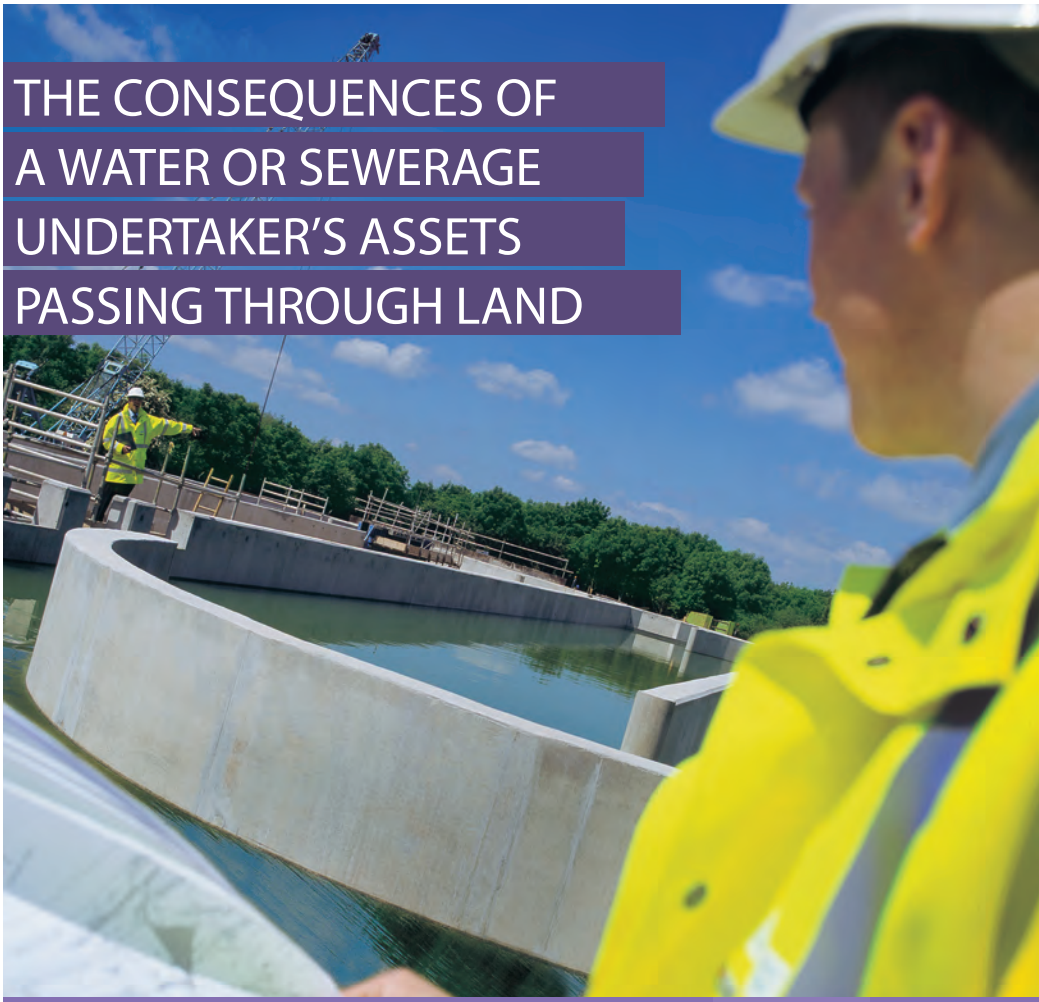
THE CONSEQUENCES OF A WATER OR SEWERAGE UNDERTAKER'S ASSETS PASSING THROUGH LAND



UNDERSTANDING
A VALUABLE RESOURCE

SEVERN TRENT

WATER SUPPLY PIPES

Consistent with their duty under the Water Industry Act, a water undertaker must develop and maintain a water supply distribution system within its area. This distribution system encompasses those parts of the water cycle from the production and treatment of water through to its delivery to the customers tap.

The distribution of water through water supply pipes can be usefully subdivided into two parts.

- Trunk mains which convey water from a water source of supply to a water treatment works, from a treatment works to a service reservoir or from service reservoir to service reservoir

- Distribution mains which convey water through the local pipe network from service reservoirs to the consumer

Service reservoirs are receiving tanks for treated water, and serve three main purposes:

- To dampen short term customer demand peaks

- To provide contingency storage

- To compensate for variations in water quality

Trunk mains are usually pipes of a significant size designed to carry substantial volumes of water. It is not normal for trunk mains to have branch or service connections from them. Such mains will have been laid as major schemes with almost direct pipe runs. It follows that the water undertaker or a preceding Authority will have used its powers to gain access to land to lay these pipes. It is unusual for these pipes to be laid in the street. The distribution mains system comprises a network of smaller pipes usually arranged in zones allied to a specific service reservoir and valved such that each is divisible into smaller zones for the purposes of leakage control or district metering.

