



One Burke
Village Infrastructure Meeting

May 24, 2022

Online via Zoom

Dufresne Group
481 Summer Street, Suite 8
Saint Johnsbury, Vermont 05819
Tel: (802) 748-8605

On May 23, 2022 at 5:00pm, a meeting was held via Zoom video conference to discuss the Burke Water and Wastewater Study. The following individuals attended:

<u>Individual</u>	<u>Representing</u>
Todd Vendituoli	One Burke
Linda Lotti	One Burke
Cathie Wheeler	One Burke
Kevin Mack	One Burke
Christine Emmons	Burke Selectboard
Lynnette Claudon	State of Vermont
Amy Macrellis	Stone Environmental
Andrea Day	Dufresne Group

Andrea Day has prepared the following summary of notes taken at the meeting. Please notify her if you have any corrections or additions to these minutes. Tasks to be completed as a result of this meeting are underlined.

- I. A discussion of whether to resume in person meetings occurred and it was determined that unless the meeting involved activities that required in person attendance, meetings would remain remote.
- II. The minutes from the April 19, 2022, meeting were approved.
- III. **Water & Wastewater Study**
 - a. East Burke Update
 - i. Loan application and draft Engineering Services Agreement for Burke Mountain wastewater system appraisal and Phase 1 assessment of 114 site in East Burke sent to Town. State has said that 100% subsidy is available for this work.
 - b. West Burke Alternatives Presentation
 - i. See attached presentation. A summary of questions and comments during the presentation is included below.
 1. Funding discussion

- a. Even with a higher grant award, the cost to the users if they cover both operation and maintenance and the reserve fund is high. Linda pays approximately \$600/yr in East Burke for water.
 - b. The reserve fund number is higher than what is typically put into reserves for systems this size but is based on industry guidance which is to put away enough each year to be able to replace an asset when it reaches the end of its useful life. The reserve fund contribution could be increased over time.
 - c. Does the reserve fund need to be paid only by users or could that be included in the overall tax base payments? Andrea will look into this.
2. No fire flows are included for the water system.
3. Wastewater discussion
- a. For an individual wastewater system, due to the regulations a typical lot needs to be at least 0.3-0.4 acres in size to fit both a well and septic. If an existing system fails and adequate space is not available, a “best-fit” solution can be pursued which could add \$10,000 or more to the cost.
 - b. Pre-treatment allows for a smaller disposal area.
 - c. A change in regulations related to the sale of property and requirement for inspection of wastewater systems is not anticipated anytime soon.
 - d. Centralized wastewater systems with a new surface water discharge are very difficult to permit and the regulations require elimination of indirect discharge as an option before a direct discharge will be allowed.
 - e. Setbacks for small-scale systems (<6,500gpd) are less than those for indirect

discharge systems that treat 6,500 gpd or more.

- f. Future Town Garage Site discussion
 - i. The area available for a wastewater disposal system at the future Town garage site could expand to the west with removal of the berm.
 - ii. How many acres would be needed for wastewater disposal?
 - iii. Amy noted that there isn't much opportunity to expand the area to the south due to a seasonal seep but with removal of the berm to the west, additional test pits, if favorable, could expand the area available for wastewater disposal.
- g. The Cole site has the potential to dispose of more than 25,000 gallons per day with additional analysis.
- h. The design flows are based on guidance from the State regulations and are conservative. As actual flow data is recorded, it is very likely that the flows will be much less than the design flow. Warren built their system based on a design flow of 30,000 gallons per day per the State regulations and are actually only seeing around 15,000 gallons per day. There is the flexibility in the indirect discharge permitting to allow for review of capacity based on flow data.
- i. Subsurface drip disposal is another option that could be considered for the disposal field to reduce the footprint needed.
- j. Who will manage the system will need to be determined, will it be the Village, Town or a Fire District?
- k. Where does the jurisdiction fall between the Town and Village?

- I. For the selectboard presentation, more information on the needed well replacements/water system development that would be associated with the development of the Cole site and breaking out the costs of the Cole site separately would be helpful.

c. Next steps

- i. Continue to refine alternatives for West Burke. Presentation to the selectboard on June 6.
- ii. Work to move East Burke on-site explorations forward.

