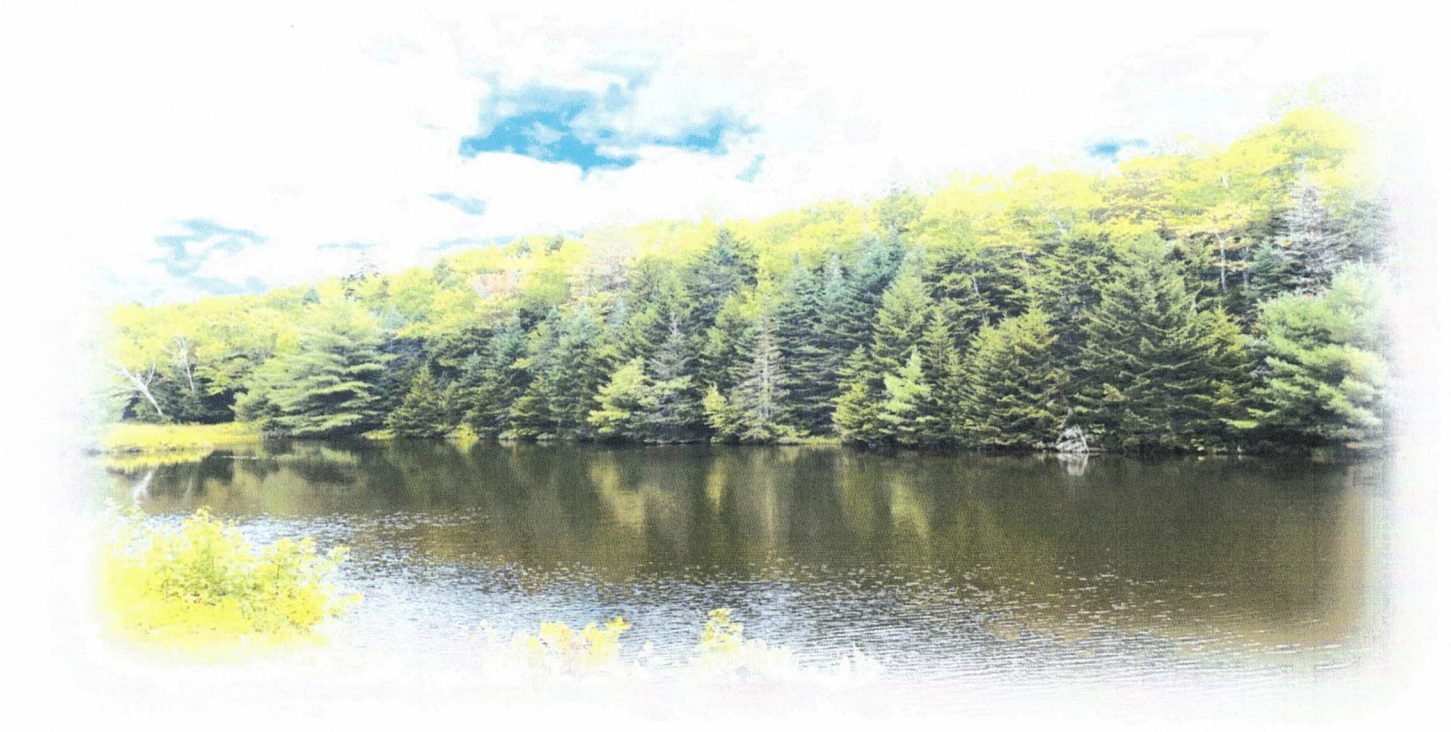


New London-Springfield Water Precinct

Annual Report for the year ending 2023



Founded in 1925
Providing service to customers in the Towns of New London and Springfield NH



#2 Reservoir

New London-Springfield Water System Precinct Commissioners

John MacKenna Term expires 2024
Kenneth Jacques Chairman Term expires 2025
Richard (Rip) Cross Term expires 2026

New London-Springfield Water System Officers

Charles Hafner, Moderator Term expires 2024 resigned
Robert Bowers, Moderator Term expired March 2024 appointed February 2024
Marion Hafner, Treasurer Term expires 2024
Tracey MacKenna, Clerk Term expires 2024

Report to the Voters 2024

The Annual Meeting of the New London-Springfield Water System Precinct held on March 21, 2023, saw the election of Richard Cross to a three-year term as a Water Commissioner. Elected to the position of Treasurer was Marion Hafner, elected to the position of Clerk was Tracey MacKenna and elected to the position of Moderator was Charles Hafner. Each position is for a one-year term.

Charles Hafner resigned as Moderator on February 1, 2024, and the Commissioners appointed Robert Bowers to complete the term.

All articles set forth on the warrant for the 2023 Annual Meeting were passed.