The distribution network is similar to most other utility networks in that the pipes will normally be laid in the street or similar publicly accessible land. Properties will be connected to the distribution network through service pipes. Depending on the length of pipe, ownership of a service pipe is usually split between the undertaker and the property owner. The water undertaker is normally responsible up to the boundary of the property where it then becomes the responsibility of the customer.

The public map of waterworks as defined by S200 of the Water Industry Act, 1991 is regarded as the definitive map of public water supply pipes. This map only shows the pipes vested in the water undertaker and not associated service pipes to individual properties.

New pipes are laid in private land by issuing statutory notices to land owners and occupiers under the powers contained in section 159 of the Water Industry Act 1991. Works in private land are carried out in accordance with an OFWAT approved code of practice. Following service of notice, water undertakers normally rely upon their statutory powers to keep and maintain pipes in private land and formal deeds of grant of easement are largely considered to be unnecessary. When new pipes are laid, this position is secured by ensuring that owners and occupiers are provided with as-laid plans indicating the width of statutory protection that is required. This is called the Protected Strip Width and the details are covered below.

The following widths are generally regarded as being adequate to protect water supply pipes:

- Pipe sizes below 300mm – Minimum width 5 metres
- Pipe sizes 300mm and above up to and including 1000mm a minimum of 8 metres for water mains
- Pipe sizes above 1000mm according to need and depth

The decision on the precise width to be adopted will be made by the design engineer and needs to take into account, in particular, the following:

- The size and depth of the pipe and the need to protect its structural integrity from loading
- Unless circumstances are such that the only means of providing such protection is by structural protection or reinforcement, the surface width of the protected strip should;
  - be that subtended by angles of 45 degrees from the trench invert
  - be sufficient to include all thrust blocks and associated ground support to afford passive pressure
- be outside any slip circle induced by adjacent ground removal
- encompass any chambers containing apparatus and allow any necessary ground support and flotation protection. This should also cover any by-passes installed.
- Protection against alteration in ground levels, tree planting or building over the pipe
- The need for access to the pipe for routine inspection and maintenance. The working space for cleaning and re-lining will depend on the technique adopted

A protected strip need not accommodate the full working width for the original pipe laying, future re-laying or duplication. If duplication is to be allowed for (because future modelling suggests it might be required), an additional 2.5 metre width should be sufficient in the case of pipe sizes below 300 mm giving a total width of 7.5, metres whereas for pipes between 300 mm and 1000 mm a minimum width of 15 metres should be protected. However, extra width may be needed dependent on the design and orientation of thrust blocks etc. needed for the duplication.

The protected strip width must allow for washouts and chambers and any associated revetment of a watercourse.

The protected strip width need not, as such, take account of the working area likely to be required in the event of a future burst but should take into account the likelihood of damage to surrounding or adjacent buildings, particularly houses.

Building over or near water supply pipes

It follows from the above that there is a general prohibition on the construction of building over or near to water supply pipes that are owned by a water company. For most people in a residential property this is not usually of concern as normally the only water pipe present on their property will be their own service pipe. In a limited number of circumstances they might also have a neighbours (private) service pipe running though their land. Having said this to be absolutely certain that there are no water supply pipes within a property boundary reference should be made to the map of waterworks through a CON29DW Drainage & Water Enquiry. Each year there are small numbers of instances where properties or extensions are discovered to have been built over water mains supply pipes which run through private land giving rise to the need to divert the pipes at the cost of the property owner.

However for developers the consequences of a water supply pipe running though land can be significant. As defined in s185 of the Water Industry Act the owner can serve notice for works to be carried to enable development to take place — but this will be at the developers cost.

PUBLIC SEWERS

Sewerage undertakers have a duty under the Water Industry Act to provide, improve and extend a system of public sewers (for both domestic and trade flows) so as to cleanse and maintain those sewers (and any lateral drain) to ensure that the area that they serve is effectually drained. There is also a duty to make provision for the emptying of those sewers, normally through sewage treatment works or where appropriate through discharges direct to watercourses.

