

IX. GILES COUNTY

Sixteen centralized and seven de-centralized projects were identified to improve water quality and alleviate human health concerns in Giles County.

The centralized projects focus on expanding the service areas of existing wastewater systems managed by the towns within the county. Seven of the centralized projects run along the Route 460 corridor in the Sinking Creek watershed, as well as out toward the Newport area along State Highway 42. De-centralized projects in Giles County tend to be separated from the centralized projects by extreme topography, limiting the effectiveness and efficiency of connecting to a traditional wastewater system.

Primary Priorities

Centralized Projects

Project Name	Project Cost
Marville (G-1)	\$ 2,673,140
Route 100-Ingram Village/Oney/Mutter (G-2)	\$ 7,119,379
<i>Total</i>	\$ 9,792,519

Decentralized Projects

Project Name	Project Cost
Ripplemead (DC-6)	\$ 1,821,400
Ram Wayside (DC-7)	\$ 618,870
Snidertown (DC-8)	\$ 407,400
Staffordsville (DC-10)	\$ 597,800
<i>Total</i>	\$ 3,445,470

Secondary Priorities

Centralized Projects

Project Name	Project Cost
Cascades Drive Extension (G-3)	\$ 1,407,180
Virginia Heights/River Bend (G-4)	\$ 3,133,806
Mountain Lake (G-5)	\$ 1,190,600
Pearisburg System Improvements (G-6)	\$ 389,500
Pearisburg System Improvements (G-7)	\$ 176,800
Maybrook West (G-8)	\$ 8,617,920
Maybrook East Sub-area (G-9)	\$ 4,683,690
Newport Sub-area (G-10)	\$ 4,709,700
Clover Hollow Sub-area (G-11)	\$ 2,196,950
State Route 42 (G-12)	\$ 5,351,063
Sinking Creek North (G-13)	\$ 4,497,940
Sinking Creek South Phase 1 (G-14)	\$ 5,334,540
Sinking Creek South Phase 2 (G-15)	\$ 1,254,400
Shute Hollow (G-16)	\$ 3,127,040
<i>Total</i>	\$ 46,071,129

Decentralized Projects

Project Name	Project Cost
Eggleston (DC-9)	\$ 439,600
Songer Town (DC-11)	\$ 275,100
Eggleston East/Campground (DC-12)	\$ 765,800
<i>Total</i>	\$ 1,480,500

Total Funding Necessary for Giles County = \$60,789,618

Table 21 - Overall Project Ranking - Centralized Projects									
Giles County									
County	Project ID	Total ERC's	Equivalent Connections	Present Worth Per Connection	Elimination of Health Hazard	Elimination of Water Quality Problems	Available Facilities	Potential Growth (Residential/Industrial)	Total Points
			20	20	15	20	10	15	100
Giles	G-1	108	10	10	10	20	10	10	70
Giles	G-2	297	15	10	15	10	5	15	70
Giles	G-4	99	5	5	10	20	10	10	60
Giles	G-8	159	10	0	10	0	10	15	45
Giles	G-13	125	10	5	10	0	10	10	45
Giles	G-5	62	5	15	10	0	10	0	40
Giles	G-3	45	5	5	15	0	10	0	35
Giles	G-14	48	5	0	10	0	10	10	35
Giles	G-9	70	5	0	10	0	0	15	30
Giles	G-10	93	5	0	10	0	0	15	30
Giles	G-11	34	5	0	10	0	0	15	30
Giles	G-15	31	5	0	10	0	0	10	25
Giles	G-16	61	5	0	0	0	10	10	25
Giles	G-12	57	5	0	10	0	0	10	25
Giles	G-6	0	0	0	0	0	10	0	10
Giles	G-7	0	0	0	0	0	10	0	10

Table 22 - Overall Project Ranking - Decentralized Projects										
Giles County										
County	Project ID	Total ERC's	Elimination of Health Hazard	Elimination of Water Quality Problems	Permitted Water System	Community Involvement	Utility Willingness	Financial Support	Present Worth Per Connection	Total Points
			20	20	5	15	10	10	20	100
Giles	DC-10	40	15	20	0	5	10	0	10	60
Giles	DC-6	140	20	5	5	5	10	0	15	60
Giles	DC-7	50	20	0	5	5	10	0	15	55
Giles	DC-8	24	20	5	5	5	10	0	10	55
Giles	DC-9	30	15	5	0	10	10	0	10	50
Giles	DC-12	50	15	5	0	10	10	0	10	50
Giles	DC-11	15	20	5	5	5	10	0	0	45

LEGEND

 PROJECT AREA

 COUNTY LIMITS

- Centralized Projects**
- G-1. Marville
 - G-2. Route 100-Ingram Valley/Oney/Mutter
 - G-3. Cascades Drive Extension
 - G-4. Virginia Heights/River Bend
 - G-5. Mountain Lake
 - G-6. Pearisburg System Improvements
 - G-7. Pearisburg System Improvements
 - G-8. Maybrook West
 - G-9. Maybrook East Sub-Area
 - G-10. Newport Sub-Area
 - G-11. Clover Hollow Sub-Area
 - G-12. State Route 42
 - G-13. Sinking Creek North
 - G-14. Sinking Creek South Phase I
 - G-15. Sinking Creek South Phase II
 - G-16. Shute Hollow

