City of Perth

02 - Drainage Design Criteria

02.1 - Design Method

02.1.1 - The Guidelines as recommended in *"Australian Rainfall and Runoff, A guide to Flood Estimation"* (ARR) shall be used for the hydrological and hydraulic designs of the Council's drainage systems.

02.1.2 - The Rational Method as described in Book Eight - "Urban Stormwater Management" of the above publication (ARR) shall be used as the basis of design for the calculation of peak flows.

02.1.3 - Computerised Rational or Laurenson Formula based software for pipe system and analysis may be used. The Council presently utilises the XP-Storm software developed by WP Software which produce peak flow rate output files and hydraulic grade lines. The designer shall include information on the software used for the submitted design calculations.

02.2 - Design Average Recurrence Intervals

02.2.1 - The average recurrence intervals (ARI) for the design of piped drainage systems in a residential, commercial or industrial area will depend on the local circumstances of the catchment area.

02.2.2 - The Council may require designs to be based on storms of longer recurrence intervals where it is considered that the damage, danger or inconvenience likely to result from surcharging warrants such measures.

02.2.3 - As a guide the recurrence intervals adopted for typical catchments (property development) within the municipal boundary City of Perth are shown in the table below:

Type of Catchment
A) Central Business District
B) Commercial/Industrial Areas/High Rise
   /Multiple residential(outside CBD)
C) Residential Area
D) Street Drainage System

	Storage Tank	Drainage Network
A	100	20
B	50	10
C	20	10
D	20	10

ARI (years)

02.3 - Runoff Coefficients

02.3.1 - The runoff coefficient can be calculated as the average (weighted by area) of the coefficients chosen for the portions of differing permeability.