

**WASTEWATER FEASIBILITY STUDY FOR SOUTH SHAFTSBURY
TOWN OF SHAFTSBURY, VERMONT
TABLE 11: Estimate of User Costs**

	Centralized System Alternatives								Decentralized System Alternatives										
	Scenario No. 1				Scenario No. 2				Village	Scenario No. 3				Scenario No. 4			Scenario No. 5		
	Full Buildout to meet all identified wastewater needs				Center Only					Provide decentralized solutions for all areas of need				Resolve environmental concerns only			Resolve Environmental Concerns and provide for Village Growth Center (Rt. 7A, Buck Hill Rd to Ledgely Dr)		
	All Loans	with 25% grants	with 50% grants	with 50% grants and Town wide tax support	All Loans	with 25% grants	with 50% grants	with 50% grants and Town wide tax support	All loans with managed users	with 25% grants and managed users	with 50% grants and managed users	with 50% grants, managed users, and Town wide tax support	All loans with managed users	with 25% grants and managed users	All loans with managed users and Town wide tax support	All loans with managed users	with 25% grants and managed users	All loans with managed users and Town wide tax support	
TOTAL PROJECT COSTS (from Table Nos. 9 and 10)	\$6,023,000	\$6,023,000	\$6,023,000	\$6,023,000	\$2,770,000	\$2,770,000	\$2,770,000	\$2,770,000	\$3,190,000	\$3,190,000	\$3,190,000	\$3,190,000	\$1,385,000	\$1,385,000	\$1,385,000	\$1,840,000	\$1,840,000	\$1,840,000	
GRANTS/OTHER PROJECT FUNDS ¹	\$0	\$1,506,000	\$3,012,000	\$3,012,000	\$0	\$693,000	\$1,385,000	\$1,385,000	\$0	\$797,500	\$1,595,000	\$1,595,000	\$346,250			\$460,000			
LOCAL SHARE (ANR LOAN)	\$6,023,000	\$4,517,000	\$3,011,000	\$3,011,000	\$2,770,000	\$2,077,000	\$1,385,000	\$1,385,000	\$3,190,000	\$2,392,500	\$1,595,000	\$1,595,000	\$1,385,000	\$1,038,750	\$1,385,000	\$1,840,000	\$1,380,000	\$1,840,000	
ANNUAL COSTS																			
ANNUAL PAYMENT ON ANR LOAN (2% FOR 20 YEARS)	\$368,300	\$276,200	\$184,100	\$184,100	\$169,400	\$127,000	\$84,700	\$84,700	\$195,100	\$146,300	\$97,500	\$97,500	\$84,700	\$63,500	\$84,700	\$112,500	\$84,400	\$112,500	
ANNUAL OPERATIONAL COSTS FOR WASTEWATER SYSTEM																			
COST OF SERVICE TO NORTH BENNINGTON ²	\$88,750	\$88,750	\$88,750	\$88,750	\$58,250	\$58,250	\$58,250	\$58,250											
O&M OF SHAFTSBURY COLLECTION SYSTEM ³	\$35,500	\$35,500	\$35,500	\$35,500	\$23,300	\$23,300	\$23,300	\$23,300											
COST OF SERVICE FOR DECENTRALIZED SYSTEMS ⁴									\$23,000	\$23,000	\$23,000	\$23,000	\$12,400	\$12,400	\$12,400	\$14,400	\$14,400	\$14,400	
SEPTIC TANK PUMPING OF MANAGED USERS ⁵									\$8,800	\$8,800	\$8,800	\$8,800	\$10,800	\$10,800	\$10,800	\$10,400	\$10,400	\$10,400	
COST OF MANAGING ON-SITE SYSTEMS ⁶									\$6,000	\$6,000	\$6,000	\$6,000	\$7,300	\$7,300	\$7,300	\$7,100	\$7,100	\$7,100	
TOTAL ANNUAL COSTS	\$492,550	\$400,450	\$308,350	\$308,350	\$250,950	\$208,550	\$166,250	\$166,250	\$232,900	\$184,100	\$135,300	\$135,300	\$115,200	\$94,000	\$115,200	\$144,400	\$116,300	\$144,400	
TOTAL NUMBER OF ERUs ⁷	355	355	355	355	233	233	233	233	355	355	355	355	355	355	355	355	355	355	
NUMBER OF ERUs TO BE CONNECTED ⁸	355	355	355	355	233	233	233	233	115	115	115	115	62	62	62	72	72	72	
NUMBER OF ERUs TO BE MANAGED (BUT NOT CONNECTED)									240	240	240	240	293	293	293	283	283	283	
ESTIMATED REVENUES																			
FROM TAX BASE (ASSESSED TOWN WIDE) ⁹				\$85,000				\$20,000				\$6,000		\$5,000				\$30,000	
FROM USER COSTS FOR MANAGED USER WITHIN SERVICE AREA ¹⁰									\$60,000	\$60,000	\$60,000	\$60,000	\$73,250	\$73,250	\$73,250	\$70,750	\$70,750	\$70,750	
FROM USER COSTS FOR CONNECTED USER ¹¹	\$492,550	\$400,450	\$308,350	\$223,350	\$250,950	\$208,550	\$166,250	\$146,250	\$172,900	\$124,100	\$75,300	\$69,300	\$41,950	\$20,750	\$36,950	\$73,650	\$45,550	\$43,650	
TOTAL ANNUAL REVENUES	\$ 492,550	\$ 400,450	\$ 308,350	\$ 308,350	\$ 250,950	\$ 208,550	\$ 166,250	\$ 166,250	\$232,900	\$184,100	\$135,300	\$135,300	\$115,200	\$94,000	\$115,200	\$144,400	\$116,300	\$144,400	
TYPICAL ANNUAL USER COSTS (PER ERU)																			
CONNECTED USER	\$1,387	\$1,128	\$869	\$629	\$1,077	\$895	\$714	\$628	\$1,503	\$1,079	\$655	\$603	\$677	\$335	\$596	\$1,023	\$633	\$606	
"MANAGED" USER WITHIN SERVICE AREA									\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	
PROPERTY TAX (BASED ON \$100K PROPERTY) ¹²				\$47				\$11				\$3		\$3				\$17	
TYPICAL ANNUAL USER COSTS (PER GALLON)¹³																			
CONNECTED USER	\$5.66	\$4.60	\$3.55	\$2.57	\$4.40	\$3.65	\$2.91	\$2.56	\$6.14	\$4.40	\$2.67	\$2.46	\$2.76	\$1.37	\$2.43	\$4.18	\$2.58	\$2.47	
"MANAGED" USER WITHIN SERVICE AREA									\$1.02	\$1.02	\$1.02	\$1.02	\$1.02	\$1.02	\$1.02	\$1.02	\$1.02	\$1.02	

