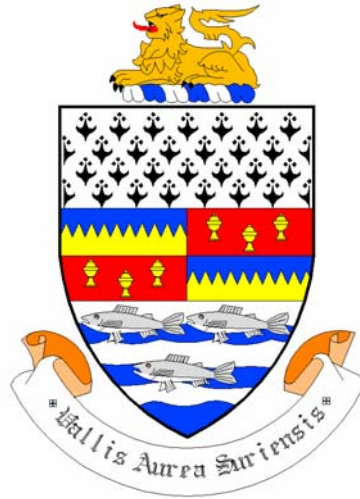


SOUTH TIPPERARY COUNTY COUNCIL

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WATER SERVICES SECTION

FOUL AND SURFACE WATER REQUIREMENTS

**A guide to completing a planning application
for Significant Developments.**

DRAFT

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Revision 1.0

The following document has been developed to assist Developers in completing a planning application for a significant development in regard to South Tipperary County Councils (STCC) Foul and Surface Water requirements. The statutory requirements to complete a valid planning application are outlined in the "Planning and Development Regulations, 2001" (S.I. No. 600 of 2001).

These guidelines are subject to change without notification. Prior to submitting a planning application it is recommended that applicants consult with the Water Services Section to confirm their requirements.

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1.0 GENERAL REQUIREMENTS

- The Developer must consult with the Water Services Section as early as possible prior to submission of any planning application, in order to obtain relevant drainage information and to ascertain drainage requirements.
- The landscape design must take cognisance of the drainage layout in order to protect the structural integrity of the drainage pipes from damage from plant roots.
- Provide all necessary documentation regarding wayleaves to the satisfaction of the Council's Water Services Section.
- The developer must make provision to service adjoining lands if those lands may be deemed landlocked by the construction of the proposed development.
- All significant developments to submit, prior to commencement of developments, details of a Sediment and Water Pollution Control Plan, for the agreement of the Water Services Section.
- The Local Sanitary Authority must be notified at least 10 days in advance of the commencement of any proposed drainage works
- All works to comply with the following publications:
 - Greater Dublin Strategic Drainage Study (GSDSDS) - 2005
 - Dublin City Council's "Code of Practice for Drainage Works V6.0"
 - Department of Environment & Local Government's "Recommendations for site Development Works for Housing Areas", November 1998
 - Waste Water Treatment Plants shall be designed, constructed and located in accordance with: *Treatment Systems for Small Communities, Business, Leisure Centres and Hotels* as published by the EPA
 - "Sewers for adoption – A Design and Construction Guide for Developers" 6th Edition as published by Water UK

Where conflicts arise between the above publications, clarification should be sought from the Water Services Section.

2.0 DESIGN CALCULATIONS

- South Tipperary County Council have implemented the Greater Dublin Strategic Drainage Study(GSDSDS) in its own administrative area. The Councils requirements for all new drainage works in the County are contained in the GSDSDS Regional Drainage Policies – Technical Documents. Volume 2, New Developments, chapters 4 to 5 are particularly relevant to developers:
 - Volume 2 – New Developments
 - Chapter 4 Sustainable Drainage Systems
 - Chapter 5 Foul Drainage Design
 - Chapter 6 Stormwater Drainage Design
- On foot of the GSDSDS the "Regional Code of Practice for Drainage works" has been published and is based on best management practice derived from international experience. This document sets out the Councils requirements in a concise format for day-to-day use.
- Design calculations are to be in accordance with the design criteria set out in Section 5 & 6 of the GSDSDS.
- Submit summary report on both the foul and surface water calculations, outlining the conclusions made.
- Where assumptions are made in relation to design calculations you are required to submit details of how, where and why these assumptions were made. It is not sufficient merely to submit design calculations independent of this.

