To determine if there is a need for supplementary fire flow (above and beyond the Minimum fire fighting rates sated in the above table) it will be necessary to assess the fire
Risk presented by their proposed land use, having regard for the proposed fire Protection measures, and obtains approval from concerned authorities
the number and location of external fire hydrants is dependent on site planning,

Building design and the fire risk associated with the development land use Hydrants, Are to be positioned along Civil Defence access routes and in no case should hydrants be located more than 150m apart where applicable.

One fire incident shall be considered for the design of networks at new developments. The velocities and head losses in networks during fire flow may exceed the maximum permissible limits. Also during fire fighting the residual pressure at parts of the water system may be lower than the minimum specified limits but shall not be less than 0.5 bar (5.0 m).

AADC has carried out a study to evaluate the fire flow requirements in Al Ain Region and to compare the cost of typical water networks in Al Ain considering different fire flow scenarios. The cost of networks designed to different fire flow scenarios is shown below in Table 13

Table 13: Cost of networks Designed to Different Fire flow scenarios

Fire Flow Scenario	***Fire flow requirements***	***Cost as % of scenario 1***
1	A network designed without considering the fire flow in the design but including the cost of fire hydrants.	100 %
2	Fire flow of 1000 litre/minute supplied from two adjacent Fire Hydrants (FH). Min pressure in networks reduced to 5.0 m during fire.	100 %
3	Fire flow of 1800 litre/minute supplied from two adjacent Fire Hydrants (FH). Min pressure in networks reduced to 5.0 m during fire	109 %
4	1800 litre/minute fire flow supplied from one Fire Hydrant (FH). Minimum pressure of 12.5 m in networks during fire.	140 %

The study recommended to apply scenarios 2 and 3 at the areas of low rise residential buildings in Al Ain region as it suit the prevailing fire exposure and fire risks in Al Ain region and at the same time reduce the construction cost of water networks without impacting the safety against fire.