FIRE PROTECTION DESIGN STANDARDS

CITY OF VAN BUREN, ARKANSAS

Ordinance: 10-2003

The fire protection design standards for water supply systems within the City of Van Buren are as follows:

Flow criteria, as stated herein are intended for the purpose of sizing mains for extensions from existing facilities where practical (i.e. where the system is capable of delivering the required pressures and flows) and for the design of large system improvements.

New water line extensions and fire protection facilities, such as mains and hydrants, shall be in working order and accepted by the Water Utility whose line is being extended or tapped prior to building permits being issued in a new development.

1. In residential areas a public main not less than six (6) inches is required for fire hydrant service and should have a minimum of 1000 gpm at 20 psi residual pressure.

2. Main extensions along through streets (primary mains) that connect other residential areas shall not be less than eight (8) inches.

3. Hydrant spacing in residential areas containing one and two family dwellings not exceeding two stories in height:

    A. Through streets: Maximum distance measured along the curb line between hydrants should not exceed 500 feet.

    B. Dead End streets and cul-de-sacs: The last hydrant in the cul-de-sac should be located not more than 250 feet from the farthest building set back line at the end of the street. The next nearest hydrant outside of the dead end street should be within 700 feet of the last hydrant.

4. Hydrant spacing in residential areas containing buildings having three or more living units, or residential units exceeding three stories in height (R-3 Zones):

    A. Through Streets: Maximum distance between hydrants should not exceed 350 feet.

    B. Dead End Streets and Cul-de-sacs: The last hydrant in the cul-de-sac should be located not more than 250 feet from the farthest building set back line at the end of the street. The next nearest hydrant outside of the dead end street should be within 500 feet of the last hydrant.

5. A fire hydrants should be located on the end of dead end mains on cul-de-sacs.

AREAS OTHER THAN RESIDENTIAL (C-1, C-2, I-1 & I-2)

1. Public mains shall be designed to provide adequate fire flow requirements, but not be sized less than eight (8) inch.

2. Through Streets: Maximum distance between hydrants shall not exceed 500 feet and should have a minimum of 1,500 gpm at 20 psi residual pressure.

3. Dead End Streets and Cul-de-sacs: The last hydrant in the cul-de-sac should be located not more than 250 feet from the farthest building set back line at the end of the street. The next nearest hydrant outside of the dead end street should be within 500 feet of the last hydrant.

4. Buildings such as commercial, industrial and residential buildings other than one and two family dwellings, that are located further than 250 feet from a public fire hydrant system shall be provided with the required minimum number of fire hydrants and be connected to a water system capable of supplying the fire flow as determined by an ISO review by the Fire Chief. The location and number of such on-site hydrants shall have a hydrant available for distribution of hose to any portion of any building on the premises at distances not to exceed 500 feet. Where at all possible, this should be a looped system.
   Ref: Arkansas State Fire code, Section 603.1.3

5. Along major arterial streets that are outside residential areas and are provided with four (4) or more traffic lanes, which are divided, hydrants shall be spaced every 500 feet on each side of the street and be arranged on an alternating basis. Neither Municipal Utilities nor the City of Van Buren shall be responsible for the cost of water main extensions along new public funded street projects in undeveloped areas.

HYDRANT SPECIFICATIONS

1. All fire hydrants shall be AWWA approved and shall meet the following criteria:

   A. Hydrants shall be the three-way type with two 2½-inch nozzles and one 4½ inch steamer.

   B. The barrel shall be a minimum of 4½ inches in diameter.

   C. The operating nut shall open counterclockwise.

   D. Hydrants shall be traffic type (break away).

   E. Each hydrant shall have its own auxiliary valve. This valve shall be as close to the water main as practical.

   F. Leads going from the main to the hydrant shall not be less than six (6) inch.

G. Hydrants shall be painted to these specifications:

1. Hydrants and all exposed parts shall be painted with the required primer and finish coats in accordance with current AWWA standards. Finish coats shall be Benjamin Moore 071-15, Safety Yellow industrial Enamel or equivalent. The developer shall supply the hydrant with the above-mentioned coating.

2. The outlet caps shall be painted according to flow rates represented:

Red - 500 gpm or less
Orange - 500 - 1,000 gpm
Green - 1,000 - 1,500 gpm
Blue – 1500 gpm or over

3. All hydrants that receive pressure from a Fire Department connection or an on-site suppression system shall be classified as private hydrants and shall be painted red.

The Van Buren Fire Department shall be responsible for flow color-coding.

HYDRANT INSTALLATION

1. Hydrants shall be installed in accordance with Water Utility requirements.
2. Hydrants shall be installed so that the steamer connection will face the street and shall be 18" above the finished grade.

3. No obstructions (fences, plantings, structures, earth fill, etc.) may be placed to block access to any fire hydrant by public safety personnel. No obstructions may be placed within 5' of any fire hydrant.

4. Where practical, hydrants shall be installed within ten (10) feet of the street intersection.

4. Replacement hydrants in developed areas shall be located at least five (5) feet from driveways, streetlights, utility poles or any other objects that may obstruct the use of the hydrant. In new developments, driveways, streetlights, utility poles or any other objects that may obstruct the use of the hydrant shall be located at least five (5) feet from any hydrant installation.

5. Each hydrant shall have a gravel drain at the shoe in order for the hydrant to drain correctly.

6. Proper installation, and acceptance by the Fire Department and Water Utility of mains and hydrants are required prior to building permits being issued.

7. The Water Utility shall inspect new fire hydrants installations prior to acceptance. Correction of deficiencies identified during inspection shall be the responsibility and at the expense of the developer.

REVIEW OF PLANS

The Van Buren Fire Department and the Water Utility shall review all proposed water line extensions for residential, commercial and industrial developments and additional hydrants on existing mains. The Fire Department shall determine the need for on-site fire protection systems. Approved fire protection layouts cannot be altered, abandoned, or added to without prior approval of the Van Buren Fire Department and the Water Utility. Any request for such alterations must be made in writing complete with drawings, noting the alterations being requested. Plans shall be provided to the Water Utility and the Van Buren Fire Department.

Three copies of proposed extensions shall be submitted to the Fire Department for review, prior to submission to the Water Utility and the Van Buren Planning Commission for approval.

Plans for new or updated hydrant installations shall include:

1. Exact location and size of existing and proposed water mains and hydrants.

2. Flow calculations for each hydrant.

3. Details of hydrant installation and concrete pad.

4. Details of concrete pad and hydrant location in regard to proximity to curbs, corners, sidewalks, catch basins, etc.

This design standard and its enforcement, is required for the health, safety and welfare of the citizens and for the protection of property within and adjacent to the City of Van Buren.