CRAIN'S CHICAGO BUSINESS

By KARI K. STEELE | September 26, 2019 01:55 PM

Forum ideas: Water

For flood control, we need green fixes, not just more gray pipes and tunnels

To prepare for more severe weather, more permeable school playgrounds and other spaces are needed to help absorb and store stormwater.

The Metropolitan Water Reclamation District of Greater Chicago is home to many notable engineering achievements over the last 130 years. We reversed the flow of the Chicago River to protect Lake Michigan, introduced local wastewater treatment, developed resource recovery strategies and instituted many water quality enhancements to improve our quality of life and the water resources upon which we rely.

Another of those achievements is concealed hundreds of feet below the surface, mined into limestone and working nonstop to protect our communities from flooding and our waterways from pollution. The Tunnel & Reservoir Plan (TARP), which includes the "Deep Tunnel," is one of the nation's largest public works projects, emulated around the world for its ability to store stormwater and wastewater that formerly flowed into our waterways. To stand over a titanic reservoir as it fills with billions of gallons of water is impressive, but as effective as the system is in safeguarding our water and shielding us from storms, it's still not enough.

Changing weather patterns require that we devise long-term solutions that meet this wave of new water. We own and operate 34 stormwater detention reservoirs and three combined sewer reservoirs, two of which are considered the world's largest of their kind. And as we complete the final piece of TARP, we realize we cannot continue drilling massive holes. The gray infrastructure from our pipes and tunnels will continue holding water and delivering immense value, but tackling larger storms requires us to meld that gray with green. Our basements and streets depend on it, and so does our water quality.

Green infrastructure captures water and allows it to infiltrate into the ground before it enters traditional conveyance systems, mimicking the natural water cycle. These projects decrease flows to both combined and separate sewer systems, protecting water quality in our waterways. The MWRD partners with local municipalities and governmental organizations to fund green infrastructure projects, providing storage and social benefits that enhance the livability of communities.

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Together with these partners, we have completed nearly 20 green infrastructure projects to date, designed to store more than 7 million gallons per rain event.

We are also working toward the completion this year of our 20th permeable schoolyard through our Space to Grow program. The partnership formed between the MWRD, Chicago Public Schools, the Chicago Department of Water Management, Openlands and Healthy Schools Campaign has resulted in more than 3 million gallons of stormwater retention per rain event.

Space to Grow transforms the schoolyards into vibrant and functional community spaces for physical activity and outdoor learning, while addressing neighborhood flooding. The new schoolyards absorb more water, reduce the load on the combined sewer system and educate students and neighbors about green infrastructure techniques and purpose. The schoolyards are a success story for students, neighborhoods and Chicago's environment.

When we took on the role of regional stormwater management agency for Cook County, we understood the urgency of mitigating flooding and improving water quality, but 15 years later the future is still uncertain. Last May we experienced record rainfall, totals that eclipsed the record set only the previous May.

Today we educate our communities on water conservation—especially during storms, to reduce the amount of water taxing our systems—and ways in which homeowners can help manage stormwater. We are also committed to a variety of stormwater management projects across Cook County. Many projects occur on grand scales, like reservoirs, levees and stream improvements. Yet many smaller local projects, like permeable parking lots, green alleys, rain gardens, tree canopies and rain barrel installations, can help combat these intense storms.

We continue to address the impacts of increasing rainfall that we've seen over recent years through our stormwater management programs, and also acknowledge the potential impacts of climate change in our planning efforts moving forward. We are reducing energy consumption and greenhouse gas emissions at our facilities that pump, treat and clean wastewater for 10 million people each day. We're creating energy from organic waste material and water, while optimizing aeration processes that will reduce energy consumption.

We chose in 2017 to honor the Paris climate agreement by reducing greenhouse gas emissions, and we have met many of our goals well ahead of the 2025 deadline to further mitigate the risk of climate change. But to protect our planet, we all play a role, and we must continue to weigh our energy demands with our ability to keep up with each storm. Each inch of rain counts, just as every second that ticks, and sustainable initiatives will be paramount in managing our water.

Kari K. Steele *is president of the board of commissioners of the Metropolitan Water Reclamation District of Greater Chicago.*

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