In review, 2023 approved two (2) applications for new residential service. Fifteen (15) gate valve boxes were repaired, and five (5) service line leaks were addressed and repaired. Two (2) major water main breaks (both on the Main Street transmission line) were repaired with the assistance of the New London Highway and Sewer Departments as well as Sunapee Water and Sewer. A big thank you goes out to those departments for all their help.

The Asset Management Plan has continued to be worked on with progress on Phase 2 (GIS Locations) and the Lead Service Line Inventory.

The Precinct moved forward with the Main Street water transmission line project from Homan's corner to Squires Lane, now that the engineering is complete, by putting the project out for bid in December.

We are also continuing our efforts in exploring future supplemental water sources in expectation of continued need for water.

The other projects completed this year dealt with SCADA system mechanical repairs. Also (3) PLC's (computers) were replaced.

The two (2) major commercial projects that were pending last year were reviewed in 2023. Both applications went through the Precinct review analysis and were sent to the Precinct's engineers for their review and comments. Along with these reviews, the projects were sent to the NHDES (NH Department of Environmental Services) for review. It was recommended by the State that major projects requiring large volumes of water and new main connections/extensions be checked to be sure that the existing system has the available capacity to absorb this increase in demand. It was determined that the Precinct could not

accommodate the required volumes based upon our maximum flow data. Domestic water supply could not be approved but fire protection would be provided.

Unfortunately, some of the recent changes in the zoning will potentially put demand pressure on the existing Precinct capacity. The Precinct boundaries will not increase but density changes will have the effect of growing the Precinct from the outside in.

As always, many thanks to our dedicated staff; Rob Thorp, Superintendent, Rod Reyelt and Jon Dame, Water System Operators who have put in at times, 7 days a week, keeping our water system maintained and working efficiently. Under the administration of Rhonda Gauthier, our Office Manager, the Precinct office is operating very efficiently, and she is a pleasure to work with.

The Board of Commissioners would once again like to remind everyone to practice best water conservation. Also, the staff is available during normal business hours to answer questions and our Consumer Confidence Report and a link to pay your bills online are located on our website, www.nlswp.com.

The Precinct would also like to extend much appreciation to Charles Hafner for his dedicated service as the Moderator of the Precinct. Thank you, Charlie.

The Board wishes to extend to the voters their appreciation for the opportunity to serve the Precinct and looks forward to continued service in 2024.

Thank you,
The Board of Commissioners
New London-Springfield Water System Precinct

New London-Springfield Water System Precinct

The inhabitants of the New London-Springfield Water System Precinct in the state of New Hampshire qualified to vote in Precinct affairs are hereby notified that the Annual Precinct Meeting will be held as follows:

First Session of Annual Meeting (Official Ballot Voting)

Date: March 19, 2024

Time: 6:30 PM

Location: Whipple Hall – 25 Seamans Road New London NH 03257

Details: Voting for Elected Officials 6:30 PM – 7:00 PM

Second Session of Annual Meeting (Transaction of All Other Business)

Date: March 19, 2024

Time: 7:00 PM

Location: Whipple Hall – 25 Seamans Road New London NH 03257

Details: Business meeting begins promptly at 7:00 PM

GOVERNING BODY CERTIFICATION

We certify and attest that on or before March 4, 2024, a true and attested copy of this document was posted at the place of meeting and at US Post Office in New London NH and that an original was delivered to District Clerk.

[illegible]



Article 1 Election of Officers

To elect the New London-Springfield Water System Precinct Officers: one Commissioner to serve a three-year term; one Treasurer to serve a one-year term; one Clerk to serve a one-year term; and one Moderator to serve a one-year term.

Article 2 Financing for Water Main Replacement

To see if the New London-Springfield Water System Precinct will vote to raise and appropriate the sum of \$4,900,000 for the replacement of the main on Main Street in New London, with \$4,800,000 of such sum to be raised through the issuance of bonds or notes under and in compliance with the Municipal Finance Act, RSA 33:1, et seq, as amended and with \$100,000 of such sum to come from the unreserved Fund Balance; to authorize the Commissioners to issue, negotiate, sell and deliver such bonds or notes and to determine the rate of interest thereon and the maturity and other terms thereof; to authorize the Commissioners to apply for, obtain and accept federal, state or other aid, if any, which may be available for said project and to comply with all laws applicable to said project; and to authorize the Commissioners to take any other action or to pass any other vote relative thereto. Commissioners recommend this article. (3/5 ballot vote required)

Article 3 Operating Budget

To see if the New London-Springfield Water System District will vote to raise and appropriate the sum of \$671,787 for general municipal operations. This article does not include appropriations contained in special or individual articles addressed separately. The Commissioners recommend this Article. (Majority vote required)

Article 4 Main Street Project

To see if the New London-Springfield Water System Precinct will vote to raise and appropriate the sum \$300,000 for the purpose of the Main Street Project. This special warrant article will be a non-lapsing appropriation per RSA 32:7, VI and will not lapse until the Main Street project is completed or by 12/31/2027, whichever is sooner. The Commissioners recommend this appropriation. (Majority vote required).