- Decentralized Projects**
- DC-6. Ripplemead
 - DC-7. Ram Wayside
 - DC-8. Snidertown
 - DC-9. Eggleston
 - DC-10. Staffordsville
 - DC-11. Songertown
 - DC-12. Eggleston East

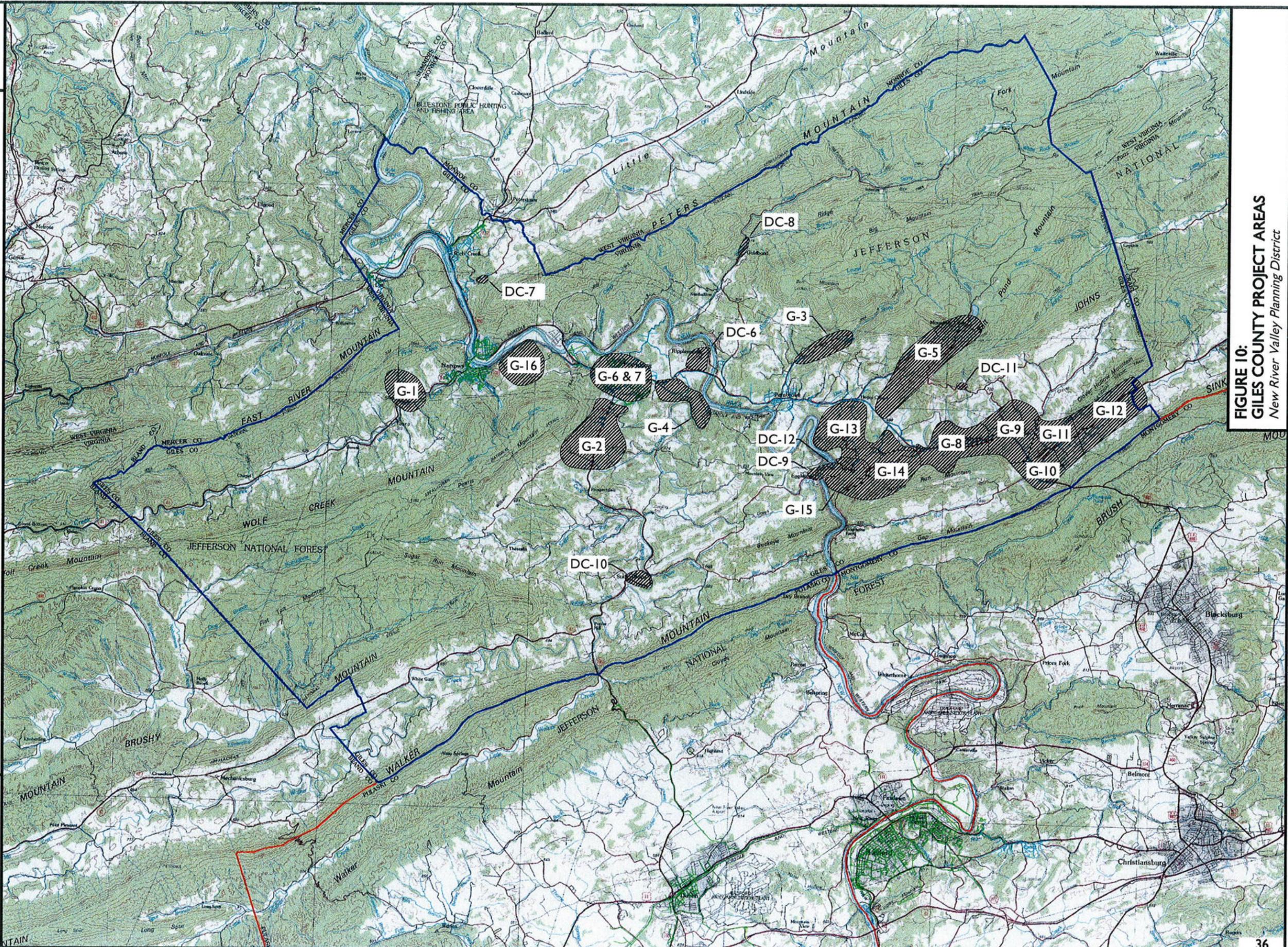


FIGURE 10:
GILES COUNTY PROJECT AREAS
 New River Valley Planning District



0 7,500 15,000

SCALE: 1" = 15,000'

SOURCE: RADFORD, VA & BLUEFIELD, WV
 U.S.G.S. QUADRANGLE

MARVILLE SEWER EXTENSION (G-1)

GILES COUNTY BOARD OF SUPERVISORS

New River Valley Planning District

Project Background

The Marville project area is located southwest of the Town of Narrows and extends primarily along State Route 61. The project area includes approximately 108 residential connections. Currently, the area is not served by a public sewage system. Residences in the area primarily utilize privately owned and maintained on-site septic systems. The project area lies in the watersheds of Wolf Creek, which has been identified by the Virginia Department of Environmental Quality (DEQ) as an impaired stream. It is anticipated that, with the provision of public sewage service, a moderate to high potential will exist for residential growth.

