

Public Opinion on the Development of a Sewer System in Shaftsbury, Vermont

May 17, 2007

Center for Rural Studies
University of Vermont

Executive Summary

In July 2007, Vermont's new and more restrictive state-wide septic regulations will go into effect. These new regulations will make it more complicated and costly to repair or replace septic systems. A study was conducted by the Center for Rural Studies in order to better understand public support among property owners for the development of a sewer system in the Town of Shaftsbury.

A survey instrument, designed to answer several research questions related to support and willingness to pay for a sewer system, was distributed to Shaftsbury property owners via the U.S. mail. Responses to the survey were received between December 2006 and January 2007. In total, the research team received 735 completed surveys. The overall response rate was 42.5 percent. The results, based on a group of this size, have a margin of error of plus or minus 4 percent at a 99 percent confidence interval.

The findings failed to show support or a willingness to pay for a sewer system project amongst a majority of the population. At most, the findings suggest that approximately 37 percent of Shaftsbury property owners support the concept of a sewer system, provided that there is some sort of additional benefit, such as economic development or septic maintenance. Concerns surrounding the project included: (a) fairness of the costs and benefits; (b) cost of the project; (c) fear of the loss of rural culture; (d) issues regarding environmental protection; (e) the location of other systems, such as the North Bennington sewer system; (f) the possible increase in taxes; and (g) an overall lack of information.

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Introduction

In July 2007, Vermont's new and more restrictive state-wide septic regulations will go into effect. The new regulations will make it more complicated and costly to repair or replace septic systems. These changes led the Town of Shaftsbury to explore the feasibility of (a) developing a public sewer system and (b) supporting the maintenance and servicing of private septic systems and dry wells.

In order to better understand public support for the development of a sewer system, as well as the maintenance and servicing of septic systems and dry wells, the Town of Shaftsbury commissioned a public opinion poll of town property owners. The five major research questions of the study were:

1. Are property owners who use public water, and may potentially be able to use the sewer system, willing to pay the amount necessary to create and maintain a sewer system;
2. Do property owners who do not use public water, and thus will not be able to use the sewer, support the creation of the system;
3. Are property owners who do not use public water willing to assist in paying the cost of the system and how much are they willing to assist;
4. Do Shaftsbury property owners support the creation of a public sewer system if the system assists economic development; and

5. Do property owners support the creation of a public sewer system if the town assists in the maintenance of private septic systems?

The town selected the Center for Rural Studies (CRS) at the University of Vermont (UVM) to conduct the research study.

This report describes (a) the methods used to collect and analyze the data for this study, (b) the results and findings of the data analysis, and (c) a set of conclusions based on the findings.

Methods

Introduction

The study methods were developed by CRS in collaboration with the Town of Shaftsbury staff, and were approved by town officials. The study methods are described in the following order: (a) the survey instrument; (b) the data collection process, and (c) the analysis and reporting.

Survey Instrument

The survey instrument (*Appendix A*) was designed to answer each of the five major research questions. It also sought to provide a description of the properties and their current water and waste use, as well as their expected future needs. CRS and the Town of Shaftsbury staff designed the instrument through a collaborative effort. A draft survey instrument was pre-tested by several property owners in Chittenden County. A final draft of the survey instrument was reviewed and approved by Town of Shaftsbury staff and elected officials.

Data Collection

The survey instrument was administered through the mail as part of a study packet. The study packets that were developed included: (1) a cover letter, (2) the survey instrument, and (3) a self-addressed stamped return envelope. In order to maximize the response rate, a variation on Dillman's "Total Design Approach" (TDA) was used. TDA is a set of recommendations for maximizing mail responses by utilizing specific survey design concepts and following a multi-step contact schedule.

A cross-sectional design was used for the data collection process. This means that data were collected at one period in time. The survey instrument administration period lasted from December 4, 2006 to January 31, 2007.

The unit of analysis for this study was the individual property owner of each parcel of land in the town. There are 1,731 pieces of property in Shaftsbury. The sampling frame, which is the operational definition of the study population, was provided by the Town of Shaftsbury in the form of the Grand List. Responses were received from property owners by mail, fax, email, and hand. In total, 735 responses were received. The overall response rate was 42.5 percent. The results, based on a group of this size, have a margin of error of plus or minus 4 percent at a 99 percent confidence interval. This means that if the survey was repeated, 99 percent of the time, the results would be plus or minus 4 percent of the numbers reported in this document.

