TOWNSEND WATER DEPARTMENT

540 Main Street West Townsend, Massachusetts 01474

1.5
4/21/22

Todd Melanson, *Chairman* , *Vice-Chairman* Christopher Jones, *Clerk*
David Vigeant, Superintendent (978) 597-2212 Email *water@townsendwater.org*

WATER COMMISSIONERS MEETING MINUTES

March 22, 2022 – 7:00 P.M.

Water Department 540 Main Street, Meeting Room

NOTE REGARDING ACCESS AND PARTICIPATION

Governor Baker updated the State of Emergency to respond to COVID-19 on February 15, 2022, and ordered an extension of certain provisions of the Open Meeting Law M.G.L. c. 30A, s 20 put into effect on March 12, 2020, until July 15, 2022, at which time the extension will be repealed.

https://zoom.us/j/95255374882?pwd=NWhBTkdkeTJDYTlKMnR1QTlYQzlMQT09

Meeting ID: 952 5537 4882 Passcode: 781313 Log on *Tuesday, March 22, 2022, at 7:00 P.M.* to participate.

I. PRELIMINARIES:

1.1 TM called the meeting of the Board of Water Commissioners to order at 7:01 PM at 540 Main St and by Zoom.

1.2 TM announced that the meeting is being recorded on Zoom.

1.3 Roll call showed members present: Todd Melanson (TM)-Chairman, Christopher Jones (CJ)-Clerk. Roll call showed citizens present: Chaz Sexton-Diranian (CSD)-Board of Selectmen, David Vigeant (DV)-Water Superintendent, Kevin Keefe (KK), Ryan Lapierre (RL), Alec Gaetz (AG), Mistie Demazure, John Bagley-3 Greeley Rd, Cindy King-1 West Elm St, Bobby Jones-AFSCME.

1.4 Chairman's additions or deletions. None

1.5 Approve Meeting Minutes of November 8, 2021, January 3, 2022, and February 10, 2022. **CJ motioned to accept the meeting minutes of November 8, 2021, January 3, 2022, and February 10, 2022. TM seconded. Unanimous vote.**

1.6 Review correspondence.

1.6.1 Extension of COVID-19 State of Emergency pertaining to the Open Meeting Law. The Board reviewed the notice stating that the State of emergency is extended until July 15, 2022.

1.6.2 Local PFAS updates. TM noted that he appreciated the local updates that DV presented.

1.6.3 MBTA housing. DV attended the recent webinar regarding the updates to the MBTA guidelines. There needs to be 50 acres allocated for 15 houses with 750 units zoned for use. The engineer will have the final say for the number of houses that can be on the lot. TM requested that when topics like this come up, that they be discussed with the Board.

1.6.4 -Addition: Cindy King said that she watched the Board of Selectmen meeting with the rate presentation. She said that it was well presented and easily understood. Ms. King thanked the board for their clarity and appreciated the communication. Ms. King also brought up the MBTA developments is a moment to have the community and Boards get together and move forward for the betterment of the town.

II. APPOINTMENTS-VOTES MAY BE TAKEN

2.1 None.

III. MEETING BUSINESS-VOTES MAY BE TAKEN:

3.1 Update/Discuss Cross Charge Agreement. TM has been in email communications with Ross, and they are working on scheduling a meeting. TM is hoping for an open and transparent process moving forward.

3.2 Update/Discuss Phone System Upgrades. Staging is scheduled for tomorrow, March 23, 2022. Full porting will take place in a few weeks. DV confirmed that the primary phone number will not be changing, only the extensions.

3.3 Update/Discuss Water Department Zoom Account. The Zoom account is now under the Water Department

3.4 Review/Discuss Meter Compliance Notification Limits. TM and DV came to an agreement that the best course of action is to call the resident 30 days after each letter is sent. Once another 30 days has passed, another letter will go out. On the third letter, there is the information about the fine that will be sent via certified mail. This will give residents 180 days to get the meter changed. TM also suggested using door hangers or taping a notice to the door for residents to call the department.

3.5 Review/Discuss Town Vehicle Policy. TM would like to review the policy with CSD. The Board of Selectmen is currently discussing policies. TM will ask the Chair to be placed on the agenda to discuss this policy.

3.6 Review/Discuss Upgrading Online Payment Service. DV and Mistie have investigated moving from UniPay to City Hall Systems. Mistie reported that it will be more beneficial to the customers and is fully integrated with Vadar, making the process easier for the office. DV was instructed to talk with the Town Accountant to make sure that it will work seamlessly with the town. He was also instructed to check that there will be no issued reporting from the utility side of Vadar to the town's Vadar. Mistie confirmed that the two sides are connected, and the town can see all activity on the utility side. TM requested an email from Vadar confirming that all accounts are interconnected and have TM, CJ, CSD, and the Town Accountant cc'd on the email. **TM motioned to approve, pending verification of coordination, to move forward with City Hall Systems. CJ seconded. Unanimous vote.**

3.7 Review/Discuss Customer Payment Plan Options. DV presented a payment plan adopted by one from a nearby town. This allows for 25% down and monthly payments. It also includes some stipulations that will be required (see attached). Tm and CJ agreed that it looks like it is set up in a way that will work better for customers. **TM motioned to accept, as presented, the Customer Payment Plan for the Townsend Water Department. CJ seconded. Unanimous vote.**

IV. COMMISSIONERS UPDATES AND REPORTS-VOTES MAY BE TAKEN:

4.1 TM recognized that the staff has been working very hard to make the system reliable and the techs have overcome a lot to do so. TM asks that people have patience and call the department if there are issues. TM directed people to the website for information and mentioned that there is an email alert that residents can sign up for. TM explained that the department is trying to keep tasks in-house and is doing as much as they can.

V. LIASON UPDATES AND REPORTS-VOTES MAY BE TAKEN:

5.1 CSD suggested that there be a schedule of proposed work posted monthly. This can prevent any issues about notifications in the future.

VI. SUPERINTENDENT'S UPDATES AND REPORTS-VOTES MAY BE TAKEN:

6.1 Update/Discuss Main Street Well. DV reported that the techs are doing most of the work and it has saved the project over $1,000,000. The electrical conduit to the well has been finished. Unitil will be doing updates on a week or two to the service lines to the property. The pitless adapter will be installed on March 23, followed by the installation of the pump and motor over the next two weeks. Once that is complete, connection will take another few weeks. DV is trying to have all construction completed by

April 14, 2022, to avoid any harm to the turtles in the area. TM said there may be some wiggle room regarding the date since it is a matter of public health and safety, but DV said he is on track to meet that deadline. The project has an anticipated completion time of early May 2022.

6.2 Update/Discuss 169 Main St and Greely Rd. DV received a phone call from Mr. Werlin of 169 Main St regarding the status of the situation. DV and Mr. Werlin reviewed the easement plan and Mr. Werlin wrote a letter to accept and move forward. TM is requested that Tighe and Bond review the plan for the pipeline, DV said that they had reviewed it, but expressed concern that doing it in an official capacity would increase the cost of the project. TM asked if DV could get the confirmation already received by Tighe and Bond in an email rather than verbally. CSD will send an email to have Town Counsel confirm the easement and draft the deed. One the confirmation is received from Tighe and Bond, the bidding process can begin using an RFP. TM will send a note to Ross with an update in the morning to move forward with the RFP.

6.3 Update/Discuss PFAS. Witches Brook 2 is being tested monthly. The rest of the wells are tested quarterly. The town is running at 50% capacity. When both Witches wells were down the week of March 7, the system was down to 25% capacity. Unitil is managing the removal of the transformer mess at the Witches wells. TM asked DV to contact the tree warden to come look at the Witches well areas and make sure there are no hazards. KK reported that Unitil has taken down trees in the area. TM requested that the tree warden visit just to make sure everything is taken care of.

6.4 Update/Discuss Harbor Trace Treatment Plant. DV reported that he is waiting for the engineers to do the work. DV has asked for a conceptual map for presentation at the Annual Town Meeting in May. DV wanted to mention that the Main St office building will be available once the Treatment Plant is built. DV said that it could be transferred to the town in the future.

6.5 Update/Discuss 12 South St-Deluxe. DV said that this should be completed sometime this spring. The engineer will be switching the 6" pipe to a 10" pipe.

6.6 Update/Discuss 2016 Ford Fusion. DV reported that the car has been handed over to the town.

6.7 Update/Discuss Highland St. DV said that once the Main St well is complete, work on Highland can begin. It will probably be after April 14, 2022. TM requested weekly updates with residents about the Main St well and how that impacts them.

6.8 Discuss/Review Updated Job Descriptions. TM would like to meet with DV and hash out the descriptions, then present them to CJ in a meeting. TM is concerned that some of the stuff is too grand for the system. The titles are out of place for the utility after discussions that TM has had with other Superintendents. KK said that he was surprised by the number of things that the Board seems unaware of regarding the jobs in the department. KK explained that he was given the Distribution Manager title in a letter, signed by DV, that was sent to DEP for licensing. TM said that the record was invalid because there is nothing in place for that position. KK presented the backstory that he did not apply for the Foreman position when it was available because the existing Superintendent was looking for someone more qualified and he would be made to a Senior Technician. KK later found out that the Senior Technician position did not exist and that he needed to be patient. KK explained that RL does the sampling and the reporting, but he does all the scheduling and is in communication with vendors and contractors. KK requested to be clear that he is always on call to help others if they need it. TM said that we are not large enough for the position of Distribution Manager. TM and DV will review the positions presented. Bobby Jones clarified that the Union would need to be consulted with any job description before it is enacted under MGL 150(e). RL seconded everything that KK has said, reinforcing that KK goes above and beyond for the department and is a hard worker and has done a lot for the department.. TM recognized the efforts, but the position will need to be reviewed and managed

for compliance purposes. AG also noted that there seems to be a lack of understanding regarding the amount of work that KK does for the department. TM will do his best to compromise and meet everybody's needs, but the positions need to fit the system. KK asked about the letter with the Distribution Manager title that has been sent to the State. TM said that it can be boiled down to a miscommunication and not ill intent. TM offered to provide a letter if KK would like. TM asked DV to reach out to the Division of Licensure to explain the system.

VII. OFFICE UPDATES AND REPORTS-VOTES MAY BE TAKEN:

7.1 The next Board of Water Commissioners meeting will take place on April 12, 2022, at 7:00 PM.

7.2 **TM motioned to review and sign December, January, and February end of month reports out of session. CJ seconded. Unanimous vote.**

ADJOURNMENT:

TM motioned to adjourn the Board of Water Commissioners meeting at 8:31 PM. CJ seconded. Unanimous vote.

Respectfully Submitted,

Mistie Demazure
Accounts Manager
Townsend Water Department

Updated guidance on holding meetings pursuant to the Act Extending Certain COVID-19 Measures

Guidance Update – February 18, 2022

On February 15, 2022, Governor Baker signed into law a new session law extending certain COVID-19 related measures. The new law, Chapter 22 of the Acts of 2022, includes an extension until July 15, 2022, of the remote meeting provisions of the Governor's March 12, 2020, Executive Order Suspending Certain Provisions of the Open Meeting Law. The new law has two major parts.

First, the new law allows public bodies to continue providing live "adequate, alternative means" of public access to the deliberations of the public body, instead of holding meetings in a public place that is open and physically accessible to the public. "Adequate, alternative means" may include, without limitation, providing public access through telephone, internet, or satellite enabled audio or video conferencing or any other technology that enables the public to clearly follow the proceedings of the public body in real time.

Second, the new law authorizes all members of a public body to continue participating in meetings remotely; the Open Meeting Law's requirement that a quorum of the body and the chair be physically present at the meeting location remains suspended.

What means of access will be considered "adequate, alternative means?"

"Adequate, alternative means" may include, without limitation, providing public access through telephone, internet, or satellite enabled audio or video conferencing or any other technology that enables the public to clearly follow the proceedings of the public body as they are occurring (i.e., "live" or "in real time"). The methods listed in the executive order and here are non-exhaustive, and we recognize that there are myriad methods that will be acceptable. "Adequate, alternative means" could include Zoom, a high-capacity telephone conference line, Facebook Live, YouTube Live, and broadcasting on live TV, including local cable access television. The brief delay of approximately 20 seconds when Zoom meetings are streamed to Facebook or YouTube Live is acceptable.

May a public body post a recording or transcript of the meeting afterwards, instead of providing access to the meeting as it is occurring?

The executive order provides that a municipal public body that, for reasons of economic hardship and despite best efforts, is unable to provide alternative means of public access that will enable the public to follow the proceedings in real time, may instead post a full and complete transcript, recording, or other comprehensive record on its website as soon as practicable after the meeting. In light of the various free and low-cost technologies that could be used to provide the public with real time access, the Division of Open Government strongly recommends that a municipal public body consult with our office before determining that it is unable to provide the public with real time access to a meeting.

May public body members meet in person, while requiring the general public to follow the proceedings remotely?

Yes. Section (1) of the executive order allowing public access through adequate, alternative means is independent from Section (2), which allows members of the public body to participate remotely. The public body may conduct its proceedings under the relief provided in section (1) or (2) or both.

If a public body will provide access to its meeting through "adequate, alternative means," what information must be included on the meeting notice?

Public bodies must continue to post notice of every meeting at least 48 hours in advance of the meeting, not including weekends or state holidays, using the official notice posting method (physical notice or website), even if the clerk's office is closed. The notice must include the "location" of the meeting. If access to the meeting will be provided through "adequate, alternative means," the meeting notice must include clear instructions for accessing the meeting remotely. A public body may require members of the public to call to obtain access information for the meeting, rather than including such information on the public meeting notice, to minimize Zoom-bombing and similar disruptions. In such situations, the meeting notice must include clear contact information, and members of the public must be able to obtain the meeting access information up to and throughout the duration of the meeting (members of the public cannot be required to register in advance).

What other requirements apply to remote meetings?

The Open Meeting Law regulations governing remote participation, 940 CMR 29.10, remain in effect, except where the Governor's executive order specifically suspends certain requirements. In particular, when any—or all—public body members participate in a meeting remotely, the following requirements apply:

1. At the start of the meeting, the chair must announce the name of the member or members who are participating remotely; such information must also be recorded in the meeting minutes.
2. All votes must be taken by roll call.

3. Members of the public body must be clearly audible to each other and to members of the public at all times.
4. When holding an executive session remotely, the public body must still take all required procedural steps for entering into executive session in open session. At the beginning of the executive session, each public body member participating remotely must state that no other person is present or able to hear the discussion at the remote location, unless the public body has approved the presence of that individual.

Should the public body encounter technical problems while meeting remotely, the person chairing the meeting may decide how to address the technical difficulties, but is encouraged wherever possible to suspend discussion while reasonable efforts are made to correct any problem that interferes with a remote participant's ability to hear or be heard clearly. If technical difficulties result in a remote participant being disconnected from the meeting, that fact and the time at which the disconnection occurred must be noted in the meeting minutes.

What about public comment, public participation, and public hearings?

The Open Meeting Law does not require that public bodies allow public comment or public participation during meetings -- to the contrary, the Open Meeting Law specifies that nobody shall address the public body without permission of the chair. However, the Attorney General encourages public bodies to allow public comment and/or public participation when feasible. Because the Open Meeting Law does not require that public bodies allow for public comment or public participation during meetings at all, the manner that public bodies may choose to accept comment or questions is outside the scope of the Open Meeting Law. Public hearings, on the other hand, are governed by separate laws that impose additional requirements, and may require opportunity for public comment or testimony. Those requirements are outside the scope of the Open Meeting Law and therefore do not fall within the Division of Open Government's jurisdiction. Public bodies and members of the public should consult with legal counsel for guidance on the requirements for public hearings.

Busy? Get up to speed on PFAS in 4 mins

MENU

1.6.2

NEWS

New Hampshire town polluted with PFAS has elevated cancer rates

By Sharon Lerner | The Intercept | February 14, 2022

Read the full article by Sharon Lerner (The Intercept)

"Residents of a New Hampshire town where drinking water was contaminated with the industrial compounds known as PFAS have elevated rates of several cancers compared to the national average and compared to several nearby communities that were not contaminated with the chemicals, according to a study published today in the journal Environmental Health Insights.

People living in Merrimack, in southern New Hampshire, had rates of thyroid cancer that were higher than the national average between 2005 and 2014. The authors also found that Merrimack residents had higher rates of thyroid, colon, and prostate cancer, when compared to several nearby towns that did not have high levels of PFAS contamination, as well as a higher risk of all cancers when compared to the relatively unexposed communities.

Merrimack is home to a Saint-Gobain factory that produces PFAS-lined glass and fabrics. Previously, the factory had been operated by the chemical company ChemFab, which Saint-Gobain acquired in 2000.

In 2016, two of Merrimack's public drinking water wells were found to contain the toxic compound PFOA, a type of PFAS, in amounts above the Environmental Protection Agency's 70 parts per trillion safety threshold. In 2019, the agency found 190 PFAS compounds in the air emissions coming out of the plant's stack, most of which had never been identified before."

This content provided by the PFAS Project.

LOCATION:

North America > US North America > US > New Hampshire

TOPICS:

Chemicals > PFAS Environment Wildlife Impact > Drinking water Impact > Drinking water > Private wells Affected community Health

The Intercept_

NEW HAMPSHIRE TOWN POLLUTED WITH PFAS HAS ELEVATED CANCER RATES

The level of PFOA in the blood of Merrimack residents was almost three times the 2015-2016 national average.

Sharon Lerner

February 12 2022, 10:00 a.m.

As the Environmental Protection Agency tests for per- and polyfuoroalkyl substances, or PFAS, pollution in public water supplies, a water bottle is seen at community park in Bucks County, Pa., on Feb. 6, 2019. Photo: Bastiaan Slabbers/NurPhoto via Getty Images

Residents of a New Hampshire town where drinking water was contaminated with the industrial compounds known as PFAS have elevated rates of several cancers compared to the national average and compared to several nearby communities that were not contaminated with the chemicals, according to a study published today in the journal Environmental Health Insights.

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According to the new paper, the level of PFOA in the blood of Merrimack residents was almost three times the 2015-2016 national average – and higher for people who drank more water.

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Murtaza Hussain

The EPA has recently taken several steps to limit exposure to PFOA, which has been shown to cause kidney cancer and other health problems, but the vast majority of PFAS compounds remain unregulated.

Nancy Murphy, a retired nurse who lives in Merrimack and whose family drank PFAS-contaminated water for years, has been asking for research on the health effects of the PFOA pollution since it was discovered in 2016. Murphy's 36-year-old daughter is sick with a number of conditions, including hypothyroidism and polycystic ovarian syndrome, both of which have been linked to PFAS exposure. Her 32-year-old son, who runs marathons, has elevated cholesterol, which is also linked to PFAS, and her youngest son also has a serious thyroid condition. Both Murphy's husband and brother-in-law, who also lived in Merrimack, have developed prostate cancer, which has also been linked to PFOA exposure – as did her father, who also had kidney cancer.