Article 5 Asset Management Program

To see if the New London-Springfield Water System Precinct will vote to raise and appropriate the sum \$24,000 for the purpose of further implementing the GIS Asset Management Program with said amount to come from the unreserved Fund Balance. This special warrant article will be a non-lapsing appropriation per RSA 32:7, VI and will not lapse until the Asset Management Plan is put into place or by December 31, 2025, whichever is sooner. The Commissioners recommend this Article. (Majority vote required)

Article 6 Phase II-Water Evaluation

To see if the New London-Springfield Water System Precinct will vote to raise and appropriate the sum \$20,000 for the purpose of evaluating the future water supply needs of the Precinct. The intention of this scope of work is to explore the geophysics of areas LON-1 and LON-2 as identified in Phase I of the ground water resource assessment report prepared by Emery & Garrett Groundwater Investigations in May of 2023. This special warrant article will be a non-lapsing appropriation per RSA 32:7, VI and will not lapse until the Phase II-Water Evaluation is completed or by 12/31/2027, whichever is sooner. The Commissioners recommend this appropriation. (Majority vote required)

Article 7 Report of Officers

To hear the reports of Officers for the coming year.



Article 8 Other Business

To transact any other business that may legally come before said meeting. (Majority vote required)

2024 Budget Worksheet

	2023 Approved	2023 Expenditures	2024 Proposed
Salaries, Benefits, Taxes	365,660.00	361,236.33	\$ 394,242.00
Maintenance	35,000.00	44,112.94	\$ 35,000.00
Pump and Tank Maintenance	47,000.00	45,125.21	\$ 35,000.00
Meter maintenance	7,000.00	7,150.42	\$ 10,000.00
Utilities	85,000.00	75,145.89	\$ 80,000.00
Supplies	25,000.00	24,644.78	\$ 25,000.00
Insurance	13,559.00	13,558.89	\$ 15,445.00
Administration	13,000.00	13,509.30	\$ 15,000.00
Audit Expense	5,000.00	5,000.00	\$ 15,000.00
Legal Expense	2,000.00	316.00	\$ 2,000.00
Election/Annual Meeting	600.00	376.19	\$ 600.00
Engineering Review	5,000.00	-	\$ 5,000.00
Equipment(capitalized)	3,000.00	-	\$ 3,000.00
Contingency	1,000.00	-	
Property Tax	3,724.00	4,218.85	\$ 3,500.00
Interest (Long Term)	-	-	
Principal (Long Term)	-	-	
Interest (Short Term)	1,000.00	-	\$ 1,000.00
Lease Expense	32,000.00	32,000.00	\$ 32,000.00
TOTAL	644,543.00	626,394.80	\$ 671,787.00

UPDATED February 29, 2024

New London-Springfield Water System Precinct Annual Meeting

Minutes of March 21, 2023

Moderator Charlie Hafner opened the annual meeting at 6:30 for the election of officers.

Article 1: Election of Officers – Richard (Rip) Cross is Commissioner with 43 votes, Emerson Colby received 6 votes for Commissioner. Marion Hafner is Treasurer with 43 votes, Charlie Hafner is Moderator with 43 votes and Tracy MacKenna is Clerk with 43 votes.

Polls closed at 7:00 PM. Business Meeting began 7:00 PM

Article 2: Report of Officers – To hear the reports of Officers for the coming year. Moved by Deb Cross to accept as written in the warrant, seconded by Kit Ross. **Passed. No discussion**

Article 3: Set salaries for Officers – To set the salaries of all Officers for the coming year; Commissioners \$1,000.00, Moderator \$50.00, Treasurer \$300.00 and \$Clerk 50.00. The Moderator added that there is no increase to salaries this year. Moved by Jane Sweat, seconded by Rod Reyelt. **Passed. No discussion.**

Article 4: Operating Budget – To see if the village district will vote to raise and appropriate the sum of \$644,543.00 for general municipal operations. This article does not include appropriations contained in special or individual articles addressed separately. (Majority vote required) There was a question on why pump and tank budget line increased. Chairman Jacques explained there is maintenance needed on wells at Colby point. Every three years, three wells get maintenance. Last year the tank in the woods got painted and a new safety ladder was installed. Question on property tax line. Chairman Jacques explained that line is used to pay Springfield in lieu of taxes on the 300 acres of property in Springfield. State won't allow municipalities to put land in current use. **Moved by Marion Hafner, seconded by Joy Kubit. Passed**