Data Storage, Analysis, & Reporting

The data were stored electronically using Microsoft Excel on a password-protected server. All project files were backed-up nightly on CDRom, a CRS network server, and a UVM network server. This process assures that the project files can never be permanently lost. All of the hardcopy paper files are stored in file cabinets within locked rooms. In order to protect the privacy and confidentiality of the respondents, no identifying information was stored with the data.

The data analysis was primarily descriptive. The Statistical Package for the Social Sciences (SPSS) was used for the analysis. Descriptive statistics were calculated for each of the variables and are presented as a series of frequency tables in the Results section of this report. The tables were created using Microsoft Word.

The narrative and figures presenting the findings are included in the results section of this report. The results are divided into three sections based on whether the property uses public water. These sections are titled: (a) Public Water Users; (b) Non-public water Users; and (c) All Property Owners. *Appendix B* provides descriptive characteristics of the properties and the current and future water and waste system use by those properties.

Results

Public Water Users

Table 1

Willingness of public water users to pay a one-time hook-up fee of approximately \$3,000 to connect to a sewer system

Response	Frequency	Percent (%)
Yes	69	27.2
No	139	54.7
Don't Know	46	18.1
Total	254	100.0

Table 2

Dollar amount that public water users, who were not willing to pay the full price of a one-time hook-up, are willing to pay to hook-up to a sewer system

Amount (\$)	Frequency	Percent (%)
0.00	74	53.2
0.01 to 800.00	21	15.1
800.01 to 2000.00	21	15.1
Don't Know	23	16.5
Total	139	100.0

Table 3

Willingness of public water users to pay annual usage fee of approximately \$600

Response	Frequency	Percent (%)
Yes	36	14.2
No	156	61.4
Don't Know	62	24.4
Total	254	100.0

Table 4

Dollar amount that public water users, who were not willing to pay the full price of an annual usage fee, are willing to pay

Amount (\$)	Frequency	Percent (%)
0.00	69	44.2
0.01 to 150.00	15	9.6
150.01 to 500.00	42	26.9
Don't know	30	19.2
Total	156	100.0

Non-Public Water Users

Table 5

Support among non-public water users for the concept of the entire town contributing to the cost of a sewer system

Response	Frequency	Percent (%)
Yes	108	22.6
No	286	60.0
Don't Know	83	17.4
Total	477	100.0

Table 6

Willingness among non-public water users to pay a full share (\$0.1862/\$100 valuation)
of the cost of the construction of a sewer

Response	Frequency	Percent (%)
Yes	75	69.4
No	19	17.6
Don't Know	14	13.0
Total	108	100.0

Table 7

Amount that non-public water users, who were not willing to pay the full cost share, are willing to pay

Amount per \$100 valuation	Frequency	Percent (%)
0.00	13	68.4
0.10 to 0.1800	5	26.3
Don't know	1	5.3
Total	19	100.0

All Property Owners

Table 8

Support for the town contributing to a sewer if the project leads to economics development

Response	Frequency	Percent (%)
Yes	269	37.5
No	308	43.0
Don't Know	140	19.5
Total	717	100.0

Table 9

Support a sewer if the town offered septic pumping at a reduced price

Response	Frequency	Percent (%)
Yes	263	37.3
No	259	36.7
Don't Know	183	26.0
Total	705	100.0

Table 10

Additional comments regarding the issue of sewer development

Category	Description
Fairness	Feel that no one helped rural residents pay for their systems, why should they help pay for the village residents' system
Cost	Feel that it would cost too much Feel that senior citizens may not be able to afford the sewer
Culture	Feel that resulting development would ruin the rural nature of the town
Environment	Feel that the discharge from the sewer system may have a negative effect on the environment and put the town in violation of laws
Location	Already receive services from North Bennington Feel that they don't want to pay for something they live so far away from and won't be hooked up to
Taxes	Feel that they receive no services from the town and are unwilling to give the town more money
Information	Feel that they do not have enough information about the project

Discussion

The first research question was: “Are property owners, who use public water, willing to pay the amount necessary to create and maintain a sewer system?” Based on the findings, a majority of the population was not willing to pay the full price for the one-time hook-up fee of approximately \$3,000 or for the annual user-fee of approximately \$600. Approximately 27.2 percent of the public water users were willing to pay the full price of the initial hook-up, while 29.1 percent, were unwilling to pay anything for the initial hook-up. There was less support for paying the full cost of the annual fee, with only 14.2 percent of the population willing to pay a \$600 annual usage fee.