"Can I say that PFAS definitely caused these things? I certainly can't," said Murphy. "But, man, there's an awful lot of things that make me wonder."

Murphy, who helped found a local advocacy group to fight the pollution and now serves on the Merrimack town council, has spent years asking for more research on how the chemicals have affected her town. "The pushback was unbelievable," said Murphy. "It was, 'Oh, you're fearmongers,' or 'You're going to ruin the property values.'"

In contrast to the new findings, a 2018 cancer incidence report from the New Hampshire Department of Health and Human Service that compared Merrimack's cancer rates to those of the state found that "none of the cancers in Merrimack, NH, occurred in significantly higher numbers than would be expected." In December, the state released an updated report that found that the number of kidney cancers between 2009 and 2018 in Merrimack is higher than would be expected "in a town of similar size in New Hampshire" but warned there was insufficient evidence to link the cancers to any exposure.

"It shows how important picking a comparison group is," toxicologist Linda Birnbaum said of the Environmental Health Insights study. "If you say, we're going to pick another economically and socially matched community, well, that all sounds great. But if they've got the same exposures you do, you're not going to be measuring anything." Birnbaum, who retired as director of the National Institute for Environmental Health Sciences in 2019, has studied the toxicity of PFAS chemicals extensively and has noted that the EPA's safety threshold for PFOA in drinking water did not reflect the evidence that extremely low levels of the chemical can cause cancer.

Mindi Messmer, who was serving in the New Hampshire state legislature when the state's first study of cancer rates in Merrimack came out, had similar thoughts about the health department's decision to compare Merrimack's cancer rates with those of the entire state. "We suspected that using that as comparator group wasn't really appropriate," said Messmer. "The cancer rates of the state are really driven by the high population centers in

southern New Hampshire, which also happen to be highly exposed to PFAS." Indeed, PFAS contamination has been measured in a 65-square mile area around the Merrimack plant.

In 2020, Messmer and several health researchers decided to embark on a study that would compare the town's cancer rates to those of the nation, as well as to those of comparable towns in New Hampshire, Vermont, and Maine that do not have notable PFAS contamination. The study also compares Merrimack's cancer rates with those of Bennington, Vermont – another town where considerable levels of PFAS have been measured in drinking water.

In addition to identifying relatively high local rates of prostate and thyroid cancers, which researchers have previously linked to PFAS, their study also found elevated levels of bladder cancer, colon cancer, esophageal cancer, and mesothelioma, which are not known to be caused by the chemicals. Messmer said she did not know why those cancer rates were higher but added that the elevated bladder cancer numbers may reflect local arsenic contamination, which is naturally occurring in the area.

"I suspect that there's a confluence of mixtures of chemicals and naturally occurring contaminants that are causing these high rates of cancers," said Messmer, adding that the findings show the need for more research.

Birnbaum agrees. Although the new study shows clear differences in the cancer rates in certain towns, "All you know is what their exposure in the water is. You don't have any blood levels from the people," said Birnbaum. "But it could very well be that this would be the kind of point where people will say, OK, there's enough data that we should go in and do another study."

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Bad Chemistry

Voluminous research has already shown links between PFAS and a wide range of health effects, including weakened immune response, reproductive difficulties, hormonal imbalances, and obesity. The cancers that have been clearly linked to the chemicals include testicular cancer, kidney cancer, prostate cancer, and, in mice, pancreatic cancer.

Although it is now clear that thousands of sites in the U.S. have been contaminated, surprisingly few studies have looked at the cancer rates in these toxic hot spots. Studies of

people who lived near a DuPont plant that released PFOA into the public water supply in West Virginia and Ohio, conducted between 2005 and 2013, showed that exposure to the chemical was "more probably than not" linked to elevated rates of testicular and kidney cancer, cholesterol, thyroid disease, preeclampsia, and ulcerative colitis, which can lead to rectal cancer.

Robert Bilott, the attorney who led the class-action litigation that led to the creation of the panel of epidemiologists who conducted the studies of the effects of PFOA near the West Virginia plant, expressed frustration at the ongoing challenges of demonstrating the health impacts of the chemicals, which have been used in firefighting foam, nonstick coatings, and hundreds of other products.

"The more people they contaminate, the harder it is for those of us exposed to prove the harm from that exposure."

"It's infuriating that the more these PFAS manufacturers contaminate the planet, the more difficult it is to do effective human health studies, as there are fewer and fewer 'uncontaminated' populations to compare to," said Bilott. "It's as if, the more people they contaminate, the harder it is for those of us exposed to prove the harm from that exposure."

Messmer, who now runs the nonprofit group New Hampshire Science and Public Health and serves on a state commission on the public health impacts of PFAS, said that she and others focused on cleaning up and preventing PFAS pollution in the state have run into considerable resistance. "The opposition for certain comes from lawyers hired by Saint-Gobain," said Messmer.

Saint-Gobain did not respond to inquiries for this story.

Messmer also pointed to a recent session of the State Senate's Energy and Natural Resource Committee during which Jodi Grimbilas, a lobbyist representing the American Chemistry Council, compared PFAS to berries. While the legislators discussed the possibility of regulating the chemicals as a class, Grimbilas said that PFAS are like berries: While some are poisonous, others, like strawberries, blueberries, and raspberries, are "good."

Murphy is pushing for more research to elucidate the precise relationship between the illnesses in her family members and the PFAS compounds in Merrimack's air and water. "My kids grew up here. I have grandchildren who live here now. We're talking about three generations of people who have been harmed by polluters here," she said. "And [the polluters] don't give a rat's ass."

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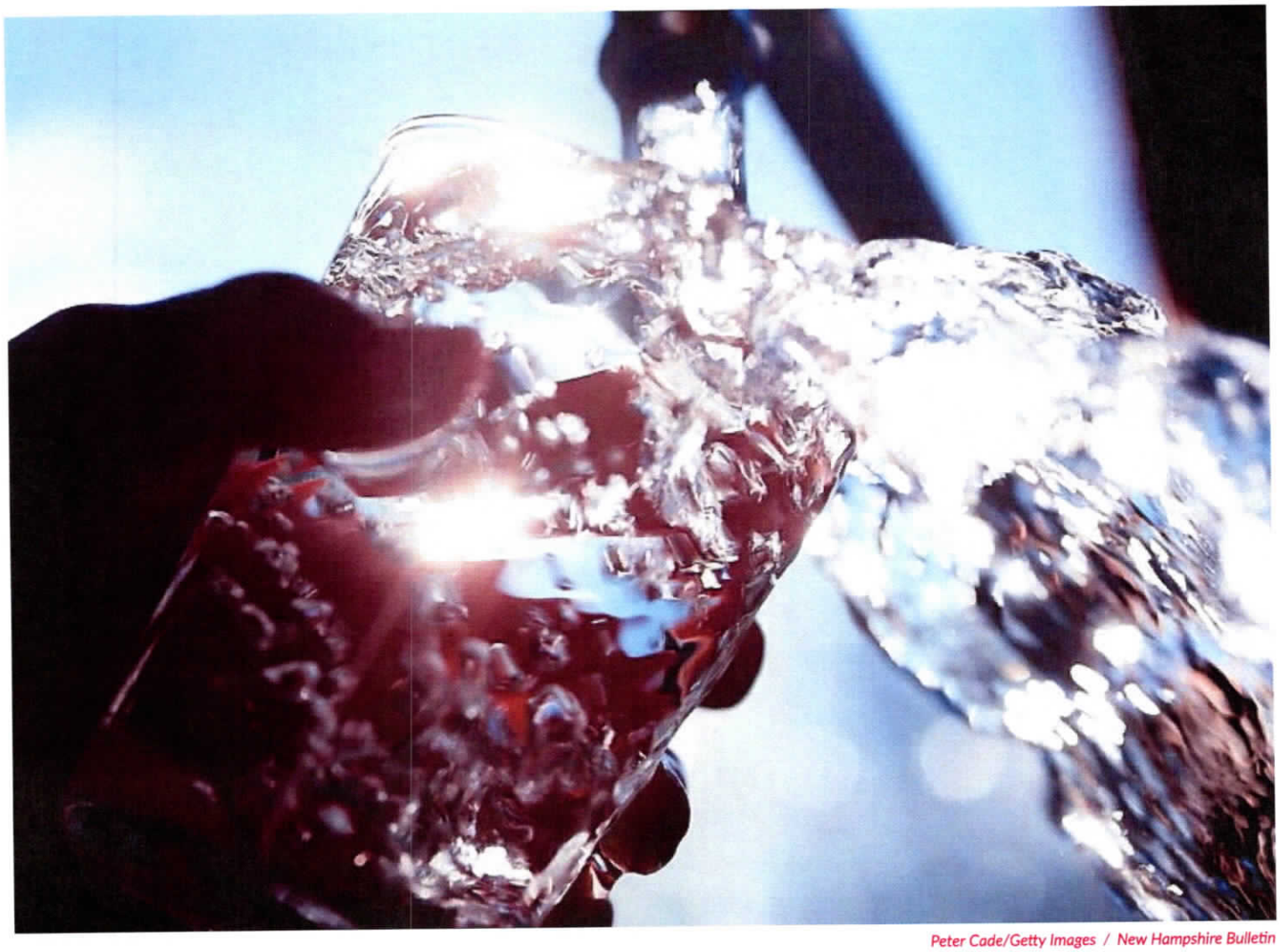
Published February 10, 2022 at 9:26 AM EST



Peter Cade/Getty Images / New Hampshire Bulletin

Most people in the United States have some level of PFAS in their blood, according to the CDC.

NHPR
Morning Edition

learned that the drinking water at her house contained chemicals called per- and polyfluorinated substances, or PFAS, which can be harmful to human health.

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The first diagnosis came in 2010: breast cancer. Williams had a successful lumpectomy and radiation treatment, and thought she could move on with her life. The kidney cancer came two years later, a more serious diagnosis than early-stage breast cancer and surprising to Williams, with no family history of the cancer, which is twice as common in men. She wasn't a smoker or overweight. She had always been an avid runner – and that meant she drank a lot of water. In 2020, she was diagnosed with bladder cancer.

Neither breast nor bladder cancer have been linked to PFAS exposure, but scientists have found a link between kidney cancer and PFAS – chemicals identified as possible carcinogens by the International Agency for Research on Cancer. Bladder cancer has been linked to arsenic, another environmental exposure from well water that is more common in northern New England than the rest of the country.

Williams learned her cancer could be tied to environmental factors only after a state report was released in December 2021, finding more cases of kidney and renal pelvis cancer than expected in the town of Merrimack: a 42 percent excess the state determined was statistically significant.

The investigation into health impacts was itself triggered by the 2016 findings of elevated PFAS in the water supply. Williams wrote to the New Hampshire Department of Health and Human Services, asking it to prioritize the investigation and expand its geographic bounds to include her town. While the state did look at cancer rates for Bedford, Litchfield, and Londonderry – and didn't find a signal to indicate concern – taking a town-by-town approach could dilute the analysis, said Laurene Allen, a citizen advocate who works with Merrimack Citizens for Clean Water. She advocates for "looking at what, regardless of town boundaries, we know is the contamination area."

Allen argues the state should use the area of exposure when analyzing cancer rates, and the Department of Environmental Services has already done mapping to model air, ground, and water contamination, she said.

"What we need is the whole area to be addressed because people need answers at the end of the day. ... And if they want to pursue legal action, my god, they have every right to do that," she said.

Questions, and more questions

The recent report from the state has prompted a slew of questions from others in the region six years after residents first learned that PFAS had leached from the Saint-

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PFAS to manufacture protective fabrics, used by the military (desert shelters and biohazard suits) and in construction (sport stadium rooftops).

Saint-Gobain has provided bottled water to some of those impacted, and paid to extend municipal water lines for some water treatment systems, according to a 2018 agreement with the state. And the state required Saint-Gobain to install a treatment system to remove chemicals from the air leaving the plant. After missing the initial deadline, last July Saint-Gobain unveiled the new system, which is now the subject of an enforcement action after the state found a bypass stack it said was unauthorized.

"Is there medical data about the local incidence of cancer? Is there evidence of the link to Saint-Gobain?" asked one participant during a community meeting in January with state health officials to address cancer concerns in Merrimack. "Does this have anything to do with the town's water problems?" asked another.

But the state Department of Health and Human Services was clear that it doesn't have satisfying answers to many of these questions. And even if they pursue further study, there are some questions that will be left unanswered, like the cause of a particular cancer.

Whitney Hammond, the chronic disease director for the department, said only a higher-than-expected number of kidney cancer cases has been found, not higher rates of cancer overall. "And at this point, we don't have the ability to link that with any particular organization, or any particular environmental contaminants," she said at the January meeting.

Even if the state decides it's feasible to move forward with a more comprehensive study of the area, even if they can secure the funding and an academic partner to undertake that work, the state does not expect to answer that question, according to Hammond. "I know everybody really wants to understand if some particular thing caused their cancer or their family member's cancer, but that's not what the department's able to do," she said. Hammond and advocates urged residents who think they may be impacted to contact the state.

PFAS are often called "forever" chemicals since they don't biodegrade and can accumulate in people, animals, and the environment. The man-made chemical used globally in commercial and industrial products since the 1950s is present in common household products that repel water, like stain repellents, stain-resistant carpets and couches, cookware, and food packaging.

New legislation

The chemical is a major environmental concern being taken up by the Legislature this year – driven in no small part by lawmakers from Merrimack.

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lakes in southern New Hampshire because of how much PFOS – or perfluorooctane sulfonic acid (a type of PFAS) had been found in the fish. The lakes included in the advisory were Beaver Lake in Derry, Robinson Pond in Hudson, Horseshoe Pond in Merrimack, Canobie Lake in Salem, and Cobbetts Pond in Windham. "These are even surface water bodies we wouldn't have anticipated," said Mindi Messmer, an environmental scientist.

House Bill 1440 – introduced this session – would set standards for PFAS in surface water, which Messmer said would be an important acknowledgment of the connection between surface water and public and private water supplies. Another bill looks at establishing regulations for soil, and gained the support of DES, which proponents say could help identify and prevent PFAS from getting into groundwater.

Most people in the United States have some level of PFAS in their blood, according to the CDC. In Merrimack, the level of PFOA, or perfluorooctanoic acid, one type of PFAS, was 4.4 times the national average among the 219 private well drinkers who were tested by the state in 2016 and 2017. Allen believes that if more people had access to sampling, it could reveal higher numbers.

"This is the largest industrial contamination of groundwater in the state's history, and it's still spreading," said Rep. Rosemarie Rung, a Merrimack Democrat and the chairwoman of the state commission charged with investigating the environmental and public health impacts associated with PFAS. "What people in Merrimack want is we want to know why."

nhpr News from New Hampshire and npr

Support

According to Mike Wimsatt, waste management division director at the Department of Environmental Services, around 2,000 wells have been tested for levels of PFAS that exceed state standards, and 936 of those wells are in what's called the consent decree area, a boundary the state and the company agreed on in 2016. Within that area, Saint-Gobain is required to provide bottled water and test wells thought to be contaminated. Outside that area, 1,094 additional private wells have tested for PFAS above the state standards; around 80 percent of those wells are in southern New Hampshire, Wimsatt said.

"We certainly believe there are many wells outside the consent decree area that are contaminated above the standard as a result of Saint-Gobain's deposition," he said.

Just in January, the state sent out 232 letters to properties within 500 feet of a well in violation of groundwater quality standards; 115 of those letters went to Bedford, the town where Williams had lived. The letters don't guarantee that the state will provide testing, but, Wimsatt said, so far they've been able to test every property that has requested it. Wimsatt said he thinks that inside the decree area, Saint-Gobain will finish

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"I'm not sure how many more samples we will end up taking," he said. "It comes down to whenever we get data that suggests where people are above standards, we draw our circle, we make notifications, we get requests, and we react to them. We will probably be at that for a while to come."

Rung said the findings of the December report didn't come as a surprise, but rather lent scientific legitimacy to people's lived experience with cancer in the region.

More research needed

Kyle Steenland, an epidemiologist and professor of environmental health at Emory University, has examined the impact of PFAS on human health in a study of around 70,000 individuals exposed to PFOA in contaminated drinking water near a DuPont factory in West Virginia. The blood levels Steenland observed in West Virginia were higher than in Merrimack, which he said should reassure residents. "If I were a resident, then I wouldn't be super alarmed here because the evidence is still not definitive and also because kidney cancer is rare." And, he said, the levels of PFOA in private wells are not extremely high.

But Steenland also pointed to sampling done by the National Cancer Institute two years ago, which implied that even lower levels of PFOA in blood could be linked to kidney cancer. Steenland echoed the state's message: more research is needed.

Nancy Murphy, a former state representative who has advocated for PFAS-related legislation, said that while scientists continue to work, for her the connection is clear. Murphy, a retired nurse, has six children, three of whom are adopted, and they each have health issues linked to PFAS, she said. "I live less than 2 miles from Saint-Gobain." Her husband has cancer. Her parents have cancer. (Murphy is also adopted and so doesn't have the same genetic makeup as her parents.)

"Can I prove it? No. But they can't convince me that's not the reason," she said.

The link, she said, is important: "We've got to call it what it is and recognize that we're killing ourselves and we don't need to be."

Williams, who travels from her home in New Jersey to the Dana-Farber Cancer Institute in Boston every three months, has lost a kidney, part of her right lung and pancreas, and her gallbladder. Since her 2012 kidney cancer diagnosis, the cancer has progressed to stage 4, which means it is incurable.

She worries that her two sons may develop cancer later in life.

She wants accountability. "I want to be able to say that Saint-Gobain is taking responsibility for this. And I would like the state to enforce some of the things that they're trying to do to control the pollutants in the environment."

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Tags NH News | PFAS | Saint Gobain | Cancer | Merrimack | New Hampshire Bulletin

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OPINION > OPINION COLUMNISTS

Wendy Murphy: Firefighters face perilous cancer risk

By WENDY MURPHY |
March 3, 2022 at 7:00 a.m.

Firefighters risk their lives every day by running in to burning buildings while the rest of us are running out. Now we're learning that they have also been risking their lives simply by using firefighting equipment.

A new Massachusetts lawsuit asserts that our heroic first responders are falling victim to cancer at very high rates because of the chemicals used in the equipment that's supposed to protect them. The 79-page complaint was filed last month in federal district court in Boston and has 16 plaintiffs, all current or retired firefighters from Worcester, Norwood, Brockton, Fall River and Boston, and one spouse.

