Our Summer 2020 newsletter was an abbreviated version so we could focus on efforts developing new procedures and practices to keep our employees and customers safe from the pandemic. The employees at KKW have been nimble in adjusting to CDC guidelines and State mandates so that we continue to provide reliable, safe, high quality drinking water to our customers. We thank all our customers and communities for their patience and understanding as we have modified some of our business practices due to the pandemic.

On April 9, 1921, Kennebunk, Kennebunkport & Wells Water District began business as a consumer-owned utility just one year after the Spanish flu pandemic was considered to be over. So, it looks like the District will begin its second century in similar fashion. I guess our descendants should take note and be prepared around 2120 or so.

One hundred years has seen a lot of changes in technology, medicine, and lifestyles but very little change in the mission of water utilities..............safe, clean water for drinking, cooking, cleaning and hygiene. In fact, we still put pipe in the ground deep enough to prevent freezing, but we use hydraulic equipment instead of hand shovels. We still treat and disinfect the water, just with more precision than ever before. And, we still get nervous during droughts as consumption continues to increase, but conservation, reduced system leakage and our relationships with neighboring utilities allows us to better manage our resources.

You likely have noticed that we’ve developed a new and unique logo for the District. With our letterhead and bills already adapted, you will soon see the logo on all our vehicles and equipment, beginning with our service vans.

I hope you enjoy this edition of What’s on Tap. We appreciate any questions, comments and concerns you’d like to share with us. They’re always welcome!
AMI PROJECT UPDATE — IN THE HOME STRETCH
Wayne Brockway, Treasurer (wbrockway@kkw.org)

As you have been reading on a regular basis, our Advanced Metering Infrastructure (AMI) system is getting much closer to completion. You may recall that this multi-year project began in earnest in December 2015. Our goal at the time was to complete the system-wide implementation within five to seven years. In fact, if it wasn’t for the onset of the Global Pandemic, we likely would have achieved this goal by the end of 2021. Although the Covid-19 virus has slowed our progress a bit, we are confident we can cross the finish line on this project by the end of 2022.

As of December 2020, we have replaced 11,830 of the old-style manually read meters, representing 83% of our 14,257 metered customer base (95% annual and 41% seasonal accounts). The current plan is to begin the spring turn-on season in the usual manner and conduct the AMI meter installations just prior to customer arrivals. We hope to resume a more normal level of installations by the Summer of 2021 or when Covid-19 protocols allow. Once it is safe, we will resume contacting the remaining annual customers to complete their meter replacements.

By now many of you have experienced some of the advantages of the AMI system. The high usage alerts indicate the potential for an accidental or unplanned water use. These alerts help to minimize property damage and prevent unnecessarily high water bills. Another advantage is that the time between getting a reading and issuing the water bill has continued to decrease. This allows customers to react quicker to problems or modify their water usage habits.

For the District, the AMI system is beginning to have a dramatic effect upon the ways we work both in the field and in the office (which we expected would occur). It is creating the opportunity to explore streamlined solutions for work order processing (i.e., paperless) and billing processes to name a few. This is particularly true for our seasonal accounts which have been a historically labor-intensive process.

Once the AMI project is complete, it will offer the very real opportunity for the District to consider monthly billing consistent with almost all other utilities such as electric, gas, telephone, cable, etc. This will provide real advantages by allowing for a bill that is both lower and more predictable. Customers will be able to plan and budget their bills more effectively and make it easier to remain current. We look forward to this exciting opportunity and hope that you see this as a benefit as well.

If you have any questions, please feel free to contact me thru my email listed above. As always, we will continue to provide you with regular progress updates in upcoming newsletters and on our website at www.kkw.org.

