



Town of Woodstock + HBS

Woodstock Aqueduct Company: Ownership and Operations

November 16, 2023

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Executive Summary (1 of 2)

Ownership Options and Implications *(pages 4-15)*

- Water system ownership varies across US and VT, with tradeoffs existing between public and private related to pricing, quality, financing, expertise, and control
- Arlington, VT showcases successful transition from private to public to fix old, unfunded infrastructure as preferred financing allowed city to acquire firm and make much-needed repairs
- M&A is possible, but WAC conditions and external factors make potential 3P investment less likely

Available Sources of Funding *(pages 16-24)*

- Due to the high-income level of townspeople, Woodstock will likely not be eligible for grants; however, may be able to access below market-rate interest long term loans from government entities
- Woodstock may also be able to take advantage by federal institution-backed loan guarantees to access lower interest rate financing

Executive Summary (2 of 2)

Deep Dive: Town Acquisition – Financial Model *(pages 25-34)*

- The financial model's goal is to simulate scenarios for the acquisition given: cost of CAPEX projects (improvement, maintenance, and repair), cost changes under town's ownership, fees and tariffs increase, and the sources of funds available
- There are 4 key financial/operational assumptions regarding revenue streams, tax implications, maintenance costs, and purchase price
- 5 key inputs: revenue forecast, cost of capital, purchase price, project planning, and OpEx and SG&A; these inputs will provide a "cash deficit" and "price increase" tracker to guarantee the WAC is cash flow positive under the town's management

Deep Dive: Town Acquisition – Community Engagement *(pages 35-40)*

- There are many infrastructural needs competing for resources at this time and the water system is the most critical among them
- Developing an organized strategy around community engagement and education is imperative to the project's success

Ownership options and implications





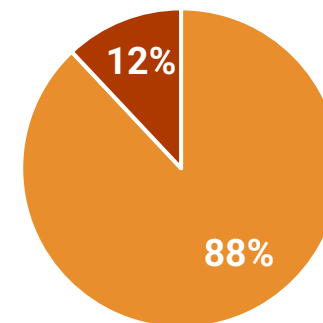
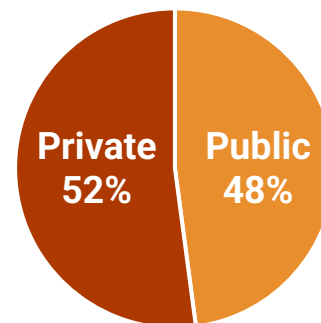
Water supply ownership structures vary across the US and often depend on community size, location

Community water system ownership

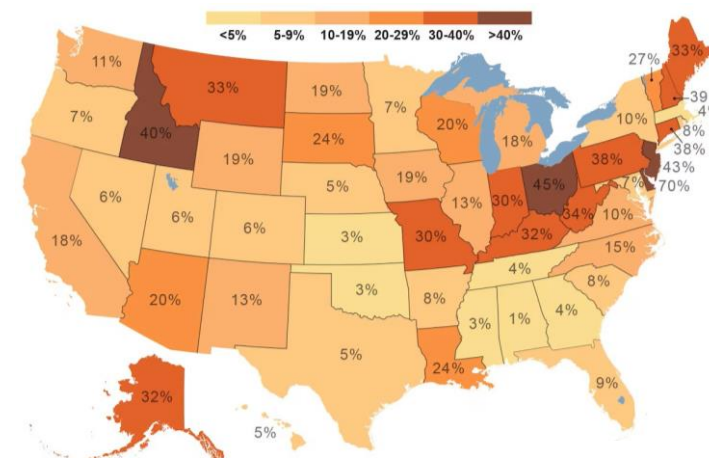
- **Public utility:** owned by govt. or public agency; operated by a govt. or contractor
- **Private utility:** owned and operated by a private for-profit or nonprofit firm
 - Includes publicly-traded companies, regional operators, individual utilities, cooperatives, and investment firms
- Majority of 50K systems are private; state rules can incentivize ownership type

of Systems (US)

% of Pop. Served (US)



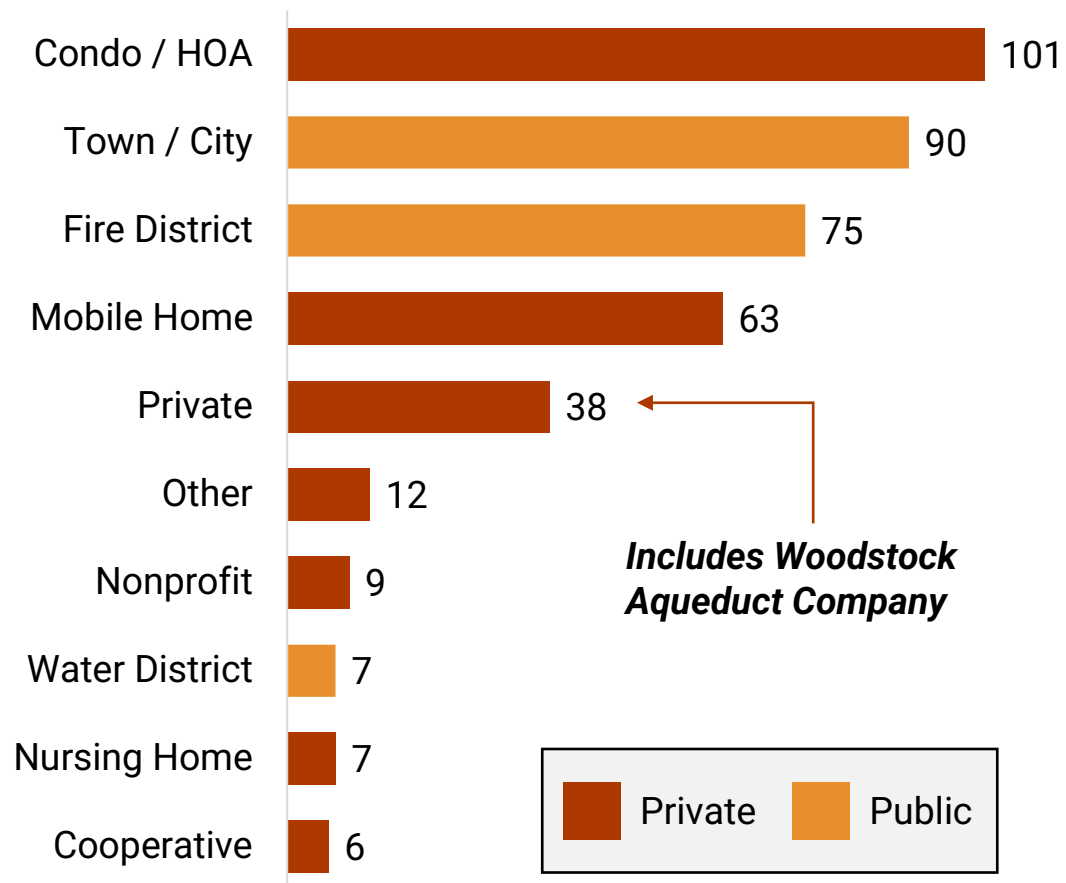
% Private Ownership, By State



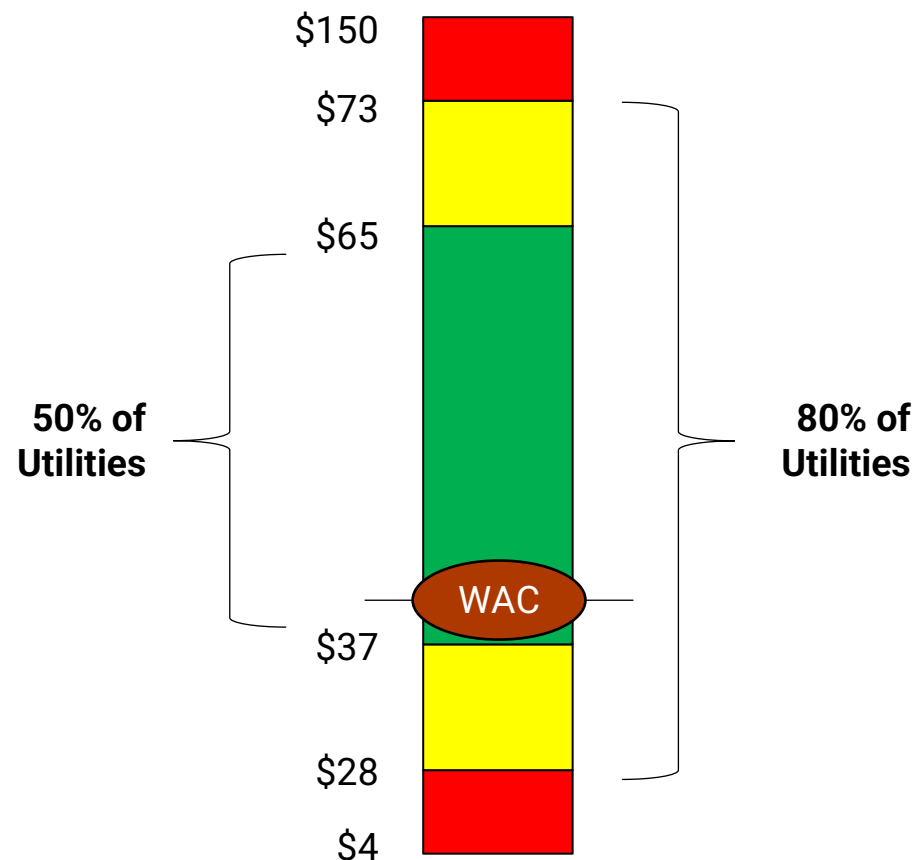


Within the state of Vermont, water ownership type and rates can also differ dramatically

VT Water / Sewer Utilities
(By Ownership Type)



VT Water / Sewer Utility Rates
(Monthly at 5,250 Gallons)





Public or private ownership is not exactly binary, as varying degrees of control exist across system type

Private-Owned

Hybrid

Public-Owned

"External" Operators	"Internal" Operators	Public-Private Partnerships	Councils and Consortiums	Public Municipal
Third-party with limited or no local presence; often own multiple systems operated on for-profit basis	Third-party with direct ties to municipality (e.g., citizen-owned); usually operate only one system	Govt. owned but operated by private contractor; balances local control with external expertise	Partner with other systems (informal or contractual) to reduce costs, share expertise and risks	Govt. owned and operated as a public service to the community; often governed by board
Examples American Water, Carlyle Group, Eversource Group	Examples Woodstock Aqueduct Company, Whitinsville Water Co (MA)	Examples Alice, TX and Seven Seas Water Group	Examples Southern Maine Regional Water Council	Examples Burlington Water Division, Boston Water and Sewer Commission