Sewerage systems tend to be local and as the contents are generally not being forced under pressure to their final destination they are laid to take advantage of the passive impact of gravity on the contents. This means that they will tend to follow the topography of the land in which they are laid, and as a result, may not always follow the expected route and the likelihood of public sewers passing through private land is much greater. This is further compounded by the habits followed by developers to connect properties to a sewer that runs along the rear of properties where kitchens and bathrooms are typically situated. For many urban properties there is a high probability that a public sewer will be present within the property boundary.

Sewerage, sewers, drains and sewage

The terminology and definitions around waste water drainage is a little more extensive than for water supply.

The network of sewers is called the sewerage system and the wastewater carried by it is called sewage or foul drainage. The pipe serving a single property is a drain. Where two or more drains combine to jointly serve more than one property then these then become sewers. Lateral drains, as newly defined by the Water Act 2003, are that part of the drain that lies between the curtilage of the property that it serves and the public sewer.

‘Sewers can be either public or private. Public sewers are those which have been positively stated as such by the sewerage undertaker or a preceding authority either because they were built by that Authority or they have been adopted under powers exercised by that Authority or undertaker. Following the 2011 Private Sewer Transfer, the majority of sewers are now the responsibility of the Sewerage Undertaker. The public sewer map as defined by S199 of the Water Industry Act holds records of known public sewers, storm water overflows and disposal mains. A minority of sewers remain private — i.e. they are not maintainable at the expense of the sewerage undertaker. This includes sewers that have not yet been adopted by the sewerage undertaker even if a Section 104 Agreement is in place. This includes sewers that have not yet been adopted by the sewerage undertaker even if a Section 104 Agreement is in place.

Private sewers constructed and serving properties built before October 1st 1937 generally became public sewers under the provisions of the Public Health Act 1936. The majority of private sewers constructed after this date became public under the Water Industry Act (Schemes for Adoption of Private Sewers) Regulations 2011. Not all of these are shown on the public sewer maps.

Sewerage systems can be either separate or combined.

Separate sewers are typically associated with post war developments. The foul sewerage and surface water sewerage networks are separated so that foul sewage from internal drainage systems such as kitchens and bathrooms is collected and conveyed for treatment and disposal at a suitable treatment facility. Surface water such as run off from impermeable surfaces associated with buildings is collected in a separate network for discharge into the environment. This arrangement is now established practice for the construction of sewerage systems. Controls are required to maintain the integrity of these networks. For example if foul sewage is discharged to a surface water sewer then this is an offence and will result in a polluting discharge to the environment. Conversely if surface water is discharged to a foul water sewer then the additional hydraulic load could result in flooding — which could be particularly unpleasant.

Combined systems are usually older and reflect the history of development of residential areas. With these systems both foul sewage and surface water is discharged to a single combined sewer in which it is then conveyed to a suitable treatment facility.

A further type of sewer is often noted on plans — a rising main. This is a means of conveying sewage from a low point to another part of the sewerage network where it can continue its journey by gravity. These are pumped systems and the contents will be under high pressure. These are usually laid in near straight lines across land and will need significant protection with regard to the prevention of building over or near to such pipes.

Similar arrangements exist as for water supply pipes as described earlier. New pipes are laid in private land by issuing statutory notices to land owners and occupiers under the powers contained in section 159 of the Water Industry Act 1991. Works in private land are carried out in accordance with an OFWAT approved code of practice. Following service of notice, sewerage undertakers normally rely upon their statutory powers to keep and maintain pipes in private land and formal deeds of grant of easement are largely considered to be unnecessary. When new pipes are laid, this position is secured by ensuring that owners and occupiers are provided with as-laid plans indicating the width of statutory protection that is required. This is called the Protected Strip Width and the details are covered below

The decision on the precise width to be adopted will be made by the design engineer and is more complex than that for water supply pipes and so cannot be readily summarised although the principles are similar.

Building over or near sewers

Because of the increased likelihood of homeowners wishing to build over or near sewers the guidelines for maintaining a protective strip may be varied at the discretion of the sewerage undertaker. Building Regulations published in 2000 required that the sewerage undertaker be consulted by the local authority for all building over or near sewer situations. Sewerage undertakers have tended to take a permissive attitude to allowing individual schemes to progress for domestic developments which comprise of extensions to existing houses. These usually require the homeowner to carry out an investigation of the state of the sewer and remedy any defects at their expense prior to construction. Construction itself is strictly controlled to protect the sewer from damage during the building or subsequently. Homeowners are usually required to indemnify the sewerage undertaker against any losses that they might incur as a result of either a failure of the sewer or the need of the undertaker to gain access to the sewer as part of their carrying out their statutory functions.

