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Welcome to the Tortoise QuickTake podcast. Thank you for joining us. Today, senior members of Tortoise provide a timely update on trending topics in the market.

Welcome to the first Tortoise podcast on the water sector. I am Matt Weglarz, Portfolio Manager with Tortoise. Fittingly, we've chosen to launch this podcast on World Water day. Tortoise has a strong history investing in essential assets and infrastructure as well as focusing on market segments where we've identified a capital supply/demand imbalance. Water fits into all of these categories. This is the first in a new series of podcasts diving into the water space. Today we'll cover the global water crisis at a high level, but future podcasts will get much more specific on a variety of areas, including country-level case studies, discussions on the impact of technology in the sector, capital requirements and pertinent industry news.

The water crisis we're facing currently and in the future is scary, to put it mildly. There is, arguably, not a more essential component to life than water. There is absolutely no substitute, everyone and almost everything require it to live. The supply is finite. The world may be covered in water, but according to the U.S. Department of the Interior, less than 1% of water on earth is readily available for human consumption. While our supply is limited, demand is ever increasing as the population grows, industrial usage intensifies and the global economy expands.

Amplifying that problem, is over-aged and under-maintained infrastructure that leaks billions of gallons of water around the globe every day.

Many in the world take ready access to clean, fresh water for granted, but hydrology and earth systems sciences reports that 30% of the world, or roughly two billion people live in areas seriously affected by water shortages. Water is not only vital to survival, but ready access is a foundation which allows communities to thrive economically. To help quantify the economic burden that unreliable water sources have on our economy, the World Economic Forum has water rated as the number 1 economic risk globally, with more than \$260 billion in potential annual economic impact.

The water crisis in Cape Town is an example of how diverging supply and demand forces that extend for years can spark a sudden catastrophe. Kevin Winter, a professor from the University of Cape Town notes how over the last 20 years, the city's population grew by 79% while during the same time frame, water storage capacity only increased 15%. Throw on a severe drought, and you have a recipe for disaster. Residents have seen water use severely restricted and there has even been talk of turning off the municipal water supply completely. This is an unimaginable situation for many around the world, but it's one that's suddenly very real for the residents of Cape Town.

Water issues are not limited to emerging markets, with developed markets facing various crises of their own. Even here in the U.S., we face immense water risks. While Flint, MI. is the benchmark for water issues, many of our water systems face issues, most notably due to aging infrastructure.

As we look into the future, natural supply/demand imbalances will cause more and more communities across the globe to face a water shortfall. According to the United Nations, at the current pace, 47% of all people will live in severe water stress by 2030. By 2030, that's nearly 5 billion people – who will live in areas where reliable water resources no longer exist!

So, I guess the question is what can we do about it? This is where our expertise at Tortoise comes into play, because we believe the solution to preventing these global water crises is capital investment. Cities like Cape Town are prime examples of how critical it is to address these issues before they spiral out of control. Globally, the OECD estimates that \$14 trillion of investment is required from 2016-2030; in emerging markets, the need is primarily to build out new infrastructure; in developed markets, the need is more focused on rehabilitating existing market infrastructure. Technology will also play a critical role in the story, but much investment is required to get us where we need to go. We can maximize supply by reducing waste/losses, reusing water onsite, and building desalination facilities. We can reduce the demand side by utilizing more efficient agricultural techniques, adopting industrial process systems that use water more efficiently, and embracing water efficient household products.

This is not a problem that can be solved overnight, but working together can make a real difference to forging a better future. It is our goal at Tortoise to help align capital with the investment required to provide our growing global population with this most valuable commodity. Hopefully, we can be a valuable resource to you as you explore the global water landscape and the investment opportunity we believe exists. Thank you for listening to the first Tortoise water podcast, we'll talk to you next time.

Thank you for joining us. And stay tuned for our next cast. Have topics you want covered or other feedback to share? Write us at info@tortoiseadvisors.com.

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