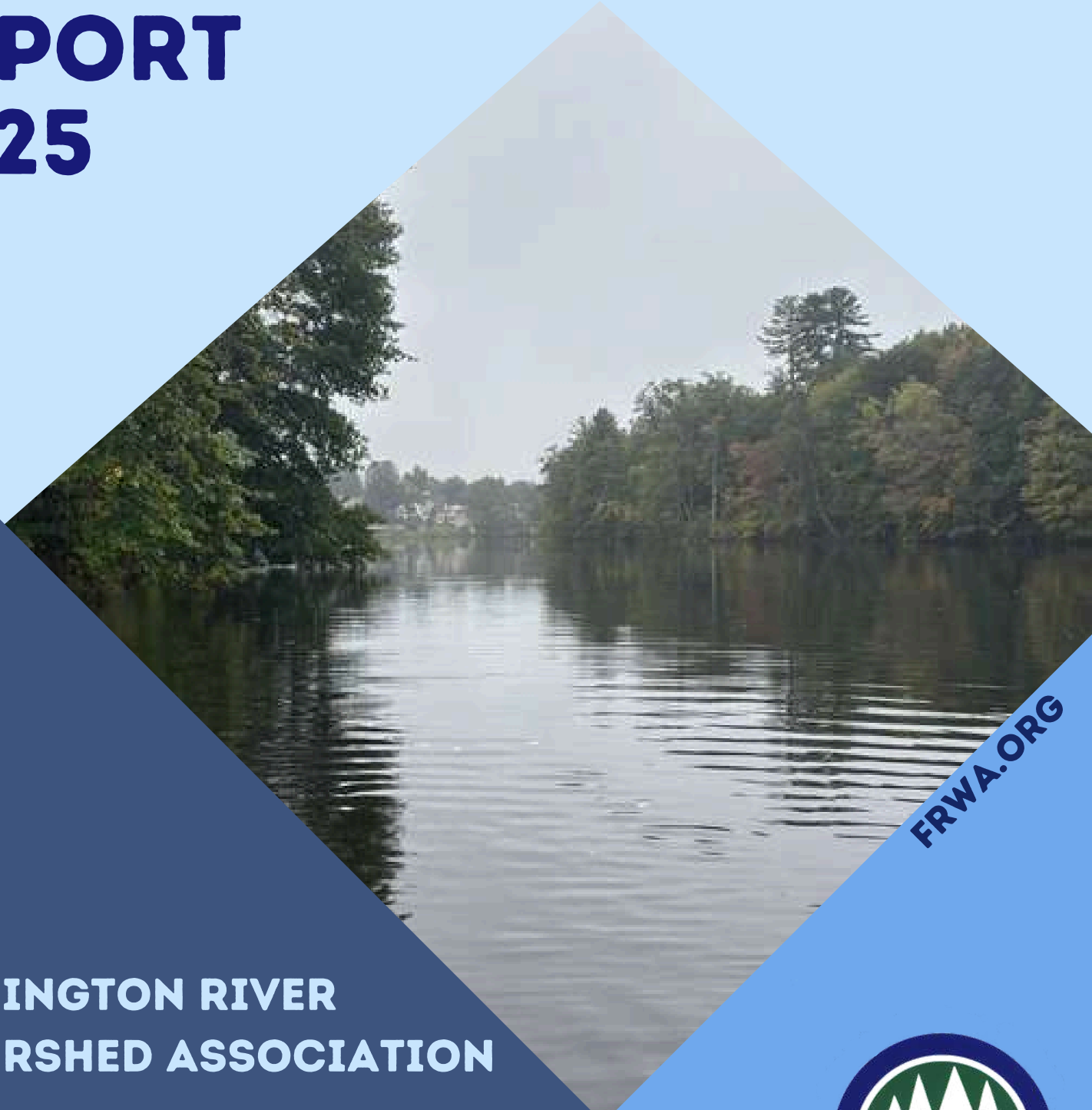
FARMINGTON RIVER WATERSHED WATER QUALITY REPORT 2025



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FARMINGTON RIVER WATERSHED ASSOCIATION

749 HOPMEADOW STREET
SIMSBURY, CT 06070

Protecting the Farmington River - For You, For All, Forever

FARMINGTON RIVER WATERSHED WATER QUALITY REPORT 2025

Farmington River Watershed Association Inc.
Simsbury, CT 06070

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ABOUT THE FARMINGTON RIVER WATERSHED ASSOCIATION

The Farmington River Watershed Association (FRWA) is a 501(c)(3) non-profit organization founded in 1953. Our mission is to preserve, protect, and restore the Farmington River and its watershed lands through research, water monitoring, stewardship, education, and advocacy.

Our water monitoring programs and research inform our work and provides reliable data to the Connecticut Department of Energy and Environmental Protection (CT DEEP) and the Massachusetts Department of Environmental Protection (MassDEP). FRWA has been conducting water monitoring in the Connecticut portion of the watershed since 2004, and in Massachusetts since 2019. We monitor and research different water parameters for recreation, pollution, and habitat suitability.

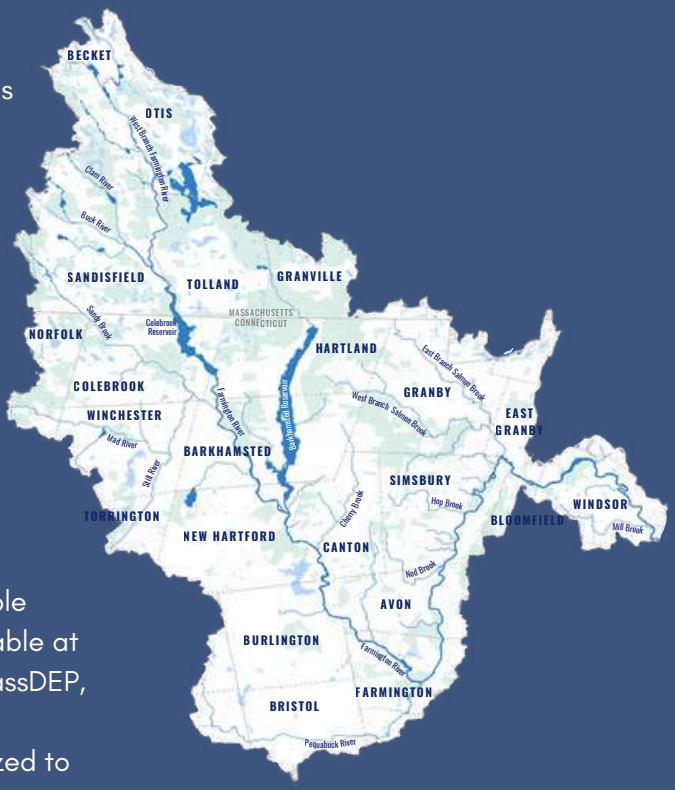
FRWA is involved in several stewardship projects, from stormwater reduction via rain gardens and bioswales, terrestrial and aquatic invasive removals, and management of the FRWA Frey Property. We work with our local communities, towns, and land trusts on projects including river management and stormwater pollution reduction education. Additionally, we restore streambanks and aquatic habitats for fish and wildlife, for example, by removing dams or restoring native plant communities.

In our education mode, we provide classroom visits, field trips, and student seasonal employment. We host presentations and workshops on water quality, river history, and managing stormwater runoff. We organize river cleanups and other events including invasive removals, and paddling trips. As advocates, we speak up for watershed protection and river-friendly practices and policies at the local, state, and national level.

The Farmington River is the longest tributary to the Connecticut River, coursing 81 miles from Massachusetts headwaters to its confluence with the Connecticut River. The Farmington River watershed has two federal partnership Wild & Scenic designations in Connecticut, with 50.4 miles on the Farmington River and 26.4 on Salmon Brook.

FRWA uses monitoring data to:

- Reveal trends relative to changing climate and precipitation patterns via long term monitoring.
- Locate potential preservation & restoration opportunities.
- Monitor changes in water quality and land use.
- Identify impairments.
- Document high quality waters for protection and preservation.
- Share with state agencies for decision making and use in inland water quality reporting to the Environmental Protection Agency (EPA).
- Measure inputs from tributaries to the Farmington River.
- Inform advocacy efforts for priority locations.



FRWA follows all protocols in our Quality Assurance Project Plans (QAPPs) and Standard Operating Procedures (SOPs) to ensure sample collection an analysis is accurate. Information on our QAPPs is available at the end of this report. All of our data is shared with CT DEEP and MassDEP, and uploaded to the EPA's Water Quality Portal. Our data helps by increasing the availability of credible external data that can be utilized to support CT DEEP's and MassDEP's Clean Water Act Programs.

Acknowledgements

The authors would like to thank the Town of Simsbury Water Pollution Control Authority for providing lab space for our equipment.

Organizations providing program support and funding: the Farmington River Coordinating Committee, the Lower Farmington River and Salmon Brook Wild & Scenic Committee, CT DEEP, Izaak Walton League of America, and the Berkshire Clean, Cold, and Connected partnership.

Businesses for providing site access: Ti-Trikes, Ensign-Bickford Company, Gifts of Love Farm, and Miss Porter's School.

Volunteers Tom Carpenter, our Salt Watch Coordinator, Tom Dougherty, and all of our Izaak Walton League of America Salt Watch volunteers.

FRCC Farmington River Coordinating Committee

Lower Farmington River and Salmon Brook WILD & SCENIC

Connecticut Energy & Environment

The Izaak Walton League of America

Clean, Cold & Connected Berkshire County

There are 33 towns in the watershed covering 609 square miles of land in Massachusetts and Connecticut. Approximately 100,000 acres of the watershed lies within MA, with the remaining 285,000 acres in Connecticut. The Farmington River watershed supplies hundreds of thousands of Hartford region residents with drinking water.

CONTACT US

FRWA has CT site data from 2004-present, and MA site data from 2019-present. If you are interested in our historic data, long-term trends, or other data we collect, visit frwa.org or contact us to learn more. Other parameters we collect on a project-based level, include nitrogen, phosphorous, nitrates, ammonia, algae, macroinvertebrates, chlorophyll, phycocyanin, depth, dissolved oxygen, conductivity, turbidity, and pH.

FRWA staff also mentor other organizations on procedures, analysis, or project design - feel free to reach out to learn more about our water quality monitoring.

PAIGE VICHIOLA-SILVA WATER QUALITY MANAGER

Paige works on water quality monitoring and research projects, performs data management, data analysis, QA and QC, and produces scientific reports.

Contact Paige for questions related to research and water quality data.

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Ciara organizes water monitoring programs, performs fieldwork and lab tasks, makes maps via GIS, and produces reports and educational materials.

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LAURA HART CONSERVATION DIRECTOR

Laura manages budgets and grant writing, conservation efforts on the Frey Property, and works with partners on green infrastructure projects such as rain gardens.

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Acronyms & Definitions

FRCC: Farmington River Coordinating Committee, an advisory committee for Upper Farmington Wild & Scenic River designation farmingtonriver.org

LFSWS: Lower Farmington River and Salmon Brook Wild & Scenic, an advisory committee for Lower Farmington and Salmon Brook Wild & Scenic River designation lowerfarmingtonriver.org

CT DEEP: Connecticut Department of Energy and Environmental Protection

MassDEP: Massachusetts Department of Environmental Protection

BCCC: Berkshire Clean, Cold, and Connected Partnership

Long-term: The same location monitored for 5 or more years to develop a baseline

TMDL: Total Maximum Daily Load

µS/cm: MicroSiemens per centimeter, a unit for electrical conductance of water

°C: Temperature in Celsius

MPN/100mL: Most probable number per 100 milliliters. This is a unit of measurement for bacteria concentrations to statistically estimate counts by volume, rather than direct counts of specific colonies

mg/L: Milligrams per liter. This is a unit of measurement, used in this report to quantify chloride values

kg/day: Kilograms per day. This is a unit of measurement for an amount of a parameter flowing through a waterbody per day

Geomean: A geometric mean averages a set of values and reduces the impact of infrequent outliers

Water Quality Criteria

Bacteria (*E. coli*) in freshwater
Geometric Mean of 126/100mL or greater for impaired

Temperature for sensitive species
CT: A June-August mean of 18.3°C or colder for cold water fish
MA: A June-August mean of 20°C or colder for cold water fish

Nutrients
Total Phosphorus less than 0.02 mg/L
Total Nitrogen less than 1 mg/L

Conductivity
There is no water quality criteria for conductivity but expected values for the watershed are between 100-300 µS/cm

Chloride for freshwater aquatic life
Chronic concentration criteria (CCC) or chronic conditions for aquatic life is 230 mg/L or greater for 4 days

Criterion maximum concentration (CMC) or acute conditions for aquatic life is 860 mg/L or greater for 1 hour

***Water quality criteria is determined by the EPA, state agencies, or recommended from published research**

2025 WATER QUALITY SUMMARY

FRWA has several different programs including water quality monitoring and research projects, advocacy, education and outreach, and stewardship, but they all have the same goal - to protect or enhance water quality. While this report solely focuses on data collection and results, FRWA staff are always working to protect the watershed through implementing projects to benefit water quality. In 2025, a monumental accomplishment was achieved by removing the Grist Mill Dam in Farmington, CT. While this didn't affect water quality values directly, water quality is more than data - it is the ecosystem as a whole, from biodiversity to geology and how they are all connected to the health of the watershed. The removal of the Grist Mill Dam has not only made passage easier for fish, it has made recreation safer, and now as a riffle it provides more habitat for macroinvertebrates and many other benefits in between. In this report the focus will be on municipalities and each waterbody individually, keeping in mind their connection to each other and the system as a whole.

Farmington River - Grist Mill Dam - Farmington, CT

The number one water quality issue facing the Farmington River and its tributaries is polluted stormwater runoff. With increased development contributing to an increase in impervious surfaces, such as roads, walkways, rooftops, parking lots, and lawns, water quality decreases and temperatures increase. The headwaters of the Farmington River are located in MA, where approximately 85% of the land in the watershed is forested. This is the main reason we see very high quality waterbodies and cold temperatures in this part of the watershed. As we progress down the river, towards increased development, we see a decrease in water quality as bacteria, temperature, and chloride levels climb. This can lead to other issues, including potentially toxic cyanobacteria blooms, as we saw on the Farmington River on Rainbow Reservoir in Windsor in 2025, 2022, and years prior to 2021. Our data helps inform us of locations of concern and areas that would benefit from green infrastructure solutions to reduce stormwater pollution.

The last truly normal weather patterns the Farmington River Watershed experienced was in 2019. Since then, we have been experiencing alternating extremes of drought and excess precipitation. Unlike past years, 2025 faired well in the first half of the year with almost average temperatures and precipitation but then progressed to drought in the second half of the year, similar to 2024. While precipitation was not as extreme as previous years, the watershed did experience moderate and severe drought in late summer and fall. These more erratic weather patterns can cause water quality to suffer, with increased pollutants. We see similar issues with water quality in both drought and flooding conditions, as both lead to increases in pollutants and temperatures. The water quality of a waterbody is dependent on land uses surrounding it and the impact weather has on these land uses. It is well known that more urban areas in the watershed experience impacted water quality due to increased impervious surfaces contributing to increased stormwater run-off. Some locations can vary in water quality depending on what type of weather was present while other locations remain the same. For example, in summer 2022, during drought, we even saw increased E.coli bacteria in the very rural and pristine portion of the watershed in Massachusetts.

According to NOAA, 2025 fared better than previous years for temperatures and precipitation (NOAA, 2026). Weather patterns started out typical, with a relatively normal winter with less snow than 2024 and January being 0.3°F warmer than the monthly 1895-2025 mean. Overall, winter months had less precipitation than the mean, yet chloride was high for urban streams due to road salt applications and increased runoff from icing events. Spring months were warmer than their respective monthly means and precipitation was lower than the mean, except in May with 7.63" of precipitation compared to a mean of 3.95". Summer was normal for temperature yet had less precipitation than monthly means which led to a late summer and early fall drought. Drought progressed and persisted throughout the fall and into winter 2026 in both CT and MA. Despite less precipitation, no issues arose in our programs but a cyanobacteria bloom did occur on Rainbow Reservoir in Windsor, CT from late July through August 2025.

Bacteria was typical this year with minimal changes compared to previous years. The Farmington River in East Granby did change from unimpaired bacteria values in 2024 to impaired in 2025. The Pequabuck River, which normally is impaired for bacteria, saw decreases in 2025 compared to previous years, but did not decrease to unimpaired. All other locations monitored for bacteria did not change in criteria from previous years. Summer average temperatures decreased for the Fall River in Otis, the Still River in Winsted, and Rainbow Brook in Windsor from warm to cool, while the Farmington River downstream the Rainbow Dam in Windsor increased from cool to warm with a summer average of 22.4°C. All other locations had minor changes in average temperature but did not change their classification. Chloride was higher at all sites in 2025 for both yearly average and maximums. While higher, not all sites were impaired for chloride. The Farmington River had higher averages and maximums than previous years with most locations faring well, but in Windsor, CT chloride increased to 180 mg/L which is of concern. Locations with yearly averages higher than 230 mg/l included Rainbow Brook, Seymour Hollow Brook, and Mill Brook in Windsor. While averages for chloride don't determine if conditions met the criteria for aquatic life, they give insight into which locations are priorities. Similarly, conductivity was higher throughout the watershed for 2025, and with pairing conductivity loggers with the chloride monitoring program, we determined that 23 instances of acute conditions (equal to or higher than 860mg/L for 1 hour) and 11 chronic conditions (average of 230 mg/L or greater for four days) occurred for the 2024-2025 winter months. Nutrient monitoring determined that the highest nutrients and nutrient inputs into the Farmington River are occurring at the Still River in Barkhamsted, the Pequabuck River in Farmington (accumulation from three treatment plants upstream), and the East Branch and Mainstem Salmon Brook in East Granby. Additionally, high nutrients and nutrient load occurred in Simsbury near the water treatment facility, which is likely the cause of accumulation in the downstream watershed. Lastly, a cyanobacteria bloom did occur again on Rainbow Reservoir in Windsor from late July through August which impairs recreation, water quality, and biodiversity on the reservoir and downstream Rainbow Dam.

Farmington River - Grist Mill Dam Removed - Farmington, CT

Farmington River

The Farmington River is monitored at 18 locations throughout MA and CT, and fared well in 2025 for *E. coli* bacteria at all sites except in East Granby which was above the water quality criteria. Temperature is monitored in the West Branch Farmington River in Otis, Tolland, Hartland, and Barkhamsted and on the Farmington River in New Hartford, and Windsor. MA sites in Otis and Tolland were warm and cool respectively while all upper CT Farmington River sites had cooler temperatures compared to summer 2024, and were considered cold water. In Windsor, temperatures were considered warm at 22.4°C which was warmer than 2024 at 21.4°C.

Three chloride sites in the Farmington River are monitored year-round in New Hartford, Simsbury, and Windsor. All sites on average were low but increases were seen during winter months, with each river site increasing above 100 mg/L which is considered fair, and a maximum of 180 mg/L in Windsor which is considered high for the river itself compared to tributaries. Nutrient monitoring was new for 2025 and primarily performed upstream and downstream water treatment plants on the river. Increases were seen during and post storm monitoring, with the highest results in Simsbury. Nutrients were low throughout the Farmington River except in Simsbury, most likely due to accumulation in the downstream watershed.

18 bacteria sites
16 sites with geomeans below the criteria

3 chloride sites
168 data points recorded

6 continuous temperature loggers
35,736 data points recorded

8 nutrient sites
144 data points recorded

Massachusetts

In Massachusetts, seventeen sites are monitored for *E. coli* bacteria, with five sites on the West Branch Farmington River and twelve tributaries, one of which flows into the East Branch Reservoir. West Branch Farmington River sites in MA had low *E. coli* values and tributaries showed excellent water quality, with the lowest *E.coli* geomean remaining at Benton Brook in Sandisfield. FRWA monitors temperature in the MA portion of the watershed with funding from the Berkshire Clean, Cold and Connected partnership. Two of these loggers are conductivity loggers which also record temperature. No tributaries or Farmington River locations were considered cold in 2025, and Shales Brook in Becket, and the West Branch Farmington River in Otis were warm.

17 bacteria sites
All sites with geomeans below the criteria

335 meter data points recorded

4 continuous temperature loggers
52,560 data points recorded

2 continuous conductivity loggers
17,520 data points recorded

Upper River

Nineteen sites were monitored in the Upper Farmington River Watershed for bacteria. The West Branch Farmington River and Farmington River in New Hartford consistently have low *E. coli* values with the West Branch Farmington River in Riverton being undetectable on 5/28/25. Winsted, the center of Winchester, has a higher percentage of impervious surfaces leading to increases in *E. coli* values in the Mad River and Still River. Morgan Brook, another tributary monitored in the upper river watershed, remained low in *E. coli*. FRWA monitors for temperature at fifteen sites in the upper river watershed with three sites on the river and twelve sites on tributaries, five of which are also conductivity loggers.
Almost all tributary temperatures were considered cool, with Rugg Brook in Winsted being cold and an Unnamed Tributary to the Farmington River on FRWA Frey property in New Hartford and Still River in Winsted being warm. Eight sites were monitored for chloride in the upper river watershed and are considered excellent to good conditions except Jim Brook in Canton which had chloride spike during winter storms. The Still River was the only location in the upper river watershed to have high nutrients due to flowing through an urban area and having a water treatment plant.

19 bacteria sites **11** sites with geomeans below the criteria	**8** chloride sites **448** data points recorded	**10** continuous temperature loggers **87,600** data points recorded
8 nutrient sites **144** data points recorded	**5** continuous conductivity loggers **525,600** data points recorded	**1** dissolved oxygen logger **131,400** data points recorded

Lower River

In the Lower Farmington River Watershed, twenty-three sites are monitored for bacteria. The lower river watershed has a higher density of development along the river corridor with more impervious surfaces and therefore higher *E. coli* values. Several tributaries had increased *E. coli* values in 2024 and include tributaries Roaring Brook in Unionville, Pequabuck River in Farmington, Nod Brook in Avon, Minister, Hop, and Russell Brook in Simsbury, Salmon Brook East Branch and Salmon Brook mainstem in Granby and East Granby, and Phelps and Mill Brook in Windsor. Temperature is monitored in the Salmon Brook watershed at five locations since it is most probable to have cold waters in the lower river watershed. Tributaries to the West Branch Salmon Brook and West Branch Salmon Brook itself had average summer temperatures colder than the criteria for sensitive species such as trout (less than 18.29°C). Fifteen sites are monitored for chloride in the lower river watershed. Two locations were considered fair for chloride (100-230 mg/L). Rainbow Brook in Windsor was the only site to increase to toxic conditions after a winter storm. Nutrients are higher in the lower river watershed due to more urban areas with impervious surfaces and agricultural lands. The Pequabuck River and East Branch and Mainstem Salmon Brook had high nutrients along with the Farmington River in Simsbury.

23 bacteria sites **16** sites with geomeans below the criteria	**15** chloride sites **840** data points recorded	**4** continuous temperature loggers **35,040** data points recorded
16 nutrient sites **288** data points recorded	**7** continuous conductivity loggers **735,840** data data points recorded	Active Cyanobacteria bloom Rainbow Reservoir, Windsor

FARMINGTON RIVER TRENDS

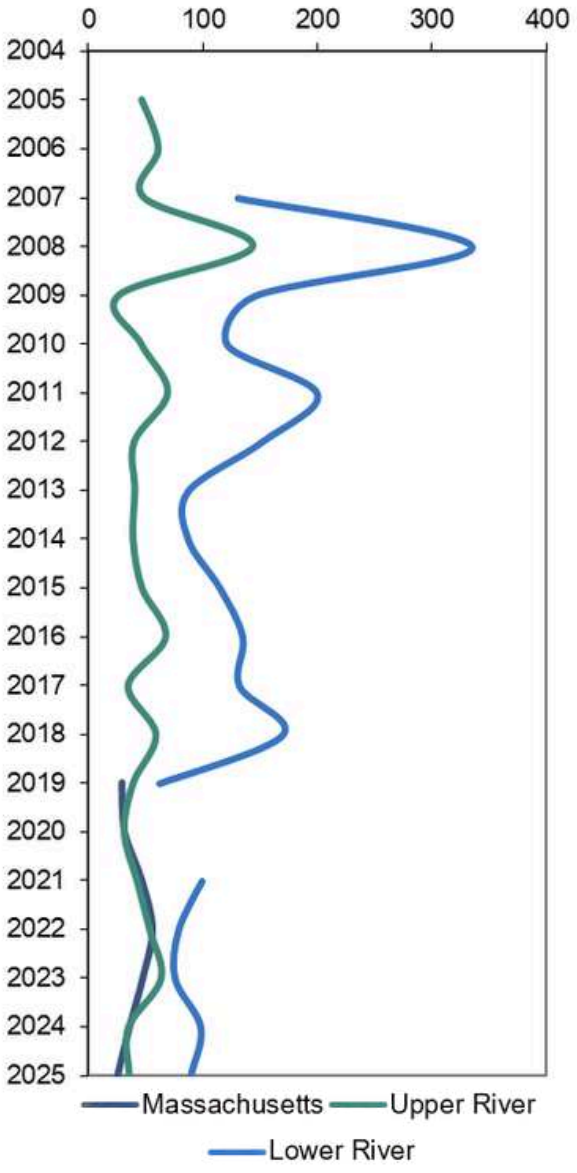
Bacteria

Bacteria trends over time can be difficult to visualize, especially since different sections started being monitored at different times. To visualize bacteria geomeans over time and from upstream to downstream, the graph to the right represents Massachusetts, upper river, and lower river by year. This way, increases in bacteria can be seen downstream compared to upstream.

