



CITY DEVELOPMENT PLAN

# SG8: Water Environment

SUPPLEMENTARY GUIDANCE

January 2017

CITY DEVELOPMENT PLAN POLICIES	CITY DEVELOPMENT PLAN SUPPLEMENTARY GUIDANCE
CDP 1 The Placemaking Principle	SG 1 The Placemaking Principle
CDP 2 Sustainable Spatial Strategy	<i>SDF City Centre</i> <i>SDF Glasgow North</i> <i>SDF Govan Partick</i> <i>SDF Greater Easterhouse</i> <i>SDF Inner East</i> <i>SDF River</i> <i>LDF Drumchapel</i> <i>LDF Pollok</i> <i>LDF South Central</i>
CDP 3 Economic Development	SG 3 Economic Development
CDP 4 Network of Centres	SG 4 Network of Centres
CDP 5 Resource Management	SG 5 Resource Management
CDP 6 Green Belt and Green Network	SG 6 Green Belt and Green Network
CDP 7 Natural Environment	SG 7 Natural Environment
CDP 8 Water Environment	SG 8 Water Environment
CDP 9 Historic Environment	SG 9 Historic Environment
CDP 10 Meeting Housing Needs	SG 10 Meeting Housing Needs
CDP 11 Sustainable Transport	SG 11 Sustainable Transport
CDP 12 Delivering Development	SG 12 Delivering Development

Policies CDP 1 (The Placemaking Principle) and CDP 2 (Sustainable Spatial Strategy) are overarching policies which, together with their associated Supplementary Guidance, must be considered for all development proposals to help achieve the key aims of The Plan.

Policies CDP 3 to CDP 12 (and associated Supplementary Guidance) provide more detail on specific land use elements which contribute to meeting the requirements of the overarching policies.

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## Introduction

This supplementary guidance (SG) will require to be read, and used, in conjunction with SG on: Placemaking and Design; the Green Belt and Green Network: the Natural Environment; and Sustainable Transport to ensure a co-ordinated approach to delivering design excellence in new development and the creation of a multi-functional green network.

The River Clyde Flood Management Strategy will be revisited through the proposed River Clyde Strategic Development Framework. Until such times as the SDF is adopted, RCFMS will be Interim Planning Guidance.

### 1. Background

- 1.1 The City Council is committed to helping transform how the city region thinks about, and manages, rainfall to help end uncontrolled flooding and improve water quality. This ethos is fundamental to the development planning decision making process. Effective management of planning policy in the city will be one of a number of measures employed by the City Council to reduce overall flood risk. Development shall be managed in a way that takes any opportunity to manage surface water in a way that complements the natural environment and promotes sustainable integrated drainage solutions.
- 1.2 The purpose of this guidance is to provide information on how the Council will address flooding and development impact through the planning process. It is intended as guidance for developers, landowners, planning practitioners and others involved in the development process.

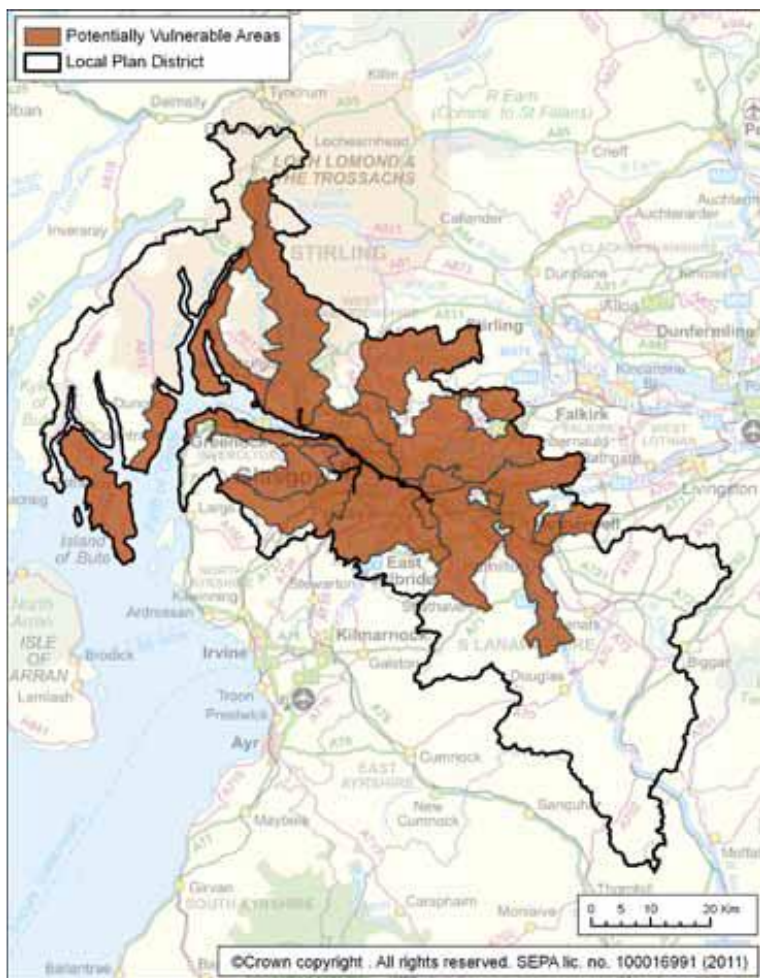
- 1.3 We all have a responsibility to reduce flood risk - from public bodies such as Glasgow City Council, Scottish Water and the Scottish Environment Protection Agency (SEPA) to homeowners and developers. The Flood Risk Management (Scotland) Act 2009 takes a plan-led, risk based, collaborative and sustainable approach to flood risk management at the catchment scale. This approach is embedded in this guidance document and will develop with time.