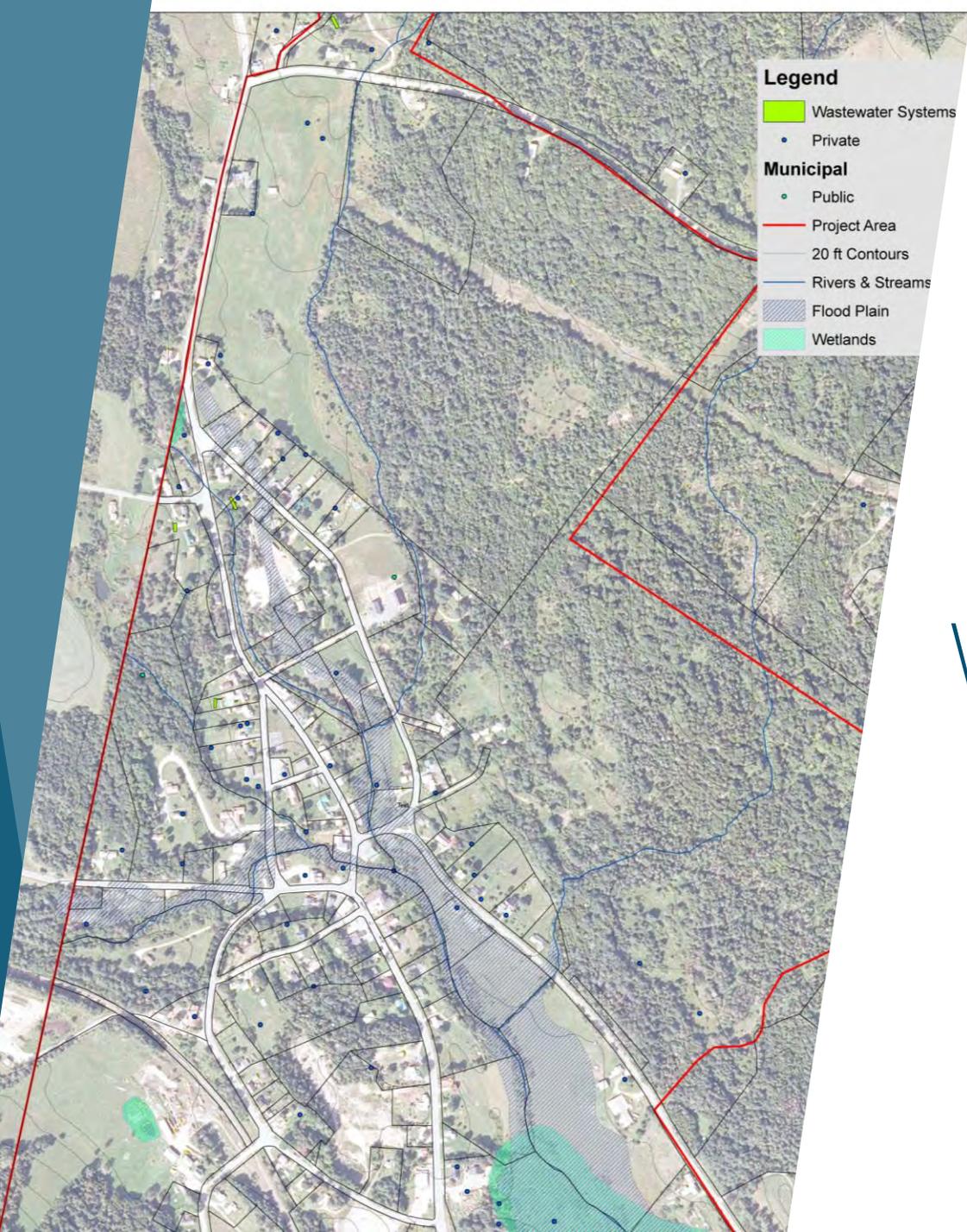
IV. **Other**

a. One Burke Updates

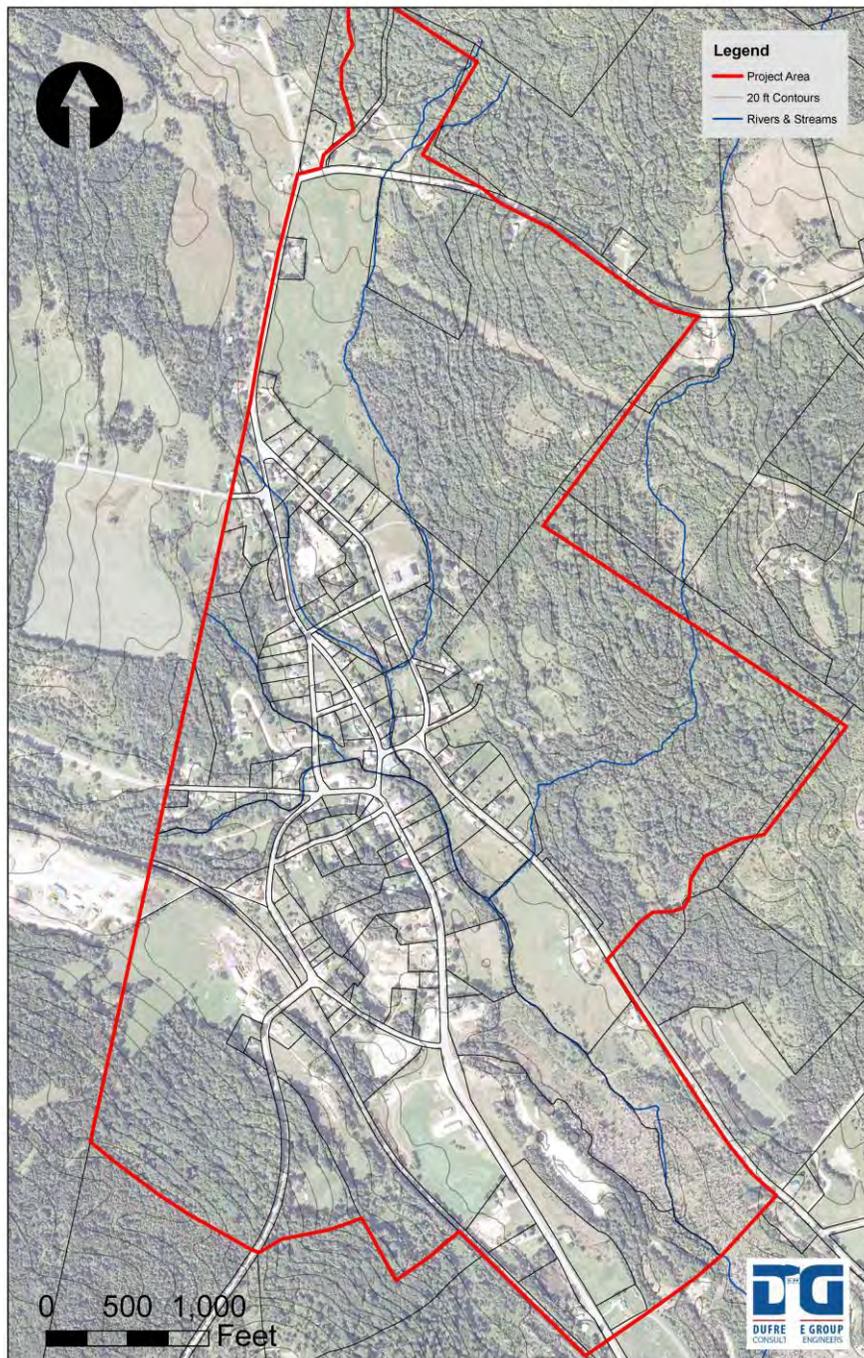
- i. Working on 501 3c status.
- b. Village ARPA - \$50,000 was awarded to the Town that was initially intended for the Future Town Garage site purchase but can be shifted to other uses associated with the Village Wastewater project.
- c. The Town is pursuing a VTrans scoping study grant to look at sidewalks in West Burke Village.
- d. A link to the Visioning and Economic Development Study is available on the Burke Chamber website.
 - i. <https://www.burkevermont.com/files/Vision%20&%20Economic%20Development%20Strategic%20Plan%20for%20West%20Burke%20Village.pdf>
- e. Include an overall project timeline in the next meeting.

