Part 2 Standards for Design of Stormwater Drainage Works

Division 1 Design Criteria

2.1.1 Design Parameters

(1) Design parameters are to be in accordance with the criteria listed in the Queensland Urban Drainage Manual (QUDM) and Ipswich City Council Standard Drawings, except as amended by this Planning Scheme Policy.

Note:

a. The design of the proposed drainage system is to ensure that the upstream drainage is not adversely affected and that the downstream drainage system is capable of adequately catering for the discharge of the additional flow produced as a result of the development.
b. If the downstream system is not capable of carrying the increased discharge, measures are to be proposed to ensure the downstream system is capable of carrying the increased discharge or the stormwater is to be detained on the site.
c. Measures are to include, but not be limited to, investigation for upgrading the existing downstream system.
d. The design of the proposed drainage system is to accommodate both existing and future developed flows from upstream catchments.
e. Drainage Reserves over downstream drainage paths or written approval from the affected property owners is required from the development site to the point of discharge.
f. The minor drainage system is to be piped throughout the development.

2.1.2 Gullies/Access Chambers

(1) Gully pits are to be designed and constructed in accordance with Standard Drawing No. SD.04. Gully pits in excess of 1.5 metres deep are to be constructed as a combination gully pit/access chamber structure.

(2) The grate and frame details are to be in accordance with Standard Drawing No. SD.07.

(3) The stormwater line from structure to structure is located beneath the kerb and channel (verge side outer edge of the pipe to be directly beneath the back of the kerb and channel).

(4) Stormwater lines under the road pavement are to be kept to a minimum, and no access covers are permitted in the road pavement.

(5) The stormwater pipe is not to be located behind the back of the kerb.

(6) Gully pits are to be located on straights wherever possible

(7) Gully pits are to be located to reduce the likelihood of conflict with future driveway locations.

(8) Anti ponding gullies in curves are to be side entry type, chamber and grate only and are to be avoided wherever possible.

(9) Access chambers are to be designed and constructed in accordance with Standard Drawing No. SD.02.
Note: Non-standard structures are to be fully detailed in the Engineering Drawings.

(10) Step irons are to be installed in all access chambers and gully pits in excess of 1.2m deep.

2.1.3 Detention Basins

(1) Detention basins are to be designed in accordance with QUDM to criteria nominated by the Local Government for specific applications.
Note: The Local Government is to be consulted prior to proceeding with the design of detention basins.

2.1.4 Risk Assessment

(1) Risk assessment is to be conducted in accordance with QUDM to develop the risk profile for stormwater systems including all culverts, detention basins and inlet structures.

2.1.5 Easements

(1) Easements are to be provided over proposed or existing stormwater drains and overland flows from a storm

event with a 1% Annual Exceedance Probability (AEP) where located within private property in accordance with Table 2.1.

Table 2.1 — Easement widths

Pipe Diameter	Easement Width
225mm and 300mm	2m
375mm and 525mm	3m
625mm	4m

(2) The easements are to be centrally located over the pipe alignment, to encompass all drainage structures and are to be granted free of cost to or compensation payable by Council.

Division 2 Roofwater and Interallotment Drainage Systems

Note 2.2A:
The provisions of a piped drainage system, within allotments to receive roof and allotment runoff may be necessary in the following circumstances:
a. where lots fall away from the street;
b. where the proportion of impervious area within a development is such that surface runoff is likely to be intolerably high, e.g. within industrial and multi-unit lots; or
c. where the construction of buildings up to side or rear boundaries may be permitted thus blocking or concentrating natural flow paths.

2.2.1 Design Criteria

(1) The design is to comply with the *Queensland Urban Drainage Manual (QUDM)*, except as amended by this Planning Scheme Policy.

(2) For residential development, the roofwater and inter-allotment drainage must be minimum Level III in QUDM.

Note:
The provisions of a piped drainage system, within allotments to receive roof and allotment runoff may be necessary in the following circumstances:
a. where lots fall away from the street;
b. where the proportion of impervious area within a development is such that surface runoff is likely to be intolerably high, e.g. within industrial and multi-unit lots; or
c. where the construction of buildings up to the side or rear boundaries may be permitted thus blocking or concentrating natural flow paths.

2.2.2 Pipe Size

(1) The minimum pipe size is to be 225 mm diameter, and the maximum pipe size is to be 375mm diameter.

2.2.3 Location of Pipe

(1) The main "line" is to be located 0.6 metres from rear boundaries and 1.2 metres from side boundaries.

2.2.4 Access Chambers

(1) Access chambers are to be provided at the following locations:
a. change of grade;
b. change of pipe size;
c. change of direction; and
d. end of line.

2.2.5 Branch Connections

(1) At least one connection point is to be provided on the main line for each property.

2.2.6 Outlets

(1) All interallotment roofwater drainage systems are to discharge into a suitably located stormwater pit or access chamber in the street.

(2) Where the design of the street drainage system is such that up to a maximum of two (2) properties are so isolated from a stormwater pit or access chamber that their private drainage system could not be reasonably expected to connect, discharge into the kerb and channel will be allowed subject to a hydraulic analysis as to the existing road flows and capacity of the roadway for the increased discharge.

2.2.7 Design Discharge

(1) Mannings Equation with a minimum 'n' value of 0.11 is to be used to determine pipe sizes.

(2) The minimum pipe grade is to be in accordance with *QUDM*.

(3) Pipes may be graded "obvert to obvert" provided that the following minimum falls are provided through pits and access chambers:
a. 0 - 30 degrees – 0.02m;
b. 30 - 60 degrees – 0.04m;
c. 60 - 90 degrees – 0.08m.

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