



SAINT CHRISTOPHER AND NEVIS

Ministry of Public Infrastructure, Energy & Utilities; Domestic Transport;
Information, Communications & Technology; and Post

STATEMENT ON WATER SUPPLY ON ST. KITTS

19 December 2022

Water is Life and every drop counts. I repeat, Water is Life and every drop counts.

In my capacity as Minister with responsibility for Public Utilities et al which encapsulates the Water Services Department, I wish to provide a statement on the present state of Water Supply across St. Kitts and to bring some much-needed clarity and understanding to our water reality as transparent information on this water issue has been absent in recent years.

After many years of insufficient attention being paid to our water resources, we are now facing a **National Water Crisis**.

St. Kitts and Nevis is considered a water scarce country based on the UN definition of countries with less than 1000 cubic meters (220,000 gallons) per capita of renewable water resources a year. At present, **ALL** of our potable water comes from rainfall. That is, when rain falls, there are some rivers that flow moderately and provide **surface water** and, importantly, water that percolates, mainly along our mountain ranges and along our sloping lands, into our aquifers which provide **groundwater**. Currently, we have seven (7) rivers providing surface water, which account for about 30% of our water supply, and twenty-six (26) wells providing groundwater, which account for about 70% of our water supply, for a combined production of about 5.6 million gallons of water per day. Water from these sources is channeled or pumped into storage reservoirs ranging in sizes from 20,000 gallons to 1 million gallons. We presently have about 7.5 million gallons of storage. This water is then gravity fed to our homes, businesses, hotels, farms, and the like.

While our present production capacity is 5.6 million gallons per day, our present demand is approximately 6.6 to 7 million gallons of water per day resulting in a deficit of up to 1.4 million gallons per day. Consequently, with a demand greater than production, the Water Services Department is unable to provide 24-hour water supply service in certain areas of St. Kitts. This in turn has resulted in the need for the rationing of our water supply. To compound the issue further, our projected demand for 2025, less than 3 years away, is 8.7 million gallons per day which would represent a deficit of 3.1 million gallons a day based on present capacity to supply.

The question is, ***why is our production now less than our demand?***

Over the past decades, especially during the housing boom in the late 1990s and early 2000s, the standard of living in St. Kitts improved significantly with many more thousands of persons with access to flush toilets and almost every household having a water connection to the public distribution network. The development of a robust public water supply system allowed, at that time, for improvement in farming and other industries. We were only able to meet this upsurge in demand from the rapid housing and tourism expansion and agricultural diversification during that period because we were able to drill new wells around the island.

However, unfortunately, in recent years and in particular the last 7 years, we entered into an era where our ability to meet the ever-increasing demands fell short. Post 2014, the well-drilling program was not sustained as it ought to have been. Additionally, in the absence of well-drilling, there was no aggressive push to find alternative sources.

To compound the issue, over the last 10 years or so, we have recorded a near 20% decrease in annual rainfall thereby causing our aquifers not to adequately recharge even as we pump more and more water from them. Take for instance, over 40 years ago, scientist estimated that the safe yield of the Basseterre Valley Aquifer was 2.5 million gallons per day. However, due to the increased demand and no other sources in the Basseterre area coming on stream, sometimes, in excess of 3 million gallons per day has been extracted from the aquifer. Additionally, with decreased rainfall, it is safe to assume that the safe

yield could actually be closer to 2 million gallons a day. Consequently, we have been depleting our aquifer faster than it could recharge. The result is that we are now seeing the signs of saltwater intrusion as our freshwater levels are getting dangerously low. Additionally, as the earth continues to warm due to climate change, we see that our sea water levels are rising which will further impact the rate of saltwater intrusion into our aquifer. Thus, I am advised to **warn** that if saltwater intrusion is allowed to persist because of over extraction of the wells, our aquifers could be condemned for **decades**!

Therefore, because of economic expansion leading to increased demand, decreased rainfall, overextraction of our aquifers, signs of saltwater intrusion and little to no exploration of new sources of water over the past 7 years, it became **IMPERATIVE** to reduce extraction from our aquifers in order to save our aquifers that provide 70% of our potable water. Unfortunately, this has meant that our water supplies have had to be rationed by shutting off reservoirs daily so that they can be partially filled with water for the next day. Additionally, there has also not been enough surface water from our rivers to keep those reservoirs even half full. In short, there is simply not enough water for us to safely produce to meet our current demand, given our current water infrastructure. In most cases when you do not have running water it is because there just is not enough.