V. **Next meeting**

- a. June 21, 2022 at 5pm via zoom
- b. Strawberry Festival – Friday, June 24 from 4-7pm
 - i. Posters used at previous meetings will be used for the Strawberry festival.



West Burke Water & Wastewater Alternatives



WORK COMPLETED TO DATE

- ▶ Project Area
 - ▶ Identified by reviewing existing Village boundaries and growth area from the Town Plan

WORK COMPLETED TO DATE

- ▶ Surveys of West Burke Business Owners
 - ▶ 5 of 8 (62%) Business Surveys Returned
 - ▶ 100% have drilled wells with no history of contamination
 - ▶ All wells at least 100ft from septic
 - ▶ 80% standard in-ground leachfield, 20% dry well
 - ▶ 20% of wastewater systems over 50 years old, 40% 15-30 years old, 40% less than 15 years old
 - ▶ EPA recommends planning for replacement once a system reaches 25-30 years old
 - ▶ All systems >100ft from surface water
 - ▶ 60% of business property owners indicated additional septic capacity would increase opportunity for their property
 - ▶ 40% think a municipal water system is desirable, 20% would be interested in connecting
 - ▶ 100% think a municipal wastewater system is desirable, 60% would be interested in connecting
 - ▶ 100% think a public water or wastewater system would increase economic development

WORK COMPLETED TO DATE

- ▶ Surveys of West Burke Property Owners
 - ▶ 43 of 117 (36%) Residential Surveys Returned
 - ▶ 67% Drilled well, 30% spring
 - ▶ 51% of residential wells within 200ft of septic
 - ▶ 70% standard in-ground leachfield, 16% dry well
 - ▶ 40% of wastewater systems over 30 years old
 - ▶ EPA recommends planning for replacement once a system reaches 25-30 years old
 - ▶ 28% of systems <100ft from surface water
 - ▶ 86% of residential property owners indicated the use of their property is not limited by septic needs
 - ▶ 19% think a municipal water system is desirable, 9% would be interested in connecting
 - ▶ 21% think a municipal wastewater system is desirable, 14% would be interested in connecting

WORK COMPLETED TO DATE

- ▶ Visioning and Economic Development Study
 - ▶ West Burke will be a mixed-use pedestrian-friendly village center providing goods and services to area residents as well as visitors in such sectors as hospitality & dining, services, outdoor recreation and housing to meet the needs of all residents.
 - ▶ **The Village's physical development pattern will revive, reinforce and build upon West Burke's historic character while providing connections to historic features and recreation opportunities.**

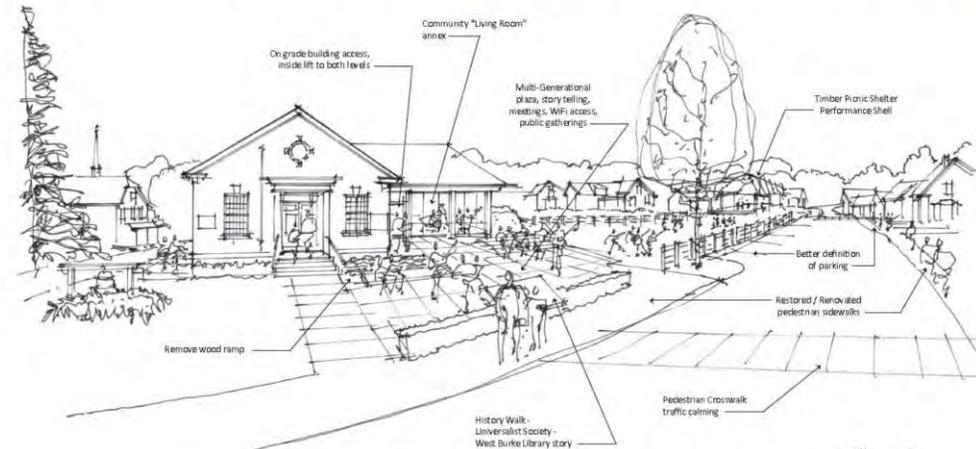
A Vision & Economic Development Strategy for West Burke

THE PLAN

Take on "catalytic" projects to build momentum for more investment in the Village:

- Renovation of Library as Center for Community Activities
 - Creation of a "West Burke History Trail"
- Restore historic streetscape (e.g., street trees & sidewalks)

Work with property owners/investors in the core of the Village to secure technical & financial support for improvements



Water System Alternatives

▶ PRIVATE WATER SUPPLIES

▶ Advantages:

- ▶ The existing wells have adequate yields and decent water quality.
- ▶ No regular bills for the water supply, but the installation, operation, and maintenance costs are the responsibility of each individual property owner.
- ▶ Use of individual or shared on-site wells and springs requires significantly less infrastructure by eliminating distribution piping and a water treatment facility.

▶ Disadvantages:

- ▶ Not all properties can support both a well and a septic system.
- ▶ Water quality is not regularly tested in private wells.

Water System Alternatives

▶ PUBLIC WATER SUPPLIES

▶ Advantages:

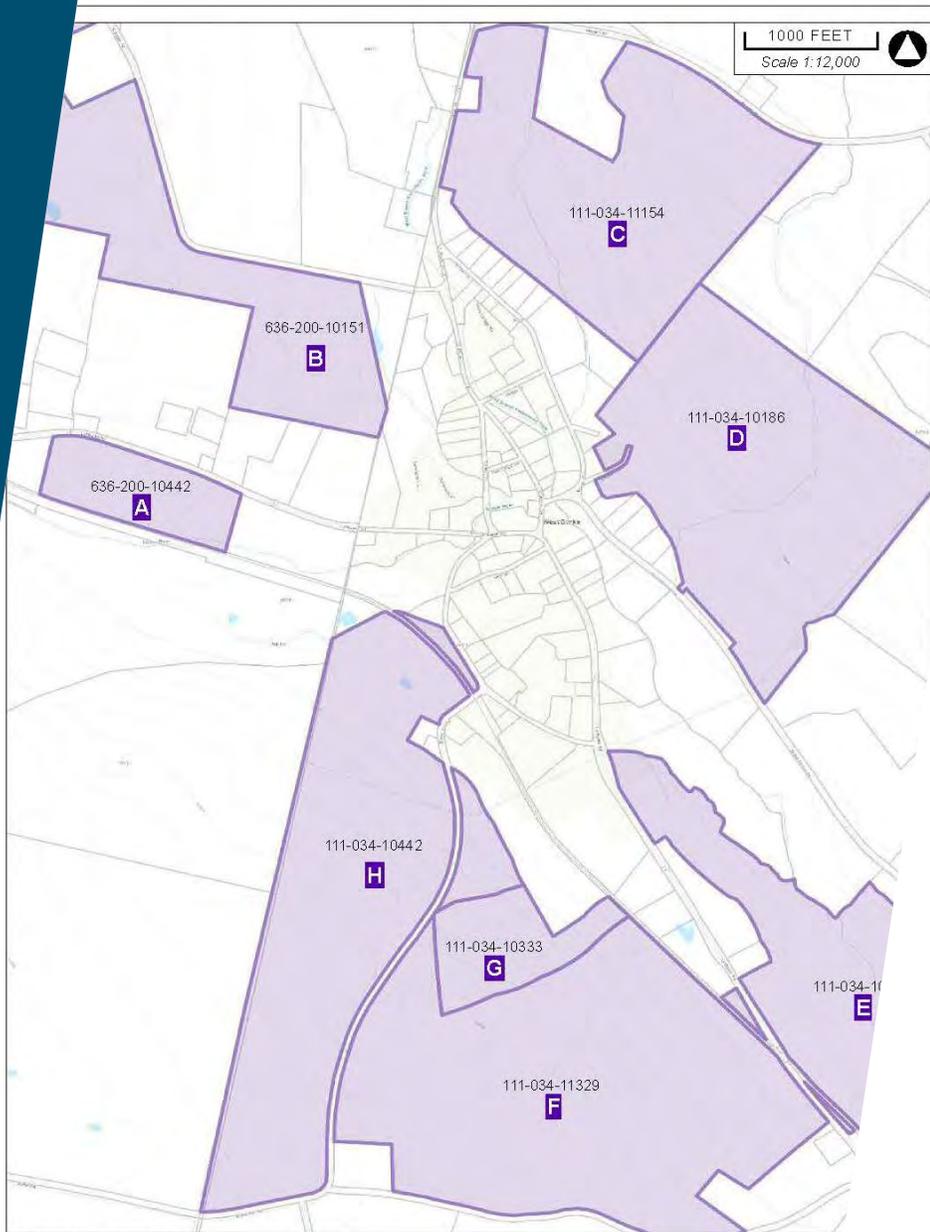
- ▶ The water is regularly tested to ensure the water being supplied to users meets State of Vermont water quality standards.
- ▶ A public water supply system will ensure potential future growth can be sustained.
- ▶ Use of a public water system provides greater flexibility in implementing on-site wastewater disposal alternatives.

▶ Disadvantages:

- ▶ Land purchase is required for the well and water treatment facility.
- ▶ Extensive infrastructure is required for the new well, water treatment facility, distribution piping, and water services.
- ▶ Landowners are likely to be resistant to a public water supply when they already have wells with reasonably good quality water and their costs could increase significantly to fund the project.
- ▶ Regular maintenance and testing is required for public water supplies which results in ongoing expense for operation and maintenance.

Water System Alternatives

- ▶ Determine Demand
 - ▶ Estimated well needs to have a safe yield of 51 gallons per minute
- ▶ Review of existing Public Water Supplies
 - ▶ Two existing public water supplies in West Burke.
 - ▶ Town Offices at 212 School Street
 - ▶ Non-community
 - ▶ Estimated yield of the well is 20 gallons per minute.
 - ▶ West Burke Housing, WSID 5555, located on Burkeland Lane
 - ▶ Community
 - ▶ Estimated yield of 7 gpm.
 - ▶ Given the estimated demand to serve the project area of 51 gpm, neither of the existing public water supplies in the area have sufficient capacity.



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FIGURE 7
Potential Parcels for the Development of a Community Water Source
Groundwater Availability Study, West Burke, Vermont.

Water System Alternatives

- ▶ Develop a water system to serve the project area
- ▶ Study completed by Hoffer Consulting Inc. to identify well sites
 - ▶ 8 potential well sites identified by Jeff Hoffer

Water System Alternatives Cost Estimates

Well Site	Water System Development Cost	Distribution, MW&C, Contingency	Engineering, Legal, Property Acq.	Total
A	\$ 2,352,900	\$ 3,753,000	\$ 1,266,200	\$ 7,372,100
B	\$ 2,171,150	\$ 3,662,000	\$ 1,217,700	\$ 7,050,850
C	\$ 2,281,400	\$ 3,717,200	\$ 1,247,100	\$ 7,245,700
D	\$ 2,063,400	\$ 3,608,200	\$ 962,700	\$ 6,634,300
E	\$ 2,474,900	\$ 3,814,000	\$ 1,298,700	\$ 7,587,600
F	\$ 2,468,150	\$ 3,810,600	\$ 1,296,900	\$ 7,575,650
G	\$ 2,092,400	\$ 3,622,600	\$ 1,196,500	\$ 6,911,500
H	\$ 2,072,150	\$ 3,612,600	\$ 1,191,200	\$ 6,875,950

- Total project Cost includes a 20% contingency.
- Cost estimates are in 2022 numbers.