In regard to the second research question: “Do property owners who do not use public water support the creation of a public sewer system?” A clear majority, 60.0 percent of the population, did not support the project, while only 22.6 percent supported the project. The remainder of the population was undecided. Of the minority that supported the concept of a public sewer, just over two-thirds were willing to pay the full cost; however, since that group is such a small minority, in response to question three, only 15.7 percent of the population would be willing to pay a share of their property taxes to support a sewer system.

Overall, only 37.5 percent of the entire population of both public water users and non-users supported the development of a sewer system, even with the possible benefit of additional economic development. Approximately, the same percent of Shaftsbury property owners supported the creation of a public sewer system if the town assists in the maintenance of septic systems. This

suggests that given some additional benefits, approximately 37 percent of the population of Shaftsbury property owners supported the creation of a sewer system, which answers question four and five.

The additional comments suggest seven reasons why support for such a project may be limited. The reasons are: (a) fairness of the costs and benefits; (b) total cost of the project; (c) fear of the loss of rural culture; (d) issues regarding environmental protection; (e) the location of other systems, such as the North Bennington sewer system; (f) the possible increase in taxes; and (g) an overall lack of information about the project.

Conclusions

Overall, there was no sign of an overwhelming support for or willingness to pay for a sewer system among the population. At most, the findings suggest that approximately 37 percent of Shaftsbury property owners supported the concept of a sewer system, provided that there is some sort of additional benefit, such as economic development or septic maintenance. Support was slightly higher among those in the population who use town water and could potentially be connected to the system, but supporters were still in the minority.

Seven major issues and concerns have been identified, which may have been limiting support for the project. Addressing several of these issues may help increase support, or at least reduce opposition to the creation of a sewer system in Shaftsbury.

Appendix A

Inventory of Water and Waste Systems: Current Usage and Future Needs

Thank you for agreeing to participate in this voluntary research study. Your time and interest are greatly appreciated. Your privacy and confidentiality will be strictly maintained throughout the research process. The aggregated results of the study will be presented in a report to the town, but individuals will not be identified in any way. This survey should take less than ten minutes to complete.

Instructions

Question 1: Should I respond to this survey?

Answer 1: This survey has been sent to every property owner in the Town of Shaftsbury. If you are the owner of the property, please respond to the survey. If you are not the owner, please write that on the survey. If you own more than one property, please fill out one form for each individual property.

Question 2: How do I respond to this survey?

Answer 2: If you are willing and able to respond to this survey, please take the following steps:

1. Proceed through the survey one question at a time;
2. Follow the instructions on the individual pages; and
3. Make a check mark in the box that corresponds with your answer. Try not to leave any question blank.

Question 3: How do I return this survey?

Answer 3: After you have completed this survey, please fold it in half and place it in the return envelope that has been provided. No postage is necessary.

Question 4: If I have any more questions while completing this survey, how can I contact the researchers?

Answer 4: The Shaftsbury Town Administrator, Aaron Chrostowsky, can be reached by phone at (802)442-4043 during regular business hours. Project coordinator, Thomas DeSisto, can be reached at the Center for Rural Studies by phone at (802)656-0258. If there is no answer, please leave a message.

Once again, thank you for your time and participation. If you have any comments or questions after finishing the survey, please include them in the space provided on the last page. Finally, we can be reached for comments or questions at the contact information provided at the end of the survey questionnaire.

Section I: Property Information

1. What year did you purchase this property? _____ year
2. Out of the following choices, which best describes your property?
1 Single family
2 Multiple family (units): _____
3 Commercial
4 Industrial
5 Other (specify): _____
3. What is the lot size of your property in acres (include fractions of acres)? _____ acres
4. What term best describes the area that your property is located?
1 Village
2 Rural, non-village
3 Other (specify): _____
5. How many half bathrooms (no bath tub/shower) are on this property?
0 None
1 One
2 Two
3 Three
4 Other (specify): _____
6. How many full bathrooms (bath tub/shower) are on this property?
0 None
1 One
2 Two
3 Three
4 Other (specify): _____

Section II: Water & Waste System Information

7. What type of water supply is used on your property?
1 Private Well
2 Town Pipes
3 Other (specify): _____
8. Is your water supply on the same lot as your waste system?
1 Yes
2 No
3 Don't Know
9. What type of waste system supply is used on your property?
1 Dry Well
2 Septic (leach field)
3 Septic (mound system)
4 Other (specify): _____
5 Don't Know
10. What is the size of the waste system in gallons? _____ gallons