Bacteria has been monitored in the Massachusetts portion of the Farmington River watershed since 2019. The Farmington River in Massachusetts is located in the Berkshires where there is low development, and results in low bacteria. All locations over the last six years have remained low with the exception of West Branch Farmington River (WBFR-727) just upstream Colebrook River Lake in 2022, most likely due to drought conditions.

Bacteria has been monitored in the upper river portion of the Farmington River watershed since 2004. The upper Farmington River in Connecticut runs through low development, and results in low bacteria. All locations have remained below the water quality criteria with the exception of 2008. The river in Riverton (FR-1) has remained under 20 MPN/100mL geomean for the last 20 years and therefore is consistently the lowest bacteria location on the river monitored by FRWA.

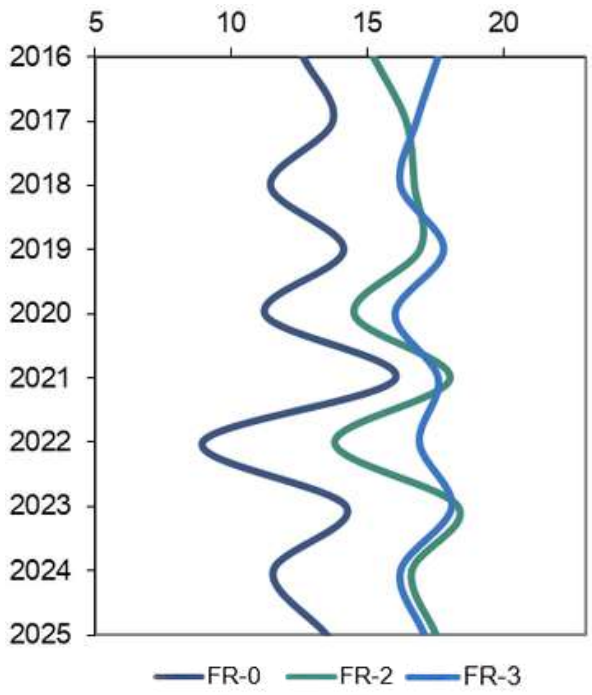
Bacteria has been monitored in the lower river portion of the Farmington River watershed since 2007. The lower Farmington River in Connecticut runs through more urban areas and therefore is prone to higher bacteria. 2008 also had higher bacteria values as was present in the upper river. In 2022, 2023 and 2024, no river sites had bacteria over the water quality criteria. Over the last five years bacteria has decreased and the majority of river locations are not impaired with the exception of the Farmington River in East Granby in 2025.



Trends over time from upstream to downstream reveal consistent low bacteria in Massachusetts and the upper river, with some higher values on outlier years, primarily due to extreme weather patterns. The lower river has seen improvement over the last several years.

Temperature

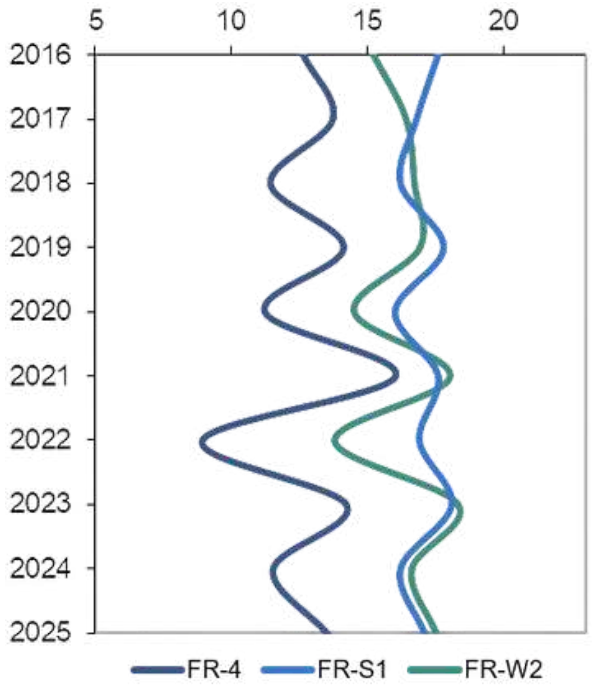
Continuous temperature has been monitored in the upper river since 2016, in the lower river since 2023, and started in MA in 2025. This allows us to see trends over time associated with weather patterns such as drought, but to also compare summer averages to the cold water fish recommended criteria.



The West Branch Farmington River just downstream Hogback Dam remains the coldest location monitored by FRWA over the last eight years. All locations have varying average summer temperatures depending on summer weather conditions. In flood years such as 2021 and 2023, summer averages increased, and in drought years such as 2022, decreased.

These extreme weather patterns play a role in how the dam releases cold water from the bottom of the reservoir, influencing river temperatures. The Farmington River in the upper river has only ever increased above cold criteria in 2023 in Riverton, and despite this, has remained cold for sensitive species in this section of the river.

The Farmington River in Windsor just downstream Rainbow Dam has been monitored since 2024. It was cool in 2024 and warm in 2025 most likely due to low flows and aligned with the cyanobacteria bloom on Rainbow Reservoir.



Chloride

The upper Farmington River has been monitored for chloride via grab sample from 2004 to 2018. These samples were taken between spring and fall, which excludes winter when road salts are applied, but allows us to see a minor increase over fourteen years. Chloride in the upper river remained excellent from 2004 to 2018 during summer months.

In late 2021, the chloride monitoring program was developed which includes monitoring year-round using a calibrated and quality control checked multiparameter meter. Monitoring includes all weather conditions and also includes the river in the downstream portion of the watershed. Monitoring year-round has revealed higher chloride values in winter months, and especially in February 2025, when the Farmington River in Windsor increased to 180 mg/l.

METHODS & 2025 SNAPSHOT

In 2025, FRWA again collected more data than previous years resulting in a new record of 2.2 million data points. With two YSI ProDSS multiparameter meters out multiple times a month, and 35 continuous loggers deployed year-round, FRWA is utilizing equipment to collect more data than ever.

Multiparameter Meter Measurements

FRWA collects more data than is present in this report. If you are interested in additional data, please reach out. FRWA has two YSI ProDSS multiparameter meters used in all monitoring locations, some of which are year round, to collect in-situ measurements. This year, 10,890 meter data points were recorded, and while this does include some parameters that are typically not used for assessments and not always shared with other organizations, they add to the long-term data collected on the watershed and can be used in the future if needed. FRWA follows all calibration and QC procedures per our QAPP to ensure data collection is accurate and useable.

43 times FRWA performed meter calibrations
288 pre and post run QC checks

Additional parameters:
Barometric Pressure (mmHg), Sp. Cond (µS/cm), Sal (psu), nLFCond (µS/cm), TDS (mg/L), Resistivity (ohms-cm), Sigma-T (s t), Sigma (s), ODO (% Sat), ODO (mg/L), Cl- (mV), Pressure (psi a), Depth (m)

Other Continuous Logger Parameters

While temperature and conductivity continuous logger data is present in this report, FRWA uses loggers to collect other parameters. Water level loggers are typically deployed in air for barometric pressure and in water upstream or downstream culverts and dams to record water level change every hour. Dissolved oxygen (DO) loggers are being utilized in ponds to determine dissolved oxygen mg/L every hour. As with the conductivity loggers, these loggers collect temperature, and using barometric pressure, the software can calculate dissolved oxygen (% saturation) or water level (meter or feet) every hour.

140,160 water level data points

35,040 dissolved oxygen (mg/L) data points recorded

35,040 dissolved oxygen (%) data points recorded

RETENTION POND MONITORING

In the spring we upgraded our loggers that monitor the Frey retention pond to the Onset HOBO MX802, which is a cabled multiparameter logger. It includes water level, temperature, conductivity (cond and sp. cond), and dissolved oxygen (mg/L and % saturation) all on one logger and provides staff with easier access for data retrieval - no more kayaking out on the pond to retrieve and download them!

METHODS: BACTERIA

FRWA collects and analyzes grab samples for Total Coliform and *E. coli* bacteria to determine if the Farmington River is safe for recreation and to document bacteria inputs into the river. Not only does it indicate if waterways are safe for recreation, it also helps identify locations for pollution such as urban areas with impervious surfaces, but also agricultural lands.

Staff and interns conducted routine bi-weekly monitoring for *E. coli* bacteria during the summer recreation season. Each CT site was sampled eight times from May through September, and each MA site was sampled six times from June through September. All analysis is done using IDEXX Colilert and Quanti-Tray. Our IDEXX laboratory is located in space allotted to us in the Simsbury Water Pollution Control Facility, Simsbury, CT. Geometric means were calculated at the end of the sampling season and are present in this report.

In this report, bacteria data is represented as MPN/100mL and in the form of geometric mean which is being compared to the water quality criteria of 126 MPN/100mL or greater for *E. coli* bacteria in freshwater. Our processes for bacteria monitoring in Connecticut has been in practice and shared with CT DEEP since 2004. In 2024, FRWA monitored a total of fifty-nine locations for bacteria in the Farmington River Watershed in Connecticut and seventeen sites in the headwaters in Massachusetts.

BACTERIA STATS

59 sites throughout MA and CT

539 samples analyzed for Total Coliform and E. coli (MPN/100mL)

182 quality control samples analyzed

3 interns trained in sampling and lab analysis

METHODS: NUTRIENTS

To supplement the research on Rainbow Reservoir, limnologist Dr. Ken Wagner of Water Resource Services recommended an assessment of watershed nutrient inputs to determine sources of nutrient loading from water pollution control facilities and target tributaries in relation to nutrient inputs into Rainbow Reservoir, and to further refine the nutrient reduction estimates which were determined from the 2021 study to effectively reduce cyanobacteria blooms on Rainbow Reservoir. This assessment is also in alignment with CT DEEP's active Phosphorus Reduction Strategy in the Farmington River Watershed.

Nutrient parameters were analyzed at 24 sites to determine values, loads and inputs, and percent reductions. These parameters included Total Phosphorus, Total Dissolved Phosphorus, Total Nitrogen, Total Dissolved Nitrogen, Ammonia, Nitrate and nitrite, and Total Kjeldahl Nitrogen. Total phosphorus (TP) is the sum of all phosphorus present in water, both dissolved and particulate, organic and inorganic forms. Total Dissolved Phosphorus (TDP) pertains to all dissolved organic and inorganic phosphorus in the water. Total Nitrogen (TN) is the sum of all nitrogen present in the water, both dissolved and particulate. Total Dissolved Nitrogen (TDN) is nitrogen that is dissolved in water, not attached to any particles. Ammonia (NH3) is a common form of nitrogen found in waters, and can be toxic to fish in high quantities. Nitrate and nitrite (NOx) are forms of dissolved nitrogen and are considered inorganic. Total Kjeldahl Nitrogen (TKN) is the sum of organic nitrogen and ammonia in water, and does not include inorganic forms. For this report, only Total Nitrogen and Total Phosphorus are shown. The full report is available on our website at frwa.org/resources - Research Reports.

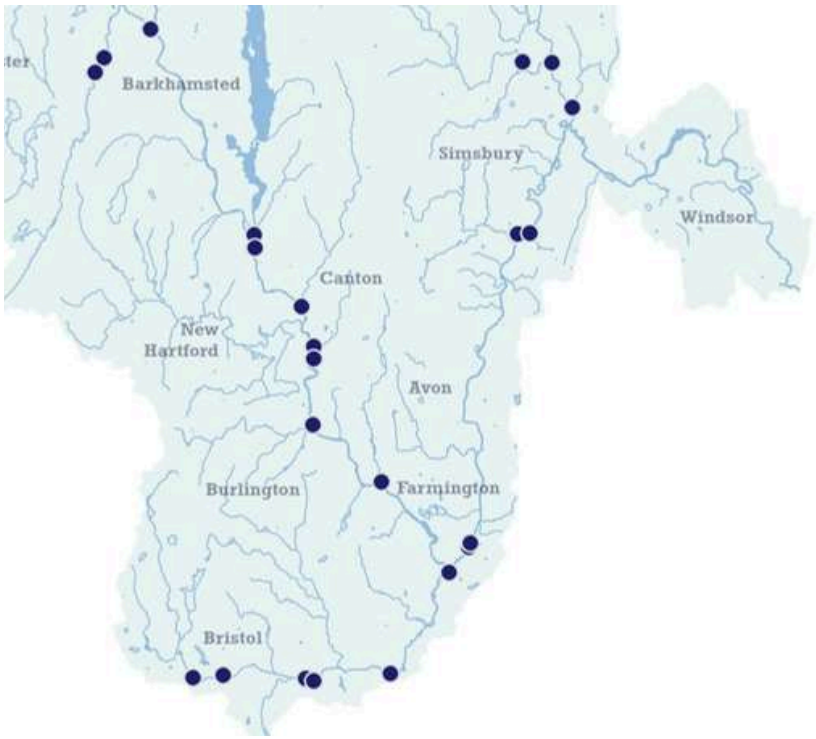
NUTRIENT STATS

24 sites

pre, during, and post storm sampling

432 data points analyzed

Tributaries and upstream and downstream water treatment plants



METHODS: CONTINUOUS TEMPERATURE

In-stream temperature monitoring is conducted using Onset HOBO Pro v2 loggers at twenty-one locations. We collect continuous water temperature data every hour, year-round, to identify cold water fish habitat, document thermal impairments, and monitor the impact of stormwater runoff. Loggers are programmed to record temperature (°C) data every hour year-round. Data is downloaded twice per year in Spring and Fall and analyzed to determine a summer mean from June - August and compared to the recommended criteria for sensitive species determined by CT DEEP.

All data is shared with CT DEEP and MassDEP. FRWA follows the CT DEEP Bureau of Water Protection & Land Reuse Monitoring & Assessment Program Volunteer Stream Temperature Monitoring (V-STEM) Network, Version 1.2 Last Revised April 2017 for temperature loggers and FRWA's Continuous Loggers Standard Operating Procedure (SOP).

Temperature criteria is referenced from *Summer Thermal Thresholds of Fish Community Transitions in Connecticut Streams* (Beuchene et al., 2014). For this report, summer data is isolated from June to August and averaged since these months may see temperatures rise above 18.3°C for cold water fish. Temperature data is presented as Cold (<18.3°C), Cool/Transitional (18.3-21.69°C) and Warm (>21°C) (Beauchene et al., 2014).

TEMP STATS

18 temperature loggers deployed + **15** conductivity loggers recording temp (°C)

1,068,720 temperature data points recorded

10 sites considered cold

23 sites considered cool or warm

METHODS: CONTINUOUS CONDUCTIVITY

In-stream conductivity monitoring is conducted using Onset HOBO U24 loggers at fifteen sites. We collect continuous water conductivity data every fifteen minutes, year-round, to identify conductivity increases associated with chloride pollution from road salt applications.

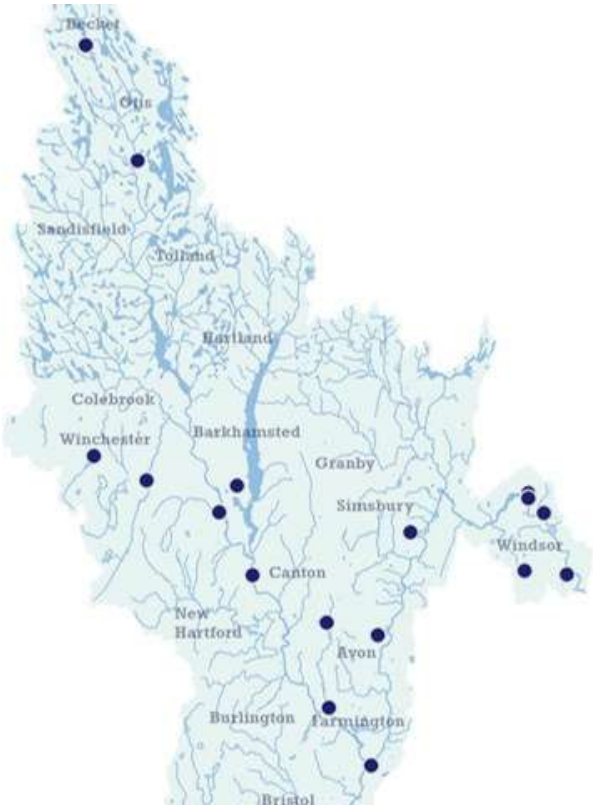
Loggers are programmed to record conductivity data (µS/cm) every fifteen minutes. Additionally, these loggers also record temperature (°C) data at the same logging interval of fifteen minutes. Data is downloaded a minimum of twice per year in Spring and Fall and calibrated in the Onset HOBOware Pro software using reference meter measurements of temperature and conductivity. This calibration also calculates specific conductance (µS/cm). While there is no official criteria for conductivity, FRWA compares results to other locations in the watershed to determine which locations are high. FRWA's primary goal of this monitoring is to determine chloride pollution and compare it to the EPA and CT DEEP's criteria for chloride affecting aquatic life. To do this, FRWA uses meter reference measurements to develop site specific linear regressions to calculate approximate chloride for comparison to the criteria. This allows FRWA to determine if locations are experiencing a chronic or acute condition. All data is shared with CT DEEP. FRWA follows the CT DEEP Bureau of Water Protection & Land Reuse Monitoring & Assessment Program Volunteer Stream Temperature Monitoring (V-STEM) Network, Version 1.2 Last Revised April 2017 for temperature loggers and FRWA's Continuous Loggers Standard Operating Procedure.
You can view our Conductivity Reports at frwa.org/resources - Research Reports.

COND STATS

15 conductivity loggers deployed

525,600 conductivity data points recorded

525,600 specific conductance data points calculated



METHODS: CHLORIDE

Chloride is monitored in Connecticut at twenty-five locations to observe changes in pollution from application of road salts during winter storms. Additionally, summer months are monitored to determine if lingering chloride in the environment is present during high production times for plant and animals, primarily during drought. Monitoring is performed eight times per year, with four samplings in the winter, one sampling in the spring, and three samplings in the summer. Data was collected using a YSI ProDSS multiparameter meter measuring chloride (mg/l), temperature (°C), and conductivity and specific conductance (µS/cm).

Chronic increases in chloride concentrations can result in impaired food webs and reduced fitness of aquatic plants and wildlife during times of high production, including the spring and summer months. Data is shared with the IWLA, CT DEEP, and MassDEP. The data is used to identify impairments and make recommendations at specific locations, to see long-term trends, and to gather baseline data. Water quality criteria of chloride for aquatic life is impaired at 230 mg/L for 4 days. Values above 230 mg/L for chloride can result in impaired food webs and reduced fitness of aquatic plants and wildlife during times of high production. While Toxic values in this report do not reflect the 4 day period of 230 mg/L, it gives insight into which locations have the potential to reach this criteria. FRWA has been using conductivity logger to supplement data collection to approximately calculate chloride from conductivity data to determine chronic and acute conditions. For detailed research on this you can view our conductivity reports at frwa.org/resources - Research reports.

CHLORIDE STATS

23 sites

184 chloride measurements

23 acute conditions

11 chronic conditions

METHODS: CYANOBACTERIA

FRWA performs lake sampling as needed in the watershed, which was started through a CT DEEP Aquatic Invasive Species (AIS) grant to monitor cyanobacteria on Rainbow Reservoir in Windsor, CT. In 2026, Rainbow Reservoir had another cyanobacteria bloom. Staff performed lake sampling on one date and several shore measurements throughout the bloom.

Lake sampling involves additional equipment, such as a van dorn sampler, an Ekman dredge, and a secchi disk. The van dorn sampler allows us to take an isolated sample at all 5 sites at a specific depth to collect algae and nutrient samples. The Ekman dredge is used to take sediment samples at the bottom of a waterbody. The secchi disk measures water transparency in meters at all 5 sites. FRWA also uses a multiparameter meter for lake sampling and records data at 1-meter increments from surface to bottom including turbidity (NTU), temperature (°C), dissolved oxygen (DO mg/L and Sat %), conductivity (µS/cm), specific conductance (µS/cm), and chlorophyll (Chl-a) and phycocyanin (PC).

Shore sampling consisted of multiparameter meter measurements and algae grab samples. To view our research on Rainbow Reservoir visit frwa.org/resources - Research Reports.

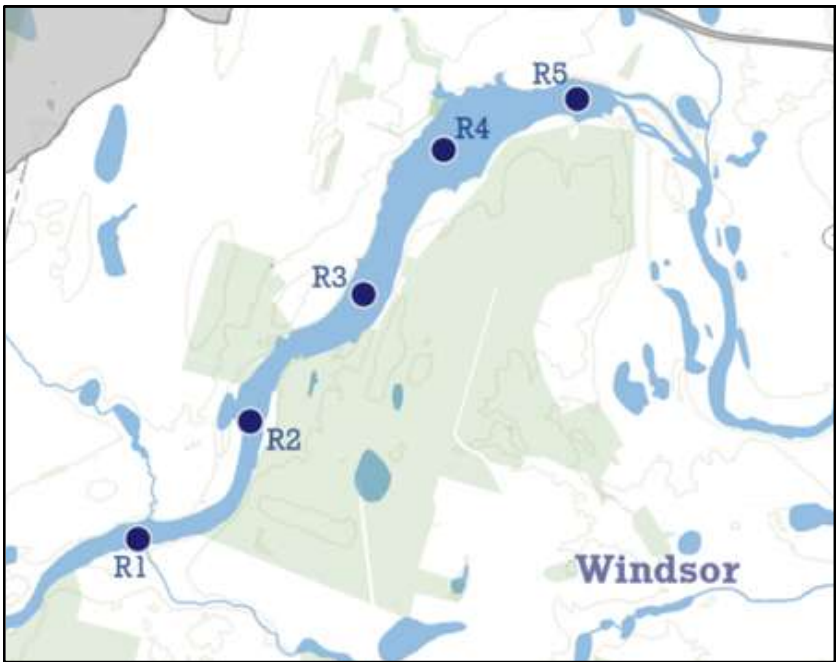
CYANO STATS

2 algae samples

14 nutrient data points - Total Nitrogen, Total Dissolved Nitrogen, Total Kjeldhal Nitrogen, Total Phosphorus, Total Dissolved Phosphorus, Nitrates, and Ammonia.

5 secchi measurements

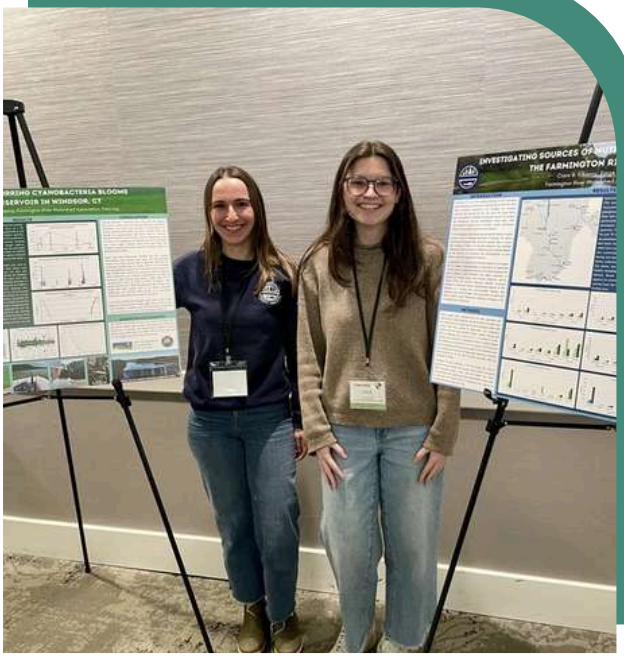
224 meter data points - Turbidity (NTU), Dissolved Oxygen (mg/L & % sat), Temperature (°C), Conductivity (µS/cm), Chlorophyll (Chl-a), Phycocyanin (PC)



RESULTS

The results in detail are listed in this report first by the West Branch Farmington River and Farmington River mainstem sites, then by towns beginning in the headwaters in Massachusetts and ending with the confluence to the Connecticut River in Windsor, Connecticut. We show it in this manner to not only follow the flow of the river and tributary inputs, but to see we generally have more pollutants as we progress down river and through more urban areas. This is due to a greater amount of watershed inputs, development pressures, and stormwater runoff at the bottom of the watershed, compared to mostly rural and forested lands upstream which has less impervious surfaces that create higher infiltration rates in the headwaters and therefore high water quality.