- 1.4 Work undertaken through the Metropolitan Glasgow Sustainable Drainage Partnership (MGSDP) and the introduction of the Flood Risk Management (Scotland) Act 2009 has (and will continue to) expose and untangle the complex interactions of the urban drainage system within the city boundary. This guidance determines how water bodies shall be managed in terms of planning policy (and its interaction with other legislation or guidance) in a way that enhances and protects the natural environment without detriment to surrounding areas.

### 2. Flood Risk Management (Scotland) Act 2009

- 2.1 The Flood Risk Management (Scotland) Act received Royal Assent in June 2009. The Act takes a risk based, sustainable and collaborative approach to flood risk management in Scotland.
- 2.2 Local Authorities, SEPA and Scottish Water have a general duty to reduce overall flood risk in a process led by SEPA.
- 2.3 In 2011, SEPA carried out a National Flood Risk Assessment of Scotland. This established a baseline understanding of the vulnerability to flooding from all sources. Areas deemed to be of significant flood risk were identified as Potentially Vulnerable Areas or PVAs (Fig. 1). SEPA then divided Scotland into 14 Local Plan Districts (LPDs). These LPDs are the administrative areas in which to report the reduction of flood risk to the PVAs.

Figure 1



2.4 Glasgow City Council lies within the Clyde and Loch Lomond LPD. This LPD includes 10 Local Authorities who along with SEPA and Scottish Water will be responsible for reducing flood risk to the 20 PVAs contained within the LPD boundary. Glasgow City Council act as the Lead Local Authority for this group. The City is subject to seven PVAs (in whole or in part), with effectively all of the City being covered.

- 2.5 In December 2015, SEPA published a [Flood Risk Management Strategy for the Clyde and Loch Lomond LPD](#). The Strategy should be read in conjunction with the Local Flood Risk Management Plan ([LFRMP](#)) for the Clyde and Loch Lomond LPD published, on behalf of the Local Authorities of the LPD, by Glasgow City Council (as Lead Local Authority) in June 2016.
- 2.6 The Flood Risk Management Strategy identifies the areas at risk of flooding and sets objectives for reducing flood risk to these areas. The LFRMP identifies actions to avoid and reduce the risk of flooding, and protect communities within the PVAs and across the Local Plan District.
- 2.7 These actions include 19 flood protection schemes or works; 24 flood protection studies; as well as flood warning schemes, surface water management plans, and natural flood management studies and works. These measures are programmed in 6 year cycles from 2016.
- 2.8 Surface Water Management Planning will also become a vehicle for reducing flood risk in the city. A number of areas within the city have been identified as requiring Surface Water Management Plans (SWMPs). These will assess the flood risk from multiple sources and will (at a local level) provide options for measures to be put in place to slow, treat and store surface water above ground and at source.
- 2.9 Where detailed SWMPs are brought forward, they will form either Supplementary Guidance (subject to consultation) to the City Development Plan (CDP) or, alternatively, a material consideration. Either way, they will be an important consideration in the determination of planning applications. These plans may include a requirement for specific measures (reservation of land for flood management, construction of elements of the plan, specific design requirements etc). These measures will often either require safeguarding in, or will require to be delivered through, new development.

2.10 The final Local Flood Risk Management Plan was published in June 2016 beginning its period of implementation.

2.11 The process then begins again, starting with a new national flood risk assessment to be followed by more in depth mapping and assessment of current flood risk.

### 3. The Metropolitan Glasgow Strategic Drainage Partnership (MGSDP)

3.1 The Metropolitan Glasgow Strategic Drainage Partnership ([MGSDP](#)) is a partnership formed by organisations involved with the operation of the sewer and drainage network within the greater Glasgow area - Glasgow City Council, Scottish Water, Scottish Canals, South Lanarkshire Council, Clyde Gateway URC, Scottish Enterprise and the SEPA. This partnership is born out of the floods which affected the east end of Glasgow in July 2002.

3.2 The collaborative approach to the issues of urban flooding and drainage draws upon the expertise of the parties and their statutory responsibilities and encourages the partners to work together towards shared objectives exchanging information, experience and knowledge.