Article 5: Main Street Project – To see if the New London Springfield Water System will vote to raise and appropriate the sum of 100,000 for the purpose of the Main Street Project. This special warrant article will be a non-lapsing appropriation per RSA 32:7, VI and will not lapse until the Main Street Project is completed or by 12/31/2023, whichever is sooner. The Commissioners recommend this appropriation. (Majority vote required) Jacques spoke on this. The Commissioners are trying to keep the tax rate down but putting money away for bigger projects. Moved by Cara Leone, seconded by Deb Cross. **Passed**

Article 6: Other Business- To transact any other business that may legally come before said meeting (Majority vote required) Chairman Jacques recognized and thanked James Cricenti for his 37 years of dedication to the Precinct. Jacques explained that Cricenti always had the best interest in the Precinct and the Community during his many years of service. Marion Hafner moved to close the meeting, seconded by Rod Reyelt.

Meeting adjourned at 7:20 PM

Tracey MacKenna, Clerk

New London-Springfield Water System Precinct Staff

Robert Thorp, Superintendent
Rhonda L Gauthier, Office Manager
Roderic Reyelt, Water Operator
Jon Dame, Water Operator

Administrative **Office hours:** Monday through Thursday 8:00 am – 12:00 pm

Shop hours: Monday through Friday 7:30 – 4:00

Phone: 603-526-4441

Email: nlswp@tds.net

Website: nlswp.com



New London - Springfield Water System Precinct
Shop and Office
73 Old Dump Road New London NH 03257

Is Gasoline Contaminating Your Drinking Water?

Gasoline is one of the most dangerous products commonly found around the home, yet people often store and use it with little care. Some of the chemicals in gasoline have been found in drinking water with increasing frequency, including benzene, toluene and MtBE (Methyl t-Butyl Ether), which is *easily dissolved in water* and is a possible carcinogen. Even a gasoline spill as small as a gallon can contaminate your drinking water wells or a public water supply.

To Protect Your Drinking Water from Gasoline

Avoid Spilling Gasoline on the Ground, Especially Near Wells

- Don't drain gasoline from lawn mowers, snow blowers, etc. onto the ground.
- Don't burn brush with gasoline.
- Don't top off your fuel tank.
- Keep refueling and engine work away from water supply wells, and if possible, over a concrete floor or similar barrier. Immediately clean up any gas or oil spills.

Avoid Spilling Gasoline in Lakes, Ponds and Rivers

- Keep special gasoline-absorbing pads on your gas-powered boat and know how to use them.
- If you own a larger boat, make sure it has no-spill tank vents.
- Fill portable tanks from outboard boat engines on shore.
- Refuel snowmobiles and ice augers on shore; do not take gasoline storage tanks onto ice-covered ponds.

Store Gasoline Properly

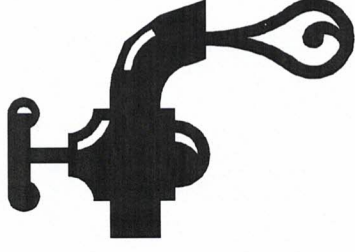
- Use a clearly labeled container made for gasoline and with a spout to avoid spills.
- Keep gasoline containers in a dry, well ventilated shed or detached garage away from water supply wells. Don't keep metal gasoline cans on a dirt floor for extended periods.

Dispose of Waste Gasoline Properly

- Handle old or dirty gasoline as hazardous waste. Bring it to a household hazardous waste collection center in a proper gasoline container.

If a spill occurs: For *any size* spill that is not immediately cleaned up, first contact your local 911 responder or fire department, then call the NHDES emergency spill number at (603) 271-3899 (Mon-Fri, 8-4), or weekends and evenings at (603) 223-4381 (NH State Police).

Got Clean Drinking Water?



It's up to you!

***The DOs and DON'Ts for Maintaining
Clean Drinking Water***



For more information, please contact the Drinking Water Source Protection Program at (603) 271-2862 or visit our website: <https://www.des.nh.gov>

Where does your drinking water come from?

Your drinking water comes from groundwater or surface water. Groundwater is the water that flows through the spaces between soil particles and through fractures in rock. It comes from rain and snowmelt percolating through the ground. Surface water comes from rainfall and snowmelt running over land and from *groundwater* seepage into lakes, rivers and reservoirs.

Why should you be concerned?

While some pollutants, such as bacteria, viruses and phosphorus, can be reduced by passing through soil under certain conditions, groundwater can be easily contaminated by chemicals and oils. Surface water is also affected by soil and pollutants picked up as water flows over land.

Keep Household Hazardous Wastes

Out of your Drinking Water! Such as ...

