

CITY OF GRAND JUNCTION, COLORADO

MEMORANDUM

Reply Requested
Yes No

Date

April 4, 1978

To: (From:) Jim Wysocki
City Manager

From: (To:) Duane R. Jensen, P.E. *D.R.J.*
City Engineer-Utilities

Subject: Fire Protection Within the City of Grand Junction

Questions have recently risen concerning the City's policy for upgrading its water system as required for fire protection within the City of Grand Junction. We hope to explain the policy which we have used in the past and hope to continue using in the future.

The City water system is rated for fire protection and classified by the Insurance Services office. In their publication they outline how much fire water flow in gallons per minute should be provided to certain areas. These flows are determined based upon building size, type of construction, distance between buildings, type of material to be stored or utilized within the buildings, and availability to automatic sprinkler systems. These fire water flows requirements are easily computable and should be determined by the developer at his preliminary design stage. If this is accomplished the developer can make an early determination of the cost to upgrade the fire protection to his buildings if upgrading is required. He may even make some adjustment in his building construction materials, design, or determine to install an automatic fire sprinkling system within the building to decrease the amount of water flow necessary.

The Fire Department can provide fire flow availability information from all fire hydrants within the City if reasonable notice is given.

The problem which we have had in the past is that fire protection is addressed last instead of at the beginning. A building may be completely designed and many times under construction prior to the time that the needed fire water flow requirements are addressed.

We realize that the City has some obligation to provide domestic water service to any individual property within the City. In some cases this responsibility is assured by the Ute Water Conservation District or other water company serving the area. We also feel that the City or the water company serving the area has the responsibility for providing the large grid water supply system so that submains can be connected to retain the overall quality of the systems fire protection capability.

When the water supply system requires upgrading to meet the requirements of new development, the cost of that upgrading shall be at the cost of the developer. It should be the developer's responsibility to prove that either the existing system or the system which he proposes meets the fire fighting requirements of the Insurance Services office and to submit the proof that it does meet these requirements in the form of a brief report during the early part of the planning process.

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To: (From:) Jim WysockiFrom: (To:) Duane R. JensenFire Protection within the City of Grand Junction (page two)

Unfortunately there are some areas within the City where building has taken place in the past and fire flow requirements and hydrant availability do not meet the requirements of the Insurance Services office criteria. The City has budget funds for 1978 and may continue to budget funds to bring these areas up to the standards required based on the existing structures which the City has already allowed to be constructed in the areas. The primary goal of these appropriations is to make improvements in these areas and we are working toward that goal as quickly as our resources will allow.

Developers often attempt to develop within these areas. We recommend that this development should not take place unless adequate water flows for fire protection to their development is assured. When the development is located within areas where the water system for fire protection is already inadequate and the proposed improvements to the water system will not only benefit the proposed new development but also the surrounding existing structures and the City resources are available, then the City may participate in the improvement. The amount of City participation is computed based upon the percentage of land not being developed of the total land area which the fire protection improvement will bring into compliance with Insurance Services Office standards. For example, an area of residential housing requiring fire flows of 500 gallons per minute and fire hydrant density of one hydrant to cover 160,000 square feet of land area does not have adequate water supply for fire protection. A developer wishes to construct a building within this area requiring a fire flow of 4000 gallons per minute and a hydrant density of one per 100,000 square feet of land area. The developer's property only covers an area of 40,000 square feet including one-half of all adjacent road right of ways. The cost of running the necessary pipeline and setting the necessary hydrants is determined to be \$10,000. After his building is constructed and the hydrant is placed in service the hydrant density required in the immediate area which the one hydrant can adequately service is 100,000 square feet. Therefore, the City may pay for 60% of the cost of upgrading the proposed system. It would be the City's responsibility to bring the fire protection of the surrounding areas up to the 500 G.P.M. and 160,000 square foot per hydrant area.

The area which is computed as being covered by hydrant placed on the edge of a street right of way must have free access from that street right of way. If area to be covered is more than 150 feet from the street right of way line, we must point out that the Uniform Fire Code, Sec 13.391C states that the Fire Chief may require an on-site hydrant closer to the building or area to be served. Since on-site hydrants usually have limited access to other properties, the cost of these are entirely borne by the developer, and the area which they serve is limited to the one property on which they are located.

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To: (From:) Jim Wysocki From: (To:) Duane R. Jensen

Fire Protection within the City of Grand Junction (page three)

In summary:

1. The City should adopt and enforce the implementation of the Insurance Services Office standards and require that they are met through its planning process.
2. The City should bring its water supply system for fire protection to the Insurance Service Office Standards in areas where it is deficient in already developed areas as soon as possible.
3. Developers shall pay the cost of seeing that these standards are met for new developments.
4. Where the improvement due to a development to the water supply system for fire protection improves the water supply for fire protection to a surrounding area which does not already have fire protection to the Insurance Service Office standards prior to the development, then the City may participate in the cost of such improvements on a percentage basis.
5. Areas which are to be accounted as within the service area for a particular hydrant must have free access from that hydrant.
6. Under the Uniform Fire Code when any portion of the buildings protected is in excess of 150 feet from a right of way where fire protection is provided then the Fire Chief may require that an on-site hydrant be installed.