3.3 Metropolitan Glasgow covers a total of seven local authority areas. The Partnership recognises that its aims and objectives cannot be met without the help and involvement of these other local authorities and other key stakeholders / partners.

#### *MGSDP Objectives*

3.4 The partnerships objectives are:

- Flood Risk Reduction
- River water quality improvements
- Enabling economic development
- Habitat improvements
- Integrated investment planning

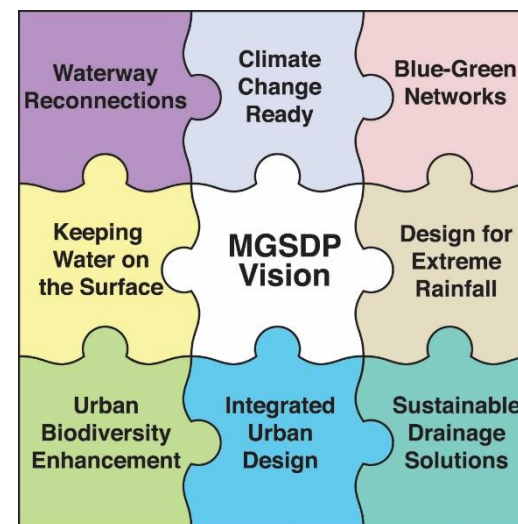
#### *MGSDP Vision*

3.5 The MGSDP 2060 Vision (Fig. 2) is to transform how the city region thinks about and manages rainfall to end uncontrolled flooding and improve water quality. The vision will be realised through partnership working which will be shaped by the eight Guiding Principles:

- Enhancement of our urban biodiversity and landscape
- Reconnection of our waterways
- Design for the severity of the rain
- Presumption that surface water will be kept on the surface
- Creation of an integrated system of blue green networks
- Integrated urban master planning and design
- Sustainable and affordable drainage solutions
- Climate-change ready

3.6 The ethos of the Flood Risk Management (Scotland) Act 2009 complements the MGSDP Vision.

**Figure 2**



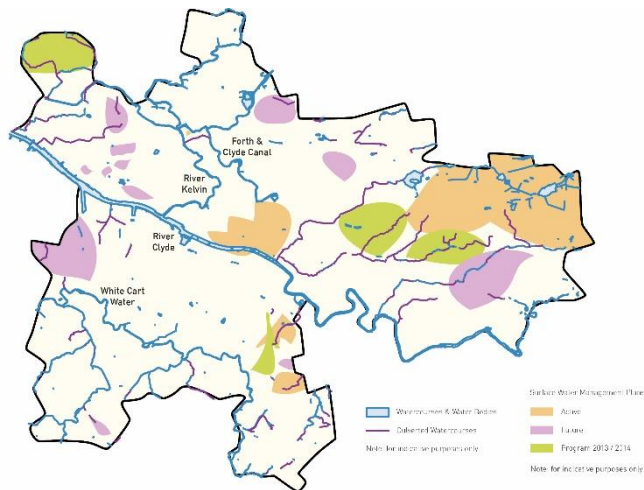
3.7 The realisation of this vision will provide the flexibility to respond to other changes in the city region, recognised as being important by the Future Glasgow Report 'A 50 Year Vision for the Future' and help make Scotland a world leading Hydro Nation.

3.8 Within Section 8 Surface Water Drainage Strategy there is a requirement to demonstrate how the MGSDP Objectives and Vision have been incorporated into the design development for all new developments.

#### 4. Surface Water Management Plans

4.1 The Council has identified a number of communities which are vulnerable to flooding or where economic development is constrained due to insufficient capacity within the existing drainage networks. To meet the Council responsibilities under the Flood Risk Management (Scotland) Act 2009 and the MGSDP vision, the Council is currently promoting a number of Surface Water Management Plans (SWMPs) (Fig. 3).

Figure 3



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4.2 SWMPs will be developed to address the aforementioned specific issues, and will include a range of measures to manage, attenuate and route surface water. In addition to water management, the use of SWMPs will aid the Council in meeting a number of other objectives with regards to Climate Change adaptation, green networks and place making.

4.3 For the purpose of SWMP delivery these measure will be split into a number of elements:

- a) Strategic features integral to the overall plan
- b) Conveyance routes
- c) Area specific guidance for development
- d) Recommendations for incremental change for existing roads and open space
- e) Property level interventions
- f) Sacrificial land for flood storage

4.4 Completed SWMPs will go through the due process and will form either Supplementary Guidance to the City Development Plan (CDP) or, alternatively, a material consideration in the determination of planning applications.

#### 5. Flood Risk Screening

5.1 Planning applications of 5 or more dwellings or introducing a new building of more than 250 sq metres ground floor area will require to be accompanied by a completed Flood Risk Screening checklist to identify any potential flood risk to the proposal (see appendix 1). The Council considers flood risk to be a key consideration which may significantly influence the acceptability, nature, design and capacity of a development.