WHERE SOLAR AND WATER MEET FOR A DRINK
Rob Weymouth, Facilities Manager (rweymouth@kkw.org)

If you were driving down Route One at the Arundel/Biddeford town line last December, you probably noticed the Water District had a large excavation on the edge of the road. The reason for that work is a long story dating back to 1979 when the Water District established a 20-inch watermain interconnecting KK&W with the then Biddeford Saco Water Company. A pump and valve control station was needed and the only location available for it was about a half mile south of the town line. An agreement was executed between Biddeford Saco Water and Kennebunk Water District detailing how the relationship between the utilities and a few intermediate customers would be managed. The agreement was for 40 years. My, how fast 40 years can fly by. So here we were in 2019 renewing our agreements with Maine Water Company, the current owner of the water utility.

In 40 years, technology has changed greatly and has now allowed us to build a much smaller more efficient and easier to maintain interconnection facility.

We have now placed the operating valve between the two systems right on the Arundel/Biddeford town line. One of the most unique features of this new interconnection station is it is totally powered by solar. The pole with two solar panels and three antennas is the only thing that gives it away to the general public that there is even a facility there. Everything from lighting to environmental monitoring, security, valve actuation, sump pump, communications and controls, is powered by solar. By going this route, the small cost of the system far outweighed the cost of going with conventional electrical service from the grid. When we factored in the extremely light electrical load that was necessary to operate this facility, we could see that just a minimum bill for electric utility service would pay for the solar system in a short amount of time.

Another advantage of solar is power storage for use when no sun is available. The battery storage is available during power outages, so no backup generator is required.
The year 2020 was a busy one for KK&W’s mainline crew. Even with a brief pause in the spring due to Coronavirus, we still managed to install 9,856 feet of new water main, which is nearly .97% of the total system. The target in the industry is to replace 1% of the system each year, so considering that we lost about one month of working time and worked within some busy roadways, 2020 was still a very successful year for water main replacements.

We have another ambitious water main replacement schedule for 2021. We’re looking to replace between 10,600 and 14,600 feet of water main this year, depending on funding, as I’ll explain in a minute. We have a few coordination projects planned for the Kennebunks in addition to a huge, multi-phase project in Wells designed to strengthen the backbone of the entire southern portion of the system. Among the water main replacement projects planned for 2021 are:

**Broadway Avenue, Kennebunkport:** This project will replace 150' of obsolete 1” galvanized pipe with 2” HDPE. Its purpose is to improve water quality and quantity and to reduce the potential for leaks.

**School Street, Kennebunkport:** This project will replace 70' of obsolete 8” cast iron pipe with 12” ductile iron pipe to eliminate a system bottleneck and improve fire flows in the area.

**Colony Avenue and Ocean Avenue, Kennebunkport:** This project will replace 1,150’ of obsolete 8” pipe with new 12” PVC pipe. This project is being done in conjunction with road and utility work to support the Colony Hotel’s major renovation and expansion project.

**Merrifield Drive, Kennebunk:** This project will start at the intersection of Ivy Court and Merrifield Drive and will replace 1,700 feet of obsolete and leak-prone 6” AC pipe on the north loop of Merrifield Drive with new 8” pipe. This project will be done in conjunction with the Town’s drainage and road reconstruction project. The work completed on Merrifield Drive by the Town in 2020 resulted in a few main breaks on this section of pipe. The goals of the project are to improve water quality and fire flows and to decrease the potential for leaks in the area.

**Secondary Transmission Main Replacement and Relocation Project:** The next four projects will take up the bulk of our mainline crew’s time this year. Two of them are actually continuations of 2020 work. They are described as four separate projects for budgeting, scheduling, and design purposes, but essentially, they are in series working towards the same goal. This is a huge project for the District and a critical one. It will provide a reliable, redundant transmission main to the existing one in Route 1 which serves the entire southern end of the system. The following projects comprise this larger effort:

**Laudholm Farm Road & Old Farm Lane, Wells – Phases 1 & 2:** This huge project will be completed in two phases. The first phase (about 3,900 feet) extends from the end of the paved portion of Laudholm Farm Road to Island Beach Road. By the time this newsletter reaches you, we will actually be pretty far along in the construction of the first phase. The main that we’ll be replacing currently runs through the Rachel Carson marsh, which is a difficult place to make repairs and is not an ideal home for such a critical section of pipe. We’ll replace it with a new 16” main along Laudholm Farm Road and Old Farm Lane, which are currently public rights-of-way and trails for the Wells Reserve. The majority of the new main will be installed via the traditional open-trench method, but approximately 700 feet will be directionally drilled beneath a sensitive causeway section of the road.

