressed.*
4. *A Maintenance Plan for the proposed SuDS submitted including:*
 - *a description of the system and how each part of the system is expected to work*
 - *management objectives for the site*
 - *inspection and maintenance schedules, material, tools and initial cost estimates*
 - *maintenance access points, easements and outfalls.*
5. *Confirmation of prospective approval and adoption/vesting applications for all SuDS components;*

6. *Appropriate consideration of the compatibility of suds in relation to the footprint of the development site, which should also take account of the space required for future maintenance (i.e. access tracks etc), and;*
7. *A self-certified health and safety risk assessment.*

8. CONTROLLED ACTIVITIES REGULATIONS (CAR)

- 8.1 Under CAR, SEPA risk assess proposed activities before granting, if appropriate, an authorisation. The type of authorisation required depends on the environmental risk of the proposed activity. There are three levels of control:
- General Binding Rules (GBRs) provide statutory controls over certain low risk activities
 - Registration is intended to cover low risk activities which cumulatively pose a risk to the water environment
 - A licence is needed if site-specific controls are required, particularly if constraints upon the activity are to be imposed
- 8.2 More detailed information can be found by accessing the CAR Practical Guide, available at: https://www.sepa.org.uk/media/34761/car_a_practical_guide.pdf
- 8.3 To speed up the process and to ensure appropriate document control, all queries, document submissions, approval forms etc. should be directed to the relevant planning officer in the first instance.

APPENDIX A: FLOOD RISK SCREENING COVER SHEET FOR PRE-APPLICATION DISCUSSION AND/OR PLANNING APPLICATION IN PRINCIPLE

Project Detail

Project Name:
Site Location:
Planning Reference:
Site Plan Ref:

Consultations Undertaken

Consultations Undertaken	Date	Further Actions Agreed?
North Ayrshire Council:	Yes / No
Scottish Water:	Yes / No
SEPA:	Yes / No
Other:	Yes / No

Sources of Information

Sources of Information	Rev No.	Title
North Ayrshire Council:
Historic Flood Maps:
SEPA Flood Maps:
Other:

Potential Sources of Flooding

Potential Sources of Flooding	Yes / No	Comments
Fluvial (watercourses):
Pluvial (surface water):
Sewers / Drains:
Ground Water:
Coastal / Tidal:
Flow Paths:

Have any potential flood risks been identified? Yes / No
Is the proposed development site located within a functional flood plain? Yes / No

Comments:

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

APPENDIX B: DEVELOPER’S CHECKLIST

1. Have you completed the Flood Risk Screening Assessment (required for all development other than single dwellings, change of use applications, conversions etc)?
2. Have you identified relevant site specific opportunities and constraints (i.e. the green network, Tree Preservation Orders, invasive species, contamination)?
3. Have you undertaken a Pre-development application with Scottish Water and undertaken pre-application consultation with North Ayrshire Council?
4. Have you devised a drainage Strategy (including coloured plan and associated schedules showing the prospective obligations of NAC and Scottish Water)?
5. Have you provided plans and schedules to identify future actions to safeguard the performance of surface water infrastructure / flood protection measures?
6. If you are proposing to discharge to a watercourse or waterbody or private drainage system and, if so, have you completed a Drainage Impact Assessment?
7. Is a Flood Risk Assessment required (development within a Potentially Vulnerable area, functional flood plain, or where the site or its environs have a history of flooding usually require a FRA)?
8. Are your proposals covered by SEPA's General Binding Rules? If not, are the appropriate consents in place (registration or license)?
9. Have you provided material to demonstrate that the SUDS is an integrated component of the overall design proposal? Have you used the Simple Index Tool to identify levels of treatment and drawings to communicate your drainage strategy?
10. Have you undertaken a Designers Health & Safety Risk Assessment?

APPENDIX C: ROADS CONSTRUCTION CONSENT

Before applications for Construction Consent can be determined, applicants must provide the following supporting information:-

1. a copy of letters from SEPA and Scottish Water confirming that the drainage proposals are acceptable;
2. a Drainage Assessment (DA) prepared in accordance with current SEPA best practice guidance. The discharge of stormwater from the development should comply with the stipulated design criteria, current 'SuDS for Roads' design guidance and the requirements of Scottish Water. In addition, NAC requires Drainage Assessments to address the following:
 - i. the effects of the 1 in 200 year storm and run-off plus climate change;
 - ii. the effects of differing storm intensities over and above the 10-year return;
 - iii. the extents of differing flood conditions should be shown on a site plan to ensure that no water enters buildings or restricts movement of emergency vehicles, the routing of surface water through the site for each flood event should also be shown on the drawings, and;
 - iv. a strategy for dealing with any field drainage affected by the works.
3. in connection with the design of SuDS, applications for Construction Consent should be accompanied by the following:
 - i. a completed self-certification for the Flood Risk Assessment and Drainage Impact Assessment;
 - ii. full details of the SuDS Design and/or Drainage Design, and;
 - iii. a "Responsibility Schedule" for drainage infrastructure detailing the prospective maintenance responsibilities of Scottish Water, NAC and third parties for the purpose of safeguarding the proper function of the assets.
4. a SuDS Management Plan, including:
 - i. a SuDS overview;
 - ii. a 'Management Statement' describing the SUDS scheme and setting out the management aims and responsibilities for the site;
 - iii. a 'Maintenance Schedule' describing what work is to be done and when it is to be done using frequency and performance requirements as appropriate, including:
 - a risk assessment for public safety;
 - consideration of how the SuDS will perform and develop over time, anticipating any additional maintenance tasks to ensure the system continues to perform as designed;
 - specification notes that describe how work is to be undertaken and the materials to be used, and;
 - iv. a site plan showing maintenance areas, control points and outfalls.

5. the Developer will also be required to put in place legally binding and enforceable title conditions, including suitable factoring arrangements to ensure the SuDS systems serving the development are properly maintained and are, in all time coming, kept in a satisfactory condition. To this end, the following CC4 condition is appended to Construction Consents:

'The Developer will put in place legally binding and enforceable title conditions, including suitable factoring arrangements, to ensure the SUDS systems serving the development is properly maintained and is, in all time coming, kept in a satisfactory condition. Confirmation that appropriate arrangements are in place will be provided to the Council prior to the occupation of the first dwelling'.

To avoid having to revise submissions, applicants may find it helpful, where possible, to meet the requirements of Roads Construction Consent when applying for planning permission. This is an approach that will be supported by the relevant Council Departments.