The lawsuit claims that PFAS, a dangerous cancer-causing chemical used in most firefighting equipment, is causing widespread cancer in firefighters nationwide. The Massachusetts lawsuit is one of many against the companies that manufacture and sell firefighting equipment. They didn't warn anyone that PFAS is deadly. In fact, they said it was safe. All 15 firefighters have significantly elevated levels of PFAS in their blood. All 15 have cancer.

Firefighters know the job is dangerous, and that they risk their lives every time the bell rings. They go to work every day aware that if a building collapses or they take in too much smoke, they might not make it home.

Plaintiff Paul Cotter was a Worcester firefighter for 27 years. He once rescued a man from a building that was engulfed in flames. He's now struggling with the debilitating effects of prostate cancer. Plaintiff Daniel Ranahan has been a firefighter for seven years, following in his father's footsteps. He also has very high levels of PFAS in his blood, and has been diagnosed with lymphoma. He founded a cancer foundation to support stricken firefighters and their families.

PFAS is everywhere in firefighting. It's in the foam used to extinguish fires, especially oil and grease fires. The chemicals in PFAS help repel the spread of flames, but firefighters breathe it in, and it gets in their eyes and mouths. In some cases, they become soaked in it.

PFAS is also in firefighters' helmets, jackets, pants, boots and gloves. It helps protect them from heat and water, but when PFAS is exposed to high temperatures, it breaks down and degrades, causing firefighters to absorb the deadly chemicals through skin, or from hand to mouth contact.

Congressman Jim McGovern and Sen. Elizabeth Warren said in November that a federal investigation of PFAS manufacturers is warranted, but they have said and done nothing since. Firefighters have also asked Maura Healey to step in, but only crickets from her office so far. Someone should check their campaign donations.

PFAS-producing companies once provided lots of funding and support to firefighter unions, which made it harder for those who were getting sick to complain, but things changed when Boston's own Ed Kelly took over the International Association of Firefighters union and refused to stay silent. He no longer accepts sponsorships or advertisements from PFAS companies and has made clear that the safety of firefighters is his top priority.

The companies that make firefighting equipment have known since the 1950s that PFAS is dangerous, but they didn't warn anyone. This is what the lawsuit is all about. Companies like 3M and AGC Chemicals should be held accountable.

What firefighters do is heroic enough. Corporate bank accounts should not be getting fatter while firefighters are getting sicker.

Tags: Cancer, Fire, Firefighters

Author **Wendy Murphy**

Wendy is adjunct professor of sexual violence law at New England Law|Boston where she has taught for fifteen years. An impact litigator whose work in state and federal courts around the country has changed the law to improve protections for women's and children's constitutional rights, she developed and directs several projects in conjunction with the school's Center for Law and Social Responsibility.

Follow Wendy Murphy @WMurphyLaw

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49 Photos Of What Life Was Like Back In The '70s

By Bleacher Breaker

If you grew up during the 1970's, then these photos will bring back some vivid memories.

energy supply for the New England region. Then, last week, the Massachusetts Municipal Wholesale Electric Company issued a press release reaffirming its commitment to help Massachusetts reach a goal of net zero carbon emissions by the year 2050. The Groton Electric Light Department is a member of (MMWEC).

In late January, stakeholders of ISO-New England voted to keep a rule in effect that critics claim protects fossil fuel energy producers from competing against renewable energy producers in providing electricity to the New England Grid. According to an article in the Feb. 5 Boston Globe, the decision reversed the stated position of ISO-New England to eliminate what is called the Minimum Offer Price Rule.

The *Minimum Offer Price Rule* limits the number of energy projects that developers can bid on by creating a minimum price level which developers cannot bid below. According to the Globe article, the Minimum Offer Price Rule has been the target of Federal regulators because it is viewed as an impediment in introducing more renewable energy into the mix of energy supplies in New England.

ISO-New England had planned to eliminate the Minimum Offer Price Rule (MOPR) this year but after lengthy discussions among stakeholders in ISO-New

Continued On Page 4

State Multifamily Zoning Mandate Could Swell Town Population By 25%

Select Board Members Say It Is An 'Unfunded Mandate' 'Not Good For Groton' & 'Absurd'

by Connie Sartini

Land Use Director Takashi Tada advised the Select Board at their Monday night meeting about a change to Mass General Law Chapter 40A that added a new Section 3A to the Zoning Act that is applicable to MBTA communities. He added that Groton is considered an MBTA community because it is adjacent to Shirley, Ayer and Littleton MBTA train stations, and as such this mandates the town to have multifamily zoning.

"This is the first step that is required by May 2 for the town to have a briefing on the guidelines, which we are doing tonight and to submit a community information form This buys us until Dec 31, for the request for determination of compliance."

Tada said that an MBTA community must have a zoning ordinance or bylaw that provides for at least one district of reasonable size in which multi-family housing is permitted as of-right and that such multi-family housing cannot be age restricted and must be suitable for families with children. This section defines a district of "reasonable size" as not less than 50 contiguous acres of land and that it must have a minimum gross density of 15 units per acre, be located not more than 0.5 miles from a commuter rail station, subway station, ferry terminal or bus station, if applicable.

According to the DHCD guidelines, an overlay district is an acceptable way to achieve compliance with Section 3A, provided that such an overlay district should not consist of a collection of small, non-contiguous parcels. At least one portion of the overlay district land areas must include at least 25 contiguous acres of land, and must be able to achieve 15 units per acre which could result in 750 housing units in a multi-family setting.

The purpose of Section 3A is to encourage MBTA communities to adopt zoning districts where multi-family zoning is permitted as of-right, and that meet other requirements set forth in the statute.

The Department of Housing and Community Development, in consultation with the

Continued On Page 8

Police learned that the victim had agreed to meet another party in the parking lot to complete an online transaction for the sale of two puppies.

The other party arrived in a car with several other people, allegedly showed what appeared to be a handgun, took the puppies, and robbed the victim of personal items. No one was injured."

Following an investigation by Littleton Police Detectives and numerous other law enforcement agencies in Eastern Massachusetts, a man was identified as the suspect and a warrant was issued for his arrest.

He was taken into custody without incident on Thursday in Revere at his residence by Revere and Littleton Police and

Continued On Page 2

Groton Reads & Eats

Delicious Events All Month Long!
March 1 – March 31, 2022
Groton Public Library GPL.ORG
Groton Reads is generously supported by the Groton Public Library Endowment Trust.

Check it Out! 2022 Groton Reads & Eats GPL.ORG

Check out a Groton Reads & Eats book selection and earn a badge for special discounts at participating businesses!
For details, go to gpl.org or visit the library!

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TOWN OF TOWNSEND
VEHICLE ASSIGNMENT POLICY

Policy #4-05
Vehicle Assignment Policy

The purpose of this policy is to set forth the guidelines under which Town vehicles will be authorized to Town Personnel and the guidelines under which Town vehicles maybe used.

The provisions of this policy apply to all general government employees. Employees whose employment is regulated by collective bargaining agreements or personal contract are subject only to those provisions not specifically regulated by agreement.

It is the policy of the Town that certain positions require employee access to municipal vehicles, either during the work shift or on a 24-hour on-call basis. Town vehicles are not personal vehicles and are not for personal use. Town vehicles should be viewed as belonging to the citizens of the Town and are assigned solely for the purposes consistent with providing services to those citizens.

The assignment of municipal vehicles during work time is based upon job description. Appointing authorities who have municipal vehicles available for this purpose may assign such vehicles in a manner consistent with departmental workload and employee function. The assignment of vehicles may be rescinded at any time by the Board of Selectmen.

The assignment of vehicles for 24-hour use will be made in writing by the Town Administrator, and will only be considered for employees who require a vehicle for the ordinary and necessary discharge of their job functions. Criteria which will be used in the determination of eligibility for 24-hour vehicle use include:

Officially designated on-call status:
Emergency or other equipment contained in the vehicle; and/or
No town facility is available for garaging in a safe and convenient location.

Vehicle use is limited to travel to and from the residence and place of work. The vehicle should be driven over the most direct route taking into account road and traffic conditions. The vehicle should not be utilized for travel outside a direct commuting route for personal reasons. Whenever a position becomes vacant, the authorization for 24-hour use shall be re-evaluated.

Employees assigned municipal vehicles on a 24-hour basis will be given a copy of this policy and will be required to sign a confirmation receipt.

Employees authorized to commute in a Town vehicle may be subject to imputed income tax regulations as set forth by the Internal Revenue Service, which considers a certain portion of the vehicle use (namely the commute) to be income for the purposes of income taxation. On December 1st of each year, the Treasurer/Collector shall be responsible for determining any tax liability and will be provided with the names of all employees authorized to use Town vehicles for commuting purposes, and the normal, one-way commuting distance. Employees who are assigned marked and unmarked police vehicles, and/or marked municipal vehicles carrying tools and meeting certain other eligibility criteria will not be subject to imputed income taxation as a result of the vehicle assignment.

Rules Governing Use:

1. Municipal vehicles will not be used to transport passengers who are not directly or indirectly related to municipal business. Passengers shall be limited to Town employees and individuals who are directly associated with Town work activity (committee members, consultants, contractors, etc.). Family members shall not be transported in Town vehicles.
2. Vehicles should contain only those items for which the vehicle is designed. The Town shall not be liable for the loss or damage of any personal property transported in the vehicle.
3. Employees are expected to keep municipal vehicles clean, and to report any malfunction or damage to their supervisor immediately.
4. Employees assigned vehicles for commuting purposes are expected to park such vehicles in safe locations.
5. Employees must wear seatbelts in vehicles so equipped during operation of the vehicle.
6. Employees may not operate municipal vehicles under the influence of alcohol, Illegal drugs, or prescription drugs or medications which may interfere with effective and safe operation.
7. Employees who operate municipal vehicles must have a valid motor vehicle license issued by the state of their current residence and may be required to provide proof of valid motor vehicle license once every six (6) months.
8. Employees driving municipal vehicles shall obey all applicable traffic and parking regulations, ordinances, and laws.

   a) Employees who incur parking or other fines in municipal vehicles will generally be personally responsible for payment of such fines unless the payment of such fines by the town is approved by the Board of Selectmen.
   b) Employees who are issued citations for any offense while using a municipal vehicle must notify their supervisor immediately when practicable, but in no case later than 24 hours. Failure to provide such notice may be grounds for disciplinary action.
   c) An employee who is assigned a municipal vehicle and who is arrested for or charged with a motor vehicle offense for which the punishment includes suspension or revocation of the motor vehicle license, whether in his or her personal vehicle or in a municipal vehicle, must notify his or her supervisor immediately when practicable, but in no case later than 24 hours. Conviction for such an offense may be grounds for loss of municipal vehicle privileges and/or further disciplinary action.

9. No employee may use a municipal vehicle for out of state use without advance approval of the Town Administrator.

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9. No employee may use a municipal vehicle for out of state use without advance approval of the Town Administrator.

Mileage Reports

Employees using a municipal vehicle will be required to keep track of business miles with an Assigned Vehicle Log Form. The mileage log will contain the following information:

Date	Business Purpose
Mileage	Personal Use Miles
Starting location	
Destination	

On a monthly basis the employee will be required to submit the mileage log form to the Board of Selectmen's Office.

Mileage reports must be kept up-to-date and maintained by the employee. Failure to submit a report and maintain logs in a timely manner may result in the loss of vehicle privileges.

All Employees will be given a copy of this policy and will be required to sign a confirmation receipt.

Adopted by the Board of Selectmen on October 25, 2005
THE TOWNSEND BOARD OF SELECTMEN

Daniel J. Murphy, *Chairman*

Peter H. Collins, *Vice-Chairman*

Robert Plamondon, *Clerk*

3.6

Online Billing Software

City Hall Systems

- Bill information sent at time of billing.
- Nightly Vadar communication. Up to date payment every day
- Account number and address needed for payment
- Payment file emailed daily
- Fees: $.50 check
  2.95%, $1.00 minimum
- Online check/MC/AMEX/Disc
- Visa can be accepted if Treasurer joins
- No cost to utility
- Autopay for total bill
- Can schedule payments manually
- Credit cards are accepted over the phone through call center
- Stores PDF of bills to accounts. Customers can view historical bills online.
- Partial payments will correctly reflect the remaining balance.
- If customer opts in, bills can be sent via email

Unipay

- Bills are manually uploaded monthly
- Once uploaded, the amount is the same until next upload
- Accounts can be found using account number or address
- Manual downloads for payments
- Fees: $.50 check
  $2.50/$100 payment
- Online check/MC/AMEX/Disc
- No cost to utility
- Autopay for total bill
- Autopay for specified amount

DEPARTMENT OF PUBLIC WORKS Water, Wastewater, Highway & Solid Waste Divisions

Mark L. Wetzel, P.E., Superintendent
Pamela J. Martin, Office Manager

25 BROOK STREET
AYER, MASSACHUSETTS 01432
T: (978) 772-8240
F: (978) 772-8244

Water Shut-Off Payment Plan

To participate in a payment plan after receiving a water service shut off notification for non-payment:

1. Make a down payment of 35% of the total charges for water and sewer (including past due and current charges).
2. Payments can be made over the period of 1 year.
3. You must remain current with future water bills and make payments on time. Failure to do so will result in a default of this payment agreement. Your water service may be terminated or your account may be referred to a collection agency if you default.

Hardship Payment Plan

To participate in the Hardship Plan you must:

1. Make a down payment of 25% of the total charges for water and sewer (including past due and current charges).
2. Some plans may be eligible for an expanded duration of up to three years should monthly payments be over $100 when calculated for a twelve month term.
3. You must remain current with future water bills and make payments on time. Failure to do so will result in a default of this payment agreement. Your water service may be terminated or your account may be referred to a collection agency if you default.
4. Show certification of any of the following programs or classifications:
    a. Government Issued Unemployment Compensation
    b. Low income home energy assistance program (LIHEAP)
    c. Federal Public Housing/ Section 8
    d. Food Stamps
    e. Students (high school, college, trade or vocational) including students who have graduated within the last 180 days
    f. Seniors (65 and older)
    g. Medicaid or Supplemental Security Income (SSI)
    h. On active military duty, including reservists and national guard, or been discharged from the military in the last 180 days
    i. Homeowners in foreclosure
    j. Participants in the Temporary Assistance for Needy Families (TANF) program administered by the U.S. Department of Health and Human Services
    k. Persons receiving worker's compensation income benefits.

DEPARTMENT OF PUBLIC WORKS Water, Wastewater, Highway & Solid Waste Divisions

Mark L. Wetzel, P.E., Superintendent
Pamela J. Martin, Office Manager

25 BROOK STREET
AYER, MASSACHUSETTS 01432
T: (978) 772-8240
F: (978) 772-8244

AGREEMENT FOR PAYMENT
PAST DUE WATER /SEWER ACCOUNT

Agreement Date _____ Account Number _____

Water/Sewer Customer _____

Service Address _____

Mailing Address _____

I, the undersigned _____, hereby acknowledge and agree to pay my water and sewer account as follows:

Account Balance	$
Initial Payment Amount	$
Agreement Payment Amount	$
Agreement Period	Months
Payment Due Date	2 PM on the 30th of Each Month

1. 35% of the total account balance is due at the time of the signing agreement.
2. You must remain current on all future bills.
3. Payment Amount includes interest at 14% annual rate.
4. Failure to make the above payments by the date and time shown will result in termination of water service.
5. If water service is terminated due to failure to comply with the terms of this agreement, the undersigned agrees to pay the full account balance, plus any fines or fees assessed to the water/ sewer account.

By signing this agreement, the Town of Ayer is not waiving its right to collect these payments in full at any time by allowing the above listed water/sewer customer to make partial installment payments.

_____ _____
Customer Signature Date

_____ _____
Ayer DPW Signature Date

Please make payments to: Town of Ayer
25 Brook Street
Ayer MA, 01432

Adopted by the Ayer Board of Selectmen, Jan. 8, 2013

3.7

TOWNSEND WATER DEPARTMENT

540 Main Street West Townsend, Massachusetts 01474

Todd Melanson, *Chairman* , *Vice-Chairman* Christopher Jones, *Clerk*

David Vigeant
Water Superintendent

978-597-2212
water@townsendwater.org

AGREEMENT FOR PAYMENT
PAST DUE WATER ACCOUNT

Agreement Date_____ Account Number_____

Customer_____

Service Address_____

Mailing Address_____

I, the undersigned _____, hereby acknowledge and agree to pay my water account as follows:

Account Balance	$
Initial Payment Amount	$
Agreed Payment Amount	$
Agreement Period	Months
Payment Due Date	3 PM on the 30th of each month

1. 25% of the total account balance (past due and current) is due at the time of signing agreement.
2. Remaining payments are split over 12-month period. Some plans may be eligible for up to 36 months if calculated monthly payments exceed $100.00 for the 12-month term.
3. Enrollment in online autopay is required to ensure that all future water bills will remain current.
4. Upgrade of the water meter to the newest model.
5. Payment amount includes interest at 1.5% amount due.
6. Failure comply with the terms of this agreement results in the undersigned agreeing to pay the full account balance, plus any fines or fees assessed to the account. Failure of payment could result in lien or termination of service.

By signing this agreement, the Townsend Water Department is not waiving its right to collect payments in full at any time by allowing the above listed water customer to make partial installation payments.