These ownership structures present trade-offs that can be weighed with individual community needs

	Factor	Private	Public	Considerations
↑ Quantitative	Pricing		✓	Customers of private systems pay ~\$20 more per month (despite PUCs regulating price); poorer HHs spend 4.4% of income (vs. 2.8%) if private
	Quality	✓		Public systems commit significantly more Max. Contamination Level, Treatment Technique, and Health-Related violations of the SWDA
	Regulations	—	—	Both public and private systems must adhere to federal and state regulations related to public health and the environment
↓ Qualitative	Financing		✓	Municipalities have greater access to attractive water-specific financing and grants; municipality has no tax burden on its operations
	Expertise	✓		Managing and operating a water system can be complex, so municipality must ensure it has or can acquire the necessary resources to do so
	Control		✓	Municipality can make decisions that prioritize the needs and value of the community, including long-term sustainability and economic growth



Case Study #1, Arlington, VT: transition from private to public to fix old, unfunded infrastructure

	Transition Considerations	Challenges with Private Ownership
	Need to Fix Aging System Infrastructure	<ul style="list-style-type: none">• Underfunded liabilities and repairs; firm had limited capital access to help fix
	Concerns with System Quality and Operations	<ul style="list-style-type: none">• Leakage issues related to old infrastructure as ~25% of pumped water was lost
	Desire to Grow Municipal Capacity	<ul style="list-style-type: none">• Municipality wanted greater control and ownership of responsibility
	Prevention of Potential Development	<ul style="list-style-type: none">• Municipality planned for 20% pop. growth which system could not handle

Similar issues currently facing Woodstock

Arlington, VT – Demographics
Population: 2,500 Median HH income: \$75K
Poverty rate: 6.9% Water users: 510



Case Study #1, Arlington, VT: preferred financing allowed city to acquire firm and make much-needed repairs

Transition plan focused on three key areas

Financing

Secured \$4M from Vermont State Revolving Fund; \$1.65M to acquire company, rest for repairs; did not raise taxes

Operations

Retained sole water system employee; integrated all HR and accounting systems with the town systems

Pricing

Froze water rates for first 5 years after acquisition; debt allowed city to make necessary system improvements



System improved but city had unforeseen issues

System infrastructure

Immediate investment in pipes fixed leakage issues; gradual, systematic replacement of old assets with new PEX pipes

Administrative difficulties

Retained employee “resistant to change” which slowed strategic initiatives; “off the books” work required from city employees

Economic development

City failed to realize any growth despite ownership of system (but can better control and plan for now)



Case Study #2, Martin County, KY: public-private partnership due to quality and expertise issues

Publicly-owned and managed water system experienced significant quality issues...

...forcing Alliance Water partnership to balance 3P expertise and municipal power

47% of samples had 1+ contaminants over federal standards

20 miles of water mains to be replaced annually

96% of residents relied primarily on bottled water for drinking

\$3.16 surcharge for users to cover \$160K / mo. fee to Alliance

\$100K lost per month by the utility despite 5th highest rates in state

\$8M received in federal and state grants to make improvements

>70% of water was lost somewhere throughout the system

<30% of water now lost in system, a 50+ year all-time low



Case Study #3, Lake Station, IN: transition from public to private due to town's financial difficulties

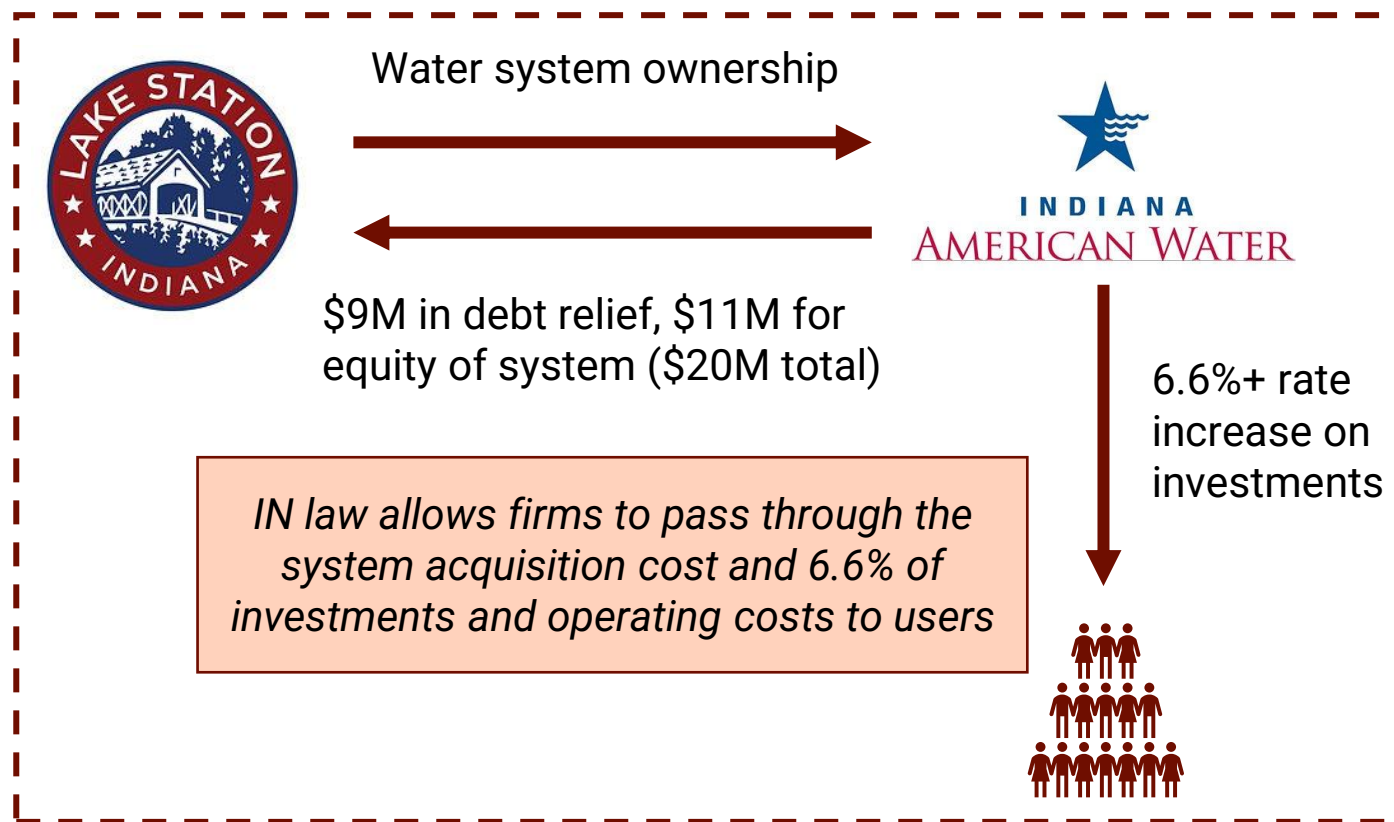
High debts forced potential sale but divided local government

City operating budget \$2M overdrawn; water system considered "distressed" due to debt burden; city had laid off employees, delayed basic repairs

"When that money...when we've spent it on needed projects, I wonder what we'll do then." – Councilman Rick Long

"Selling the water will allow us to provide efficient services, and then we'll have a little nest egg." – Mayor Chris Anderson

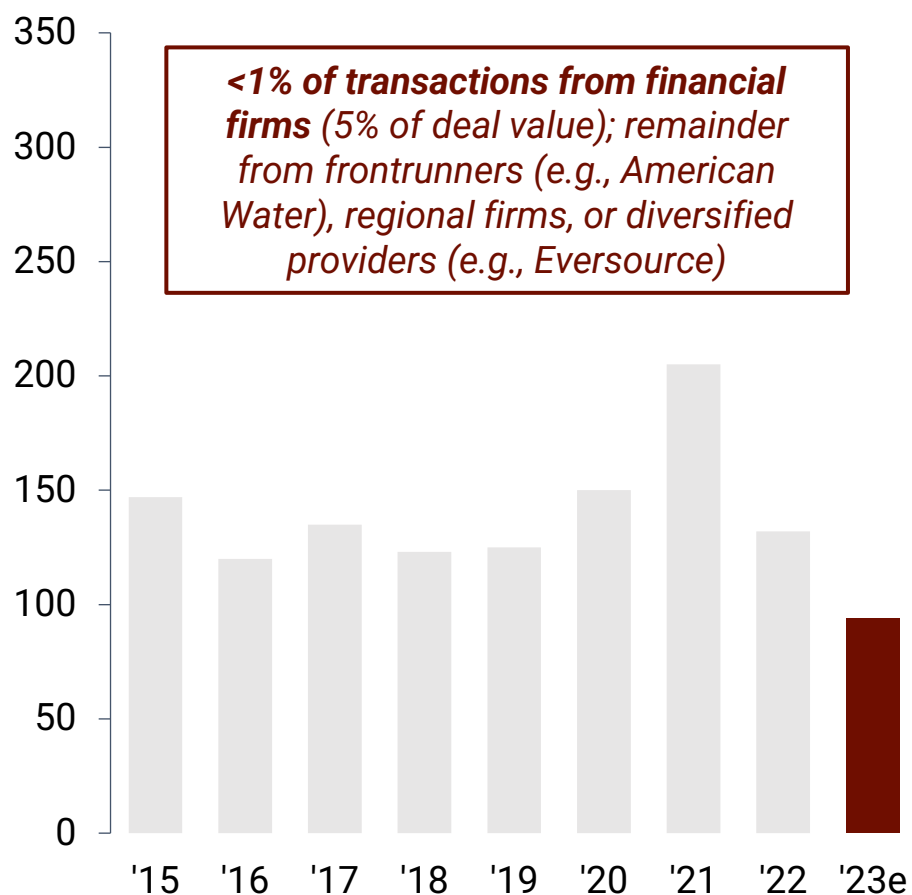
Eventual sale of water system provided windfall to municipality, but risked price increases on citizens for all investments





