The U.S. water supply system is imploding

by Richard Freeman

Ancient water mains and water processing systems, which deliver tens of billions of gallons of water daily throughout America, continued to rupture during the cold snap which started in mid-January and continued into February. No phase of the economy functions without reliable water delivery: from the growth of agriculture to the working of industry, from the societal prevention of disease to personal biological survival.

The media, relying upon "common sense," has portrayed the breakdowns as caused by the "the cold"; that is not true. Rather, the cause is the lack of infrastructure redundancy. Corrosion on an older pipe generates critical weak points. Then, temperature swings—not the cold itself—cause the pipe to contract and expand, a process that corroded pipes or pipes made of cheap materials cannot handle. Examples of the national picture include:

- On Jan. 21, a pre-Civil War, 138-year-old water main burst in Brooklyn, New York, creating a gaping crater in the middle of Fourth and Clinton Streets that looked as if a meteor had hit the street. The escaping water formed a winter lake that ran over four blocks, flooding and damaging dwelling units along the way. In turn, the water undermined and broke a gas line. Hundreds of families lost power, water, and heat. The nearby Battery Tunnel had to be closed for over 10 hours.

While Mayor Rudolph Giuliani toured the area, a resident asked him if he was going to raise taxes now that the area had become waterfront property.

- In Philadelphia, the ruptures of aging water mains became so frequent that the water system was losing 100 million gallons of water a day, an amount equal to the water supply of several medium-sized cities. By Jan. 24, the city reservoir system's water supply had plunged to one-third the 1 billion gallon level that is required. In response, Philadelphia's water utility cut water supply down to a trickle for 547,000 of its citizens, and cut off water altogether to others.
- In Atlanta three mains broke, leaving practically the whole city with water only for cooking and minimum hygiene—no showers.
- In Maryland on Jan. 19, work crews were repairing 47 water main breaks, and 21 breaks the following day. In Washington, D.C., a water main break in the Municipal Building closed the driver's license bureau and sent water into the police cellblock. A break in a downtown Washington fast-food restaurant sent water cascading down Metrorail escalators and flooded one mezzanine level at the Farragut North train station.

No action on a national plan

The water delivery system in the United States comprises 436,000 miles of pipes, enough to span the circumference of the earth more than 15 times. Each year, there is a break for every 3.7 miles of water main in place. Thus, over 117,000 miles of water piping sustain one break each year. U.S. public works projects replace only 2,300 miles of pipe per year—less than 2% of those that experience breaks.

The lack of commitment to funding infrastructure is the cause of this problem. In turn, this was caused by 1) the depression, which has dried up tax revenues on both federal and local levels, and 2) the widespread acceptance of the budget-cutting mentality typified by Wall Street darling Sen. Phil "Landfill" Gramm (R-Tex.). This lunatic ideology views improvements and even maintenance of infrastructure as less important than so-called "cost-efficiency" accounting.

Take the old cast iron pipes in the nation's water systems that, when corroded, cannot handle the temperature and pressure stresses. Some 48% of the nation's water main system is cast iron; the percentage in older cities is 70-90%. The iron pipes in older cities on the East Coast and in the Midwest range from 100 to 140 years old.

Newer forms of ductile iron, that can handle many of the problems described above, do exist. But installing just one mile of the more elastic ductile iron in densely populated areas can cost $1 million. This places the true unpaid bill, for just replacing the cast iron pipes in the nation's water system, at $210 billion. This does not include the cost of fixing and repairing ductile iron pipes that have corroded.

Cortez White, general manager of the Washington Suburban Sanitary Commission in D.C., which covers a 4,700-mile system, reported, "In 1986, we identified $700 million worth of projects we considered critical, but the number grew so big [in the intervening years] *we don't even calculate it anymore. We just don't have the money to do it,*" he said (emphasis added). The commission experiences, on average, 1,200 water main breaks a year.

Harmful bacteria, including the potentially deadly cryptosporidium, were found in the Milwaukee water system in 1993, and were suspected in the Houston and Washington water systems. This comes from not regularly cleaning pipes or valves. The last time the valves in Washington were even systematically tested was 20 years ago.

At the current rate, most area utilities replace only about a dozen miles of pipe each year, which translates into the fact that it would take more than 200 years to rebuild each area's water supply system: in reality, they won't last that long. The United States as a nation has abandoned reliable delivery of water; unless that policy is reversed, the economy will die.