

Since 1918, WSSC has proudly served the citizens of Prince George's and Montgomery Counties through its delivery of safe and reliable water and wastewater treatment services. In honor of WSSC's Centennial this year, write an essay, in 1500 words or less, detailing the benefits WSSC has brought to its 1.8 million residents over the past 100 years. Additionally, outline the challenges you foresee facing water utilities over the next 25 years and how you would resolve them.

Water is arguably the most important resource that we rely on. Life on earth cannot exist without it. While humanity has harnessed nature in almost every way, our dependency on water remains. We not only need drinking water to sustain ourselves, we also use it constantly for sanitation. We take showers and baths, wash our clothes and our dishes, and dispose of our biological waste with water every day. In many cultures, water has an even deeper meaning. Water is sometimes thought to wash away more than just dirt, and to purify body and soul. Water is crucial to our lives and to our society. As the human population has exploded, we have come a long way from carrying a dirty bucket of water to our houses. Now, massive pipes pump millions of gallons of water every day to hundreds of thousands of people in Montgomery and Prince George's counties alone. Our water delivery and treatment processes have changed greatly, and the Washington Suburban Sanitary Commission (WSSC) has been on the forefront of that progress.

WSSC has come a long way from its early beginnings in Hyattsville in 1918, when its first three commissioners met above a drugstore. The fledgling water utility was tasked with serving 30,000 people over 95 square miles by pumping a little more than 300,000 gallons of water every day. It started by taking over the existing water distribution and sewage pipes, and then began working on expansion. In the first 18 years, WSSC's service area only grew by about a third, to 125 square miles, but the population served more than doubled to 78,000 people. Today, WSSC's reach is nearly 1,000 square miles of Montgomery and Prince George's counties, containing over 11,000 miles of sewer and water pipelines. The original 300,000 gallons of water daily seem like a tremendous amount, but today that number averages at about 167 million gallons per day.

We have most definitely reached a point where the majority of the local population would struggle greatly without WSSC. You can see this whenever there is a water main break and water supply to a neighborhood must be turned off. People complain and struggle when they cannot flush their toilets or take a shower. Even a few hours significantly inconveniences us - what if we had to last a week? A year? I am glad we do not have to find out what that would look

like. WSSC serves the community greatly by doing so much maintenance and regular pipe replacement. Doing this prevents hundreds of disasters and thousands of cases of households and businesses not having running water. Sometimes burst pipes mean more than a slight inconvenience. If a hospital or nursing home loses its water, for example, lives suddenly become endangered. That is a tremendous responsibility for WSSC to bear. This is why it is so important to replace aging water mains before they become a liability. Unfortunately, just because routine replacements are done, there is still no guarantee that the pipes will last until replaced. Bursts do occur, but WSSC is prepared to handle them. Although the necessary water shutdowns might evoke memories of annoyance in most people, it is important to remember why the water needs to be shut off. It would be impossible for repairs to be done with the water still flowing through the pipes. I clearly remember one morning a few years ago when a water main burst under a street in my neighborhood. I saw the site myself before WSSC arrived, and witnessed the force of the water lifting the paved road a few inches so it could escape. That water is a near-unstoppable force, so it is crucial to shut it off before repairs are attempted. All of the pipe replacements, be they emergency or routine, that WSSC does drastically benefit the community, as thankless as the job may be.

WSSC is running well and supplying a necessary service to a massive population of people. However, there will be new difficulties to overcome in the future. One large issue is that the population is not done growing. Water supply and treatment facilities will need to continue to be upscaled to meet the increased demand in the coming years. WSSC also has to stay mindful of the fact that higher volumes of water flowing through pipes that are now too small may be a concern as well. With higher water and sewer demand comes a higher demand for energy. Treating water to make it safe for consumption or returning to the environment is a process that is very demanding in terms of electricity. WSSC already generates some renewable energy by use of solar panels, but obviously it would be ideal if it could match, or even exceed, its consumption with its generation.

The biggest challenge that WSSC faces and will continue to face is that of aging pipes. With water distribution and sewer pipes combined, WSSC is responsible for over 11,000 miles of pipes across the two counties. Some of those pipes are older than 90 years, and they are continuing to age. While it is impressive that WSSC has been managing to replace around 50 miles every year, the current infrastructure still needs to hold up for over 200 years at that rate. Unfortunately, even the newest pipes - coated in zinc, rather than the old and less durable pure ductile iron - are only built to withstand 100 years of use. WSSC would have to more than

double its replacement rate in order to stay within that 100-year-long expected lifespan. Plus, the older pipes are even more prone to failure, meaning that replacing them must continue to be a top priority. Increasing pipe replacement on so large a scale would require significantly more funds than WSSC is currently earning, and if it decided to follow through with the ideas, the ratepayers would suffer. Since WSSC is supported through people and businesses paying a monthly rate for their services, it will be difficult to walk the line between overcharging ratepayers and constantly rushing to fix catastrophes caused by old decrepit pipes.

When local residents and businesses think of WSSC, their first thought is probably of their water bill. Perhaps it was higher this month compared to last, or they just detest paying utility bills. When people understand where their money goes, and the roles they can play in supporting the utility, they're able to be better customers. In this age of busy calendars, ever-multiplying information sources, distracted attentions, and demands for more transparency, effective outreach and education poses another challenge. Effective methods must be creative, coupling more traditional communications with new opportunities as they emerge. Today, this includes WSSC's engaging social media presence, public events, and hand-on youth programs. The coming years will undoubtedly introduce platforms and techniques we've not yet imagined.

Water is a crucial part of our society, our culture, and most importantly, our wellbeing. WSSC has been providing Montgomery and Prince George's counties with clean water and sewage services without fail for an entire century. Without WSSC, we would not be able to perform so many of the daily rituals we depend on. There are many great water-related challenges on the horizon for the water utility, from aging pipes to high energy demands, but WSSC will move forward with the most innovative technology as they have done since 1918.