

A Very Serious Leak: How the U.S. Can Help Avoid a Water Crisis

by Walter Wang, CEO of JM Eagle



INFRASTRUCTURE IS BACK IN vogue thanks to the Obama Administration and its strategy to help create jobs by rebuilding the nation's roads, bridges and water systems. In fact, renewed interest in infrastructure is so high the American Society of Civil Engineers (ASCE) moved up the release of its Report Card for America's Infrastructure. Unfortunately,

their news wasn't good.

The average grade given to the nation's infrastructure was extremely low—a D—while the price to repair it, \$2.2 trillion over the next 5 years, was extraordinarily high. Additionally, of the 15 categories reviewed, water infrastructure was singled out as being especially deficient and functionally obsolete.

Better Management to Eliminate Waste

There is no question that water is an extremely valuable and critical resource. In fact, some believe it's more important than oil because we can't survive without it and there are no viable substitutes. Given the generally poor management of this precious resource, others feel we'll run out of water long before we run out of fuel.

While awareness of water scarcity—and its impact—is increasing (more than two-thirds of states in the country predict water shortages by 2012), the operative word in this pending crisis is management. Not just in terms of reducing water footprints and finding new ways to meet ongoing demand, but management in the context of reducing the

unbelievable water waste that occurs due to a lack of infrastructure innovation.

While many of our cities were visionary in developing water infrastructure, these systems are now well over 100 years old and no longer capable of serving the nation's needs. Made with ductile iron or concrete, the pipes are corroding, clogged and handling less and less volume.

They're also extremely susceptible to breaks (thousands occur each year) of which only the most critical are fixed, leaving others to leak permanently. Not surprisingly, approximately 15% of municipal water is lost to leaks, and public water systems that serve more than one million people in the U.S. average a loss of 17%.

There also is an increased risk of drinking water being contaminated, bringing disease to users from sewage or other pollutants infiltrating the lines. Conversely, corroding pipes that should be carrying sewage to treatment plants instead leak wastewater underground, polluting the soil, underground aquifers and nearby watersheds. Water exfiltration or soil infiltration can also lead to sinkholes, road damage, flooding and compromised building foundations.

Add to that the fact that existing infrastructure was not designed for the growth in population, let alone the current rate of individual water consumption (100 gallons per day versus 10 gallons 100 years ago), and it's clear that there's a dire need to repair, expand and improve our existing water infrastructure.

New and Better Options

The good news is that new infrastructure options have been developed that are just as strong and more durable—as well as more flexible and less labor intensive to install—compared to what's traditionally been used. Additionally, these innovative solutions meet the demands of engineers, architects, contractors, etc. and can be used to avoid massive construction projects to replace or rebuild leaky, outdated or broken pipes.

They also often provide more benefits in terms of both traditional cost/price scenarios and in relation to the environment.

For example, the Plastic Pipe Institute states that the cost of opening an old iron or concrete line and inserting HDPE pipe can be 33 to 66% less than the traditional dig-and-replace method. And due to the longevity of the new HDPE pipe, the cost benefit can hit 300%.



Plastic pipe also has a smaller carbon footprint during the manufacturing process because the melting process requires 90% less energy/heat compared to iron. Additionally, the weight of pipe is not only an issue for installation, but it's an important consideration in terms of transportation costs.

Conclusion

While there will continue to be much discussion about water infrastructure, the debate must quickly move from repairing and replacing to making smart decisions on how we do it.

Technology has changed the way we can and should design infrastructure systems. Unfortunately, many of the key planners and designers are simply reacting to the old problems with the same traditional approaches that ultimately result in more dramatic water waste.

Today, we have an opportunity to improve our water infrastructure by using innovative approaches and materials that not only eliminate the tremendous leakage, but allow our cities and municipalities to build solid systems that will provide safe, healthy and abundant water.



JM Eagle's new internal joint restraint, Eagle Loc 900 being installed

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