5.2 During the screening exercise consideration must be given to all sources of flooding which may impact on the proposed development, including: fluvial; pluvial; sewer; ground water; tidal; and flow paths.

5.3 It is envisaged that the flood risk screening exercise will be a desk based study, drawing upon publicly available mapping series and applicants' site specific knowledge.

5.4 The following sources of data may assist in the screening process:

- SEPA flood maps
  - Pluvial
  - Fluvial
- Tidal
  - Flood defences
- Ordnance Survey Scottish Detailed River Network
  - Natural watercourses
  - Culverted watercourses
- British Geological maps
- Scottish Water maps

5.5 The Council may be able to provide more detailed information on locations, configuration and condition. However provision of the above information from the Council will be subject to a charge (subject to review).

5.6 If any flood risks are identified during the screening exercise, there will be a requirement to carry out a Flood Risk Assessment (FRA) in accordance with Section 6 of the supplementary guidance.

5.7 Where an FRA is deemed necessary, the Council will expect both the FRA to be undertaken and its findings to be incorporated into the proposed development. Where this is not the case, planning permission will not be granted.

## 6. Flood Risk Assessments (FRA)

6.1 If any flood risks are identified during the flood risk screening process, there will be a requirement to carry out a detailed flood risk assessment in accordance with the Council's Flood Risk and Drainage Impact Assessment: [Planning Guidance for Developers](#) and the requirements of SEPA.

6.2 The FRA must clearly identify specific flood risks and quantify issues that need to be addressed. The FRA will also require to demonstrate that the flood mitigation strategy can be delivered, in compliance with all other relevant legislative requirements of Scottish Planning Policy, the Flood Risk Management (Scotland) Act 2009 and [SEPA](#).

6.3 For clarity, the Council has expanded the Scottish Planning Policy, Flood Risk Framework and provided guidance on the appropriate modelling return periods. If a proposed development lies outwith the specified risk classification, the applicant will be required to confirm appropriate risk classification with the Council's Flood Risk Management Team.

6.4 All development identified to be at risk of flooding using the Council Flood Risk Framework, must incorporate a 'freeboard allowance' and/or the use of water resistant materials and forms of construction which must be appropriate to its function, location and planned lifetime.



## Council Flood Risk Framework

Generally Acceptable Development (Provided Flood Protection Measures to the Appropriate Standard Already Exist and are Maintained, are Under Construction, or are a Planned Measure in a Current Flood Risk Management Plan)	Return Period/Probability
Domestic dwelling of 2 storeys or more Industrial Office development Retail Hotel with no habitable rooms on the ground floor Community facilities Bars and Restaurants	1:200 year plus climate change or 0.5% probability
Generally Acceptable Development	Return Period/Probability
Flatted development with habitable dwellings at ground floor* Mobile home parks* Bungalows* GP Surgeries	1:500 year plus climate change or 0.2% probability
Strategic buildings Hospitals Schools Residential care homes Police control facilities Fire control facilities Strategic Infrastructure	Greater than 1:1000 plus climate change or less than 0.1% probability

\* Greater risk than two story dwellings due to no place of safety being available to residents above the ground floor

### 7. Functional Flood Plain

7.1 The Scottish Planning Policy presumes against land raising within a functional flood plain. Any proposed development within a functional flood plain should be designed to be commensurate with the potential flood risk, set out within Section 6 Flood Risk Assessment, without the need to raise or defend land. Consequently, the majority of development proposed within a functional flood plain (inclusive of fluvial and pluvial flooding) is likely to be inappropriate.

7.2 Only in exceptional circumstances will land raising or defence of a functional flood plain be considered for new development. Where land raising or land defending has been accepted, equivalent compensatory storage plus 10% must be provided and a drainage impact assessment will be required to demonstrate that there will be no increase in water level of the relevant watercourse. Land raising should not create islands of development.

7.3 The exceptional circumstances in which the Council may consider land raising or defence of a functional flood plain, in support of new development, include:

- Critical infrastructure
- Major regeneration projects
- Recreational facilities (sports fields, golf courses, cycleways etc.)
- Where this would have a neutral or positive effect on the probability of flooding elsewhere.

### 8. Surface Water Drainage Strategy

8.1 The creation of a surface water drainage strategy is fundamentally important to the design development for any new development of 5 or more dwellings or introducing a new building of more than 250 sq metres ground floor area. This strategy will set out the key principles of the surface water drainage strategy and demonstrate appropriate spatial planning.