The second phase (about 3,950 feet) extends from Route 1 to the start of the main that will be installed in Phase 1. Completion of this phase in 2021 will depend upon available funding. We’ve applied for an SRF loan with the State of Maine Drinking Water Program and if successful this section will be seriously considered.

**Island Beach Road, Wells:** This project will extend from Old Farm Lane to Drakes Island Road. It will replace 2,450 feet of obsolete 6” pipe with new 16” PVC pipe as part of the secondary transmission main upgrade and relocation project. This project may be done in conjunction with the Town’s project to repave Island Beach Road.

**Drakes Island Road, Wells:** This portion of the transmission main project will extend from the intersection of Island Beach Road to Eaton Avenue, replacing 650 feet of obsolete 6” pipe with new 16” PVC pipe.

We know pipe replacement projects tend to be inconvenient for residents and traffic, but please understand these are multigeneration projects that are necessary for the capacity and reliability of the public water system. We thank you for your patience.
The goal of any drinking water’s treatment system is to produce safe drinking water that is aesthetically pleasing to the consumer. In order to maintain a fresh quality, water has to keep moving and be used in a timely manner, a term known to us as water turnover. At KKW, we try to turnover approximately half of the water in our distribution system on a weekly basis. The water’s continuous movement, along with tank mixing and drawdown strategy, is essential for keeping its freshness and clarity. The Water District also performs an aggressive flushing program every spring in order to scour the distribution piping and remove any mineral sediment that may have accumulated. An additional bonus is that it also provides routine checks of fire flow capabilities and hydrant operations.

On a smaller-scale, it’s also helpful for homeowners to think about their own internal plumbing in the same way. Water that remains stagnant in the pipes over extended periods of time can cause a loss of quality in both appearance and taste. A good practice, especially for seasonal residences and even those taking extended vacations, is to flush your plumbing lines upon return. Removing any older water helps ensure that it’s fresh and always appealing. It is as simple as running your tap or outside spigot for a few minutes prior to use. Conservation of water is important, however the quantity of water necessary to clear your plumbing lines is insignificant compared to the benefit.

As always, thank you for taking the time to read our newsletter. I welcome your questions and comments and look forward to your call. Please direct your inquiries to me at 207-985-2362.

OUR NEW HOME FOR EQUIPMENT AND INVENTORY
Keith Archibald, Distribution Manager (karchibald@kkw.org)

Our property located next to our Filtration Plant has been used over the years to support our backwash lagoons as well as a storage area for some of our larger inventory items and equipment. In 1992 the District erected a building, still referred to today as the New Pipeyard Building, to keep our inventory and equipment out of the elements. At the time it met our needs. As the years have passed, we’ve witnessed substantial customer growth along with the expansion of our distribution system. Eventually that new building filled to the brim so much that we acquired shipping containers to house the overflow of inventory items such as valves, fittings and appurtenances.

Seeing the need to increase our storage space, Assistant Superintendent Scott Minor had a vision and followed it up with the initial blueprint for the structure. He envisioned a design of what a “new” building would look like and what the space would conceptually be used for. In a collaborative effort, he sought input from all the stakeholders of this new space that included the Distribution Department, Facilities Department, and Inventory Manager Peter Jewett. The group reviewed the drawings and began to plan how to accommodate current as well as future needs. With a few modifications and adjustments, we reached a consensus and began looking forward to the day we could bring the concept to reality.

