

Technical guidance

To support you in making a Section 104 application

This document provides technical guidance to help with an application to have new sewers adopted under Section 104 of the Water Industry Act 1991.

All submissions for new sewers being offered for adoption should be made in accordance with the Sewerage Sector Guidance appendix C Design and Construction Guidance (DCG). If the proposed development contains a pumping station, the pumping station should be designed in accordance with DCG and the latest United Utilities Pumping Station Addendum document. Any design with sustainable drainage systems (SuDS) should be designed in accordance with CIRIA C753 'The SuDS Manual'.

1. Pre-development enquiry

We recommend that when you begin to plan your development, you contact us to agree your site drainage strategy. If assets are to be offered for adoption or you intend on draining the development to a surface water sewer you must complete a pre-development enquiry.

Early discussion with our Pre development Engineers can avoid delays in the sewer adoption process.

The team can also provide advice on requisitioning a new public sewer and how to divert a public sewer that might be in the way of your development.

All predevelopment enquiries should be made using the wastewater predevelopment enquiry form.

2. Site Investigation

2.1 Ground Conditions

The Principal Designer should undertake an appropriate level of ground investigation, so that all aspects of soil properties, geotechnology and hydrology are understood to inform the design process. The site should be assessed for variations in soil conditions, areas of filled land, preferential underground seepage routes, and variations in the level of ground water. The proposed design should show how you have investigated and mitigated any risks that have been identified and a copy of the ground condition report is to be provided to us, the report (including but not limited to water quality, contamination, ground failure and the effects of adjacent developments).

As ground conditions across the land ownership boundary can vary, we would recommend that if the proposal includes SuDS that you complete a targeted geological assessment to support the proposed location for the SuD.

2.2 Existing services

The need to cross existing services (both chartered and unchartered) is considered to be a foreseeable challenge in making a sewer connection and the presence of existing services should be considered early within the design process to ensure you can make a connection as proposed. For this reason, it is unlikely that the presence of existing services alone will provide justification to allow agreement of an alternative mode of connection.

2.3 Location and maintenance considerations

Sewers for adoption are usually located within highways or areas of public open space. For assets not located within the highway the Principal Designer should consider future maintenance, and provide suitable access provisions. The location of new or existing sewers within new developments should not impede our ability to carry out our basic maintenance duties.

2.4 Proposals with reduced levels

Surcharge levels of existing sewers should be considered when planning a development, particularly in scenarios where existing site levels are to be reduced. Consideration should be made to the proposed manhole cover levels and finished floor levels in relation to the existing sewer cover levels. Introducing cover levels that are lower than the existing sewer network can in certain scenarios increase flood risk on new developments and should be avoided. Further network modelling work may be required to establish the impact on new developments where cover levels are substantially lower than the existing network which may take additional time.

3. Surface water

3.1 General

The discharge of surface water to the public sewer should only be considered where SuDS (Sustainable Drainage Systems) have been discounted; evidence to confirm that infiltration or discharge to watercourse is not possible will be required.

Any new adoptable systems should be designed to achieve no surcharging in a design storm (1 in 2 year event), and no flooding from any part of the drainage system in a 1 in 30 year event. The design of the storage should be on a basis of the worst duration for a 1 in 30 year return period, the capacity may need to be increased further depending on the flood risk outlined by LLFA and planning conditions.

If a connection to the public sewer is permitted, we will usually ask for the discharge to be limited and therefore surface water flows may need to be stored on site.

Combined storage facilities will not be adopted. The developer will need to provide a system whereby surface water flows are stored before combining with any foul flows.

3.2 Discharge rights

Any adoptable sewers discharging to a watercourse or SuDS will require a protected strip which includes our rights to discharge and must be attached to the deeds of the land/property. This deed will also protect our rights of access to the public sewer. The protected strip or 'easement' is normally a minimum of 3 metres either side of the sewer but can differ according to size and depth of the sewer (see our easement local practice). The easement will need to be entered into and completed on or before completion of the S104 Agreement and should be at no additional cost to us.

The developer is responsible for obtaining appropriate approval to construct the outfall structure along with any necessary discharge consents. We will require visibility of this to support your application.