8.2 The site drainage strategy will require to set out the following:

- To which network/waterbody will surface water will be discharged;
- Water quality treatment requirements (Sustainable Drainage Systems (SuDS));
- Strategy to manage in-curtilage, roads and open space drainage;
- Percentage of permeable area within in the development;
- Attenuation requirements;

- Attenuation measures (attenuation measures must take account of permissible underground storage limits contained within Table 1); and
- How the design has taken account of placemaking principles, including:
  - how the design of the development responds to SUDS, including good development frontage onto SUDS which delivers surveillance and improves safety;
  - how the drainage strategy will provide for multifunctional green Infrastructure

8.3 The applicant will require to demonstrate that key principles of the proposed drainage strategy are acceptable to the relevant authorities (The Council, Scottish Water and SEPA) (see Appendix 2).

8.4 The MGSDP Vision promotes above ground management of surface water and consequently, underground storage of surface water will be limited. The permissible underground storage volume will be based upon the requirements 1:200 year event.

**Table 1 Permissible percentage of Surface Water Storage Underground**

Site impermeable Area (%)	Underground Storage (%)
0 to 25	20
25 to 50	15
50 to 75	10
75 to 100	5

8.5 If it proposed to discharge surface water to a watercourse/waterbody, the Council will require the application to be accompanied by a Drainage Impact Assessment. Further details of the Councils DIA requirement are found within Section 10.

## 9. Scottish Water

9.1 Scottish Water is a publicly owned company answerable to the Scottish Government and the people of Scotland. Scottish Water has sole responsibility for providing water and waste water services to domestic customers and wholesale Licensed Providers, who service business customers.

### 9.2 Foul Drainage

Policy CDP8 states that all developments requiring a foul discharge should be connected to the public sewerage system. The Council recommends that all applicants consult with Scottish Water at the earliest possible stage of the design development to ensure that sufficient capacity is available for connection.

### 9.3 Business and Trade Effluent

For all business and trade effluent discharges the Council recommends that the applicant engages with an appointed Licensed Provider to Scottish Water. Further advice on Business and Trade Effluent discharges can be provided via the Scotland on Tap link below.

### 9.4 Surface Water Drainage

If it has been identified within the Surface Water Drainage Strategy Section 8 that surface water should be discharged to either a combined or a surface water sewer, the Council recommends early engagement with Scottish Water. The applicant will be required to provide evidence of consultation and approval in principle from Scottish Water for the surface water discharge prior to the determination of a planning application.

### 9.5 Public Water Connection

For any development which will require a new connection to the public water network, the Council recommends that the applicant engages with Scottish Water at the earliest possible opportunity. Prior to the

commencement of construction works the applicant will be required to provide evidence that an Offer of Connection has been made by Scottish Water.

#### 9.6 Planning Requirements

To demonstrate that the development can be effectively drained the applicant will be required to provide:

- a) Approval in principle
- b) Drainage Impact Assessment Application (if required)
- c) Scottish Water Drainage Impact Assessment Output (If required)

9.7 Prior to the commencement of development works the applicant will be required to submit to the Council a copy of the appropriate technical approval or consent to discharge to a Scottish Water asset.

#### *Reference Documents*

- [Sewers for Scotland 3](#)
- [The Sewerage \(Scotland\) Act 1968](#)
- [Scotland on Tap](#)

### **10. Drainage Impact Assessments (DIA) for a Watercourse/Waterbody**

10.1 The Council has a duty to manage impact of surface water discharges to a waterbody/watercourse from new development. Within the Surface Water Drainage Strategy (Section 8), the applicant will require to identify to which network surface water will be discharged. If it is proposed to discharge surface water to a waterbody/watercourse (open or culverted), there will be a requirement to carry out a Drainage Impact Assessment (DIA) in accordance with the Council's Flood Risk Assessment and Drainage Impact Assessment: Planning Guidance for Developers and the requirements of SEPA.

10.2 The Council's policy regarding surface water discharges to a waterbody/watercourse is that there should be no detriment to the overall flow rate, level or increased impact upon a 3rd party's property. Moreover, the maximum permissible discharge from any site will be not be greater than a 1 in 2 year Greenfield equivalent. The DIA must clearly set out pre- and post-development run-off rates to the relevant discharge point and any required mitigation measures to comply with the Council policy.

10.3 All modelling and calculations must be carried out in accordance with industry best practice and may be subject to scrutiny.

### **11. Development Affecting Watercourses**

11.1 River basin management planning (RBMP) is intended to protect and improve the water environment in a way that balances costs and benefits to the environment, society and economy. SEPA leads on the delivery of RBMP and the RBMP for the Scotland river basin district (covering Glasgow) is now available.

11.2 The RBMP sets out actions to: improve water quality; improve physical condition; improve access for fish migration; improve water flows and levels; and help prevent the spread of invasive non-native species, reflecting the requirements of the European Water Framework Directive (transposed into Scottish Law as the Water Environment and Water Services (Scotland) Act 2003).

11.3 The land use planning system can help deliver on these actions through the location and design of new development in, around or affecting water bodies. The content of the RBMP will be taken into account, as appropriate, when determining such development proposals.