The moment finally came at the end of 2019. This building was not just a shell, but the culmination of forethought and planning that resulted in a perfect application for our growing needs. The building itself was placed in a southerly direction with an optimum roof pitch for future solar panels. Energy efficient LED lighting with motion detection activation along with radiant heat tubing within the floor were installed. There’s an option for either thermal, solar thermal or other conventional heat sources for the floor.

So, over the winter, we erected shelving and relocated our inventory from the shipping containers into the building. The new set up is a great improvement, especially since our inventory is now well organized in a centralized place where everything is visible with plenty of room to work. Along with the inventory, there is ample room to house other equipment such as plows, generators, skid steer, excavators, trucks and trailers.

Being that we had not come up with a name for the “new” building and we could not call it the new building because that would just cause confusion (LOL), it’s been dubbed the “new” New Pipeyard Building (sometimes we’re not the most creative bunch). The building is a great addition to our organization as it will help extend equipment life as well as enhance employee safety by avoiding the need to climb on ice- and snow-covered equipment. I’m confident that it will serve us well for many years to come.
Here at the Water District, we have many programs in place in order to carry out our mission to consistently provide the highest quality water and customer service at the lowest reasonable cost. We have developed numerous programs and policies to keep us in safety and regulatory compliance.

The District has a well-established and effective health and safety committee that has developed a comprehensive and award-winning program over the years to keep our employees safe. In addition to maintaining employee health and safety, the program’s success is also measured by the District’s industry leading 0.59 Experience Modification Rate (EMR). This 0.59 EMR is 41% better than industry bench mark average of 1.0 and results in a significant reduction in the District’s Workers’ Compensation Insurance premiums. The District has nine separate health and safety programs in place to keep the water, the customer, and our employees safe. We adhere to three Federal safety programs: 1.) Process Safety Management Program evaluates our system; 2.) Risk Management Program protects the public; and the 3.) Extremely Hazardous Substance Program details emergency response. We also have an Emergency Response Plan that is designed to protect against threats to the water system while our Contingency Plan was developed to assist in response to natural disasters so that we can keep the water flowing to the customer. Lock Out/Tag Out, Confined Space Entry, and Respirator Protection Programs help keep our employees safe while carrying out their work assignments. And, we are currently working on another Federal program, the American Water Infrastructure Act, which will roll several of the other programs into one plan.

We are members of the Local Emergency Planning Committee and meet regularly with others from York County. We perform both table-top drills and on-site simulation drills to monitor the effectiveness of all of the constantly changing above programs.

We are also required to meet many State and Federal testing requirements for water quality. The primary ones include the Lead and Copper Rule, Disinfection Byproducts, Radionuclides, Total Coliform Rule, Volatile Organic Compounds, Synthetic Organic Compounds, Total Organic Compounds, Nitrites and Nitrates, as well as a growing list of currently Unregulated Contaminants. The great news is that high quality water we deliver to your tap meets or exceed all of them.

We are serious about what we do. I am Co-chair of the Water Resource Committee for the Maine Water Utilities

CONTINUED ON PAGE 7

CUSTOMER CORNER—Let us help you keep things safe & simple
Kathleen Chapin, Front Office Supervisor (kchapin@kkw.org)

The Customer Service team here at KK&W wants to remind our customers of the online services available, especially as we all face the reality of social distancing. In 2012, we partnered with an online payment company called Invoice Cloud in order to provide our customers with contemporary billing solutions and payment options. Invoice Cloud employs the highest standards in internet security known as PCI. This stands for Payment Card Industry, and compliance with the industry standards is a requirement for those that accept the major credit cards and for software providers who have applications which involve the transmission and/or storage of credit card information. None of your financial account information is stored on District servers; the only information we see is truncated to the last four digits as is standard for PCI compliance. In addition, no customer information is ever shared with a third party.

