The Drinking Water in Waterbury

What is EFUD? The **Edward Farrar Utility District** created on July 1, 2018 is a Vermont municipality within the Town of Waterbury that has a legislative Charter that limits the District's authority to the managing and operating the water and sewer utilities within the Towns of Waterbury, Duxbury and Moretown.

The EFUD by Charter has boundaries, holds property, has registered voters, holds elections at annual meeting, may bond and borrow funds in support of the Water and Sewer utilities. The District in governed by five elected District Commissioners and may hire a manager and staff to support the necessary function.

The EFUD was created when the Village voted to dissolve after numerous failed merger votes.

The Utility District was named in memory of **Edward Farrar** who died in a trench cave in October 14, 1904 in at the head of South Main Street and Elm Street while in stalling a sewer line. He was the Village President and a Water Commissioner at the time.

October 14, 2023

The Edward Farrar Utility District Commissioner in cooperation with the Waterbury Historical Society held ceremony dedicatating a Plaque on the grave stone of Edward Farrar honoring his service to the Village of Waterbury. Edward Farrar was the Village President and a Water Commissioner when he lost his life in a sewer trench cave in on October 14, 1904 on Elm Street. On the plaque is the resolution approved at the annual Village Meeting March 6, 1905. The presentation was led by EFUD Commissioner, Skip Flanders with participation by Public Works Director Bill Woodruff and a benediction given by Pastor Peter Plagge. Shown in the picture left to right are Natalie Sherman EFUD Commissioner, Pastor Peter Plagge, Public Works Director Bill Woodruff and Skip Flanders EFUD Commissioner. Photo by Cheryl Casey

The purpose of these informational sessions is to provide input to the EFUD board as it considers policy options.

The sessions are designed to educate the EFUD commissioners and staff, EFUD users, and the public in general about the challenges that the District's watershed faces, the risks they create, and steps that can be taken to address them.

These sessions will inform EFUD' s deliberations on a longer-term policy for the management of the watershed

The current configuration of the **Village Water System**, with the source 6 miles from the Village on Mt Hunger and storage above the Village providing pressure built in 1895 is the third most important event in the development and growth of the Town of Waterbury.

#1 The Survey of Waterbury by Partridge Thatcher in 1882. Thatcher is one of the few original landowners who set foot in Waterbury

#2 The settlement of James Marsh in Waterbury near the mouth of Thatcher Brook in 1883.

#3 The 1895 Vote to build the Water system for $32,200 which would be 1.2 Million in 2025

4 The development of the Railroad to Waterbury in 1849

In protecting not only the water source it is important to note that **Public Water Systems** are defined as **“Critical Infrastructure”** in statue under the US Patriot Act of 2001.

This definition is codified in 42 USC s 5195 c(e_) and referenced in 6 USC s 101(4).

This program is administered by the Federal Cybersecurity & Infrastructure Security Agency

Before 1895, the Village area was served by two smaller water systems, one with source and storage on a small stream off Perry Hill just above the I89 Highway.

Another smaller system with an unknown source also served some buildings in the Village.

The Village growth dictated a need of a larger water system with a desire for a better hydrant system for fire protection.

The Village hired an Engineer and formed a study committee. The Engineer evaluated every small stream around the Village, including Crossett Brook in Duxbury, small streams off Blush Hill and Perry Hill and springs on land in Stowe.

A deciding factor in choosing the sources 6 miles from the Village in Stowe was the locating a large spring on the land of E A Gibbs in Stowe, now part of the Waterworks, that flowed at 150 gallons per minute.

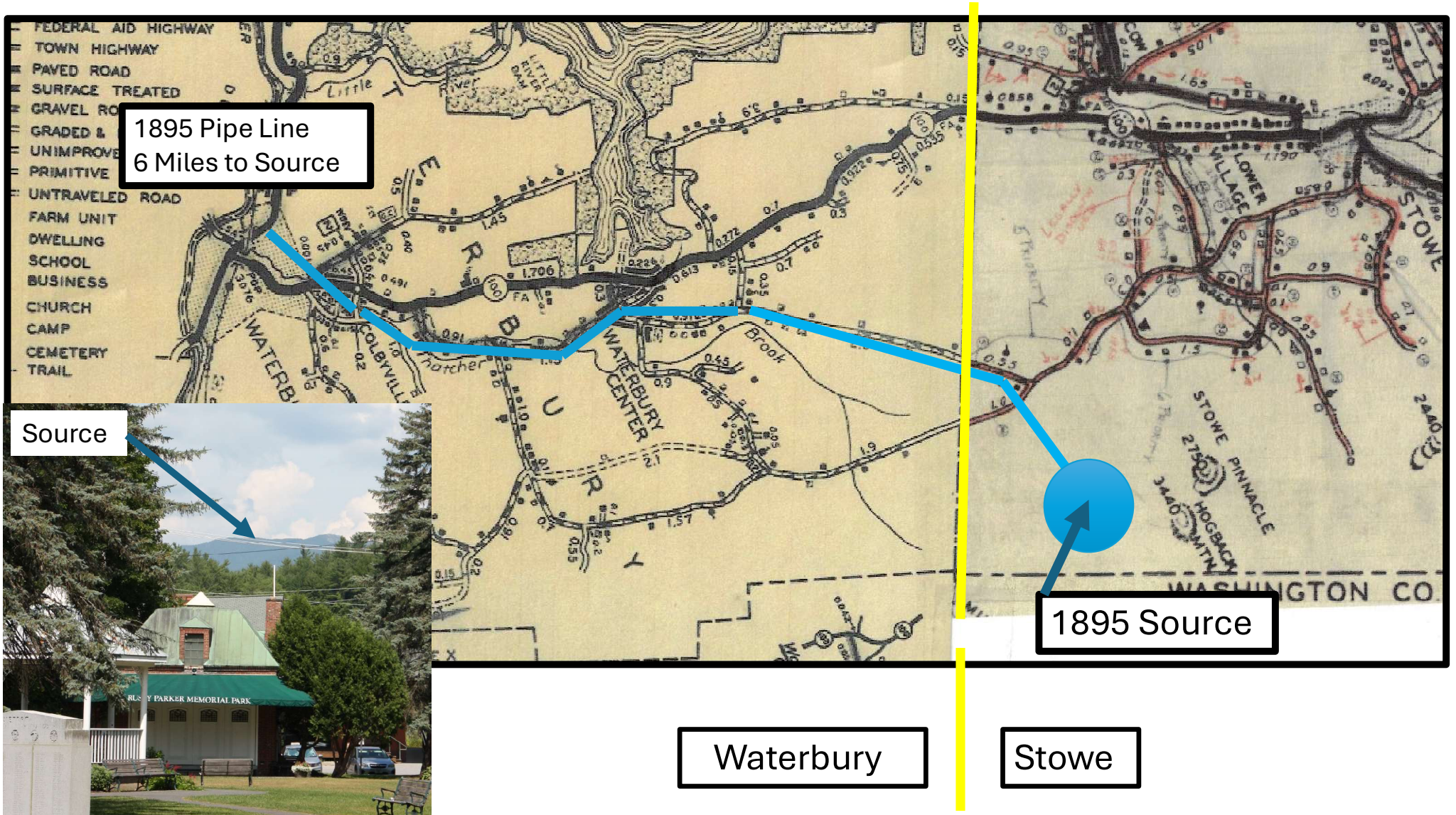
1895 Village Voters approved the Construction of the Village Water System with surface water intakes and springs 6 miles from the Village on Mt Hunger and a 500,000 storage reservoir 230 feet above the Village on Blush Hill to float on the system providing 100 psi water pressure.