Water M&A has remained steady, but deals largely driven by publicly-traded utilities in select states

of Water Utility M&A Transactions



Selected Water Utility Acquisitions

Seller	Buyer	Trans. Value (Connections)
City of Rosiclare, IL	American Water	\$2.7M (500)
Egg Harbor City, NJ	American Water	\$21.8M (3,000)
Town of Lowell, IN	American Water	\$24.5M (4,000)
New England Service Co.	Eversource Energy	\$48.8M (10,000)

97% of American Water M&A activity occurs in 13 'fair market' states (VT not one), which allows for higher water valuations



Both internal conditions of the WAC and external factors make potential third-party investment less likely

WAC characteristics may reduce 3P interest



Heavily indebted system (\$700K relative to size (9.3x leverage); IOUs typically leveraged at 4-5x EBITDA)



Significant and underfunded repairs (~\$10M) required to bring system up to reliable quality standards



Strong local ties may prevent serious consideration to external buyer, despite willingness to sell

Market conditions not ripe for M&A



Raising interest rates have reduced global M&A deal volume (-4% YoY), especially for PE firms (-30% YoY)



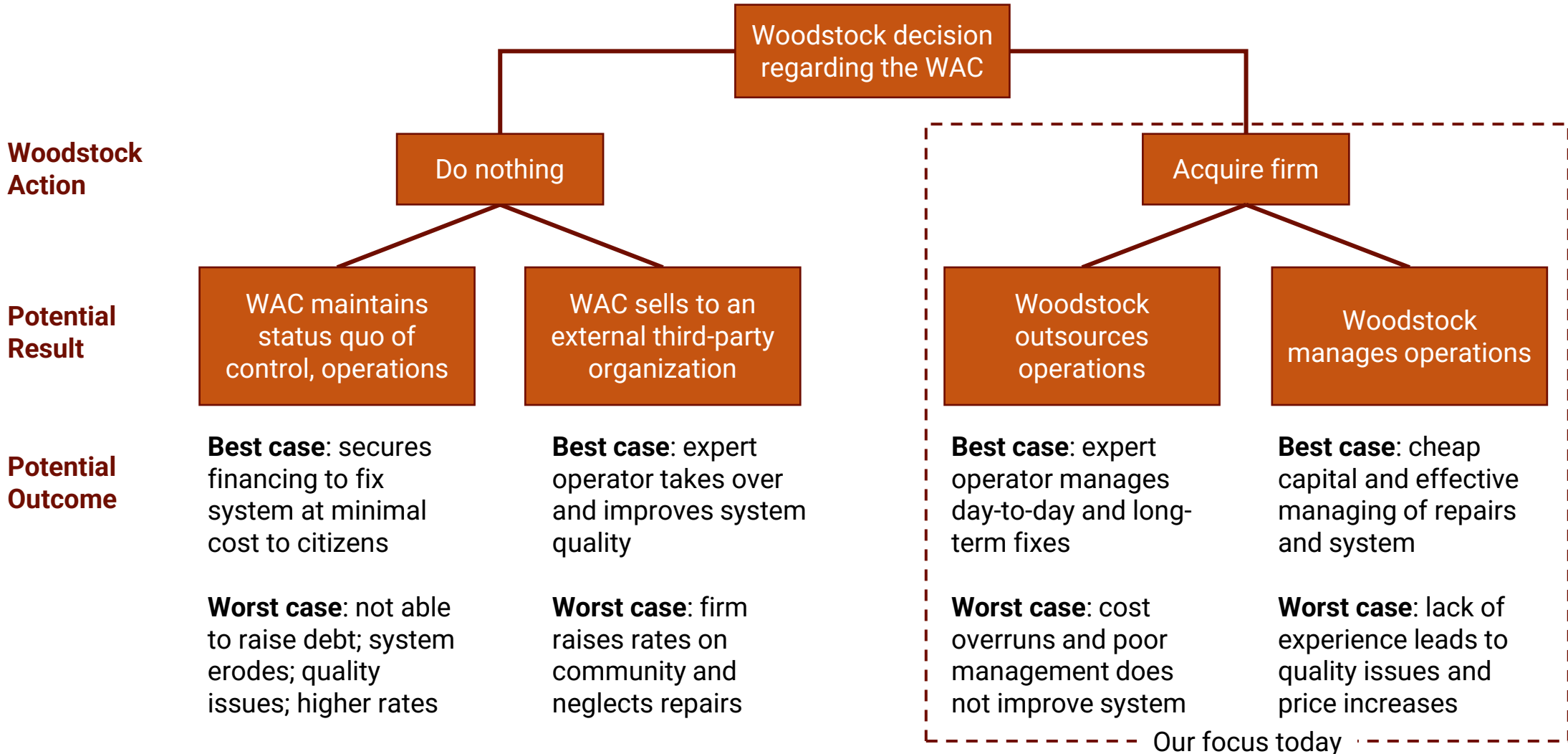
Vermont regulations prevent FMV of water utilities; large share of M&A activity taking place in NJ, PA, TX



Isolated systems in small states less attractive; firms typically roll up around large systems in single state



Woodstock should evaluate potential WAC outcomes with regards to control and capacity



Available Sources of Funding





Acquiring WAC will require both initial financing and long-term methods of repayment

Short-Term Methods of Payment

Municipal Debt
Loans provided for by public institutions and/or private banks

Municipal Bonds
Bonds issued by the municipality, underwritten by an investment bank



Long-Term Methods of Repayment

Taxes
Tax Revenue, Tax Increment Financing (TIF),
Increased Tax Rates

Tariffs
Increased water rates

Transfers
Federal, Regional, or State-level grants



There are a wide variety of options to finance both the initial cash outlays and repayments

Bonds

- Revenue generating bonds issued by the town
- Either taxable or tax-exempt, with tax-exempt attracting more investors
- Current interest rates of 3 – 6%, depending on credit rating and maturity

Loans

- Repaid under 10 to 40-year timelines
- Below market interest rates for municipalities

Grants

- Do not need to be repaid
- Financed through an application process for a specific project
- **Due to high income level, Woodstock does not have a history of receiving many grants**

Tax Increment Financing (TIF)

- Town issues bonds to finance improvements or purchases
- Taxes within the TIF district are used to pay off bonds

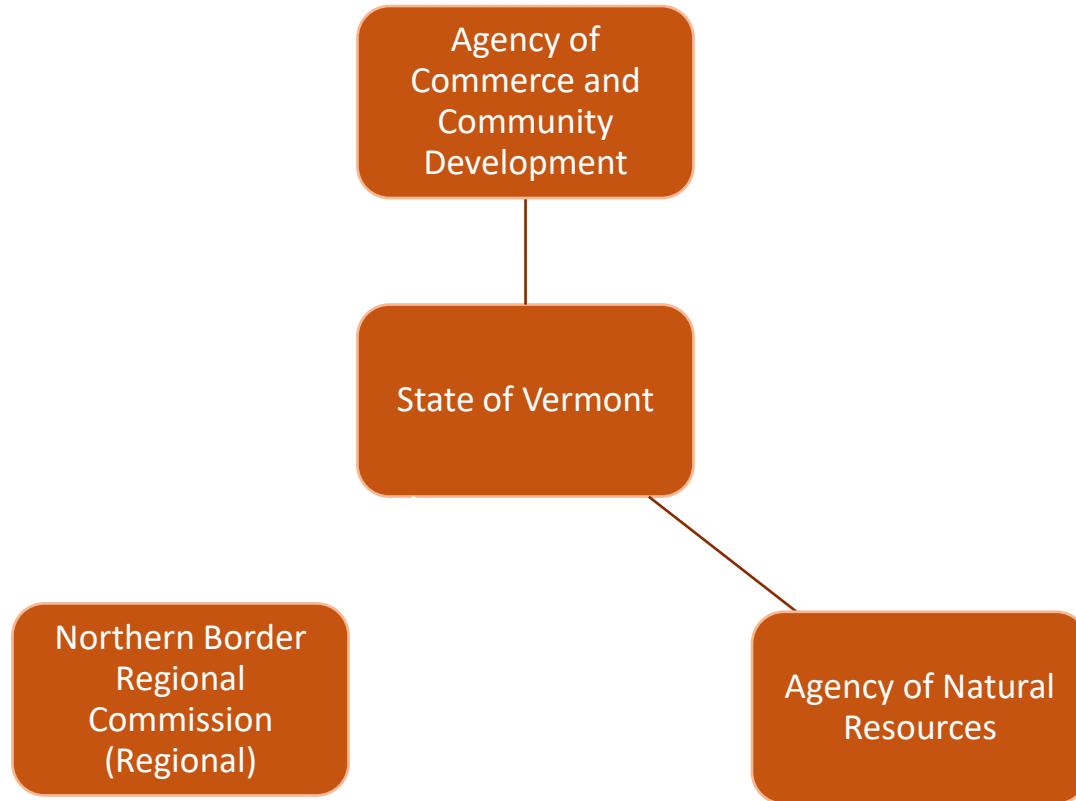
Loan Guarantees

- Not a direct source of funding
- Can be used to refinancing existing debt

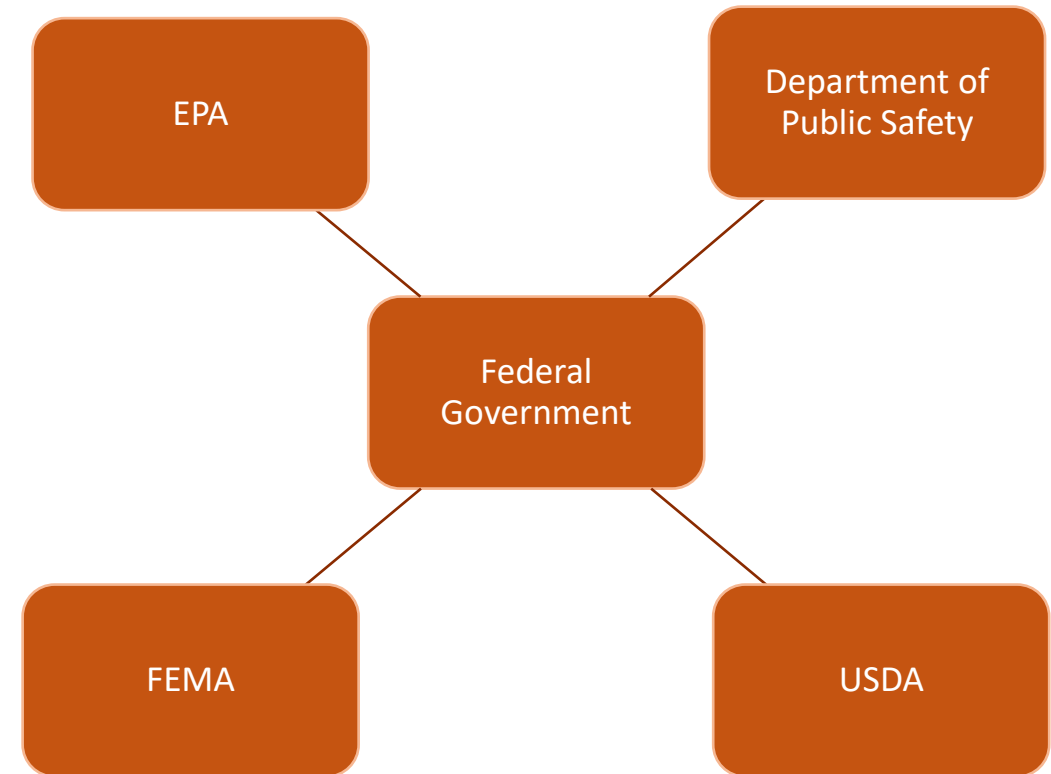


WAC can unlock funding sources at the state, regional, and federal level

State-level sources



Federal-level sources





Although there are many grants available for similar projects, Woodstock's income level is too high to qualify