Proposed Facilities

The proposed facilities associated with the Marville Sewer Extension include approximately 23,138 linear feet of 8-inch gravity sewer. The extension will connect to the existing Town of Narrows sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Town of Narrows Wastewater Treatment Plant (WWTP). The Town of Narrows WWTP has a permitted capacity of 0.25 million gallons per day (MGD) and currently treats an average of 0.18 MGD. Treated effluent from the Town of Narrows WWTP discharges into the New River which is not identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 132 connections (anticipated 50-year growth of 20%) and a flow of 300 gallons per day (GPD) per connection, future average daily flow for the project area will be approximately 39,600 GPD or 0.04 MGD. Therefore, adequate capacity is available at the Town of Narrows WWTP to treat the anticipated wastewater generated in the Marville project area.

Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Marville Sewer Extension are \$2,673,140 and \$2,314, respectively. These costs result in an approximate present worth of \$24,992 per existing connection.

PRELIMINARY PROBABLE PROJECT COST

<u>Construction Cost</u>				
23,138	L.F.	8" Gravity Sewer @	\$80/L.F.	\$1,851,040
108	EA.	Gravity Sewer Connections @	\$1,900/EA.	<u>\$205,200</u>
Total Construction Cost				\$2,056,240
 <u>Related Cost</u>				
30	%	Total Construction Cost		<u>\$616,900</u>
Total Related Cost				\$616,900
TOTAL PROJECT COST				\$2,673,140

ANNUAL OPERATION AND MAINTENANCE (O&M) COST

<u>Operation and Maintenance Cost</u>				
23,138	L.F.	Gravity Sewer @	\$0.10/L.F.	<u>\$2,314</u>
TOTAL ANNUAL O&M COST				\$2,314

PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%) \$26,050

TOTAL PROJECT PRESENT WORTH \$2,699,190

PRESENT WORTH PER CONNECTION (108 CONNECTIONS) \$24,992

Table 23- PROJECT DATA SHEET

Project Name:	Marville (G-1)	
County:	Giles	
Type of Project:	Centralized	
Utility Provider:	Giles County BOS	
Responsible Mgmt Entity?	Giles County BOS	
Existing Water System?	Yes	
Existing Conditions:	The project area is currently not served by a public sewage system.	
Proposed Project:	The project consists of approximately 23,138 linear feet of 8-inch gravity sewer.	
Existing WWTP:	Name =	Narrows Town - Sewage Treatment Plant
	Design Flow =	0.2500
	Average Flow =	0.18
	Receiving Stream =	New River
	Stream Classification = Impaired Stream	IV Yes
Watershed or Adjacent Stream:	Name =	Wolf Creek (tributary to New River)
	Impaired =	Yes
	Within Vicinity =	Yes
Equivalent Customers Served:	Residential =	108
	Industrial	0
	Commercial =	0
Health Hazard:	Known older homes with septic systems.	
Construction Feasibility:	WWTP/Collection System Available	<input checked="" type="checkbox"/>
	WWTP/Collection System Upgrades Required	<input type="checkbox"/>
	WWTP/Collection System Not Available	<input type="checkbox"/>
Growth Potential:	Residential growth potential only	
Total Project Cost:	\$2,673,140	
Present Worth Per Connection:	\$24,992	