The following widths are generally regarded as being adequate to protect sewerage pipes:

- Pipe sizes below 300mm — Minimum width 5 metres

- Pipe sizes 300mm and above up to and including 1000mm a minimum of 8 metres for pumped rising mains

- Pipe sizes above 1000mm according to need and depth

WATER INDUSTRY OBLIGATIONS AND POWERS

Statutory framework for water and sewerage undertakings.

Prior to the privatisation of the water industry in 1989, responsibility for most aspects of water management rested with one of the 10 regional Water Authorities who had quite wide ranging responsibilities, or with one of around 30 Water Supply companies who had a limited responsibility for the supply of water to a particular area. Following privatisation these responsibilities were split and certain environmental regulatory responsibilities were removed from the Water Authorities and were placed with the National Rivers Authority (now the Environment Agency).

The Water Act 1989 enabled the privatisation of the industry through the creation of 10 Water and Sewerage Companies, the creation of the National Rivers Authority (Environment Agency), the establishment of the Drinking Water Inspectorate and the new function and powers of the Water Services Regulation Authority (renamed under the Water Act 2003 from the previous Director General of Water Services (OFWAT).

Each of these bodies have a distinct role in the management of water resources and the aquatic environment in England and Wales.

Water and Sewerage Undertakers have a general duty to:

- Develop and maintain a water supply system in its licence area, to provide a supply of water for domestic or non domestic purposes and to ensure that the supply is wholesome and fit for human consumption;
- Provide, improve, extend, maintain, cleanse, empty and maintain a system of sewers and sewage disposal treatment works in its licence area as well as a duty to provide a public sewer to be used for drainage of premises for domestic purposes and the discharge of trade effluent

The Environment Agency has the following functions:

- Land Drainage
- Flood Defence
- Water Resource Management
- Water Quality (environmental)
- Fisheries
- Conservation/Amenity/Recreation and Navigation

The Drinking Water Inspectorate was established as a part of the DoE (now DEFRA) with the principal task of ensuring that water undertakers are fulfilling their statutory obligations for the supply of wholesome drinking water. This is done through a series of technical audits and compliance monitoring with Water Supply (Water Quality Regulations) 1991.

The Water Services Regulation Authority has two primary duties and in performing these must take into account several objectives. The primary duties are:

- To ensure that the water and sewerage functions are carried out throughout England and Wales;

- Undertakers are able (in particular, by securing a reasonable return on their capital) to finance the proper carrying out of those functions

- Subject to these primary duties the Water Services Regulation Authority must exercise and perform it's powers and duties in the manner it considers best calculated to:

- Protect the interests of customers and potential customers in respect of charges (having particular regard to customers in rural areas);

- Protect the interests of customers in terms of the quality of service;

- Promote economy and efficiency on the part of undertakers in the carrying out of water and sewerage functions;

- Facilitate effective competition between persons holding or seeking appointments as water or sewerage undertakers;

- Determine certain kinds of disputes between companies and customers

Following the establishment of these bodies through the Water Act the primary legislation for the Water Industry is the Water Industry Act 1991 which consolidated the relevant legislation.

A number of additional Statutes have been enacted since the 1991 Act that have moved the legislation of the water industry on. Amongst these are the Environment Act 1995, which extended the duty to provide a sewer under s98 of the 1991 Act to an obligation to provide sewers where the current (private) provisions are inadequate (s101A) and the Water Act 2003, which included new powers for a sewerage undertaker to adopt "lateral" drain pipes when adopting a sewerage network under s104 of the 1991 Act or when providing requisitioned or s101A sewers and also provided a framework for the "self lay" of water supply pipes by developers for subsequent adoption by the water undertaker and the Water Industry (Schemes for Adoption of Private Sewers) 2011, which transferred the majority of private sewers and lateral drains into public ownership.

Water and sewerage undertakers powers in relation to land

Consistent with their duties to provide water and sewerage services within their licence area undertakers have certain rights with regard to the development of these services and the continuing maintenance of their apparatus. These are covered in Part VI of the Water Industry Act, 1991 and are summarised below.

s.155 Allows an undertaker to purchase compulsorily any land required by the undertaker for the purposes of, or in connection with, the carrying out of their functions, subject to authorisation by the Secretary of State.

s.156 Prevents an undertaker from disposing of land or an interest in land without the consent of the Secretary of State. Any consent will be subject to conditions and will have regard to the impact of the disposal on subsequent use of the land

s.158 Confers the power to lay relevant pipes for the carrying out of its functions in, under or over any street (and keep that pipe there). There is also the power to inspect, maintain, adjust, repair or alter any pipe in, under or over any street.