_____ _____
Customer Signature Date

_____ _____
TWD Signature Date

Please make payments online at: www.townsendwater.org follow the links to UniPay

Townsend, Massachusetts				**Projected Charges at**
Construction of GP Well, Main Street				Maher Se
Contract No.: 2022-01				71 Conc
AECOM 250 Apollo Drive, Chelmsford MA. 01824				North Readin
Bid Date: September 30, 2021				Ph No.: 978-664-9355
AECOM Project No. 60652472				E-Mail: pmaher@mah
Item No.	Item Description	Quantity	Unit	Unit Price
1	Mobilization/Demobilization	1	LS	13,000.00
2	For furnishing, installing & removing erosion control barriers as specified, the unit price of	0	LF	$15.00
3A	Removal of 2-inch dia. steel test wells including galv screens as specified, the unit price of	160	VF	$21.00
3B	Removal of 8-inch dia. steel test wells including screens as specified, the unit price of	81	VF	$75.00
4	For furnishing, installing and removal of 30-inch minimum dia. Temporary steel casing as specified, the unit price of	30	VF	$800.00
5A	For furnishing, installing and removal of 24-inch diameter temporary steel casing as specified, the unit price of	52	VF	$700.00
5B	For furnishing, installing and leaving-in-place 24-inch diameter steel casing as specified, the unit price of	0	VF	$720.00

Townsend, Massachusetts				**Projected Charges at**
Construction of GP Well, Main Street				Maher Ser
Contract No.: 2022-01				71 Conc
AECOM 250 Apollo Drive, Chelmsford MA. 01824				North Readin
Bid Date: September 30, 2021				Ph No.: 978-664-9355
AECOM Project No. 60652472				E-Mail: pmaher@mah
Item No.	Item Description	Quantity	Unit	Unit Price
6	For furnishing and installing 18-inch diameter Type 304 stainless steel well casing as specified, the unit price of	60	VF	$460.00
7	For furnishing and installing 18-inch diameter Type 304 stainless steel well screen as specified, the unit price of	20	VF	$400.00
8	For placing manufactured glass beads (furnished by Owner) as filter pack, as specified, the unit price of	75	VF	$100.00
9	For furnishing and placing concrete seal as specified, the unit price of	20	VF	$175.00
10	For furnishing and installing pitless well unit as specified, the unit price of	1	EA	$43,700.00
11	For furnishing and placing clean fill, as specified, the unit price of	2	CY	$650.00
12	For well development, as specified, the unit price of	240	HR	$225.00

Townsend, Massachusetts				**Projected Charges at**
Construction of GP Well, Main Street				Maher Se
Contract No.: 2022-01				71 Conc
AECOM 250 Apollo Drive, Chelmsford MA. 01824				North Readi
Bid Date: September 30, 2021				Ph No.: 978-664-9355
AECOM Project No. 60652472				E-Mail: pmaher@mah
Item No.	Item Description	Quantity	Unit	Unit Price
13	For furnishing, installing and subsequently removing pumping test equipment as specified, the unit price of	1	EA	$5,800.00
14	For continuous pumping of permanent gravel packed well for performance testing purposes, as specified, the unit price of	48	HR	$145.00
15	For reading and recording recovery water levels after the 48-hour continuous pumping performance testing as specified, the unit price of	0	HR	$138.00
16	For furnishing, installing and removing discharge piping and appurtenances as specified, the unit price of	250	LF	$5.00
17	For video inspecting permanent gravel-packed well as specified, the unit price of	2	EA	$500.00

Townsend, Massachusetts	**Projected Charges at**
Construction of GP Well, Main Street	Maher Se
Contract No.: 2022-01	71 Conc
AECOM 250 Apollo Drive, Chelmsford MA. 01824	North Readin
Bid Date: September 30, 2021	Ph No.: 978-664-9355
AECOM Project No. 60652472	E-Mail: pmaher@mah

Item No.	Item Description	Quantity	Unit	Unit Price
18A	For mobilizing/demobilizing equipment for sole purpose of installing 2- or 2.5-inch diam test wells, as specified, the unit price of	1	EA	$750.00
18B	For driving and removing 2.5- or 4.5-inch diam well casing for small diameter test well, as specificed, the unit price of	75	VF	$50.00
18C	For furnishing, installing and later removing 2-inch diameter PVC test well casing, as specified, the unit price of	70	VF	$7.00
18D	For furnishing, installing and later removing SS W/W well screen for 2- or 2.5-inch diam test well, as specified, the unit price of	1	5-ft	$225.00
18E	For developing and pumping of 2- or 2.5-inch diameter test well, as specified, the unit price of	1	HR	$285.00

Townsend, Massachusetts				**Projected Charges at**
Construction of GP Well, Main Street				Maher Ser
Contract No.: 2022-01				71 Conc
AECOM 250 Apollo Drive, Chelmsford MA. 01824				North Readin
Bid Date: September 30, 2021				Ph No.: 978-664-9355
AECOM Project No. 60652472				E-Mail: pmaher@mah
Item No.	Item Description	Quantity	Unit	Unit Price
18F	For grain-size analysis of soils obtained from 2- or 2.5-inch diameter test wells, as specified, the unit price of	12	EA	$75.00
	Total Amount of Bid			

Townsend, Massachusetts				**Completion Feb 8 202**
Construction of GP Well, Main Street				vices, Inc.
Contract No.: 2022-01				rd Street
AECOM 250 Apollo Drive, Chelmsford MA. 01824				g, MA 01864
Bid Date: September 30, 2021				
AECOM Project No. 60652472				erserv.com
Item No.	Item Description	Quantity	Unit	Total
1	Mobilization/Demobilization	1	LS	13,000.00
2	For furnishing, installing & removing erosion control barriers as specified, the unit price of	0	LF	$0.00
3A	Removal of 2-inch dia. steel test wells including galv screens as specified, the unit price of	160	VF	$3,360.00
3B	Removal of 8-inch dia. steel test wells including screens as specified, the unit price of	81	VF	$6,075.00
4	For furnishing, installing and removal of 30-inch minimum dia. Temporary steel casing as specified, the unit price of	30	VF	$24,000.00
5A	For furnishing, installing and removal of 24-inch diameter temporary steel casing as specified, the unit price of	52	VF	$36,050.00
5B	For furnishing, installing and leaving-in-place 24-inch diameter steel casing as specified, the unit price of	0	VF	$0.00

Townsend, Massachusetts				**Completion Feb 8 202**
Construction of GP Well, Main Street				vices, Inc.
Contract No.: 2022-01				rd Street
AECOM 250 Apollo Drive, Chelmsford MA. 01824				g, MA 01864
Bid Date: September 30, 2021				
AECOM Project No. 60652472				erserv.com
Item No.	Item Description	Quantity	Unit	Total
6	For furnishing and installing 18-inch diameter Type 304 stainless steel well casing as specified, the unit price of	60	VF	$27,600.00
7	For furnishing and installing 18-inch diameter Type 304 stainless steel well screen as specified, the unit price of	20	VF	$8,000.00
8	For placing manufactured glass beads (furnished by Owner) as filter pack, as specified, the unit price of	75	VF	$7,500.00
9	For furnishing and placing concrete seal as specified, the unit price of	20	VF	$3,500.00
10	For furnishing and installing pitless well unit as specified, the unit price of	1	EA	$43,700.00
11	For furnishing and placing clean fill, as specified, the unit price of	2	CY	$1,300.00
12	For well development, as specified, the unit price of	240	HR	$54,000.00

Townsend, Massachusetts				**Completion Feb 8 202**
Construction of GP Well, Main Street				vices, Inc.
Contract No.: 2022-01				rd Street
AECOM 250 Apollo Drive, Chelmsford MA. 01824				g, MA 01864
Bid Date: September 30, 2021				
AECOM Project No. 60652472				erserv.com
Item No.	Item Description	Quantity	Unit	Total
13	For furnishing, installing and subsequently removing pumping test equipment as specified, the unit price of	1	EA	$5,800.00
14	For continuous pumping of permanent gravel packed well for performance testing purposes, as specified, the unit price of	48	HR	$6,960.00
15	For reading and recording recovery water levels after the 48-hour continuous pumping performance testing as specified, the unit price of	0	HR	$0.00
16	For furnishing, installing and removing discharge piping and appurtenances as specified, the unit price of	250	LF	$1,250.00
17	For video inspecting permanent gravel-packed well as specified, the unit price of	2	EA	$1,000.00

Townsend, Massachusetts				**Completion Feb 8 202**
Construction of GP Well, Main Street				vices, Inc.
Contract No.: 2022-01				rd Street
AECOM 250 Apollo Drive, Chelmsford MA. 01824				g, MA 01864
Bid Date: September 30, 2021				
AECOM Project No. 60652472				erserv.com
Item No.	Item Description	Quantity	Unit	Total
18A	For mobilizing/demobilizing equipment for sole purpose of installing 2- or 2.5-inch diam test wells, as specified, the unit price of	1	EA	$750.00
18B	For driving and removing 2.5- or 4.5-inch diam well casing for small diameter test well, as specificed, the unit price of	75	VF	$3,750.00
18C	For furnishing, installing and later removing 2-inch diameter PVC test well casing, as specified, the unit price of	70	VF	$490.00
18D	For furnishing, installing and later removing SS W/W well screen for 2- or 2.5-inch diam test well, as specified, the unit price of	1	5-ft	$225.00
18E	For developing and pumping of 2- or 2.5-inch diameter test well, as specified, the unit price of	1	HR	$285.00

Townsend, Massachusetts				**Completion Feb 8 202**
Construction of GP Well, Main Street				vices, Inc.
Contract No.: 2022-01				rd Street
AECOM 250 Apollo Drive, Chelmsford MA. 01824				g, MA 01864
Bid Date: September 30, 2021				
AECOM Project No. 60652472				erserv.com
Item No.	Item Description	Quantity	Unit	Total
18F	For grain-size analysis of soils obtained from 2- or 2.5-inch diameter test wells, as specified, the unit price of	12	EA	$900.00
	Total Amount of Bid			**$249,495.00**

Development Record, Main Street GPW, TW 3-21 (TW 3									All Entries Repres
Townsend MA				SWL = 2.5 ft bgs +/-					
Contract No.: 2022-01									Be
Date	Well-Screen Interval, ft, bgs	Pumping Rate, gpm	Orifice Weir, inches	Orifice Height, inch	Static WL, ft, below TOC	Pumping WL, ft, below TOC	Drawdown, ft	Specific Capacity, gpm/ft	Daily Sand Qty, gallons
Jan 18 2022	75 - 80	**205**	6 x 4		5.35			**5.2**	**25**
Jan 19 2022	75 - 80	**210**	6 x 4	10.5	5.35	46.50	41.15	**5.1**	**15**
Jan 20 2022	75 - 80	**210**	6 x 4	10.5	5.42	50.00	44.58	**4.7**	**7**
Jan 21 2022	75 - 80	**215**	6 x 4	11.0	5.44	37.80	32.36	**6.6**	**6**
Jan 24 2022	75 - 80	**220**	6 x 4	11.5	5.56	42.55	36.99	**5.9**	**5**
Jan 25 2022	70 - 80	**Pull Back**	**24" Casing**						**0**
Jan 26 2022	70 - 80	**310**	6 x 4	24.0	5.40	27.40	22.00	**14.1**	**22**
Jan 27 2022	70 - 80	**361**	6 x 5	8.5	5.38	32.82	27.44	**13.2**	**12**
Jan 28 2022	70 - 80	**361**	6 x 5	8.5	5.45	33.25	27.80	**13.0**	**8**
Jan 31 2022	70 - 80	**361**	6 x 5	8.5	5.45	34.90	29.45	**12.3**	**7**
Feb 1 2022	70 - 80	**361**	6 x 5	8.5	5.55	33.48	27.93	**12.9**	**7**
Feb 2 2022	70 - 80	**383**	6 x 5	9.5	5.50	32.46	26.96	**14.2**	**8**
Feb 3 2022	70 - 80	**412**	6 x 5	11.0	5.55	34.92	29.37	**14.0**	**4**
Feb 4 2022	70 - 80	**412**	6 x 5	11.0	4.69	32.83	28.14	**14.6**	**3**
Feb 7 2022	70 - 80	**412**	6 x 5	11.0	4.85	32.35	27.50	**15.0**	**1**
Feb 8 2022	70 - 80								

Development Record, Main Street GPW, TW 3-21 (TW 3						**All Entries Repres**			
Townsend MA				SWL = 2.5 ft bgs +/-					
Contract No.: 2022-01						Be			
Date	Well-Screen Interval, ft, bgs	Pumping Rate, gpm	Orifice Weir, inches	Orifice Height, inch	Static WL, ft, below TOC	Pumping WL, ft, below TOC	Drawdown, ft	Specific Capacity, gpm/ft	Daily Sand Qty, gallons

Development Record, Main Street GPW, TW 3-21 (TW 3						**All Entries Repres**			
Townsend MA				SWL = 2.5 ft bgs +/-					
Contract No.: 2022-01						Be			
Date	Well-Screen Interval, ft, bgs	Pumping Rate, gpm	Orifice Weir, inches	Orifice Height, inch	Static WL, ft, below TOC	Pumping WL, ft, below TOC	Drawdown, ft	Specific Capacity, gpm/ft	Daily Sand Qty, gallons

Development Record, Main Street GPW, TW 3-21 (TW 3				ent Those Observed at the END of each day					
Townsend MA				Bead Depth, 5-6 mm beads:					
Contract No.: 2022-01				ad Depth, 2.85-3.45 mm beads:					
Date	Well-Screen Interval, ft, bgs	Pumping Rate, gpm	Orifice Weir, inches	Cum Sand, gallons	Bead Depth, ft, Jack Plate	Daily Bead Settle, ft	Cum. Bead Settle, ft	Daily Dev Hours	Cum Dev Hours
Jan 18 2022	75 - 80	**205**	6 x 4	25	69.0	**0.4**	0.4	7.5	7.5
Jan 19 2022	75 - 80	**210**	6 x 4	40	69.5	**0.5**	0.9	9.0	16.5
Jan 20 2022	75 - 80	**210**	6 x 4	47	69.5	**0.0**	0.9	9.0	25.5
Jan 21 2022	75 - 80	**215**	6 x 4	53	69.5	**0.0**	0.9	9.0	34.5
Jan 24 2022	75 - 80	**220**	6 x 4	58	69.5	**0.0**	0.9	9.5	44.0
Jan 25 2022	70 - 80	**Pull Back**	**24" Casing**	**58**		**0.0**	**0.9**	0.0	44.0
Jan 26 2022	70 - 80	**310**	6 x 4	22	**66.5 Refill**	**4.1**	4.1	4.5	48.5
Jan 27 2022	70 - 80	**361**	6 x 5	34	**64.8 Refill**	**1.7**	5.8	8.0	56.5
Jan 28 2022	70 - 80	**361**	6 x 5	42	66.1	**1.3**	7.1	8.5	65.0
Jan 31 2022	70 - 80	**361**	6 x 5	49	66.8	**0.7**	7.8	5.5	70.5
Feb 1 2022	70 - 80	**361**	6 x 5	56	**66.4 Refill**	**1.4**	9.2	9.0	79.5
Feb 2 2022	70 - 80	**383**	6 x 5	64	**66.3 Refill**	**1.1**	10.3	10.0	89.5
Feb 3 2022	70 - 80	**412**	6 x 5	68	67.0	**0.7**	11.0	10.0	99.5
Feb 4 2022	70 - 80	**412**	6 x 5	71	67.4	**0.4**	11.4	7.0	106.5
Feb 7 2022	70 - 80	**412**	6 x 5	72	67.8	**0.4**	11.8	7.0	113.5
Feb 8 2022	70 - 80								

Development Record, Main Street GPW, TW 3-21 (TW 3				ent Those Observed at the END of each day					
Townsend MA				Bead Depth, 5-6 mm beads:					
Contract No.: 2022-01				ad Depth, 2.85-3.45 mm beads:					
Date	Well-Screen Interval, ft, bgs	Pumping Rate, gpm	Orifice Weir, inches	Cum Sand, gallons	Bead Depth, ft, Jack Plate	Daily Bead Settle, ft	Cum. Bead Settle, ft	Daily Dev Hours	Cum Dev Hours

Development Record, Main Street GPW, TW 3-21 (TW 3				**ent Those Observed at the END of each day**					
Townsend MA				Bead Depth, 5-6 mm beads:					
Contract No.: 2022-01				ad Depth, 2.85-3.45 mm beads:					
Date	Well-Screen Interval, ft, bgs	Pumping Rate, gpm	Orifice Weir, inches	Cum Sand, gallons	Bead Depth, ft, Jack Plate	Daily Bead Settle, ft	Cum. Bead Settle, ft	Daily Dev Hours	Cum Dev Hours

David J. Werlin

6.2

March 11, 2022

David Vigeant
Superintendent
Townsend Water Department
540 Main St.
Townsend, MA 01474

Dear Superintendent Vigeant:

Thank you for bringing to our attention that you have the utility easement plan for the purpose of re-routing the water main that presently runs through our basement at 169 Main Street in Townsend.

We have reviewed the plan and approve the location, however, we must see and review the actual easement document.

It is our hope that at your March 22, 2022 meeting this project will move forward, and that the required bidding process will begin without further delay.

Thank you for your continued efforts in shepherding this long overdue project.

Yours truly,

Beverly Napior

David J. Werlin & Beverly L. Napior

Werlin-Napior Realty Trust

cc: David Klebenoff, Esq.

169 Main Street
Townsend, Massachusetts 01469
617.371.5215
dave@greatnortheast.com

6.3

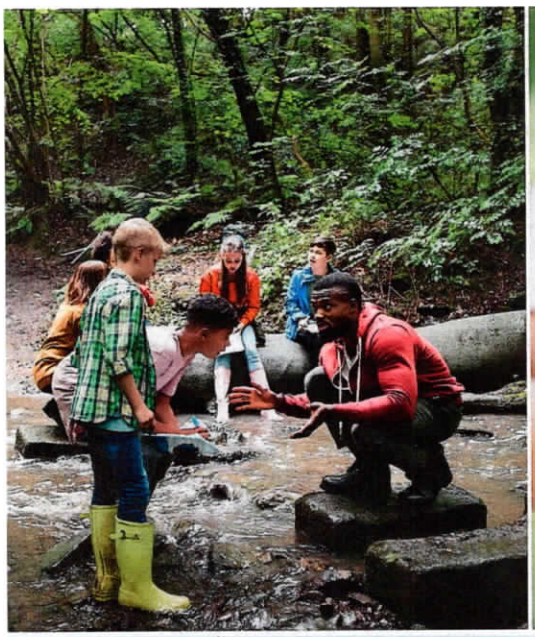
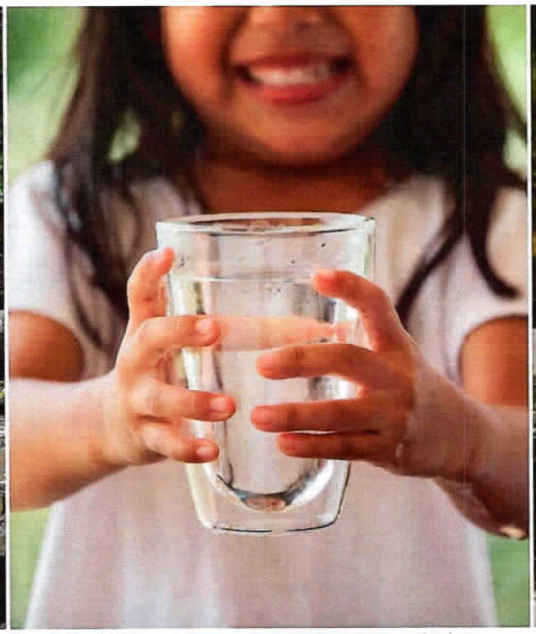
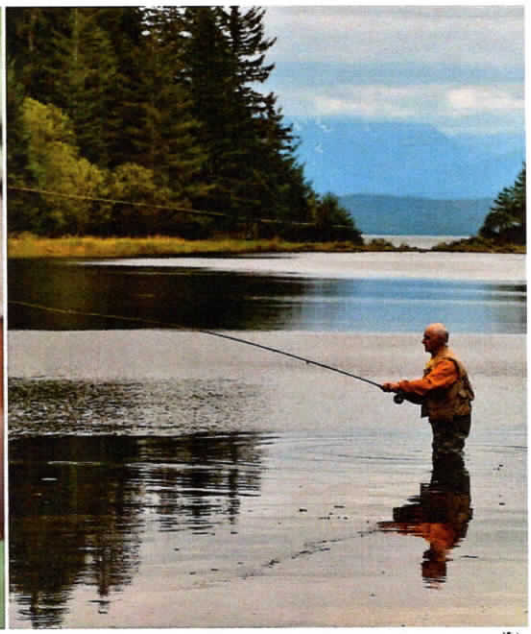
PFAS Task List

1) Media Study--- Ongoing Finish April 2022
2) Land Survey--- Pending Contract for Tighe and Bond Harbor Trace Land, Ash- South - South Harbor waterline, and Main St March April 2022
3) EPA-Umass testing Harbor Trace March 2022
4) Wetlands at Harbor Trace March 2022
5) Install Pumps at Main st
6) Building design first meeting Feb 2022
7) Rate Informational Meeting 1 March 2022
8) Union contract split from highway March April negotiate 3 year contract fix positions in Contact. 1) Accounts Manager/Water Tech 2) Distribution Foreman 3) Water Tech 4) Water Tech/ Backflow 5) Water Tech /Meter 6) Environmental Compliance/ Water Treatment 7) Office Manager/ Water Tech
9) Electric Building at Main St Well connect electrical April 2022
10) Additional Subsidies in final SRF April 2022
11) Town Meeting vote 7 May 2022
12) Test and Permit Main St put in system May 2022
13) No Later than 30 June 2022 communities must have appropriated the necessary local project funds or have committed to a schedule to obtain funds
14) Decommission main st wellfield Plant trees as per DEP permit
15) No Later than Completed applications must be submitted to MassDEP at the earliest possible time but not later than 14 Oct 2022
16) Aug 2022 Contract for 4 filter vessels 40 weeks to deliver
17) Sept 2022 Contract for water line Witches Brook to Harbor Trace
18) Oct-Dec 2022 permitting building site
19) Dec 2022 Reevaluate Rates
20) Jan 2023 Treatment Plant Contract goes out to Bid
21) Feb/March Treatment Plant Contract Awarded
22) Break Ground April May 2023
23) Vessels in May June 2023
24) June 2023 Water Tech/Backflow Hire
25) Last contract out of Backflows Aug 2023 roll into water department
26) Water Tech/ Meter Hire Oct 2023
27) All Training Finished May 2024 for Plant operation
28) Finish Project May June 2024 for summer water use Plant will operate 24 hours a day in summer 3 wells.