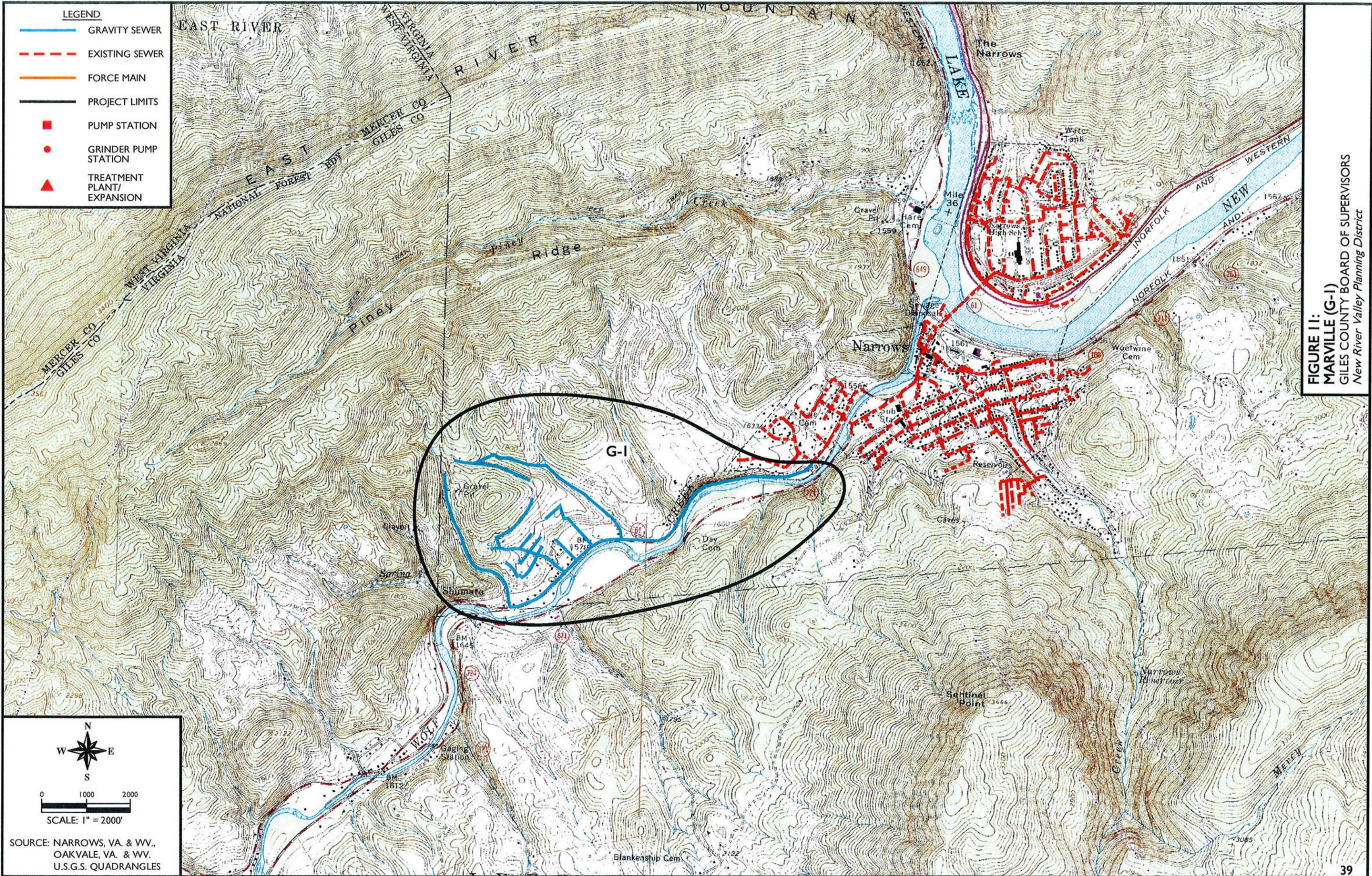


FIGURE 11:
MARVILLE (G-1)
 GILES COUNTY BOARD OF SUPERVISORS
 New River Valley Planning District

ROUTE 100 – INGRAM VILLAGE/ONEY/MUTTER SEWER EXTENSION (G-2)

GILES COUNTY BOARD OF SUPERVISORS & TOWN OF PEARISBURG

New River Valley Planning District

Project Background

The Route 100 – Ingram Village/Oney/Mutter project area is located southwest of the Town of Pearisburg and extends primarily along State Routes 100, 622, and 665. The project area includes approximately 297 residential connections. Currently, the area is not served by a public sewage system. Residences in the area primarily utilize privately owned and maintained on-site septic systems. The project area lies in the watersheds of Walker Creek, which has been identified by the Virginia Department of Environmental Quality (DEQ) as an impaired stream. It is anticipated that, with the provision of public sewage service, a moderate to high potential will exist for residential growth.

Proposed Facilities

The proposed facilities associated with the Ingram Village/Oney/Mutter Sewer Extension include approximately 50,775 linear feet of 8-inch gravity sewer, 7,641 linear feet of 2-inch force main, and three grinder pump stations. The extension will connect to the existing Town of Pearisburg sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Town of Pearisburg Wastewater Treatment Plant (WWTP). The Town of Pearisburg WWTP has a permitted capacity of 0.275 million gallons per day (MGD) and currently treats an average of 0.19 MGD. Treated effluent from the Town of Pearisburg WWTP discharges into the New River which is not identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 362 connections (anticipated 50-year growth of 20%) and a flow of 300 gallons per day (GPD) per connection, future average daily flow for the project area will be approximately 108,600 GPD or 0.109 MGD. Therefore, adequate capacity is available at the Town of Pearisburg WWTP will require an upgrade to treat the anticipated wastewater generated in the Ingram Village/Oney/Mutter project area.

Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Ingram Village/Oney/Mutter Sewer Extension are \$7,119,379 and \$14,842, respectively. These costs result in an approximate present worth of \$24,534 per existing connection.

PRELIMINARY PROBABLE PROJECT COST

<u>Construction Cost</u>				
50,775	L.F.	8" Gravity Sewer @	\$80/L.F.	\$4,062,000
7,641	L.F.	2" Force Main @	\$19/L.F.	\$145,179
3	EA.	Grinder Pump Stations @	\$75,000/EA.	\$225,000
297	EA.	Gravity Sewer Connections @	\$1,900/EA.	\$564,300
		WWTP upgrade per connection over capacity	\$6000/EA	<u>\$480,000</u>
		Total Construction Cost		\$5,476,479
<u>Related Cost</u>				
30	%	Total Construction Cost		\$1,642,900
		Total Related Cost		\$1,642,900
		TOTAL PROJECT COST		\$7,119,379

ANNUAL OPERATION AND MAINTENANCE (O&M) COST

<u>Operation and Maintenance Cost</u>				
50,775	L.F.	Gravity Sewer @	\$0.10/L.F.	\$5,078
7,641	L.F.	Force Main @	\$0.10/L.F.	\$764
3	EA.	Grinder Pump Stations @	\$3,000/EA.	\$9,000
		TOTAL ANNUAL O&M COST		\$14,842