	Local Borrowing 3.5% for 30 years	USDA-RD Loan 2.00% for 40-Years	USDA-RD 25% Grant, 75% Loan at 2.00% for 40 years
Estimated Total Project Cost	\$7,587,600	\$7,587,600	\$7,587,600
Less Anticipated Grants in Aid	\$0	\$0	\$1,896,900
Remaining Local Share	\$7,587,600	\$7,587,600	\$5,690,700
Annual Payment	\$412,548	\$277,370	\$208,028
Annual Operation & Maintenance Costs	\$20,000	\$20,000	\$20,000
Annual Reserve Fund	\$58,000	\$58,000	\$58,000
Total Annual Expenses	\$490,548	\$355,370	\$286,028
USER ONLY - Annual Payment to Capitalize Project (including principal and interest) and Operation and Maintenance assuming 128 users	\$3,832	\$2,776	\$2,235
FULL TAX BASE – Tax Rate Increase to Capitalize Project (including principal and interest)	0.1425	0.0958	0.0718
FULL TAX BASE – Tax Increase for \$150,000 residence to Capitalize Project (including principal and interest)	\$226.18	\$152.07	\$114.05
USER ANNUAL PAYMENT – with full tax base supporting capital costs and users supporting capital costs, O&M and Reserve Fund	\$835.56	\$761.45	\$723.43

- Note that because even with the full tax base support the user rates are more than the target rate of 1.5% of the MHI, additional grant may be awarded. West Burke MHI is \$37,222 which results in a target rate of \$558/year.
- Total project Cost is based on the highest project cost estimate

Water System Funding Alternatives

Wastewater System Alternatives

▶ INDIVIDUAL DECENTRALIZED WASTEWATER

▶ Advantages:

- ▶ The installation, operation, and maintenance costs are the responsibility of each individual property owner.
- ▶ Use of on-site systems requires less infrastructure.
- ▶ Use of on-site systems saves money for the Town and taxpayers.

▶ Disadvantages:

- ▶ Smaller lots cannot support on-site septic systems and use may be limited due to separation requirements.
- ▶ **A lack of space and most properties' proximity to water sources is limiting potential growth, both for existing and planned structures.**
- ▶ A failed system being unidentified or simply not repaired would be a health risk or a potential pollution risk for wells and/or surface water.

▶ Estimated Costs:

- ▶ For a typical in-ground leach field system, the cost can range from \$6,000 to \$8,000. If a mound system is required due to soil types or separation to limiting layers the cost can increase to \$13,000 to \$18,000 depending on the site requirements.

Wastewater System Alternatives

- ▶ COMMUNITY DECENTRALIZED WASTEWATER
 - ▶ Decentralized wastewater systems can also be utilized to serve a group of homes, also known as a cluster system. A summary of the advantages and disadvantages to cluster systems is included below.
 - ▶ Advantages:
 - ▶ Smaller initial investment than an equivalent centralized system.
 - ▶ Less operation and maintenance costs than a centralized system.
 - ▶ Frees up space and wastewater capacity for individual properties.
 - ▶ Protect public health and the environment with improved operation and maintenance.
 - ▶ Disadvantages:
 - ▶ Greater area required for treatment than compared to individual septic systems.
 - ▶ Requires a second capital investment for property owners with existing on-site septics.
 - ▶ Regular on-going maintenance costs.

Wastewater System Alternatives

▶ CENTRALIZED WASTEWATER

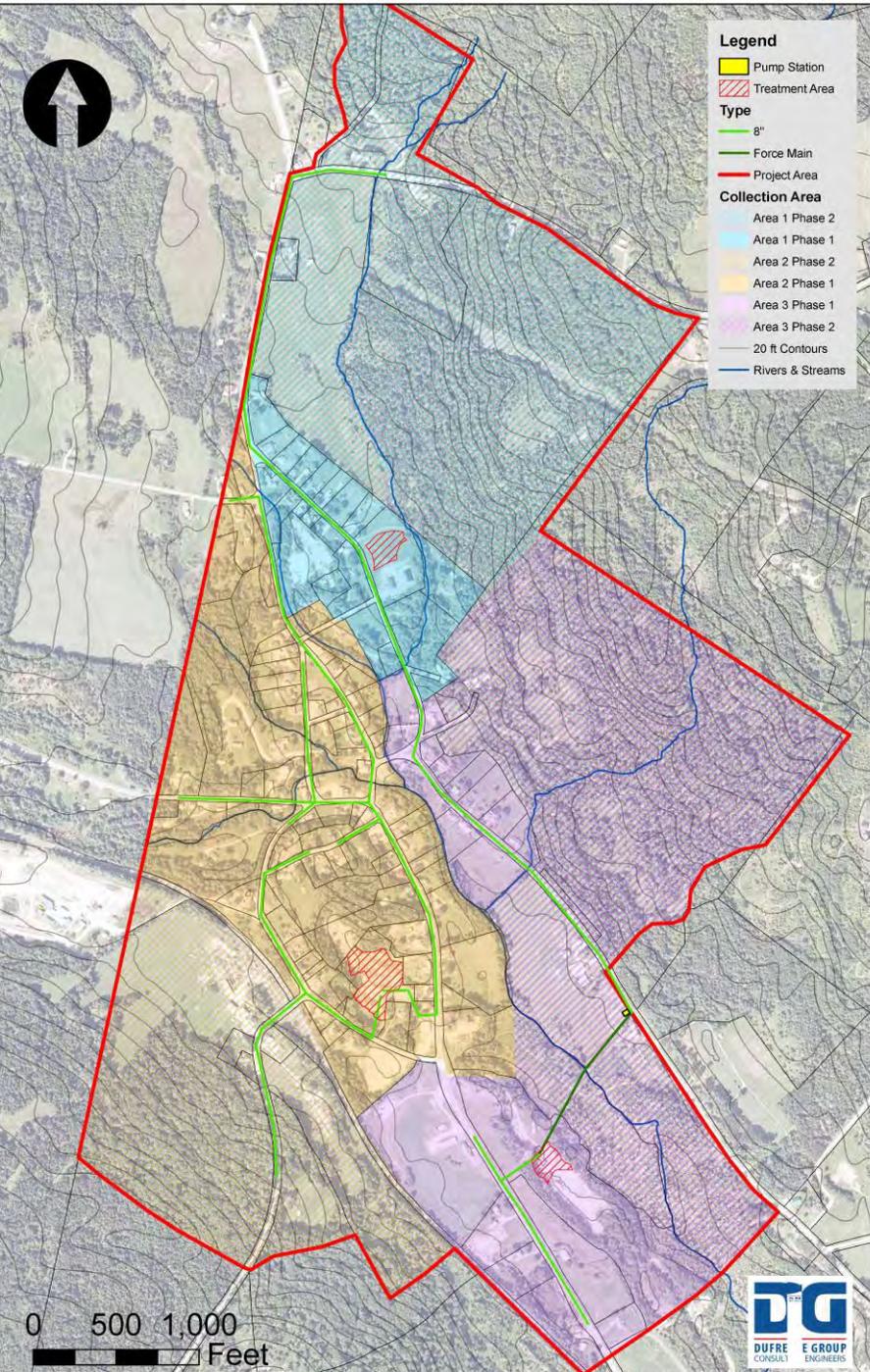
- ▶ Centralized Wastewater systems are typically used by large municipalities and consist of a collection system and wastewater treatment plant.
- ▶ Advantages:
 - ▶ **A public system would allow property owners' greater flexibility to alter their property.**
 - ▶ A public system would allow for greater environmental protection through oversight by an operator and annual inspections.
 - ▶ The risks and costs of a failure are likely less per property owner than they would be for a private septic system.
 - ▶ Property owner maintenance requirements are limited to the sewer service.
- ▶ Disadvantages:
 - ▶ Extensive infrastructure is required for the new sewer collection system, sewer services, pumping station, and force main (if applicable), and disposal system(s).
 - ▶ Landowners are likely to be resistant to a public wastewater system when they already have septic systems and their costs could increase significantly to fund the project.
 - ▶ Significant capital cost.
 - ▶ Regular maintenance and testing is required for public wastewater systems which results in ongoing expense for operation and maintenance.