This section also allows for the erection of street notices indicating the position of the apparatus. This can be onto any building or fence abutting the street.

Where a water undertaker uses these powers to carry out works on a service pipe owned by a third party then the undertaker can recover its reasonable costs.

s.159 Confers the power to lay relevant pipes for the carrying out of its functions in, under or over any land which is not a street (and keep thatpipe there). There is also the power to inspect, maintain, adjust, repair or alter any pipe in any such land.

These powers are only exercisable after reasonable notice (at least three months for new pipes but 21 days if requisitioned) of the proposed exercise has been given (except in an emergency where shorter notice periods can be given).

Note — Other Undertakers — the gas, electricity and telecoms utility suppliers all have powers to lay their apparatus within streets but are more restricted than water and sewerage undertakers in that they need to come to private agreements with regard the laying of their

apparatus in, under or over private land. They do, however, have CPO powers which they can utilise should they be unable to reach an agreement with a private landowner.

Water and sewerage undertakers also have powers to carry out works or to enter land for a number of other purposes consistent with their statutory functions. These are detailed below:

s.168 Provides for any person designated in writing to enter land for the purposes of carrying out works described above. This includes carrying out relevant tests such as experimental borings or taking of water or effluent samples.

Entry must be after serving a reasonable notice on the occupier.

s.170/1 Allow for designated persons to enter premises to investigate the misuse or waste of water or to ascertain if there is any contraventions of any of the relevant sewerage provisions it is the duty of the undertaker to enforce or to enter premises to carry out works authorised by the relevant sewerage provisions.

s.172 Subject to notice, confers powers to persons designated in writing to enter land for the purpose of inspecting relevant meters for the supply of water to, or discharge of effluent from a premises.

Sections 174–178 of the Water Industry Act provide protection to a water and sewerage undertakers assets and the carrying out of its functions to protect against fraud and to recognise the significant public health issues that may occur if supplies are contaminated or sewage is not properly contained and treated. Offences under these sections carry a criminal penalty.

s.174 Specifically prohibits the interference, modification, or attachment to apparatus vested in the water undertaker without the consent of the undertaker. As well as allowing for criminal penalties, provisions exist within this section for the water undertaker to recover its costs in remedying the situation.

This section does allow for actions to be taken in an emergency to prevent loss or damage.

s.175/6/7 These sections provide protection for meter installations and provide the mechanism in which consumers and the water undertaker can engage to resolve disputes over metering. There is also provision for the water undertaker to recover its costs as a result of interference with a meter or investigation into the operation of a meter. The disputes procedure provides for referral to the Director General if necessary.

s.178 Makes it an offence to obstruct any person acting in the execution of the relevant sewerage provisions of this Act.

Sections 179–191 of the Water Industry Act provide supplementary provisions with respect to an Undertakers powers. These are summarized below:

s.179 Covers the circumstances that allow for pipes to be vested in the water and sewerage undertaker.

s.180 Confers on the undertaker the obligation to minimise the impact of its works and pay compensation.

s.181 Details the procedures for complaints following the exercise of works powers on private land — in particular the involvement of the Director General.

s.182 Requires the undertaker to develop a code of practice for exercising its powers for works in private land, and to submit these to the Director General for approval. The Director General has the power to add modifications to this code of practice or to withdraw approval for the code of practice.

s.183 Confers protection on other undertakers activities.

s.184 Allows other undertakers to carry out, at their expense, works on sewers to facilitate their functions.

s.185 Allows the owner of land to serve notice on a water and sewerage undertaker to carry out works to enable the development of that land unless the request is unreasonable. The water and sewerage undertaker can recover their costs in carrying out these works.

s.186/7 Prevents sewerage undertakers from exercising their powers to the detriment of flood defence works or within tidal waters.

s.188/9 Covers minerals rights and planning controls that would apply as a consequence of the exercise of powers under this Act i.e. the undertaker must still comply with the relevant Acts.

s.191 Requires a water undertaker that is developing a reservoir in Wales that is not for the benefit of the local community, to provide for recreational activities on or around the reservoir.