All data represented in this report is compared to the EPA, CT DEEP, and recommended research criteria. While there is more data collected and analyzed than present in this report, we wanted to represent what is easy to digest and what shows the most information on water quality in the watershed. For more detailed data and analysis, or specific research projects, please reach out to Paige Vichiola-Silva at pvichiola@frwa.org or visit frwa.org/resources - Research Reports for more information.



Paige & Ciara present research posters at the NEIWPCC NAB conference, Feb. 2026

21 All Farmington River Sites

25 Otis, MA

27 Sandisfield, Tolland, & Granville, MA

Torrington & Winchester 29

Barkhamsted & West Hartland, CT 33

New Hartford, CT 35

37 Canton & Burlington, CT

39 Farmington, CT

42 Bristol, CT

Avon, CT 43

Simsbury, CT 45

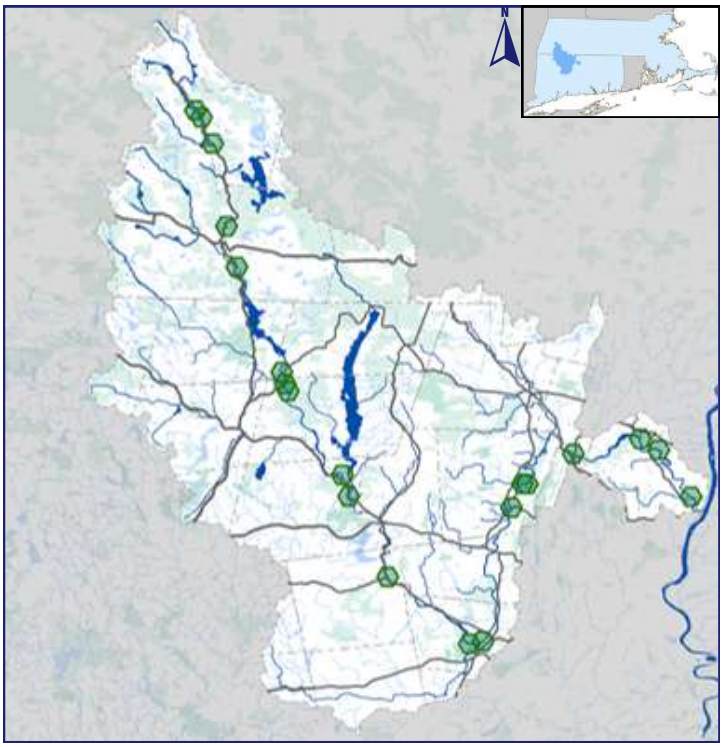
Granby & East Granby, CT 47

49 Bloomfield & Windsor, CT

51 Rainbow Reservoir, Windsor, CT

ALL FARMINGTON RIVER SITES

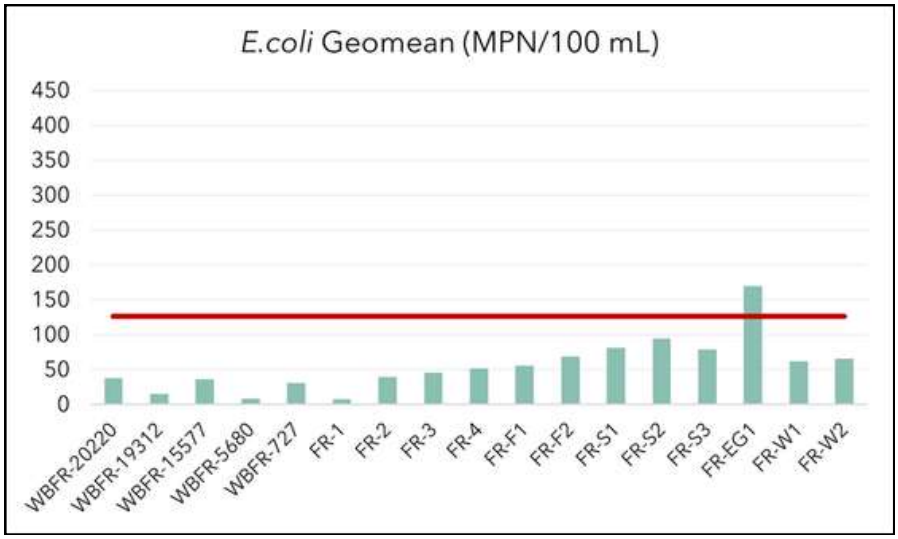
Twenty sites are monitored on the mainstem of the Farmington River, from the headwaters in Massachusetts to the confluence with the Connecticut River in Windsor. There are 5 sites along the West Branch Farmington River in Massachusetts, 5 sites in the Upper Farmington River Wild & Scenic designation, and 10 sites in the Lower Farmington River and Salmon Brook Wild & Scenic designation. Most sites are upstream or downstream a water treatment plant or major tributary, such as the Pequabuck River in Farmington.



Bacteria

The Farmington River from MA to the confluence with the Connecticut River in Windsor remains lower in *E.coli*, with the lowest values in MA and Barkhamsted, CT. As the river moves downstream through New Hartford to Windsor, we see increases in *E.coli* compared to upstream. This is due to more urban areas and increased impervious surfaces associated with them, particularly seen in Farmington after the Pequabuck River's confluence (**FR-F2**).

In previous years, some locations had geomeans above 126 MPN/100 mL, but in 2025 they all remained low except the Farmington River in East Granby which was impaired at 169 MPN/100 mL. All other river sites remained below 100 MPN/100mL, with the lowest value at FR-F1 in Riverton which is typical.



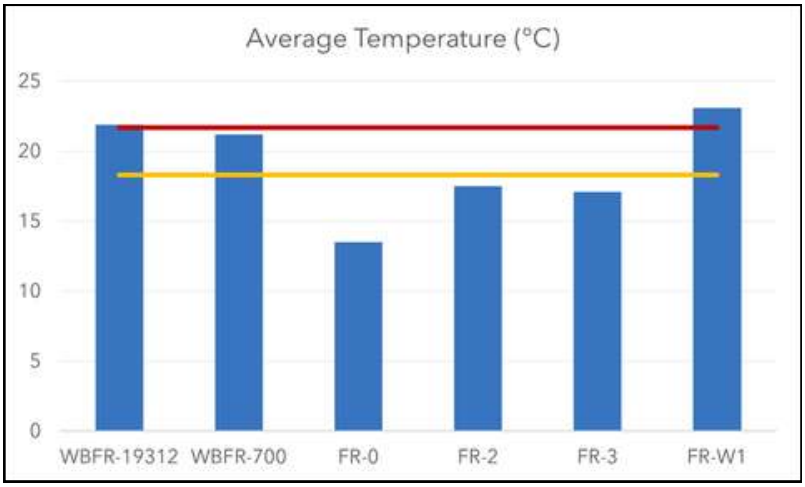
Temperature

Two temperature sites were added in MA in 2025 in Otis and Tolland (**WBFR-19312** and **WBFR-700**). This was the first time temperature has been continuously monitored in MA and gives insight into conditions prior to entering Colebrook River Lake. While the West Branch Farmington River flows through rural areas, it does not stay cold. In Otis, the average summer temperature was 21.9°C which is considered warm. In Tolland, the average summer temperature was 21.2°C which is considered cool.

All of the Farmington River sites in the upper river watershed (**FR-0**, **FR-2**, and **FR-3**) were cold in 2025, consistent with previous years data recorded by FRWA. This segment of the river remains cold due to releases from the bottom of the Colebrook River Lake, which is a large reservoir in the watershed.

In the lower river, two Farmington River sites in Windsor are monitored. The Farmington River at Cat Connection in Windsor (**FR-CC**) downstream the Rainbow Reservoir and Rainbow Dam had a summer average of 23.6°C which is considered warm and increased compared to the 2024 average of 21.4°C which was cool. A new site was added at Strawberry Hills in Windsor (**FR-W1**) for 2025 and had a summer average of 22.4°C which is also considered warm.

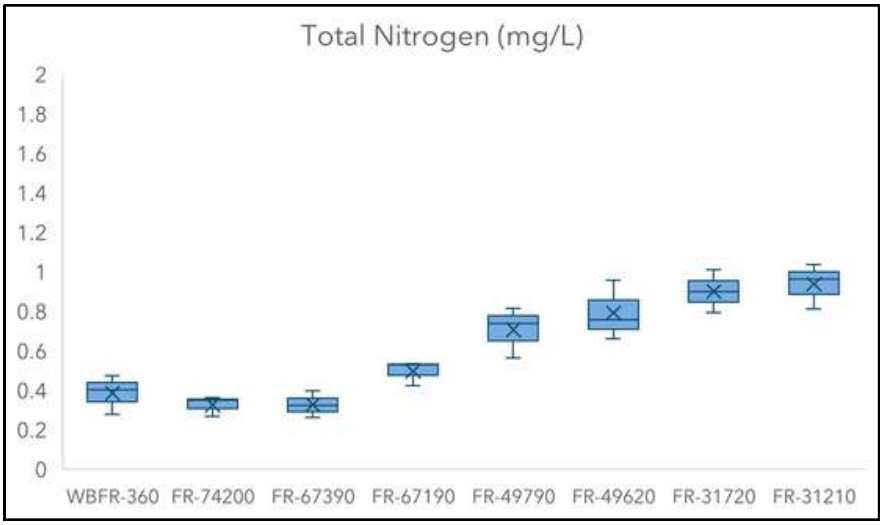
While more sites should be added, we see from the 2025 data that the only cold section of river that is monitored by FRWA is present in Hartland, Barkhamsted, and New Hartford and is most likely due to the Colebrook River Lake releases.



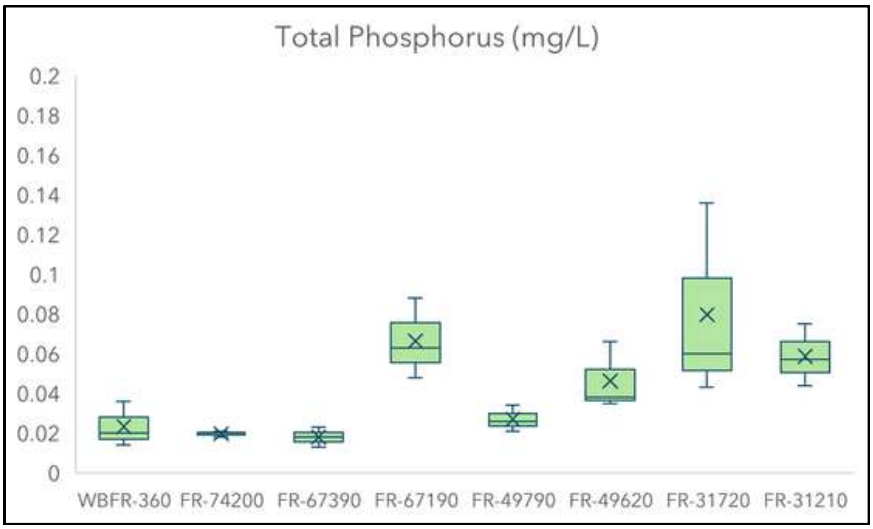
Farmington River, Barkhamsted

Nutrients

The Farmington River was sampled in 8 locations upstream and downstream the New Hartford, Canton, Farmington, and Simsbury Water Pollution Control Facilities (WPCFs) for nutrient concentration and loading. Data shows a steady increase of total nitrogen concentration as the river flows downstream, which is nutrients accumulating as discharges and runoff enter the Farmington River. Higher values in the Lower River can be attributed to an increase of development and impervious surfaces, along with increased agricultural land use. Total nitrogen averages were below the recommended criteria of 1 mg/L, however single samples in taken in Simsbury **(FR-31720 and FR-31210)** were above the criteria. While not present in the graph, total nitrogen loading increased from an average of 28 kg/day in New Hartford **(FR-74200)** to an average of 492 kg/day in Simsbury **(FR-31210).**



Data on the Farmington River shows an increase of total phosphorus as it flows downstream. The Farmington River **(FR-67190)** downstream the Canton WPCF had a total phosphorus average of 0.066 mg/L, which is over three times greater than the upstream site **(FR-67390)** at an average of 0.018 mg/L. This is attributed to discharge from the WPCF, and additional inputs from Rattlesnake Brook, between the sampling sites. The Farmington River **(FR-31720)** upstream the Simsbury WPCF was elevated in total phosphorus, reaching levels of 0.136 mg/L, above the 0.025 mg/L recommended criteria. This is likely due to inputs from Hop Brook a few meters upstream the sampling site. While not present in this graph, total phosphorus loading was highest in Simsbury, with an average of 33.5 kg/day, compared to 1.5 kg/day in New Hartford **(FR-74200)** which was the lowest.

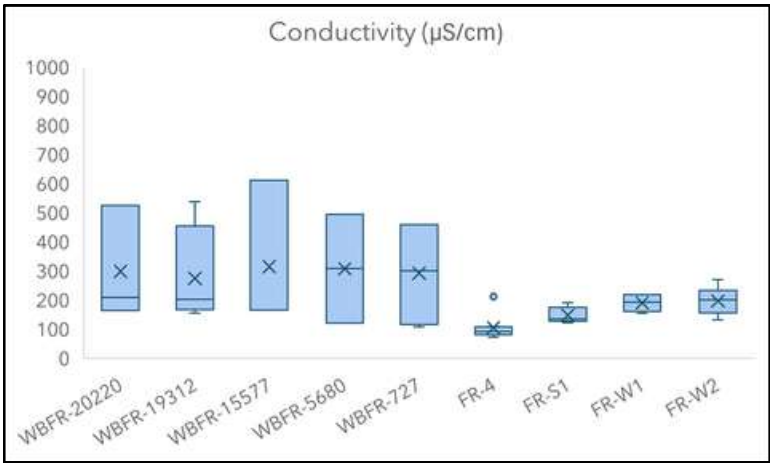


Conductivity

FRWA currently only has one continuous conductivity logger deployed in the Farmington River in Windsor (**FR-W1**). All other conductivity data for the river is collected using our multiparameter meter.
The West Branch Farmington River in MA is only monitored via multiparameter meter during routine summer monitoring, while CT is monitored year round through the chloride monitoring program.

In MA, the West Branch Farmington River (**WBFR-20220, WBFR-19312, WBFR-15577, WBFR-5680, and WBFR-727**) has higher average conductivity over summer months compared to CT. In CT, the upper river (**FR-4**) is the lowest, and increases are seen as the river flows through more urban areas (**FR-S1** and **FR-W2**) on it's way to the Connecticut River.

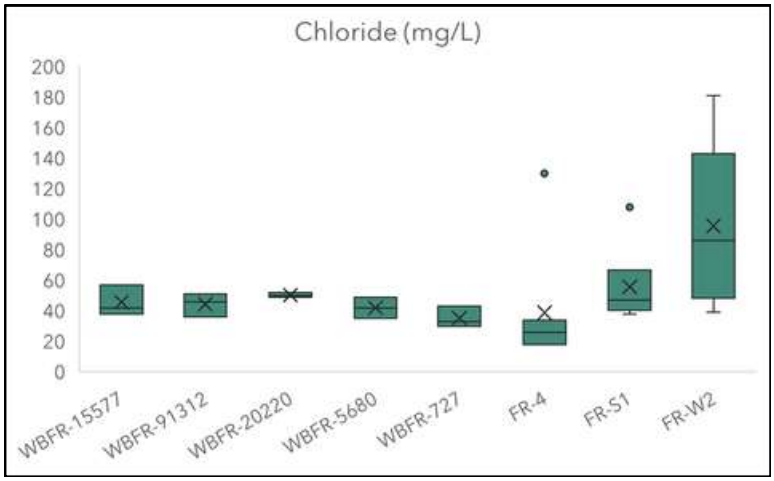
Higher conductivity in summer months in MA can be due to lower flows, geological features, or land uses and lingering road salt application practices.



Chloride

The Farmington River dilutes tributary chloride inputs due to the higher volume of water in the river. FRWA has chloride data back to 2004 for the Farmington River in the upper river watershed in CT. Trends show increases in chloride over time, although less in the river compared to tributaries.

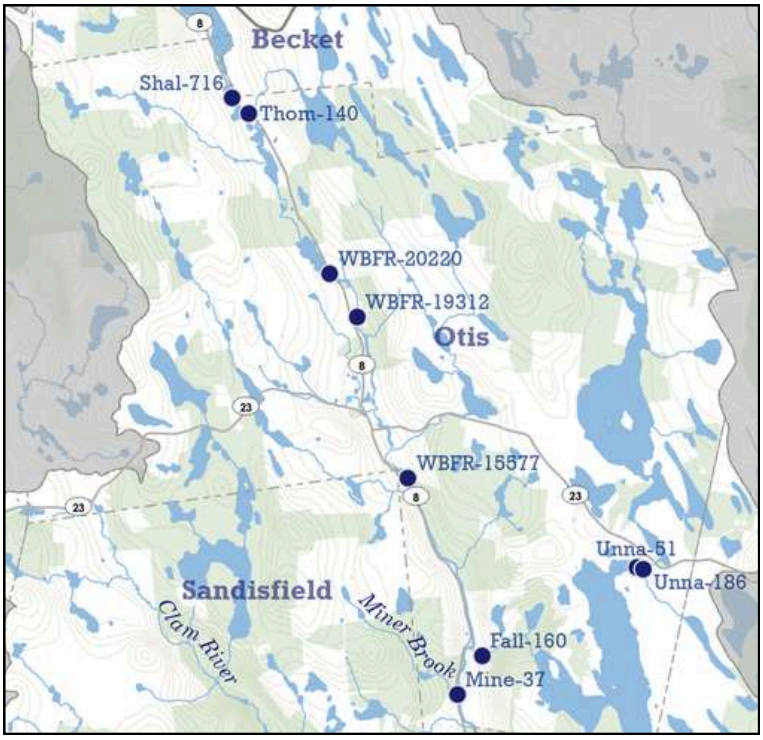
Similar to conductivity, chloride monitored in MA is performed from June through August. This data does not include any winter months when road salts would be applied. The Farmington River sites in CT **(FR-4, FR-S1, and FR-W2)** are monitored year-round through FRWA's chloride monitoring program. In CT, due to winter monitoring, the river saw spikes in February associated with road salt applications. On average these sites are still good with the exception of FR-W2 which had a higher average and a maximum of 180 mg/L, which is of concern.



Farmington River, Barkhamsted

OTIS, MA

In Otis, sites include three locations on the West Branch Farmington River and tributaries to the river include Thomas Brook, Miner Brook, and two unnamed tributaries to Otis Reservoir. The West Branch Farmington River in MA then travels through Sandisfield and Tolland, into Colebrook River Lake in CT, through the West Branch Reservoir, and into the Upper Farmington River Wild & Scenic River designation.

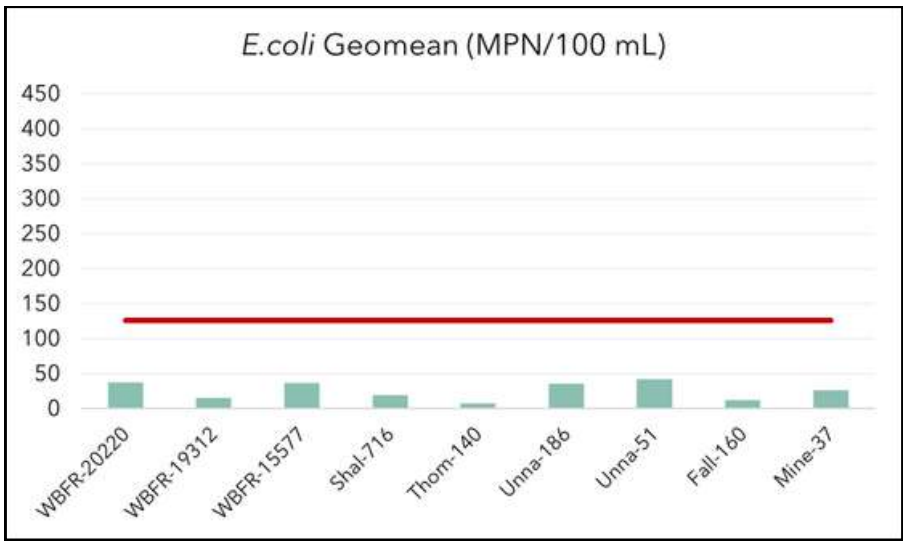


Bacteria

The land use in Otis is sparse with rural neighborhoods, little commercial development, and limited impervious surfaces, which has resulted in pristine water quality.

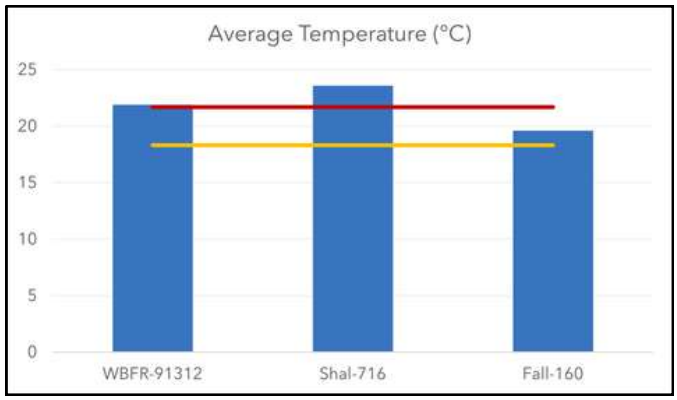
All monitoring sites in Otis were low in 2025. Thomas Brook **(Thom-140)** was the lowest in Otis with a geomean of 7.5 MPN/100 mL, compared to 9 MPN/100 mL in 2024. Miner Brook **(Mine-37)** was at its lowest in FRWA history, with a geomean of 26 MPN/100 mL, likely due to less extreme weather patterns over the summer

The West Branch Farmington River's bacteria fluctuates as it flows though Otis. The most upstream West Branch Farmington River site **(WBFR-20220)** had a geomean of 38 MPN/100 mL, decreasing from the 2024 geomean of 61 MPN/100 mL. Downstream **(WBFR-19312)** decreased to a geomean of 16 MPN/100 mL then increases **(WBFR-15577)** to 36 MPN/100 mL before entering Sandisfield.



Temperature

FRWA is monitoring temperature at two tributaries and one location on the West Branch Farmington River. The Fall River originates from Otis Reservoir at the Southwest Bay and flows for about a mile before entering the West Branch Farmington River. The reservoir is dammed and controls Fall River, which is most likely influencing the water temperature. Fall River **(Fall-160)** had a summer average of 19.6°C, which was cold. Shales Brook is the outlet of Shaw Pond, which is smaller than Otis Reservoir, and is the result of higher temperatures. Shales Brook **(Shal-716)** was warm with an average of 23.6°C, which is the highest temperature recorded in MA. The West Branch Farmington River **(WBFR-19312)** was considered warm with a summer average of 21.9°C, most likely due to being a larger waterbody with warm water inputs from tributaries.



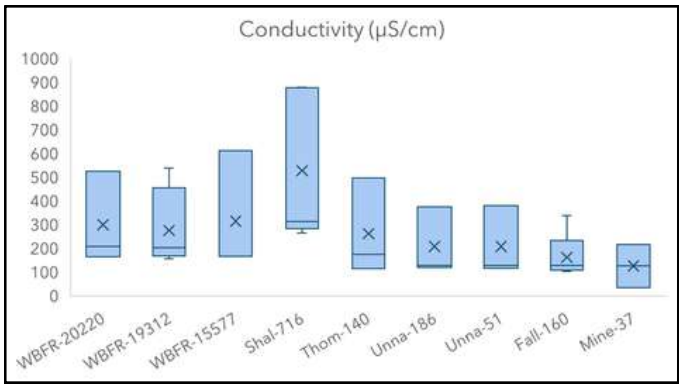
Drought started during summer months in MA, resulting in low flows and increased temperatures. 2025 was the first year for monitoring MA West Branch Farmington River temperatures meaning there is no comparison to previous years with no drought. The Fall River was cooler in 2025 and considered cold compared to 2024.

