Event	Area
	Culverts on major roads (check for 1 in 100 years storm)

* Lagoons that have an outlet or overland flow track to sea that does not cause disruption to properties or road users will be sized for the next higher event in the above table. For example, a lagoon serving an area which is generally a 1 in 5 year catchment type shall be sized for a 1 in 10 year storm before overflow occurs

Table 3-2 – Design storm standard for various facilities

3.2.2. Duration of Rainfall

To determine the storm duration, the multipliers given in Table 3-3 should be applied to the time of concentration, according to the catchment type. This means longer storms, and therefore lower rainfall intensities are used for lower priority sites; design flows for these catchments will therefore be lower. The recommended methods for calculation of time of concentration are described in the following sections.

Priority	Catchment type	T_c Multiplier M
1	Major Roads; expressways; arterials; underpasses; road crossings and culverts; underground car parks (Ramps)	T_c
2	High density sectors (≥ 50% impermeable area)	2 x T_c
3	Low density sectors (≤ 50% impermeable area)	3 x T_c
4	Industrial sectors*	5 x T_c
5	Open areas, parks and areas of infrequent use and not subject to building flooding	12 x T_c

* If the Industrial sectors are more than 50% impervious, then they should be treated as Low density sectors.

Table 3-3 – Priorities and time of concentration multipliers used to determine design storm durations

Please note that the above is applicable only to calculations done using the rational method.

3.2.3. Design storm duration

Design storm duration and a specified design return period are required to determine design rainfall intensity, i (mm/hr) from IDF relationships as given in the following section.

For storm water networks and drainage design the time of concentration t_c, along with the multipliers of Table 3-3, should be taken as the design storm duration. Time of concentration is defined as the interval in time from the beginning of the rainfall to the time when water from the furthest point in the catchment reaches the point under consideration. It is one of the key characteristics of a catchment and care is required in its calculation.

The response times of urban and rural catchments can be very different, and different methods are required for each. Dealing with mixed urban/rural catchments is discussed in Section 3.5.