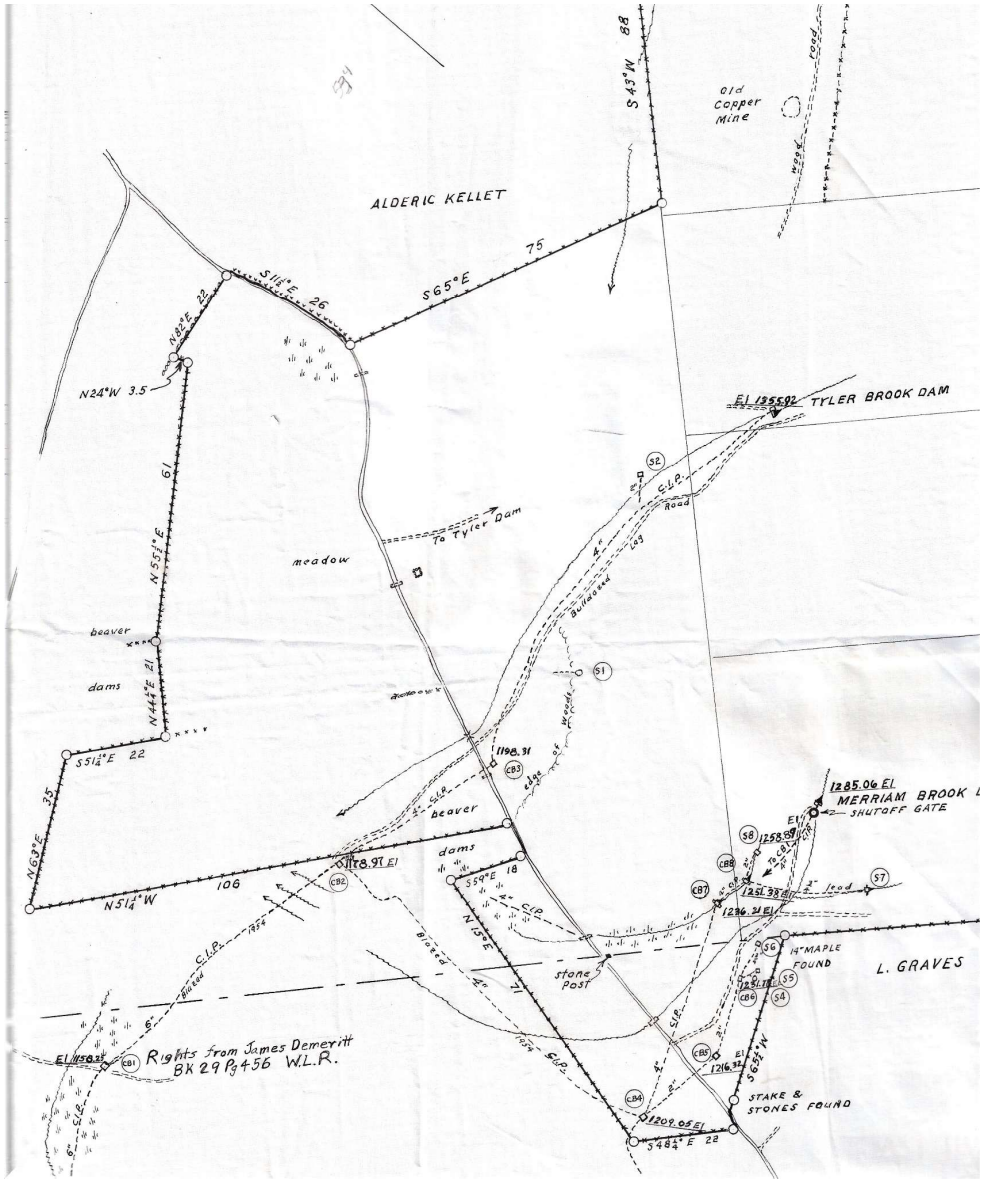
It was a good design that has served Waterbury well and did not involve pumping to provide pressure and transport water.

The System was designed by Joel Foster, the then Superintendent of the Montpelier Water System, and built by L Taylor of Worcester Mass. Much of the labor was provided by Italian immigrants including excavation of trenches for laying pipe some 12 miles of trench in rocky soil.

The 1895 cost was $32,271 the equivalate of $1.2 M in 2025 dollars.

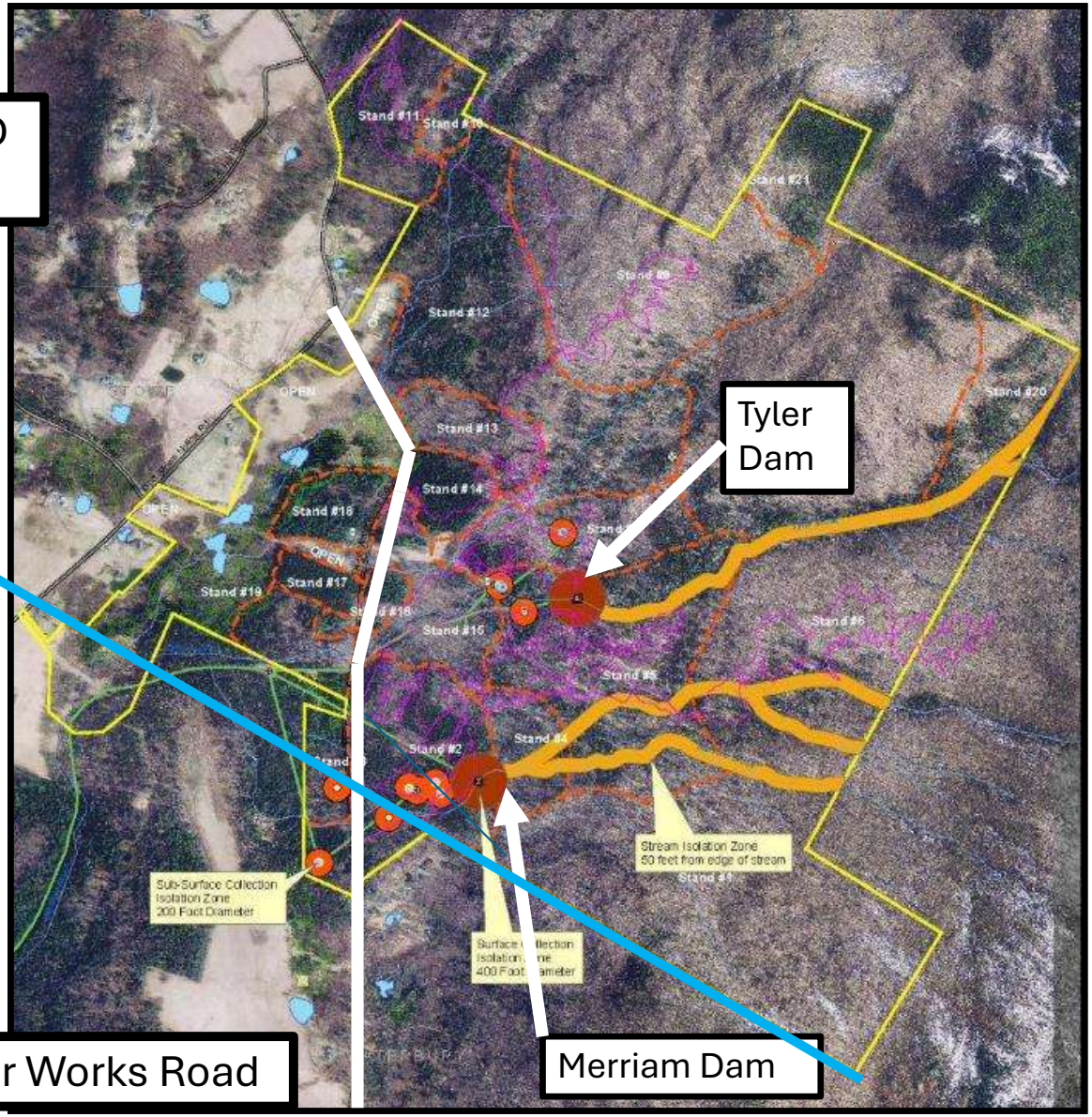
The basic design estimated the water sources were adequate for 225,000 gallons per day.


FEDERAL AID HIGHWAY
TOWN HIGHWAY
PAVED ROAD
SURFACE TREATED
GRAVEL RO
GRADED &
UNIMPROVE
PRIMITIVE
UNTRAVELED ROAD
FARM UNIT
DWELLING
SCHOOL
BUSINESS
CHURCH
CAMP
CEMETERY
TRAIL
1895 Pipe Line
6 Miles to Source
Source
1895 Source
Waterbury
Stowe
WATERBURY CENTER
Brook
LOWER VILLAGE
STOWE PINNACLE
HOGBACK MTN
WASHINGTON CO.