Wastewater System Alternatives

- ▶ Estimate Wastewater Production
 - ▶ Existing demand estimated at 42,000 gallons per day
 - ▶ Additional growth could add up to 7,000 gallons per day
- ▶ Reviewed properties in the project area to determine potential sites for wastewater disposal
 - ▶ Initially identified 6 sites, field visits narrowed the sites down to 3
 - ▶ Town offices property off School Street (Area 1)
 - ▶ Old **Gravel Pit behind Cole's (Area 2)**
 - ▶ Future Town Garage Site (Area 3)

Wastewater System Alternatives

- ▶ Based on setbacks and Test pits at each of the potential wastewater disposal sites, the following capacities were determined:
 - ▶ Area 1 - Town offices property off School Street - <6,500 gallons per day
 - ▶ Area 2 - **Old Gravel Pit behind Cole's** - 25,0000 + gallons per day
 - ▶ Area 3 - Future Town Garage Site - <6,500 gallons per day



Wastewater System Alternatives

With the preliminary capacity of each site determined, a collection area map was developed

Wastewater System Alternatives

- ▶ Area 1 - Town offices property off School Street - <6,500 gallons per day
 - ▶ Advanced treatment
 - ▶ Approximately 3,900 LF of sewer collection main
 - ▶ 23 connections
 - ▶ Includes Town Offices and Senior Meal Site



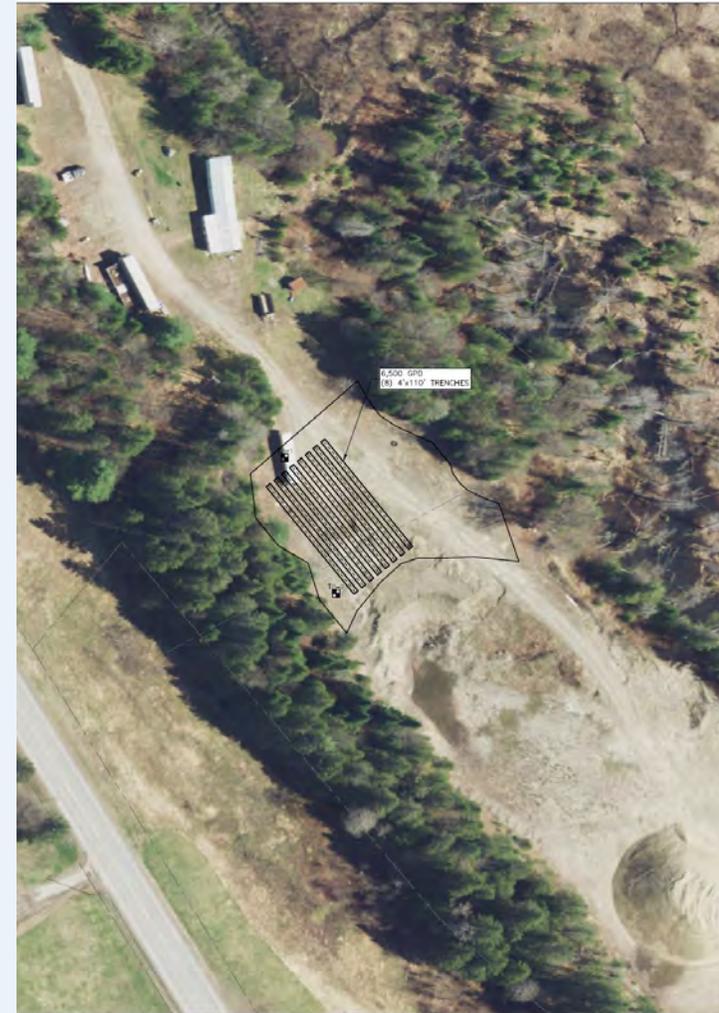
Wastewater System Alternatives

- ▶ Area 2 - **Old Gravel Pit behind Cole's** - 25,0000 + gallons per day
 - ▶ Advanced treatment
 - ▶ Approximately 9,700 LF of sewer collection main
 - ▶ 80 connections - core of Village area
 - ▶ Requires abandonment of downstream wells and development of small water system.