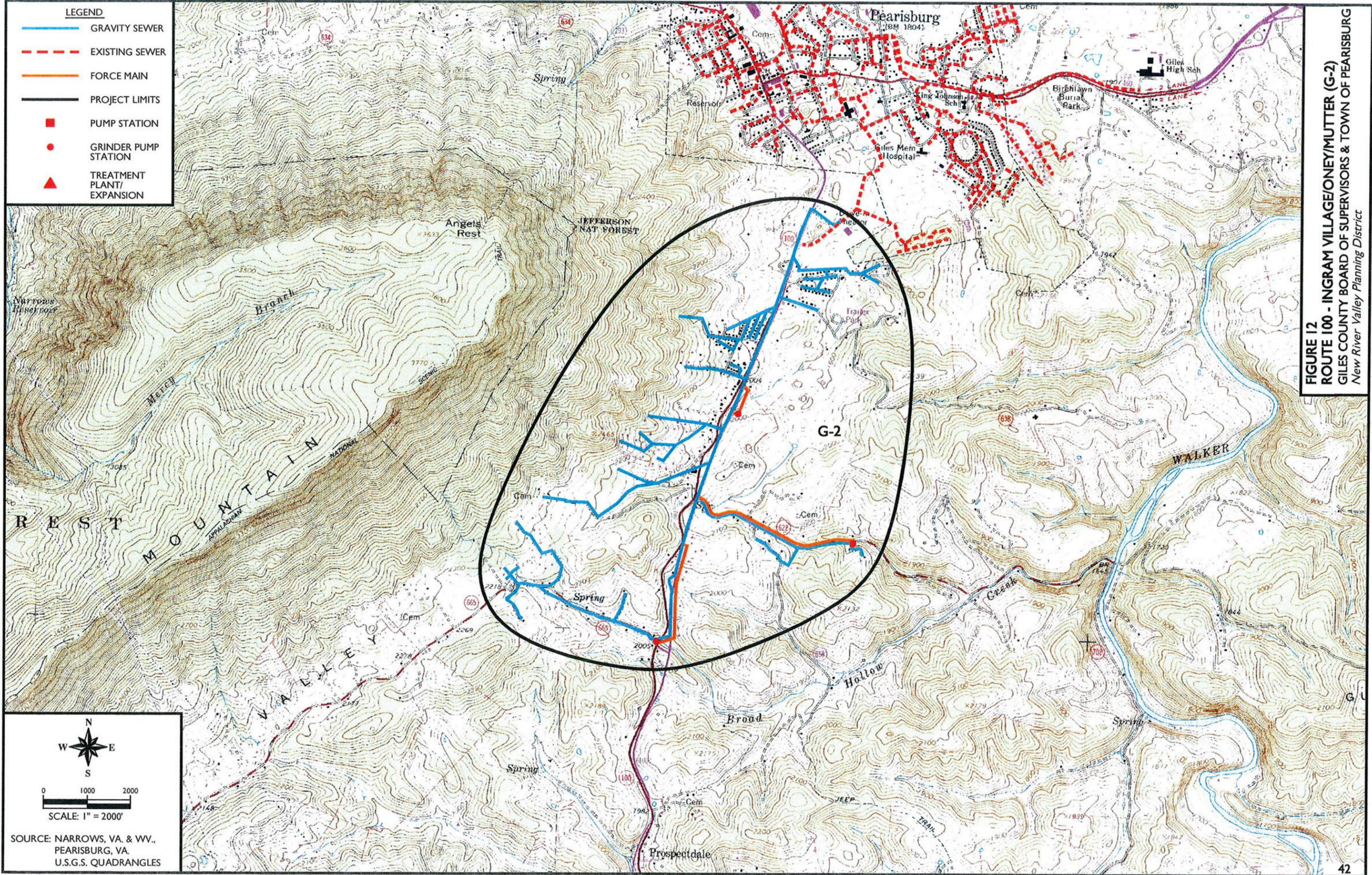
PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%) \$167,090

TOTAL PROJECT PRESENT WORTH \$7,286,469

PRESENT WORTH PER CONNECTION (297 CONNECTIONS) \$24,534

Table 24 - PROJECT DATA SHEET

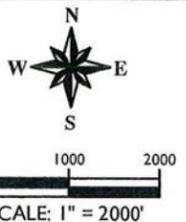
Project Name:	Route 100 - Ingram Village / Oney / Mutter (G-2)	
Type of Project:	Centralized	
Utility Provider:	Giles County BOS / Town of Pearisburg	
Responsible Mgmt Entity?	Giles County BOS / Town of Pearisburg	
Existing Water System?	Yes	
Existing Conditions:	The project area is currently not served by a public sewage system.	
Proposed Project:	The project consists of approximately 50,775 linear feet of 8-inch gravity sewer, 7,641 linear feet of 2-inch force main, and three grinder pump station.	
Existing WWTP:	Name =	Town of Pearisburg - Sewage Treatment Plant
	Design Flow =	0.2750
	Average Flow =	0.19
	Receiving Stream =	New River
	Stream Classification = Impaired Stream	IV Yes
Watershed or Adjacent Stream:	Name =	Two UTs to Walker Creek (tributary to New River)
	Impaired =	Yes
	Within Vicinity =	No
Equivalent Customers Served:	Residential =	296
	Industrial	0
	Commercial =	1
Health Hazard:	Documented septic failures.	
Construction Feasibility:	WWTP/Collection System Available	<input checked="" type="checkbox"/>
	WWTP/Collection System Upgrades Required	<input type="checkbox"/>
	WWTP/Collection System Not Available	<input type="checkbox"/>
Growth Potential:	Residential growth potential only	
Total Project Cost:	\$7,119,379	
Present Worth Per Connection:	\$24,534	