3.0 DRAWINGS

- Submit drawings in accordance with section 23 of the “Planning and Development Regulations,2001” Plans should clearly show sewer lines, manholes, invert & cover levels etc.
- Submit proposed longitudinal sections of the Foul & Surface Water sewers to include; the chainage, pipe type, pipe strength, pipe diameter, pipe gradient, the invert and cover levels of the manholes, and to include the invert level of the existing manhole at the outfall.
- Plans of proposed Waste Water Treatment Plants shall clearly show the plant layout and compliance with the buffering zones as detailed in Table 4 of the EPA’s “Treatment Systems for Small Communities, Business, Leisure Centres and Hotels”.

4.0 FOUL SEWER NETWORK

- The Council’s preferred option is to only permit gravity foul sewers, and all reasonable effort must be made by the Developer to facilitate this. Only in exceptional circumstances will pumping stations be acceptable. Please provide details of the various options that have been explored to connect to the public sewer via gravity, indicating why a pumping station has been preferred over same.
- If the Developer proposes to connect to a private sewer not yet taken in charge, and which may or may not be on the public road, the Developer should note the following
 - Section 4.1.8 of Dublin City Council’s “Code of Practice for Drainage Works V6.0 states”
*The Developer is responsible for establishing the adequacy of any existing private drainage to which they propose to connect their development. The Developers attention is drawn to the fact that it is their responsibility to obtain all necessary permission from the owners of the private drainage system to which it is intended to connect to.*This written permission should accompany the application.
- The Council requires that any site greater than 1ha shall make provision for the monitoring of discharges from the development in line with Section 5.3 of the GSDSDS. Submit details with regard to same.
- The use of under sink macerators/food grinders for processing and discharging waste food to the drainage system is not permitted
- In areas where material is stored, such as bins, waste compactors, etc that can cause pollution: the immediate area must be contained, covered and drained to the foul sewer

Prior to the publication of the GSDSDS foul sewer design was based on the Department of Environment & Local Government’s “Recommendations for site Development Works for Housing Areas”, November 1998. While this document still remains in place, it has effectively been superseded by the GSDSDS, and Dublin City Council’s “Code of Practice for Drainage Works V6.0”, which is based on the GSDSDS.

Some of the principal design requirements for a foul sewer are shown below:

- All new drainage systems shall be designed and constructed on the basis of a separate system, even where draining into a combined system
- Sewers and manholes shall be located in public pavements, roads or in public open spaces.
- The length of pipe-work from manhole to manhole should not exceed 90m.
- Gully pots must be provided for every 200m² of paved area but low points on a roadway will require additional gullies.
- The minimum depth of cover over a main pipeline shall be 1.2m. If that cannot be achieved, the pipes shall be fully surrounded in 150mm thick concrete with an absolute minimum depth of cover of 750mm.

- Foul sewers shall be by gravity where possible.
 - The GSDSDS reduces design flows to 3900 l/dwelling/day.
 - Gradients to be selected so as to maintain self cleaning velocities.
 - When flowing half full velocities should be in the range 0.75m/s to 3m/s.
 - No gravity mains below 225mm will not be accepted.
 - Monitoring facilities for foul discharges shall be included for those developments exceeding 1ha in area
 - A minimum clear distance of 3m between the outside diameter of the pipe and all structures shall be maintained to allow for future access and maintenance of the pipeline. This distance shall increase in accordance with Table 2.1 of "Sewers for Adoption".
- Pumped Mains:**
- Discharge velocity in range 0.75m/s to 1.8m/s. Max 3m/s
 - Diameters below 100mm will generally not be accepted.
 - Mains >500m may require chemical dosing or a reduced main size. Design calculation shall be provided.

5.0 PUMPING STATIONS (PS)

Pumping Stations shall be designed, constructed and located in accordance with "Sewers for adoption – A Design and Construction Guide for Developers" 6th Edition, and in general they should be of a Wet Well/Dry Well Design.

