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July 13, 1993

Hand-Deliver

Mr. Steve Tribble, Director
Division of Records and Reporting
Florida Public Service Commission
101 East Gaines Street
Tallahassee, FL 32399-0850

RE: Docket No. 911082-WS
Proposed Revision of PSC Water and Wastewater Rules

Dear Mr. Tribble:

On behalf of Florida Cities Water Company, enclosed for filing in the above docket are 16 copies of a response to the Florida Fire Sprinkler Association's April 22, 1993 submission to the Commission.

Please acknowledge receipt of the foregoing by stamping the enclosed extra copy of this letter and returning same to my attention. Thank you for your assistance.

Sincerely,



Wayne L. Schiefelbein

ACK _____
AFA _____
APP 1 _____
CIB _____
CIV _____
CMB _____
CMB WLS/meg
CMB Enclosures
CMB cc: (w/enc.)
EAS _____
LEO 1 Kenneth Hoffman
LEO 1 Brian Armstrong
LEO 6 Buddy Dewar
LEO Rick Mann
CMB Chris Moore
RTH 3 _____
SJD 1 _____
WLS _____
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DOCUMENT NUMBER-DATE

07488 JUL 13 93

FPSC-RECORDS/REPORTING

**FLORIDA CITIES
WATER COMPANY****MEMORANDUM**

TO: File

FROM: Mike Acosta 

DATE: July 12, 1993

SUBJECT: Response to the Florida Fire Sprinkler Association's
April 22, 1993 Submission to the Florida
Public Service Commission

Florida Cities Water Company does not have any problem with the use of the ISO formulas for the calculation of required fire flows with and without fire sprinkler systems. However, many municipal ordinances require minimum fire flows regardless of the installation of fire sprinkler systems.

It is the FFSA's contention that the reduced fire flows required by sprinkler systems reduce the size of water mains and associated infrastructure. This premise is simply false. Attached are the appropriate pages of the Lee County Development Standards Ordinance regarding this matter.

Page D.27 shows minimum fire flow requirements based on whether single family or multi-family units are constructed.

Page D.28 again shows an minimum fire flow which must be met. Also, shown is the potential for alternate sources of water when fire flows cannot be met. This alternate could involve water from swimming pools, lakes, canals, sea water or any other available source. This type of system requires the highest levels of cross connection control.

Pages D.28 and D.29 shows minimum water main sizes based on the use of the land being developed. In essence, the zoning of the land determines the size of the water main not the fire flow requirement.

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4837 Swift Road, Suite 100
Sarasota, Florida 34231
P.O. Box 21119 (34276-4119)
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Memo to File
July 12, 1993
page 2

Page D.30 shows the minimum fire hydrant spacing requirements. Again these are based on the use of the land being developed, zoning driven not fire flow driven.

Florida Cities Water Company's largest and fastest growing division is in Lee County. Lee County's DSO sets out the minimum requirements as listed above. The premise that fire sprinkler installation reduces the water infrastructure needs of the community is simply not true and should be rejected.

MA/as

Enclosure

D.7. Cont. RECEIVED

D.7. REQUIRED FIRE FLOWS:

MAY 27 1993

GENERAL OFFICE

- a. Applicability
- (1) These provisions apply to all developments that occur within existing public water systems, outside of existing public water systems, and outside of an established fire district or taxing unit.
- b. Interpretation of These Regulations and Conflict With Other Regulations.
- (1) These regulations shall be construed to be the minimum regulations necessary for the purpose of meeting the general and specific requirements named herein.
 - (2) Where any provision of these regulations impose a restriction different from that imposed by any other provision of these regulations or any other ordinance, regulation, or law, the provision which is more restrictive shall apply.
 - (3) Formal interpretations on water supplies and fire department access shall be made by the County Fire Official. A case book of intent and interpretations shall be maintained for continuity and consistency on a county-wide basis with this Ordinance.
- c. General Provisions for All Developments
- (1) Building Class:
 - (a) One and two dwelling unit developments.
 - (b) Multi-family developments with three (3) to six (6) dwelling units per building and not exceeding two stories in height.
 - (c) Multi-family developments with more than six (6) dwelling units per building, or more than two stories in height, and all commercial areas.
 - (d) All industrial areas.
 - (e) Hazardous storage areas (as defined in the Standard Building Code).

D.7.c. cont.

- (2) Fire Department Access: Buildings that fall into Class 1(c) through (e) as set forth above, and any unusual and potentially hazardous circumstances as determined by the Fire Official, shall provide a 20-foot wide fire department fire lane(s) in the rear of such building(s). This shall be an identified stabilized surface adequate to carry the load of fire apparatus. (Amended by Ordinance 89-18, Section Nine; adopted June 7th, 1989, effective October 1, 1989.)
- (3) Required Fire Flows:

Fire flows for all developments shall be determined according to this section before the issuance of a Development Order.

The contractor or installer of water supply systems in new developments shall demonstrate by actual test, that the capacity of the water supply system will meet fire protection design requirements. A fire flow of the existing public water system shall be made before the issuance of a Development Order for all developments in or within one-quarter (¼) mile of an existing public water system. Fire flow tests shall be witnessed by the fire department, and other authorities having jurisdiction who desire to do so.

d. Existing Public Water Systems

- (1) Where a public water system exists within one-quarter (¼) mile of a proposed private or public water system, then the proposed system shall connect with the existing public water system provided that the rules or regulations which govern the existing public water system can be amended to accommodate such a connection.
- (2) A copy of the agreement between the developer and the owner which will permit the developer to connect to the owner's system(s) shall be required.
- (3) Design Standard for Public Water Systems and Fire Protection:

(a) General

Fire protection and public water systems shall be designed by an engineer and constructed in accordance with county, state, and federal standards, including satisfaction of the domestic requirements established by the appropriate state agency and the fire protection requirements established by the Uniform Lee County Fire Code, as may be amended from time to time.