Source Name	Organization	Level	Availability
Water and Waste Disposal Loan & Grant Program	USDA	Federal	Public Only
Flood Mitigation Assistance Grant Program	FEMA	Federal	Public Only
Building Resilient Infrastructure and Communities (BRIC) Fund	FEMA	Federal	Public Only
Emergency Community Water Assistance Grants	USDA	Federal	Public Only
Municipal Planning Grant (MPG)	Agency of Commerce and Community Development	State	Public Only
Vermont Community Development Program (VCDP)	Agency of Commerce and Community Development	State	Public Only
Business Emergency Grant	State of Vermont	State	Public and Private
Flood Resilient Communities Fund (FRCF)	Department of Public Safety (Funded by American Rescue Plan Act (ARPA))	Federal	Public and Private
Northern Border Regional Commission (NBRC)	Northern Border Regional Commission	Federal	Public and Private
Community Recovery and Revitalization Program (CRRP)	Agency of Commerce and Community Development (Funds through ARPA)	State	Public and Private



However, according to a USDA official who was interviewed, the Town of Woodstock's median household income is too high to qualify for most, if not all.



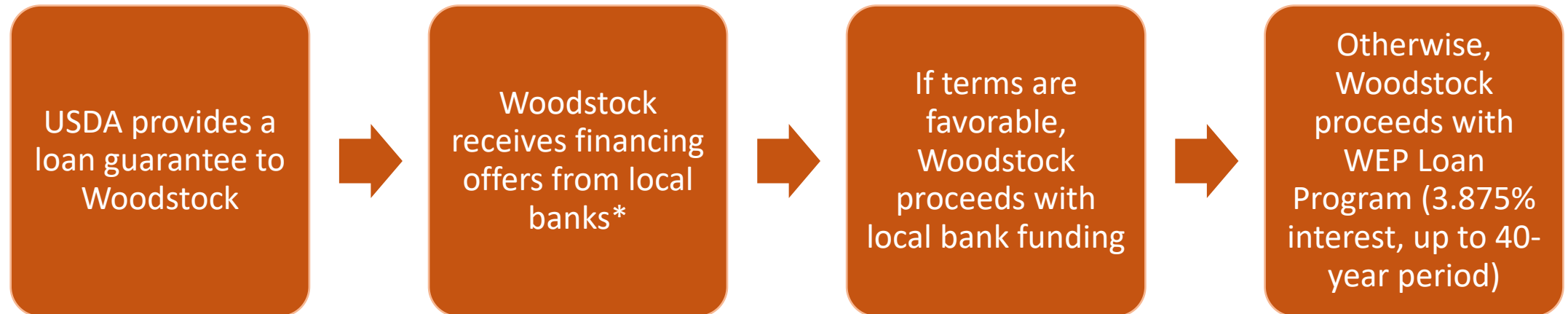
Woodstock is eligible for loans at below market-level interest rates at long amortization periods

Source Name	Organization	Level	Availability	Amortization Period	Interest Rate Range
Water and Waste Disposal Loan & Grant Program	USDA	Federal	Public Only	Up to 40 years	3.875%
Clean Water State Revolving Fund	Vermont ANR (Agency of Natural Resources)	State	Public Only	5 to 15 years for Planning and Final Design, up to 30 years for Construction	0% for Planning and Final Design, 2% Municipal and 2.75% Private for Construction
Vermont Municipal Bond Bank - Pooled Loan Program	Vermont Bond Agency	State	Public Only	Up to 30 years May request up to 5 years interest only	5.68% AA+ Market Rate
Rural Water Loan Fund (RWLF)	National Rural Water Association (NRWA)	Non-profit	Public Only	Up to 10 years	3%
Drinking Water State Revolving Fund	Vermont ANR (Agency of Natural Resources)	State	Public and Private	20 years	3%
Water Infrastructure Finance and Innovation Act (WIFIA)	EPA	Federal	Public and Private	Up to 35 years with maximum 5-year deferral after completion	5.11% 30-Yr as of October 20 Greater than or equal to US Treasury rate for similar maturity



Woodstock can take advantage of loan guarantee programs as an indirect method of financing

USDA Water and Environmental (WEP) Loan Guarantee Program



*According to a USDA official that was interviewed, the WEP Loan Guarantee Program requires the municipality to first assess financing options via local banks to prevent taking business from local communities



Tax Increment Financing provides a complex but effective method of debt repayment

- Purpose: Finance improvements for public infrastructure which serves the specific “TIF District”.
- Process:



- Notable Vermont TIF Districts: Barre, St. Albans, Hartford, Burlington.
- Killington TIF District created in 2022 included water and transportation infrastructure improvements of approximately \$62M.

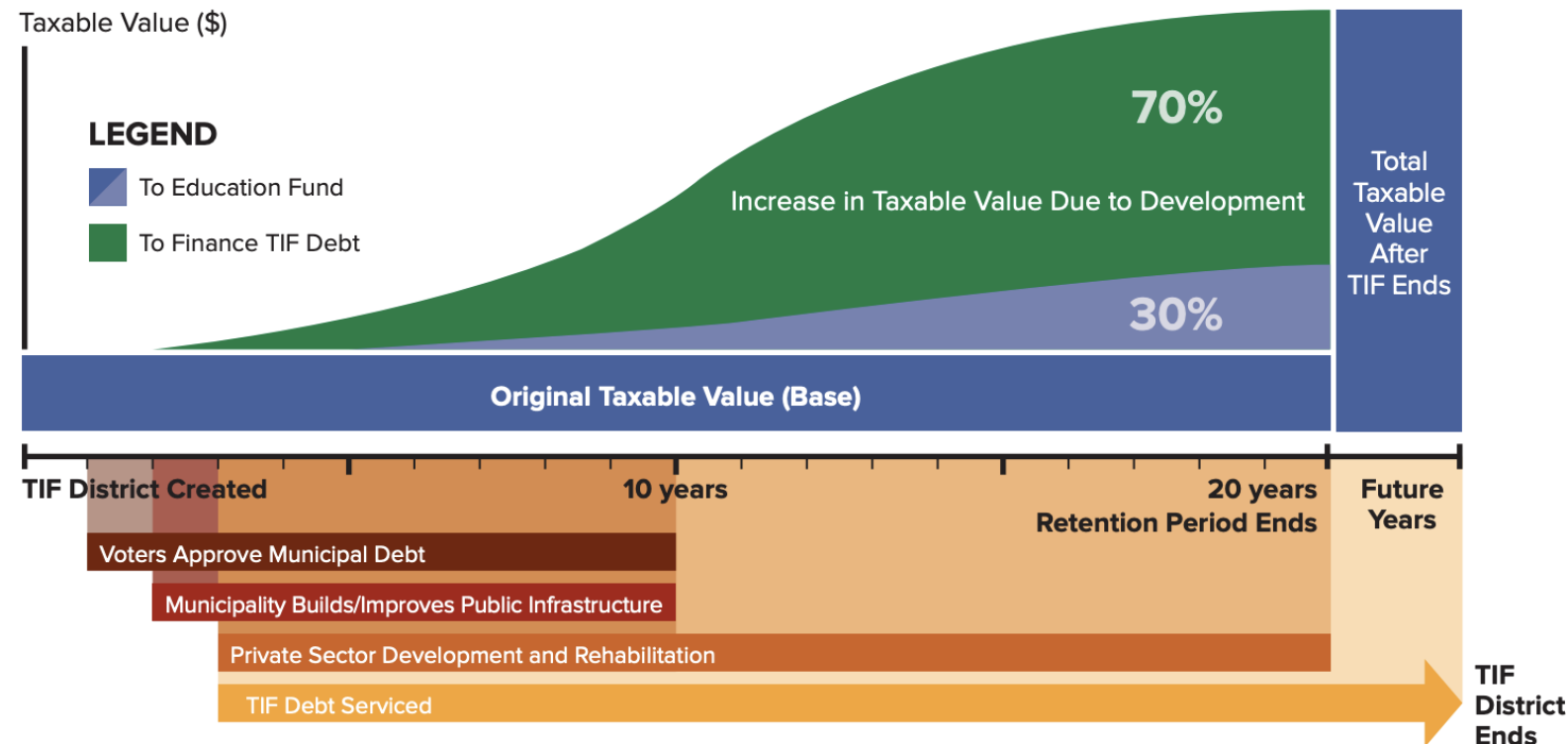


Tax Increment Financing revenue is distributed based on the original and increased taxable value

- While infrastructure debt is being repaid:
 - Original Taxable Value goes to the Education Fund
 - A minimum of 30% of the increased revenue goes to the Education Fund
 - The remainder (up to 70%) is retained by the municipality to finance infrastructure debt

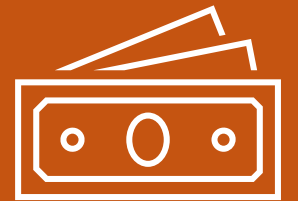
According to an interview with a previous government official, TIF can be a controversial tool due to equality concerns and may be difficult to pass.