- Appropriate design calculation shall be submitted with the application and should include full details of proposed pumping station.
- A plan layout and typical arrangement drawing of pumping station and valve chamber shall be submitted. A typical pumping station layout is shown in Figures 2.11 and 2.12 of Sewers for Adoption.
- The station should be located no closer than 15m to habitable buildings

6.0 WASTE WATER TREATMENT PLANTS (WWTP)

To avoid the situation where there could be a multitude of sewerage treatment systems of different technologies in one village or community to cater for each development as it arises, it is proposed to have only one central WWTP for any village or community. This plant would have a 20year design period and a population equivalent of 350 would be the very minimum that any village or community would rise to over a 20 year period.

Any new application must take cognisance of the above when submitting proposals for a WWTP.

In general WWTP shall be designed, constructed and located in accordance with: "*Treatment Systems for Small Communities, Business, Leisure Centres and Hotels*" as published by the EPA.

- Appropriate design calculation shall be submitted with the application and should include all details of the proposed plant including:
 - Population projections, Development Potential of surrounding lands and existing Waste waters flows.
 - Hydraulic and Biological Loads
 - **Assimilative capacity of the receiving waters or, where none exist, the geology of the soils to allow discharge to groundwater.**
 - Treatment system and proposed level of treatment
 - Site suitability test

8.0 STORM WATER ATTENUATION

The Developer shall design his storm water attenuation system in accordance with Section 6.0 of the GDSDS.

- All new developments that have > 1,500m² impervious area or discharge to overloaded sewers must have attenuation measures
- The Developer shall submit full detail of proposed attenuation tanks. Tanks must have the capacity to be cleaned and de-silted.
- If the developer proposes to use the attenuation tank to discharge to groundwater, he must:
 - Submit a site suitability test in accordance with BRE Digest 365.
 - **Provide an emergency overflow pipe to a suitable water course. It is not acceptable to use the foul sewer as an overflow.**
- The rate of discharge to the receiving water shall be restrained to that of Greenfield runoff for the site. Method of calculation shall be the Institute of Hydrology Report No. 124 "flood estimation for small catchments", 1994. This may require attenuation

$$QBAR_{rural} = 0.00108 \text{ AREA}^{0.89} \text{ SAAR}^{1.17} \text{ SOIL}^{2.17}$$

QBAR _{rural}	Mean Annual Flood flow from a rural catchment in m ³ /s	
AREA	Area of catchment in km ²	
SAAR	Standard average rainfall	Available from Met Eireann
SOIL	Soil index	Map attached

- Attenuate the 30 year critical storm event
- Contain the 100 year critical storm event on site. It is recommended that floor levels of all houses are at least 500mm above the predicted maximum 100yr flood level.
- Intercept at least 5mm and preferably 10mm rainfall event runoff to storage and infiltration
- Maximum permissible outflow from site of 3.1 l/s/ha for a 0.5 ha site and 2 l/s/ha in general
- Design calculations must take account of Climate change
 1. Adjust rainfall intensities by factor of 1.1
 2. Adjust river flows by factor of 1.2.

9.0 INFILTRATION DITCHES/SOAKPITS

Although soakways have been applied to road drainage, their use for anything other than roof water is not advised, as the high sediment loads from road runoff usually causes blockage problems within 20 years. In light of this STCC require the following:

- Where developers proposed to discharge all runoff to infiltration ditches or soakways, these shall be designed in accordance with BRE Digest 365, with the following adjustments:
 - The infiltration ditch/soakway shall be designed for both the 30year and 100 year storm event as per the attenuation tanks.
 - Stone filled soakways will only be permitted for the disposal of roof water
 - For the disposal of road runoff an approved system with a void ratio in excess of 90% with associated silt traps must be used. **An emergency overflow pipe to a suitable watercourse must be provided.**

10.0 FLOOD RISK ASSESSMENT

- The developer must prove that development is not at risk of, or will not cause additional flooding. Where flood risk maps are not available the Developer will be required to carry out a flood risk assessment in accordance with the above requirements
- All proposed structures must be set back from the edge of any watercourse to allow access for channel cleaning/maintenance. A 15meter wide riparian buffer strip each side of the watercourse is required”