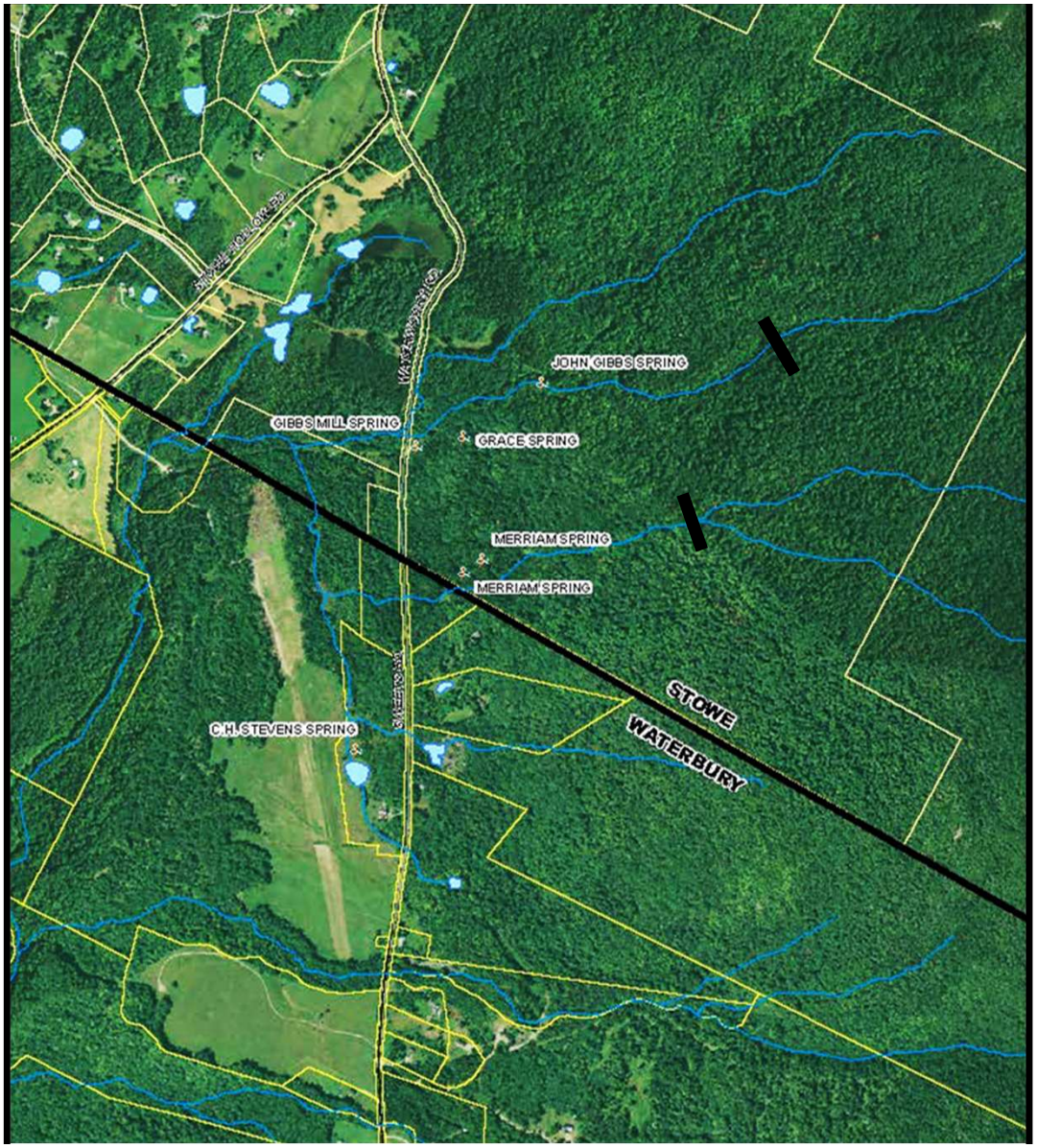


1958 survey Map of the Watershed Property purchased in 1895

Land Owned by EFUD in Water Works



EFUD owns 488 acres in Stowe and pays property taxes to Town of Stowe.

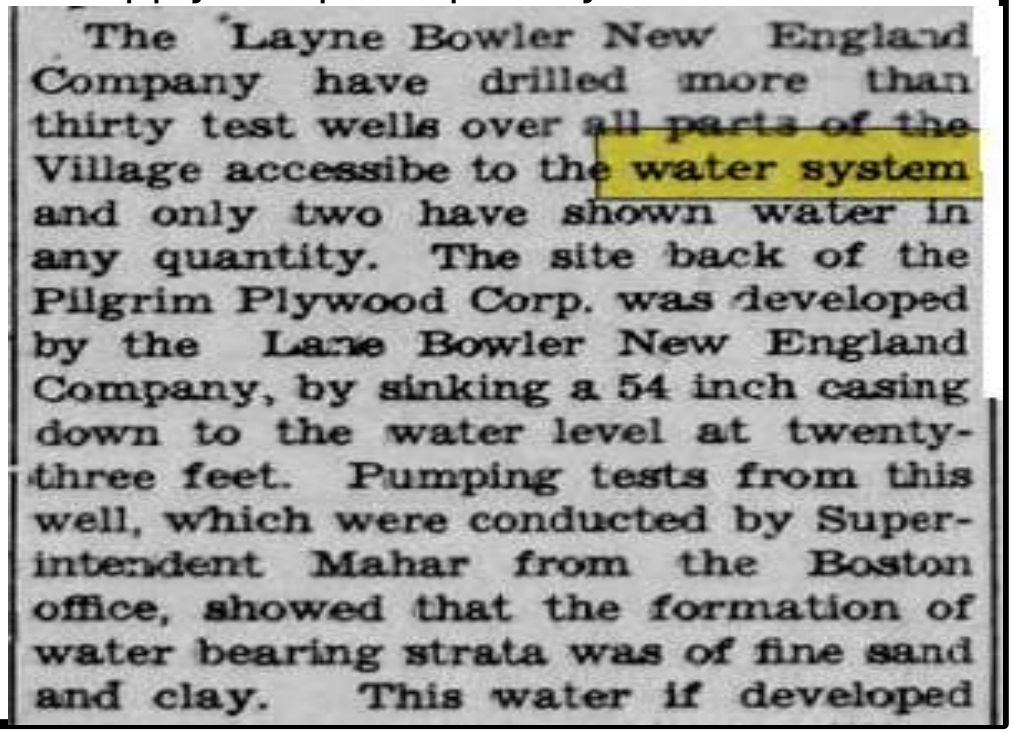


Google Earth photo of EFUD watershed property showing Streams and springs and dams

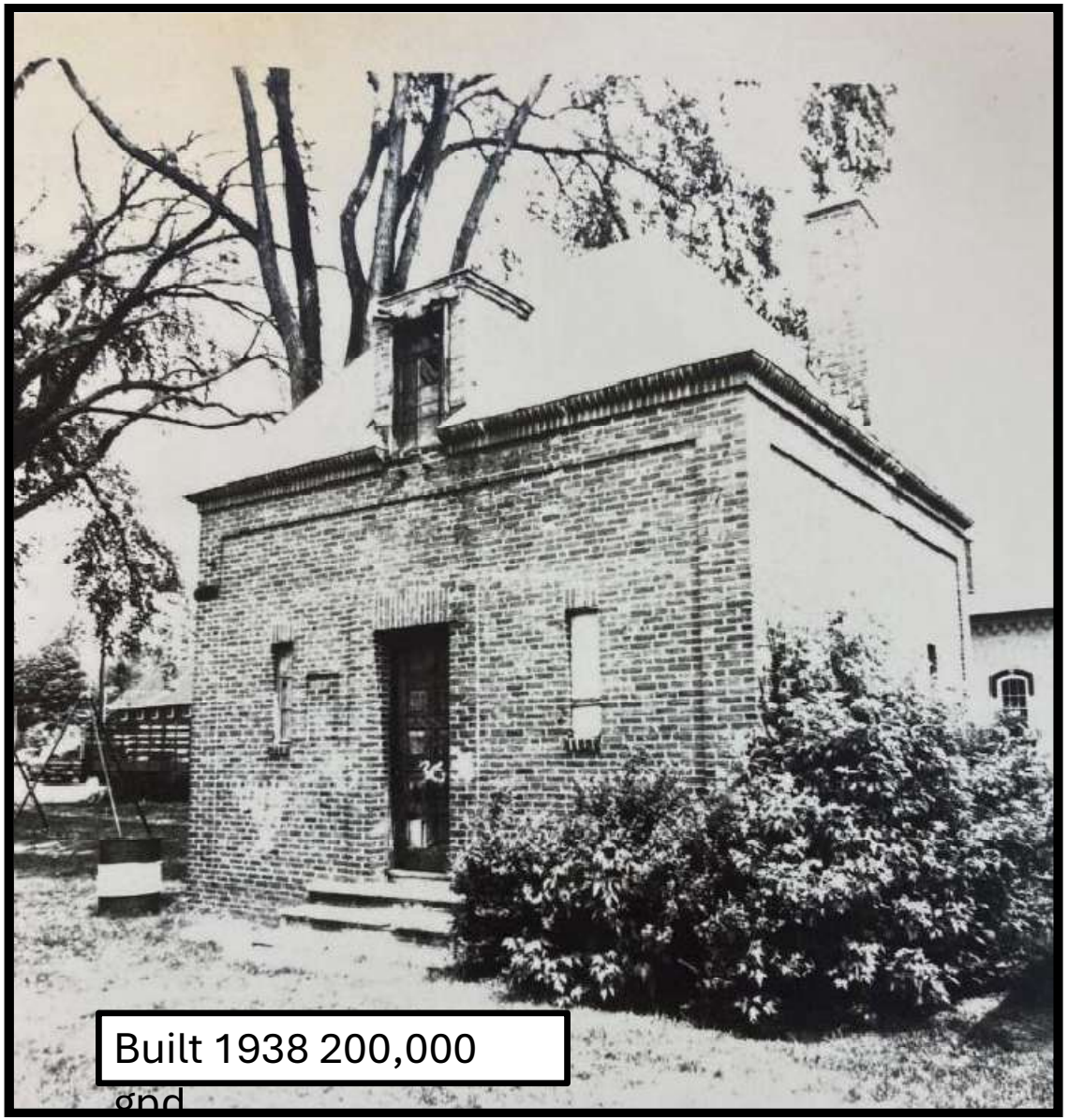
In 1936 there was a water shortage such the served Village hired Lane Bowler New England to find and supplemental water source.