Automotive Fluids • Auto Batteries • Used Motor Oil
Oil-Based Paint • Paint Thinner • Antifreeze
Pesticides • Cleaning products • Gasoline

DO –

- Use non-toxic and less-toxic alternatives to pesticides and household chemicals.
- Take leftover household chemicals to your town's household hazardous waste collection day.
- Follow package directions on pesticides, fertilizers and other household chemicals.
- Check your underground fuel storage tank (UST) frequently for leaks. If a UST is more than 20 years old, replace it with an aboveground storage tank that has a concrete slab underneath it, a cover and secondary containment.
- Take care of your septic system. Inspect it every year and get it pumped out every 3-5 years.
- Avoid damage to your leach field and distribution lines by keeping vehicles, livestock and other heavy objects off of them.



- Test soil every two years to determine existing nutrient levels and pH before applying fertilizers.
- Use slow or controlled release nitrogen sources of fertilizer.
- Measure the area of your lawn to be fertilized to determine how much to use and calibrate or adjust spreader settings to match the recommended rate for fertilizers.
- Use drip pans large enough to contain motor vehicle or power equipment fluids being replaced or drained.
- Fully drain oil over a drip pan or pail before disposal. Most solid waste transfer stations accept used oil filters for recycling. Store and transport used oil filters in a covered leak-proof container until disposal.
- Keep absorbent materials such as rags, pads, "Speedi-Dry" or kitty litter near the work area and clean up all spills as soon as they occur.
- Dispose of all used absorbents immediately in a leak-proof container.
- Refuel or repair engines over an impervious surface, such as a concrete floor or tarp.
- Drain all fluids from motor vehicle parts before removing them from the vehicle.
- Follow medicine disposal guidelines described at www.nh.gov/medsafety.



DON'T –

- Buy more pesticides or hazardous chemicals than you need.
- Dispose of hazardous chemicals by pouring them down the drain or onto the ground.
- Over-use pesticides or household chemicals. More is not necessarily better.
- Have your UST removed by a contractor who is not familiar with state guidelines for UST removal.
- Overload your septic system with solids by using a garbage disposal, unless the system is specifically designed for one.
- Pour chemicals down the sink or toilet.
- Use septic system cleaners or additives containing acids or chemical solvents such as trichloroethylene (TCE).
- Use fertilizers if heavy rains are anticipated as the nutrients will be flushed from the lawn into drains and low areas.
- Apply fertilizers within 25 feet of most lakes and streams.

11:58 AM

New London-Springfield Water System Precinct

03/12/24

Trial Balance

Accrual Basis

As of December 31, 2023

	Dec 31, 23	
	Debit	Credit
Lake Sunapee Bank-cd	0.00	
Mascoma Bank	0.00	
10006 · Lake Sunapee Bank	499,541.26	
10007 · Lake Sunapee Bank MM a/c	48,006.73	
10008 · Sugar River Savings	240,412.91	
11000 · Accounts Receivable	3,547.75	
11100 · Receivable-Auditor	0.00	
12000 · Inventory Asset	49,595.66	
13000 · Prepaid Expenses	0.00	
14050 · Undeposited Funds	286.00	
South Pleasant Street Cost	0.00	
15000 · Booster Station/Tank CSC	1,864,359.00	
15005 · Colby Point Wells	1,786,945.00	
15010 · county road project	0.00	
15020 · Equipment	266,367.99	
15030 · Facilities	2,988,527.58	
15040 · South Pleasant St Cost	0.00	
15045 · Main Street Project	53,817.76	
15060 · accumulation Depreciation		4,022,649.25
15070 · Right-to-use asset	243,378.63	
15090 · Accum. Amortization-right-to-us		30,422.29
16000 · Inter-Fund Receivable	0.00	
20000 · Accounts Payable		13,951.55
20400 · Payroll Liabilities		0.28
20410 · Accrued Payroll	0.00	
20710 · Payable - Auditor	0.00	
20720 · Loan 6000748914	0.00	
20730 · Accrued vacation payable		56,234.50
COUNTY RD MAIN REPLACEMENT LOAN	0.00	
Lake Sunapee Bank Loan	0.00	
Principal Long Term Note Mascom	0.00	
20900 · Inter-Fund Payable	0.00	
21000 · Lease Obligation - Colby Point		212,956.34
2.3000 · Appropriated Surp;us	0.00	
2.3010 · Committed Fund Balance		103,897.34
2.3020 · Nonspendable Fund Balance	0.00	
2.3030 · Opening Bal Equity	0.00	
2.3040 · Unassigned Fund Balance		401,087.46
2.3050 · Surplus	0.00	
2.3060 · Retained Earnings	88,589.81	
2.3070 · Plant & Equipment Fund		2,964,982.24
30300 · Miscellaneous Income		13,475.77
30500 · ARPA FUNDS from Town of New Lon		63,008.33
30600 · Interest Income		36.49
30700 · Refunds		1,263.68
30800 · Precinct (Property) Taxes		644,635.46
3402 · Water Income		3,737.60
3402 · Water Income:3402-01 · Meter I...		241,842.05
3402 · Water Income:3402-02 · Interes...		130.05
3402 · Water Income:3402-03 · Penalty...		2,150.00
3402 · Water Income:3402-04 · Backflo...		5,355.00
3402 · Water Income:3402-05 · System ...		2,422.00
3402 · Water Income:3402-06 · Hydrant...		43,000.00
3402 · Water Income:3402-07 · Propert...		2,450.00
3186 · Payment in lieu of Taxes	4,218.85	
4130 · Officer Salary	3,400.00	