11. What year was the waste system last serviced? _____ year

12. Has the waste system failed?
 1 Yes (describe failure) If *Yes*, please describe the failure:
 2 No _____
 3 Don't Know _____

13. If your current waste system fails, is there a site location available for a new system?
 1 Yes
 2 No
 3 Don't Know

Section III: Personal Opinions

14. Does your current water system limit the household/commercial use of your property?
 1 Yes If *Yes*, describe the limitation:
 2 No _____
 3 Don't Know _____

15. Does your current waste system limit the household/commercial use of your property?
 1 Yes If *Yes*, describe the limitation:
 2 No _____
 3 Don't Know _____

Important Information

In July 2007, Vermont's new and more restrictive state-wide septic regulations go into effect. The new regulations will make it more complicated and costly to repair or replace septic systems.

These changes have led the Town of Shaftsbury to explore the feasibility of (1) developing a sewer system and (2) supporting the maintenance and servicing of septic systems and dry wells. For more information, (a) go to www.shaftsbury.net, (b) call (802)442-4043, or (c) visit the town offices.

**Public
Water
Users
Only**

16a. According to the 2006 Sewer Feasibility Study, village residents *may* need to pay a one-time fee of approximately \$3,000 to hook-up to the system. Would you be willing to pay this fee to connect/hook-up to the system?
 1 Yes
 2 No
 3 Don't Know

16b. If you answered No to *Question 16a*, how much would you be willing-to-pay to hook-up to the sewer system?
 \$ _____

17a. According to the 2006 Sewer Feasibility Study, residents connected to the sewer system *may* need to pay a \$600 annual usage fee. Would you be willing to pay this fee?
 1 Yes
 2 No
 3 Don't Know

17b. If you answered No to *Question 17a*, how much would you be willing-to-pay to hook-up to the sewer system?
 \$ _____

Non-Public Water Users

- 18a. Would you support the *concept* of the entire town contributing to the cost of building a sewer system? 1 Yes
2 No
3 Don't Know
- 18b. If you answered Yes to *Question 18a*, would you be willing-to-pay the full cost at \$0.1862/\$100 valuation (for example: a \$150,000 property would pay \$279.30)? 1 Yes
2 No
3 Don't Know
- 18c. If you answered No to *Question 18b*, how much of the cost of building the system would you be willing-to-pay? \$ _____

All Property Owners

19. Would you support the development of a sewer system in the village if the project leads to economic development, such as restaurants and office space? 1 Yes
2 No
3 Don't Know
20. Would you support developing a sewer system in Shaftsbury if the town offers septic pumping to all property owners at a reduced price? 1 Yes
2 No
3 Don't Know

Section IV: Comments or Questions

21. Please feel free to use this section of the survey to make any comments or ask any questions that you have regarding the issues raised by this survey.

Thank you very much for participating in this study. Please return this survey questionnaire in the postage-paid envelope provided to:

Center for Rural Studies
University of Vermont
Burlington, Vermont 05401
Phone (802) 656-3021
Fax (904) 264-5582

Appendix B

Table 1B

Year the property was purchased by current owner

Year	Frequency	Percent (%)
1884 to 1973	147	20.8
1974 to 1984	136	19.2
1985 to 1993	149	21.1
1994 to 2001	154	21.8
2002 to 2006	121	17.1
Total	707	100.0

Table 2B

Description of the property

Type	Frequency	Percent (%)
Single Family Home	650	88.4
Multiple Family Home	18	2.4
Commercial	8	1.1
Industrial	1	0.1
Other	58	7.9
Total	735	100.0

Table 3B

Number of units in multiple family homes

Number of Units	Frequency	Percent (%)
Two (2)	10	76.9
Three (3)	2	15.4
Four (4)	1	7.7
Total	13	100.0

Table 4B

Description of the properties that were previously described as “other”

Type	Frequency	Percent (%)
Agriculture	7	12.7
Forest	10	18.2
Home/business	4	7.3
Pasture/Forest	1	1.8
Recreation	9	16.4
Vacant	24	43.6
Total	55	100.0