During the summer of 1937 they drilled 30 test wells in areas around the Village to find a supplemental water source.

They were only able to find one site that could supply adequate quantity with the necessary quality to supplement
the Source



The Layne Bowler New England Company have drilled more than thirty test wells over all parts of the Village accessibe to the water system and only two have shown water in any quantity. The site back of the Pilgrim Plywood Corp. was developed by the Lane Bowler New England Company, by sinking a 54 inch casing down to the water level at twenty-three feet. Pumping tests from this well, which were conducted by Superintendent Mahar from the Boston office, showed that the formation of water bearing strata was of fine sand and clay. This water if developed



Built 1938 200,000 gpd

Waterbury's Pump House On Park Nearly Completed

W. M. Adams & Sons, Inc., are constructing a pump house in the park at Waterbury to house equipment in connection with a new source of water to augument the village's esent supply. Twenty-two feet square and of three floors, the structure is being erected over a dug well, one of the few of its kind in the State.

The 1896 Water System served as constructed until 1938 when Search for an addition source of water for drought periods a gravel pack well was constructed in the Village Park now Rusty Parker Park purchased from the CVRR in 1929.

1988

In July of 1988 Waterbury experienced a drought in the surface water sources.

It was necessary to turn-on the Park Well installed in 1938 to supplement the water source. This well was last used in 1961, 17 years ago.

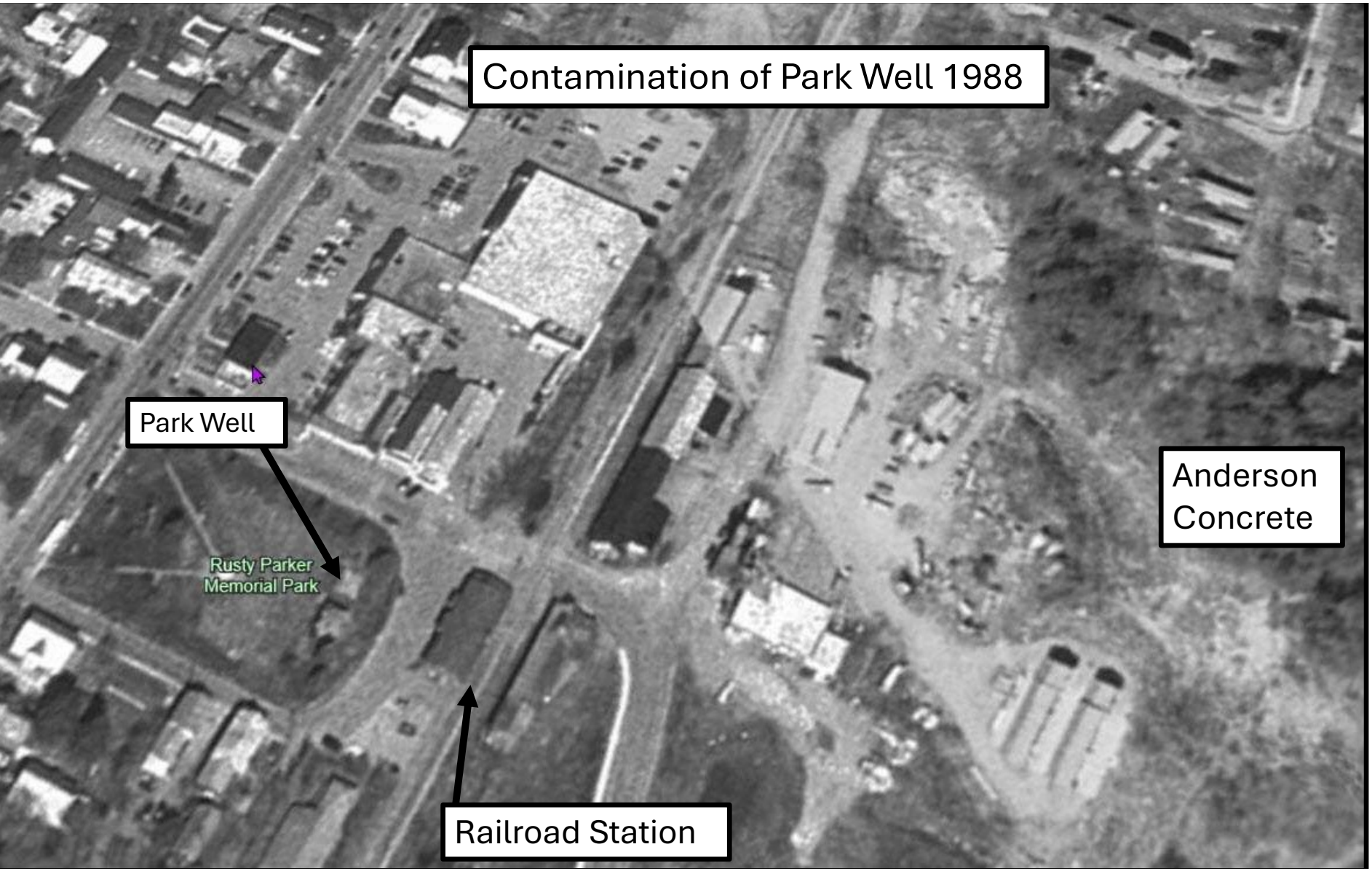
The first water sample from the Park Well showed contamination with benzene evidence of contamination by gasoline.

We had to issue a boil water order to reduce the benzene to below safe level.

We resorted to the use the Demeritt well that is high in iron and Manganese to supplement the water supply.

Further testing of the Park Well confirmed increasing levels of benzene.

It was determined that the Park Well was contaminated from gasoline spills across the tracks from the former Anderson Concrete Plant.


Contamination of Park Well 1988
Park Well
Rusty Parker Memorial Park
Anderson Concrete
Railroad Station

After confirming the contamination and the need for a new supplemental water source we hired Dufresne Henry Engineers and began the process of developing an upgrade to the Water System.