11:58 AM

New London-Springfield Water System Precinct

03/12/24

Trial Balance

Accrual Basis

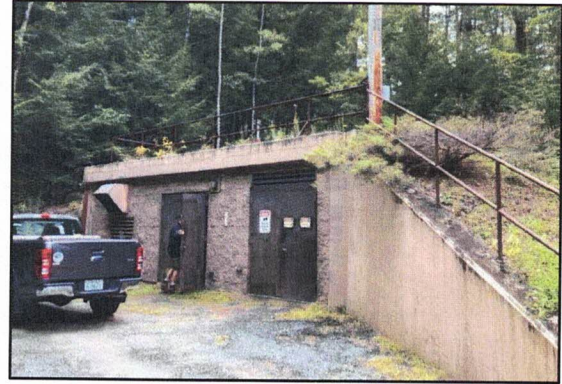
As of December 31, 2023

		Dec 31, 23	
		Debit	Credit
4140	· Election / Annual Meeting	376.19	
4150	· Accountant Fees	5,000.00	
4153	· Legal Expense	316.00	
4155	· Personnel Administration	0.00	
4155	· Personnel Administration:4155-...	0.00	
4155	· Personnel Administration:4155-...	86,346.00	
4155	· Personnel Administration:4155-...	27,364.22	
4155	· Personnel Administration:4155-...	213,088.67	
4155	· Personnel Administration:4155-...	13,447.32	
4155	· Personnel Administration:4155-...	17,590.12	
4196	· Insurance:4196-01 · Primex Pro...	13,558.89	
4331	· Administration	543.20	
4331	· Administration:4331-02 · Misce...	874.37	
4331	· Administration:4331-03 · Postage	1,907.87	
4331	· Administration:4331-04 · Offic...	1,197.39	
4331	· Administration:4331-05 · Dues ...	8,123.97	
4331	· Administration:4331-08 · Compu...	862.50	
4332	· Utilites:4332-01 · electricity	61,629.43	
4332	· Utilites:4332-02 · fuel oils/p...	4,906.22	
4332	· Utilites:4332-03 · telephone	8,610.24	
4333-00	· Supplies	18,519.10	
4333-00	· Supplies:4333-01 · Vehicle ...	6,125.68	
4334-00	· Maintenance	35,253.96	
4334-01	· meter maintenance	7,150.42	
4334-02	· pump and tank maintenance	45,125.21	
4334-03	· Vehicle	8,858.98	
4790-00	· Lease	32,000.00	
SP ART 2021-05	System Improve	6,245.91	
SP ART 2022-01	Utiltiy Truck	5,233.32	
SP ART 2022-02	Eval Water Suppl	30,000.00	
SP ART 2022-03	MAIN STREET PROJ	28,437.57	
TOTAL		8,829,687.68	8,829,687.68

3.3 Colby Point Pump Station

The Colby Point Pump Station was constructed in 1996 and includes electrical controls for six wells, chemical treatment systems and two high lift vertical pumps. The station is constructed in an embankment with poured concrete floor/clearwell, walls and roof. The amount of ceiling/wall insulation is unknown.

There are two outside doors for a pump/generator room and chemical room. In addition to the high lift pump/well controls, the station also includes a 125 kW Olympian diesel emergency generator equipped with a 1500-watt block heater. During the site visit, the block heater temperature was measured to be 129 degrees, which is slightly higher than a typical range of 100 to 120 degrees. This setting should be adjusted to bring the operating temperature below 120 degrees.



The pump room is heated with a ceiling mounted propane heater. The observed wall thermostat setting was 71 degrees. The chemical room is heated with a 7.5 kW ceiling mounted electric heater with the wall thermostat set at 65 degrees. A dehumidifier with a setting of 30-35% RH is used to minimize pipe condensation in the station.