The duties of a water undertaker to provide water supplies

Part III, Chapter II of the Water Industry Act, 1991 places a duty on a water undertaker to provide a water main for domestic purposes when requested to do so by the owner of a premises, the occupier of a premises or any local authority. The water undertaker must also provide a water main in accordance with New Town developments and urban development plans. These provisions allow for a water undertaker to recover its costs in providing the requisitioned main (subject to off-setting income in a prescribed manner). The costs in providing a requisitioned main can also include the cost of re-inforcing the network to handle the additional required capacity.

The methods by which new water supplies can be provided was amended by the Water Act, 2003. These options are summarised below:

Relevant Deficit or Discounted Aggregate Deficit - payment calculation options when water undertaker is providing a requisitioned supply

Self Lay — where the developer or its contractor is laying a pipe for subsequent adoption by the water undertaker

The Act prescribes the self-lay approach including the basis of charging (which aligns to requisitioning) and the payment of an Asset Value on adoption of the water main.

A Code of Practice and standard self lay agreement have been developed by the industry in conjunction with developers representatives and OFWAT.

A water undertaker must also provide adequate supplies for non domestic uses – provided that in doing so it can recover its costs and the general duty to provide supplies for domestic use is not compromised. A water undertaker must also provide adequate provisions for fire hydrants – usually as agreed with the Fire Authority. Occupiers of premises that may require additional fire hydrants may request this at their cost.

Chapter III provides for the quality and sufficiency of water supplies. Sections 67-69 define the position regarding water quality and Section 70 makes it an offence to supply water unfit for consumption. Sections 71-75 provide protection to the water supply network, and make it an offence to misuse, waste or contaminate public water supplies.

Local Authorities have duties defined under Sections 77-86 whereby they must take steps to satisfy themselves that the water undertaker is performing its functions and also undertake controls of private water supplies. In both instances the Local Authority can require the water undertaker or the owner of the private supply to carry out remedial works.

The duties of a sewerage undertaker to construct or adopt sewers and other miscellaneous provisions

Part IV, Chapter II of the Water Industry Act, 1991 places a duty on a sewerage undertaker to provide a sewerage network for domestic purposes when requested to do so by the owner of a premises, the occupier of a premises or any local authority. The sewerage undertaker must also provide a sewerage network in accordance with New Town developments and urban development plans. These provisions allow for a sewerage undertaker to recover its costs in providing the requisitioned sewer and the cost if necessary of improving the network to meet this additional demand.

With new developments, prior to April 2012, a developer would provide the sewerage network within the development and then work with the sewerage undertaker towards adoption. This was usually achieved through Section 104 of the Water Industry Act. This provided that a sewerage undertaker may enter into an agreement with the developer to adopt the sewers and sewage disposal works subject to them being constructed to an agreed standard.

Following the introduction of Section 42 of the Flood and Water Management Act in April 2012, Section 104 agreements are now mandatory for all new sewers connecting to the public sewerage network. Water Companies are also obligated to adopt sewers at the end of the process.

There does exist the provision under Section 102 of the Water Industry Act for a sewerage undertaker to adopt existing sewers or sewage disposal works – often this is done following a request from the residents of a particular area. Section 105 provides an appeals mechanism if there are disputes under these Sections with ultimate reference to the Secretary of State if necessary.

Section 105A provides for regulations to be made which provide for the adoption of private sewers by sewerage undertakers

The above refers to the provision of sewerage services for domestic use. There is a general provision under Section 106 of the Water Industry Act that connections can be made to the public sewerage network for domestic use. Such connections must be with the consent of the sewerage undertaker and it is an offence under Section 109 of the Act to connect without this consent.

The public health provisions of this Act are taken very seriously and there are further offences covered in Section 111 which expressly forbid the discharge of certain substances into the sewer which may be dangerous, cause a nuisance or impair the proper function of the sewerage network and sewage disposal facilities. Offences under this Section can lead to imprisonment upon conviction.

Sections 112-114 provide for the sewerage undertaker to require repair, upgrading or replacement of private drains or sewers. In certain circumstances this will be at the undertakers cost.

Section 115 allows for Agreement between the undertaker and relevant highway authority for the use of highway drains for the carrying of surface water or the use of public sewers to convey surface water from adopted highways.

Trade Effluents are specifically excluded from the general right to connect to the public sewer except with the specific consent of the undertaker. Sections 118-141 deal with the procedures by which a consent can be applied for, subsequently granted and the appeals mechanism

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