Twenty years after its founding in Charleston, Water Mission continues to deliver safe water solutions and community development to disaster zones and underserved countries around the world.

Outpouring of Love

In 1998, Molly and George Greene (above) developed a water treatment system to aid people in Honduras in the wake of Hurricane Mitch. Three years later, the couple founded Water Mission as a faith-based nonprofit. Though Molly passed away in a drowning accident in 2019, her husband and son and their staff, now 400 people and counting, continue to carry out the vision: "That all people would have access to safe water and the opportunity to experience God's love."

Written by Lauren Brooks Johnson
Portraits & warehouse photographs by Amanda Bouknight
International images & portrait (above by Mic Smith Photography) courtesy of Water Mission

In 2009, Water Mission installed tapstands in this Malawi community after learning that children left home just before midnight each night to get in line at the nearest water source in order to have water the following day.
For two decades, Water Mission has mobilized safe water relief during natural disasters around the globe, as well as built lifesaving water systems in underdeveloped regions, where 2.2 billion people live without access to safe drinking water. On any given day, inside its 43,000-square-foot Navy Yard warehouse, volunteers work assembly-line style to construct Living Water Treatment Systems. These mostly solar-powered units use a variety of methodologies, including reverse osmosis and chlorination, to remove contaminants and produce 10,000 gallons of potable water a day. From the warehouse rubers hang a vibrant collection of flags representing the countries touched by this faith-based engineering nonprofit. “At the end of the day, those flags are a refreshing reminder that we’ve helped somebody somewhere,” says retired programmer-turned-volunteer Geoff Brittain.

From the Ground Up
During a six-month stretch this year, Water Mission responded to a half-dozen international crises, including earthquakes in Haiti and Indonesia, a winter storm in Texas, and back-to-back hurricanes in Honduras.

“Where people’s supplies have been disrupted, we focus on immediately restoring access to safe drinking water,” says CEO George Greene IV, whose parents founded Water Mission in 2001.

Disaster response is one of three branches of the group’s essential work. Some 300-plus full-time staff, most indigenous to their station countries, guide Water Mission’s day-to-day efforts. They zero in on the long-term needs of developing communities in nine countries across East Africa, Indonesia, and Latin America. Supported by another 100 domestic employees, the organization works to bring safe drinking water and sanitation to the 30 percent of the world’s population who lack these basic necessities.

Much of this aid takes place in rural areas that have been overlooked and underserved. Homes don’t have electricity, running water, or bathrooms, and water choices are limited. The time spent accessing far-off sources and

On the morning of August 14, a fleet of Chinook helicopters swept into southern Haiti, bearing enough water treatment equipment to supply 35,000 distraught residents. Hours earlier, a 7.2-magnitude earthquake had shaken the fragile nation. Already weakened by political turmoil, poverty, and the COVID-19 pandemic, towns subsequently lay in shambles, entire buildings reduced to little more than concrete heaps. Amid the dust, however, one North Charleston-based nonprofit poured out a clear promise of care in the form of clean H2O.
“Within a month of bringing safe water into a community, we see the incidence of waterborne disease drop. School attendance increases. Adults can work to generate income…. Water is the linchpin, the key to breaking the poverty cycle.”—Dr. George Greene

In the Bidibidi settlement of Northern Uganda, where refugees live in exile for 10 or more years, solar-powered pumping systems provide a clean water solution that is both financially sustainable and operationally resilient.

the intrinsic illness from unsafe drinking water keep people from more productive pursuits such as school, farming, and other work. In these “last-mile communities,” Water Mission strategically constructs tap stands and sanitary pit latrines, and more recently, in response to the pandemic, thousands of handwashing stations. The simple introduction of clean water for drinking and hygiene produces a substantial trickle-down effect.

“Within a month of bringing safe water into a community, we see the incidence of waterborne disease drop. School attendance increases. Adults can work to generate income. The communities establish a municipal bank account to fund maintenance and expansion of their water system. People realize they’re capable of helping themselves.” That’s a huge paradigm shift,” explains Water Mission co-founder Dr. George Greene III.

“Water is the linchpin, the key to breaking the poverty cycle.”

Somewhere in between disaster response and community outreach lies Water Mission’s support of the refugee camps in Uganda and Tanzania. “Refugees move because of a crisis, but the average tenure in these camps is estimated to be 10 years,” explains CEO Greene. “We organize immediate access to basic needs, but we also have to plan in the tens of years.”
Building Solutions: At Water Mission’s North Charleston warehouse, volunteers man assembly line stations to carefully construct the nonprofit’s signature Living Water Treatment Systems. A display explains how the basic system works to clean water that’s pumped from nearby rivers, drawn from higher ground, or up from the ground, depending on the community’s landscape.

