MEADVILLE AREA WATER AUTHORITY

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July 26, 2011

TO: Board Members
FROM: Don Nold

RE: Fire Hydrant Color Coding and other information

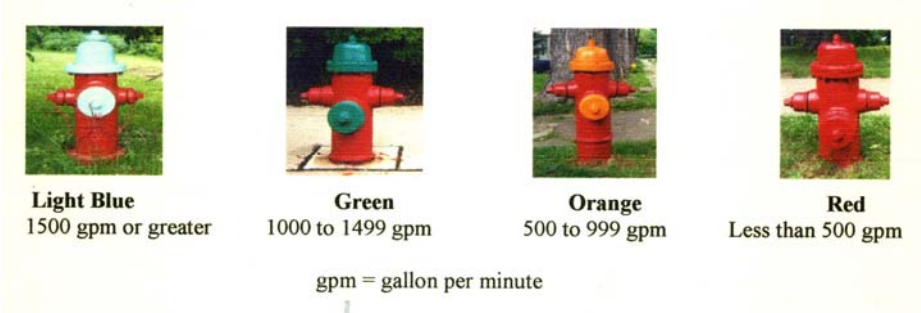
At the July 25, 2011 MAWA Board of Director's meeting, I was requested to provide some information about the color coding and labeling of hydrants.

HISTORY OF COLOR CODING OF FIRE HYDRANTS IN MAWA WATER SERVICE AREA:

The color coding of fire hydrants started in the year 2000 at the request of the City of Meadville Fire Chief Larndo Hedrick (Tunie) to improve fire protection for City Firefighters. The color coding today meets the National Fire Protection Association (NFPA) Standards.

The tops and the 4" nozzle on hydrants are painted based on the tested flow rate.

Red = Less than 500 gpm
Orange = 500 gpm to 999 gpm
Green = 1,000 gpm to 1,499 gpm
Blue = 1,500 gpm



LABELING PRESSURE ZONES:

After all the fire hydrants were flow tested and painted, the Fire Chief and MAWA felt that placing a number tag would improve fire protection because the number would also be followed by a letter that designed the pressure zone; L = Limber Road Tank, R = Highland Reservoir, and H = Hillcrest Tank.

Red
Less than 500 pgm
R = Highland Reservoir

Orange
501 to 999 gpm. The
L = Limber Tank

Green
1,000 to 1,499 gpm
The R = Highland Reservoir

Blue
>1,500 gpm
The R = Highland Reservoir

MAPPING:
In the year 2006, MAWA started our Global Informational System (GIS) mapping program. All of our hydrants were mapped using a GPS and maps were provided to the fire departments. The map show the location of the hydrant and is color coded show the projected flow.

The mapping and color coding is critical to fire fighters because they can quickly glance at the map and select the best hydrants while in route.

MAINTAINENCE OF FIRE HYDRANTS:
Although hydrants are sometimes referred has that darn thing that is located just where I want to park my car, it serves a valuable purpose for fire fighters and the MAWA customer's insurance rates. Approximately every five years the Insurance Services Office, Inc. (ISO) reviews the hydrant flows, fire department equipment and staff to determine the insurance rates that will be applied to customer's rates.

Fire hydrants are flushed twice a year to remove sediments that can build up in the waterlines and inspected to ensure that they are in working order. Also the fire hydrant is an excellence location to sound and to correlate for water leage.

Meadville is known for snow and the MAWA staff ensures that the hydrants are clear of snow. The MAWA would like to thank residents for removing the snow around fire hydrants and for the fire department that also helps.

Some folks will ask why some hydrants have chains that connect the nozzle caps and some do not. All hydrants come with chains that connect the nozzle caps. At MAWA we cut these chains off because a weathered or painted chain can impede the removal of the cap for the fire fighters.

WHO PAYS THE COST OF MAINTAINING HYDRANTS AND THE WATER USED?
The MAWA customers pay for the cost of repairing, replacement and the water used in the in fire fighting that is included in your base rate meter charge.

HISTORY OF FIRE HYDRANTS:

- Hydrants or fire plugs date back from to the 1600's. Firefighters would drill a hole in wooden street mains to provide water for bucket brigades. Afterward, they would use a wooden plug to seal the tap and mark the location.

- In the 1700's valves began to replace the simple wooden plugs and firefighters began carrying portable standpipes (vertical outlets) - which were inserted into the plugs.

- The word hydrant in the U.S. appears the first time in connection with the Philadelphia municipal water system, 1799. These hydrants were used both for fire protection and a water source for the poor. In winter months watchmen inspected the hydrants hourly, releasing small amount of water to prevent freezing.

- It is estimated that the dry barrel hydrant started appearing in 1812. This hydrant has a valve located at the bottom of the hydrant to prevent freezing.

- In the 1930s, cars became popular and started running into fire hydrants. Manufacturers respond to the call and designed hydrants to break away without damaging the valve. This concept is still used today.