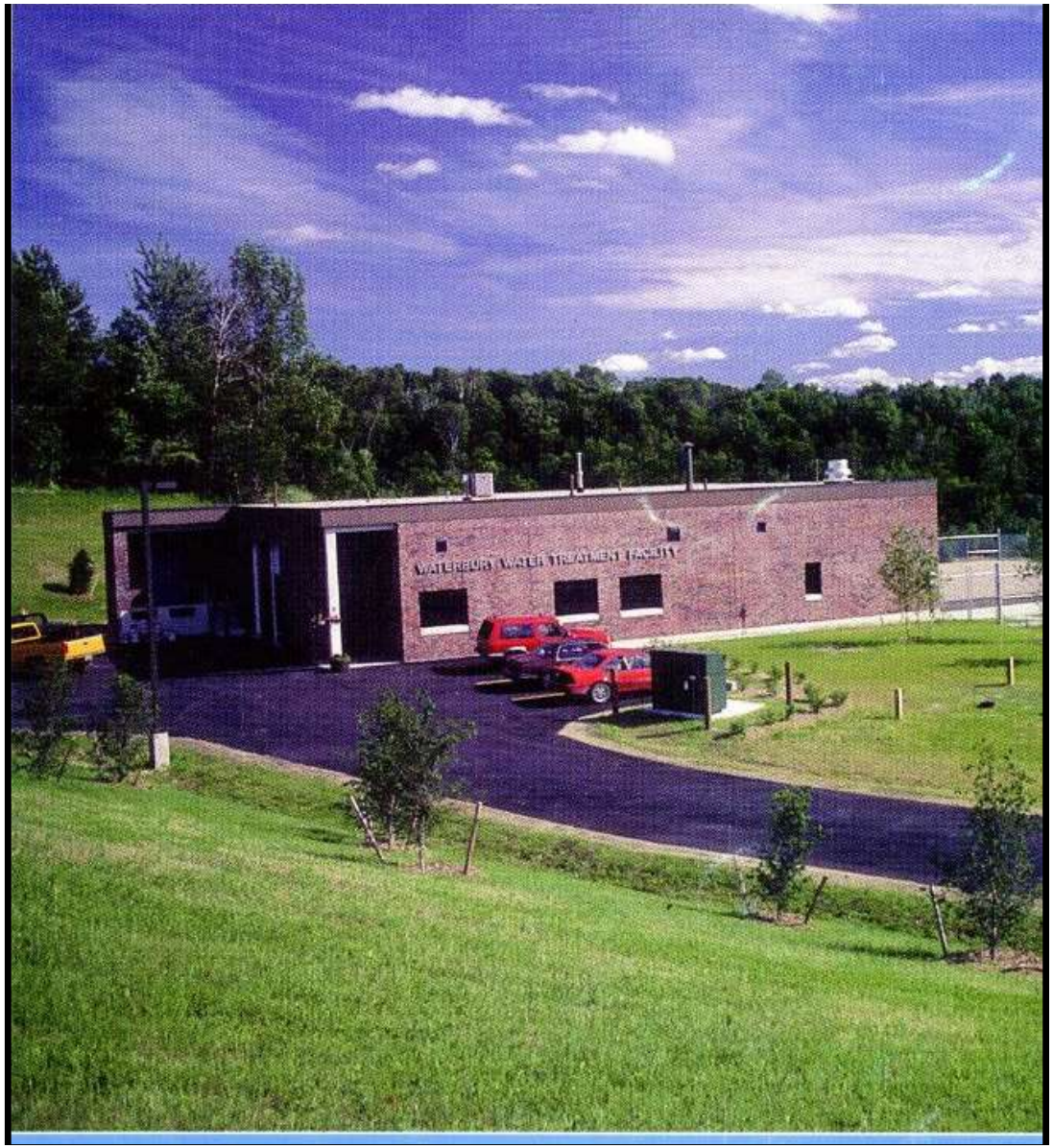
We went immediately back to the area high on the mountains where the original source was, looking for ground water sources to provide an adequate year round supply of water.

We took an option on 35 acres of land from Linwood Sweet that could provide isolation and began looking for Ground Water sources. Because of the location we found both adequate quantities of safe ground water.

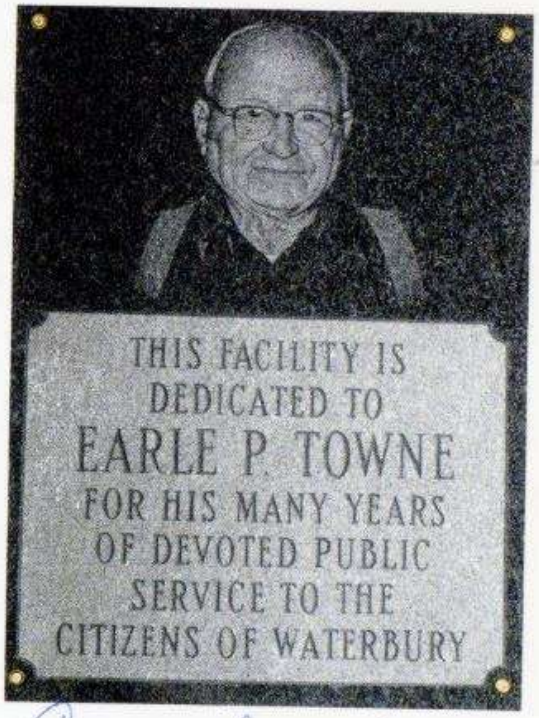
The 1992 upgrade of the water system included the drilling of four wells, construction of a water treatment facility with clear water storage and new transmission and distribution lines.

January 1990 the Village voter approved a bond vote for $4,136 million dollars. The total project cost was $7,595 with the remaining $3,459 million in State and Federal grants.

Total cost of $7.595 Million Dollars with today's inflation would cost $19.3 Million Dollars.



Waterbury Water Treatment Facility
Waterbury, Vermont
Dedicated to
Earle P. Towne
August 8, 1992