Conductivity

Fall River (**Fall-160**) and Shales Brook (**Shal-716**) have conductivity loggers and other locations were measured using the multiparameter meter during summer months. Both locations are downstream impoundments Otis Reservoir and Shaw Pond.

Fall River (**Fall-160**) conductivity was average and lower than other locations in MA, while Shales Brook (**Shal-716**) had the highest maximum and average.

The West Branch Farmington River and tributaries most likely have higher conductivity in summer months due to lower flows, geological features, or land uses and lingering road salt application practices.



Fall River, Otis

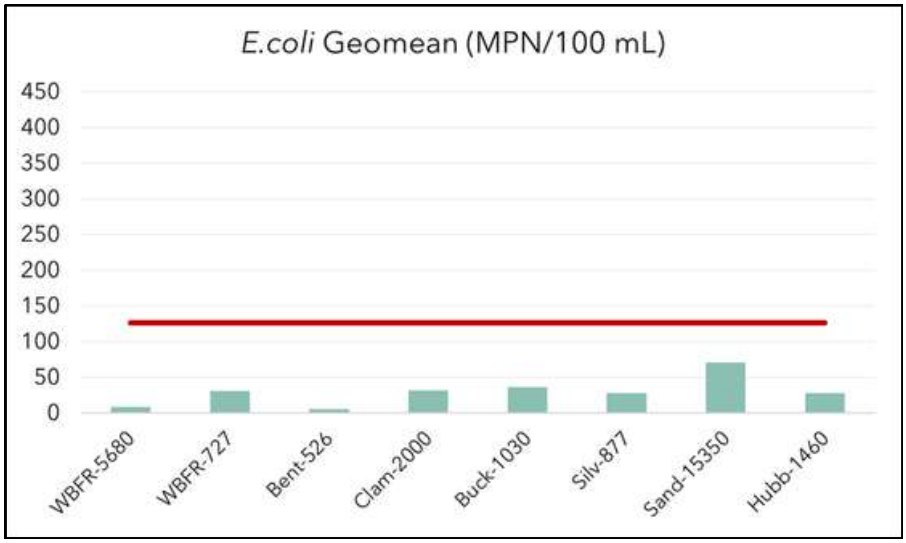
SANDISFIELD, TOLLAND, AND GRANVILLE, MA

Seven sites are within Sandisfield, with one Farmington River location, and tributaries Sandy Brook, Buck River, Unnamed Tributary to the Buck River, Silver Brook, Clam River, and Benton Brook. The site in Tolland includes the West Branch Farmington River before it enters Colebrook River Lake. In Granville, the Hubbard River is monitored, which flows into the East Branch Reservoir in CT. The East Branch Reservoir in CT provides drinking water to more than 400,000 people in the Greater Hartford area. Both Silver Brook and the Buck River have inputs into the Clam River, which is a major tributary to the Farmington River in Sandisfield. Sandy Brook flows south into CT and through Colebrook to the Still River, into the Upper Farmington River Wild & Scenic designation.

Bacteria

All sites in Sandisfield, Tolland, and Granville remained low in *E.coli* for 2024. Trends for these sites since FRWA began monitoring in 2019 are very low, and none of the sites in Sandisfield, Tolland, or Granville have ever been above the criteria. Benton Brook **(Bent-526)** was once again the lowest site in the watershed, with a geomean of 5.5 MPN/100 mL.

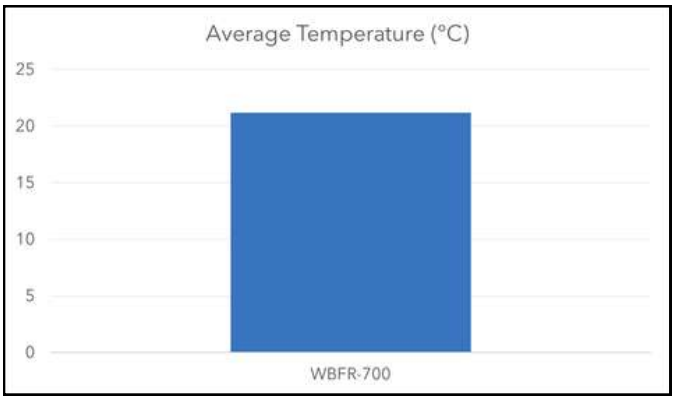
Land use in Sandisfield, Tolland, and Granville results in these low *E.coli* values. There is very minimal commercial development and impervious surfaces, which results in high water quality.



Temperature

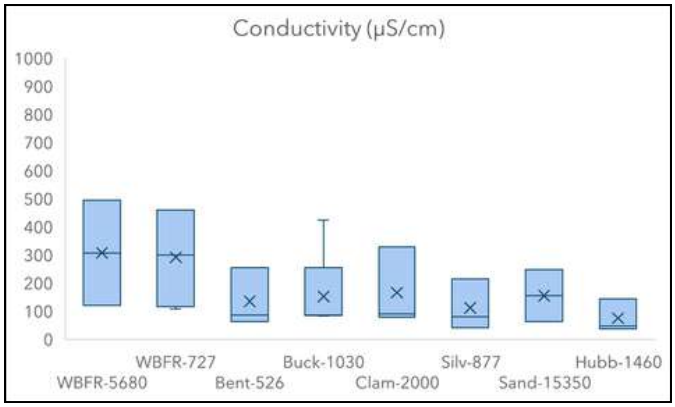
A new temperature logger was deployed in the West Branch Farmington River in Tolland, MA in 2025, to bridge a gap in river temperature data. West Branch Farmington River **(WBFR-700)** had a summer average of 21.2°C, which is considered warm by MassDEP standards. The West Branch Farmington River in MA is not supporting for aquatic life due to a lack of cold water assemblage.

For comparison, this summer average is similar to Farmington River temperatures in Windsor, CT, while the West Branch and Farmington River in the upper river tend to stay cold. This may show that the river is typically not cold except downstream the Colebrook River Lake, which is a large impoundment that releases water from the bottom, resulting in very cold temperatures.



Conductivity

Conductivity in the West Branch Farmington River and tributaries in MA are relative to each other. Most tributaries are average for conductivity in the watershed while the river itself has a higher range. The West Branch Farmington River (**WBFR-5680, WBFR-727**) and tributaries most likely have higher conductivity in summer months due to lower flows, geological features, or land uses and lingering road salt application practices.

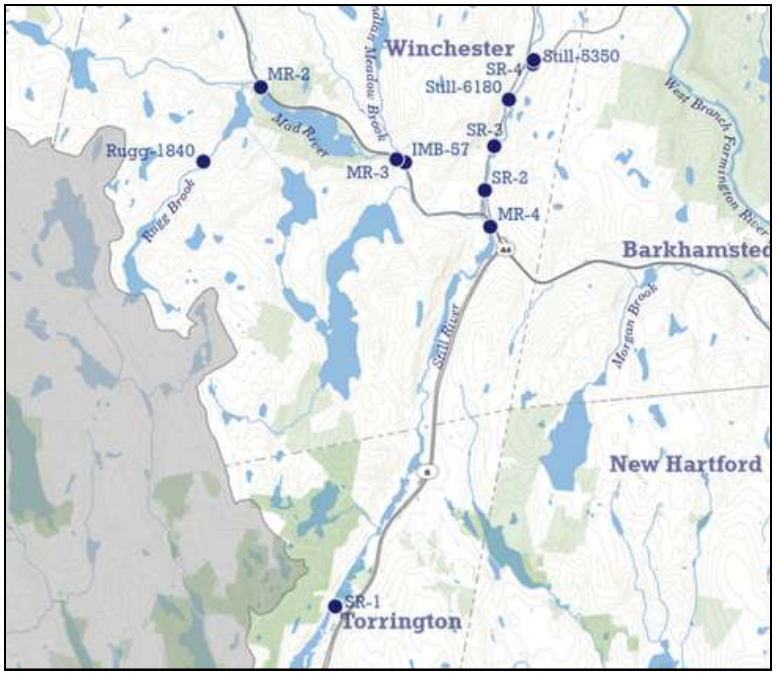


West Branch Farmington River, Tolland

TORRINGTON AND WINCHESTER, CT

Winsted, the center of Winchester, and Torrington are urban areas in the watershed. The Mad River flows from Norfolk to the Still River in Winsted. The Still River originates in Torrington and flows north through Winsted to its confluence with Sandy Brook, and then into the Farmington River in the Upper Farmington River Wild & Scenic designation. Rugg Brook and Indian Meadow Brook are tributaries to the Mad River.

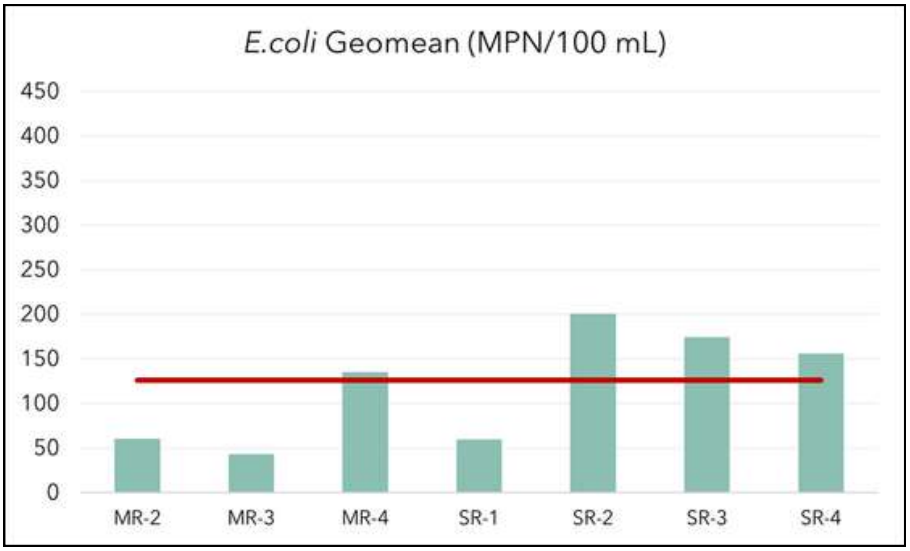
The Mad and Still Rivers are not supporting for recreation due to being impaired for E.coli and subsequently have TMDLs.



Bacteria

Upstream Still River **(SR-1)** has a geomean of 60 MPN/100 mL, which is below the criteria. Still River in Winsted (**SR-2** and **SR-3**) was lower than 2024, with 2025 geomeans of 201 and 174 MPN/100 mL respectively. Downstream Still River **(SR-4)** had a geomean of 156 MPN/100 mL, the lowest since 2021.

Mad River *E.coli* was lower in 2025 than it was in 2024, the upstream sites **(MR-2 and MR-3)** were considered low with geomeans of 60 and 43 MPN/100 mL respectively. The downstream site **(MR-4)** was above the criteria with a geomean of 135 MPN/100 mL, but had decreased since 2024, which was 177 MPN/100 mL.



Temperature

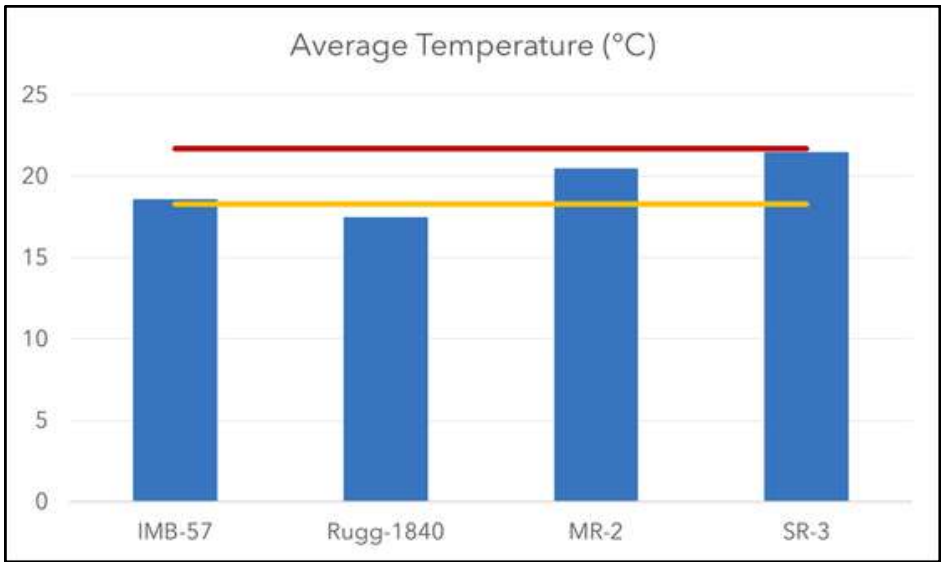
Indian Meadow Brook **(IMB-57)** was once again cool in 2025, with a summer average of 18.6°C. It has only been considered cold once in 2023, with an average temperature of 17.7°C, and continues to be monitored as it is a confirmed cold water habitat by CT DEEP.

Rugg Brook **(Rugg-1840)** was cold again in 2025 with a summer average of 17.5°C. Rugg Brook is a predicted cold water tributary to the Mad River, as it flows through a forested area with minimal development, providing shaded buffers which keep temperatures cold.

The Mad River **(MR-2)** continues to be cool in 2025 with a summer average of 20.5°C. It flows alongside Route 44, and runoff is most likely contributing to these cooler temperatures.

The Still River **(SR-3)** had a summer average of 21.5°C, which is considered cool. The Still River has been cool or warm since monitoring began in 2014.

All four of these sites are located in predicted cold water areas, however only Rugg Brook was recorded as cold by FRWA in 2025.



Still River, Torrington

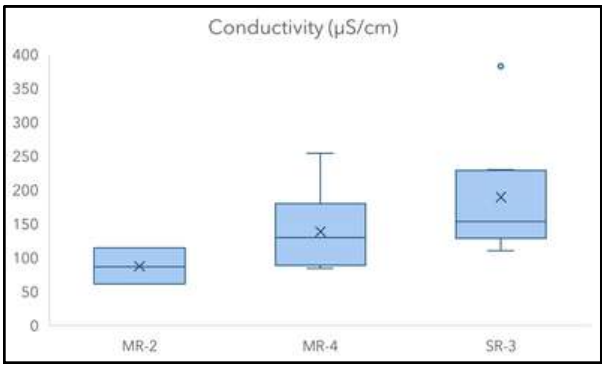
Conductivity

The Mad River and Still River continuous temperature loggers were changed to conductivity loggers in spring 2024, allowing FRWA to collect both temperature and conductivity data.

The Mad River (**MR-2**) downstream Rugg Brook Reservoir and upstream the Mad River Reservoir primarily has rural land uses. While the Mad River's conductivity increased in 2025, it is not of concern.

The Still River (**SR-3**) also had higher conductivity in 2025 than 2024 but was not of concern.

Both locations saw relatively minimal increases associated with more road salt applications during winter months, but overall did not increase enough to be of concern.



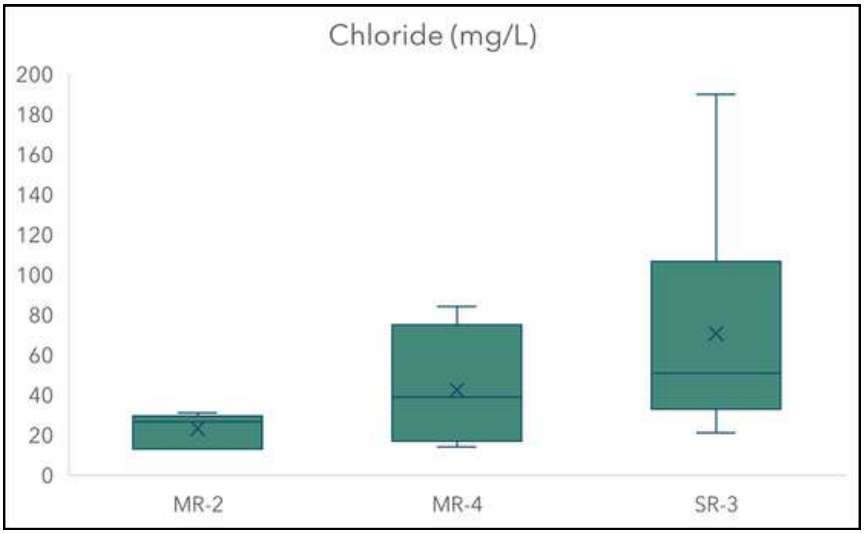
Chloride

FRWA has chloride data back to 2004 for both the Mad River and Still River. Trends for both rivers shows increases in chloride over time. Due to chloride being ionic, it lingers in the environment and accumulates. Accumulation can also be present in groundwaters, which was seen by FRWA during the 2022 drought.

Maximum chloride measurements were higher for 2025 associated with road salt applications during winter months, but over all not concerning.

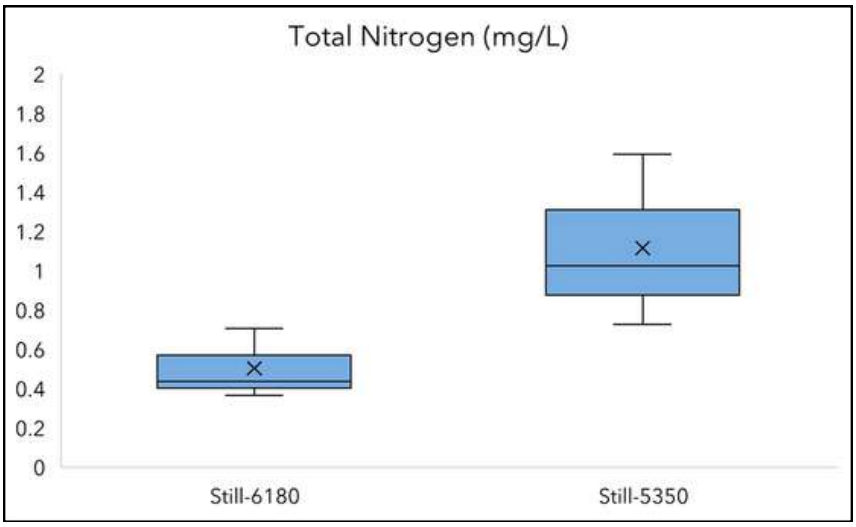
Mad River **(MR-4)** chloride was slightly higher than 2023 with an average of 30 mg/L which changes it from excellent to good. The maximum for 2024 also increased to 58 mg/L from 37 mg/L in 2023.

Still River **(SR-4)** chloride was was slightly higher than 2023 with an average of 38 mg/L but remains considered as good. The maximum for 2024 also increased to 60 mg/L from 50 mg/L in 2023.

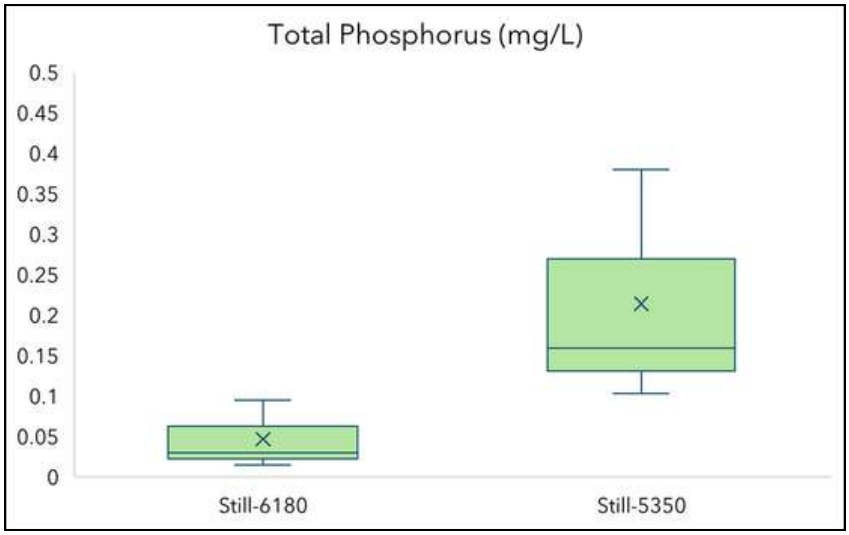


Nutrients

The Still River **(Still-6180)** upstream the Winsted WPCF had a total nitrogen average of 0.5 mg/L, which is below the recommended criteria of 1 mg/L. The Still River **(Still-5350)** downstream the Winsted WPCF had total nitrogen above the criteria, with an average of 1.1 mg/L. This was the highest total nitrogen recorded in the Upper River. This increase is directly correlated to the WPCF discharges, and is likely the primary source of nitrogen input in the Still River.



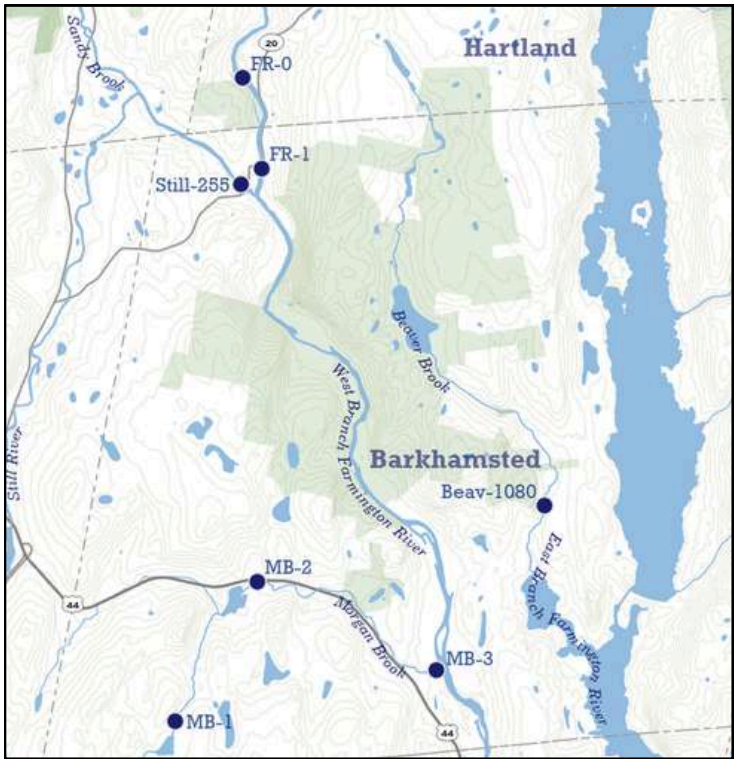
The Still River **(Still-6180)** upstream the Winsted WPCF had a total phosphorus average of 0.046 mg/L, which is above the recommended criteria of 0.025 mg/L. The Still River **(Still-5350)** downstream the Winsted WPCF had the highest total phosphorus average in the whole watershed, with .021 mg/L, which is over eight times greater than the recommended criteria of 0.025 mg/L.



Still River, Winchetster

BARKHAMSTED AND WEST HARTLAND, CT

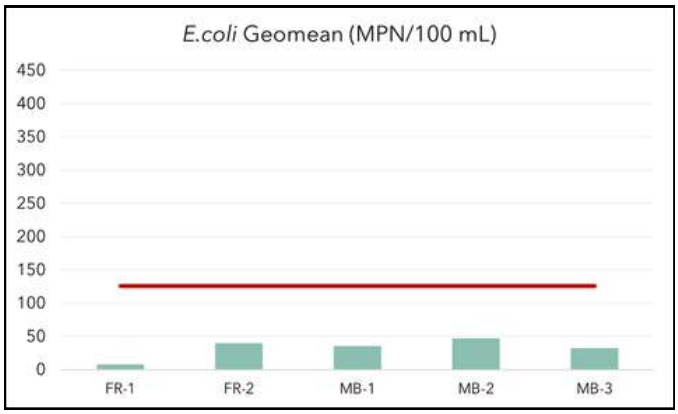
The West Branch Farmington River flows from West Branch Reservoir in Hartland, just after Colebrook River Lake. The West Branch Farmington River is located in the Upper Farmington River Wild & Scenic designation. Morgan Brook tributary flows into the West Branch Farmington River and is not supporting for recreation due to being impaired for E.coli and subsequently has a TMDL. Beaver Brook, which flows into Lake McDonough, is a new location for temperature, conductivity and chloride.



Bacteria

The Farmington River **(FR-1)** remained low in 2025, with a geomean of 7.8 MPN/100 mL, an increase from the 2024 geomean of 3 MPN/100 mL. It was once again the cleanest site in CT in 2025. The Farmington River downstream **(FR-2)** was at its lowest since 2020 with a geomean of 40 MPN/100 mL.