LEGEND

- GRAVITY SEWER
- - - EXISTING SEWER
- FORCE MAIN
- PROJECT LIMITS
- PUMP STATION
- GRINDER PUMP STATION
- ▲ TREATMENT PLANT/ EXPANSION

FIGURE 12
ROUTE 100 - INGRAM VILLAGE/ONEY/MUTTER (G-2)
 GILES COUNTY BOARD OF SUPERVISORS & TOWN OF PEARISBURG
 New River Valley Planning District



SOURCE: NARROWS, VA. & WV.,
 PEARISBURG, VA.
 U.S.G.S. QUADRANGLES

RIPPLEMEAD COMMUNITY SEWER PROJECT(DC-6)

GILES COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

Project Background

The large community of Ripplemead was developed around 1950, and uses conventional onsite septic systems. The older homes were built on small lots. The soil in this area consists of thick clays which have a slow percolation rate, thus requiring large drain fields. Septic system repairs are very expensive. This community is located in karst topography, with numerous sinkholes evident throughout. Central collection and treatment would require a grinder pump station and several miles of force main to get the wastewater to the Pearisburg sewage treatment plant. A plant expansion project would also be required to provide capacity for treatment. Because of the high cost of providing a central system, a decentralized system is recommended for this community. There are approximately 140 homes in this community.

Proposed Facilities

The proposed facilities associated with this project include 140 septic tanks with approximately 25% requiring pump packages to discharge into the main collection lines. The collection system would consist of 20,000 feet of small diameter effluent sewer line. The proposed treatment system is an AdvanTex AX100 Treatment System using six treatment modules, and UV disinfection system with discharge.

Project Costs

The preliminary probable project cost and annual operation and maintenance costs are \$1,821,400 and \$33,540, respectively. These costs result in an approximate present worth of \$15,707 per existing connection.

PRELIMINARY PROBABLE PROJECT COST

Construction Cost

35	EA.	STEP Systems	\$5,000	\$175,000
105	EA.	STEG Systems	\$3,000	\$315,000
5,000	LF	6" Gr. Effluent Line	\$14	\$70,000
15,000	LF	4" Gr. Eff. Or 2" Force Main	\$10	\$150,000
50	EA.	Road Crossings	\$2,500	\$125,000
30,000	Gal.	Treatment System - AX100	\$10	\$300,000
24,000	Gal.	Treatment Tanks	\$1.50	\$36,000
30,000	Gal.	Discharge System - UV	\$2	\$60,000
140	EA.	Crush & Fill Existing Septic Tank	\$500	\$70,000

Total Construction Cost \$1,301,000

Related Cost

40 % Total Related Cost \$520,400

TOTAL PROJECT COST \$1,821,400

OPERATION AND MAINTENANCE (O&M) COST

<u>Conn.</u>	<u>Unit</u>	<u>Description</u>	<u>\$/Month</u>	<u>Monthly</u>	<u>Total Annual</u>
140	EA.	Plant Operations & Maintenance	\$12.50	\$1,750	\$21,000
35	EA.	STEP System Operations	\$10.50	\$368	\$4,410
105	EA.	STEG System Operations	\$5.50	\$578	\$6,930
		VPDES Permit Fee	\$0.71	\$100	\$1,200

TOTAL O&M COST \$2,795 \$33,540

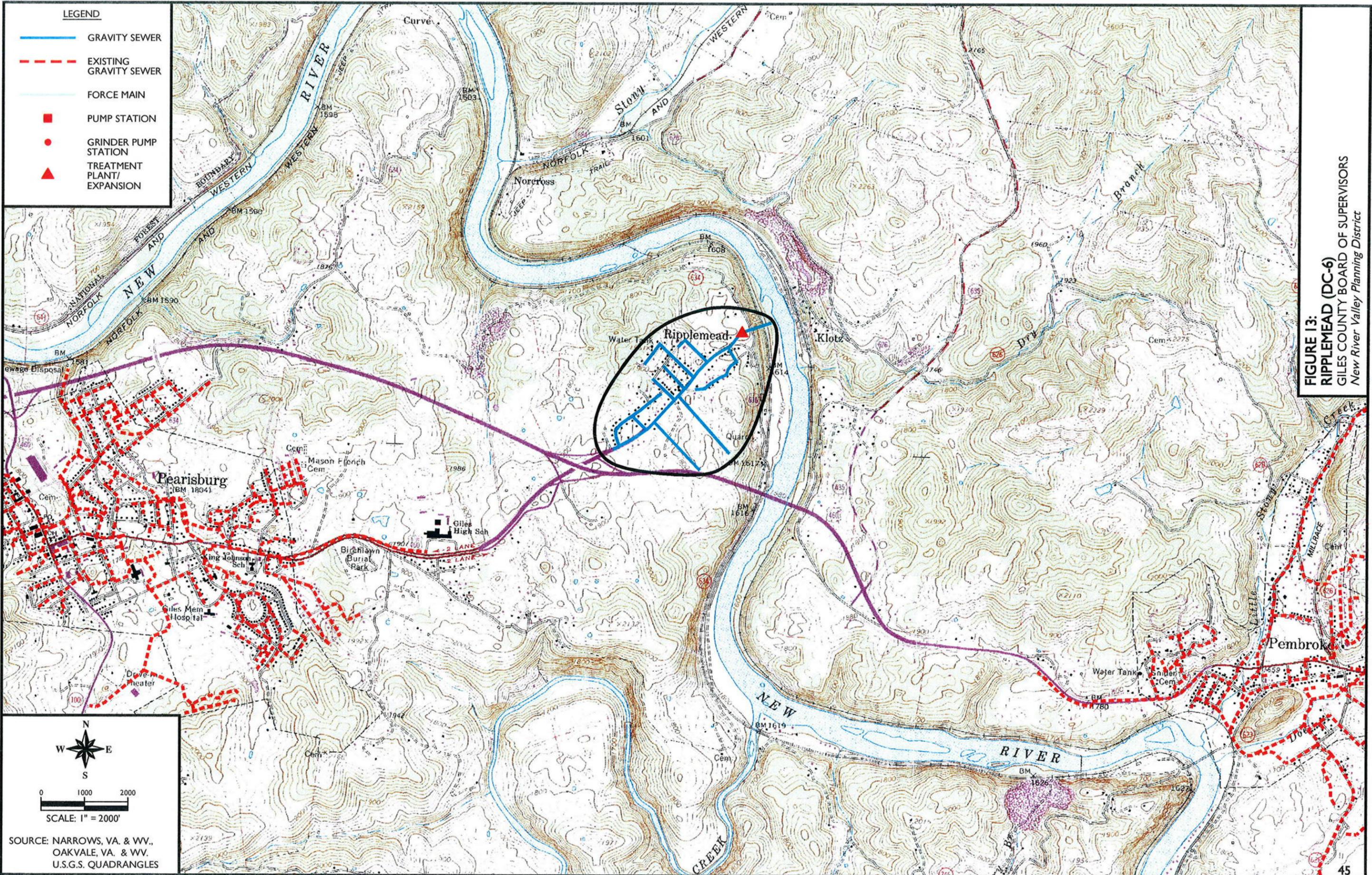
PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%) \$377,587

