Focused Fire Flow

The Insurance Service Office (ISO) provides a community where an assessment of risk, hazard and value that is relatively uniform from city to city. It is referred to as the ISO Needed Fire Flow File (NFF). Any fire chief in the country has the opportunity to acquire this file for use in any type of planning activity simply by making contact with the Insurance Service Office.

A letter that has been sent in on fire department letterhead will be acknowledged by the ISO and they will immediately return the Excel spreadsheet to the fire department. This information can be used internally or can be handed over to a consultant. In either case it provides one fundamental baseline of every community's fire problem.

It should be recognized that a needed fire flow file is not always up to date because they are linked to an inspection cycle for ISO gradings. However, the ISO has expressed an interest in receiving any information from any fire department that would continue to add data to this process.

Focused fire flow utilizes this information by sorting and filtering the information contained in the Excel spreadsheet. An example of how this can work based on a hypothetical city is as follows:

If the department has 1,000 occupancies that the ISO has ranked its onsite studies a review of the Excel spreadsheet will reveal the numbers of buildings that fall into each respective fire flow requirement. i.e., the data sheet can be sorted from the least to the most under the column of needed fire flow and a synopsis will be provided that will indicate the distribution of the fire flows.

After the sort has been accomplished if you go to the highest fire flows in the community and develop and copy the highest fire flows and the locations simultaneously these can be geocoded and placed on a map to show the areas in which fire department concentration is highly likely to be required.

For example, if the fire flow in the community is no higher than 2000 gpm then it is unlikely for a focused fire flow review. However, if the fire department only has one engine company and there are multiple buildings that generate 3000 or 3500 gpm fire flow it is highly desirable that these locations be identified and placed in a document for potential assessment.

Focused fire flow emphasizes the concentration of this. However, they also have a bearing on distribution. It is obvious that in buildings that have high fire flows the sooner the fire is controlled the more likely that fire flow will not be required.

A review of the fire flow itself is an indication of the total effective response force that may or may not be required. The actual applied fire flow from an individual fire company can be relatively low (125 gpm) up to a high of the pump capacity of the apparatus. The following table illustrates the differences in a matrix form to see how this fire flow gets applied.

Scenario	GPM involved	Staffing per flow	Comment
Interior Attack	125 gpm	3	Requires two in two out
Exterior Attack	250 gpm	6	Maximum hand line
Deck Gun	1,000 gpm	3	Defensive Operation Only
Ladder Pipe Operation	1,250 gpm	3	No Interior Attack Allowed

The purpose of developing a focused fire flow layer in a GIS is to clearly indicate where concentration will be required in order to put a sufficient number of personnel on the fire scene to provide a combination of interior attack if the building is going to be saved or exterior attack if the exposures need to be protected. Both of these translate into a total number of companies that must be required to be able to reach that area within the timeframe of a second or third alarm assignment. A second alarm assignment should be considered anything over 2,500 gpm. A third alarm assignment should be anything over 3,500 gpm. Any multiples beyond that need to be evaluated based upon local conditions.