3.3 Dealing with exceedance

Exceptional weather events are becoming more common. A copy of the flood routing plan is required to support your application, showing that the layout and landscaping of the site aims to route water away from any vulnerable property and avoid creating hazards to access and egress routes into the Development, in accordance with the National Planning Policy Framework. This explains that no flooding of properties should occur as a result of a one in 100 year storm event (including an appropriate allowance for climate change).

We do not have to adopt storage to cater for exceedance events with a return-period in excess of 30 years as this can place additional burden on our maintenance activities. If you feel it is justified to effectively deal with exceedance within your adoptable network, you can make an application for us to consider the adoption of the additional storage. We will look at these requests on a site by site basis. Options for flow attenuation should be discussed with the Developer Services team as early as possible.

3.4 Sustainable Drainage Systems

We will consider the adoption of SuDS meeting the definition of a sewer (see the DCG for detail on the types of adoptable SuDS).

We do not adopt property level SuDS.

If you need a sewer network adopting that is served by an communal infiltration system this must be offered for adoption alongside the sewer network.

Any SuDS feature offered for adoption will need to meet the requirements of the DCG and the CIRIA SuDS manual.

3.5 Discharge to watercourse / existing waterbody

In order to manage on-site flood risk for a development site, the surface water outfall level must be considered and include an appropriate freeboard allowance.

To comply with the guidance within CIRIA, the Principal Designer will need to demonstrate that any proposed surface water outfall level is suitable to effectively drain the site. The impact of potential downstream constraints must be considered within the design process, for example consideration of high water levels in the receiving watercourse.

Water level information will need to be provided at the point of surface water discharge. We consider it to be good practice to determine the 2, 10 and the 30 year water level for established waterbodies.

For less established waterbodies, for example ditch systems, we recognise that water level information is not always available. In such scenarios the Principal Designer should provide a detailed explanation with supporting evidence, (for example; survey information) to demonstrate how the proposed outfall level will ensure the site can be effectively drained.

It is recommended that you discuss your proposals with us as early as possible and agree a suitable invert level for the outfall pipe as this can be critical to the overall site drainage design.

In most scenarios, we will request a low maintenance non return valve to be installed.

For simulations to satisfy protection against flooding, a freely discharging outfall may only be used where the outfall level is confirmed to be set above the 30 year TWL with evidence to support this.

For discharges to culverted watercourses, the outfall should be set to achieve a soffits level connection. We will require hydraulic simulations for a 1 in 30 year storm taken against a surcharged outfall level of 1 metre above the soffit level of the receiving culvert, unless accurate modelling information can be supplied.

3.6 Discharge to new SuDS feature

For outfalls to storage ponds, basins and swales; an appropriate freeboard should be provided. To allow the adoptable sewers to freely discharge in the design storm event and to prevent siltation of upstream pipework, we typically accept the outfall pipe to be set above the design storm water level. This will prevent the SuD surcharging back into the sewers.

Bed level discharges to ponds, basins or swales will not be accepted. No outfall should be drowned in normal conditions.

3.7 Discharge to sewer

For discharges to public sewer, the outfall should be set to achieve a soffits level connection.

During a 1 in 30 year storm, the existing public sewerage network will rarely accept free discharge from a new development. Therefore we will require hydraulic simulations for a 1 in 30 year storm taken against a surcharged outfall level of 1 metre above the soffit level of the receiving sewer, unless we stipulate otherwise (based on more accurate modelling information). For information on how to connect to the public sewer, please see our 'Sewer connections guide' on the website.

If you are offering new sewers for adoption, you do not need to complete a 'Part 1 - Application to connect to the public sewer'; however your contractor must still apply for permission to make the connection. This is using the form 'Part 2 - Request for permission to work on the public sewer' which is available on our website. Please note this will not be processed by our connections team until the scheme has been 'technically accepted' and full payment received.

No work can be carried out on the public sewer without written approval from United Utilities prior to the start of the work.

About us

United Utilities is the North West's water company. We keep the taps flowing and toilets flushing for seven million customers every day. From Crewe to Carlisle, we work hard behind the scenes to help your life flow smoothly.