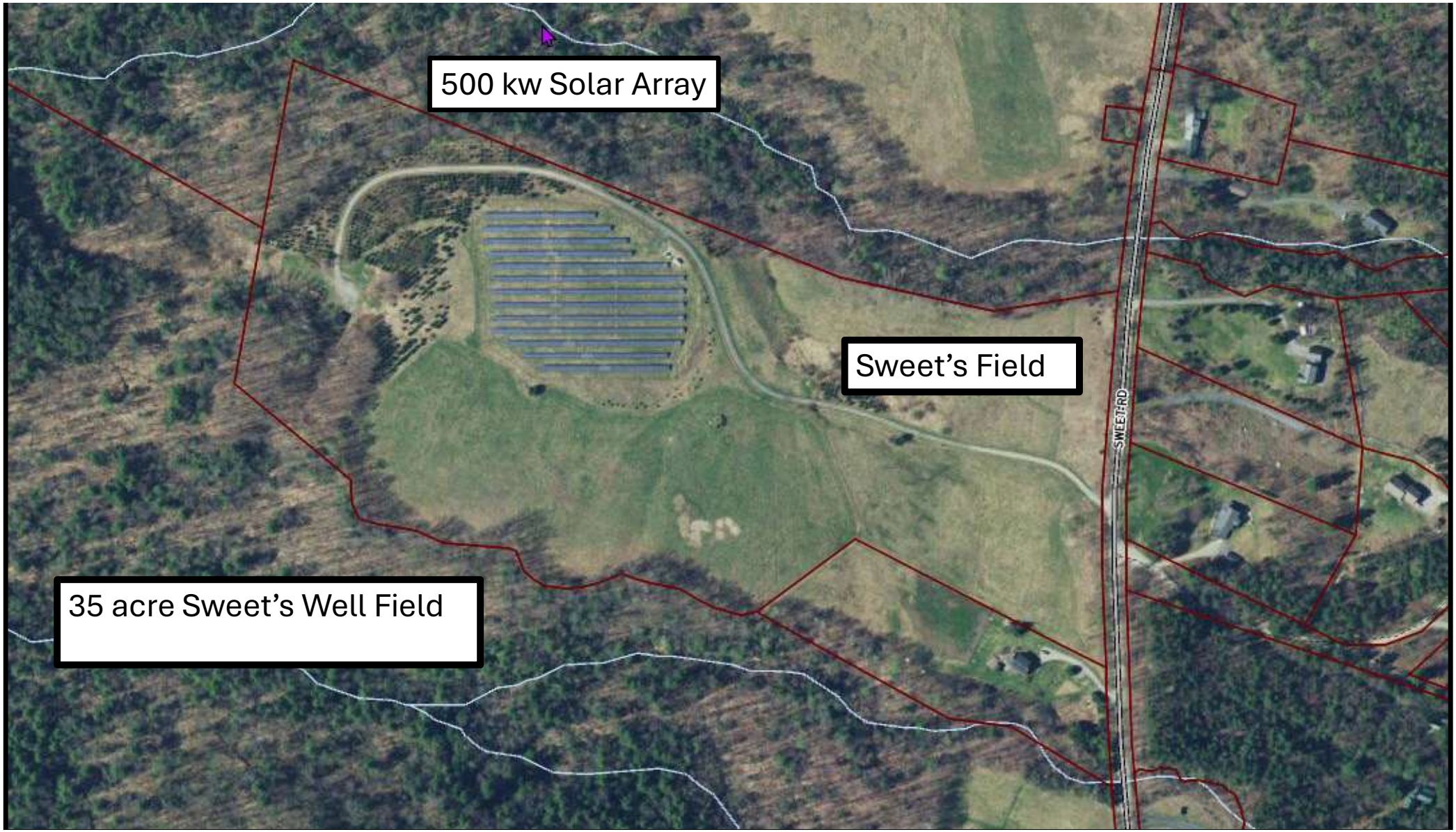
Earle Towne

Innovative Features

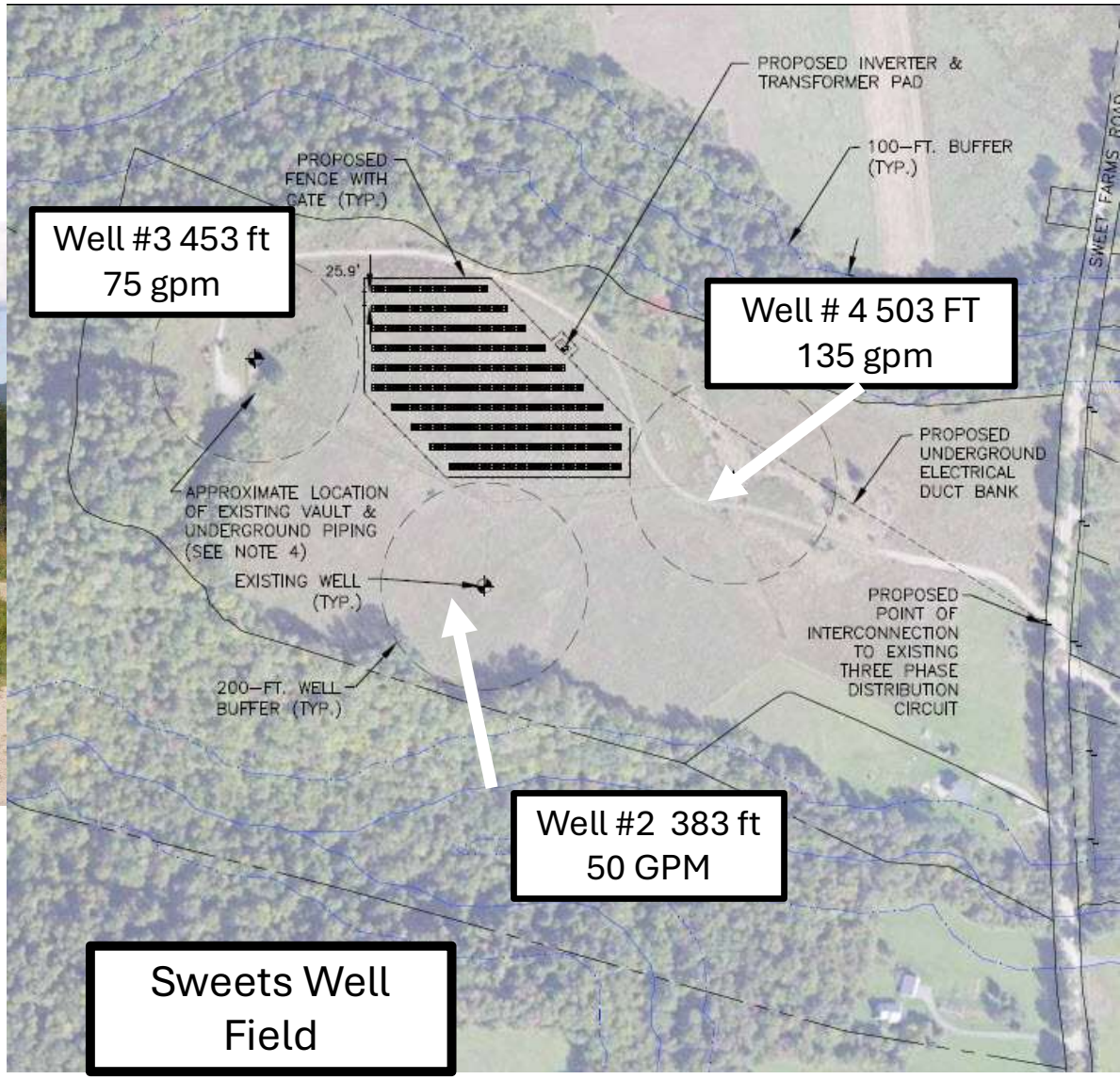
- Trident Package System-compact adsorption clarification and mixed media filtration system combines flocculation, clarification and filtration into one package tank resulting in reduced space requirements. The system removes:
  - turbidity
  - bacteria, viruses and parasites
  - color, taste and odor
  - organics
- Filtered water to waste cycle.
- Process water recycle system.
- Supervisory Control And Data Acquisition (SCADA).
- Automatic plant shutdown on low chlorine and high turbidity.
- Facility expandable to 1.5 million gallons per day.
- Leopold filter underdrain.
- Stainless steel tankage.
- Standby electrical generator.
- Vehicle storage area.