Some of the systems use reverse osmosis to remove any salt and sediment from the water and then add chlorine to eliminate bacteria, producing up to 20,000 gallons of safe drinking water a day. Volunteers also package completed systems and maintenance parts for shipment around the world (opposite).

In the open fields of Nyarugusu Refugee Camp, for example, Water Mission erected a 100,000-watt solar panel to power the treatment and pumping of water for more than 250,000 displaced people. Similar projects have been constructed in two other camps.

The Global Water Crisis
As the longtime regional director of Water Mission’s program in Tanzania, Will Furlong harbors a unique understanding of the trials associated with a lack of safe water and sanitation. “In East Africa, most women and children walk an average of three miles to fetch water outside of their communities. They are frequently raped or molested along the way. Once there, they must often wait in line. If the water source is a lake or river, villagers also contend with skin-burrowing parasites and crocodiles.”

The water they carry back in buckets remains heavily contaminated. “Some try to boil it and others add a chlorine tablet, but those are expensive solutions, so most people just drink the water as is,” explains Furlong, who lives in Dar es Salaam. He tenderly recalls one Ugandan fishing village crowded with malnourished children. “They were beautiful children, smiling, curious, playful. I know if nothing was done, every one of them would get sick, and the most vulnerable among them would die.”

Half of the hospital beds in developing countries are filled with people suffering waterborne illnesses. Yet in the United States, we can access safe water with the touch of a tap. “What’s so striking about this problem is that it shouldn’t exist,” says Dr. Greene, who created Water Mission along with his late wife, Molly. “We have the technology in the developed world to treat any water anywhere.” His son concurs, “We solved the water issue in this country more than 100 years ago. We can fix this.”

A Watershed Moment
George and Molly Greene’s Charleston-based environmental testing lab General Engineering Laboratories (GEL) was deep into its teenage years when Hurricane Mitch hit Honduras in 1998. Seeing news reports of entire villages washed out to sea and feeling compelled to help, Dr. Greene reached out to his only contact in the country, an Episcopal bishop. “I sent an e-mail simply said, ‘What can we do? We know a little about water. I honestly didn’t think I’d hear back,’ he remembers. But the next morning, an urgent one-line reply sat in his inbox: ‘We need six drinking water units.’

Unable to locate any ready-made systems, he set to sketching on a yellow legal pad. “Water treatment isn’t really complicated, so we thought, ‘Let’s just build something.’” Two weeks later, a small team from GEL had transformed basic hardware store materials into a half-dozen water treatment systems ready to be airlifted into Honduras. Along with volunteers from their company, the Greens headed to Honduras the week before Thanksgiving to install the rudimentary systems—the first working prototype of the
"We have the privilege of being able to turn on the tap without even thinking about it. Maybe there’s some level of responsibility that comes with that."
—George Greene IV

Water Mission has earned four stars from Charity Navigator for 14 consecutive years and two Sustainability Leadership Awards from the American Chemistry Council (2020). Dr. George and Molly Greene were also the first Americans to receive the Solar World Einstein Award (2012).

Living Water Treatment System. "That trip changed our lives," stresses Greene. "We saw conditions that we’d never thought existed." In one village, the sole source of drinking water was a murky brown river known locally as "Rio de Muerte (River of Death)" for the deadly diseases harbored in its waters.

For the subsequent two years, the couple continued educating themselves about the vast global water crisis. They dabbled in safe water solutions under their company umbrella, solving treatment systems to Mozambique, El Salvador, Turkey, and other nations in need, but quickly realized that the answer wouldn’t be found in a for-profit environment. "On the last Saturday in September 2000, Molly and I sat on our back porch, talking and praying. By the end of the day, we were in agreement," remembers Greene. "The couple planned to sell their company, at the time, the largest privately owned US lab, to focus on water. "We felt this was where the Lord was leading us," he explains. "We knew this wouldn’t be just a humanitarian group, but a Christian ministry to provide access to safe water while also sharing our beliefs."

A Lasting Impact
Greene’s PhD in chemical engineering and Molly’s master’s in Spanish proved to be quite a powerful combination. "We ran our for-profit company based on Christian values," he
To address the urgent global water crisis, Water Mission’s day-to-day activity involves constructing water treatment systems, tap stands, sanitary latrines, and handwashing stations across East Africa, Indonesia, and Latin America through nine permanent country programs.