United States
Environmental Protection
Agency

6.3

PFAS Strategic Roadmap: EPA's Commitments to Action 2021–2024

A Note from EPA Administrator Michael S. Regan

For far too long, communities across the United States have been suffering from exposure to PFAS pollution. As the science has continued to develop, we know more now than ever about how PFAS build up in our bodies over long periods of time, and how they can cause adverse health effects that can devastate families. As Secretary of the North Carolina Department of Environmental Quality, I saw this devastation firsthand. For years, the Cape Fear River had been contaminated by these persistent "forever" chemicals. As I spoke with families and concerned citizens, I could feel their suffering and frustration with inaction. I knew my job was going to be trying and complex. But we were able to begin to address this pervasive problem by following the science, following the law, and bringing all stakeholders to the table.

As one of my earliest actions as EPA Administrator, I established the EPA Council on PFAS and charged it with developing an ambitious plan of action to further the science and research, to restrict these dangerous chemicals from getting into the environment, and to immediately move to remediate the problem in communities across the country. EPA's PFAS strategic roadmap is our plan to deliver tangible public health benefits to all people who are impacted by these chemicals—regardless of their zip code or the color of their skin.

Since I've been EPA Administrator, I have become acutely aware of the invaluable and central role EPA has in protecting public health in America. For more than 50 years, EPA has implemented and enforced laws that protect people from dangerous pollution in the air they breathe, the water they drink, and the land that forms the foundation of their communities. At the same time, my experience in North Carolina reinforced that EPA cannot solve these challenges alone. We can only make progress if we work in close collaboration with Tribes, states, localities, and stakeholders to enact solutions that follow the science and stand the test of time. To affect meaningful change, engagement, transparency, and accountability will be critical as we move forward.

This roadmap will not solve our PFAS challenges overnight. But it will turn the tide by harnessing the collective resources and authority across federal, Tribal, state, and local governments to empower meaningful action now.

I want to thank the co-chairs of the EPA Council on PFAS—Radhika Fox, Assistant Administrator for Water, and Deb Szaro, Acting Regional Administrator in Region 1—for their leadership in guiding the development of this strategy.

Let's get to work.

Administrator Michael S. Regan

PFAS Council Members

The following policy and technical leaders serve as members of the EPA Council on PFAS. They have been instrumental in working with their respective offices to develop the Agency's strategy. The Council will continue to coordinate across all EPA offices and Regions to accelerate progress on PFAS.

Co-Chairs

Radhika Fox, Assistant Administrator for Water

Deb Szaro, Acting Regional Administrator, Region 1

Office of the Administrator

John Lucey, Special Assistant to the Administrator

Andrea Drinkard, Senior Advisor to the Deputy Administrator

Office of Air and Radiation

John Shoaff, Director, Air Policy and Program Support

Office of Chemical Safety and Pollution Prevention

Jeffrey Dawson, Science Advisor

Tala Henry, Deputy Director, Pollution Prevention and Toxics

Office of Enforcement and Compliance Assurance

Cyndy Mackey, Director, Site Remediation Enforcement

Karin Leff, Director, Federal Facilities Enforcement

Office of General Counsel

Dawn Messier, Deputy Associate General Counsel, Water

Jen Lewis, Deputy Associate General Counsel, Solid Waste and Emergency Response

Office of Land and Emergency Management

Dana Stalcup, Deputy Director, Superfund Remediation and Technology Innovation

Dawn Banks, Director, Policy Analysis and Regulatory Management

Office of Research and Development

Tim Watkins, Acting Director, Center for Public Health and Environmental Assessment

Susan Burden, PFAS Executive Lead

Office of Water

Jennifer McLain, Director, Ground Water and Drinking Water

Deborah Nagle, Director, Science and Technology

Zachary Schafer, Senior Advisor to the Assistant Administrator

EPA Regions

John Blevins, Acting Regional Administrator, Region 4

Tera Fong, Water Division Director, Region 5

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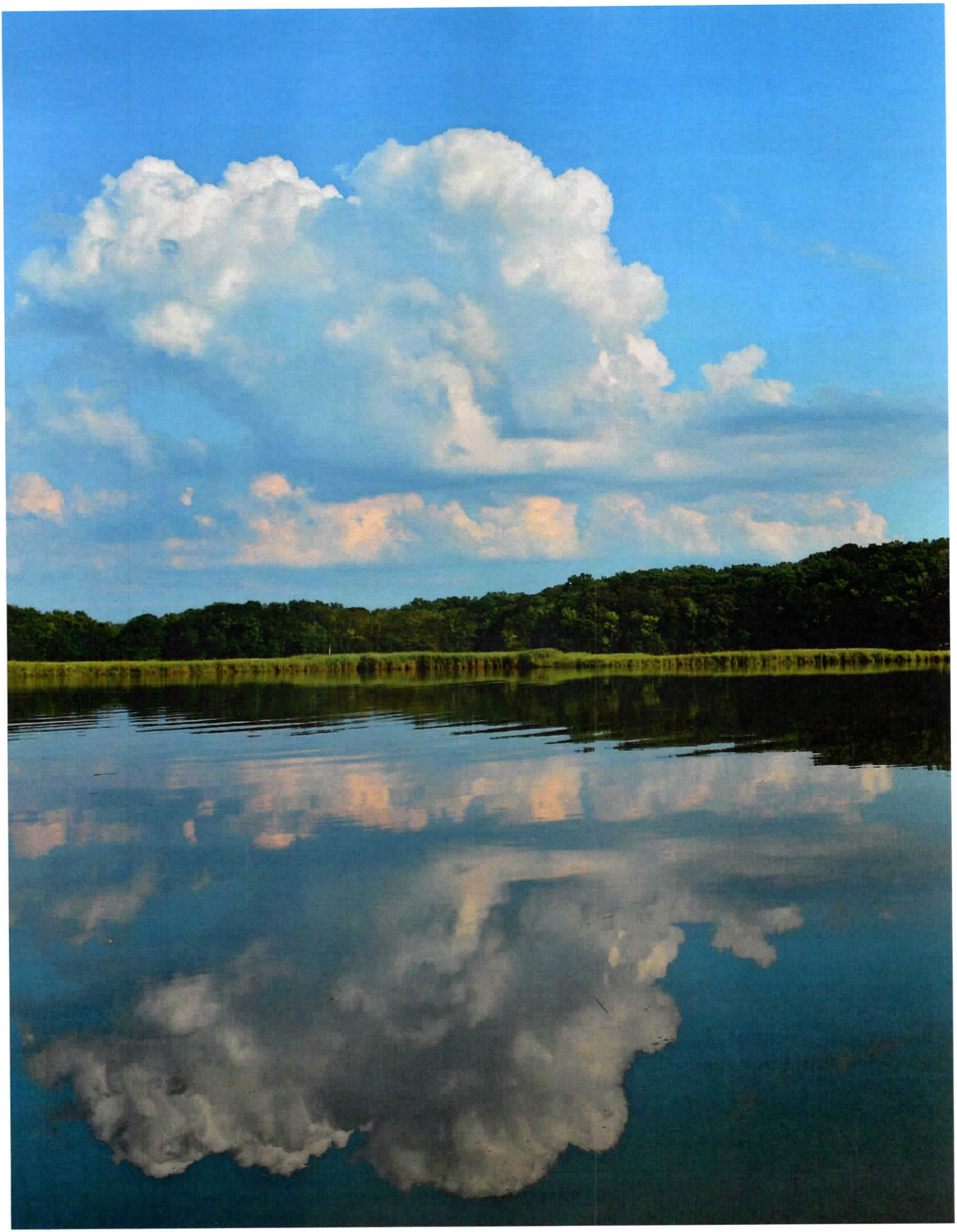

Introduction

Harmful per- and poly-fluoroalkyl substances (PFAS) are an urgent public health and environmental issue facing communities across the United States. PFAS have been manufactured and used in a variety of industries in the United States and around the globe since the 1940s, and they are still being used today. Because of the duration and breadth of use, PFAS can be found in surface water, groundwater, soil, and air—from remote rural areas to densely-populated urban centers. A growing body of scientific evidence shows that exposure at certain levels to specific PFAS can adversely impact human health and other living things. Despite these concerns, PFAS are still used in a wide range of consumer products and industrial applications.

Every level of government—federal, Tribal, state, and local—needs to exercise increased and sustained leadership to accelerate progress to clean up PFAS contamination, prevent new contamination, and make game-changing breakthroughs in the scientific understanding of PFAS. The EPA Council on PFAS developed this strategic roadmap to lay out EPA's whole-of-agency approach to addressing PFAS. To deliver needed protections for the American people, the roadmap sets timelines by which the Agency plans to take specific actions during the first term of the Biden-Harris Administration. The strategic roadmap builds on and accelerates implementation of policy actions identified in the Agency's 2019 action plan and commits to bolder new policies to safeguard public health, protect the environment, and hold polluters accountable.

The risks posed by PFAS demand that the Agency attack the problem on multiple fronts at the same time. EPA must leverage the full range of statutory authorities to confront the human health and ecological risks of PFAS. The actions described in this document each represent important and meaningful steps to safeguard communities from PFAS contamination. Cumulatively, these actions will build upon one another and lead to more enduring and protective solutions.

EPA's integrated approach to PFAS is focused on three central directives:

- **Research.** Invest in research, development, and innovation to increase understanding of PFAS exposures and toxicities, human health and ecological effects, and effective interventions that incorporate the best available science.
- **Restrict.** Pursue a comprehensive approach to proactively prevent PFAS from entering air, land, and water at levels that can adversely impact human health and the environment.
- **Remediate.** Broaden and accelerate the cleanup of PFAS contamination to protect human health and ecological systems.

The Agency's Approach

EPA's approach is shaped by the unique challenges to addressing PFAS contamination. EPA cannot solve the problem of "forever chemicals" by tackling one route of exposure or one use at a time. Rather, EPA needs to take a lifecycle approach to PFAS in order to make meaningful progress. PFAS pollution is not a legacy issue—these chemicals remain in use in U.S. commerce. As such, EPA cannot focus solely on cleaning up the downstream impacts of PFAS pollution. The Agency needs to also look upstream to prevent new PFAS contamination from entering air, land, and water and exposing communities. As the Agency takes tangible actions both upstream and downstream, EPA will continue to pursue a rigorous scientific agenda to better characterize toxicities, understand exposure pathways, and identify new methods to avert and remediate PFAS pollution. As EPA learns more about the family of PFAS chemicals, the Agency can do more to protect public health and the environment. In all this work, EPA will seek to hold polluters accountable for the contamination they cause and ensure disadvantaged communities equitably benefit from solutions.

Consider the Lifecycle of PFAS

EPA will account for the full lifecycle of PFAS, their unique properties, the ubiquity of their uses, and the multiple pathways for exposure.

PFAS are a group of synthetic chemicals that continue to be released into the environment throughout the lifecycle of manufacturing, processing, distribution in commerce, use, and disposal. Each action in this cycle creates environmental contamination and human and ecological exposure. Exacerbating this challenge is that some PFAS persist in the environment. PFAS are synthesized for many different uses, ranging from firefighting foams, to coatings for clothes and furniture, to food contact substances. Many PFAS are also used in industrial processes and applications, such as in the manufacturing of other chemicals and products. PFAS can be released into the environment during manufacturing and processing as well as during industrial and commercial use. Products known to contain PFAS are regularly disposed of in landfills and by incineration, which can also lead to the release of PFAS. Many PFAS have unique properties that prevent their complete breakdown in the environment, which means that even removing PFAS from contaminated areas can create PFAS-contaminated waste. This is currently unregulated in most cases.

Get Upstream of the Problem

EPA will bring deeper focus to preventing PFAS from entering the environment in the first place—a foundational step to reducing the exposure and potential risks of future PFAS contamination.

Intervening at the beginning of the PFAS lifecycle—before they have entered the environment—is a foundational element of EPA's whole-of-agency approach. While hundreds of individual PFAS compounds are in production and use,[i] a relatively

modest number of industrial facilities produce PFAS feedstock,[ii] and a relatively narrow set of industries directly discharge PFAS into water or soil or generate air emissions in large quantities.[iii] This context helps to pinpoint clear opportunities to restrict releases into the environment. EPA will use its authorities to impose appropriate limitations on the introduction of new unsafe PFAS into commerce and will, as appropriate, use all available regulatory and permitting authorities to limit emissions and discharges from industrial facilities. This approach does not eliminate the need for remediation where releases and exposures have already occurred, but it is a critical step to preventing ongoing concentrated contamination of soil and surface and groundwaters.

Hold Polluters Accountable

EPA will seek to hold polluters and other responsible parties accountable for their actions and for PFAS remediation efforts.

Many communities and ecosystems are continuously exposed to PFAS in soil, surface water, groundwater, and air. Areas can be exposed due to their proximity to industrial sites, airports, military bases, land where biosolids containing PFAS have been applied, and other sites where PFAS have been produced or used and disposed of for specific and repeated purposes. When EPA becomes aware of a situation that poses a serious threat to human health or the environment, the Agency will take appropriate action. For other sites where contamination may have occurred, the presence of certain PFAS in these environments necessitates coordinated action to understand what specific PFAS have been released, locations where they are found, where they may be transported through air, soil, and water in the future, and what remediation is necessary. EPA will seek to hold polluters and other responsible parties accountable for their actions, ensuring that they assume responsibility for remediation efforts and prevent any future releases.

Ensure Science-Based Decision-Making

EPA will invest in scientific research to fill gaps in understanding of PFAS, to identify which additional PFAS may pose human health and ecological risks at which exposure levels, and to develop methods to test, measure, remove, and destroy them.

EPA's decisions regarding PFAS will be grounded in scientific evidence and analysis. The current body of scientific evidence clearly indicates that there are real, present, and significant hazards associated with specific PFAS, but significant gaps remain related to the impacts of other PFAS on human health and in the environment. Regulatory development, either at the state or federal level, would greatly benefit from a deeper scientific understanding of the exposure pathways, toxicities, and potential health impacts of less-studied PFAS. The federal government, states, industry, academia, and nonprofit organizations—with appropriate coordination and resources—have the capability to conduct this necessary research.

EPA is conducting new research to better understand the similar and different characteristics of specific PFAS and whether and how to address groups and categories of PFAS. The Agency is focused on improving its ability to address multiple chemicals at once, thereby accelerating the effectiveness of regulations, enforcement actions, and the tools and technologies needed to remove PFAS from air, land, and water.

To break the cycle of contamination and exposure from PFAS, additional research is needed to identify and/or develop techniques to permanently dispose of or destroy these durable compounds. Government agencies, industry, and private laboratories need tools and validated methods to measure PFAS in air, land, and water to identify pollution sources, demonstrate facility compliance, hold polluters accountable, and support communities during and after cleanups.

Prioritize Protection of Disadvantaged Communities

When taking action on PFAS, EPA will ensure that disadvantaged communities have equitable access to solutions.

Many known and potential sources of PFAS contamination (including military bases, airports, industrial facilities, and waste management and disposal sites) are near low-income communities and communities of color. EPA needs to ensure these affected populations have an opportunity to participate in and influence the Agency's decision-making. This may call for the Agency to seek out and facilitate the communities' engagement by providing culturally appropriate information and accommodations for people with Limited English Proficiency, facilitating community access to public meetings and comment periods, and offering technical assistance to build community-based capacity for participation. EPA's actions need to consider the unique on-the-ground conditions in these communities, such as outdated infrastructure, to help ensure they benefit equitably from policy solutions.

EPA will also collect more data and develop new methodologies to understand PFAS exposure pathways in disadvantaged communities; to what extent PFAS pollution contributes to the cumulative burden of exposures from multiple sources in these communities; and how non-environmental stressors, such as systemic socioeconomic disparities, can exacerbate the impacts of pollution exposure and vice versa.

Goals and Objectives

EPA's comprehensive approach to addressing PFAS is guided by the following goals and objectives.

RESEARCH

Invest in research, development, and innovation to increase understanding of PFAS exposures and toxicities, human health and ecological effects, and effective interventions that incorporate the best available science.

Objectives

- Build the evidence base on individual PFAS and define categories of PFAS to establish toxicity values and methods.
- Increase scientific understanding on the universe of PFAS, sources of environmental contamination, exposure pathways, and human health and ecological effects.
- Expand research on current and emerging PFAS treatment, remediation, destruction, disposal, and control technologies.
- Conduct research to understand how PFAS contribute to the cumulative burden of pollution in communities with environmental justice concerns.