Some of the most commonly used options our customers enjoy include paperless billing and scheduling automatic payments. When you sign up for paperless billing you are still able to view your bills as a .pdf. They are stored within your account information and can be viewed or printed at your leisure. The automatic payment option allows you to store your payment information and the bill is paid on the bill due date. As opposed to paying through your own banking portal, there is no lag time when you pay through our website and we receive your payment electronically the next business day. Another flavor of automatic payments allows you to choose your payment date each time you receive a bill from us so that you decide when the money leaves your bank account.

We encourage you to utilize our online services as a means of simplifying your bill-paying experience. If you prefer, you’re always welcome to call or email our Customer Service team and they can help you navigate the process or set it up for you. If you have any questions, feel free to contact our business office at 207-985-3385 or email us at www.customerservice@kkw.org.
While no two states often experience the same set of impacts during a drought, neither do areas within the same state. As noted below, our southern Maine service territory was officially designated as a category D1 Moderate Drought in early July of 2020 (which also happens to coincide with the beginning of our high summertime customer demand period), while other parts of the state experienced little to no impact. Since the record drought of 2001-2003, the District has worked hard to develop a diversified portfolio of water supply sources. These sources include the original Branch Brook surface water supply, two new primary groundwater well supplies and two new secondary groundwater well supplies. The District has also developed and enhanced its interconnections and mutual aid agreements with our neighboring water utilities to the north and south. This proactive thinking and planning served the District’s customers well as the moderate drought designated in July rapidly intensified into a category D3 Extreme Drought by late September, peaking in mid-October where 11.79% of the entire state was under the D3 designation. Although the drought had lessened in many areas, our entire service territory remained under the D3 designation on November 10th as noted below. The projected above-average winter precipitation will certainly be a welcome sight.

Many have asked how the 2020 drought compares with recent droughts of the past. Statistics compiled by the National Drought Mitigation Center indicate that the 2020 drought was slightly more intense, but of shorter duration, than the most recent 2016-2017 drought and both were significantly less intense and a much shorter duration than the major drought of 2001-2003. Drought is just one of the many contingencies the District includes as part of its emergency preparedness and response programs which include the primary goal of ensuring that our customers always have an abundant supply of safe drinking water on tap.
A large part of our success in maintaining business continuity through a summer of drought and a global pandemic, was the ability to fully reactivate the Kennebunk River Well (KRW) groundwater supply source on June 16th, following the completion of our new GAC (Granular Activated Carbon) Treatment Facility. The 4½ year process leading up the completion of the new GAC Treatment Facility was complex and arduous. It involved extensive research, pilot testing, evaluation, regulatory approval, design and construction, which was done mostly by in-house District staff. The new GAC Treatment Facility and related appurtenances also required significant capital investment, which was funded primarily by a $1.3M low interest SRF program loan (20-year term at 1% interest). The KRW is a significant water supply source, capable of providing around 250MG (million gallons) per year or around 23% of the District’s current total annual water supply needs. In addition to being a large water supply source, the KRW and companion GAC Treatment Facility also provide the operational advantage of being able to run 24 hours per day without full-time onsite operator supervision, unlike the Branch Brook surface water Filtration Plant located on Route 1 in Kennebunk.

This article is likely the last of four articles describing the extensive process the District used to identify, evaluate and ultimately remove the unregulated contaminant group known as PFAS (Per- and Polyfluoroalkyl Substances) from the KRW public water supply. The primary PFAS contaminants the District is dealing with at the KRW are PFOS (Perfluorooctane Sulfonate) and PFOA (Perfluorooctanoic Acid). For additional background, reference and insight regarding these contaminants and how the GAC removal process works, we recommend the reader revisit the three prior What’s on Tap newsletter articles presented in our Winter 2018 edition (GAC Filtration 101 – Turning a New Page), Summer 2018 edition (GAC Filtration 201 – Beginning of the End Game?), and Winter 2019 edition (GAC Filtration 301 – We have an Endgame!!). All of these newsletter articles can be found on the District’s website at www.kkw.org under the About KKW heading.