Wastewater System Alternatives

- ▶ Area 3 - Future Town Garage Site - <6,500 gallons per day
 - ▶ Advanced treatment
 - ▶ Approximately 4200LF of sewer collection main
 - ▶ One pump station
 - ▶ 23 connections - all residential plus future Town Garage





Legend

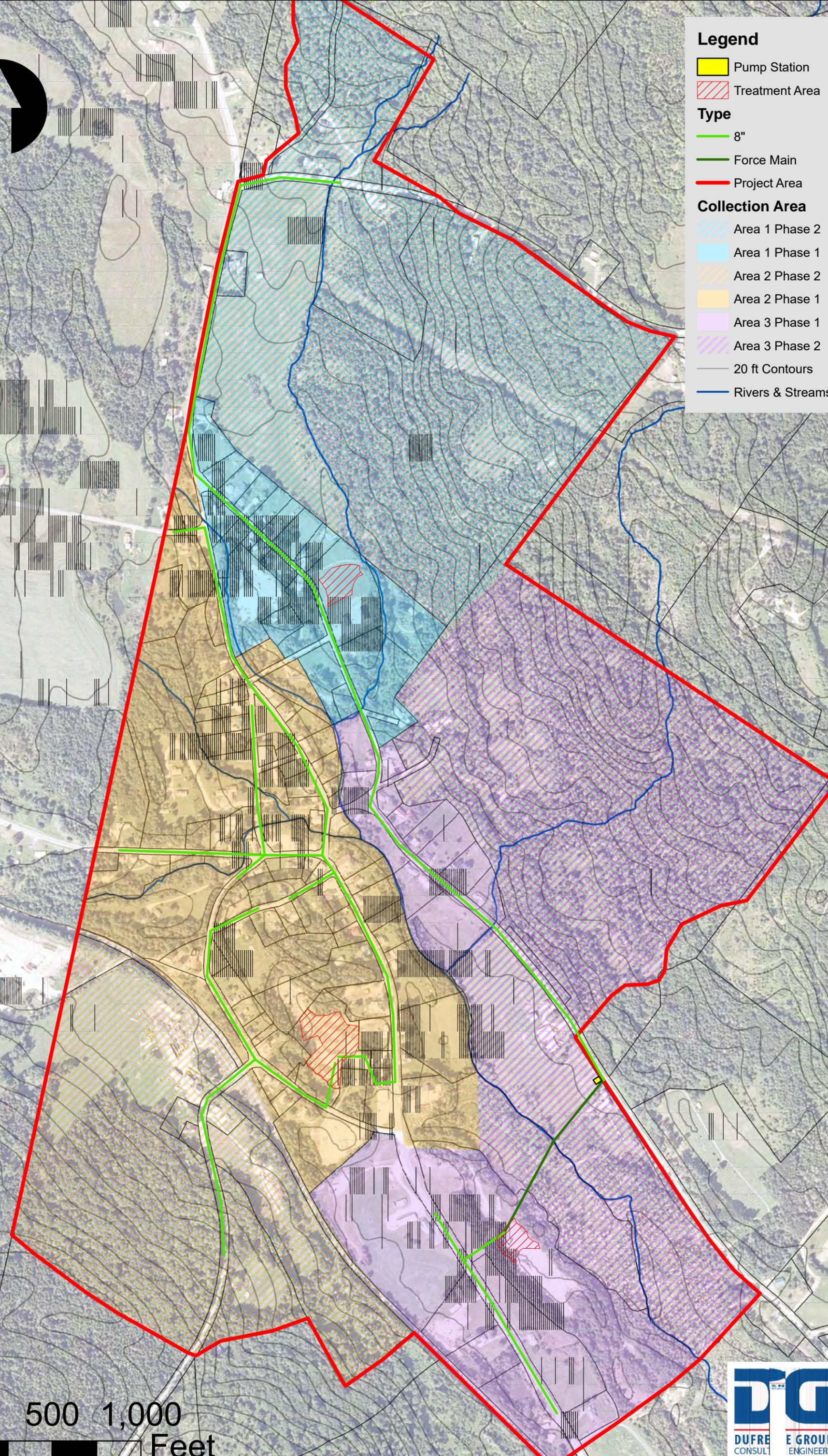
- Pump Station
- Treatment Area

Type

- 8"
- Force Main
- Project Area

Collection Area

- Area 1 Phase 2
- Area 1 Phase 1
- Area 2 Phase 2
- Area 2 Phase 1
- Area 3 Phase 1
- Area 3 Phase 2
- 20 ft Contours
- Rivers & Streams



Wastewater System Alternatives - Phasing

- ▶ Area 1 - School Street
 - ▶ Max design capacity: 6,499 gallons per day
 - ▶ Estimated flow from contributing project area including infiltration/inflow: 7,300 gallons per day
 - ▶ Recommend keeping Phase 1 to more dense areas and then as flows are recorded, can determine additional capacity to expand
 - ▶ Phase 1 estimated flow: 5,500 gpd



Wastewater System Alternatives - Phasing

- ▶ Area 2 - **Cole's gravel pit**
 - ▶ Max design capacity: 32,000 gallons per day
 - ▶ Estimated flow from contributing project area including infiltration/inflow: 33,500 gallons per day
 - ▶ Recommend keeping Phase 1 to more dense areas and then as flows are recorded, can determine additional capacity to expand
 - ▶ Phase 1 estimated flow: 30,000 gpd



Wastewater System Alternatives - Phasing

- ▶ Area 3 - Future Town Garage Site
 - ▶ Max design capacity: 6,499 gallons per day
 - ▶ Estimated flow from contributing project area including infiltration/inflow: 7,700 gallons per day
 - ▶ Recommend keeping Phase 1 to more dense areas and then as flows are recorded, can determine additional capacity to expand
 - ▶ Phase 1 estimated flow: 5,100 gpd



Wastewater System Alternatives Cost Estimates

Site	Collection, Treatment and Disposal Cost plus Contingency	Engineering, Legal, Property Acq.	Total
Area 1 - School Street	\$ 1,872,537.50	\$ 809,600.00	\$ 2,682,137.50
Area 2 - Cole's	\$ 5,064,475.00	\$ 413,000.00	\$ 5,477,475.00
Area 3- Gingue/Town Garage	\$ 2,316,950.00	\$ 994,700.00	\$ 3,311,650.00
Total			\$11,471,262.50