Tax Increment Financing: Timeline and Revenue Distribution



¹Graphic via the State of Vermont Agency of Commerce and Community Development TIF One-Pager

Deep Dive: Town Acquisition **Financial Model**





To forecast the town acquisition scenarios, the team defined some key financial and operational assumption



Revenue Streams

There are **2 main sources of revenue** that, over time, will support debt repayment:

- **Hydrant Fee:** increasing the hydrants' fee ultimately means **charging the entire town of Woodstock through taxes**
- **Water Tariff:** increasing water tariffs **impacts only the aqueduct's users**, both commercial and residential users, that have pay different tariffs depending on pipe type



Tax Implications

If the town acquires the aqueduct, **it will not be subject to income taxes**

Therefore:

- Since the aqueduct won't pay taxes, there will be a **reduction on the town's tax revenue in the future**
- **Depreciation is not being considered** on the model since it only serve as a tax benefit, and it's a non-cash expense



Maintenance Costs

One way to calculate an ongoing maintenance CAPEX is to consider a similar value to the annual depreciation cost.

However, the working group opted for a different approach:

- Include a **conservative and inflation adjusted cost for "Repairs and Maintenance"**, as an OpEx account
- Include **CAPEX investments on a "per project" basis**, solving for specific needs for maintenance and improvement



Purchase Price

The current purchase price offered by the aqueduct equals the **book value its debt: ~\$673k (as of Dec 22)**

However, given the 2023 flood and the incurred cost of repairs, **debt has increased by an unknown amount**

If the town acquires the aqueduct, the model assumes that **the financing available would have better rates and, therefore, repay and replace the current debt**



Financial model will help understand the cost implication for the town given a set of planned CAPEX projects

X Detailed Next

1 Revenue Forecast

REVENUE	PLACEHOLDER/MISSING DATA		
Revenue Stream	%	Price	Number of hydrants/customers
Hydrants Revenue			
Price per hydrant/quarter		\$100	96
Price % Increase (YoY)	2.00%		
Water Tariff Revenue			
Price per customer (commercial)		\$550	77
Price per customer (residential)		\$550	700
Price % Increase (YoY)	2.00%		

2 Cost of Capital

COSTS	
OpEX and SG&A on Tab "Operating Cost Forecast"	
Average Interest Rate	3.24% << More information on Tab "Sources of Funds"

3 Purchase Price

ACQUISITION	Price	Start Year	Debt	Payment Terms (in years)
Project Acquisition	\$673,724	2023	\$673,724	30

4 Project Planning

PROJECTS					
Inflation	2.00%				
Project	Notes	Cost	Start Year	Debt	Payment Terms (in years)
Tank	Investment to address the fire safety requirement imposed by the State.	\$4,000,000	2028	\$4,000,000	30
Cox District Pipe Replacement/Relocation	Replacing a 8" pipe with a 12" pipe down Cox District Road to Route 4 to increase the flow from the existing tank into the town.	\$1,347,580	2026	\$1,347,580	30
Route 4 Replacement	Upgrade the existing 8" pipe that runs from the Cox District Road along Route 4 to the Rec Center to a 12" pipe to improve the flow of water from the tank into the town.	\$3,051,400	2026	\$3,051,400	30
Cox Road Dam Renovation	Rebuild the dam to preserve capacity of the reservoir as an emergency source of water	\$800,000	2031	\$800,000	30
New Well and Replacement of Pump One	The 90% report highlights the need for replacement in the next few years.	\$800,000	2025	\$800,000	30
Ongoing pipe upgrades	Specific work is TBD, but ongoing upgrades will be required to address pipe failures and to slowly upgrade the system.			\$0	30
Melishwood & East End development	Install 8" or 12" from Maxim Way to the 8" pipe at the Congregational Church replacing a 4" pipe that is currently in place. The distance is 3,590 feet with an estimated cost of \$395/foot. This upgdgrade would open up the East End for future development.			\$0	30
Project 8					
Project 9					
Project 10					
Project 11					
Project 12					

MAIN DRIVERS/METRICS TIMELINE		0	1	2	3	4	5	6	7	8
		2023	2024	2025	2026	2027	2028	2029	2030	2031
Sale of Water		\$465,750	\$475,065	\$484,566	\$494,258	\$504,143	\$514,226	\$524,510	\$535,000	\$545,700
Hydrants Revenue		\$38,400	\$39,168	\$39,951	\$40,750	\$41,565	\$42,397	\$43,245	\$44,110	\$44,992
Price per hydrant/quarter		\$100	\$102	\$104	\$106	\$108	\$110	\$113	\$115	\$117
Price % Increase (YoY)			2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Water Tariff Revenue		\$427,350	\$435,897	\$444,615	\$453,507	\$462,577	\$471,829	\$481,266	\$490,891	\$500,709
Price per customer (commercial)		\$550	\$561	\$572	\$584	\$595	\$607	\$619	\$632	\$644
Price per customer (residential)		\$550	\$561	\$572	\$584	\$595	\$607	\$619	\$632	\$644
Price % Increase (YoY)			2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

CASH FLOW BEFORE DEBT SERVICE		0	1	2	3	4	5	6	7	8
		2023	2024	2025	2026	2027	2028	2029	2030	2031
OpEX and SG&A		\$165,666	\$203,649	\$205,924	\$208,175	\$210,401	\$212,597	\$214,763	\$216,893	\$218,986
Average Interest Rate		\$0	\$0	\$832,320	\$4,668,233	\$0	\$4,416,323	\$0	\$0	\$937,328
CASH FLOW BEFORE DEBT SERVICE		\$165,666	\$203,649	(\$626,396)	(\$4,460,058)	\$210,401	(\$4,203,726)	\$214,763	\$216,893	(\$718,341)
DEBT SERVICE										
Total Debt (End of Period)		\$673,724	\$660,096	\$1,478,347	\$6,115,219	\$5,988,416	\$10,273,832	\$10,049,356	\$9,817,615	\$10,515,703
Total Debt Service (Interest + Principal)		(\$22,740)	(\$35,430)	(\$35,430)	(\$79,200)	(\$324,692)	(\$324,692)	(\$556,937)	(\$556,937)	(\$556,937)
CASH FLOW AFTER DEBT SERVICE		\$816,650	\$168,219	\$170,494	\$128,976	(\$114,292)	(\$112,095)	(\$342,175)	(\$340,044)	(\$337,951)
Cummulative Cash Available		\$852,506	\$1,020,725	\$1,191,219	\$1,320,195	\$1,205,903	\$1,093,808	\$751,634	\$411,590	\$73,639

5 Impact Overview

Is there a cash deficit?	YES
Max cummulative gap	(\$9,038,793)

Price per customer	Current	Price @ Year 10	% increase	Price @ Year 10 if only inflation adjusted	% increase
COMMERCIAL	\$550.00	\$670.45	22%	\$670.45	22%
RESIDENTIAL	\$550.00	\$670.45	22%	\$670.45	22%



The price inputs for hydrants, commercial customers and residential customers can be forecasted separately

1 Revenue Forecast

PLACEHOLDER/MISSING DATA

REVENUE				
Revenue Stream	%	Price	Number of hydrants/customers	
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Price per hydrant/quarter	\$100	\$102	\$104	\$106	\$108
		2.00%	2.00%	2.00%	2.00%
Water Tariff Revenue	\$427,350	\$435,897	\$444,615	\$453,507	\$462,577
Price per customer (commercial)	\$550	\$561	\$572	\$584	\$595
Price per customer (residencial)	\$550	\$561	\$572	\$584	\$595
		2.00%	2.00%	2.00%	2.00%

There are **2 ways to change the revenue forecast** and therefore the price changes to customer:

You must first **fill in the current prices** for hydrants and water tariff as a starting point.

For water tariff, you need to **distinguish commercial and residential customers**, the price for each and the number of customers served on each group.

The **% price increase assumption will be used as the default growth assumption** unless manually changed otherwise.

To **manually change the price increase on a specific year**, you can change the inputs on the respective year's columns, both for the hydrants and the tariffs.



The average interest rate should reflect the weighted average cost of capital of the expected required debt

2 Cost of Capital

Average Interest Rate

3.24% << More information on Tab "Sources of Funds"

The **average interest rate assumes a rough average of the sources of funds** found by the team on a preliminary research. As the Town Selectboard advances on discussions with the debt providers, this input should reflect the weighted average cost of capital given the amount of funds available from each bank.

Team’s preliminary research summary on model tab “Sources of Funds”

Sources of funds available

Bank	Principal Description	Interest Rate Description	Amortization Period
Water and Waste Disposal Loan & Grant Program	Varied	2.375% - 3.125%	Up to 40 years
Clean Water State Revolving Fund	Varied	0% for Planning and Final Design, 2% Municipal and 2.75% Private for Construction	5 to 15 years for Planning and Final Design, up to 30 years for Construction
Drinking Water State Revolving Fund	Varied	3.000%	20 years
Water Infrastructure Finance and Innovation Act (WIFIA)	Up to 49% of eligible project costs of \$5M minimum project size	Greater than or equal to US Treasury rate for similar maturity (5.11% 30-Yr as of October 20)	Up to 35 years with maximum 5 year deferral after completion
Rural Water Loan Fund (RWLF)	The lesser of \$200,000 or 75% of the total project costs	3.000%	Up to 10 years
Vermont Municipal Bond Bank - Pooled Loan Program	Varied	5.68% AA+ Market Rate	Up to 30 years - May request up to 5 years interest only



Price should be adjusted as the town learns more about the WAC's debt situation and negotiations advance

3 Purchase Price

ACQUISITION

Project	Price	Start Year	Debt	Payment Terms (in years)
Acquisition	\$673,724	2023	\$673,724	30

There are 4 inputs on the acquisition purchase price:

Price: As previously discussed, the current purchase price is the book value of debt as of Dec 2022. This can be adjusted to reflect updates to debt or any other price as negotiations evolve.

Start Date: This shouldn't be changed as the model considers 2023 as year 0.

Debt: The model currently assumes the entire purchase is being financed. If any equity (e.g., grants) becomes available, the amount of debt should be adjusted accordingly.

Payment Terms: Should reflect the number of years as agreed on debt terms.



