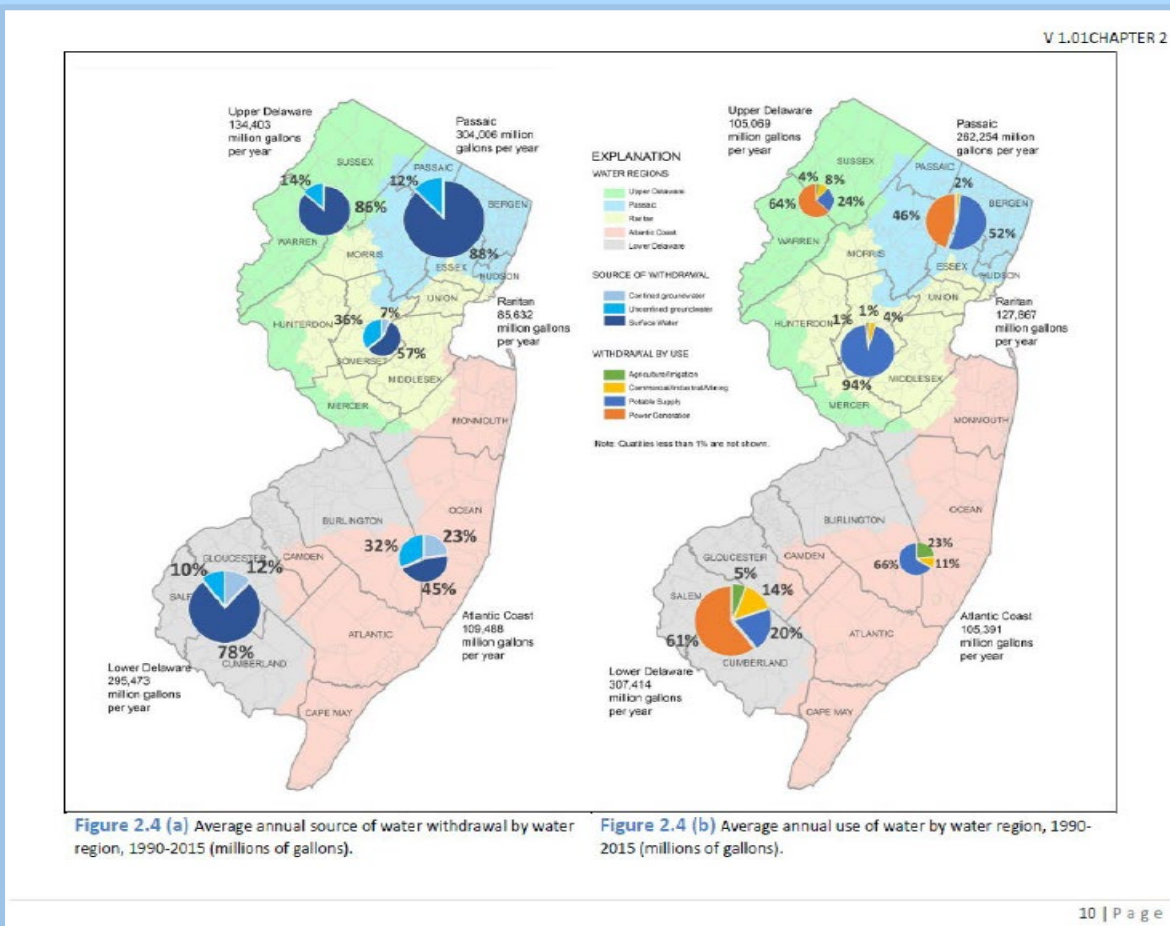


## DO WATER UTILITY TOURS STIMULATE WATER PROTECTION EFFORTS?

Everyone knows the adage “a picture paints a thousand words”, but how does this apply to a local water utility tour? The answer simply put is that no two water treatment facilities are the same. Water sources can change daily, with the seasons or catastrophically after a disaster. Systems were built at different times in various ways with varying materials to overcome local challenges across history. Although your local average water treatment plant might seem unassuming, shrouded in mystery and not all that glamorous, they are genuinely in the truest sense of the term unique from one another! They are so vastly different that they require unique collaborations and solutions to solve their water quality problems! For the initiated, this seems intuitive and blatantly obvious; for the uninitiated, a tour can feel like visiting Willy Wonka’s Chocolate Factory. It is easy to forget that most people have never toured a local water system in their lives. A tour with a local water treatment operator can have a lasting impression on people that lasts a lifetime.