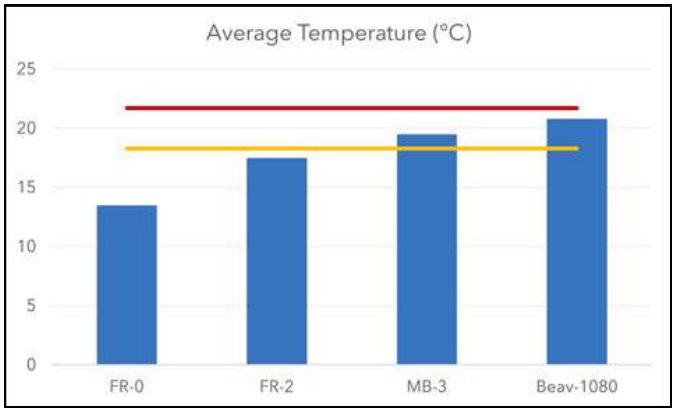
All three Morgan Brook sites remained below the water quality criteria in 2025. Upstream Morgan Brook **(MB-1)** was low with a geomean of 36 MPN/100 mL. Morgan Brook along Rt 44 **(MB-2)** had a geomean of 47 MPN/100 mL, the highest of the three sites, and is likely a result of runoff coming from Rt 44. Just before its confluence with the Farmington River **(MB-3)**, it decreased to a geomean of 33 MPN/100 mL.



Temperature

The Farmington River **(FR-0)** at Hogback Road remains cold with a summer average of 13.5°C. This site is the closest to Colebrook River Lake, and receives cold water releases from the bottom of the reservoir. The Farmington River **(FR-2)** along West River Road was considered cold with an average of 17.5°C, which is higher than the 2024 average of 16.6°C. It is typically warmer than the upstream and downstream sites, most likely due to input from Sandy Brook.

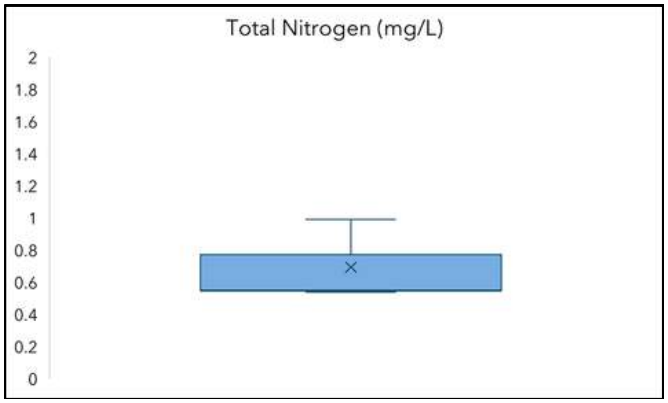
Morgan Brook **(MB-3)** continued to have cool temperatures, with an average of 19.5°C, which is slightly cooler than the 2024 average of 19.9°C. Morgan Brook is dammed upstream and runs alongside Route 44, which is likely resulting in its cool temperatures. Beaver Brook **(Beav-1080)** was cool again in 2025 with a summer average of 20.8°C.

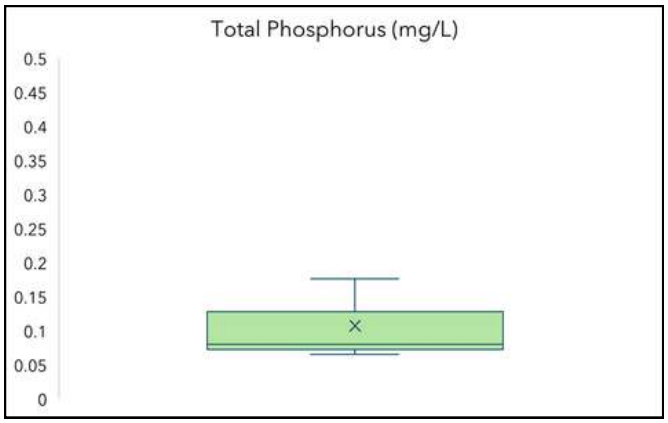


Nutrients

The Still River **(Still-255)** at the confluence with the Farmington River was monitored for the watershed nutrient study to understand total nutrient input into the Farmington River. Total nitrogen was 0.69 mg/L, which is below the criteria, while total phosphorus was 0.108 m/L, which is over four times greater than the recommended criteria of 0.025 mg/L.

While not present in the graph, total daily input from the Still River into the West Branch Farmington River had an average of 97 kg/day of total phosphorus, which is one of the higher inputs to the Farmington River found in the 2025 study.



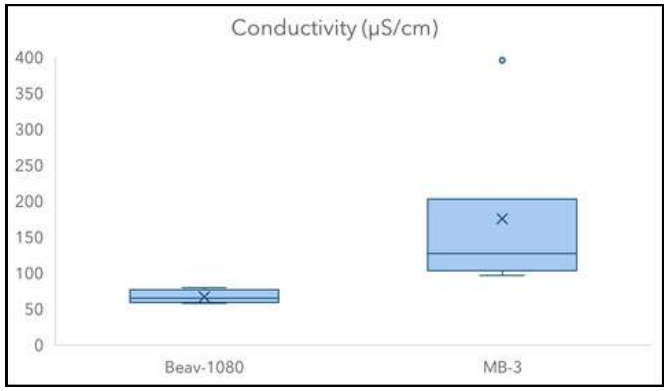


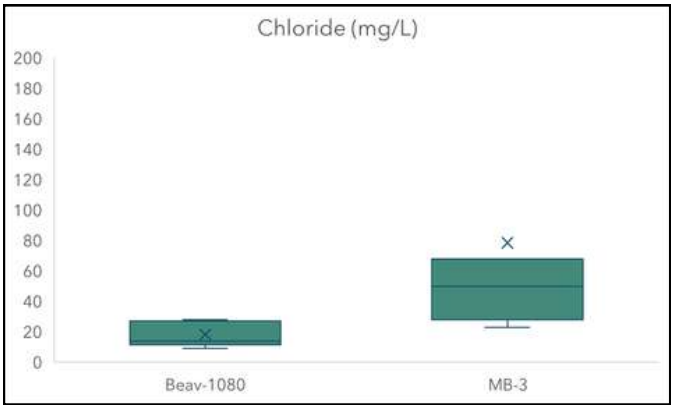
Conductivity & Chloride

FRWA has chloride data back to 2004 for Morgan Brook. Trends show increases in chloride over time, although less for Morgan Brook compared to the Mad and Still River. Due to chloride being inorganic, it lingers in the environment and accumulates. Accumulation can also be present in groundwaters, which was seen by FRWA during the 2022 drought.

Morgan Brook **(MB-3)** had a high values of 288 mg/L in February associated with winter storm road salt applications. Morgan Brook has not had values this high in previous years. Despite the high values, the average was low at 76 mg/L. Similarly, conductivity increased to an average of 395 µS/cm compared to 170 µS/cm in 2024.

Beaver Brook (**Beav-1080**) had low chloride for 2025 with an average of 20.3 mg/L and a maximum of 28 mg/L. 2025 values were lower than 2024 which had a maximum of 52 mg/L. Conductivity was very low with an average of 67 uS/cm.

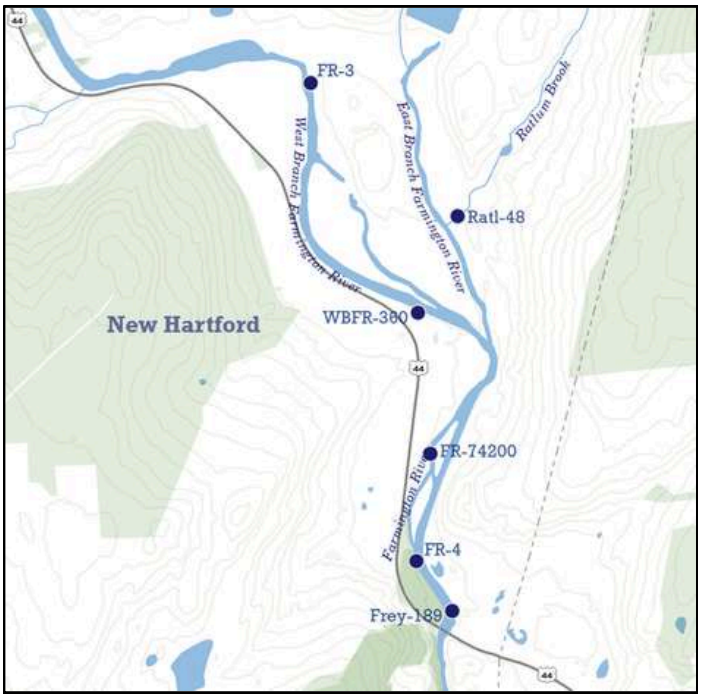




West Branch Farmington River, Barkhamsted

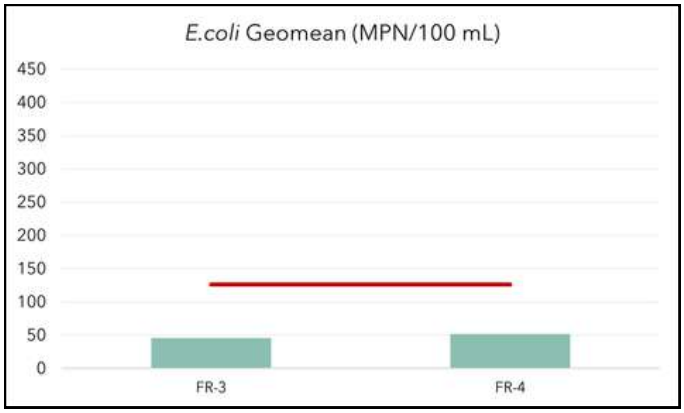
NEW HARTFORD, CT

Sites in New Hartford include two river sites along the Upper Farmington River Wild & Scenic designation at at Black Bridge and Satan's Kingdom. Ratlum Brook is a tributary to the East Branch Farmington River, and Unnamed tributary to the Farmington River is monitored on property owned by FRWA. The property was donated to FRWA by the Estate of Lily Frey. FRWA aims to restore a natural buffer to this tributary, and is monitoring temperature and conductivity for future reference after restoration.



Bacteria

E.coli in the Farmington River remained low in 2025. The Farmington River at Black Bridge **(FR-3)** had a low geomean of 46 MPN/100 mL, and has remained low since 2009. The Farmington River at Satan's Kingdom **(FR-4),** a popular recreation area for river tubing, has remained low since 2009, with a 2025 geomean of 52 MPN/100 mL.

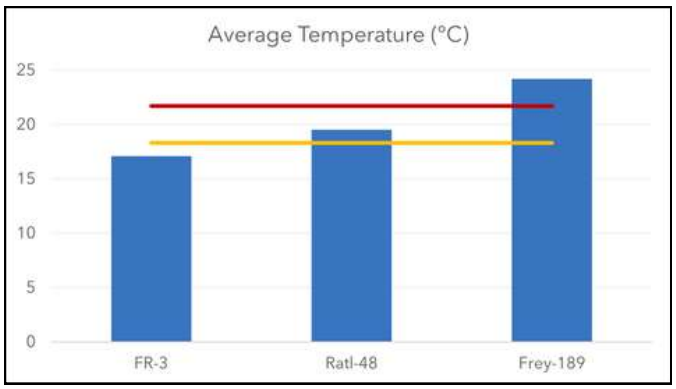


Temperature

The Farmington River **(FR-3)** at Black Bridge is historically cold and remains so in 2025 with a summer average of 17.1°C.

Ratlum Brook **(Ratl-48)** had a summer average of 19.5°C in 2025, and was considered cool for the second year in a row. Ratlum Brook is predicted cold water habitat, but flows through Ski Sundown and receives runoff from the mountain, which is likely resulting in warmer stream temperatures.

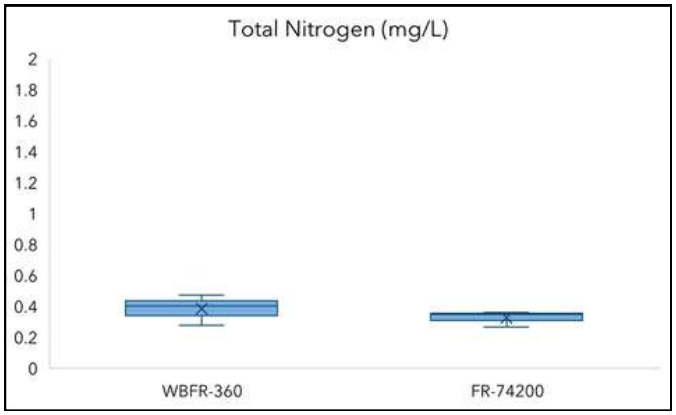
The Unnamed Tributary to the Farmington River **(Frey-189),** which flows through the FRWA Frey Property, had a summer average of 24.2°C, and is the warmest site recorded in the entire watershed in 2025. This tributary is dammed multiple times upstream, and has reduced shade and streamside buffers, resulting in increased temperatures. This stream will be a future restoration effort for FRWA to replant natural shading and buffers along the banks to help reduce temperatures and create a cold water refuge for aquatic life during warm summer months.

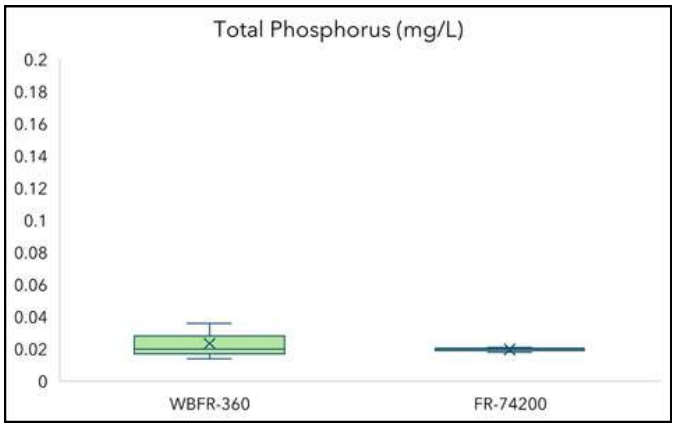


Nutrients

West Branch Farmington River upstream the New Hartford WPCF (**WBFR-360**) had a total nitrogen average of 0.39 mg/L, below the recommended criteria. The total phosphorus average was 0.023 mg/L, below the criteria.

The Farmington River below the New Hartford WPCF **(FR-74200)** had lower nutrients than upstream the WPCF, because of the confluence of the East and West Branches above this sampling site. The total nitrogen average was 0.33 mg/L, and the total phosphorus average was 0.019 mg/L.

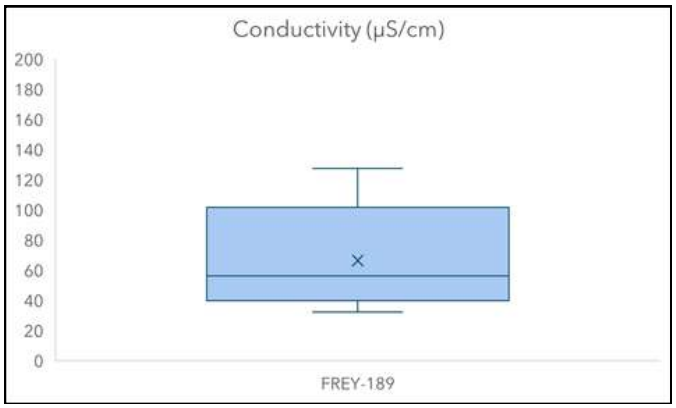


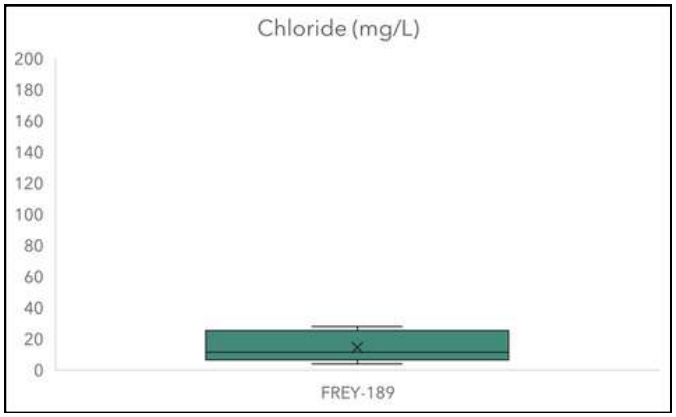


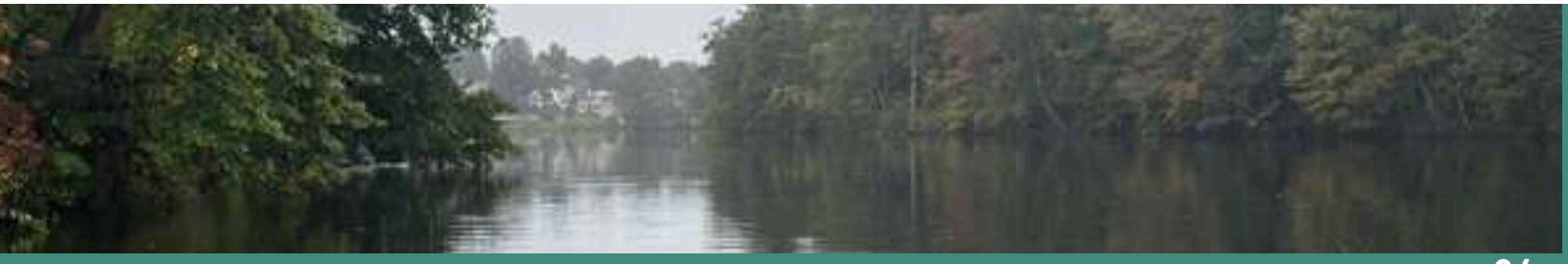
Conductivity & Chloride

The Unnamed Tributary (**Frey-189**) to the Farmington River at FRWA Frey Property continues to have low chloride values considered excellent on average at 19 mg/L. It's upper reach is relatively protected until it runs through a neighborhood and a personal property pond.

Conductivity on average is low and overall is normal for the watershed.



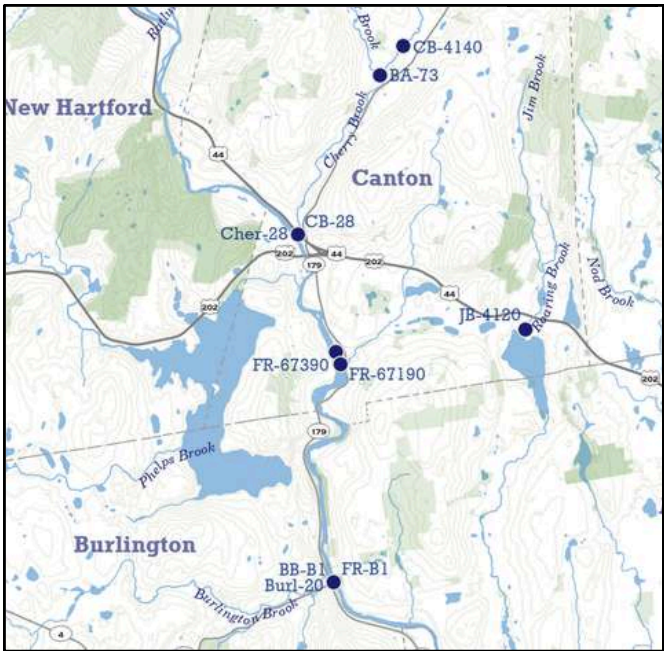




Farmington River, New Hartford

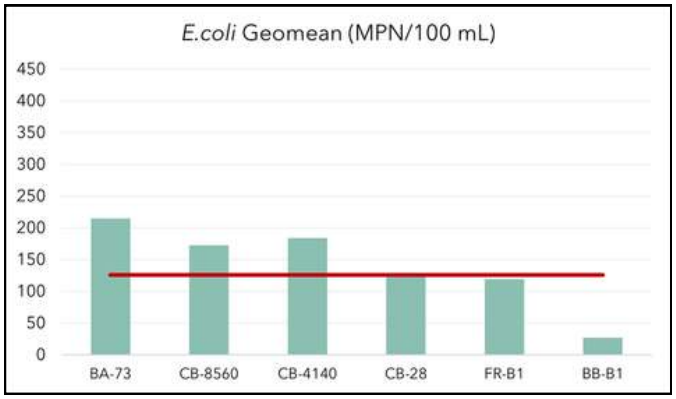
CANTON & BURLINGTON, CT

Four Cherry Brook sites are located at the North Canton Volunteer Fire Department, Meadow Road, Barbourtown Road, along with tributary Barbour Brook, and at the confluence with the river. Cherry Brook is not supporting for recreation due to being impaired for E.coli and subsequently has a TMDL.
Jim Brook is located at The Shoppes at Farmington Valley where increased impervious surfaces are present and drains into Secret Lake.



Bacteria

Cherry Brook at the Canton Volunteer Fire Department **(CB-5680)** remained high in 2025, with a geomean of 172 MPN/100 mL. Cherry Brook on Meadow Rd **(CB-4140)** remained high in 2025 with a geomean of 1834 MPN/100 mL, compared to 231 in 2024 and 1186 MPN/100 mL in 2022. Results from FRWA's 2022 study indicated that agricultural activity around this site was the main contributor to high *E.coli* values here and further downstream. Barbour Brook **(BA-73)**, a tributary to Cherry Brook, had a 2025 geomean of 215 MPN/100 mL, which was higher than the 2024 geomean of 142 MPN/100 mL. Downstream Cherry Brook **(CB-28)**, just above the confluence with the Farmington River, remained low in 2025 with a geomean of 124 MPN/100 mL.



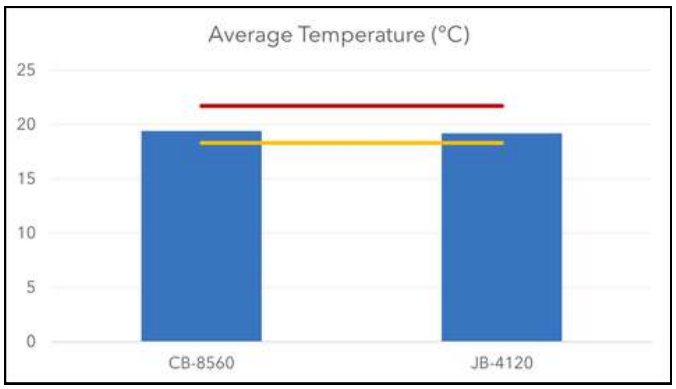
Burlington Brook **(BB-B1)** remained low in 2025 with a geomean of 26.7 MPN/100 mL, and has been below the criteria since 2019.

The Farmington River in Burlington **(FR-B1)** was low in 2025 with a geomean of 119.3 MPN/100 mL, but has increased over the last three years, with 91 MPN/100 mL in 2024, and 85.1 MPN/100 mL in 2023.

Temperature

Cherry Brook **(CB-8650)** was considered cool with an average of 19.4°C. Cherry Brook has remained cool since 2020, when FRWA began to monitor this site, with a running average of 19.7°C.

Jim Brook **(JB-4120)** was cool with a summer average of 19.2°C, compared to the summer 2024 average of 19.3°C. This site is not expected to be cold as it runs through The Shoppes at Farmington Valley and is mostly unshaded downstream Route 44.



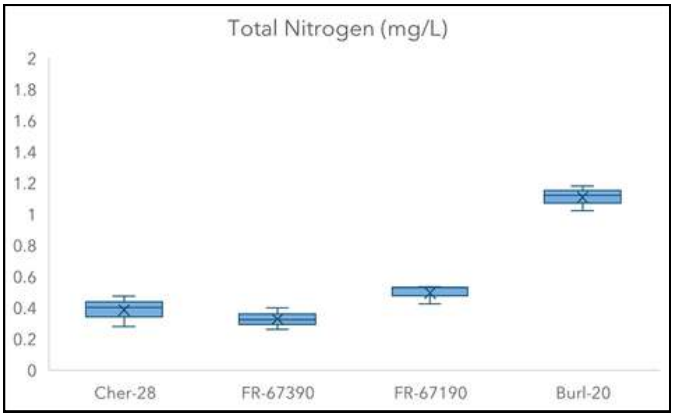
Nutrients

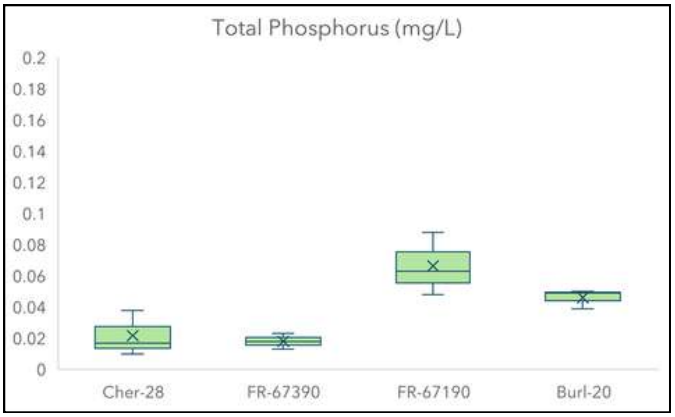
Cherry Brook **(Cher-28)** had a total nitrogen average below the criteria at 0.52 mg/L. The total phosphorus average was 0.021 mg/L, which is below the 0.025 mg/L criteria. Cherry Brook was selected for the cattle farm roughly 4000 meters upstream the confluence.