Notes:
¹ No specific sources of grant funding have been identified at this time. This table presents the sensitivity of user costs with various grant amounts.
² An estimate of \$250 per ERU is assumed as a cost of service. Actual costs will need to be negotiated as part of an intermunicipal agreement with the Town of Bennington.
³ An estimate of \$100 per ERU is assumed.
⁴ An estimate of \$200 per ERU is assumed.
⁵ Assumes typical managed user has tank volume 4 times daily flow, and pumping 1/4 of tanks per year @ \$0.15/gal.
⁶ Assumes an estimate of \$25 per ERU, based on engineering judgement.
⁷ Total number of ERUs is based on a count of existing structures on USGS mapping, and assumption the School is 15 ERUs
⁸ Total number of ERUs is based on a count of existing structures within service area limits depicted on Figure Nos. 3 and 4.
⁹ For scenarios with tax assessments as part of the revenue stream, the amounts were determined to provide an "affordable" user cost for connected users.
¹⁰ All wastewater systems within the service area that are not connected to the community system would be managed, and will require an annual fee for service provided (inspections, tank pump out, etc.). An estimated annual fee of \$250 per ERU is assumed.
¹¹ Equal to the balance of other revenues to meet annual costs.
¹² Based on a grand list of \$1,790,000. Median property value in the Town is \$86,000. To determine impact on the tax rate, divide the estimated property tax by 1,000.
¹³ Based on 245 gpd/ERU.
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**WASTEWATER FEASIBILITY STUDY FOR SOUTH SHAFTSBURY
TOWN OF SHAFTSBURY, VERMONT
TABLE 12: Evaluation of Alternatives**