Attendees of tours are given a packet of general information about water usage and general facts across the state. One such image (below) is from the *NJ Water Supply Master Plan 2017-2022* which is



currently being updated as of this writing. The two maps of New Jersey show the five distinct watershed regions overlaid with pie charts depicting water usage by source (on the left) and usage by industry (on the right). Even though there are more municipal wells in the state than surface water intakes, most of the water pumped in the state comes from surface water sources for a variety of uses. Other than for

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potable usage, it is a shock to most people to learn that power plants are the largest pumpers of water in the state. Often referred to as the “water energy nexus”, people do not realize that it takes massive amounts of water to produce energy and it requires lots of energy to pump water. People are also shocked to learn that the average annual withdrawals do not equal the average annual usage. Maybe this is due to issues with metering, leaks, and even aquifer storage and recovery when water is pumped and used at separate times of the year. Quick facts like these from an intelligently designed image can drastically increase a person’s ability to make wise decisions that ultimately protect water quality and quantity in their region.

On two recent tours with groups of professionals from various backgrounds, new insights were gained into potential collaborations to protect water sources. For some it was a first-time tour and for others it was one of the few tours they had been on in their careers. At both tours, representatives from the Environmental Protection Agency (EPA) were present, New Jersey Department of Environmental Protection (NJDEP), New Jersey Department of Agriculture (NJDA), and US Department of Agriculture Rural Development (USDA RD). Many times, it is common that if someone has been on a tour prior, it was of a larger facility unlike the smaller facilities that are most common across the nation.

On the tour of Butler Reservoir in Kinnelon NJ, participants got to tour a relatively pristine water source. The immediate headwaters of which are the “Heart of the Highlands” (about 35,000 acres) in West Milford and Newfoundland, NJ are almost entirely protected

from development and encroachment in conjunction with the Highlands Preservation and Planning Act. Protecting rare and endangered species as well as abundant natural resources, the Act regulates dozens of municipalities to protect the drinking water supply for millions of residents with dense forests and trout bearing streams. Additionally, municipalities within the Highlands are subject to stricter rules and regulations as well. A few examples include restrictions on building, development, and pumping of septic systems, as well as other mandates to protect water quality. There was even a surprise visit from the survey crew that runs an airboat on the reservoir to take vital water quality samples and data on the Butler Reservoir and neighboring communities. If needed, prescribed treatments for invasive algae and harmful algal blooms (HABs) can be determined from these tests and was a valuable discussion to have with an industry expert. As of this writing, there have been no recent issues with HABs here, but it has



**\*\*\*Butler Reservoir and filter plant tour with survey boat in the background.  
Photo by Tim Miller of Aquatic Analysts\*\*\***

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become an increasingly more common problem. Industry experts like this are deep wells of knowledge that can be priceless!

The tour of the Burlington City Water Plant along the Delaware River was a drastic difference from the surface water plant on the Butler Reservoir. Although this facility is upstream from the end of the river,



**\*\*\*Flocculation basin at the Burlington City Water Plant. Photo by Paul Britt of NJ Water Association\*\*\***

the overall Delaware River watershed is over 13,500 square miles across five states draining into 330 miles of contiguous river. A great challenge to staff is they are at the mercy of whatever flows down the river daily. From heavy sediment flows to unknown contaminants, and all manner of other threats such as a chemical spill just across the river in Pennsylvania (On Friday March 24, 2023) which

fortunately never reached their intake. It is a miracle that they can provide clean drinking water to their community consistently with very few interruptions. This plant features a display case in the lobby showing artifacts from a time long since forgotten. The story goes that when the city of Philadelphia ripped out their wooden water mains and switched to iron mains, Burlington City at that time had purchased some of the old wooden mains to reuse them for some time as part of their distribution system. One such wooden main is on display in the lobby with a metal sleeve insert and was said to be sealed with linseed oil at one time.

Sometimes when speaking with the public you hear comments such as “I do not trust my water” or “my water is terrible “with no evidence as to why. Nonetheless it is our job to educate them, and guided tours are a great way to do so! Potable water in New Jersey is highly regulated and explaining that has positive feedback. Additionally, helping them understand more of the industry jargon and showing them where the water is pumped and treated are great ways to eradicate fears of the unknown. Allowing people to meet directly with their water providers on utility system tours can change them for the better, turning skeptics into advocates. It’s our job to educate people and to bridge that gap between the public and our water treatment heroes we all depend on daily.

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