RESTRICT

Pursue a comprehensive approach to proactively prevent PFAS from entering air, land, and water at levels that can adversely impact human health and the environment.

Objectives

- Use and harmonize actions under all available statutory authorities to control and prevent PFAS contamination and minimize exposure to PFAS during consumer and industrial uses.
- Place responsibility for limiting exposures and addressing hazards of PFAS on manufacturers, processors, distributors, importers, industrial and other significant users, dischargers, and treatment and disposal facilities.
- Establish voluntary programs to reduce PFAS use and release.
- Prevent or minimize PFAS discharges and emissions in all communities, regardless of income, race, or language barriers.

REMEDIATE

Broaden and accelerate the cleanup of PFAS contamination to protect human health and ecological systems.

Objectives

- Harmonize actions under all available statutory authorities to address PFAS contamination to protect people, communities, and the environment.
- Maximize responsible party performance and funding for investigations and cleanup of PFAS contamination.
- Help ensure that communities impacted by PFAS receive resources and assistance to address contamination, regardless of income, race, or language barriers.
- Accelerate the deployment of treatment, remediation, destruction, disposal, and mitigation technologies for PFAS, and ensure that disposal and destruction activities do not create new pollution problems in communities with environmental justice concerns.

Key Actions

This section summarizes the bold actions that EPA plans to take from 2021 through 2024 on PFAS, as well as some ongoing efforts thereafter. The actions described in this roadmap are subject to the availability of appropriations and other resources. Each of these actions—led by EPA's program offices—are significant building blocks in the Agency's comprehensive strategy to protect public health and ecosystems by researching, restricting, and remediating PFAS contamination. As EPA takes each of these actions, it also commits to transparent, equitable, and inclusive engagement with all stakeholders to inform the Agency's work.

These are not the only actions underway at EPA, nor will they be the last. As the Agency does more, it will learn more. And as EPA learns more, it will do more. As EPA continues to build the evidence base, as regulatory work matures, and as EPA learns more from its partnerships across the country, the Agency will deliver additional actions commensurate with the urgency and scale of response that the PFAS problem demands.

Office of Chemical Safety and Pollution Prevention

Publish national PFAS testing strategy

Expected Fall 2021

EPA needs to evaluate a large number of PFAS for potential human health and ecological effects. Most PFAS have limited or no toxicity data. To address this data gap, EPA is developing a national PFAS testing strategy to deepen understanding of the impacts of categories of PFAS, including potential hazards to human health and the environment. This will help EPA identify and select PFAS for which the Agency will require testing using Toxic Substances Control Act (TSCA) authorities. In the 2020 National Defense Authorization Act (NDAA), Congress directed EPA to develop a process for prioritizing which PFAS or classes of PFAS should be subject to additional research efforts based on potential for human exposure to, toxicity of, and other available information. EPA will also identify existing test data for PFAS (both publicly available and submitted to EPA under TSCA) that will be considered prior to requiring further testing to ensure adherence to the TSCA goal of reducing animal testing. EPA will use the testing strategy to identify important gaps in existing data and to select representative chemical(s) within identified categories as priorities for additional studies. EPA expects to exercise its TSCA Section 4 order authority to require PFAS manufacturers to conduct and fund the studies. EPA plans to issue the first round of test orders on the selected PFAS by the end of 2021.

Ensure a robust review process for new PFAS

Efforts Ongoing

EPA's TSCA New Chemicals program plays an important gatekeeper role in ensuring the safety of new chemicals, including new PFAS, prior to their entry in U.S. commerce. Where unreasonable

risks are identified as part of the review process, EPA must mitigate those risks before any manufacturing activity can commence. The 2016 TSCA amendments require EPA to review and make a determination regarding the potential risks for each new chemical submission. Since early 2021, EPA has taken steps to ensure that new PFAS are subject to rigorous reviews and appropriate safeguards, including making changes to the policies and processes underpinning reviews and determinations on new chemicals to better align with the 2016 amendments. In addition, EPA has previously allowed some new PFAS to enter the market through low-volume exemptions (LVEs), following an expedited, 30-day review process. In April 2021, the Agency announced that it would generally expect to deny pending and future LVE submissions for PFAS based on the complexity of PFAS chemistry, potential health effects, and their longevity and persistence in the environment. Moving forward, EPA will apply a rigorous premanufacture notice review process for new PFAS to ensure these substances are safe before they enter commerce.

Review previous decisions on PFAS

Efforts Ongoing

EPA is also looking at PFAS that it has previously reviewed through the TSCA New Chemicals program, including those that it reviewed prior to the 2016 TSCA amendments. For example, EPA recently launched a stewardship program to encourage companies to voluntarily withdraw previously granted PFAS LVEs. EPA also plans to revisit past PFAS regulatory decisions and address those that are insufficiently protective. As part of this effort, the Agency could impose additional notice requirements to ensure it can review PFAS before they are used in new ways that might present concerns.

In addition, EPA plans to issue TSCA Section 5(e) orders for existing PFAS for which significant new use notices (e.g., a new manufacturing process for an existing PFAS, or a new use or user) have recently been filed with EPA. The orders would impose rigorous safety requirements as a condition of allowing the significant new use to commence.

More broadly, EPA is planning to improve approaches for overall tracking and enforcement of requirements in new chemical consent orders and significant new use rules (SNURs) to ensure that companies are complying with the terms of those agreements and regulatory notice requirements.

Close the door on abandoned PFAS and uses

Expected Summer 2022

Many existing chemicals (i.e., those that are already in commerce and listed on the TSCA Inventory of chemicals), including PFAS, are currently not subject to any type of restriction under TSCA. In some instances, the chemicals themselves have not been actively manufactured for many years. In others, chemicals may have certain past uses that have been abandoned. Absent restriction, manufacturers are free to begin using those abandoned chemicals or resume those abandoned uses at any time. Under TSCA, by rule, EPA can designate uses of a chemical that are not currently ongoing—and potentially *all* uses associated with an inactive chemical—as "significant new uses." Doing so ensures that an entity must first submit a notice and certain information to EPA before it can resume use of that chemical or use. TSCA then requires EPA to review and make an affirmative determination on the potential risks to health and the environment and to require safety measures to address unreasonable risks before allowing the PFAS use to resume. EPA is considering how it can apply this authority to help address abandoned uses of PFAS as well as future uses of PFAS on the inactive portion of the TSCA Inventory.

Enhance PFAS reporting under the Toxics Release Inventory

Expected Spring 2022

The Toxics Release Inventory (TRI) helps EPA compile data and information on releases of certain chemicals and supports informed decision-making by companies, government agencies, non-governmental organizations, and the public. Pursuant to the 2020 NDAA, certain industry sectors must report certain PFAS releases to TRI. However, certain

exemptions and exclusions remain for those PFAS reporters, which significantly limited the amount of data that EPA received for these chemicals in the first year of reporting.[iv] To enhance the quality and quantity of PFAS information collected through TRI, EPA intends to propose a rulemaking in 2022 to categorize the PFAS on the TRI list as "Chemicals of Special Concern" and to remove the de minimis eligibility from supplier notification requirements for all "Chemicals of Special Concern." EPA will also continue to update the list of PFAS subject to TRI and expects to announce an additional rulemaking to add more PFAS to TRI in 2022, as required by the 2020 NDAA.

Finalize new PFAS reporting under TSCA Section 8

Expected Winter 2022

TSCA Section 8(a)(7) provides authority for EPA to collect existing information on PFAS. In June 2021, EPA published a proposed data-gathering rule that would collect certain information on any PFAS manufactured since 2011, including information on uses, production volumes, disposal, exposures, and hazards. EPA will consider public comments on the proposal and finalize it before January 1, 2023. Ultimately, information received under this rule will enable EPA to better characterize the sources and quantities of manufactured PFAS in the United States and will assist the Agency in its future research, monitoring, and regulatory efforts.

Office of Water

Undertake nationwide monitoring for PFAS in drinking water

Final Rule Expected Fall 2021

The Safe Drinking Water Act (SDWA) establishes a data-driven and risk-based process to assess drinking water contaminants of emerging concern. Under SDWA, EPA requires water systems to conduct sampling for unregulated contaminants every five years. EPA published the proposed Fifth Unregulated Contaminant Monitoring Rule (UCMR 5) in March 2021. As proposed, UCMR 5 would provide new data that is critically needed to improve EPA's understanding of the frequency that 29 PFAS are found in the nation's drinking water systems and at what levels. The proposed UCMR 5 would significantly expand the number of drinking water systems participating in the program, pending sufficient appropriations by Congress. The data gathered from an expanded set of drinking water systems would improve EPA's ability to conduct state and local assessments of contamination, including analyses of potential environmental justice impacts. As proposed, and if funds are appropriated by Congress, all public water systems serving 3,300 or more people and 800 representative public water systems serving fewer than 3,300 would collect samples during a 12-month period from January 2023 through December 2025. EPA is considering comments on the proposed UCMR 5 and preparing a final rule. Going forward, EPA will continue to prioritize additional PFAS for inclusion in UCMR 6 and beyond, as techniques to measure these additional substances in drinking water are developed and validated.

Establish a national primary drinking water regulation for PFOA and PFOS

Proposed Rule Expected Fall 2022, Final Rule Expected Fall 2023

Under the SDWA, EPA has the authority to set enforceable National Primary Drinking Water Regulations (NPDWRs) for drinking water contaminants and require monitoring of public water

supplies. To date, EPA has regulated more than 90 drinking water contaminants but has not established national drinking water regulations for any PFAS. In March 2021, EPA published the Fourth Regulatory Determinations, including a final determination to regulate Perfluorooctanoic acid (PFOA) and Perfluorooctane sulfonic acid (PFOS) in drinking water. The Agency is now developing a proposed NPDWR for these chemicals. As EPA undertakes this action, the Agency is also evaluating additional PFAS and considering regulatory actions to address groups of PFAS. EPA expects to issue a proposed regulation in Fall 2022 (before the Agency's statutory deadline of March 2023). The Agency anticipates issuing a final regulation in Fall 2023 after considering public comments on the proposal. Going forward, EPA will continue to analyze whether NPDWR revisions can improve public health protection as additional PFAS are found in drinking water.

Publish the final toxicity assessment for GenX and five additional PFAS

Expected Fall 2021 and Ongoing

EPA plans to publish the toxicity assessments for two PFAS, hexafluoropropylene oxide dimer acid and its ammonium salt. These two chemicals are known as "GenX chemicals." GenX chemicals have been found in surface water, groundwater, drinking water, rainwater, and air emissions. GenX chemicals are known to impact human health and ecosystems. Scientists have observed liver and kidney toxicity, immune effects, hematological effects, reproductive and developmental effects, and cancer in animals exposed to GenX chemicals. Completing a toxicity assessment for GenX is essential to better understanding its effects on people and the environment. EPA can use this information to develop health advisories that will help communities make informed decisions to better protect human health and ecological wellness. The Office of Research and Development is also currently developing toxicity assessments for five other PFAS—PFBA, PFHxA, PFHxS, PFNA, and PFDA.

Publish health advisories for GenX and PFBS

Expected Spring 2022

PFAS contamination has impacted drinking water quality across the country, including in underserved rural areas and communities of color. SDWA authorizes EPA to develop non-enforceable and non-regulatory drinking water health advisories to help Tribes, states, and local governments inform the public and determine whether local actions are needed to address public health impacts in these communities. Health advisories offer a margin of protection by defining a level of drinking water concentration at or below which lifetime exposure is not anticipated to lead to adverse health effects. They include information on health effects, analytical methodologies, and treatment technologies and are designed to protect all lifestages. EPA will publish health advisories for Perfluorobutane sulfonic acid (PFBS) and GenX chemicals based on final toxicity assessments. The Agency will develop accompanying fact sheets in different languages to facilitate access to information on GenX and other PFAS. Going forward, EPA will develop health advisories as the Agency completes toxicity assessments for additional PFAS.

Restrict PFAS discharges from industrial sources through a multi-faceted Effluent Limitations Guidelines program

Expected 2022 and Ongoing

Effluent Limitations Guidelines (ELGs) are a powerful tool to limit pollutants from entering the nation's waters. ELGs establish national technology-based regulatory limits on the level of specified pollutants in wastewater discharged into surface waters and into municipal sewage treatment facilities. EPA has been conducting a PFAS multi-industry study to inform the extent and nature of PFAS discharges. Based on this study, EPA is taking a proactive approach to restrict PFAS discharges from multiple industrial categories. EPA plans to make significant progress in its ELG regulatory work by the end of 2024. EPA has established timelines for action—whether it is data collection

or rulemaking—on the nine industrial categories in the proposed PFAS Action Act of 2021, as well as other industrial categories such as landfills. EPA's multi-faceted approach entails:

- Undertake rulemaking to restrict PFAS discharges from industrial categories where EPA has the data to do so—including the guidelines for organic chemicals, plastics and synthetic fibers (OCPSF), metal finishing, and electroplating. Proposed rule is expected in Summer 2023 for OCPSF and Summer 2024 for metal finishing and electroplating.
- Launch detailed studies on facilities where EPA has preliminary data on PFAS discharges, but the data are currently insufficient to support a potential rulemaking. These include electrical and electronic components, textile mills, and landfills. EPA expects these studies to be complete by Fall 2022 to inform decision making about a future rulemaking by the end of 2022.
- Initiate data reviews for industrial categories for which there is little known information on PFAS discharges, including leather tanning and finishing, plastics molding and forming, and paint formulating. EPA expects to complete these data reviews by Winter 2023 to inform whether there are sufficient data to initiate a potential rulemaking.
- Monitor industrial categories where the phaseout of PFAS is projected by 2024, including pulp, paper, paperboard, and airports. The results of this monitoring, and whether future regulatory action is needed, will be addressed in the Final ELG Plan 15 in Fall 2022.

Leverage NPDES permitting to reduce PFAS discharges to waterways

Expected Winter 2022

The National Pollutant Discharge Elimination System (NPDES) program interfaces with many pathways by which PFAS travel and are released into the environment and ultimately impact people and water quality. EPA will seek to proactively use existing NPDES authorities to reduce discharges of PFAS at the source and obtain more comprehensive information through monitoring on the sources of PFAS and quantity of PFAS discharged by these sources. EPA will use the effluent monitoring data to inform which industrial categories the Agency should study for future ELGs actions to restrict PFAS in wastewater discharges.

- **Leverage federally-issued NPDES permits to reduce PFAS discharges.**[v] EPA will propose monitoring requirements at facilities where PFAS are expected or suspected to be present in wastewater and stormwater discharges, using EPA's recently published analytical method 1633, which covers 40 unique PFAS. In addition, EPA will propose, as appropriate, that NPDES permits: 1) contain conditions based on product elimination and substitution when a reasonable alternative to using PFAS is available in the industrial process; 2) require best management practices to address PFAS-containing firefighting foams for stormwater permits; 3) require enhanced public notification and engagement with downstream communities and public water systems; and 4) require pretreatment programs to include source control and best management practices to protect wastewater treatment plant discharges and biosolid applications.
- **Issue new guidance to state permitting authorities to address PFAS in NPDES permits.** EPA will issue new guidance recommending that state-issued permits that do not already include monitoring requirements for PFAS use EPA's recently published analytical method 1633, which covers 40 unique PFAS, at facilities where PFAS is expected or suspected to be present in wastewater and stormwater discharges. In addition, the new guidance will recommend the full suite of permitting approaches that EPA will use in federally-issued permits. The guidance will enable communities to work closely with their state permitting authorities to suggest monitoring at facilities suspected of containing PFAS.

Publish multi-laboratory validated analytical method for 40 PFAS

Expected Fall 2022

In September 2021, EPA (in collaboration with the Department of Defense) published a single-laboratory validated method to detect PFAS. The method can measure up to 40 specific PFAS compounds in eight environmental matrices (including wastewater, surface water and biosolids) and has numerous applications, including NPDES compliance monitoring. EPA and DOD are continuing this collaboration to complete a multi-laboratory validation of the method. EPA expects to publish the multi-lab validated method online by Fall 2022. Following the publication of the method, EPA will initiate a rulemaking to propose the promulgation of this method under the Clean Water Act (CWA).

Publish updates to PFAS analytical methods to monitor drinking water

Expected Fall 2024

SDWA requires EPA to use scientifically robust and validated analytical methods to assess the occurrence of contaminants of emerging concern, such as an unidentified or newly detected PFAS chemical. EPA will update and validate analytical methods to monitor additional PFAS. First, EPA will review reports of PFAS of concern and seek to procure certified reference standards that are essential for accurate and selective quantitation of emerging PFAS of concern in drinking water samples. EPA will evaluate analytical methods previously published for monitoring PFAS in drinking water (EPA Methods 533 and 537.1) to determine the efficacy of expanding the established target PFAS analyte list to include any emerging PFAS. Upon conclusion of this evaluation, EPA will complete multi-laboratory validation studies and peer review and publish updated EPA PFAS analytical methods for drinking water, making them available to support future drinking water monitoring programs.

Publish final recommended ambient water quality criteria for PFAS

Expected Winter 2022 and Fall 2024

EPA will develop national recommended ambient water quality criteria for PFAS to protect aquatic life and human health. Tribes and states use EPA-recommended water quality criteria to develop water quality standards to protect and restore waters, issue permits to control PFAS discharges, and assess the cumulative impact of PFAS pollution on local communities. EPA will publish recommended aquatic life criteria for PFOA and PFOS and benchmarks for other PFAS that do not have sufficient data to define a recommended aquatic life criteria value. EPA will first develop human health criteria for PFOA and PFOS, taking into account drinking water and fish consumption. This initiative will consider the latest scientific information and will develop human health criteria for additional PFAS when final toxicity assessments are available. Additionally, EPA will support Tribes in developing water quality standards that will protect waters under Tribal jurisdiction under the same framework as waters in adjacent states. Aquatic life criteria are expected in Winter 2022, and human health criteria are expected Fall 2024.

Monitor fish tissue for PFAS from the nation's lakes and evaluate human biomarkers for PFAS

Expected Summer 2022

States and Tribes have highlighted fish tissue data in lakes as a critical information need. Food and water consumption are important pathways of PFAS exposure, and PFAS can accumulate in fish tissue. In fact, EPA monitoring to date shows the presence of PFAS, at varying levels, in approximately 100 percent of fish tested in the Great Lakes and large rivers. In Summer 2022, EPA will collect fish tissue in the National Lakes Assessment for the first national study of PFAS in fish tissue in U.S. lakes. This will provide a better understanding of where PFAS fish tissue contamination is occurring, which

PFAS are involved, and the severity of the problem. The new data will complement EPA's analyses of PFAS in fish tissue and allow EPA to better understand unique impacts on subsistence fishers, who may eat fish from contaminated waterbodies in higher quantities. EPA's preliminary analysis on whether concentrations of certain PFAS compounds in human blood could be associated with eating fish using the Centers for Disease Control and Prevention's National Health and Nutrition Examination Survey (NHANES) data found a positive correlation. Completing this analysis will help make clear the importance of the fish consumption pathway for protecting communities. EPA will continue to pursue collaboration with Tribal and federal partners to investigate this issue of mutual interest.