The 2022-2023 pump run time recorded by staff is summarized below. When the water storage tank level reaches 22', all six wells are activated (sequentially over a short period of time) and both high lift pumps come on-line.

Table 3.3: Colby Point Pump Station 2022-2023 Operational Data

Month	Well #1 Hours	Well #2 Hours	Well #3 Hours	Well #4 Hours	Well #5 Hours	Well #6 Hours	High Lift Pump #1 Hours	High Lift Pump #2 Hours
Jul 2022	574	575	575	575	575	575	290	296
Aug 2022	587	588	588	588	587	587	298	300
Sep 2022	366	368	368	368	366	366	191	195
Oct 2022	336	338	338	338	337	337	177	179
Nov 2022	306	307	307	307	307	307	163	163
Dec 2022	371	376	376	376	256	371	164	167
Jan 2023	377	382	381	382	0	377	150	161
Feb 2023	402	403	403	402	0	402	163	164
Mar 2023	419	420	420	421	0	420	168	166
Apr 2023	440	442	441	441	0	440	172	172
May 2023	516	519	519	518	497	516	345	48
Jun 2023	529	531	531	531	529	529	325	0
Total/Avg	5223	5249	5247	5247	3454	5227	2606	2011

The estimated energy use for the wells and pump system are shown in Table 3.4. For each system a kWh/MG of flow was included. The electric heater, dehumidifier and block heater represent the majority of energy use for the miscellaneous energy column (negative values are due to the flow readings not matching up with the billed utility energy use meter readings).

3.4 Colby-Sawyer Booster Pump Station

The Colby Sawyer Booster Pump Station was constructed in 2006 and is located on 617 Main Street. The station includes three horizontal booster pumps, fire pump, storage tank and emergency generator.

The pump station and adjacent 500,000 gallon storage tank was constructed with poured concrete with a field stone façade for the exposed wall. The amount of ceiling/wall insulation for the station is unknown.



The station was originally constructed to provide a back up to the Colby Point Pump Station. The booster pumps and fire pump can be utilized in the event of low system pressure, which could be caused by a line break or high system demand. To maintain the water quality in the adjacent water storage tank, operators manually activate one booster pump each Thursday to pump approximately 90,000 gallons of stored water into the system. This operation typically takes 4 hours. On Sunday, valves are opened and system water flows back into the tank through the altitude valve.

The 2022-2023 pump run time recorded by staff and estimated flow is summarized below. The pump energy use column is based on the weekly run time and the 18 kW power draw measured for Pump #2 at full speed.

Table 3.8: Colby Sawyer Booster Pump Station 2022-2023 Energy and Operational Data

Month	Pump #1 Hours	Pump #2 Hours	Pump #3 Hours	Fire Pump Hours	Monthly Flow (MG)	Pump Energy Use (kWh)	Estimated Energy Use (kWh) for Misc. Equipment	Station Billed Energy Use (kWh)
Jul 2022	10	10	10	0	0.39	540	2,460	3,000
Aug 2022	10	10	10	0	0.39	540	2,060	2,600
Sep 2022	10	10	10	1	0.39	585	2,415	3,000
Oct 2022	10	10	10	0	0.39	540	2,060	2,600
Nov 2022	10	10	10	0	0.39	540	1,960	2,500
Dec 2022	10	10	10	0	0.39	540	2,960	3,500
Jan 2023	10	10	10	0	0.39	540	4,160	4,700
Feb 2023	10	10	10	0	0.39	540	3,860	4,400
Mar 2023	10	10	10	1	0.39	585	4,215	4,800
Apr 2023	10	10	10	0	0.39	540	4,360	4,900
May 2023	10	10	10	0	0.39	540	3,060	3,600
Jun 2023	10	10	10	1	0.39	585	2,715	3,300
Total/Avg	120	120	120	3	4.68	6,615	36,285	42,900

The miscellaneous energy use of 36,285 kWh in Table 3.8 is primarily for the generator block heater and electric heaters. This represents 85% of the energy use (kWh) at the station.

The emergency generator is a 500 kW CAT diesel generator equipped with a ~4000-watt block heater. During the site visit, the block heater temperature was measured to be 168 degrees, which is higher than a typical range of 100 to 120 degrees. The savings for adjusting the block heater thermostat below 120 degrees is reviewed in OM #5.

3.5 Water Storage Tanks

The water system includes the remote Colby Tank in the Springfield Town Forest and a storage tank adjacent to the Colby Sawyer Booster Pump Station.

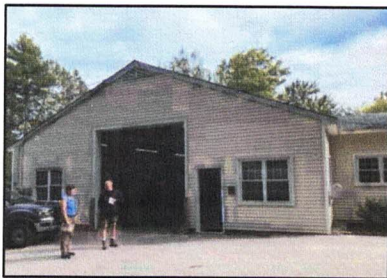
The Colby Tank (also called the Colby Point Tank) is a one million gallon concrete tank constructed in 1996. The tank does not have power and level is estimated based on system pressure controls. The tank level fluctuates between 22' (lead pump on) and 25' (pump off).