The Farmington River upstream the Canton WPCF (**FR-67390**) had a total nitrogen average of 0.33 mg/L and a total phosphorus average of 0.018 mg/L. Both of these values are below their respective criterias.

The Farmington River downstream the Canton WPCF (**FR-67190**) had higher nutrient values than upstream. The total nitrogen average was 0.5 mg/L, which is below the criteria. The total phosphorus average was above the criteria with 0.066 mg/L.

Burlington Brook **(Burl-20)** had a total nitrogen average above the criteria with 1.11 mg/L. The total phosphorus average was 0.046, above the recommended criteria. The Burlington State Fish Hatchery feeds into Burlington Brook, which has a constant discharge coming from the stock ponds.

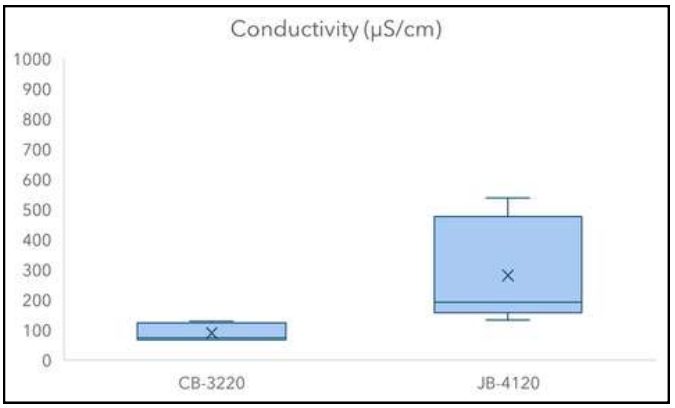


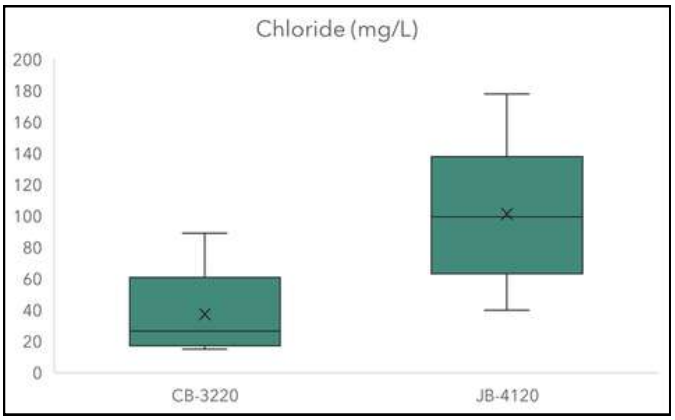


Conductivity & Chloride

Jim Brook **(JB-4120)** chloride increased compared to 2024, with an average of 102 mg/L and a maximum of 178 mg/L. There was an acute condition from Dec 5th - Dec 6th (23 hours) and a high value of 1,658 mg/L. Conductivity averaged 230 uS/cm in 2025 which is higher than last year, and is comparable to other tributaries.

Cherry Brook **(CB-3220)** had a maximum of 89 mg/L, which is higher than 2024 and an average of 39 mg/L. Chloride is not of concern at Cherry Brook. Conductivity average was 94 uS/cm, which is low compared to other tributaries.



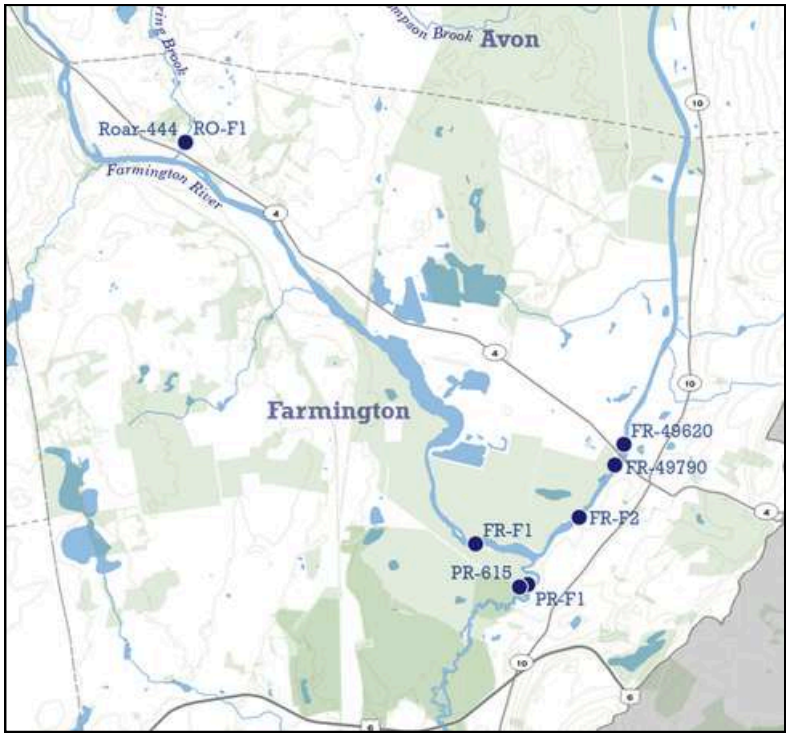


Cherry Brook, Canton

FARMINGTON, CT

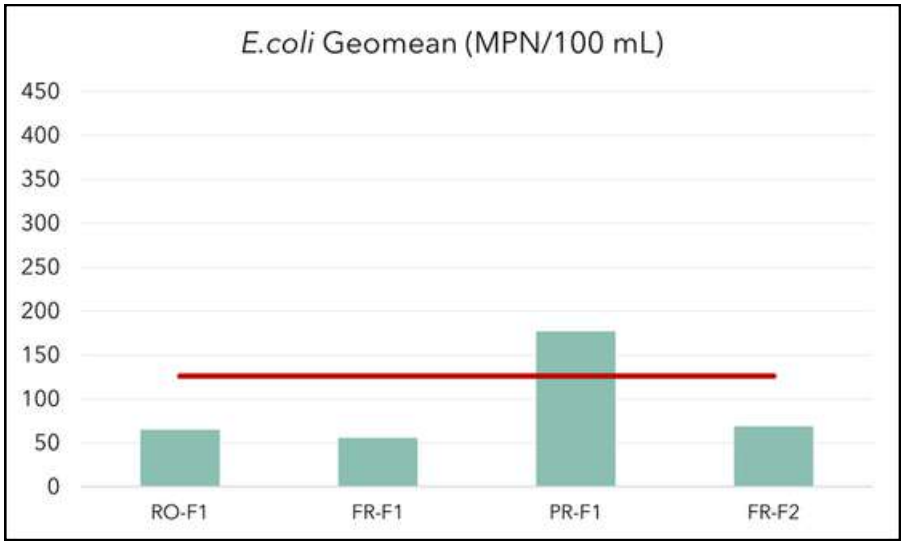
The Farmington River in Burlington and Farmington are in the Lower Farmington River Wild & Scenic designation. Sites in Burlington include tributary Burlington Brook and the Farmington River at the confluence with Burlington Brook.

In Farmington, two locations on the Farmington River are monitored at the Klop Community Gardens and at Miss Porters School, which is upstream and downstream the Pequabuck River's input, a major tributary to the Farmington that flows from Plymouth, Bristol, and Plainville. The Pequabuck River is not supporting for recreation due to being impaired for E.coli and subsequently has a TMDL. Additionally, Roaring Brook is monitored due to a gold course upstream.



Bacteria

Roaring Brook **(RO-F1)** was low in 2025 with a geomean of 65.3 MPN/100 mL, compared to a 2024 geomean of 152 MPN/100 mL. *E.coli* values can vary in Roaring Brook depending on summer weather patterns, but in 2025 it was clean.
The Farmington River in Farmington **(FR-F1)** remained low in 2025 with a geomean of 55.6 MPN/100 mL and similarly the Farmington River downstream the Pequabuck River **(FR-2)** was also low with a geomean of 69 MPN/100 mL. the higher values downstream compared to upstream can be attributed to high *E.coli* inputs from the Pequabuck River.
The Pequabuck River **(PR-F1)** was at its lowest value in FRWA history with a 2025 geomean of 176.9 MPN/100 mL. While still impaired, 2025 was lower than 2007-2024. It flows through urban Bristol, resulting in high bacteria from increased stormwater runoff.

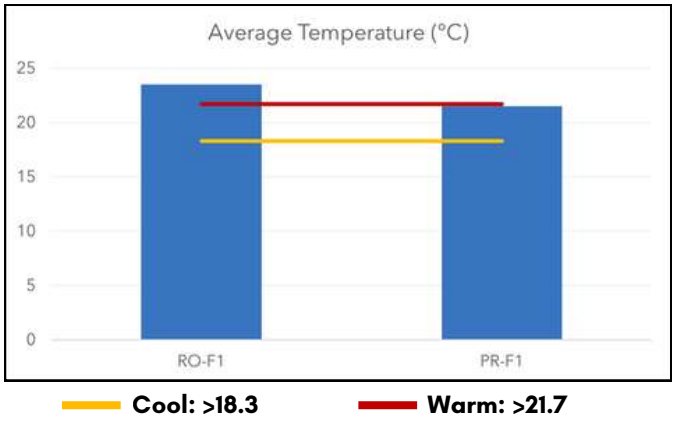


Temperature

The Pequabuck River and Roaring Brook are not predicted cold water habitat for trout and other cold water species.

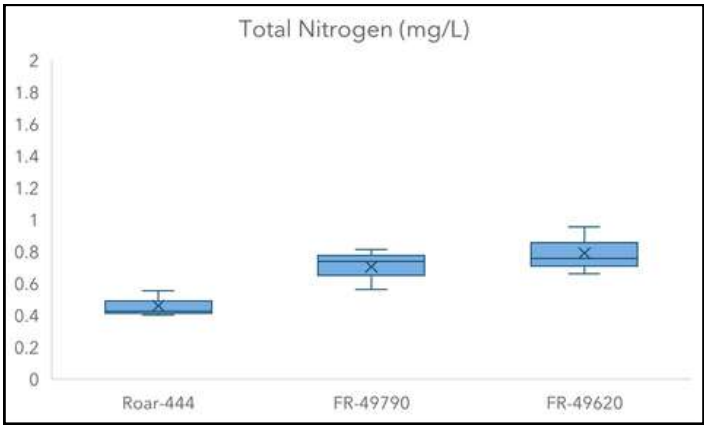
Roaring Brook **(RO-F1)** was warm in 2025 with a summer average of 23.5°C, which is the highest continuous temperature recorded in the lower river watershed. Roaring Brook is dammed multiple times upstream and flows through urban neighborhoods, which can be attributed to warmer stream temperatures.

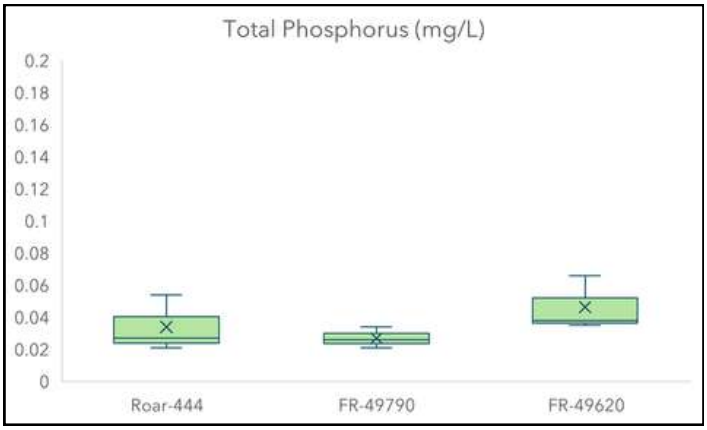
The Pequabuck River **(PR-F1)** was 21.5°C, which is considered cool. This is due to the river flowing through increased impervious surfaces and wetlands prior to this location.



Nutrients

Roaring Brook (**Roar-444**) had an average total nitrogen value of 0.46 mg/L, below the recommended criteria and an average total phosphorus above the criteria at 0.034 mg/L. Roaring Brook is downstream a golf course in Farmington, and receives polluted runoff from fertilizer applications on the course which can increase nutrient input.
The Farmington River upstream the Farmington WPCF **(FR-49790)** had an average total nitrogen value of 0.71 mg/L which is below the criteria while the average total phosphorus value was 0.027 mg/L and is above the criteria. Both parameters increased in the Farmington River downstream the Farmington WPCF **(FR-49620)**, with a total nitrogen average of 0.79 mg/L, and a total phosphorus average of 0.046 mg/L.





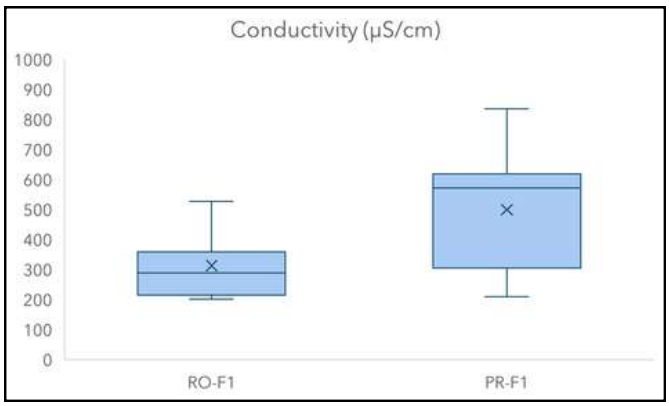
Farmington River, Farmington

Conductivity

Continuous conductivity loggers were deployed in Roaring Brook and the Pequabuck River in fall 2023 due to higher chloride in previous years.

Roaring Brook (**RO-F1**) conductivity average was typical compared to other tributaries at 290 uS/cm, however it did have a minimal increase compared to an average of 224 uS/cm in 2024. The maximum in 2025 was 528 uS/cm, which is considered high for this site.

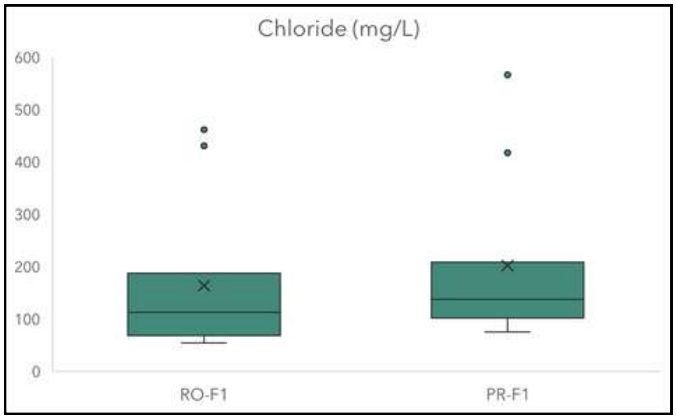
The Pequabuck River (**PR-F1**) conductivity increased with a 2025 average of 476 uS/cm compared to 286 uS/cm in 2024. The maximum was 836 uS/cm, which is the highest FRWA has recorded at this site, and reflects the increasing chloride in the Pequabuck River and road salt applications.



Chloride

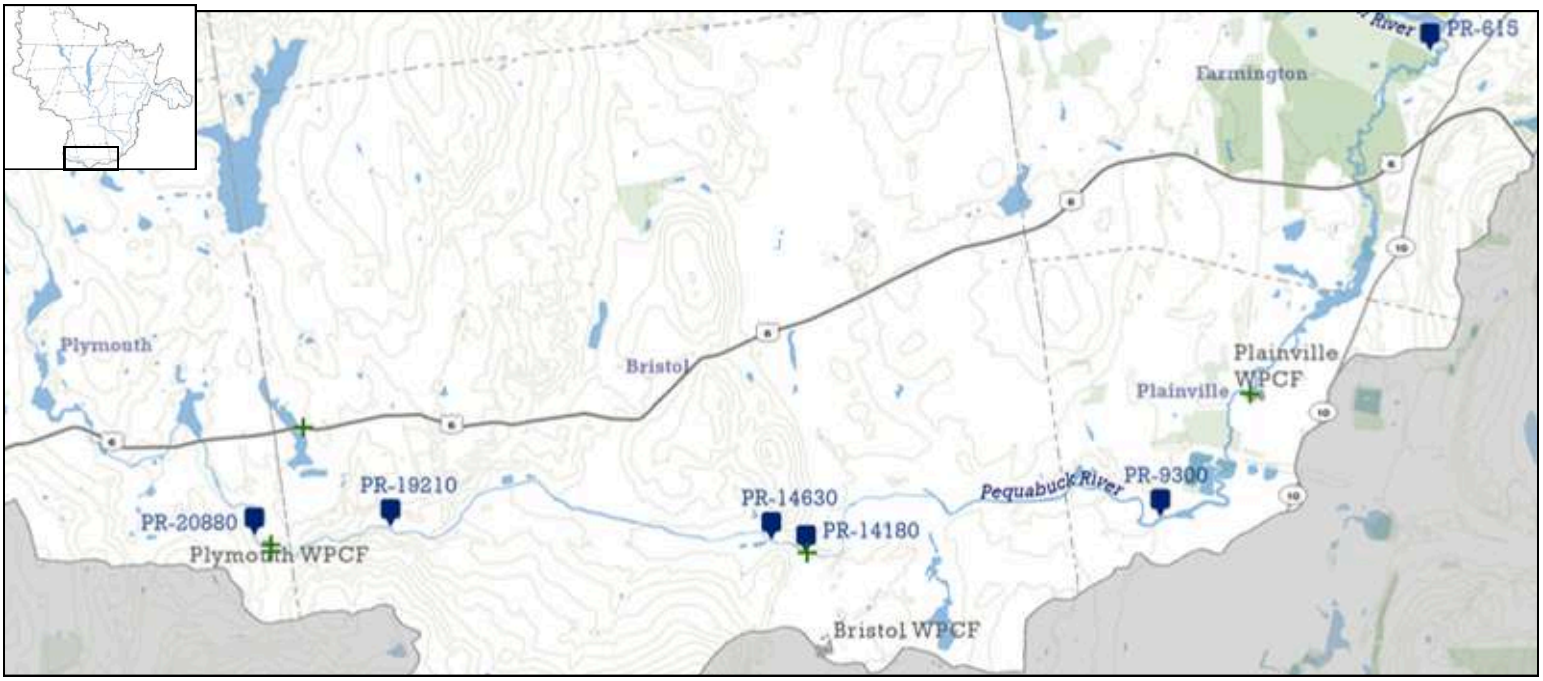
Roaring Brook (**RO-F1**) experienced one acute and one chronic condition in 2025. The 2025 average was 148 mg/L, and the maximum was 462 mg/L, which is a significant increase from 2024, which averaged 69 mg/L. Roaring Brook had one acute condition on Feb 17th with a high of 1,067 mg/L and one chronic condition from Feb 17th - Feb 21st with a four day average of 433mg/L.

The Pequabuck River (**PR-F1**) chloride significantly increased in 2025, with an average of 212 mg/L compared to 96 mg/L in 2024. The maximum was 567 mg/L in 2025, an increase from 174 in 2024. It also experienced 2 acute conditions and 2 chronic conditions in 2025 during January and February months with the longest chronic condition being 19 days from Feb 7th to Feb 26th with an average of 515 mg/L. Acute conditions were longer than other locations and occurred on from Jan 25th- Jan 27th (2 days) with a high of 1,004 mg/L, and Feb 18th - Feb 20th (2 days) with a high of 953 mg/L.



Pequabuck River, Plymouth

BRISTOL, CT



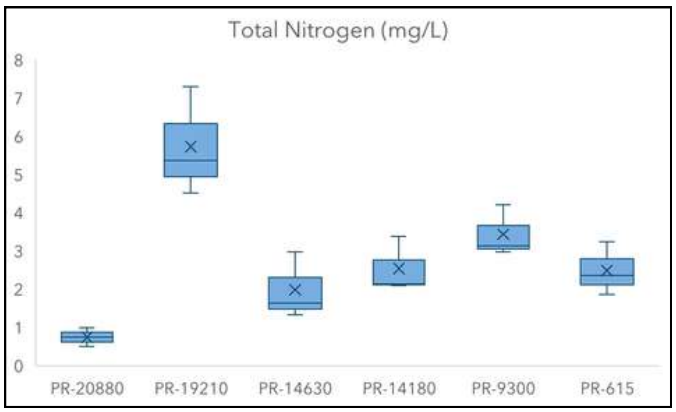
The Pequabuck River originates in Litchfield County and flows for 19 miles before draining into the Farmington River in Farmington, Connecticut. It has a 58 square mile watershed, made up of three subregional basins. Bristol, Burlington, Farmington, Harwinton, Plainville, Plymouth, and Wolcott are municipalities within the watershed which lie within Hartford, Litchfield, and New Haven counties. The headwaters originate in a rural landscape then flow into urbanized areas, such as downtown Bristol, where impervious surfaces have a high percent land use. The water pollution treatment facilities (WPCFs) are located on the Pequabuck River in Plymouth, Bristol, and Plainville.

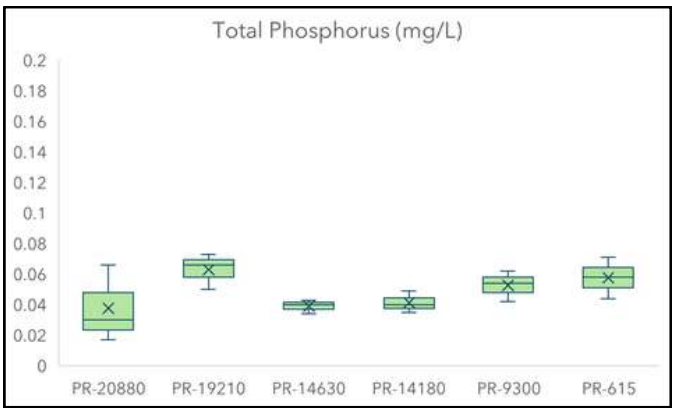
Nutrients

Nutrients were monitored upstream and downstream three WPCFs on the Pequabuck River in Plymouth, Bristol, and Plainville, to understand nutrient output from each point source.

Upstream the Plymouth WPCF **(PR-20880)**, total nitrogen was was below the criteria of 1 mg/L. The five remaining sites all had total nitrogen above the criteria, and downstream the Plymouth WPCF **(PR-19210)** had the highest total nitrogen with an average of 5.73 mg/L, and a single sample reached 7.3 mg/L.

All sites on the Pequabuck River were above the recommended criteria for total phosphorus, which is 0.025 mg/L. Downstream the Plymouth WPCF (**PR-19210)** was the highest with an average of 0.063 mg/L.



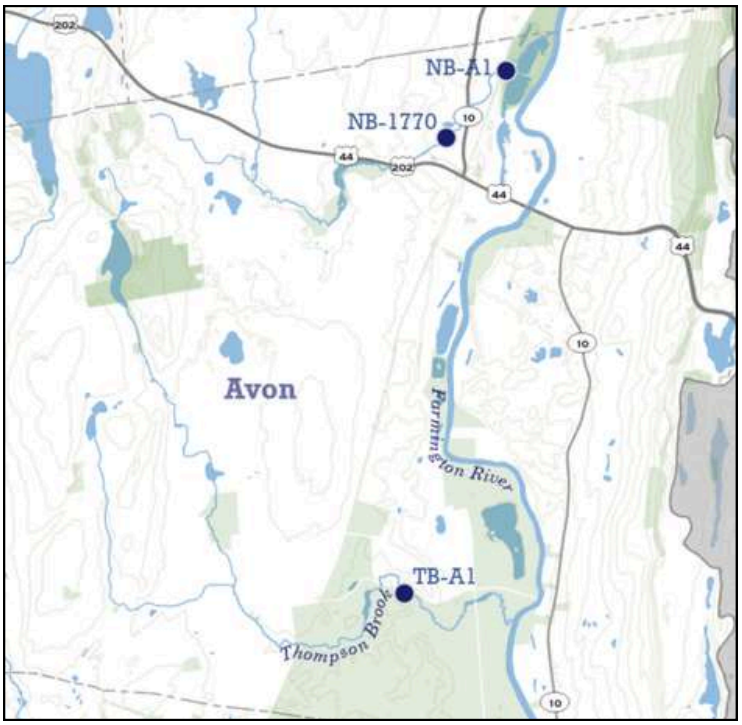


AVON, CT

Avon tributaries include Thompson Brook and Nod Brook. Nod Brook flows along Rt 44 where there is more development and impervious surfaces. Nod Brook on Ensign Dr. was monitored for temperature, conductivity, and chloride, and Nod Brook at the Wildlife Management Area has been a long-term bacteria location.