Table 5B

Size of the property in acres

Lot size (in acres)	Frequency	Percent (%)
<0.8	174	24.0
0.81 to 2.0	155	21.3
2.01 to 4.5	107	14.7
4.6 to 13	146	20.1
13.01 to 420 acres	144	19.8
Total	726	100.0

Table 6B

Location of the property

Location	Frequency	Percent (%)
Village	173	23.8
Rural, non-village	538	73.9
Other	17	2.3
Total	728	100.0

Table 7B

Description of the location if the property was described previously as “other”

Location	Frequency	Percent (%)
Agriculture	1	7.1
Non-village development	13	92.9
Total	14	100.0

Table 8B

Number of half baths on the property

# Half baths	Frequency	Percent (%)
None	478	65.7
One	228	31.3
Two	20	2.7
Three	2	0.3
Total	728	100.0

Table 9B

Number of full baths are on the property

#Full baths	Frequency	Percent (%)
None	46	6.3
One	311	42.3
Two	285	38.8
Three	74	10.1
Other	19	2.6
Total	735	100.0

Table 10B

Number of full baths on the property if greater than three

# Full Baths	Frequency	Percent (%)
Four (4)	9	50.0
Five (5)	5	27.8
Seven (7)	1	5.6
Eleven (11)	2	11.1
Eighteen (18)	1	5.6
Total	18	100.0

Table 11B

Type of water supply used on the property

Type	Frequency	Percent (%)
Private Well	440	60.2
Town Pipes	254	34.7
Other	37	5.1
Total	731	100.0

Table 12B

Response to the question: Is your property's water supply located on the same lot as your property's waste system?

Response	Frequency	Percent (%)
Yes	495	70.5
No	183	26.1
Don't Know	24	3.4
Total	702	100.0

Table 13B

Type of waste system used on the property

Type	Frequency	Percent (%)
Dry Well	36	5.0
Septic (Leach Field)	538	75.5
Septic (Mound System)	39	5.5
Other	78	10.9
Don't Know	22	3.1
Total	713	100.0

Table 14B

Other sources of the properties water supply

Type	Frequency	Percent (%)
Both Private Well and Town Pipes	1	3.0
Bottled Water	1	3.0
Collection	12	36.4
No Water	19	57.6
Total	33	100.0

Table 15B

Other types of waste systems used on the property

Type	Frequency	Percent (%)
Multiple	56	73.7
No System	1	1.3
None	8	10.5
Other system	1	1.3
Town	10	13.2
Total	76	100.0

Table 16B

Year the septic system was last serviced

Year(s)	Frequency	Percent (%)
1950 to 1999	113	20.0
2000 to 2002	102	18.1
2003 to 2004	147	26.0
2005	91	16.1
2006	112	19.8
Total	565	100.0

Table 17B

Responses to the question: Has your waste system failed before?

Response	Frequency	Percent (%)
Yes	53	7.6
No	622	88.7
Don't Know	26	3.7
Total	701	100.0

Table 18B

Reponses to the question: Is there a location available on your property for a new waste system?

Response	Frequency	Percent (%)
Yes	53	7.6
No	622	88.7
Don't Know	26	3.7
Total	701	100.0

Table 19B

Reponses to the question: If your waste system has failed, what was the failure?

Category	Type of Failure
Tank	Rusted Out
	Overfilled
Pump	Clogged
	Motor Failed
Leach Field	Expanded
	Clogged
Pipes	Collapsed or Broken
	Clogged
Other	Toilets Don't Always Flush

Table 20B

Responses to the question: Does your property's water system limit the use of the property?

Response	Frequency	Percent (%)
Yes	48	6.8
No	576	81.9
Don't Know	79	11.2
Total	703	100.0

Table 21B

Responses to the question: If your water system limits the use of your property, how does it do so?

Category	Description
Flow	Low Flow
	Low Pressure
Supply	Limited
	No Running Water
	Limited During Power Outages
	Surface Supply Only
	Located on Neighbors Property
	Limits to Residential Use
	Limits Number of Residents on Property

Table 22

Responses to the question: Does your property's waste system limit the use of your property?

Response	Frequency	Percent (%)
Yes	61	8.8
No	528	76.1
Don't Know	105	15.1
Total	694	100.0

Table 23

Responses to the question: If your property's waste system limits the use of the property, how does it do so?

Category	Description
Capacity	Limits Number of Bedrooms Will Not Support a Clothes Washer Limits to use as a Single Family Home
Placement	No Place for Replacement System Size Limited by Proximity to Well