- 11.4 In keeping with the MGSDP Vision that surface water should be managed above ground, the Council's policy is that natural watercourses should not be culverted. The only exception to this policy will be if the proposal is part of a flood mitigation scheme or if the proposal will significantly reduce flooding within the catchment. Where possible, new development should facilitate the removal of redundant structures and return water bodies to their natural state, as part of a multifunctional green network.
- 11.5 Development will not be permitted if there is a likelihood that the structural integrity of a culverted watercourse, which is still deemed necessary, may be endangered. Whilst not an exhaustive list, the Council considers that the following activities may give rise to such a situation:
- a) Construction of permanent structures over a culvert
  - b) Increased loading upon a culvert from foundations
  - c) Piling adjacent to a culvert
  - d) Increased loading upon a culvert from construction activities
  - e) Increase loading upon a culvert from alteration of ground levels
- 11.6 All existing access points/routes to watercourses must be maintained or repositioned in agreement with the Council's Flood Risk Management Team. The Council also reserves the right to request the construction of additional access points/routes to a watercourse to enable the Council to meet its statutory responsibilities under the Flood Risk Management Act (Scotland) 2009. This will include, but is not limited to, the following aspects:
- a) The construction of new manholes at a maximum spacing of 90m
  - b) The construction of new manholes at changes in direction
  - c) The construction of suitable access routes suitable for maintenance vehicles (vector units)
  - d) The provision of debris screens, when deemed necessary.
- 11.7 Subject to agreement with the Council's Flood Risk Management Team, and in compliance with the relevant legislation, a culverted watercourse may be diverted. However, the final form and alignment of any diversion will require to maintain existing pass forward flows or flows specified by the Council and have a self-cleansing velocity. In addition to the above hydraulic performance criteria, consideration must be given to the following points:
- a) Opportunities for day lighting
  - b) Removal of site specific flow restrictions
  - c) Improving access to the culvert for maintenance
  - d) Opportunity to create multifunctional green infrastructure, including enhancements to landscape, habitats and access/recreation
  - e) Removal of barriers to fish movement
- 11.8 Prior to any connections being made, construction works over or adjacent to a culverted watercourse being carried out, the applicant will be required to consult with the Council's Flood Risk Management Team regarding pre and post (CCTV) surveying and any monitoring requirements.
- 11.9 The Council policy is that maintenance of debris screens and open sections of watercourse within new developments will be carried out at monthly intervals by land manager/factor. The maintenance requirement will include (but will not be limited to) the following activities:
- a) Clearance of debris from screens
  - b) De-littering of embankments
  - c) Removal of debris from the watercourse channel
  - d) Grass cutting during the growing season

## 12. Sustainable Drainage Systems (SuDS)

12.1 The Council promotes the above ground management and separation of surface water from foul sewerage. Consequently, all developments which discharge or have the potential to be discharged to a waterbody/watercourse or covered by a SWMP will be required to provide the requisite levels of water quality treatment.

12.2 The requirement for water quality treatment by the use of a SuDS Train, is a key element of the Surface Water Drainage Strategy (Section 8). It is fundamentally important that the water management strategy is developed at the earliest stage of the design and the principles agreed with the Council and Scottish Water before the development layout is formalised.

12.3 In addition to the meeting the basic water quality treatment requirements, the Council will assess the integration of the SuDS features into the overall development design. This should be undertaken as part of a placemaking approach to the design of the new development and should be considered in conjunction with the City Development Plan's requirements for enhancing biodiversity, access to open space and the provision of sustainable travel routes as part of a multifunctional green network. In delivering such an approach, this Supplementary Guidance should be read in conjunction with the other Supplementary Guidance produced in support of the CDP.

12.4 The purpose of SuDS is to provide water quality treatment and the attenuation of surface water prior to discharge to a receiving network. Surface water is generally split into four categories:

- 1 **Residential curtilage water:** (private space) roofs, driveways, grounds and car parks
- 2 **Commercial curtilage:** (private space or not in public ownership) roofs, car parks, private public realm, private roads, footpaths etc.
- 3 **Publicly owned space:** roads, footpaths, public realm, parks.
- 4 **Publicly adopted roads**



*Enhanced Biodiversity - Cathcart Road SuDS*

12.5 While in-curtilage, commercial and private spaces will generally be the responsibility of Scottish Water or the property owner, the areas publicly adopted roads and public realm drainage will generally be the responsibility of the Council.

12.6 SuDS features such as ponds and basins should be overlooked to allow passive monitoring. They should also be accessible for maintenance purposes. In addition they should be fully integrated into the development's open space and movement strategy requirements.

12.7 SuDS facilities should be designed to provide water quality treatment and to convey flow associated with a 3.33% or 1 in 30 year event. Any flows which exceed the design capacity of the SuDS or conveyance

network require to be routed in a controlled manner to an appropriate location (i.e. a regional SuDS facility or a suitable designated space) prior to discharge. If a SuDS or other design exceedance storage area is to discharge to a waterbody/watercourse then the discharge must be comply with the Council’s no detriment policy and the approved Drainage Impact Assessment.