Nod Brook and Thompson Brook are not supporting for recreation due to being impaired for *E.coli* and subsequently have TMDLs.

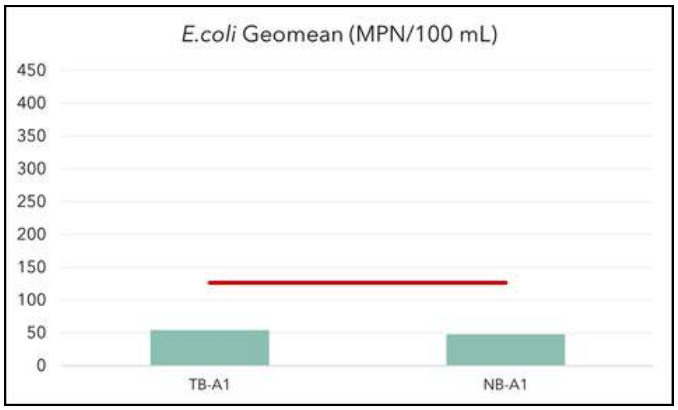
The Farmington River is not monitored in Avon.



Bacteria

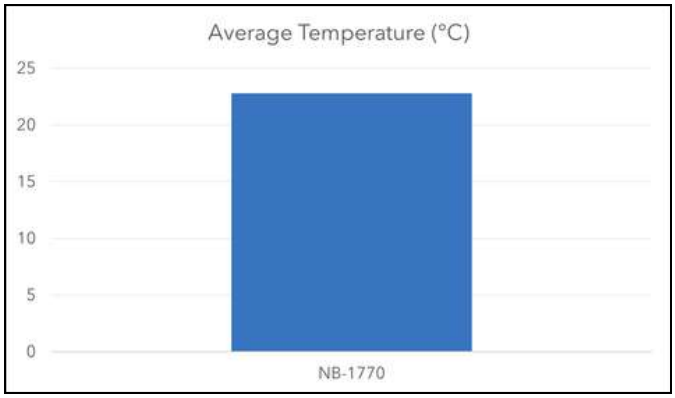
Thompson Brook **(TB-A1)** flows through Fisher Meadows, a 250 acre recreation area, and lends to low bacteria levels with little urban development surrounding it before it enters the Farmington River. *E.coli* remains low with a 2025 geomean of 54.2 MPN/100 mL, compared to 103 MPN/100 mL in 2024.

Nod Brook **(NB-A1)** had a 2025 geomean of 48.1 MPN/100 mL, compared to 158 MPN/100 mL in 2024. *E.coli* can vary in Nod Brook depending on precipitation during summer months, as it flows through developed areas with increased impervious surfaces.



Temperature

FRWA currently has one conductivity logger in Nod Brook in 2025, which also records water temperature. Nod Brook **(NB-1770)** was considered warm with an average summer temperature of 22.8°C. The warm temps are due to heavier urban development in the downstream reach of Nod Brook and less shaded buffers. Nod Brook is not considered a predicted cold water habitat for aquatic species.



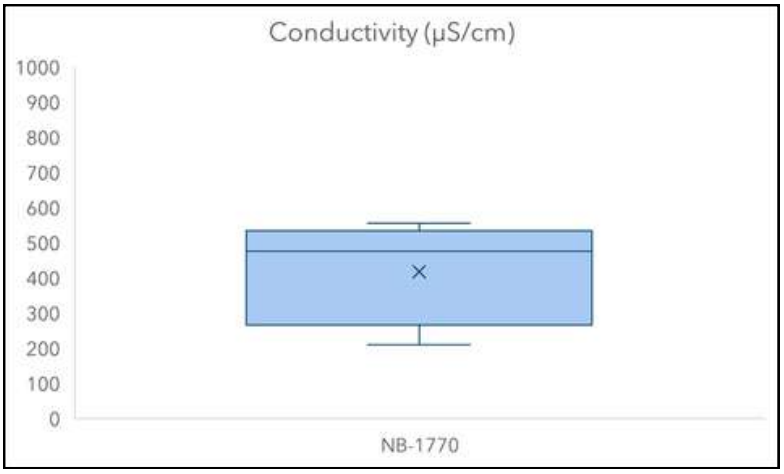
Conductivity

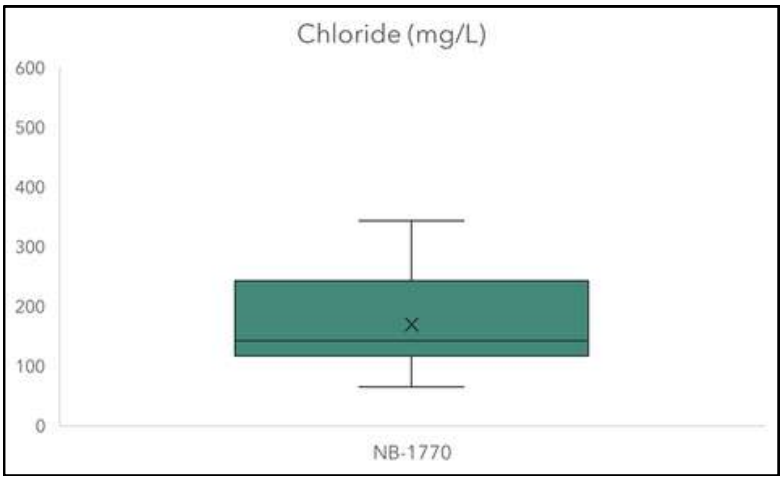
Nod Brook at Ensign Dr. (**NB-1770)** had an average of 385 uS/cm which is higher than last year at 326 uS/cm, and a maximum of 544 uS/cm in 2025.

Chloride

Nod Brook **(NB-1770)** had an average of 192 mg/L, which increased from the 2024 average of 127 mg/L. The 2025 maximum was 344 mg/L, compared to the 2024 maximum of 241 mg/L. Nod Brook had one chronic condition in 2025 from February 15th to February 28th (4 days) with a four day average of 460 mg/L.

If you are interested in these high values in more depth please read our 2025 Lower Farmington River Conductivity Report at FRWA.org/resources.



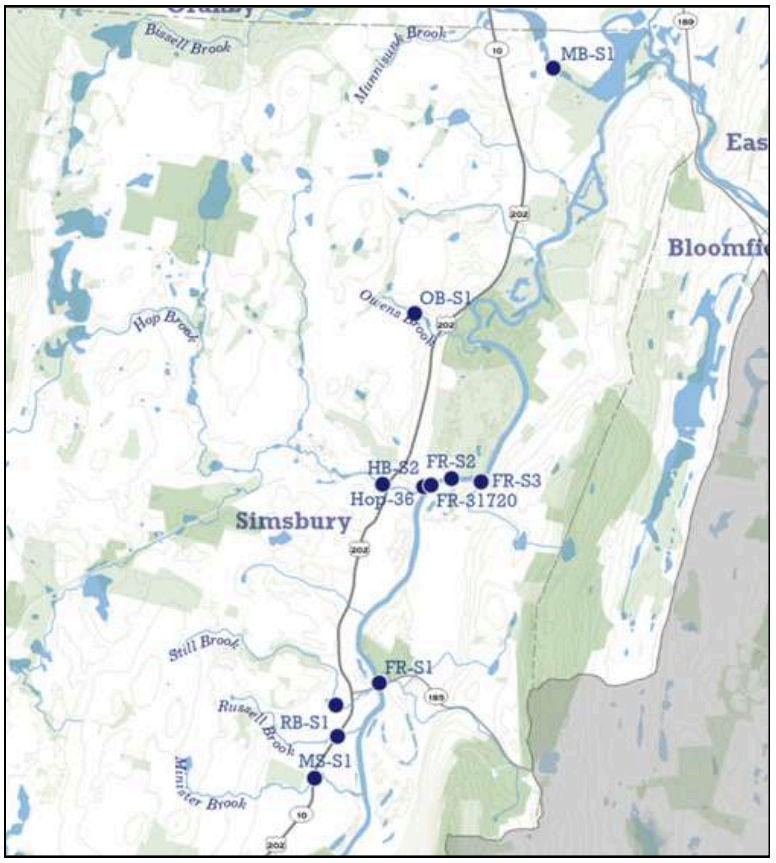


Farmington River, Avon

SIMSBURY, CT

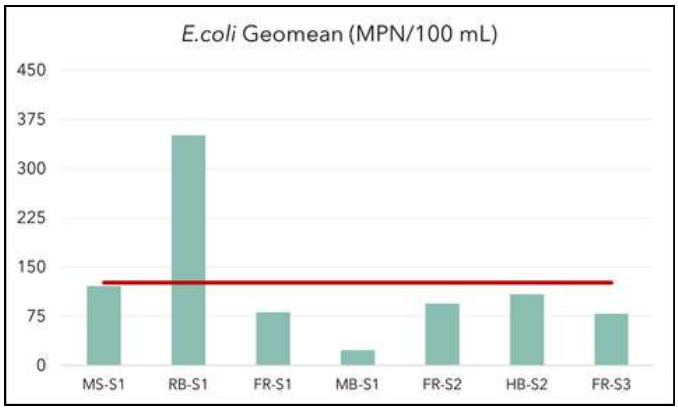
Farmington River sites in Simsbury along the Lower River Wild & Scenic designation include the Pinchot Sycamore, before the Simsbury Water Pollution Control Authority (WPCA) discharge and after at the boat launch.

Tributaries monitored in Simsbury include Minister Brook, Russell Brook, Still Brook, Hop Brook, Owens Brook, and Munnisunk Brook.



Bacteria

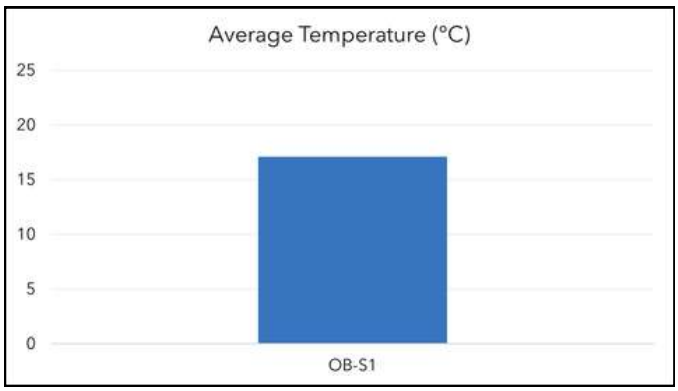
Minister Brook **(MS-S1)** was low for the first time since 2017, with a geomean of 120.8 MPN/100 mL. Russell Brook **(RB-S1)** remained high in 2025 with a geomean of 351 MPN/100 mL. Hop Brook **(HB-S2)** was low in 2025 with a geomean of 108.4 MPN/100 mL, a large decrease from the 2024 geomean of 190 MPN/100 mL. These sites have previously varied in *E.coli* levels due to changes in summer weather patterns. Munnisunk Brook **(MB-S1)** was low again in 2025 with a geomean of 23.4 MPN/100 mL.



The Farmington River *E.coli* levels can vary depending on precipitation events that occur during summer months. The Farmington River at the Pinchot Sycamore **(FR-S1)** was below the criteria in 2025 with a geomean of 81.5 MPN/100 mL, compared to 131 MPN/100 mL in 2024 which was high. The Farmington River downstream (**FR-S2 and FR-S3**) remained low with geomeans of 94.6 and 78.9 MPN/100 mL respectively. The small decrease in *E.coli* between FR-S2 and FR-S3 are most likely due to clean inputs from the WPCF.

Temperature

Owens Brook **(OB-S1)** was considered cold with a summer average of 17.1°C, slightly higher than 2024 which had an average of 16.8°C. The stream is just over a mile long and runs through a small neighborhood before entering the Farmington River. Owens Brook is a predicted cold water habitat for sensitive species.

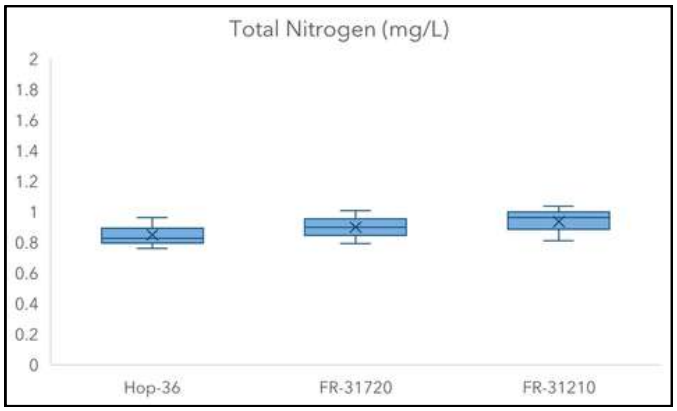


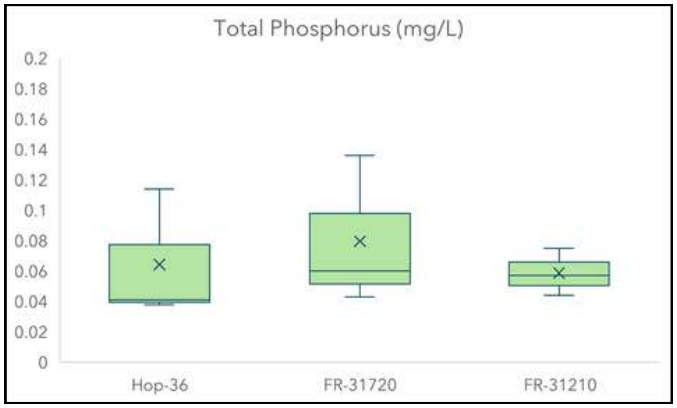
Nutrients

Hop Brook (**Hop-36**) had an average total nitrogen value of 0.85 mg/L, which is below the criteria. The average total phosphorus value was 0.064 mg/L, which is more than double the criteria. This is most likely due to the golf course upstream.

The Farmington River (**FR-31720**) upstream the Simsbury WPCF had an average TN value of 0.9 mg/L, below the criteria, while the average TP value was 0.08 mg/L, with a single sample increasing to 0.136 mg/L which was over 5 times greater than the recommended criteria.

The Farmington River **(FR-31210)** downstream the Simsbury WPCF had an average TN of 0.94, which is below the criteria, while the TP average was 0.059 mg/L and above the criteria. While not present in the graph, total nitrogen loading in the Farmington River reached 848 kg/day, which was the highest recorded in the watershed and most likely due to accumulation in the downstream watershed.



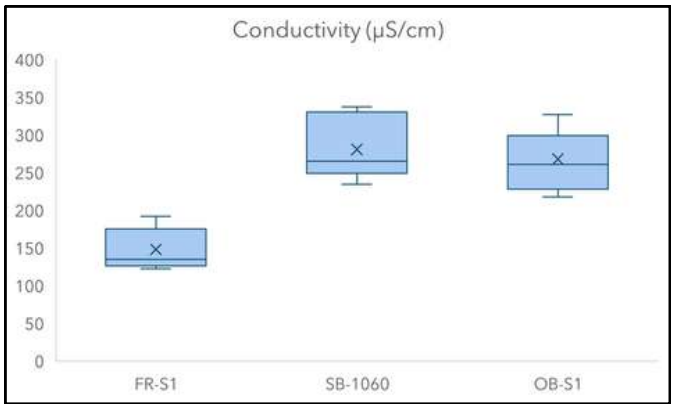


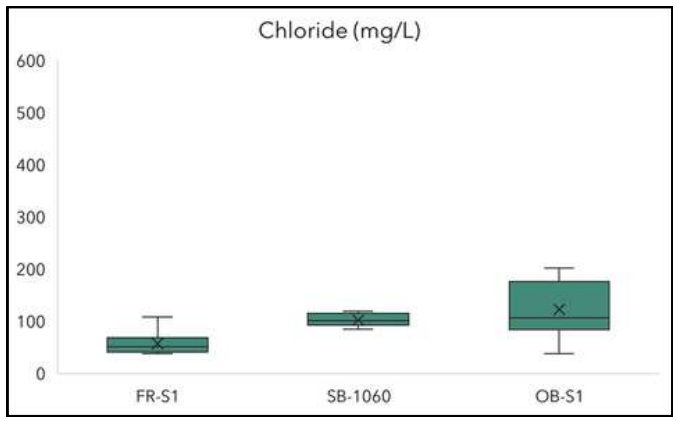
Chloride & Conductivity

The Farmington River **(FR-S1)** increased in 2025 with an average of 58 mg/L and a maximum of 108 mg/L. While these values are still considered low, it sis an increase compared to previous years and compared to other locations which also increased, shows impacts and accumulation from road salt applications during winter months. Despite higher chloride values, conductivity was normal with an average of 151 uS/cm.

Still Brook **(SB-1060)** had a lower maximum in 2025 at 119 mg/L, however the average increased to 103 mg/L from 85 mg/L in 2024. Similarly, the conductivity average increased to 281 uS/cm compared to 246 uS/cm in 2024 most likely associated with the higher maximum.

Owens Brook **(OB-S1)** worsened significantly in 2025 with an average of 112 mg/L compared to 57 mg/L in 2024, and a maximum of 179 mg/L. Additionally, Owens Brook had one acute toxicity condition on Feb 27th (6 hours) with a high of 1474 mg/L and one chronic toxicity condition from Feb 24th to Feb 28th (4 days) with an average of 368 mg/L.



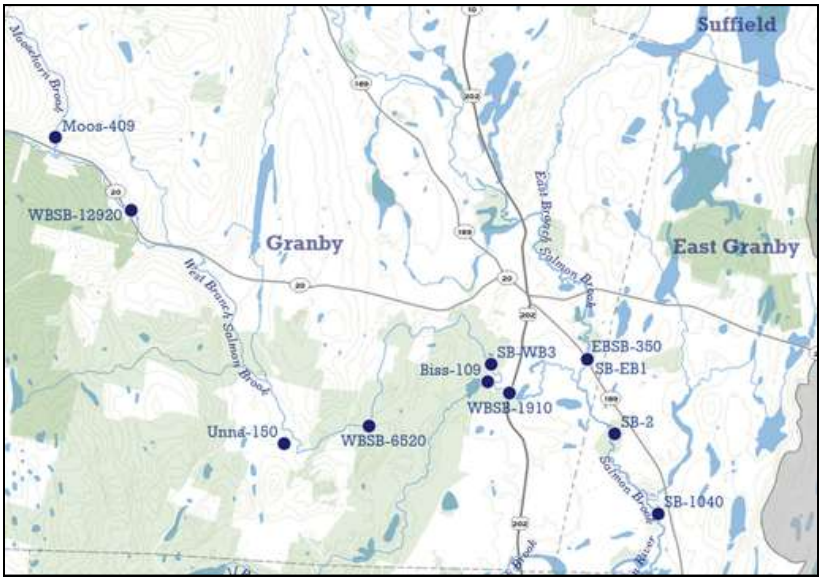


Farmington River, Simsbury

GRANBY & EAST GRANBY, CT

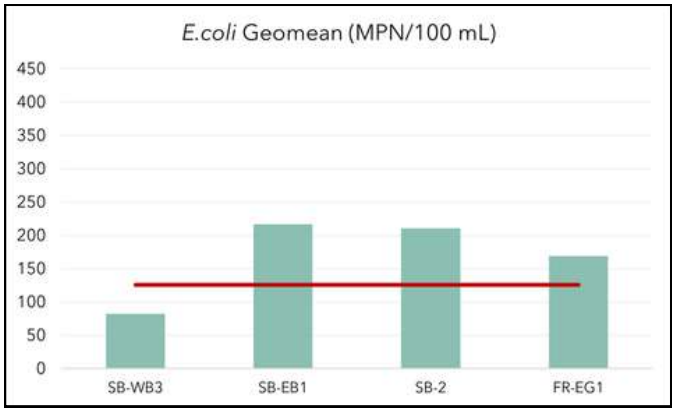
Salmon Brook, including mainstem, West and East Branch, total 26.4 miles and are designated Wild & Scenic. West Branch Salmon Brook originates in Hartland and flows through Granby with abundant forests and protected lands, including McLean Game refuge, resulting in colder water, and lower *E.coli* and chloride values. The West Branch of Salmon Brook is not supporting for recreation due to being impaired for *E.coli* and subsequently has a TMDL.

Moosehorn Brook, Unnamed Tributary, and Bissell Brook are tributaries to the West Branch Salmon Brook, all of which flow through forests and protected lands.



Bacteria

West Branch Salmon Brook **(SB-WB3)** remained low in 2025 with a geomean of 82.3 MPN/100 mL, which is the lowest its been in FRWA history. East Branch Salmon Brook **(SB-EB1)** has had impaired values since 2008, and remains impaired in 2025 with a geomean of 216.8 MPN/100 mL. Salmon Brook (**SB-2)** has been impaired since 2011 when FRWA began monitoring it, and continues to be impaired in 2025 with a geomean of 210.8 MPN/100 mL. The Farmington River (**FR-EG1)** was high in 2025 with a geomean of 169.4 MPN/100 mL.

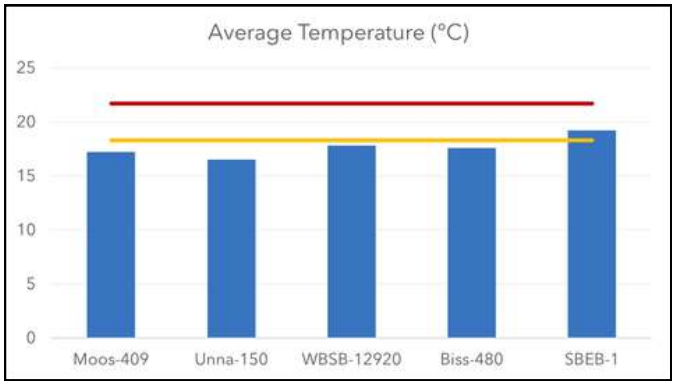


Temperature

Moosehorn Brook (**Moos-409**), West Branch Salmon Brook (**WBSB-12920**), and Unnamed Tributary to West Branch Salmon Brook (**Unna-150**) all remained cold as in previous years with averages of 17.2°C, 17.8°C, and 16.5°C, respectively.

Bissell Brook **(Biss-480)** is monitored downstream Trout Pond in McLean Game Refuge. Despite being dammed, it remained cold in 2025 with an average temperature of 17.6°C, most likely due to running through forested lands prior to the impoundment.

East Branch Salmon Brook (**SB-EB1)** was added as a new temperature site in 2025 and had a summer average of 19.2°C which is considered cool.



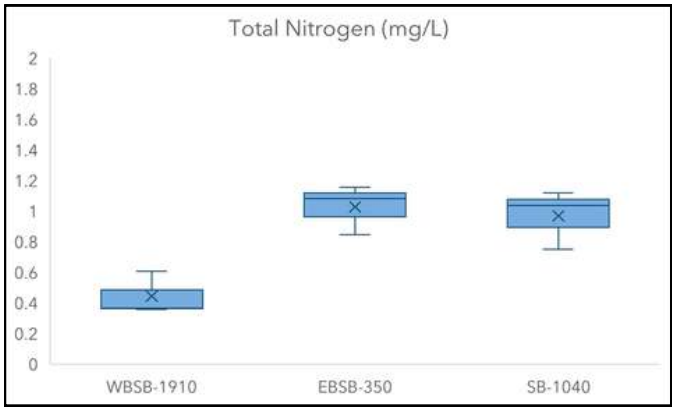
Nutrients

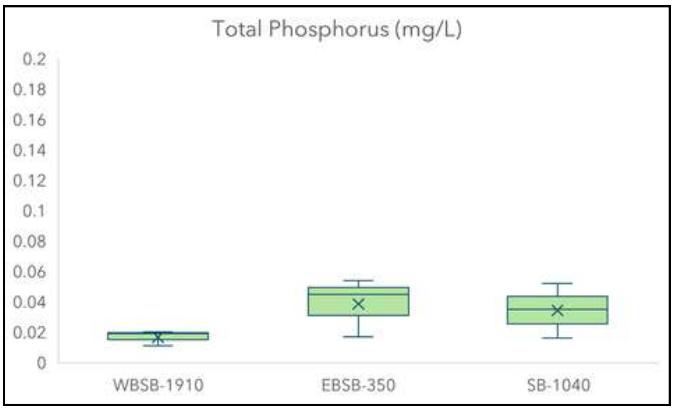
The Salmon Brook Watershed was included in the FRWA 2025 watershed nutrient study for the high agricultural land use surrounding the streams.