1992 Water Treatment System

2024 Water System Operators
Kenny Ryan, Kyle Guyette,
Grant McCracken adjacent to
water filtration tanks


500 kw Solar Array
Sweet's Field
SWEET RD
35 acre Sweet's Well Field

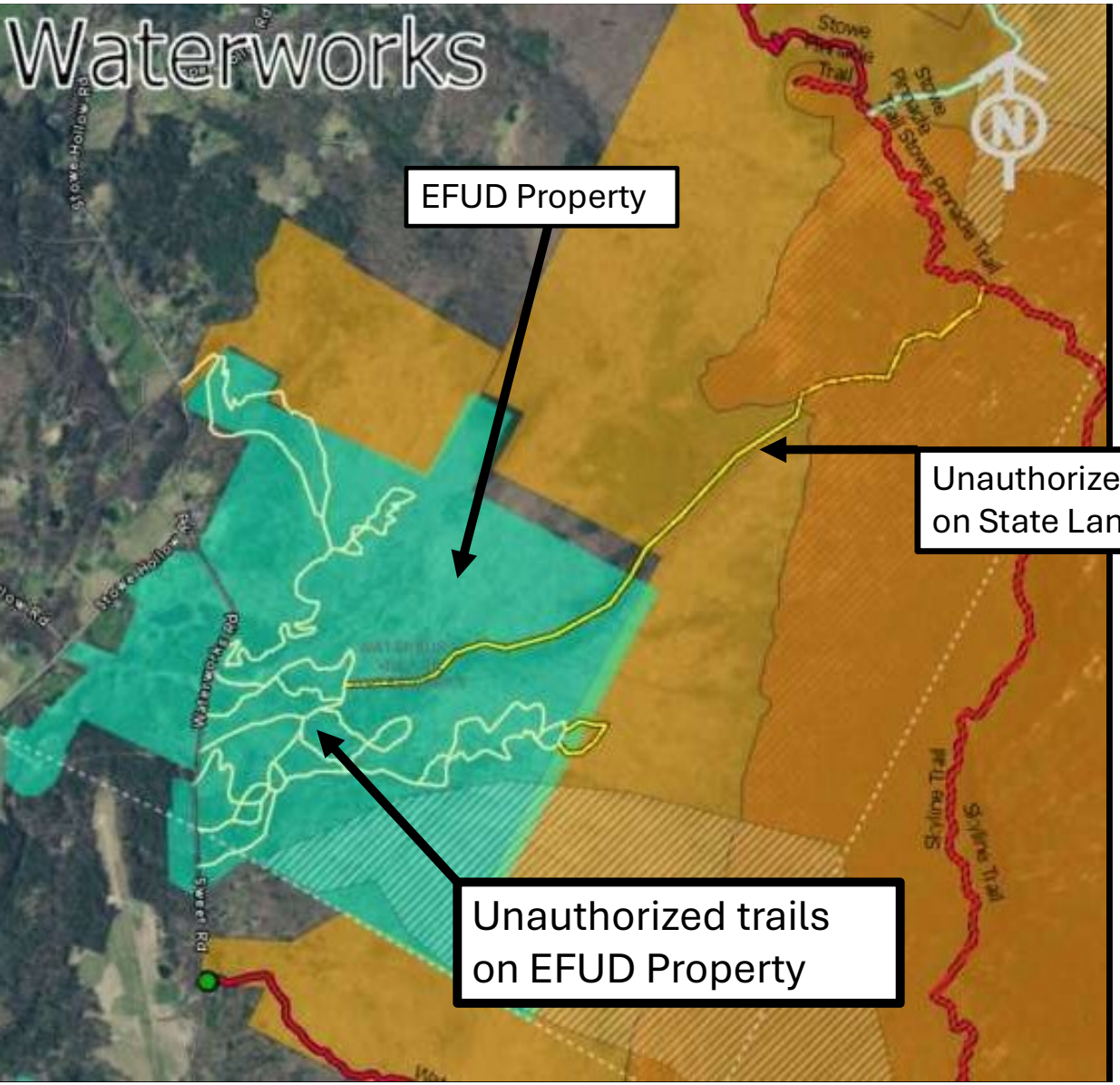
Sweet's Well Field with Solar Array



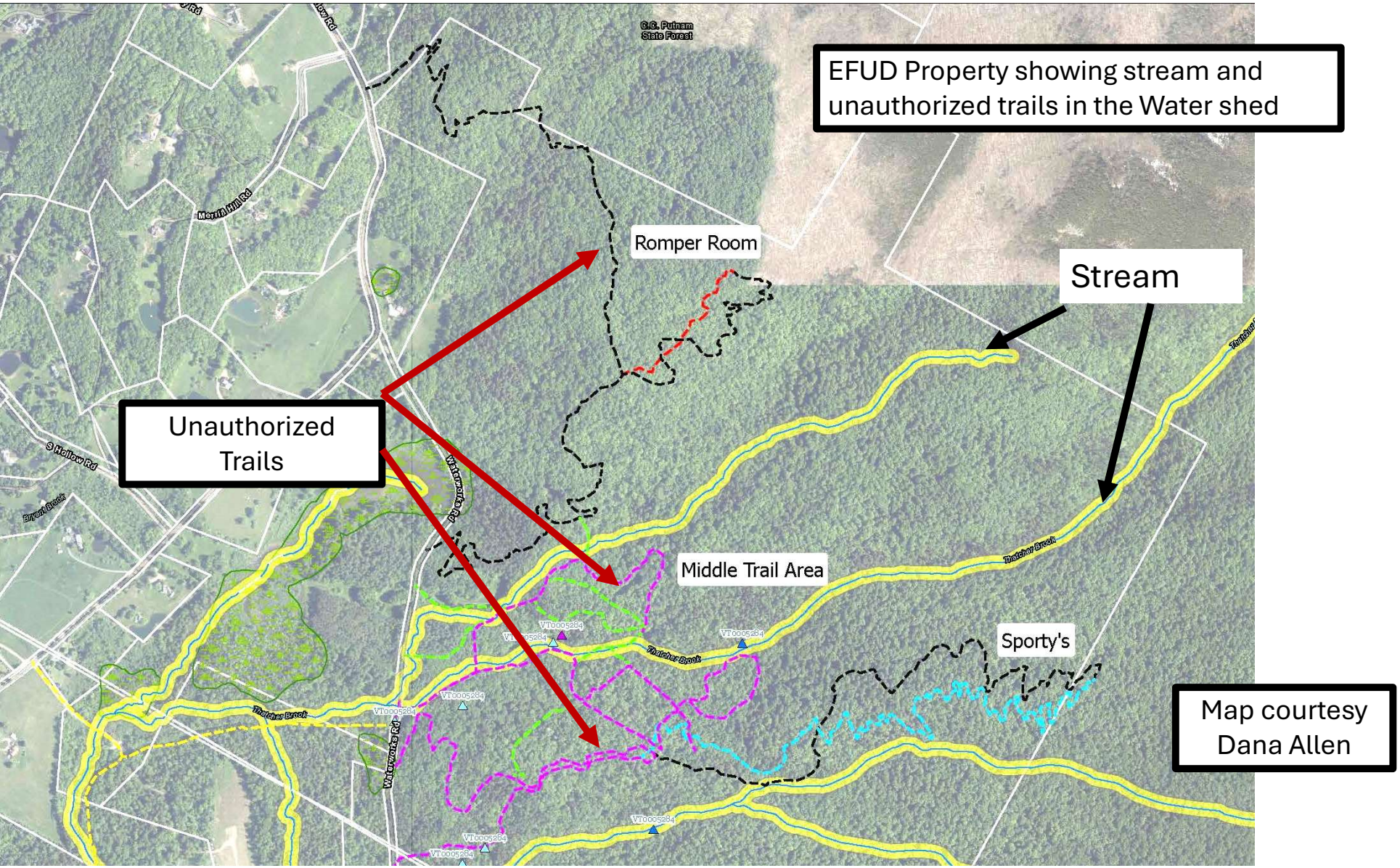
Well # 1 is a very unique and valuable well. This well was drilled on the exact location of a high yielding spring purchased in 1895.

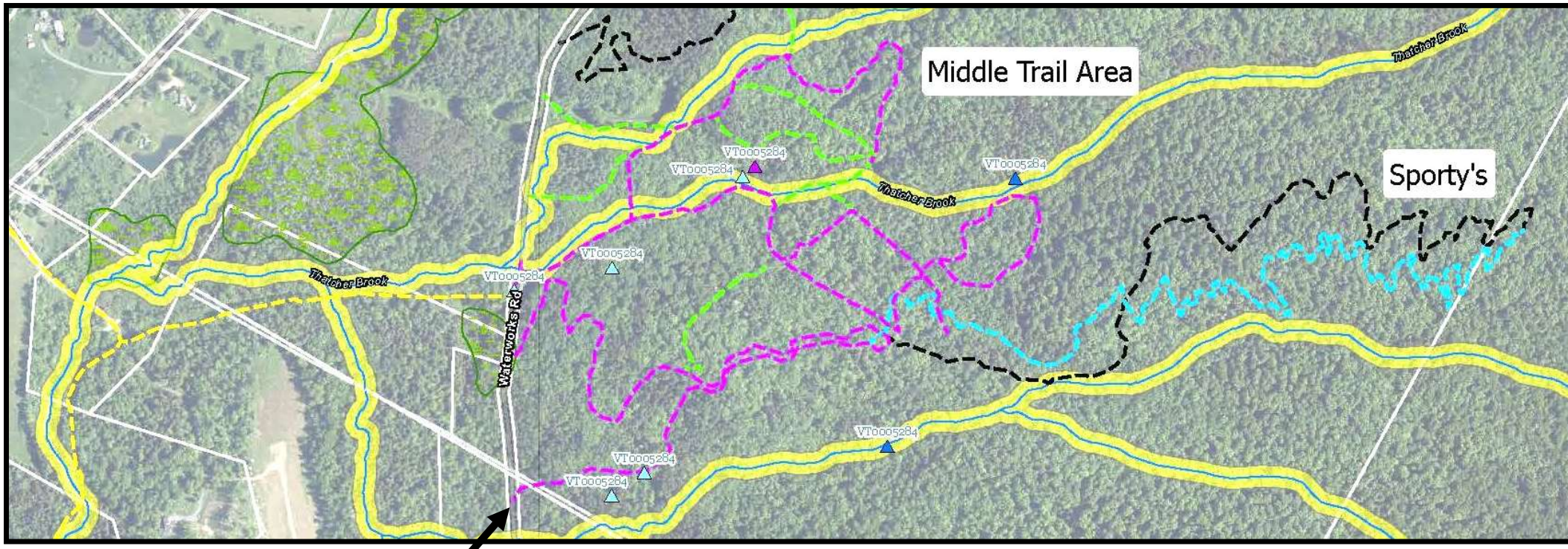
The well was drilled to a depth of 600 feet and had a yield in excess of the approved capacity of 325 GPM