TOTAL PROJECT PRESENT WORTH \$2,198,987

PRESENT WORTH PER CONNECTION (140 CONNECTIONS) \$15,707

Table 25 - PROJECT DATA SHEET

Project Name:	Ripplemead Community Sewer Project (DC-6)	
County:	Giles	
Type of Project:	Decentralized Wastewater System	
Utility Provider:	Giles County	
Responsible Mgmt Entity?	Giles County	
Existing Water System?	Public Water	
Existing Conditions:	Old homes on small lots. Many issues with failures and odors. Central sewerage would require a grinder pump station and a couple of miles of force mains for central sewer. Poor clay soils adversely affect onsite disposal. Community established about 1950s.	
Proposed Project:	Employ biofilter treatment system and uv disinfection and discharge into New River. Estimate of 105 gravity collection units and 35 pump systems required to flow to treatment system.	
Existing WWTP:	Name =	N/A
	Design Flow =	
	Average Flow =	
	Receiving Stream =	
	Stream Classification =	
	Impaired Stream	
Watershed or Adjacent Stream:	Name =	New River
	Impaired =	No
	Within Vicinity =	No
Equivalent Customers Served:	Residential =	140
	Industrial	0
	Commercial =	0
Health Hazard:	No	
Construction Feasibility:	WWTP/Collection System Available	No
	WWTP/Collection System Upgrades Required	
	WWTP/Collection System Not Available	
Growth Potential:	Residential growth estimated at 10%.	
Total Project Cost:	\$1,821,400	
Present Worth Per Connection:	\$15,707	



RAM WAYSIDE SEWER PROJECT (DC-7)

GILES COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

Project Background

This community, often referred to as the Mullins Trailer Park, consists of several older mobile homes located on a steep hillside overlooking the New River just west of the Town of Rich Creek. Public water is available, but no public sewer. The lack of a public sewer system, poor soils, and the high costs of repairing failing onsite systems has caused a blighted condition in this community. Many of the mobile homes are abandoned, but without sewer there is no reason to remove the old trailers and replace with newer ones. The New River around Rich Creek has fishing, boating and camping activity during the warmer months, and would benefit from having an adequate sewer system for the Ram Wayside.

Proposed Facilities

The proposed facilities associated with constructing a decentralized sewage treatment system include approximately 5,200 linear feet of small diameter sewer lines for collection, and a three unit treatment system capable of handling 15,000 gallons per day. Because of the poor soil for disposing of the treated effluent onsite, a discharging system is recommended. This type of system would require the treated effluent to be disinfected before it could be discharged into the New River.

Project Costs

The preliminary probable project cost and annual operation and maintenance costs are \$618,870 and \$12,000, respectively. These costs result in an approximate present worth of \$15,079 per existing connection.