West Branch Salmon Brook **(WBSB-1910)** had the lowest total nitrogen and total phosphorus of the three branches. The total nitrogen average was 0.45 mg/L, below the 1 mg/L criteria, and the total phosphorus average was 0.017 mg/L, below the 0.025 mg/L criteria.

East Branch Salmon Brook **(EBSB-5430)** had a total nitrogen average of 1.03 mg/L which was above the criteria, and reached a high of 1.16 mg/L. The total phosphorus average was 0.039 mg/L, above the criteria, and reached a high of 0.054 mg/L. East Branch had the highest values of the three branches, most likely due to more agricultural lands.

Salmon Brook mainstem **(SB-2)** had a total nitrogen average of 0.97 mg/L, but reached up to 1.12 mg/L, which is above the 1 mg/L criteria. The total phosphorus average was 0.034 mg/L, above the criteria. This results in high nutrient inputs in to the Farmington River.



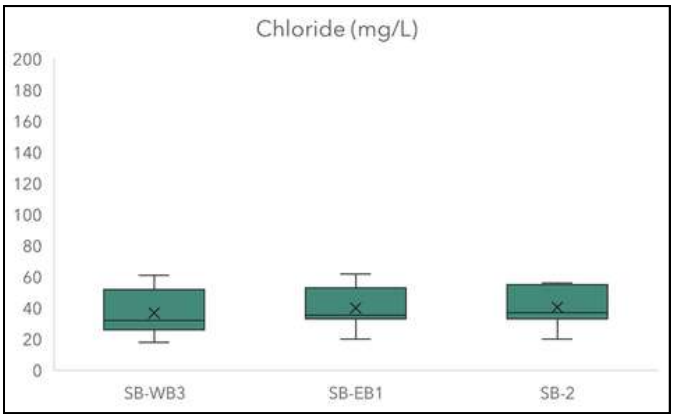


Chloride

The Salmon Brook watershed has had very low chloride values since FRWA began monitoring in 2021. Salmon Brook watershed has the lowest recorded chloride values in tributaries in the Lower Farmington River Watershed, however slight increases were observed in 2025.

There were minimal changes in the Salmon Brook watershed for chloride, but during winter months, the West Branch Salmon Brook **(SB-WB3)** and East Branch Salmon Brook (EBSB-5430) had higher chloride values than previous years. Thankfully, the highest was 62 mg/L which is still considered low for the watershed.

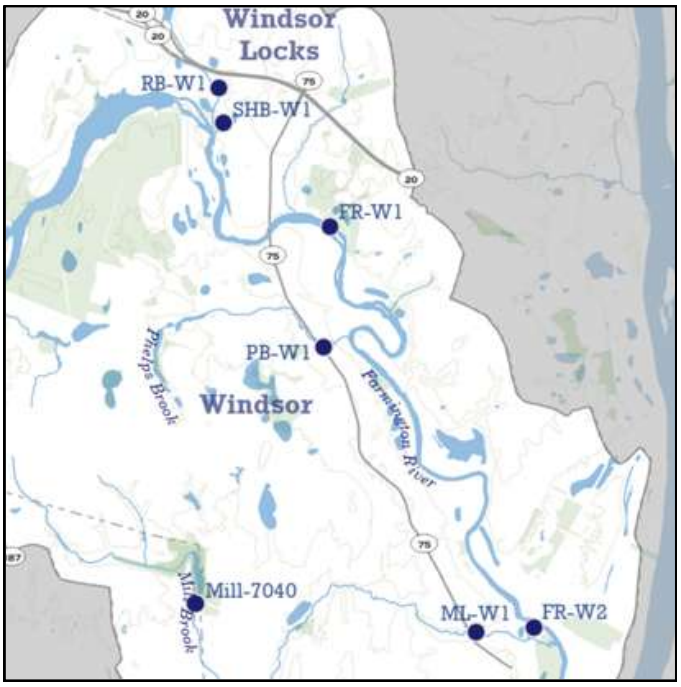
The West Branch Salmon Brook **(SB-WB3)** had the lowest chloride of all branches in 2025 with an average of 36 mg/L, the East Branch Salmon Brook **(EBSB-5430)** had an average of 47 mg/L, compared to 29 mg/L in 2024, and the Salmon Brook mainstem **(SB-2)** had an average of 40 mg/L.



East Branch Salmon Brook, East Granby

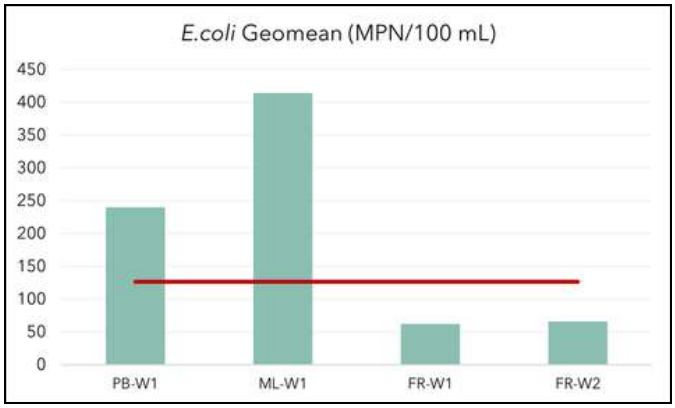
BLOOMFIELD & WINDSOR, CT

There are two sites on the Farmington River, one at Strawberry Hills Open Space which is downstream the Metropolitan District Commission Waste Water Treatment Plant (WWTP), and at the boat launch near Bart's Restaurant and the Farmington River Railroad Bridge. Tributaries monitored in Windsor include Phelps Brook, Rainbow Brook, Seymour Hollow Brook, and Mill Brook. Windsor has increased impervious surfaces, and therefore increased stormwater runoff. Rainbow Brook and Seymour Hollow Brook are monitored for chloride as they flow from Bradley Airport and Rt. 75 and which makes them more susceptible to higher chloride values. Mill Brook is not supporting for recreation due to being impaired for *E.coli* and Rainbow Brook is not supporting for habitat for fish, other aquatic life and wildlife. Subsequently, they both have TMDLs.



Bacteria

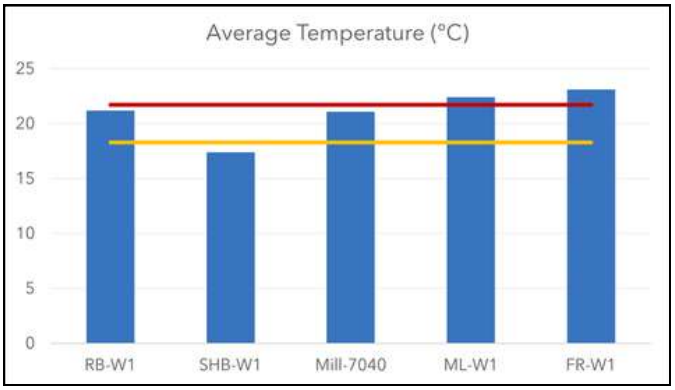
Phelps Brook **(PB-W1)** continued to trend toward higher *E.coli* values in 2025 with a geomean of 240 MPN/100 mL, the highest since 2018. Mill Brook **(ML-W1)** remains high in 2025 with a geomean of 414 MPN/100 mL. Mill Brook is surrounded by impervious surfaces, as it flows under Rt. 91 and through heavily urbanized areas, likely causing high *E.coli* levels. The Farmington River **(FR-W1)** at the Strawberry Hills Open Space and at the Windsor Boat Launch (**FR-W2**) remain clean in 2025, with a geomean of 62 and 66 MPN/100 mL, respectively.



Temperature

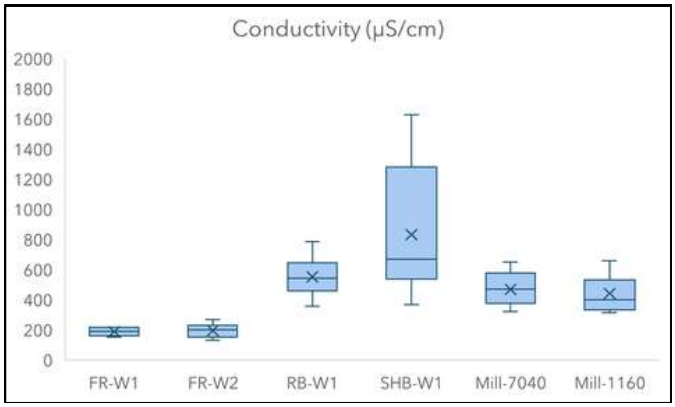
It is important to note that these sites are not predicted cold water habitat for sensitive species.

Rainbow Brook **(RB-W1)** was considered cool in 2025 with a summer average of 21.2°C, which is lower than the 2024 average of 22, which was warm. Seymour Hollow Brook (**SHB-W1)** was cold in 2025, with a summer average of 17.4, and is the only cold FRWA site in Windsor. Mill Brook (**Mill-7040)** is located downstream of Barber Pond in Bloomfield, as was added as an additional conductivity logger site in 2025. The summer average was 21.1°C, which is considered cool, while downstream Mill Brook **(ML-W1)** had a summer average of 22.4°C, which is considered warm. The Farmington River (**FR-W1)** at Strawberry Hills was considered warm with a summer average of 22.4°C. All of the FRWA sites in Windsor flow through areas of heavy urban development, which is likely resulting in warmer temperatures.



Conductivity

While Rainbow Brook (**RB-W1**) remains consistently high year-round most likely associated with high chloride and groundwater pollution.

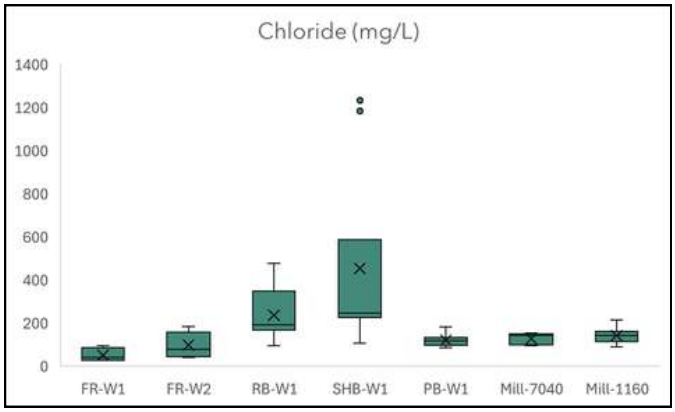


Seymour Hollow Brook (**SHB-W1**), which shares a confluence to the Farmington River with Rainbow Brook, was the highest for conductivity compared the the rest of the watershed. This is associated with chloride pollution as they are correlated.

Mill Brook upstream (**Mill-7040**) had higher conductivity most likely associated with the heavily eutrophic Barber Pond, and similarly, downstream Mill Brook (**Mill-1160**) continued to have high conductivity. The difference between these two sites is that upstream was only monitored during summer months, and downstream was monitored year round.

Chloride

Phelps Brook (**PB-W1**) had increases in 2025 with a maximum of 182 mg/L compared to 137 mg/L in 2024. It averaged 122.5 mg/L, which is elevated compared to the 2024 average, 90 mg/L, and was considered okay.



Rainbow Brook **(RB-W1)** had an average of 250 mg/L and a maximum of 476 mg/L. Chloride values increased since 2024, from an average of 215 mg/L and a maximum of 360 mg/L. While meter data showed increases over the winter, the conductivity logger failed and all winter data was lost, meaning that calculations could not be done for conditions and values may have reached higher levels than what was recorded by staff.

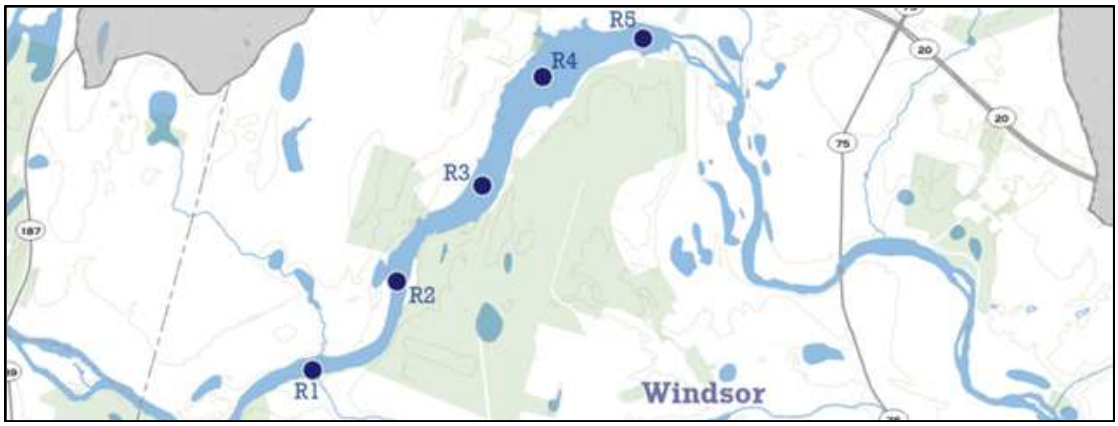
Mill Brook (**Mill-7040**) upstream was added for 2025 and had an average of 141 mg/L, and a maximum of 152 mg/L. Mill Brook (**Mill-1160**) downstream was higher with an average of 253 mg/L and a maximum of 619 mg/L. From logger calculations, it had 3 chronic conditions, and 6 acute conditions during Dec-Feb, with the highest value being 3,405 mg/L.

Seymour Hollow Brook (**SHB-W1**) had the highest average at 444 mg/L and maximum of 1,246 mg/L compared to other sites in the watershed. Additionally, from logger calculations it had 3 instances of chronic toxicity in Dec and Feb, and 12 instances of acute toxicity from Dec-Feb, with the highest value being 8,659 mg/L.

The Farmington River (**FR-W1 and FR-W2**) had average chloride throughout the year, but at FR-W2 there were increases in February to 180 mg/L which was associated with road salt applications and most likely accumulation from being the most downstream site.

Farmington River, Windsor

RAINBOW RESERVOIR, WINDSOR, CT

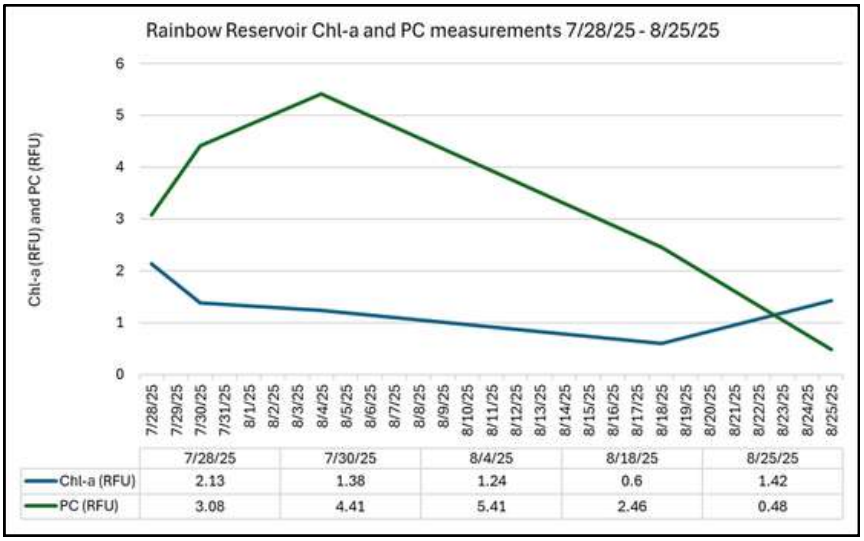


On July 23rd FRWA staff were present at Camp Shalom on Rainbow Reservoir and noticed the water was slightly green.

Staff returned to Camp Shalom on July 28th to find the reservoir was bright green. A multiparameter meter measuring turbidity, conductivity, temperature, chlorophyll (Chl-a), and phycocyanin (PC) was used along the shore. Chlorophyll and phycocyanin are used as indicators of a cyanobacteria bloom, in particular when phycocyanin is higher than chlorophyll. Chl-a measured at 2.13 RFU and PC at 3.08 which indicates an active cyanobacteria bloom (Figure 14).

On July 30th, staff performed a full lake sampling at 5 sites along the reservoir (and additional meter measurements at R2.5), from inlet to dam. Visibly, the reservoir had thick shore scum and streaking. The top meter of the reservoir had PC higher than Chl-a indicating an active bloom from Camp Shalom to the dam. Additionally, within the upper meter of the water column temperature was high and dissolved oxygen was low.

Staff checked the shore with the multiparameter meter on August 4th, 18th, and 25th, and a visual only check on the 13th. The bloom persisted in color and higher in PC until the staff check on August 25th, where PC had decreased significantly and clarity improved, confirming the cyanobacteria bloom was no longer active.



	7/28/25	7/30/25	8/4/25	8/18/25	8/25/25
Chl-a (RFU)	2.13	1.38	1.24	0.6	1.42
PC (RFU)	3.08	4.41	5.41	2.46	0.48

Figure 14: Chlorophyll and Phycocyanin RFU 7/28/25 - 8/25/25

7/23/25

7/28/25

7/30/25

8/4/25

8/18/25

8/25/25

Multiparameter meter measurements were taken during lake sampling on 7/30 at five sites on Rainbow Reservoir.

Turbidity was highly variable and highest in the upper waters from stations R2-R4, leading to declining and generally low water clarity.

Chlorophyll and phycocyanin were low at station R1, but phycocyanin increased beyond chlorophyll at stations R2.5-R4.

Secchi depths were relatively low at stations R2-R5.

Thermal gradients showed high temperatures and low dissolved oxygen, especially in the top meter at stations R2, R2.5, and R5 (Figure 15).

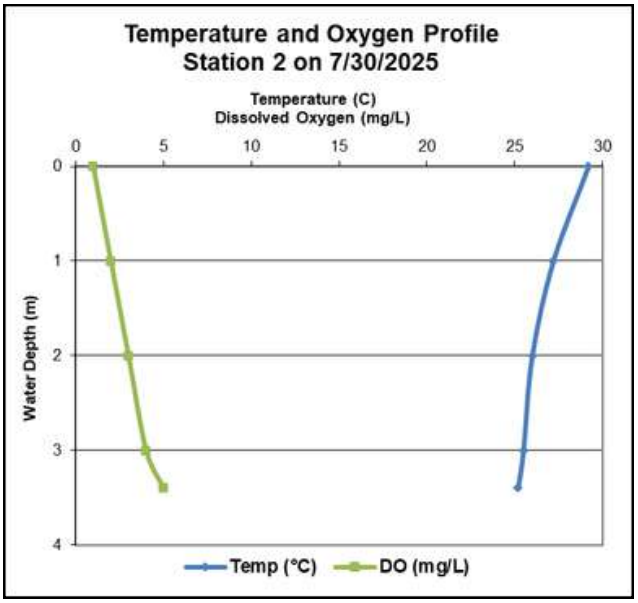


Figure 15: Thermal Oxygen Profile at Station 2 on 7/30/25

Thermal oxygen regimes are good indicators of cyanobacteria blooms, besides chlorophyll and phycocyanin, as they show the state of the reservoir. Slow moving, warm waters provide habitat for cyanobacteria to bloom, and since we know nutrient inputs are higher during low flow, we can then see that dissolved oxygen decreases due to a cyanobacteria bloom.

Total nitrogen and total phosphorus inputs were calculated based on the flows into Rainbow Reservoir on the sampling date (Figure 22). The corresponding total nitrogen concentration at station 1 had a daily load to the reservoir of 728 kg/day. The corresponding total phosphorus concentration at station 1 had a daily load to the reservoir of 59 kg/day.

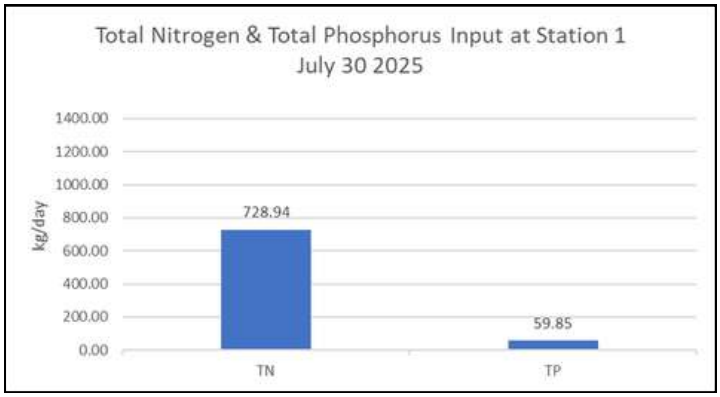


Figure 22: Total Nitrogen and Total Phosphorus Inputs at Station R1 on 7/30/25

QUALITY ASSURANCE PROJECT PLANS & STANDARD OPERATING PROCEDURES

Quality Assurance Project Plans (QAPPs) are documented procedures that explain the methods for data collection, the quality assurance and/or quality control in place, and the data quality objectives. QAPPs are approved by either the EPA or the state agencies to ensure all data collected is reliable and useable. Similarly, Standard Operating Procedures (SOPs) outline the use of specific equipment with quality assurance and/or quality control in place, and the data quality objectives. FRWA has approved QAPPs with MassDEP and CT DEEP, and SOPs on our equipment that collects data (multiparameter meter and various types of data loggers).

FRWA follows all protocols in our QAPPs and SOPs to ensure all data collected is accurate and reliable for all agencies and organizations. Calibration, pre-run checks, and post run checks of the meter are performed every field day and duplicates are performed every route. Grab sampling field dups and field blanks are performed every route and lab blanks and lab dups are performed every sample day. Reference measurements are collected via calibrated and QC checked multiparameter meter for loggers. Any data not meeting QC standards outlined in the QAPPs is omitted and not shared.

QAPPs and SOPs for FRWA include:

- FRWA's Quality Assurance Project Plan is on file at Massachusetts Department of Environmental Protection – *Farmington River Watershed Association Monitoring Program: Massachusetts section* – dated May 16, 2023 – May 15, 2026, signed by MassDEP QA Officer Suzanne Flint, Environmental Analyst.

- FRWA's Quality Assurance Project Plan on file at Connecticut Department of Energy and Environmental Protection – *Farmington River Watershed Association Monitoring Program: Connecticut section* – dated February 26, 2024 – February 25, 2027, signed by CT DEEP QA Officer Katie O'Brien-Clayton, Environmental Analyst.

- FRWA's *YSI ProDSS Multiparameter Meter Standard Operating Procedure* (also included in QAPPs).

- FRWA's *Continuous Logger Standard Operating Procedure*.

REFERENCES & RELEVANT LINKS

US EPA. 2023. National Recommended Water Quality Criteria Aquatic Life Criteria Table. US EPA. [https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table] (Date accessed: 15 December 2023)

CT DEEP. Water Quality Standards and Classifications. CT DEEP. [https://portal.ct.gov/DEEP/Water/Water-Quality/Water-Quality-Standards-and-Classification] (Date accessed: 15 December 2023)

NOAA National Centers for Environmental information, Climate at a Glance: Statewide Time Series, published February 2026, retrieved on March 3, 2026 from NOAA National Centers for Environmental information, Climate at a Glance: Statewide Time Series, published December 2023. [https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/statewide/time-series] (Date accessed 15 December 2023)

Mike Beauchene , Mary Becker , Christopher J. Bellucci , Neal Hagstrom & Yoichiro Kanno. 2014. Summer Thermal Thresholds of Fish Community Transitions in Connecticut Streams. North American Journal of Fisheries Management. 34:1. 119-131. [http://dx.doi.org/10.1080/02755947.2013.855280]

Relevant Links

CT DEEP. VSTeM Monitoring Network for Temperature Monitoring. [https://portal.ct.gov/DEEP/Water/Inland-Water-Monitoring/Volunteer-Stream-Temperature-Monitoring-Network]

Connecticut River Conservancy's Is It Clean?
https://connecticutriver.us/it-clean

Izaak Walton League of America's Salt Watch
https://www.iwla.org/water/stream-monitoring/salt-watch

Farmington River Watershed Association Resources
https://www.frwa.org/resources

THANK YOU FOR ALL OF YOUR SUPPORT!

DONATE AT FRWA.ORG

FRWA staff (left to right): Ciara Kilkenny, Laura Hart, Paige Vichiola-Silva, Kaitlin Cole, Heather Geist, Aimee Petras