Finalize list of PFAS for use in fish advisory programs

Expected Spring 2023

EPA will publish a list of PFAS for state and Tribal fish advisory programs that are either known or thought to be in samples of edible freshwater fish in high occurrence nationwide. This list will serve as guidance to state and Tribal fish tissue monitoring and advisory programs so that they know which PFAS to monitor and how to set fish advisories for PFAS that have human health impacts via fish consumption. This information will encourage more robust data collection from fish advisory programs and promote consistency of fish tissue PFAS monitoring results in EPA's publicly accessible Water Quality Portal. By issuing advisories for PFAS, state and Tribal programs can provide high-risk populations, including communities and individuals who depend on subsistence fishing, with more information about how to protect their health.

Finalize risk assessment for PFOA and PFOS in biosolids

Expected Winter 2024

Biosolids, or sewage sludge, from wastewater treatment facilities can sometimes contain PFAS. When spread on agricultural fields, the PFAS can contaminate crops and livestock. The CWA authorizes EPA to set pollutant limits and monitoring and reporting requirements for contaminants in biosolids if sufficient scientific evidence shows that there is potential harm to human health or the environment. A risk assessment is key to determining the potential harm associated with human exposure to chemicals. EPA will complete the risk assessment for PFOA and PFOS in biosolids by Winter 2024. The risk assessment will serve as the basis for determining whether regulation of PFOA and PFOS in biosolids is appropriate. If EPA determines that a regulation is appropriate, biosolids standards would improve the protection of public health and wildlife health from health effects resulting from exposure to biosolids containing PFOA and PFOS.

Office of Land and Emergency Management

Propose to designate certain PFAS as CERCLA hazardous substances

Proposed rule expected Spring 2022; Final rule expected Summer 2023

EPA is developing a Notice of Proposed Rulemaking to designate PFOA and PFOS as Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances. Such designations would require facilities across the country to report on PFOA and PFOS releases that meet or exceed the reportable quantity assigned to these substances. The hazardous substance designations would also enhance the ability of federal, Tribal, state, and local authorities to obtain information regarding the location and extent of releases. EPA or other agencies could also seek cost recovery or contributions for costs incurred for the cleanup. The proposed rulemaking will be available for public comment in Spring 2022. The Agency commits to conducting robust stakeholder engagement with communities near PFAS-contaminated sites.

Issue advance notice of proposed rulemaking on various PFAS under CERCLA

Expected Spring 2022

In addition to developing a Notice of Proposed Rulemaking designating PFOA and PFOS as hazardous substances under CERCLA, EPA is developing an Advance Notice of Proposed Rulemaking to seek public input on whether to similarly designate other PFAS. The Agency may request input regarding the potential hazardous substance designation for precursors to PFAS, additional PFAS, and groups or subgroups of PFAS. The Agency will engage robustly with communities near PFAS-contaminated sites to seek their input and learn about their lived experiences. Going forward, EPA will consider designating additional PFAS as hazardous substances under CERCLA as more specific information related to the health effects of those PFAS and methods to measure them in groundwater are developed.

Issue updated guidance on destroying and disposing of certain PFAS and PFAS-containing materials

Expected by Fall 2023

The 2020 NDAA requires that EPA publish interim guidance on destroying and disposing of PFAS and certain identified non-consumer PFAS-containing materials. It also requires that EPA revise that guidance at least every three years, as appropriate. EPA published the first interim guidance in December 2020 for public comment. It identifies three technologies that are commercially available to either destroy or dispose of PFAS and PFAS-containing materials and outlines the significant uncertainties and information gaps that exist concerning the technologies' ability to destroy or dispose of PFAS while minimizing the migration of PFAS to the environment. The guidance also highlights research that is underway and planned to address some of these information gaps. Furthermore, the interim guidance identifies existing EPA tools, methods, and approaches to characterize and assess the risks to disproportionately impacted people of color and low-income communities living near likely PFAS destruction or disposal sites. EPA's updated guidance will address the public comments and reflect newly published research results. Since the publication of the interim guidance, EPA and other agencies have been conducting relevant research on destruction and disposal technologies. EPA anticipates that additional research data will become available starting in 2022. EPA will update the guidance when sufficient useful information is available and no later than the statutory deadline of December 2023.

Office of Air and Radiation

Build the technical foundation to address PFAS air emissions

Expected Fall 2022 and Ongoing

The Clean Air Act requires EPA to regulate emissions of hazardous air pollutants (HAPs), which are pollutants that are known or suspected to cause cancer or other serious health effects. At present, EPA actively works with Tribal, state, and local governments to reduce air emissions of 187 HAPs to the environment. While PFAS are not currently listed as HAPs under the Clean Air Act, EPA is building the technical foundation on PFAS air emissions to inform future decisions. EPA is conducting ongoing work to:

- Identify sources of PFAS air emissions;
- Develop and finalize monitoring approaches for measuring stack emissions and ambient concentrations of PFAS;
- Develop information on cost-effective mitigation technologies; and
- Increase understanding of the fate and transport of PFAS air emissions to assess their potential for impacting human health via contaminated groundwater and other media pathways.

EPA will use a range of tools, such as EJSCREEN, to determine if PFAS air pollution disproportionately affects communities with environmental justice concerns. Data from other ongoing EPA activities, such as field tests, TRI submissions, and new TSCA reporting and recordkeeping requirements, will help EPA collect additional information on sources and releases. By Fall 2022, EPA will evaluate mitigation options, including listing certain PFAS as hazardous air pollutants and/or pursuing other regulatory and non-regulatory approaches. The Agency will continue to collect necessary supporting technical information on an ongoing basis.

Office of Research and Development

Develop and validate methods to detect and measure PFAS in the environment

Ongoing Actions

Robust, accurate methods for detecting and measuring PFAS in air, land, and water are essential for understanding which PFAS are in the environment and how much are present. These methods are also essential for evaluating the effectiveness of different technologies for removing PFAS from air, land, and water and for implementing future regulations. To date, EPA has developed validated methods to measure 29 PFAS in drinking water and 24 PFAS in groundwater, surface water, and wastewater. EPA has also developed a method for measuring selected PFAS in air emissions. EPA will build on this work by developing additional targeted methods for detecting and measuring specific PFAS and non-targeted methods for identifying unknown PFAS in the environment. EPA also recognizes the need for "total PFAS" methods that can measure the amount of PFAS in environmental samples without identifying specific PFAS. EPA will increase its efforts to develop and, if appropriate, validate "total PFAS" methods, focusing on air emissions, wastewater, and drinking water. Near-term deliverables include:

- Draft total adsorbable fluorine method for wastewater for potential laboratory validation (Fall 2021);
- Draft method for measuring additional PFAS in air emissions (Fall 2022); and
- Draft methods and approaches for evaluating PFAS leaching from solid materials (Fall 2022).

Advance the science to assess human health and environmental risks from PFAS

Ongoing Actions

EPA will expand understanding of the toxicity of PFAS through several ongoing research activities. First, EPA will continue to develop human health toxicity assessments for individual PFAS under EPA's Integrated Risk Information System (IRIS) Program,

and if needed, other fit-for-purpose toxicity values. When combined with exposure information and other important considerations, EPA can use these toxicity assessments to assess potential human health risks to determine if, and when, it is appropriate to address these chemicals. Most PFAS, however, have limited or no toxicity data to inform human health or ecological toxicity assessments. To better understand human health and ecological toxicity across a wider variety of PFAS, EPA will continue to compile and summarize available and relevant scientific information on PFAS and conduct toxicity testing on individual PFAS and PFAS mixtures. This will inform the development and refinement of PFAS categories for hazard assessment. EPA will also conduct research to identify PFAS sources in the outdoor and indoor environment, to characterize PFAS movement through the environment, and to identify the relative importance of different human exposure pathways to PFAS (e.g., ingestion of contaminated food or water, interaction with household articles or consumer products, and inhalation of indoor or outdoor air containing PFAS). EPA also will work to characterize how exposure to PFAS may contribute to cumulative impacts on communities, particularly communities with environmental justice concerns. Near-term deliverables include:

- Identify initial PFAS categories to inform TSCA test orders as part of the PFAS National Testing Strategy (Fall 2021)
- Consolidate and update data on chemical/physical properties, human health toxicity and toxicokinetics, and ecotoxicity (Spring 2022 – Fall 2024)
- Complete draft PFHxS, PFHxA, PFNA, and PFDA IRIS assessments for public comment and peer review (Spring – Fall 2022)
- Complete and publish the final PFBA IRIS assessment (Fall 2022)

Evaluate and develop technologies for reducing PFAS in the environment

Ongoing Actions

EPA needs new data and information on the effectiveness of different technologies and approaches for removing PFAS from the environment and managing PFAS and PFAS-containing materials to inform decisions on drinking water and wastewater treatment, contaminated site cleanup and remediation, air emission controls, and end-of-life materials management. This information is also needed to better ensure that particular treatment and waste management technologies and approaches do not themselves lead to additional PFAS exposures, particularly in overburdened communities where treatment and waste management facilities are often located. Toward that end, EPA will continue efforts to develop approaches for characterizing PFAS in source waters, at contaminated sites, and near PFAS production and treatment/disposal facilities. EPA will also continue to evaluate and develop technologies for drinking water and wastewater treatment, contaminated site remediation, air emission controls, and destruction and disposal of PFAS-containing materials and waste streams. These efforts include conducting laboratory- and pilot-scale studies, which will inform the design of full-scale field studies done in partnership with facilities and states to evaluate real-world applications of different PFAS removal technologies and management approaches.

EPA will prioritize efforts to evaluate conventional thermal treatment of PFAS-containing wastes and air emissions and assess the effectiveness of conventional drinking water and wastewater treatment processes. EPA will also continue to evaluate and advance the application of innovative, non-thermal technologies to treat PFAS waste and PFAS-contaminated materials. Building upon these evaluations, EPA will document the performance of PFAS removal technologies and establish technology-based PFAS categories that identify the list of PFAS that are effectively removed through the application of the associated technology. Near-term deliverables include:

- Collect data to inform the 2023 guidance on destroying and disposing of certain PFAS and PFAS-containing materials (Spring 2022 – Fall 2023);
- Identify initial PFAS categories for removal technologies (Summer 2022); and
- Develop effective PFAS treatment technologies for drinking water systems (Fall 2022).

Cross-Program

Engage directly with affected communities in every EPA Region

Expected Fall 2021 and Ongoing

EPA must fully understand the challenges facing individuals and communities grappling with PFAS contamination to understand their lived experiences and determine the most effective interventions. As recommended by the National Environmental Justice Advisory Council (NEJAC), EPA will meet with affected communities in each EPA Region to hear how PFAS contamination impacts their lives and livelihoods. EPA will use the knowledge from these engagements to inform the implementation of the actions described in this roadmap. EPA will also use the input to develop and share information to reduce potential health risks in the near term and help communities on the path to remediation and recovery from PFAS contamination.

Use enforcement tools to better identify and address PFAS releases at facilities

Ongoing Actions

EPA is initiating actions under multiple environmental authorities—RCRA, TSCA, CWA, SDWA and CERCLA—to identify past and ongoing releases of PFAS into the environment at facilities where PFAS has been used, manufactured, discharged, disposed of, released, and/or spilled. EPA is conducting inspections, issuing information requests, and collecting data to understand the level of contamination and current risks posed by PFAS to surrounding communities and will seek to address threats to human health with all its available tools. For example, EPA's enforcement authorities allow the Agency, under certain circumstances, to require parties responsible for PFAS contamination to characterize the nature and extent of PFAS contamination, to put controls in place to expeditiously limit future releases, and to address contaminated drinking water, soils, and other contaminated media. When EPA becomes aware of a potential imminent and substantial endangerment situation where PFAS poses a threat to human health, the Agency will swiftly employ its expertise to assess the situation and take appropriate action, including using statutorily authorized powers.

Accelerate public health protections by identifying PFAS categories

Expected Winter 2021 and Ongoing

To accelerate EPA's ability to address PFAS and deliver public health protections sooner, EPA is working to break the large, diverse class of PFAS into smaller categories based on similarities across defined parameters (such as chemical structure, physical and chemical properties, and toxicological properties). EPA plans to initially categorize PFAS using two approaches. In the first approach, EPA plans to use toxicity and toxicokinetic data to develop PFAS categories for further hazard assessment and to inform hazard- or risk-based decisions. In the second approach, EPA plans to develop PFAS categories based on removal technologies using existing understanding of treatment, remediation, destruction, disposal, control, and mitigation principles.

EPA plans to use the PFAS categories developed from these two approaches to identify gaps in coverage from either a hazard assessment or removal technology perspective, which will help EPA prioritize future actions to research, restrict, and remediate PFAS. For example, EPA may choose to prioritize research to characterize the toxicity of PFAS that are not being addressed by regulations that require the implementation of removal technologies. Conversely, EPA may prioritize research to evaluate the efficacy of technologies designed to remove PFAS that are included in a hazard-based category with relatively higher toxicities. To support coordination and integration of information across PFAS categories, EPA plans to develop a PFAS categorization database that will capture key characteristics of individual PFAS, including category assignments.

Establish a PFAS Voluntary Stewardship Program

Expected Spring 2022

Reduction of PFAS exposure through regulatory means can take time to develop, finalize, and implement. Moreover, current PFAS regulatory efforts do not extend to all of the approximately 600 PFAS currently in commerce. As a companion to other efforts described in this roadmap, EPA will establish a voluntary stewardship program challenging industry to reduce overall releases of PFAS into the environment. The program, which will not supplant industry's regulatory or compliance requirements, will call on industry to go beyond those requirements by reporting all PFAS releases in order to establish a baseline and then continuing to report to measure progress in reducing releases over time. EPA will validate industry efforts to meet reduction targets and timelines.

Educate the public about the risks of PFAS

Expected Fall 2021 and Ongoing

Addressing PFAS contamination is a critical part of EPA's mission to protect human health and the environment. This important mission cannot be achieved without effectively communicating with communities, individuals, businesses, the media, and Tribal, state, and local partners about the known and potential health risks associated with these chemicals. When EPA communicates risk, it is the Agency's goal to provide meaningful, understandable, and actionable information to many audiences. To accomplish this goal, EPA will make available key explainers that help the public understand what PFAS are, how they are used, and how PFAS can impact their health and their lives. These explainers and other educational materials will be published in multiple languages, and the Agency will work to ensure information reaches targeted communities (including those with limited access to technology and resources).

Issue an annual public report on progress towards PFAS commitments

Winter 2022 and Ongoing

EPA is committed to acting on PFAS with transparency and accountability. On an annual basis, EPA will report to the public on the status of the actions outlined in this roadmap, as well as future actions the Agency may take. EPA will also engage regularly with communities experiencing PFAS contamination, co-regulators, industry, environmental groups, community leaders, and other stakeholders to clearly communicate its actions and to stay abreast of evolving needs.

Conclusion

Every level of government—federal, Tribal, state, and local—needs to exercise increased and sustained leadership to accelerate progress to clean up PFAS contamination, prevent new contamination, and make game-changing breakthroughs in the scientific understanding of PFAS. This strategic roadmap represents the Agency's commitment to the American people on what EPA seeks to deliver from 2021 to 2024.

The risks posed by PFAS demand that the Agency take a whole-of-agency approach to attack the problem from multiple directions. Focusing only on remediating legacy contamination, for example, does nothing to prevent new contamination from occurring. Focusing only on preventing future contamination fails to minimize risks to human health that exist today. To build more enduring, comprehensive, and protective solutions, EPA seeks to leverage its full range of statutory authorities and work with its partners—including other federal agencies, state and Tribal regulators, scientists, industry, public health officials, and communities living with PFAS contamination—to implement this multi-media approach and achieve tangible benefits for human health and the environment.[vi]

Endnotes

[i] Approximately 650 PFAS are currently in commerce under TSCA, roughly half of which were grandfathered into the TSCA inventory.

[ii] EPA has identified 6-8 facilities that produce PFAS feedstock.

[iii] Key industries with significant documented discharges include PFAS production and processing, metal finishing, airports, pulp and paper, landfills, and textile and carpet manufacturing.

[iv] Examples include de minimis exemption, supplier notification requirements, and applicability of those requirements to wastes.

[v] Federally-issued permits are those that EPA issues in MA, NH, NM, DC, territories, federal waters, and Indian Country (and federal facilities in DE, CO, VT, WA).

[vi] This document provides information to the public on how EPA intends to exercise its discretion in implementing statutory and regulatory provisions that apply to PFAS. Those provisions contain legally binding requirements, and this document does not substitute for those statutory and regulatory provisions or regulations, nor is it a regulation itself.

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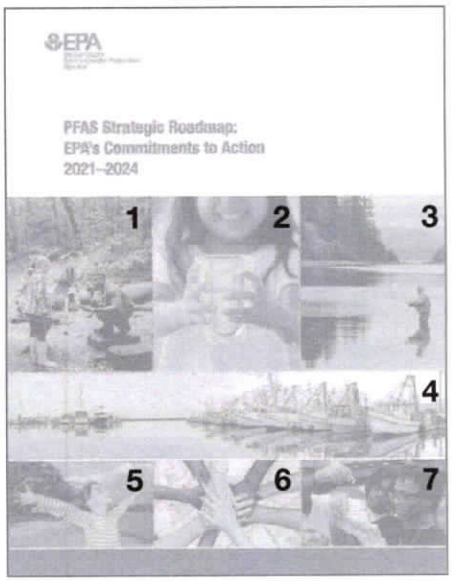

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United States
Environmental Protection
Agency

EPA-100-K-21-002
October 2021

6.8

Water Technician

Job Description and Duties

Job Description: Works to perform skilled work in the installation, operation and repair of the Town's water distribution system, treatment system and maintenance of the water supply. Under direct supervision of the Distribution Manager and Water Quality Manger.

Duties: Installation and operation and repair of the Town's water distribution D-2 and T-2 facilities.

Operates pumps, motors, and related equipment at the pumping stations. Installs and maintains watermains, hydrants, valves, pipes, and meters. Reads, installs, repairs and tests water meters. Operates a variety of motor equipment, as licensed, used in the installation, repair, maintenance, and operation of the water facilities and performs light maintenance and servicing of equipment. Maintains Water Department Grounds in all seasons. Performs Backflow and Cross-connection tests. Workers are required to undergo training as required by the needs water department paid by the water department.