Future CAPEX should be input on a “per project” basis, with 2023 expected costs and amount to be financed

4 Project Planning

PROJECTS					
Inflation		2.00%			
Project	Notes	Cost	Start Year	Debt	Payment Terms (in years)
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Cox District Pipe Replacement/Relocation	Replacing a 8" pipe with a 12" pipe down Cox District Road to Route 4 to increase the flow from the existing tank into the town.	\$1,347,580	2026	\$1,347,580	30
Route 4 Replacement	Upgrade the existing 8" pipe that runs from the Cox District Road along Route 4 to the Rec Center to a 12" pipe to improve the flow of water from the tank into the town.	\$3,051,400	2026	\$3,051,400	30
Cox Road Dam Renovation	Rebuild the dam to preserve capacity of the reservoir as an emergency source of water	\$800,000	2031	\$800,000	30
New Well and Replacement of Pump One	The 90% report highlights the need for replacement in the next few years.	\$800,000	2025	\$800,000	30
Ongoing pipe upgrades	Specific work is TBD, but ongoing upgrades will be required to address pipe failures and to slowly upgrade the system.			\$0	30
Melishwood & East End development	Install 8" or 12" from Maxim Way to the 8" pipe at the Congregational Church replacing a 4" pipe that is currently in place. The distance is 3,590 feet with an estimated cost of \$395/foot. This upgrade would open up the East End for future development.			\$0	30
Project 8					
Project 9					
Project 10					
Project 11					
Project 12					

There are 6 inputs for future CAPEX projects:

Project: Name of the project

Notes: Project description

Cost: Total project expected cost as of 2023, not inflation adjusted. Project costs will be adjusted according to the **inflation assumption**, that should reflect long term inflation expectations.

Start Year: Year when project is planned to occur.

Debt: The model **assumes all project being completely financed with debt.** If any grants or cash from operations will be used to fund the project, the amount of debt should be adjusted accordingly.

Payment Terms: Should reflect the number of years as agreed on debt terms.



The Impact Overview shows if there is a cash deficit and the expected price increase with current model inputs

5 Impact Overview

Is there a cash deficit?	YES
Max cumulative gap	(\$9,038,793)

Price per customer	Current	Price @ Year 10	% increase	Price @ Year 10 if only inflation adjusted	% increase
	COMMERCIAL	\$550.00	\$670.45	22%	\$670.45
RESIDENTIAL	\$550.00	\$670.45	22%	\$670.45	22%

The summary impact overview shows if there is a **cash deficit and the total cumulative deficit amount.**

If there is a cash deficit it means that there must be **additional price increases, and/or the projects need to be better financed.**

The impact overview also **compares the expect/planned price increase per customer vs what the price increase would have been if only inflation adjusted, from year 0 (2023) to year 10 (2033).**



The detailed OpEx and SG&A forecast allows the town to plan “per item” required cost adjustments

OpEx and SG&A Forecast

SCHEDULES OF COSTS OF OPERATIONS FOR THE YEARS ENDED DECEMBER 31, 2022

Cost Description	Assumption	2022 Actual	Adjustment 2022	2022 Pro-Forma	Assumption	Adjustment 2023+	2023
Salaries and wages	Assume same staff + inflation	\$109,478		\$109,478	3%		\$112,762
Transition Costs	Transition costs for the town for Year One			\$0	3%		\$0
Payroll taxes	Assume at 8% of Salaries & Wages going forward	\$8,678		\$8,678	8%		\$9,021
Pension plan	Assume at 8% of Salaries & Wages going forward	\$9,875		\$9,875	8%		\$9,021
Employee benefits	Assume at 25% of Salaries & Wages going forward	\$7,838		\$7,838	25%		\$28,191
Backhoe expenses	Adjusted according to Stuart's Assumptions	\$112	(\$112)	\$0			\$0
Equipment rental	Truck rental. Leave in or replace with a purchased vehicle	\$5,905		\$5,905			\$5,905
Equipment insurance	Maintain & increase @ inflation rate	\$1,270		\$1,270	3%		\$1,308
Heat	Leave as is	\$1,674		\$1,674			\$1,674
Electricity	Leave as is	\$12,822		\$12,822			\$12,822
Operating supplies	Maintain + inflation	\$16,285		\$16,285	3%		\$16,774
Property and other taxes	Adjusted according to Stuart's Assumptions	\$33,667	(\$33,023)	\$644			\$644
Rent	Adjusted according to Stuart's Assumptions	\$11,400	(\$11,400)	\$0			\$0
Truck and travel expenses	Leave as is	\$14,641		\$14,641			\$14,641
Repairs and maintenance	Forecast @ \$50,000	\$11,055	\$38,945	\$50,000	3%		\$51,500
TOTAL COSTS OF OPERATIONS		\$244,700	(\$5,590)	\$239,110		\$0	\$264,263

WAC SCHEDULES OF ADMINISTRATIVE AND GENERAL EXPENSES FOR THE YEARS ENDED DECEMBER 31, 2022

Cost Description	Assumption	2022 Actual	Adjustment 2022	2022 Pro-Forma	Assumption	Adjustment 2023+	2023
Officer salaries	Adjusted according to Stuart's Assumptions	\$43,000	(\$43,000)	\$0			\$0
Payroll taxes	Adjusted according to Stuart's Assumptions	\$3,563	(\$4,142)	(\$579)			(\$579)
Pension plan	Adjusted according to Stuart's Assumptions	\$4,300	(\$4,300)	\$0			\$0
Employee benefits	Adjusted according to Stuart's Assumptions	\$1,996	(\$1,996)	\$0			\$0
Insurance	Note 1	\$23,457		\$23,457	1%	(\$7,457)	\$16,160
Miscellaneous	Remove from future (Jireh)	\$194		\$194			\$194
Land management	Adjusted according to Stuart's Assumptions	\$1,345	(\$1,345)	\$0			\$0
Office supplies and expenses	Leave as is	\$12,322		\$12,322			\$12,322
Professional services	Adjusted according to Stuart's Assumptions	\$15,338	(\$15,338)	\$0			\$0
Telephone	Remove from future (Jireh)	\$7,724		\$7,724			\$7,724
TOTAL ADMINISTRATIVE AND GENERAL EXPENSES		\$113,239	(\$70,121)	\$43,118		(\$7,457)	\$35,821

Based on 2022 Actual results, the key inputs for OpEx and SG&A are:

Adjustment 2022: Adjustments from 2022 Actual to 2022 Pro-Forma (model input) so that 2023 onward results are comparable to 2022 performance.

Assumption: Description and value for growth or percentage of salary and wages that will be modeled from 2023 onward.

Adjustment 2023+: Lump sum adjustments to change cost base from 2023 onward.



There are four main next steps for the working group related to the financial model



Confirm price and cost assumptions

The working group needs to **confirm current residential and commercial prices, as well as validate final OpEx and SG&A** before simulating projects and necessary price increase scenarios



Simulate different funding scenarios

With the support of the HBS team, there will be one more **workshop session to simulate different projects and necessary price increase scenarios** ranging from 100% funded by hydrant fee increase to 100% funded by water tariff increase



Validate sources of funds, capital costs

To have a more accurate average cost of capital estimate, the town will need to reach out to debt providers to **confirm amount available for borrowing, and at what payment terms** (interest rate and maturity)



Present to the town in an open forum

The town's management will present the project status to citizenry in early December, including learnings, insights, and decisions to be made

Given the townhall discussion, there might be some changes or additional scenarios to model

Deep Dive: Town Acquisition **Community Engagement**

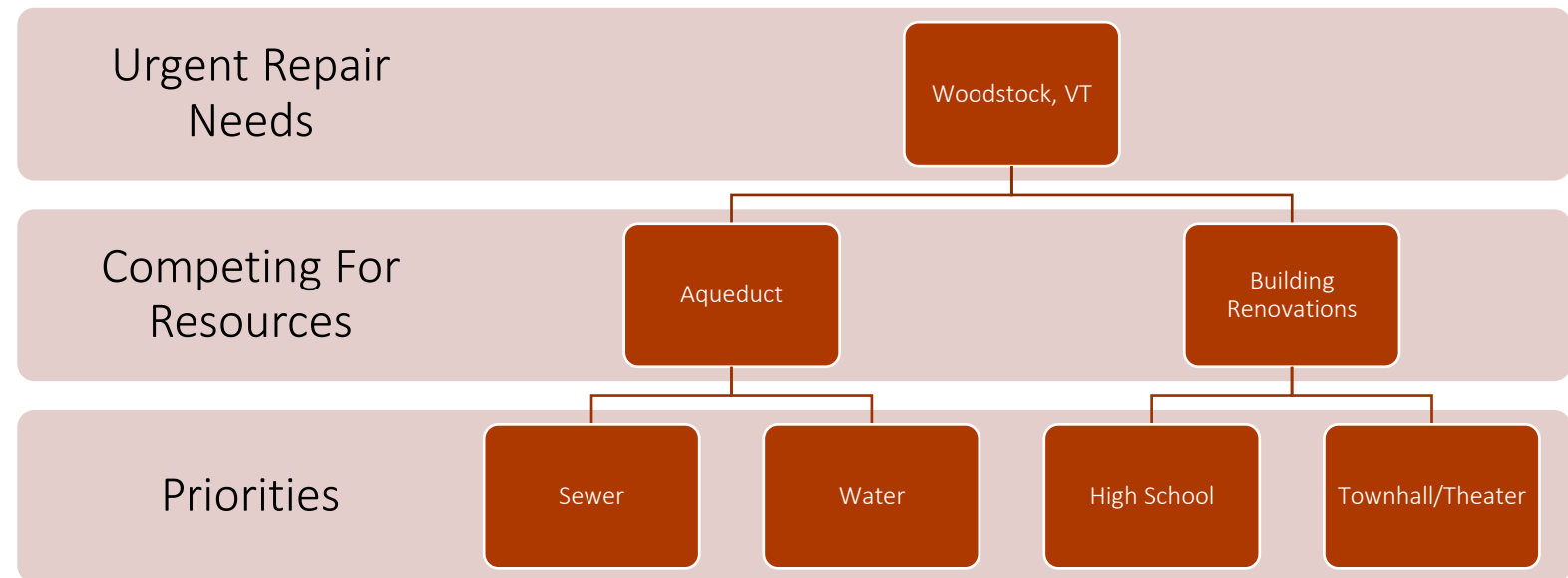




Perspective of the Town and Village will dictate project prioritization and potential constituent impact

Resources needed to renovate critical infrastructure in Woodstock, VT, servicing the town and village as well as surrounding towns.