In making water safe and accessible, the nonprofit underscores the need for “community buy-in,” wherein villagers actively help set up safe water solutions, taking ownership of the project from conception through construction and into regular operation and maintenance.

Community representatives undergo training to manage the completed Living Water Treatment System independently. Water Mission remotely monitors each system so fluid, in the event of a problem, country directors can help local leaders troubleshoot.

Paying roughly a penny a day, community members invest in a municipal bank account. These savings fund maintenance as well as future expansion of the water systems when the community begins to thrive, a natural result of the economic and educational shifts that come with safe water and sanitation.
reflects. "And we run our Christian nonprofit like a for-profit company." That has meant setting and adhering to quality standards with a strong technical focus. "We aim to put systems in place that will last."

The founder points back to this summer's earthquake in Haiti. As part of Water Mission's response, a team revisited each existing Living Water Treatment System installed after Hurricane Matthew in 2016. Knowing that Haiti sits on a seismic fault, the organization's licensed professional engineers designed the structures to withstand future disasters. Of the 40 projects, 38 of them remain functional following August's quake.

"That commitment to getting things right the first time has fueled substantial growth and credibility over the past two decades. The nonprofit assessment group Charity Navigator has bestowed a four-star rating on Water Mission for 14 consecutive years. "Donors and corporate partners recognize our excellence and determination to be best in class, to be sustainable," says Furlong. And I think, in our work, they see love."

A 2017 audit of groups working in Ugandan refugee camps specifically highlighted the nonprofit's success. "Water Mission stands out as the nongovernmental organization with enough in-house expertise to independently design, operate, and maintain solar-based water schemes," reads the International Organization for Migration's report. At a time when 30 to 50 percent of water sanitation, and hygiene projects fail after two to five years, "that really validated our approach," notes George Greene IV. As a result, Water Mission and UNICEF teamed up to publish an installation manual softening the nonprofit's standards and instructions to help guide other relief groups.

Perhaps the clearest element of the group's success rests in its approach to those in need. "We look at people as partners, a value that stems from our faith," says Furlong. "Our systems are sustainable because villages commit to the project and essentially bless themselves." When Water Mission engages with any community, it asks residents to provide locally available building materials, labor, and land for structures. Communities also participate in management training for the finished water systems. "When we get to the end of a project, we can say, 'Look what you have done.' There's a sense of ownership, pride, accomplishments and dignity," Furlong continues.

The Future is Clear
In its first decade, Water Mission reached one million people in need of safe water and sanitation solutions; now, at the close of its second decade of service, the charity has helped some seven million people across the globe. "That's a lot of people, and it means a lot to those individuals, but there's still a huge need," stresses George Greene IV, explaining that Water Mission's goal is to grow as fast as possible to meet it.

With 2.2 billion people in need of safe drinking water and nearly twice as many lacking access to adequate sanitation, Water Mission's impact to date may feel like a mere drop in the bucket, but the nonprofit is laying the groundwork for partnerships to expand their reach. "We believe there just aren't enough people working to solve the problem. This crisis is so big that it can't be solved by one organization," says Dr. Greene. Last year, the group established an international consortium known as the Global Water Center, which strives to pool the expertise and resources of companies such as Kohler (plumbing), OxyChem (chlorination), and Pace Analytical (environmental testing) for a broader impact. By sharing on each other's successes to bring safe water to developing countries, these groups can more swiftly and efficiently solve this massive problem. "Our vision is that all people would have access to safe water and an opportunity to experience God's love," explains Dr. Greene.

 Asked what the future holds, the Boswell-based founder responds matter-of-fact: "The future holds safe water for two billion, 200 million people."

PUMPING WATER

Outdoor pavilions offer hands-on activities for learning about water testing, solar-powered systems, and water treatment.

The first exhibit inside the tent, Water & Life, illustrates its three states—liquid, gas, and solid.

Providing clean, safe drinking water to a child leads to a profound ripple effect, including better health and improved opportunities for education.

In Their Shoes: Walk for Water 2022
Every day adults and children walk more than three miles to collect water for their families. On March 26, 2022, Water Mission asks Lowcountry residents to walk in the shoes of the more than 2.2 billion people around the world who lack access to safe drinking water. Walk for Water, the nonprofit's annual fundraiser, raises awareness with a three-mile bucket carry at Rivertowne Park in North Charleston. Since 2005, thousands of Walk for Water participants have raised millions of dollars to fund solutions to the global water crisis. Learn more at watermission.org.