Will be required to be on-call after hours, weekends and holidays on a rotating schedule. Expected to be available to participate in emergency overtime situations. All other duties as required.

Position Specific Duties:

Water Technician/ Meters: Required to inventory meters and parts for meters, makes meter order list, reads meters, and helps schedule meters with the accounts Manager.

Water Technician/Backflow and Cross connections: Required to maintain backflow testing equipment and help schedule the testing and retesting of backflows throughout the system.

Water Technician/ Gate Exerciser: Maintain the departments gate exerciser and inventories gate covers, gate boxes and parts.

SUPERVISION RECEIVED

Under direct supervision of the Distribution Manager and Water Quality Manger in a rotation.

JUDGMENT AND COMPLEXITY

The work involves numerous standardized practices, procedures, or general instructions that govern the work and, in some cases, may require additional interpretation. Judgment is needed to locate, select and apply the most pertinent practice, procedure, regulation or guideline.

NATURE AND PURPOSE OF CONTACTS

Relationships are primarily with co-workers, vendors, and the public, involving frequent explanation, discussion or interpretation of practices, procedures, regulations or guidelines in order to render service, plan or coordinate work efforts, or resolve operating problems. Other regular contacts are with service recipients and employees of outside organizations. More than

ordinary courtesy, tact and diplomacy may be required to resolve complaints or deal with hostile, uncooperative or uninformed persons.

EDUCATION AND EXPERIENCE

High School diploma or equivalent; one to three years of related work experience or technical training to perform assigned duties at the journeyman level; or any equivalent combination of education and experience. Any combination of training, education and experience which demonstrates an ability to perform the duties of the position. The typical qualifying entrance background are courses in water treatment and water works practice and four years of increasingly responsible experience in water treatment plant operation, including three years of supervisory experience.

Special Requirements

Massachusetts D2 and T2 Drinking Water Licenses

Massachusetts Class 2B/1C Hoisting Engineer's License

OSHA 10 Certification.

KNOWLEDGE, ABILITY, AND SKILLS

Knowledge: Thorough knowledge of practices, procedures, equipment, materials, and tools relative to public works and municipal water system construction and maintenance operations. Working knowledge of water system principles, practices and methods as applicable to a municipal setting. General knowledge of the layout of the town; Knowledge of motor equipment maintenance requirements. Principles and practices of water treatment and water quality analysis.

Abilities: Ability to operate heavy construction and maintenance related equipment safely and effectively; Ability to apply knowledge and experience to various departmental functions; ability to work effectively as a member of a crew or independently. Able to be on-call 24 hours per day. Ability to work for extended periods under adverse conditions. Ability to read and understand maps, plans, technical manuals, and specifications. Ability to communicate effectively with the public.

Skills: Skill in the operation of all required tools, equipment, and software applications. Skill in handling public complaints tactfully and effectively.

WORK ENVIRONMENT

The nature of duties may involve continuous presence of unpleasant or irritating elements, such as considerable noise, odors, chemical fumes, dust, smoke, heat, cold, oil, dirt or grease. Work may be continually performed outdoors, regardless of weather conditions.

PHYSICAL, MOTOR, AND VISUAL SKILLS

Physical Skills

Work requires moderate intermittent physical strength and effort daily, such as lifting heavy objects, carrying the object(s) and stacking them or moving them. In addition, pulling, pushing, standing or walking for the full workday may also be involved. A great deal of physical effort must be exerted at this level.

Motor Skills

Duties may involve assignments requiring application of hand and eye coordination with finger dexterity and motor coordination.

Visual Skills

Visual demands require routinely reading documents for general understanding and analytical purposes.

6.8

WATER DEPARTMENT
Distribution Manager

DEFINITION:
Under general direction, plans, coordinates, supervises, and directs the construction and maintenance of water services; supervises the water distribution system and equipment maintenance operations; performs a variety of meter service duties; performs other related duties, as required.

ESSENTIAL FUNCTIONS
The essential functions or duties listed below are intended only as illustrations of the various type of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related, or a logical assignment to the position.

- Supervise water distribution, maintenance operations, construction services, and emergency services.
- Handle customer issues effectively and courteously.
- Prepare and present a variety of reports to include staff reports and presentations.
- Coordinate contract work.
- Conduct staff meetings and instruct staff in safety procedures.
- Facilitate employee training in the operation of tools and equipment and the function and operation of facilities.
- Complete employee evaluations and make recommendations for job performance improvement. Inform Resources Regulatory Compliance Officer of problems or unusual developments within the department.
- Meet with customers to evaluate complaints and address the issues to resolve the complaint.
- Interface with other departments in a cooperative manner.
- Inspect meter boxes, lids, and meters to ensure proper maintenance and functionality.
- Perform repairs or orders replacements of meter boxes, lids, and meters, as needed.
- Locate and read meters, when required.
- Ensure that meters are flow tested.
- Investigate leaks and reports service interruptions.
- Turn water service on and off.
- Supervise the meter replacement and rotation programs.
- May participate in emergency call, stand-by duty on a rotation basis.
- Attend meetings and conferences, as necessary.
- Operates light, medium trucks and Class B trucks. May operate Class 2 and 4 hydraulic equipment normally assigned to a public works equipment operator. Type of equipment varies by the assigned task.
- Inspect equipment prior to operation to assure that all controls and safety devices are functioning properly. Lubricate and otherwise service the equipment as part of a programmed preventive maintenance schedule. Report malfunctions to the Foreman. Assists in making repairs.
- Performs preventative maintenance and minor repairs on vehicles and equipment.

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- Clears/removes snow and ice from roadways, parking lots, walkways, ramps, and steps.
- Operates equipment as directed during snow and ice events.
- Responds to weather related emergencies and other emergencies as required.
- Respond to emergencies such as inclement weather, infrastructure failures including water main breaks; emergency overtime is mandatory, scheduled overtime may also be necessary, acceptance of overtime is expected.
- Maintains digital and/or manual records of water quality data, pumping data, and daily work performed; creates and revises as necessary diagrams of water services and mains.
- Attends seminars and training classes required to maintain various licenses.
- Performs similar or related work as required, or as the situation dictates.

SUPERVISION RECEIVED

Under supervision of the Superintendent. The employee is familiar with the work routine and uses initiative in carrying out recurring assignments independently. The supervisor provides additional, specific instruction for new, difficult, or unusual assignments, including suggested work methods. The employee refers unusual situations to the supervisor for advice and further instructions.

JUDGMENT AND COMPLEXITY

The work involves numerous standardized practices, procedures, or general instructions that govern the work and, in some cases, may require additional interpretation. Judgment is needed to locate, select, and apply the most pertinent practice, procedure, regulation, or guideline.

NATURE AND PURPOSE OF CONTACTS

Relationships are primarily with co-workers, vendors, and the public, involving frequent explanation, discussion or interpretation of practices, procedures, regulations, or guidelines to render service, plan, or coordinate work efforts, or resolve operating problems. Other regular contacts are with service recipients and employees of outside organizations. More than ordinary courtesy, tact and diplomacy may be required to resolve complaints or deal with hostile, uncooperative or uninformed persons.

EDUCATION AND EXPERIENCE

High School diploma or equivalent; one to three years of related work experience or technical training to perform assigned duties at the journeyman level; or any equivalent combination of education and experience.

Special Requirements

Massachusetts D2 and T2 Drinking Water Licenses
Massachusetts Class 2B/1C Hoisting Engineer's License
OSHA 10 Certification.

KNOWLEDGE, ABILITY, AND SKILLS

Knowledge: Thorough knowledge of practices, procedures, equipment, materials, and tools relative to public works and municipal water system construction and maintenance operations. Working knowledge of water system principles, practices, and methods as applicable to a municipal setting. General knowledge of the layout of the town; Knowledge of motor equipment maintenance requirements.

Abilities: Ability to operate heavy construction and maintenance related equipment safely and effectively; Ability to apply knowledge and experience to various departmental functions; ability to work effectively as a member of a crew or independently. Able to be on-call 24 hours per day. Ability to work for extended periods under adverse conditions. Ability to read and understand maps, plans, technical manuals, and specifications. Ability to communicate effectively with the public.

Skills: Skill in the operation of all required tools, equipment, and software applications. Skill in handling public complaints tactfully and effectively.

WORK ENVIRONMENT

The nature of duties may involve continuous presence of unpleasant or irritating elements, such as considerable noise, odors, chemical fumes, dust, smoke, heat, cold, oil, dirt, or grease. Work may be continually performed outdoors, regardless of weather conditions.

PHYSICAL, MOTOR, AND VISUAL SKILLS

Physical Skills

Work requires moderate intermittent physical strength and effort daily, such as lifting heavy objects, carrying the object(s) and stacking them or moving them. In addition, pulling, pushing, standing, or walking for the full workday may also be involved. A great deal of physical effort must be exerted at this level.

Motor Skills

Duties may involve assignments requiring application of hand and eye coordination with finger dexterity and motor coordination.

Visual Skills

Visual demands require routinely reading documents for general understanding and analytical purposes.

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6.5

WATER DEPARTMENT
Water Quality Manager

DEFINITION: Under direction of the Superintendent, the Water Quality Manager supervises and participates in the operation, direction, adjustment, repair and maintenance of the water treatment related assignments and related equipment; plans, organizes, schedules, and assigns work at the plants and performs related work as required.

ESSENTIAL FUNCTIONS

The essential functions or duties listed below are intended only as illustrations of the various type of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related, or a logical assignment to the position. Duties may include, but are not necessarily limited to:

- Supervises and participates in the operation and maintenance of municipal water purification plants and wells involving complete treatment processes to ensure compliance with all federal, state, and local health codes.
- Prepares operation and maintenance work schedules and assigns personnel; reviews work of subordinates during projects and upon completion; instructs, trains, and evaluates subordinates. Maintains time records.
- Determines daily water requirements of distribution system and amounts required for treatment to meet needs of consumers and reservoirs.
- Interprets meter and gauge data and regulates treatment processes.
- Plans, supervises, and assists in the repair and replacement of plant equipment.
- Performs emergency troubleshooting work; determines quantity and type of supplies and equipment required in maintenance work.
- Coordinates safety in-service training of subordinates and ensures compliance with safety procedures in the plant; sits on the safety committee.
- Tracks, orders, and maintains records of water treatment operations and maintenance, and requisitions plant materials and supplies.
- Makes regular and special written and verbal reports; evaluate operations and activities of assigned responsibilities; recommend improvements and modifications; assists in the preparation of the annual budget and supervises expenditures from approved budget.
- Assists in the preparation of specifications for construction and other plant improvements.
- Submits justifications for staff, equipment, supplies and materials, modifications, and repairs of water well, treatment facility and related equipment.
- Performs preventative maintenance and minor repairs on vehicles and equipment.
- Clears/removes snow and ice from roadways, parking lots, walkways, ramps, and steps.
- Operates equipment as directed during snow and ice events.
- Responds to weather related emergencies and other emergencies as required.
- Respond to emergencies such as inclement weather, infrastructure failures including water main breaks; Emergency overtime is mandatory, scheduled overtime may also be necessary,

acceptance of overtime is expected.

- Maintains digital and/or manual records of water quality data, pumping data, and daily work performed; creates and revises as necessary diagrams of water services and mains.
- Attends seminars and training classes required to maintain various licenses.
- Performs similar or related work as required, or as the situation dictates.

SUPERVISION RECEIVED

Under general supervision of the Water Superintendent.

JUDGMENT AND COMPLEXITY

The work involves numerous standardized practices, procedures, or general instructions that govern the work and, in some cases, may require additional interpretation. Judgment is needed to locate, select and apply the most pertinent practice, procedure, regulation or guideline.

NATURE AND PURPOSE OF CONTACTS

Relationships are primarily with co-workers, vendors, and the public, involving frequent explanation, discussion or interpretation of practices, procedures, regulations or guidelines in order to render service, plan or coordinate work efforts, or resolve operating problems. Other regular contacts are with service recipients and employees of outside organizations. More than ordinary courtesy, tact and diplomacy may be required to resolve complaints or deal with hostile, uncooperative or uninformed persons.

EDUCATION AND EXPERIENCE

High School diploma or equivalent; one to three years of related work experience or technical training to perform assigned duties at the journeyman level; or any equivalent combination of education and experience. Any combination of training, education and experience which demonstrates an ability to perform the duties of the position. The typical qualifying entrance background are courses in water treatment and water works practice and four years of increasingly responsible experience in water treatment plant operation, including three years of supervisory experience.

Special Requirements

Massachusetts D2 and T2 Drinking Water Licenses
Massachusetts Class 2B/1C Hoisting Engineer's License
OSHA 10 Certification.

KNOWLEDGE, ABILITY, AND SKILLS

Knowledge: Thorough knowledge of practices, procedures, equipment, materials, and tools relative to public works and municipal water system construction and maintenance operations. Working knowledge of water system principles, practices and methods as applicable to a municipal setting. General knowledge of the layout of the town; Knowledge of motor equipment maintenance requirements. Principles and practices of water treatment and water quality analysis.

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Skills: Skill in the operation of all required tools, equipment, and software applications. Skill in handling public complaints tactfully and effectively.

WORK ENVIRONMENT

The nature of duties may involve continuous presence of unpleasant or irritating elements, such as considerable noise, odors, chemical fumes, dust, smoke, heat, cold, oil, dirt or grease. Work may be continually performed outdoors, regardless of weather conditions.

PHYSICAL, MOTOR, AND VISUAL SKILLS

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Work requires moderate intermittent physical strength and effort daily, such as lifting heavy objects, carrying the object(s) and stacking them or moving them. In addition, pulling, pushing, standing or walking for the full workday may also be involved. A great deal of physical effort must be exerted at this level.

Motor Skills

Duties may involve assignments requiring application of hand and eye coordination with finger dexterity and motor coordination.

Visual Skills

Visual demands require routinely reading documents for general understanding and analytical purposes.

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7.2

FISCAL YEAR 22 SUMMARY

TOWNSEND WATER DEPARTMENT - ACCOUNTS RECEIVABLE

December 31, 2021

UNCOLLECTED FROM JUNE 30, 2021				**68,102.18**
CHARGED	**07/01/21 12/31/21**	**12/31/2021**	**Previous Balance**	**Total**
	USER CHARGES	1,175.62	665,452.76	666,628.38
	FEES	700.00	2,450.00	3,150.00
	SERVICE CHARGES	0.00	16,398.43	16,398.43
	BACKFLOW	0.00	5,170.00	5,170.00
	SUBTOTAL	**1,875.62**		
	TOTAL CHARGES			**691,346.81**
				759,448.99
RECEIVED	**07/01/20 12/31/21**	**12/31/2021**		
	USER CHARGES	14,811.21	607,400.86	622,212.07
	FEES	700.00	2,257.78	2,957.78
	SERVICE CHARGES	0.00	14,623.30	14,623.30
	LATE CHARGES	0.00	912.59	912.59
	BACKFLOW	103.96	4,522.89	4,626.85
	SUBTOTAL	**15,615.17**		
	TOTAL RECEIPTS			**645,332.59**
SENT TO LIEN				22,337.31
LIENS COLLECTED				
ABATEMENTS				-679.70
ADJUSTMENTS				850.00
AJD TO MASTER				
UNCOLLECTED				**91,608.79**
				759,448.99

OUTSTANDING:

USER CHARGES	88,074.63
FEES	275.00
SERVICE CHARGES	2,472.92
LATE CHARGES	230.32
BACKFLOW	555.92
TOTAL OUTSTANDING	**91,608.79**

FISCAL YEAR 22 SUMMARY

TOWNSEND WATER DEPARTMENT - ACCOUNTS RECEIVABLE

January 31, 2022

UNCOLLECTED FROM JUNE 30, 2021				**68,102.18**
CHARGED	**07/01/21 01/31/22**	**1/31/2022**	**Previous Balance**	**Total**
	USER CHARGES	303,354.91	666,628.38	969,983.29
	FEES	400.00	3,150.00	3,550.00
	SERVICE CHARGES	5,475.00	16,398.43	21,873.43
	BACKFLOW	0.00	5,170.00	5,170.00
	SUBTOTAL	**309,229.91**		
	TOTAL CHARGES			**1,000,576.72**
				1,068,678.90
RECEIVED	**07/01/20 01/31/22**	**1/31/2022**		
	USER CHARGES	227,479.30	622,212.07	849,691.37
	FEES	450.00	2,957.78	3,407.78
	SERVICE CHARGES	5,560.37	14,623.30	20,183.67
	LATE CHARGES	5.47	912.59	918.06
	BACKFLOW	604.98	4,626.85	5,231.83
	SUBTOTAL	**234,100.12**		
	TOTAL RECEIPTS			**879,432.71**
SENT TO LIEN				22,337.31
LIENS COLLECTED				
ABATEMENTS				190.03
ADJUSTMENTS				887.50
AJD TO MASTER				
UNCOLLECTED				**165,831.35**
				1,068,678.90

OUTSTANDING:

USER CHARGES	163,043.01
FEES	225.00
SERVICE CHARGES	2,387.55
LATE CHARGES	224.85
BACKFLOW	-49.06
TOTAL OUTSTANDING	**165,831.35**

FISCAL YEAR 22 SUMMARY

TOWNSEND WATER DEPARTMENT - ACCOUNTS RECEIVABLE

February 28, 2022

UNCOLLECTED FROM JUNE 30, 2021				**68,102.18**
CHARGED	**07/01/21 02/28/22**	**2/28/2022**	**Previous Balance**	**Total**	
	USER CHARGES	5,928.17	969,983.29	975,911.46	
	FEES	150.00	3,550.00	3,700.00	
	SERVICE CHARGES	3,216.85	21,873.43	25,090.28	
	BACKFLOW	0.00	5,170.00	5,170.00	
	SUBTOTAL	**9,295.02**			
	TOTAL CHARGES				**1,009,871.74**
					1,077,973.92
RECEIVED	**07/01/20 02/28/22**	**2/28/2022**			
	USER CHARGES	58,865.32	849,691.37	908,556.69	
	FEES	250.00	3,407.78	3,657.78	
	SERVICE CHARGES	1,046.55	20,183.67	21,230.22	
	LATE CHARGES	7.81	918.06	925.87	
	BACKFLOW	-49.06	5,231.83	5,182.77	
	SUBTOTAL	**60,120.62**			
	TOTAL RECEIPTS				**939,553.33**
SENT TO LIEN					22,337.31
LIENS COLLECTED					
ABATEMENTS					19.99
ADJUSTMENTS					887.50
AJD TO MASTER					
UNCOLLECTED					**115,175.79**
					1,077,973.92

OUTSTANDING:

USER CHARGES	110,275.90
FEES	175.00
SERVICE CHARGES	4,507.85
LATE CHARGES	217.04
BACKFLOW	0.00
TOTAL OUTSTANDING	**115,175.79**