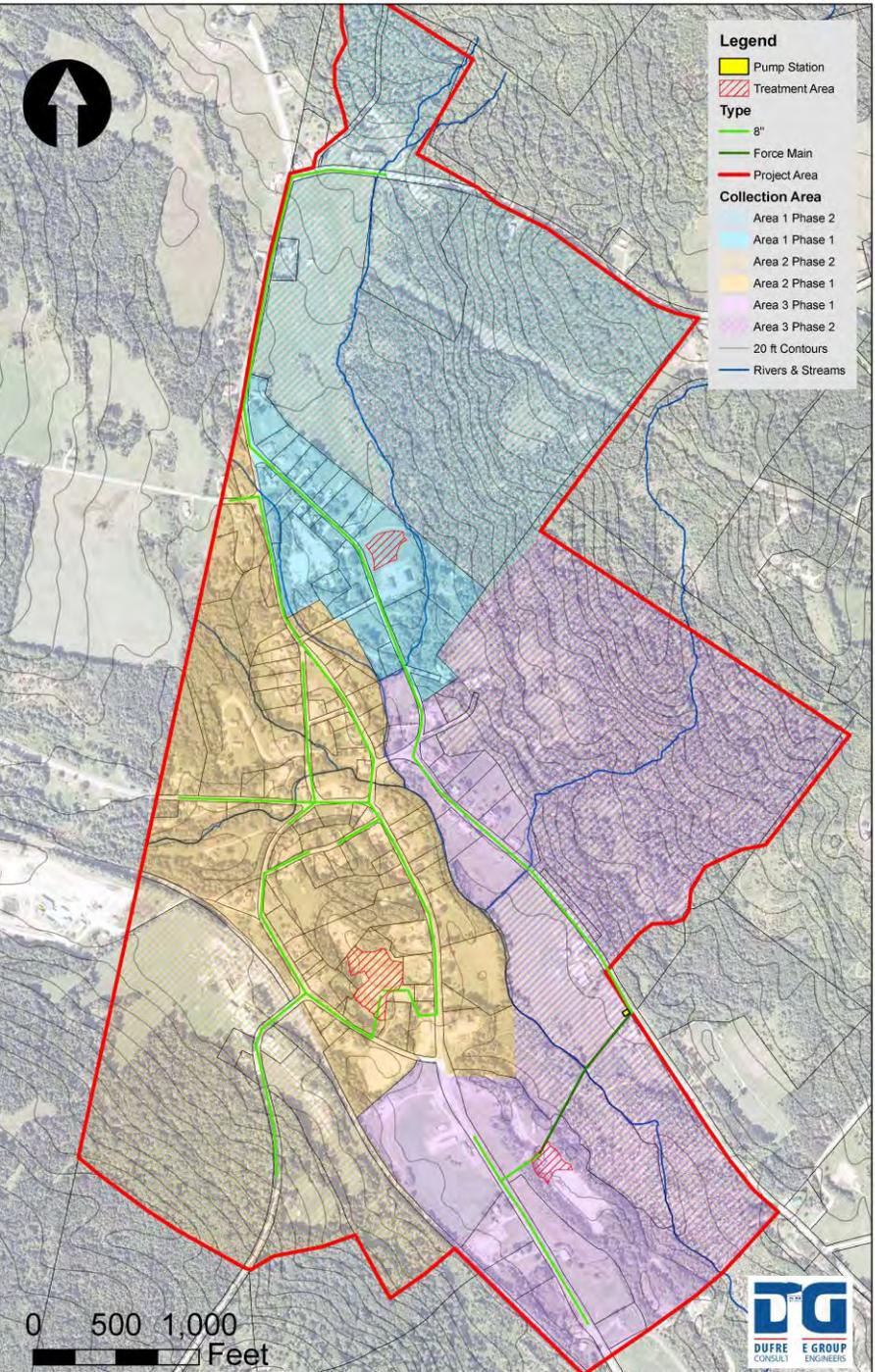
Site	Collection, Treatment and Disposal Cost plus Contingency	Engineering, Legal, Property Acq.	Total
Phase 1 - Area 1 - School Street	\$ 1,315,362.50	\$ 575,600.00	\$ 1,890,962.50
Phase 1 - Area 2 - Cole's	\$ 4,280,687.50	\$ 1,801,100.00	\$ 6,081,787.50
Phase 1 - Area 3- Gingue/Town Garage	\$ 1,862,750.00	\$ 805,500.00	\$ 2,668,250.00
Total			\$10,641,000.00

- Total project Cost includes a 20% contingency.
- Cost estimates are in 2022 numbers.

Wastewater System Funding Alternatives

	Local Borrowing 3.5% for 30 years	CWSRF 0% or 30 years with 49% Principal Forgiveness	USDA-RD Loan 2.00% for 40-Years	USDA-RD 25% Grant, 75% Loan at 2.00% for 40 years
Estimated Total Project Cost	\$ 11,471,263	\$ 11,471,263	\$ 11,471,263	\$ 11,471,263
Anticipated Grants in Aid	\$ -	\$ 5,620,919	\$ -	\$ 2,867,816
Remaining Local Share	\$ 11,471,263	\$ 5,850,344	\$ 11,471,263	\$ 8,603,447
Annual Payment	\$ 623,708	\$ 198,912	\$ 419,341	\$ 314,505
Annual Operation & Maintenance Costs	\$ 14,300	\$ 14,300	\$ 14,300	\$ 14,300
Annual Reserve Fund	\$ 86,000	\$ 86,000	\$ 86,000	\$ 86,000
Total Annual Expenses	\$ 724,008	\$ 299,212	\$ 519,641	\$ 414,805
USER ONLY - Annual Payment to Capitalize Project (including principal and interest) and Operation and Maintenance assuming 128 users	\$5,656	\$2,338	\$4,060	\$3,241
FULL TAX BASE – Tax Rate Increase to Capitalize Project (including principal and interest)	0.1508	0.0727	0.1533	0.1150
FULL TAX BASE – Tax Increase for \$150,000 residence to Capitalize Project (including principal and interest)	\$226.18	\$109.06	\$229.91	\$172.43
USER ANNUAL PAYMENT – with full tax base supporting capital costs and users supporting capital costs, O&M and Reserve Fund	\$1,009.78	\$892.65	\$1,013.50	\$956.02

- Note that because even with the full tax base support the user rates are more than the target rate of 1.5% of the MHI, additional grant may be awarded. West Burke MHI is \$37,222 which results in a target rate of \$558/year.
- Total project Cost is based on combined cost of the 3 systems with a 20% contingency.
- Cost estimates are in 2022 numbers.



Next Steps

- ▶ Continue to refine alternatives
- ▶ Present to Selectboard at first meeting in June