The Colby Sawyer Booster Pump Station Tank has a capacity of 500,000 gallons and uses an altitude valve to control tank level (13.6' level during visit). The tank is adjacent to the booster station and the controls are part of the station power feed. Since the booster station has minimal usage, the operator must manually activate one of the booster pumps every Thursday to pump approximately 90,000 gallon of stored water into the system to provide turnover. The tank is refilled through the altitude valve every Sunday.

3.6 Administration/Maintenance Building

The Administration/Maintenance Building includes an office area, bathroom and a large maintenance garage with parts room. The wood frame building has a poured concrete foundation and asphalt shingled roof. The amount of insulation in the walls/ceiling is unknown.



The office area is heated/cooled with a heat pump unit and the garage is heated with a ceiling mounted propane heater. In 2022, the building used 1,578 gallons of propane at a cost of \$4,222. OM #4 reviews the annual cost savings for using a setback thermostat to reduce the garage temperature to 50 degrees when the area is unoccupied. There may be an opportunity to reduce the garage heat loss with insulated garage doors, but reducing the room temperature is the first step to reduce costs.

Hot water for the building is supplied with a 20-gallon electric hot water tank. A propane on-demand hot water unit was considered, however, the annual electric use for the building is minimal and the savings would not support the cost of the project.

3. WATER SYSTEM FACILITIES

The pump station includes a pump/electrical room and generator room. Both rooms are heated with 7.5 kW ceiling mounted electric heaters. The observed wall thermostat setting averaged 63 degrees for both rooms. OM #3 reviews the annual energy savings for maintaining the electric heater thermostats at 50 degrees.

Electric service for the station is provided on the Eversource “G” Rate Schedule. The 2022-2023 station electric billed energy use data is summarized below.

Table 3.9: Colby Sawyer Booster Pump Station 2022-2023 Electric Energy Use and Costs

Month	Energy Use (kWh)	Actual Demand (kW)	Billed Demand (kW)	Demand Cost	Delivery (kWh) Cost	Monthly Fee	Supply Cost	Delivery Cost	Total Cost
Jul 2022	3,000	24	19	\$337	\$112	\$31	\$231	\$480	\$711
Aug 2022	2,600	24	19	\$335	\$116	\$31	\$200	\$482	\$682
Sep 2022	3,000	57	52	\$943	\$140	\$31	\$231	\$1,114	\$1,345
Oct 2022	2,600	24	19	\$335	\$120	\$31	\$200	\$486	\$686
Nov 2022	2,500	24	19	\$346	\$117	\$31	\$192	\$493	\$686
Dec 2022	3,500	27	22	\$396	\$161	\$31	\$269	\$588	\$858
Jan 2023	4,700	32	27	\$490	\$217	\$31	\$362	\$737	\$1,099
Feb 2023	4,400	65	60	\$1,085	\$189	\$31	\$338	\$1,306	\$1,644
Mar 2023	4,800	27	22	\$401	\$201	\$31	\$369	\$634	\$1,003
Apr 2023	4,900	27	22	\$398	\$207	\$31	\$377	\$635	\$1,012
May 2023	3,600	26	21	\$380	\$152	\$31	\$277	\$563	\$840
Jun 2023	3,300	55	50	\$893	\$138	\$31	\$254	\$1,062	\$1,316
Totals	42,900	412.1	352.1	\$6,338	\$1,870	\$372	\$3,300	\$8,580	\$11,881

The demand charge in Table 3.9 is 53% of the station energy costs. To reduce this cost, OM #2 reviews the demand savings for operating the on-line booster pump at a lower flow rate. The operator indicated that extending the weekly pump operating hours from 4 hours to 8 hours to pump the same total flow could be done without incurring additional labor costs.

Savings

The pump system includes three Berkeley Model B-2 horizontal centrifugal booster pumps rated for 400 gpm @ 170' TDH. The pumps include 30 hp Baldor premium efficient motors and VFDs. The fire pump is a Berkeley pump originally rated for 2,260 gpm @ 170' TDH. This pump is equipped with a 125 hp Baldor premium efficient motor.

During the site visit, flow, pressure and kW data were recorded for Pump #2 at three VFD speeds. This data was used to calculate the existing pump efficiency in Table 3.10. As shown, Pump #2 efficiency appears to be lower than the original manufacturer's curve efficiency. However, the key data related to energy costs is the reduction in electric demand (kW) that could be realized if the pumps were operated at a flow rate of 140 gpm compared to 280 gpm.