One of the signs posted in Watershed for a few years



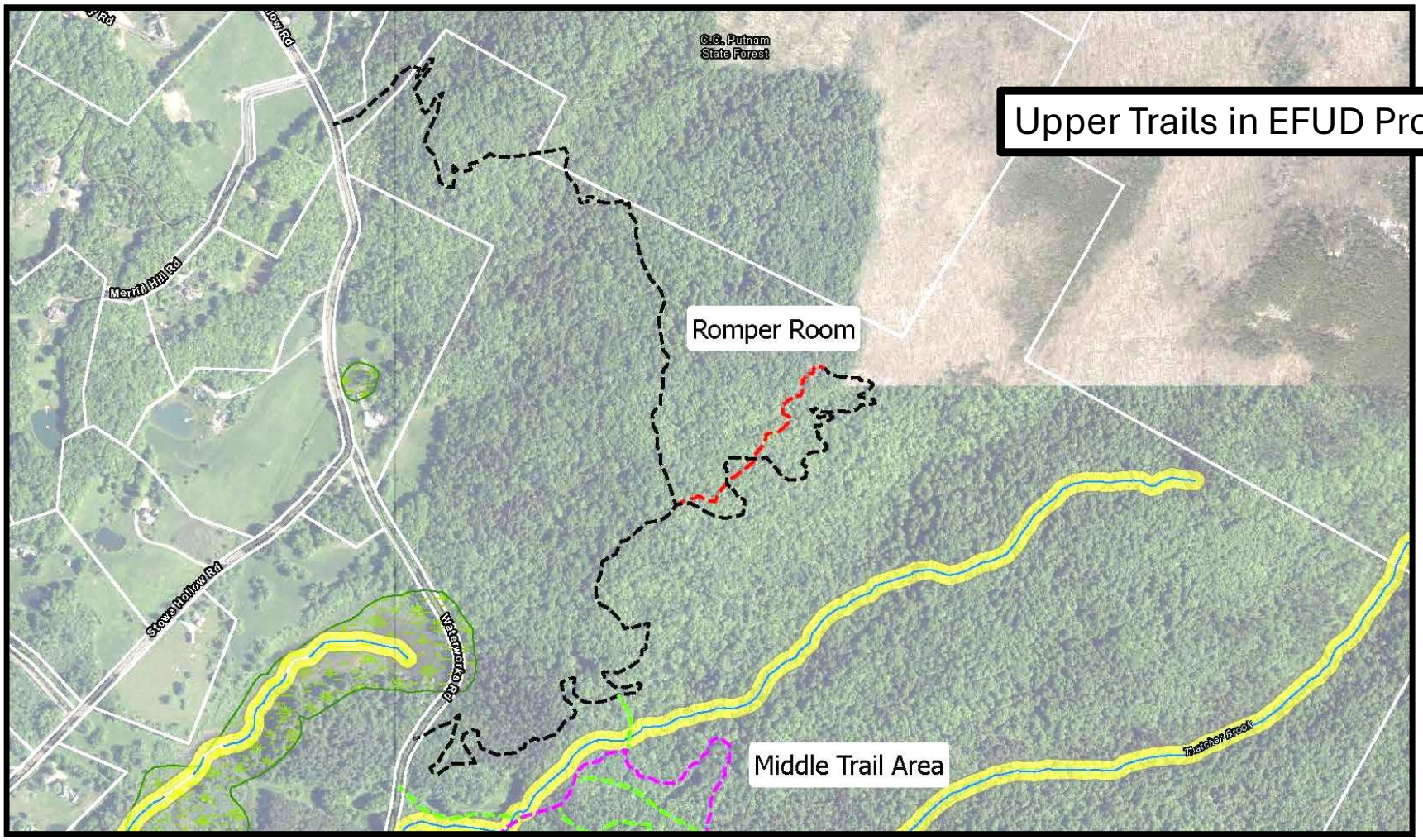
Current activities occurring in the watershed are cause for concern and we are seeking information about the risk they poses and options for addressing the risks


EFUD Property showing stream and unauthorized trails in the Water shed
Romper Room
Stream
Unauthorized Trails
Middle Trail Area
Sporty's
Map courtesy Dana Allen
C.C. Putnam State Forest
Merrill Hill Rd
S Hollow Rd
Everett Brook
Waterworks Rd
Thatcher Brook
VT0005284

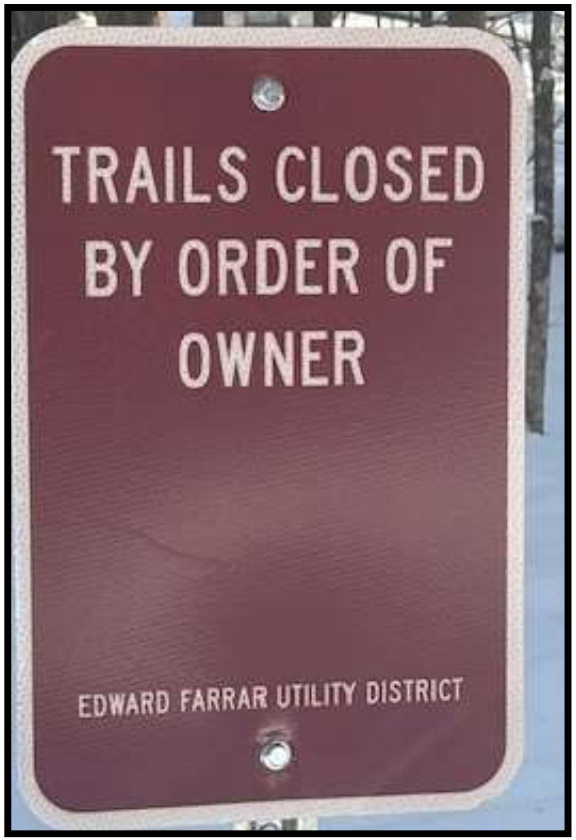


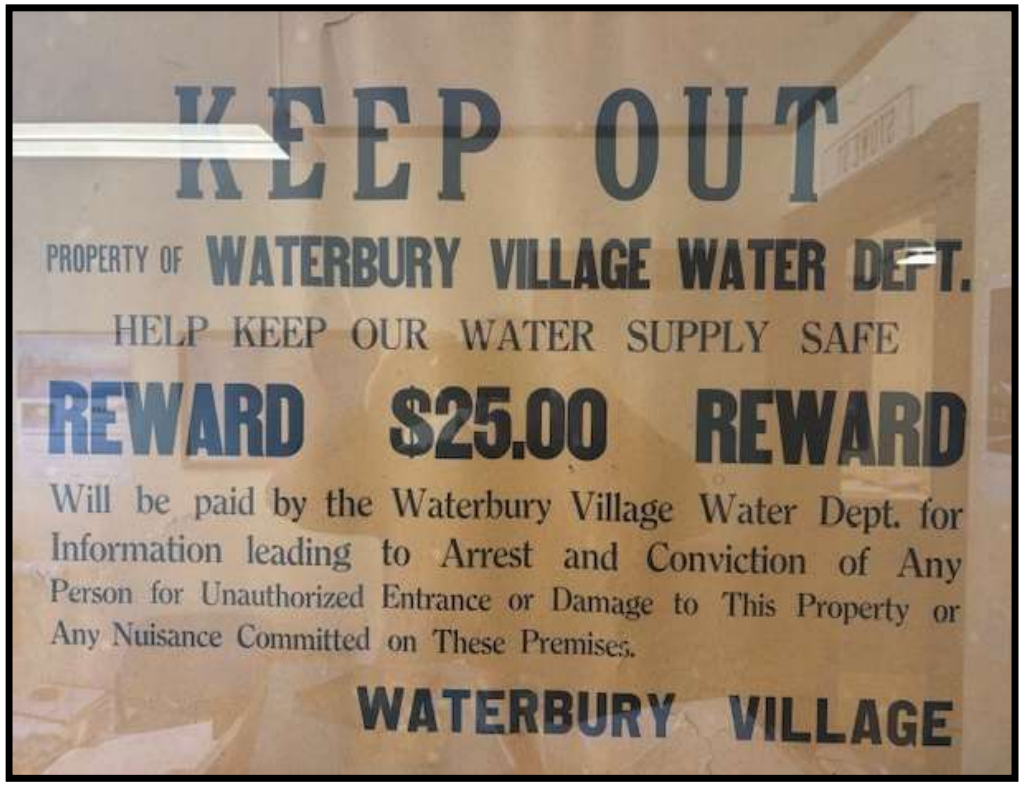
Water Works Road

Expanded view of Sporty's and Middle Trail area on EFUD Property


Upper Trails in EFUD Property
C.C. Putnam State Forest
Merritt Hill Rd
Stowe Hollow Rd
Waterworks Rd
Romper Room
Middle Trail Area
Thatcher Brook

When the Commissioners learned of the extent of the unauthorized Mt Bike trails in the Watershed we closed all trails until we could consider an interim long term policy on Water Shed Management and ensure protection of the Water Supply.




KEEP OUT
PROPERTY OF WATERBURY VILLAGE WATER DEPT.
HELP KEEP OUR WATER SUPPLY SAFE
REWARD $25.00 REWARD
Will be paid by the Waterbury Village Water Dept. for Information leading to Arrest and Conviction of Any Person for Unauthorized Entrance or Damage to This Property or Any Nuisance Committed on These Premises.
WATERBURY VILLAGE


PLAYING
BASEBALL OR FOOTBALL
ON THIS PARK IS
POSITIVELY FORBIDDEN
WATER COMMISSIONERS

This concludes the presentation on the past development of the EFUD Public Water System and the current facilities serving the communities and identifies the activities of concern that are the subject of the presentations at this time.

We welcome any questions at the direction of the Facilitator.

Thank You from the EFUD Commissioners and Staff