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Snapshot Size-Up #141

Water Main Breaks

Aging grids and careless excavators (contractors) are the two biggest reasons for water main failure, but even the simple act of firefighters closing a hydrant, if done too quickly, can create a water hammer that can cause an old water main to fail. The broken water main may become immediately noticeable, but it may also begin to secretly wash away the soil under the concrete and asphalt without tipping anyone off that a break in the system exists and/or the fact that serious damage is occurring. The result can be the eventual collapse of a crowded sidewalk or busy street, and there's no way to predict when this failure will occur.

The responsibility of firefighters who respond to water-related incidents is to ensure safety and prevent damage. At a water main break, we can accomplish these two goals by establishing command, identifying the source of the leak, calling in the proper resources, searching all nearby exposures for civilians in danger, establishing safety zones, and helping to stabilize the incident by assisting the water authorities (water department), who will be responsible for shutting down the main and making the necessary repairs. Here are tips on approaching the scene and searching for victims from the book *Fireground Operational Guides*.



1. *Approach the scene with caution, and park at a safe distance.*

- Approach slowly, look for possible collapsed roadways resultant from the ground washing away.*
- Lids may have become dislodged, beware of possible open manholes that may be hidden under the water.*
- Exit the apparatus, and walk cautiously towards the affected area.*
- Do not walk blindly into water puddles, pools, or flooded areas.*
- If you must walk in flooded areas, use a tool such as a pike pole to test for solid footing.*
- Collapse may be imminent, even to firefighters who are out of their vehicles.*
- Conduct a thorough size-up as you survey the scene.*

2. *Search for civilians who may be in danger.*

- Conduct an extensive primary search of all areas affected by the main break, including exposures (inside and out).*
- Search large puddles, collapsed roadways, flooded areas, under bridges, inside voids, nearby vehicles, nearby basements that may be flooded, and any other areas within the danger zone for civilians who may need assistance and remove them from danger.*
- Direct ambulatory civilians to safe areas.*
- Initiate rescue efforts, if needed.*



Deputy Chief Frank Viscuso is a tour commander, speaker, and best-selling author from New Jersey. He has written six books including **Fireground Operational Guides** (co-authored with M. Terpak), & **Step Up and Lead**. He can be reached at frank@commonvalor.com, or via cell: 973-981-1505. For more information, visit www.frankviscuso.com