Despite being an unregulated contaminant, all public water utilities remain under EPA’s current Lifetime Health Advisory (LHA) of no more than 70 parts per trillion (ppt) of PFAS in drinking water. While waiting for the EPA to promulgate regulatory standards for PFAS, several states have taken it upon themselves to implement their own PFAS standards, with the lower levels being 20ppt. Maine currently adheres to EPA’s 70ppt LHA. In the absence of regulatory standards, the District has taken the conservative approach of maintaining PFAS levels below 10ppt for the treated KRW water leaving the GAC Treatment Facility. Since being activated on June 16th, the GAC Treatment Facility has treated nearly 175MG of water produced by the KRW, with PFAS levels that thus far are undetectable (<2ppt). This is certainly good news as we are well on our way toward achieving our minimum 500MG production goal before needing to change out the GAC (granular activated carbon), which is estimated to cost around $60,000 ($120 per MG). In fact, preliminary data extrapolations suggest that water production of 600MG or more might be achievable before the GAC needs to be changed so stay tuned.

To think at the beginning of this endeavor, one option on the table was to abandon the KRW and our $3M investment required to bring this vital source of supply on line and connect it with the distribution system is simply now hard to believe. But back then, PFAS contamination in drinking water was a newly discovered and largely unknown threat within the drinking water industry with very limited information on available treatment technologies and the costs associated with acquiring and operating them. We certainly felt like the proverbial guinea pig at the onset. However, the collective capabilities, determination and can-do spirit of the District’s staff quickly rose to the challenge (as it has many times before) as we became consumed with the desire to develop a cost effective PFAS treatment regimen to “save” the KRW. In summary, I am beyond pleased to report that we have indeed “saved” the KRW with an innovative and well-engineered GAC Treatment Facility that has received highly favorable peer recognition. In addition, the Maine Drinking Water Program nominated the project for the prestigious, EPA 2020 Aquarius Award. Every year, one project is nominated for this award from each state (50 total nominations) with one “Exceptional Project” selected for each of five categories. The District’s GAC Treatment Facility project qualified for two of the five categories, Excellence in Environmental and Public Health Protection and Excellence in Problem Solving. Although our project was not selected as a 2020 winner, we did receive an honorable mention. The District is honored to have been recognized nationally, but more importantly, we are proud of the perseverance and team effort required to achieve such a successful outcome…… saving the Kennebunk River Well.

**Programs and Policies**

Association, and one of our Filtration Plant Operators is on the State Board of Licensure. Two other Filtration Plant Operators also help run smaller systems in the southern part of Maine in order to assist those communities. We put on classes and go to others in order to stay current with the most up-to-date changes taking place in the water industry. We work with many local partners to keep our source waters safe. They include the Sanford Regional Airport, the Maine Turnpike, CMP, Wells Reserve, The Nature Conservancy and several local land trusts. We monitor land holdings and perform timber harvests when necessary to promote a healthy watershed.

And most importantly, we run the Filtration Plant with all of this knowledge to keep the water safe, the pressure high and the costs down.
Introducing Steve Young ... Steve joined our KKW team last year and works on the Mainline crew. He’s one of the guys you’ve probably seen installing water pipe throughout our distribution system.

Brought up in Rochester, NY, he was recruited by the University of Maine in 2005 to compete on their Wrestling team. He accepted their offer and has been in Maine ever since. After graduation, his love of sports led him to begin his coaching career. He’s been a wrestling coach at Kennebunk High for 12 years; the past 6 years as Head Coach. He also finds enjoyment from coaching the Kennebunk Middle School Wrestling team and Kennebunk Youth Football. Hunting and fishing are a few more of his passions. Steve, we wish you a fulfilling career at what we think is the best water utility in Maine.

Congratulations Brian McBride who graduated (virtually) in May with an Associate of Applied Science degree in Water Environmental Technology with certifications as both a Drinking Water Specialist and Waste Water Specialist. Brian started his studies back in 2011, but life and family slowed his progress until 2018 when he recommitted to his further education and then made the Dean’s List to boot. Well done Brian!