Criteria	Decentralized System Alternatives				
	Centralized System Alternatives	Scenario 2 - Village Center only	Scenario 3 - Provide solutions for all areas of need	Scenario 4 - Resolve environmental concerns only	Scenario 5 - Resolve environmental concerns and provide for Village Growth Center
Costs/Socio-economic impacts	<p>Scenario 1 - Full Buildout to meet all identified wastewater needs</p> <ul style="list-style-type: none"> Highest cost alternative Requires substantial grant funding and a significant Town wide tax (approaching \$.05 per hundred) to make project affordable Standard method of project development 	<ul style="list-style-type: none"> Higher cost alternative Requires substantial grant funding and Town wide tax (approximately \$0.01 per hundred) to make project affordable 	<ul style="list-style-type: none"> Higher cost alternative Requires substantial grant funding and potentially some Town wide tax support to make project affordable 	<ul style="list-style-type: none"> Lowest cost alternative, but does not address future growth in Village Center Could be completed without grant funding (approximately \$0.02 per hundred) 	<ul style="list-style-type: none"> Lower cost alternative Could be completed without grant funding with some Town wide tax support (approximately \$0.02 per hundred)
Implementation/Feasibility	<ul style="list-style-type: none"> Standard method of project development 	<ul style="list-style-type: none"> Standard method of project development 	<ul style="list-style-type: none"> Requires negotiations with up to five private landowners for disposal areas 	<ul style="list-style-type: none"> Requires negotiations with up to three private landowners for disposal areas Increased flexibility to add additional service areas after project is implemented 	<ul style="list-style-type: none"> Possibly could use Town-owned land for disposal options Increased flexibility to add additional service areas after project is implemented
Administrative Issues	<ul style="list-style-type: none"> Need Intermunicipal Agreement with Town of Bennington Potential contract with Bennington for operations/billing Requires new infrastructure throughout service area 	<ul style="list-style-type: none"> Need Intermunicipal Agreement with Town of Bennington Potential contract with Bennington for operations/billing Requires new infrastructure throughout service area 	<ul style="list-style-type: none"> Requires creation of Management District with additional administrative functions/costs 	<ul style="list-style-type: none"> Requires creation of Management District 	<ul style="list-style-type: none"> Requires creation of Management District
Use of existing resources	<ul style="list-style-type: none"> Requires new infrastructure throughout service area 	<ul style="list-style-type: none"> Requires new infrastructure throughout service area 	<ul style="list-style-type: none"> Maintains functioning on-site systems 	<ul style="list-style-type: none"> Maintains functioning on-site systems 	<ul style="list-style-type: none"> Maintains functioning on-site systems Possibly could use Town-owned land for disposal
Public Acceptability	<ul style="list-style-type: none"> Generally acceptable alternative, but may have resistance with need for significant Town tax subsidy and requirement for mandatory connection Low complexity with sewer collection only 	<ul style="list-style-type: none"> Generally acceptable alternative, and ANR prefers concentrating infrastructure in designated growth centers 	<ul style="list-style-type: none"> Will require public information efforts to secure acceptance of management concept 	<ul style="list-style-type: none"> Will require public information efforts to secure acceptance of management concept 	<ul style="list-style-type: none"> Will require public information efforts to secure acceptance of management concept, but generally acceptable to provide for a commercial growth center
Complexity	<ul style="list-style-type: none"> Low complexity with sewer collection only 	<ul style="list-style-type: none"> Low complexity with sewer collection only 	<ul style="list-style-type: none"> Low to moderate complexity with sewer collection and treatment 	<ul style="list-style-type: none"> Low to moderate complexity with sewer collection and treatment 	<ul style="list-style-type: none"> Low to moderate complexity with sewer collection and treatment
Adaptability to future growth	<ul style="list-style-type: none"> Growth limited only by agreement with Bennington 	<ul style="list-style-type: none"> Growth limited only by agreement with Bennington 	<ul style="list-style-type: none"> Depending on available capacity at potential sites, could provide for limited growth in identified areas 	<ul style="list-style-type: none"> Focus on existing flows with little growth potential 	<ul style="list-style-type: none"> Provides focused growth potential in Village Center
Effects on water quality and quantity	<ul style="list-style-type: none"> Transfer of all water quality issues related to wastewater to Town of Bennington 	<ul style="list-style-type: none"> Removes some water quality concerns 	<ul style="list-style-type: none"> Removes some water quality concerns 	<ul style="list-style-type: none"> Removes some water quality concerns 	<ul style="list-style-type: none"> Removes some water quality concerns
Effects on environmentally sensitive areas	<ul style="list-style-type: none"> Largest project area/impact Several temporary impacts during construction (water crossings, wetlands) 	<ul style="list-style-type: none"> Larger project area/impact Several temporary impacts during construction (water crossings, wetlands) 	<ul style="list-style-type: none"> Smaller project area/impact 	<ul style="list-style-type: none"> Smallest project area/impact 	<ul style="list-style-type: none"> Smaller project area/impact
Reliability, redundancy	<ul style="list-style-type: none"> High reliability provided with collection sewer and no treatment Need for facility replacement in Town is minimized, treatment upgrades will be shared with Bennington 	<ul style="list-style-type: none"> High reliability provided with collection sewer and no treatment Need for facility replacement in Town is minimized, treatment upgrades will be shared with Bennington 	<ul style="list-style-type: none"> Requires effective management approach to maintaining on-site systems 	<ul style="list-style-type: none"> Requires effective management approach to maintaining on-site systems 	<ul style="list-style-type: none"> Requires effective management approach to maintaining on-site systems
Evaluation Results	Least Favorable	Relatively Favorable	Least Favorable	Relatively Favorable	Most Favorable

Source: Phelps Engineering, February 2006.
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Date/Init: 2/9/2006, ann