(b) Required Fire Flows:

The water distribution system shall be capable of delivering fire flows as follows:

(i) One and two family developments:

<u>Distance Between Buildings</u>	<u>Needed Fire Flow</u>
Over 30 feet	500 gpm
0 to 30 feet	750 gpm

Developments not capable of delivering the required fire flow shall provide automatic sprinkler systems in accordance with NFPA #13 1983 Edition or NFPA #13D 1984 Edition.

(ii) All other buildings shall calculate required fire flows in accordance with the following formula shown in d.(3)(b)(iii).

This formula establishes a base flow from which then the degree of hazard and credit for sprinkler protection will result in a final needed fire flow. NFPA #13 1983 Edition or NFPA #13D 1984 Edition shall be used for the purpose of determining hazard classification.

<u>NFPA Classification</u>	<u>Formula Application</u>
Light	Light
Ordinary I & II	Ordinary
Ordinary III & Higher	High

(iii) Fire Flow based on the Formula, $F=18$ multiplied by C multiplied by A.

D.7.d.(3)(b)(iii) cont.

F = GPM Flow @ 20 PSI Residual

C = Constant based on type of building construction

Coefficients based on construction type

1.5 = Wood (Type VI)

1.0 = Ordinary (Type V)

0.8 = Noncombustable (Type III & IV)

0.6 = Fire-Resistive (Type I & II)

A = the square root of the square footage of structure (total floor)

*Fire resistive construction need only be calculated on the three largest successive floors.

A four-hour fire resistive wall may be used to reduce total square footage of a building providing the wall intersects each successive floor of the building.

BF = Base Flow established from the formula $F = 18 C$ multiplied by A

FF = BF multiplied by .75 (Light Hazard Occupancy)

FF = BF multiplied by 1. (Ordinary Hazard Occupancy)

FF = BF multiplied by 1.25 (Hazard Occupancy)

If the building is protected by an automatic sprinkler system installed in accordance with all state and local codes, a 50% reduction of the final flow (FF) will be allowed.

(iv) A minimum flow all cases will be 500 GPM with a 20 PSI Residue .

(v) In areas that cannot meet 500 GPM, alternate sources of water may be acceptable, subject to County Fire Official approval.

(c) Water Main Installation

(i) One and two dwelling unit developments: no less than eight (8) inches in diameter, constructed in an external loop connected to intersecting water mains at a maximum distance of 1,500 feet.

D.7.d.(3)(c) cont.

- (ii) Multi-family developments with three to six dwelling units per building and not exceeding two stories in height: no less than eight (8) inches in diameter constructed in an external loop, connected to intersecting water mains at a maximum distance of 1,500 feet.
- (iii) Multi-family developments composed of buildings with more than six (6) units per building or more than two stories in height, and all commercial areas: no less than ten (10) inches in diameter constructed in an external loop system with intersecting water mains installed every 2,000 feet.
- (iv) All industrial areas, and all hazardous storage areas: no less than twelve (12) inches in diameter constructed in an external loop system with intersecting water mains installed every 2,000 feet. (Fire hydrants shall be installed on intersecting water mains.)
- (v) Fire hydrants shall be installed so that the four and one-half (4½) inch streamer connection is no less than eighteen (18) inches and no more than twenty-four (24) inches above finished grade.
- (vi) The maximum allowed dead-end waterline shall be no longer than one-half (1/2) the distance required between intersecting water mains. Contingent on the approval of the County Fire Official, alternatives may be acceptable if they embody sound engineering practices including, but not limited to, upgraded line sizes, valving, fire flow considerations, etc.
- (vii) Any water main along an arterial road or considered by the utility company to be a main transmission line shall be sized to accommodate future growth, but in no case, less than specified in this section. A letter of approval from the utility company will be acceptable evidence of conformance with this requirement.
- (viii) Fire hydrants shall be located within 10 feet of the curb line of fire lanes, streets, or private streets, when installed along such accessways.

D.7.d.(3) cont.

(d) Hydrant Spacing

(i) Fire hydrant spacing shall be determined using the last available hydrant on the public water system as the P.C.P.

(ii) Hydrant spacing for all developments shall be measured along the centerline of the street. For the purpose of this standard, the term "street" shall include all road frontage, roadway, drive, avenue, or any other road designation. Also, included shall be any private drive designated as required fire department access.

(iii) Fire hydrants shall be spaced as follows:

One to two dwelling unit developments eight hundred (800) feet apart as measured along the centerline of the street.

Multi-family developments with three to six dwelling units per building and not exceeding two stories in height six hundred (600) feet apart measured along the centerline of the street.

Multi-family developments with more than six (6) dwelling units per building or more than two (2) stories in height commercial areas four hundred (400) feet apart as measured along the centerline of the street.

All industrial and hazardous storage areas (as defined in the Standard Building Code) three hundred (300) feet apart as measured along the centerline of the street.

(iv) Where fire flows are provided by a public water system, on-site fire hydrants shall be provided so that in no case shall there be a fire hydrant located more than 400 feet of all portions of the ground floor of any building. This shall be in addition to any other hydrant spacing requirement. This shall not apply to one and two family developments.