- The "Great Baltimore Fire, February 7th, 1904 believed to be started by a cigar or cigarette that fell into the basement of the John Hurst & Company building, lasted 30 hours, claimed 1,526 buildings in an area of 70 blocks, and 2,500 businesses were destroyed. Fortunately there was only one life lost.

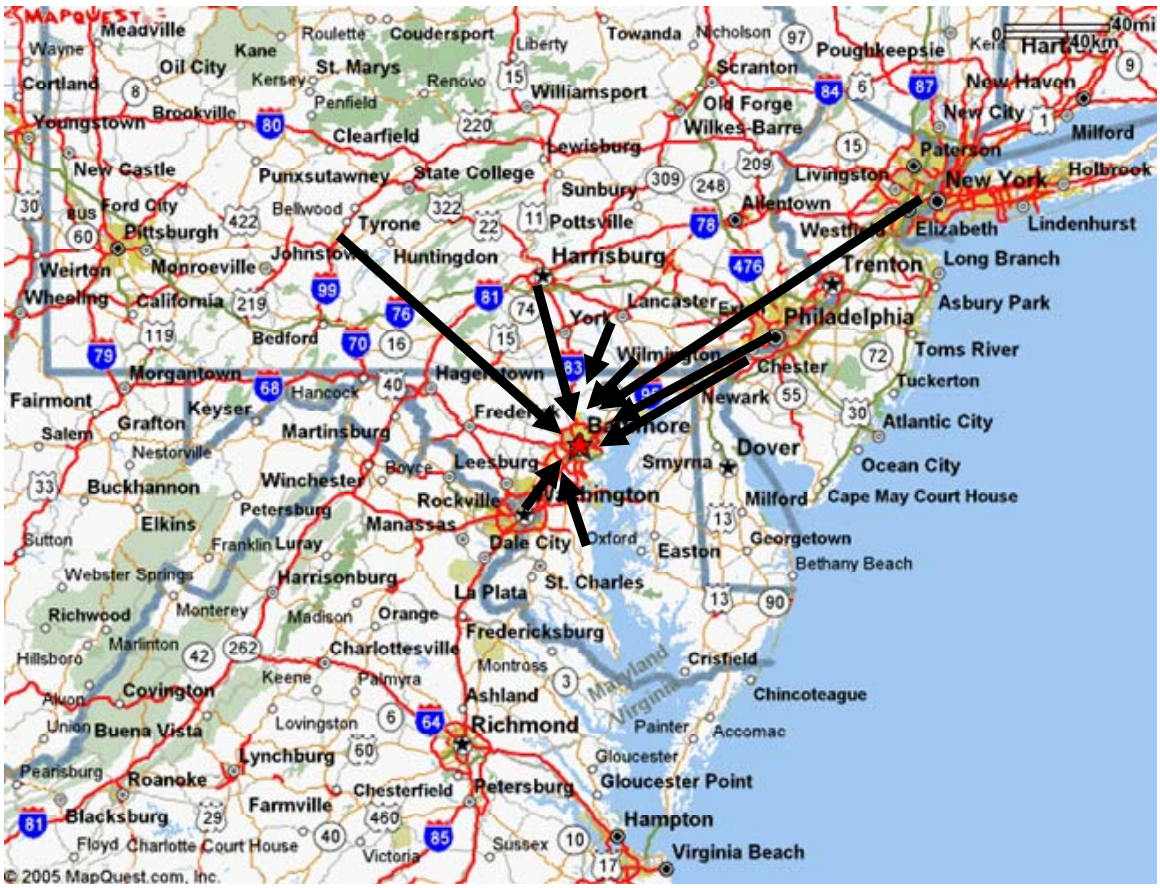
- Fighting this blaze was difficult because engine companies from Washington, DC, fire companies from Altoona, Annapolis, Chester, Harrisburg, New York, Philadelphia, Wilmington and York found that some of their fire hoses were of the same thread and some would not fit because of different thread designs.

- Imagine 1,231 firefighters, 57 engines, 9 trucks, 2 hose companies, 1 fireboat, and 1 police boat efforts were hampered by hydrant nozzle threads.

- 1905 – A NFPA committee established a standard diameter and number of threads per inch for hose couplings and fire hydrants. Before this time, Cities had different fire hydrant threads.

- 1924 – 700 cities conformed

The "Great Baltimore Fire, February 7th, 1904



MAWA'S OLDEST HYDRANT:

Matthew Hydrant (we call it Matt and it is now located in the Board Room)

- This hydrant, removed from the corner of East College St. and North Main St. in July 2004, is the oldest hydrant of the Meadville Area Water Authority.

- The hydrant is approximately 132 years old and was manufactured between July 18, 1871 and April 30, 1872. R.D. Woods Co. was very proud of their patents and displayed their patents on the top of the rim. It is known that R.D. Woods had up to 5 patent dates cast onto the bonnet rim on some hydrants. Patent dates were the following: Jan 26, 1958, Nov 16, 1869, Reissued July 18, 1871, April 30, 1872, and Reissued Feb 26, 1984.

SO HOW MANY PARTS CAN BE IN A HYDRANT?