I wish to emphasize at this point, that turning on or off water is not like turning on or off electricity. When you turn on electricity, everywhere that is connected to the source receives electricity almost instantaneously. Similarly, when it is turned off, everyone loses it almost simultaneously. However, with water, because of variations in elevations, pipe sizes, pipe distances, pressure, and other factors, water can be turned on and take hours to (or never at all) reach the furthest or highest destination, **IF** there is enough water to fill all the pipes and home storage tanks along the way. Similarly, when water is turned off, residents at lower elevations could potentially never lose water because all the water does not drain out of the system before the source is turned back on. This is partly why it is difficult to give specific times for all areas as to when water will be go or come. However, there is tremendous room for improvement in communication of information about planned or emergency water outages and as such, efforts are being made for the improved dissemination of water related information from the Water Services Department.

The next question is, ***where do we go from here?***

I want to assure you that as a new administration facing these water challenges which we met, we will not throw our hands up in the air, as it appears our most recent predecessors might have done. We believe in the resilience of our people, hence, together we will come up with solutions that are practical and sustainable. I have every confidence that we will return to 24-hour water supply!

The first low hanging fruit for us to be able to meet our demand, is to reduce our demand and **CONSERVE WATER**. It is now **critically necessary** for us to understand the situation and be willing to change our behavior because, unfortunately, we have had a culture of wasting water. This is largely because of the previous abundance of our water supply and its extremely low tariff over the years. Additionally, most of us have grown up being unaware of much of the information which I have just shared in answering the questions of “exactly where does our water come from and how much do we have?” Toward this end, we will be launching a public awareness campaign on our water supply system and the importance of **CONSERVATION**. The reality is, if all of us were to reduce our water usage by about 20% we would be immediately able to meet the demand. To do this, we would have to fix our leaking faucets and toilets and install water efficient faucets, toilets and appliances where we can; we would have to not be running the water twice as long as is necessary for a shower; we would have to not be using a running hose for the duration of cleaning cars, buildings, etc; we would have to use rainwater harvesting for our irrigation needs for our gardens and lawns as opposed to government supply; just to name a few. In the coming months, the Government will take actions to encourage conservation and strongly discourage wastage. I am therefore appealing to ALL of us to start the practice of water conservation now!

Many people ask the following question: “*With all this rainfall that we have had recently, why don’t we capture it in large storage tanks and prevent it from running away to the sea through our ghauts?*” Firstly, when rain falls, as much as 80% of it is lost back to the atmosphere through evaporation from the ground and plants. 18% goes into the ground where it becomes groundwater. Only about 2% runs off into the ocean. Let us then say we constructed 7 - one million gallon capacity tanks which we were able to fill after a heavy down pour of rain. By our current demand of roughly 7 million gallons per day, we would consume that water in **ONE DAY** or, at the very least, a few days if we were to merge it with our present capacity. It would then need to rain every one to three days to keep those tanks filled. Unfortunately, with an increasingly longer dry season and shorter wet season, our rainfall patterns would not be able to constantly fill those tanks. Therefore, one of our major problems is not storage, rather, a major problem is a constant renewable source of potable water.

In fact, we can view our mountain ranges, skirted by our gently sloping lands, as one giant reservoir that captures 18% of the rainfall and deposits it into aquifers around the island. This is actually the best reservoir we have. Therefore, we must ensure that we continue to explore all our groundwater potential as I am advised we have explored just about 60% of the island's capacity with 40% remaining untapped. Consequently, within three weeks of being appointed as Minister of Utilities, the services of BEAD (Bedrock Exploration Development Technologies) were re-engaged to continue groundwater well drilling that had been put on go slow or pause over the past 7 years. Such was the abandonment that the drilling rig was vandalized and began to deteriorate. Replacement parts had to be ordered. However, due to the major global supply chain issues, the replacements parts were delayed by months and have only recently landed in the Federation. Therefore, we expect the drilling process to start in earnest in January 2023 after the repairs are completed on the rig. Technicians are due to arrive on 27 December 2022.

The first well to be drilled will be in Cayon where we are hoping for a yield of 600,000 gallons per day. Once this well is successful, this yield will resolve the water issues in Cayon. Additionally, surplus from this well can be diverted to St. Peter's and the Lodge/Molyneux area. This well is expected to take about 6 to 8 months to complete.

Next, the experts will return to the Shadwell area to address a well with a potential yield of another 600,000 gallons per day. Success at this well will greatly assist in reducing the near million gallon a day deficit that is now experienced in the Basseterre area. Unfortunately, this will still not be enough for the Basseterre basin. Additionally, I am advised that we have effectively explored all our options from the Basseterre Valley Aquifer, which is the aquifer that supplies water to Basseterre, St. Peter's, Bird Rock to Frigate Bay to the Southeast Peninsula and their environs.