12.8 The Council sets out its detailed requirements for SuDS in residential areas in their [Design Guide: New Residential Areas](#). With regards to industrial, commercial, retail or mixed use development the applicant will be required to engage with the Council (DRS Flood Risk Management and Transport and Environment) and SEPA, at an early stage, to agree an appropriate way forward.

*Required Levels of Water Quality Treatment*

12.9 SEPA govern the requisite water quality treatment levels and further guidance regarding this matter can be found in SEPA’s [Regulatory Method \(WAT-RM-08\) Sustainable Drainage Systems](#).

12.10 The adoption or vesting of any SuDS feature will be dependent upon the construction details and appropriate arrangements for access, maintenance etc being in place.

12.11 Ownership maintenance and adoption are covered within Section 13.

*Reference Documents*

- [GCC Design Guide for new Residential Areas](#)
- [Sewers for Scotland 3](#)
- [CIRIA C753: The SuDS Manual](#)
- [Planning Guidance for Developers](#)
- [Greener Gardens – An Introduction to Raingardens for Developers](#)

**Table 2: SuDS Selection Matrix**

SuDS Feature	Levels of treatment	The Council (adopted roads)	The Council (public/open space)	Scottish Water	Private
Ponds	1	◆	◆	◆	◆
Basins	1	◆	◆	◆	◆
Wet swales	1	◆	◆		◆
Dry swales	2	◆	◆		◆
Permeable surfacing	1		◆		◆
Permeable surfacing with sub-grade storage	2		◆		◆
Bio-retention	1	◆	◆		◆
Filter drains	1		◆		◆
Green roofs	1				◆
Cellular storage	1				◆
Soakaways	1				◆

**13. Maintenance and Adoption**

13.1 At the outset of the design development, the applicant must give consideration to long-term ownership and maintenance responsibilities of the surface water drainage network. One of the key elements of this process is ensuring that all sustainable drainage systems (SuDS), which provide a statutory function are adopted or vested by a relevant in perpetuity body.

13.2 If the proposed surface water drainage network is to provide a singular function (i.e. roads drainage or in-curtilage), the Applicant will require to agree the ownership and maintenance arrangements with the relevant body and confirm these arrangements with the Council. Any

surface water assets to be constructed within the confines of a public road or public open space must be vested or adopted by either the Roads Authority or Scottish Water.

13.3 However, if the surface water network has a multiple function (i.e. in-curtilage and roads drainage), the applicant will be required to engage with both the Council and Scottish Water to agree the surface water drainage strategy, appropriate SuDS features and agree ownership arrangements. For the majority of applications of this nature the most effective way ensuring long-term maintenance of SuDS will be to enter into an agreement under Section 7 of the Sewerage Scotland Act 1968. Section 7 Agreements allow Scottish Water to enter agreement with the Roads Authority to allow the use of their sewer for the conveyance of water from the surface of a road or to use road drains to convey water from a premises.

Drainage Element	Maintenance Responsibility
Singular curtilage	Private
Multiple curtilages/commercial	Scottish Water/Private
Roads	Roads Authority

13.4 The Council and Scottish Water will require the applicant to demonstrate that there is continuous connectivity in public ownership surface water drainage networks. Consequently prior to final approval the applicant will be required to submit a marked up drainage plan, identifying all public SuDS, conveyance systems and agreed ownership.

13.5 If a proposed development has been deemed to be of significance to the City, The Council and Scottish Water will require the applicant to enter into Memorandum of Understanding (MoU) regarding long-term maintenance responsibilities. The MoU process has been developed to support innovative design which may fall out with the normal scope of the Roads Design Guide, Sewers for Scotland 3 or CIRIA C753.

13.6 The minimum qualifying criteria for the use of the MoU, are as undernoted:

- Retail (Class 1) 5,000 m2
- Commercial (Classes 4,5, and 6) 10,000 m2
- Housing developments (Class 9) with a masterplan in excess of 200 units
- Public realm or Civic amenity space greater than 2000 sqm

13.7 The Council will inform the applicant during pre-application discussion if the proposed development meets the criteria of the MoU and confirm the design and information requirements of the MoU.

#### 14. Natural Flood Management

14.1 The Council supports SEPA’s strategy for Natural Flood Management and its incorporation into the Local Flood Risk Management Plan. Due to the urban nature of the City, it is recognised that there may be significant challenges in delivering all elements of this strategy. However, the Council will support innovative solutions to incorporating natural flood management techniques into the urban environment and heavily modified waterbodies.