Measures for infrastructure renovation will likely appear on the March ballot.



Key Questions:

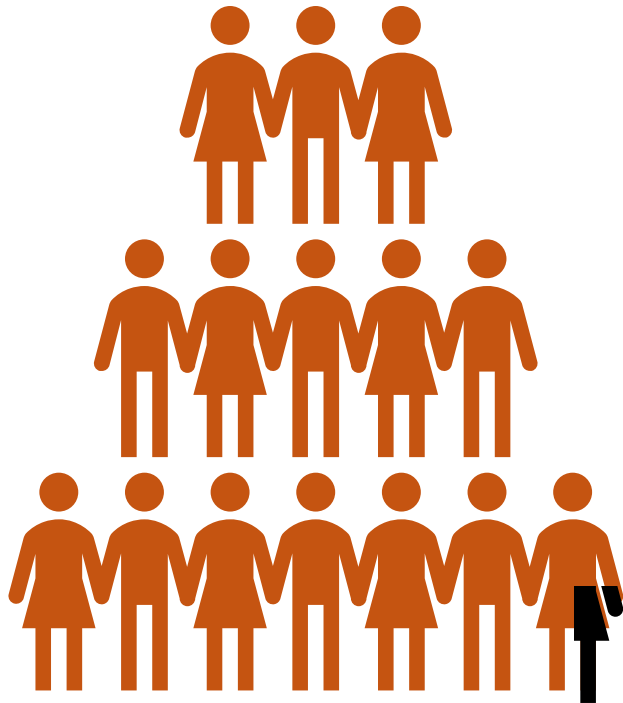
Which project will come first?

How will this impact constituent's taxes and daily lives?



Woodstock's demographic data shows rapidly increasing median income and slow population growth

Woodstock's population includes approximately 1,110 people and grew 2% from 2020 to 2021



98.4% are US citizens with a median age of 49

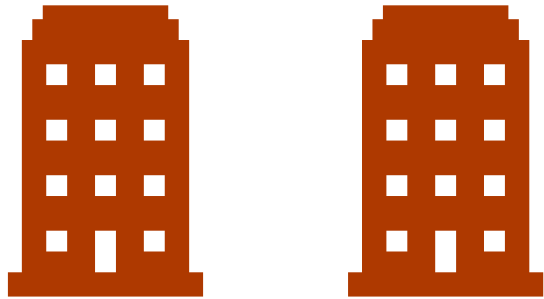
Woodstock's economy employs nearly 600 people, and the median household income is \$96,161



Median household income grew by 37% from 2020 to 2021



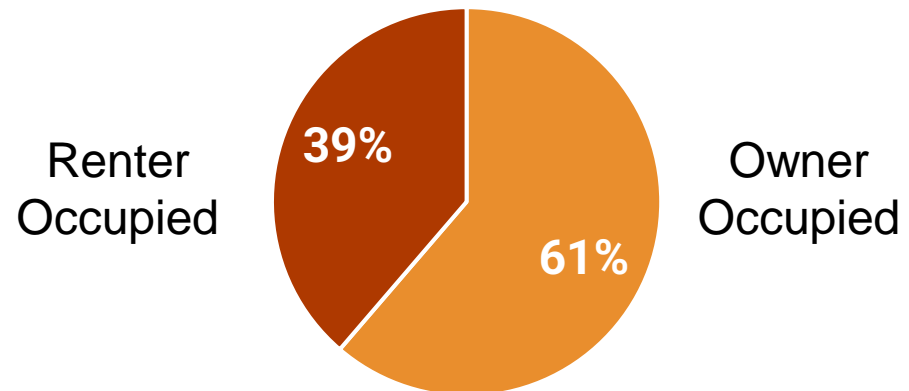
Home Ownership Rates and Income Considerations



483 Households
25% with children and 75% without

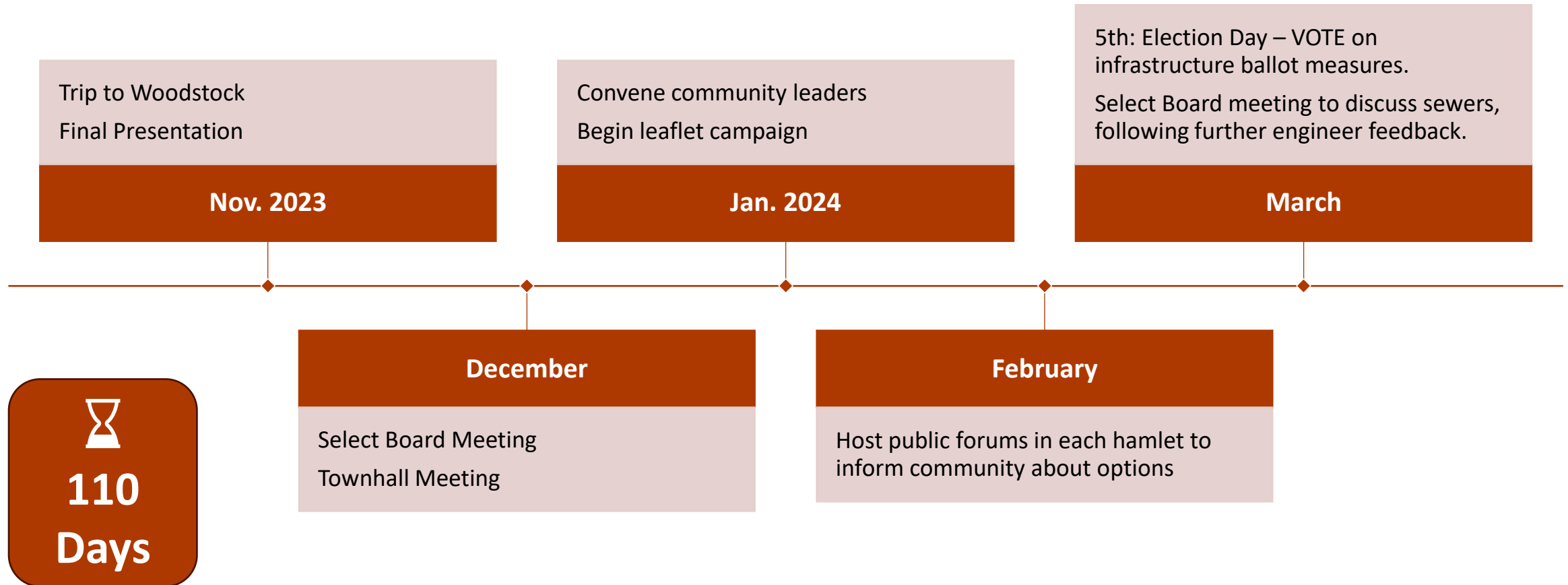


Median property value in
Woodstock, VT: \$480,400,





Timeline for public engagement should aim for potential acquisition in early to mid-2024





After interviewing 10+ experts and people from the town, there are 5 key insights relevant for the acquisition

Townspople would be more willing to support if water rates could be guaranteed for a period of time.

Interested Townsperson

Decision is as much *political* as it is *financial*.

Getting townspople on board is crucial for getting the project approved.

Emeritus Government Official

Water is critical to business and we can not operate without it. We must make the necessary repairs.

Business Person



Issue has been back-of-mind for a long time. It's time to *stop kicking the can down the road*.

Business Person

Involve the Fire Departments and their leadership in educating the townspople about the improvement needs.

Government Official

If water rates increase, infrastructure improvements and [pre-emptive] maintenance would be expected.

Business Person

Appendix



Interview Summaries



Expert Interviews: Key Insights

Infrastructure Expert (Anonymous)

Average required return for water infrastructure projects

6 - 8%

How to solve the hydrant issue?

Backflow prevention // Separate the domestic supply from the hydrants

Hydrants don't need purified water

Thoughts on the aqueduct ownership:

Normally, who owns the water, owns the sewage // Same structure, same management

The town would be the obvious owner for the distribution part of the system

Stages of water distributions: Generation, transmission, distribution

Thoughts sources of funds:

Tariffs: what you pay for as a user

Taxes: increase taxes

Transfers: government grants

Thoughts on pricing:

Raising prices is regressive

Raising property taxes is progressive

Discriminatory pricing: you can charge commercial rates and residential rates, and depending on the amount of water you use (most common)

Combine water and the sewage is a good pricing strategy

People have a general sense that water should be free, so it's more palatable to charge for sewage than water

Expert Interviews: Key Insights

Town Administrator, Arlington, VT (*town transitioned from private water ownership*)

Contact: Nick Zaiac (nick.zaiac@arlingtonvermont.org)

- Town decided to acquire due to unfunded liabilities and lack of (private) capital access
- Inability of system to expand was creating perception of stunted economic development
- Bond issuance (voter-approved) of \$4M to access State Revolving Fund (no tax impact)
- Municipality was too wealthy for most federal fund programs
- Town from water rates for first 5 years after transition
- Management by Arlington Water Board: 5 elected members, rotating staggered terms
- “Simple” integration with town; accounting system merged, one employee transition
- Main “headache” from transition is retaining “an old school employee resistant to change”
- Management of system has required work from the town’s other staff (not self-sufficient)

Expert Interviews: Key Insights

Business Person

- Municipality was too wealthy for most federal fund programs
- Not many private water companies left in Vermont
- Many regulatory hurdles now
- Community is very progressive, educated talent pool among the retirees
- People care a lot about the environment and health
- Suggestion: form a board to assist in managing the water company

Expert Interviews: Key Insights

Business Person

- Water is critical to business and we can not operate without it
- Competing priorities in the town for funds based on all of the delayed maintenance
- Issue has been back of mind, never got any legs, time to stop kicking the can down the road
- If water rates increase, would expect infrastructure improvements and maintenance.
- It would be good to have oversight, beyond the townspeople, and another set of eyes to make sure things are done at the industry standard

Expert Interviews: Key Insights

Executive Director, Vermont Rural Water Association (*VT-based nonprofit*)

Contact: Liz Royer (lroyer@vtruralwater.org)