Consequently, as a result of over extraction of the Basseterre Aquifer, the limited new drilling opportunities in the Basseterre Basin, reduced annual rainfall, saltwater intrusion, and continued economic growth expected in the Basseterre area, the time has come for us to use desalination of the tremendous renewable resource of the ocean. The use of desalination is now mainstream throughout the world and in the region such as in Antigua & Barbuda, Anguilla, Barbados, Trinidad & Tobago, and the British Virgin Islands. In fact, desalination has been done here in St. Kitts for almost 20 years since the opening of the St. Kitts Marriott Hotel and the re-development of the Frigate Bay Golf Course. The water requirements were too great for the Water Services Department and as such the developers decided to install a desalination plant. The Park Hyatt has also installed its own desalination plant and is not supplied by the public water system.

Therefore, in the coming months, the Water Service Department will be taking concrete steps towards the construction of a 2 to 3 million gallon a day desalination plant, powered by renewable energy, for the Basseterre area. We will also be benefitting from the construction of a small solar-powered desalination plant which is a donation from the United Arab Emirates.

In the short term, it has come to my attention that the Royal St. Kitts Beach Resort Limited (the Royal Utilities that supplies the St. Kitts Marriott) is presently not utilizing its full desalination capacity. Consequently, the Government of St. Kitts & Nevis and the Royal St. Kitts Beach Resort Limited are finalizing an agreement for the supply of up to 300,000 gallons of water per day to the Frigate Bay area by February 2023. This would be able to serve a significant portion of the Frigate Bay and Southeast Peninsula area which would then allow for the water normally sourced from the Basseterre aquifer for Frigate Bay to be directed to other affected areas in the Basseterre basin.

Another important step in the improvement of the water supply services is the re-establishment of the Water Board. The Water Board allows for wider engagement of stakeholders and strengthens the leadership team of the Water Services Department. We also intend to pay closer attention to the proper recruiting and training of Engineers, Hydrologists and Technicians to ensure added competency and modernization in the operations of the Water Services Department by incorporating the latest technological advancements in the sector.

The Water Board is established under the Watercourses and Waterworks Act. Pursuant to Section (5) of the Act: "The Board shall consist of the Water Engineer of the State or, if there be no such Water Engineer, then the Director of Public Works of the State, and four other members to be appointed for such period as may be determined by the Minister acting in accordance with the advice of the Cabinet." Section (5) additionally states: "The Water Engineer of the State or, if there be no such Water Engineer, then the Director of Public Works of the State shall be chairperson of the Board and shall preside at all meetings of the Board..."

To this end the Water Board will commence operation from 1 January 2023 and, by law, will be chaired by Mr. Cromwell Williams, the current Water Engineer. The names of the other nominated persons will be announced once they have accepted their appointments.

Along with the responsibility to ensure that our water system is properly managed and resourced, the Water Board will also be tasked with exploring the feasibility of corporatizing the Water Services Department. St. Kitts is one of the very few regional territories that is yet to take this step. It is believed in many quarters that corporatization tends toward greater efficiency and a higher level of service. We believe that this can be achieved while still ensuring that water remains affordable even for the most in need amongst us.

A Shared Responsibility

This new administration has given our commitment that we will spare no effort in tackling and solving the water challenges that we are facing, whether these challenges were brought on by lack of adequate funding and attention in the past or climate variations or just the rapid growth and expansion due to our socio-economic development. We are well on our way in assessing the situation and have begun to implement some of these necessary solutions. Overall, this effort will require significant expenditures – tens of millions of dollars over the coming years and **we will do it!** For 2023, the Government has increased its budgetary allocation to the Water Services Department by **260%**. This translates to an increase of 14 million dollars; from 8.7 million in 2022 to now 22.7 million for 2023.

We will modernize the water infrastructure of St. Kitts. We will deliver a water service that is safe, reliable and affordable. We will continuously drill new wells. We will construct desalination plants. We will cut down on our water leakage and wastage. We will introduce and upgrade the use of modern technology to improve the efficiency of our operations. We will construct new storage reservoirs and upgrade the water lines where necessary. We will encourage homeowners to practice rainwater harvesting. We will recruit new expertise and train our staff. We will review our tariff structure. We will make water management a **national priority**.

However, let us remember that the sustainable management of our water resources is not just the responsibility of the Government; it is a shared responsibility. Each of us, the users of this precious, finite resource must partner with the Government; we must play our part by conserving water; especially by repairing our leaks in a timely manner and practicing conservation in our everyday use of water. We can do this together.

Thank you for your attention and may God continue to bless us with an increased abundance of clean freshwater in our beloved Federation of St. Kitts and Nevis.

Sincerely,



Hon. Konris G. M. Maynard
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