14.2 SUDS schemes (required for all significant new development), provide great opportunities to create ‘naturalised’ features (e.g. swales, basins, wetlands and ponds) aligned with other functions of green infrastructure. Costs can be reduced by routing surface water along a “Pipe Free” drainage system (i.e. where surface water is kept on the surface). In addition, repairs and maintenance are more straightforward. If carefully designed and constructed, these SuDS can provide multi-functional green infrastructure which is valued by residents and communities and which can enhance urban living environments. It can also help deliver enhancements for biodiversity, helping habitats and species adapt to climate change. The Council will expect SuDS schemes for new development to be designed and implemented as part of a placemaking approach, which delivers multi-

functional green infrastructure. Where appropriate, the Council will protect land that contributes towards sustainable flood management, including land identified by SWMPs for this purpose (including for new green infrastructure and facilities).

14.3 Great opportunities exist to deliver natural flood management solutions for development on greenfield sites. The Seven Lochs masterplan, brought forward as a multifunctional green infrastructure response to the Easterhouse/Gartloch/Gartcosh Community Growth Area, illustrates how water sensitive design and the principles of natural flood management, can be used to enhance new development, and the environment of the City generally, as part of a wider placemaking approach (see SG1).

#### **15. The Water Environment (Controlled Activities) (Scotland) Regs 2011 (CAR)**

15.1 To protect the water environment, SEPA regulates activities which may impact upon the water environment. CAR regulates the following activities:

- Pollution control regime
- Impoundment regime
- Abstraction regime
- Engineering Activities

15.2 The object of the CAR is to ensure compliance with the Water Framework Directive.

##### *Level of Authorisation*

15.3 In order to allow for proportionate regulation based on the risk an activity poses to the water environment, there are three types of CAR authorisation:

- General Binding Rules (GBRs)
- Registrations
- Licences

15.4 The Council advises that the applicants should consult with SEPA if their application may involve any of the above activities. This consultation should cover whether the proposal is compliant with the regulations and the level of Authorisation required.

#### **16. Impervious Surfacing**

16.1 To enable the Council to fulfil its statutory obligations under the Flood Risk Management (Scotland) Act 2009 and the Vision of the MGSDP, the use of impermeable ground surfacing will be limited. The aim of this policy is to reduce the peak run-off rates and overall volume of surface water being discharge from hard standing areas.

16.2 Permissible percentage or reduction as appropriate of impervious ground level surfacing:

- a) Within new build residential developments is limited to 10% per curtilage.
- b) Within new build commercial developments is limited to 30% of gross external area.
- c) Residential renovation projects: a 50% reduction of impervious surfaces is required until the new build target has been achieved.
- d) Commercial extensions/renovations: impervious surfacing within the development will be reduced by 30% until the new build target is achieved.

16.3 The maintenance of pervious surfaces will be a burden upon the property owner and will be covered by “a deed of condition”, to ensure effective long-term maintenance. There will be a requirement to agree the maintenance schedule for pervious surfacing with the Council and determine the appropriate maintenance body (factor).



## Appendix 1

Glasgow City Council – Pre-application Flood Risk Assessment Screening		
<b>Project Detail</b>		
Site Location:		
Project Name:		
Proposed Development:		
Planning Reference:		
Site Plan: Ref		
<b>Consultations Undertaken</b>	<b>Date</b>	<b>Response</b>
Glasgow City Council:		
Scottish Water:		
SEPA:		
Other:		
<b>Sources of Information</b>	<b>Reviews</b>	<b>Outcome</b>
Glasgow City Council:		
Historic flood records:		
SEPA Flood Maps:		
Other		
<b>Potential Sources of Flooding</b>	<b>Comments</b>	
Fluvial	Yes/No	
Pluvial	Yes/No	
Sewer	Yes/No	
Ground Water	Yes/No	
Tidal	Yes/No	
Flow Paths	Yes/No	
<b>Have any potential flood risks been identified?</b>	Yes/No	
<b>Is the proposed development site located within a functional flood plain?</b>	Yes/No	
<b>Comments</b>		
<b>Level of Protection Required:</b>		
<b>Applicant:</b>		
<b>GCC:</b>		
<b>SEPA:</b>		

## Appendix 2

Glasgow City Council – Surface Water Drainage Strategy		
<b>Project Detail</b>		
Site Location:		
Project Name:		
Proposed Development:		
Planning Reference:		
Site Plan: Ref		
<b>Consultations Undertaken</b>	<b>Date</b>	<b>Response</b>
Glasgow City Council FRM:		
Glasgow City Council RCC:		
Scottish Water:		
SEPA:		
Other:		
<b>Surface Water Discharge Network</b>		
Watercourse	Yes/No	
<i>Scottish Water Asset:</i>		
- Surface Water Sewer	Yes/No	
- Combined Sewer	Yes/No	
<b>Overview of Surface Water Drainage Strategy</b>		
Surface Water Drainage Network:		
Private SuDS Description:		
Public SuDS:		
GCC FRM:		
GCC RCC:		
Scottish Water:		
SEPA:		

FRM- Glasgow City Council, Flood Risk Management Team  
 RCC – Glasgow City Council, Transport Team (Roads Construction Consent)