- VT Rural Water Association provides resources and advocates for public water systems
- Organization provides emergency response, apprenticeship programs, lab work, etc.
- VT has diverse mix of water ownership structures, with majority private
- Smaller systems typically have poor financial management and planning
- Some systems have not raised rates in 20+ years because they “know their customers”
- “Huge” workforce issue in the state is making local management of systems difficult
- Current 3P operators in VT experiencing labor shortages; some can’t take on new clients
- Recent years have shown increased talks of “regionalization” which would combine aspects of local ownership with shared management (board members would oversee)

Expert Interviews: Key Insights

Sales Director, Bluefield Research (*consulting firm focused on water M&A*)

Contact: John Berryman (jberryman@bluefieldresearch.com)

- Vermont is not a state that sees much, if any, water M&A activity
- Most M&A activity currently occurring in NJ, PA, and TX due to favorable regulations
- Water M&A activity in the northeast is the slowest by region
- Firms typically choose a state to invest in, purchase a large system, and roll up around it
- Some firms roll up small, distressed systems and then manage via cloud system
- Over 80% of transferred connections are between private buyers and private sellers
- M&A has slowed from record highs but appetite remains as consolidation fuels growth
- Analysts opined that a “random system in VT would not be appealing to IOUs”

Expert Interviews: Key Insights

Interested Townspeople (*Anonymous*)

- For most townspeople, water rates and tax rates are the most important deciding factors
- Townspeople are feeling doubt, uncertainty, and worry when thinking about what would happen if a private equity firm were to purchase the system
- Townspeople would be more willing to support if water rates could be guaranteed for a period of time
- Growth in connections won't necessarily increase water demand due to high proportion of second homes in the area

Expert Interviews: Key Insights

Elected Official

- Without improving the water system, the economy in the area can not prosper
- Sewer and water are the real drivers of infrastructural development
- Improving the water system will also be good for property values
- During COVID some new families moved into the area
- Merging the town and village is a good idea
- Canvas campaign with leaflets is a great way to get the information out about the water project, followed by ...
- Public forums in each hamlet. These have been very successful in the past. Bring in key partners to speak at these forums.
- Involve the fire departments in the process of informing the townspeople

Expert Interviews: Key Insights

Emeritus Government Official (*Anonymous*)

- Decision is as much political as it is financial; getting townspeople on board will be crucial to getting the project approved
- Keep the arguments simple; the more complex, the more difficult an idea is to sell
- Consider the opinions and impacts to local businesses and others who carry significant political weight
- One outspoken person can dramatically negatively impact the project

Expert Interviews: Key Insights

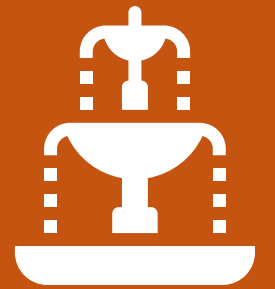
Area Director, United States Department of Agriculture (USDA)

Federal Agency with Financial Resources for Water

Contact: Misty Sinsigalli (misty.sinsigalli@usda.gov)

- Woodstock would likely not be eligible for grants based on the average income level of town residents
- Both the purchase of WAC by the town and the capital improvements needed to the water system should be eligible for loan financing
- Municipal capacity for debt will be a significant factor in deciding whether a purchase of WAC is feasible
- Consider other services tied to the water system such as schools, town hall, post office, grocery stores to find advocates

Additional Information on Sources of Funding



Key contacts for sources of funding

Name	Title	Organization	Contact Information
Sarah Waring Misty Sinsigalli	State Director for Vermont and New Hampshire Area Director, Acting Community Program Director	USDA	sarah.waring@usda.gov misty.sinsigalli@usda.gov
Michael Gaughan	Executive Director & Secretary	Vermont Municipal Bond Bank	michaelg@vtbondagency.org
Liz Royer	Executive Director	Vermont Rural Water Association	lroyer@vtruralwater.org
Stephanie Smith	State Hazard Mitigation Officer	State of Vermont	stephanie.a.smith@vermont.gov
Kristie Farnham	Director, Business Support	Vermont Agency of Commerce and Community Development	kristie.farnham@vermont.gov

State-level sources of funding

Source Name	Organization	Type	Availability	Comments
Municipal Planning Grant (MPG)	Agency of Commerce and Community Development	Grant	Public Only	Funds for the planning and revitalization of local municipalities.
Vermont Community Development Program (VCDP)	Agency of Commerce and Community Development	Grant	Public Only	Provides financial assistance to identify and address local needs related to housing, economic development, public facilities, public services, and handicapped accessibility.
Tax-Increment Financing (TIF)	Agency of Commerce and Community Development	Tax-Increment Financing	Public Only	Method of financing improvements for public infrastructure. Voters authorize municipal bonds or other debt to finance construction. Killington's and Winooski's TIFs used for water and transportation infrastructure improvements.
Community Recovery and Revitalization Program (CRRP)	Agency of Commerce and Community Development (Funds through ARPA)	Grant	Public and Private (with restrictions)	Funding for projects that spur economic recovery and revitalization. Projects include capital improvements related to municipal water supply and wastewater projects that build housing or create jobs through business creation and expansion.
Business Emergency Grant	State of Vermont	Grant	Public and Private	State is providing a 30% refund on some of the infrastructure projects related to the flooding in July (\$664K for the bridge work on Elm Street, State of Vermont is providing \$200k).
Clean Water State Revolving Fund	Vermont ANR (Agency of Natural Resources)	Loan	Public and Private	Provides loans between 0% and 2% interest. Projects can include wastewater collection and treatment construction, watershed projects, resiliency plans, stormwater projects, etc.
Vermont Municipal Bond Band – Pooled Loan Program	Vermont Bond Agency	Loan	Public Only	Provides low-cost long-term capital for municipal infrastructure projects. Up to 30-year repayment at 5.68% (AA+ Market Rate).
Drinking Water State Revolving Fund	Vermont ANR (Agency of Natural Resources)	Loan	Public and Private	Low-cost financing to public water systems for capital improvements that improve public health protection and facilitate compliance with the Safe Drinking Water Act. Loans are provided to eligible regulated community water systems (municipal or private).

Federal-level sources of funding

Source Name	Organization	Type	Availability	Comments
Water and Waste Disposal Loan & Grant Program	USDA	Grant/Loan	Public Only	Via meeting, contact is Sarah Waring, Head of USDA Vermont and NH. Provides funding for clean and reliable drinking water systems in eligible rural areas. Provides long-term low-interest loans and may be combined with a grant.
Flood Mitigation Assistance Grant Program	FEMA	Grant	Public Only	Provides funding to states and local communities. Funds can be used for projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program (According to the Status Book Report, Woodstock is part of the National Flood Program). There may be no FY23 program.
Building Resilient Infrastructure and Communities (BRIC) Fund	FEMA	Grant	Public Only	Projects must reduce or eliminate risk and damage from future natural hazards. Can be used for capability- and capacity-building activities, mitigation projects, and management costs.
Emergency Community Water Assistance Grants	USDA	Grant	Public Only	Grants provided to help communities prepare or recover from emergencies that threaten the availability of safe, reliable drinking water.
Rural Water Loan Fund (RWLF)	USDA	Loan	Public Only	Provides low interest loans with a repayment period of 10 years for infrastructure projects, system upgrades, small capital projects, and disaster relief.
Flood Resilient Communities Fund (FRCF)	Department of Public Safety (Funded by American Rescue Plan Act (ARPA))	Grant	Public and Private	Contact is Stephanie Smith; Joan Goldstein will probe further on this point (as of recent client team meeting). Projects must reduce future flood risk and must have the co-benefit of improving water quality.
Northern Border Regional Commission (NBRC)	Northern Border Regional Commission	Grant	Public and Private	Contact is Kristie Farnham. Previous funding included: Funded \$2.3M/\$23M project for Killington that included a municipal water system for the Six Peaks Killington Village Project. Funded \$1M/\$4M Town of Wilmington water/wastewater infrastructure project. Funded \$1M/\$4M Town of North Hero water main replacement to improve water service reliability. Funded \$1M/\$5M Town of Brighton upgrade to wastewater treatment facility.
Water Infrastructure Finance and Innovation Act (WIFIA)	EPA	Loans	Public and Private	Provides low-cost, flexible loans for water infrastructure projects. Eligible borrowers include public and private entities.
Business & Industry Loan Guarantees	USDA	Loan Guarantee	Public and Private	Funds may be used for business repair or development, infrastructure developments for commercial or industrial properties, machinery and equipment, and debt refinancing.

Sources of Funds Spotlight (1 of 3): FEMA

Flood Mitigation Assistance Grant Program

- Availability: Public Entities Only
- Available Funding: \$800 million
- **Goal:** Fund projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program

Building Resilient Infrastructure and Communities (BRIC) Fund

- Availability: Public Entities Only
- Available Funding: \$1 billion
- **Goal:** Fund hazard mitigation projects that reduce the risk from disasters and natural hazards (not specifically for reducing the risk of flood damage)

Both sources of FEMA funds are Hazard Mitigation Assistance Grants to fund eligible mitigation measures that reduce disaster losses. Sub-applications are submitted through the State Hazard Mitigation Officer (Vermont's is Stephanie Smith). Application period is open until February 29, 2024.

Next Step: Meet with Stephanie Smith to determine Woodstock's eligibility.

Sources of Funds Spotlight (2 of 3): State-level Municipal Planning Grant (MPG)

- Availability: Public Entities Only
- Available Funding: Up to \$30,000 for individual municipalities
- Goal: Fund projects that support planning and revitalization for local municipalities.
- Additional information:
 - All applications are required to provide a minimum cash match of 10%
 - MPG projects **must be completed within 24 months.**
 - Projects must have a **singular and well-defined focus**, even if part of a larger project.

Sources of Funds Spotlight (3 of 3): Vermont Community Development Program (VCDP)

- Availability: Public Entities Only. Majority of projects are a coordinated effort between municipalities.
- Available Funding: Depends on type, from \$3,000 (Planning Grants) to \$1,000,000 (Implementation Grants)
- Goal: Provide financial and technical assistance to identify and address local needs in the areas of housing, economic development, public facilities, public services, and handicapped accessibility modifications.
- Additional information:
 - VCDP funds must **primarily benefit persons of low and moderate income.**
 - Municipality must hold at least one public hearing to provide residents the opportunity to comment.

Next Step: January 24, 2024 is the target date for the pre-application. Contact for Woodstock would be Nathan Cleveland (nathan.cleveland@vermont.gov).