PRELIMINARY PROBABLE PROJECT COST

Construction Cost

50	EA.	STEG Systems	\$3,000	\$150,000
1,200	LF	6" Gr. Effluent Line	\$14	\$16,800
4,225	LF	4" Gr. Eff. Or 2" Force Main	\$10	\$42,250
4	EA.	Road Crossings	\$2,500	\$10,000
15,000	Gal.	Treatment System	\$10	\$150,000
12,000	Gal.	Treatment Tanks	\$1.50	\$18,000
15,000	Gal.	Discharge System - UV	\$2	\$30,000
50	EA.	Crush & Fill Existing Septic Tank	\$500	\$25,000

Total Construction Cost \$442,050

Related Cost

40 % Total Related Cost \$176,820

TOTAL PROJECT COST \$618,870

OPERATION AND MAINTENANCE (O&M) COST

<u>Conn.</u>	<u>Unit</u>	<u>Description</u>	<u>\$/Month</u>	<u>Monthly</u>	<u>Total Annual</u>
50	EA.	Plant Operations & Maintenance	\$12.50	\$625	\$7,500
50	EA.	STEG System Operations	\$5.50	\$275	\$3,300
		VPDES Permit Fee	\$2.00	\$100	\$1,200

TOTAL O&M COST \$1,000 \$12,000

PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%) \$135,094

TOTAL PROJECT PRESENT WORTH \$753,964

PRESENT WORTH PER CONNECTION (50 CONNECTIONS) \$15,079

Table 26 - PROJECT DATA SHEET

Project Name:	Ram Wayside Sewer Project (DC-7)	
County:	Giles	
Type of Project:	Decentralized	
Utility Provider:	Giles County	
Responsible Mgmt Entity?	Giles County	
Existing Water System?	Public Water	
Existing Conditions:	These communities are located near Rich Creek where soils are awful. MHP is old and several trailers are vacant. Steep terrain at 10% overlooking New River. Approximately 50 homes needing sewer in this area.	
Proposed Project:	Gravity collection should work well for this community. Advanced secondary treatment with UV disinfection system and discharge into Spring Hollow and then into New River.	
Existing WWTP:	Name =	N/A
	Design Flow =	
	Average Flow =	
	Receiving Stream =	
	Stream Classification =	
	Impaired Stream	
Watershed or Adjacent Stream:	Name =	Spring Hollow
	Impaired =	No
	Within Vicinity =	No
Equivalent Customers Served:	Residential =	50
	Industrial	0
	Commercial =	0
Health Hazard:	Yes	
Construction Feasibility:	WWTP/Collection System Available	No
	WWTP/Collection System Upgrades Required	
	WWTP/Collection System Not Available	
Growth Potential:	The project area could easily be doubled with the addition of River Bend.	
Total Project Cost:	\$618,870	
Present Worth Per Connection:	\$15,079	



FIGURE 14:
RAM WAYSIDE (DC-7)
 GILES COUNTY BOARD OF SUPERVISORS
 New River Valley Planning District

SNIDERTOWN COMMUNITY SEWER PROJECT (DC-8)

GILES COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

Project Background

This community is located beside Stony Creek and directly in front of the chemical lime plant on State Route 635. Stony Creek is a beautiful trout stream, but is receiving pollutants from the inadequate onsite septic systems in this community. Several failures have been reported to the Health Department. Stony Creek discharges into the New River just above the Ripplemead Community. There are 24 equivalent residential connections, which includes a church.

Proposed Facilities

The proposed facilities associated with this community system include approximately 7,000 linear feet of 4-inch gravity effluent sewer lines, 24 septic tanks, one-10,000 gallon per day treatment system with a permitted discharge.

Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with this decentralized wastewater system are \$407,400 and \$6,264, respectively. These costs result in an approximate present worth of \$19,913 per existing connection.

PRELIMINARY PROBABLE PROJECT COST

Construction Cost

24	EA.	STEG Systems	\$3,000	\$72,000
7,000	LF	4" Gr. Eff. Or 2" Force Main	\$10	\$70,000
2	EA.	Road Crossings	\$2,500	\$5,000
10,000	Gal.	Treatment System	\$10	\$100,000
8,000	Gal.	Treatment Tanks	\$1.50	\$12,000
10,000	Gal.	Discharge System - UV	\$2	\$20,000
24	EA.	Crush & Fill Existing Septic Tank	\$500	\$12,000
Total Construction Cost				\$291,000

Related Cost

40	%	Total Related Cost	\$116,400
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TOTAL PROJECT COST \$407,400

OPERATION AND MAINTENANCE (O&M) COST

<u>Conn.</u>	<u>Unit</u>	<u>Description</u>	<u>\$/Month</u>	<u>Monthly</u>	<u>Total Annual</u>
24	EA.	Plant Operations & Maintenance	\$12.50	\$300	\$3,600
24	EA.	STEG System Operations	\$5.50	\$132	\$1,584
		VPDES Permit Fee	\$3.75	\$90	\$1,080
TOTAL O&M COST				\$522	\$6,264

PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%) \$70,519

TOTAL PROJECT PRESENT WORTH \$477,919

PRESENT WORTH PER CONNECTION (24 CONNECTIONS) \$19,913

Table 27 - PROJECT DATA SHEET

Project Name:	Snidertown Community Sewer Project (DC-8)		
County:	Giles		
Type of Project:	Decentralized		
Utility Provider:	Giles County		
Responsible Mgmt Entity?	Giles County		
Existing Water System?	Permitted System		
Existing Conditions:	Several failures reported by Health Department. Sewer system badly needed.		
Proposed Project:	Combination of STEP/STEG collection. Treat to advanced secondary standard using biofilter. Disinfect and discharge to stream.		
Existing WWTP:	Name =	N/A	
	Design Flow =		
	Average Flow =		
	Receiving Stream =		
	Stream Classification = Impaired Stream		
Watershed or Adjacent Stream:	Name =	Stony Creek	
	Impaired =	No	
	Within Vicinity =	No	
Equivalent Customers Served:	Residential =	24	
	Industrial	0	
	Commercial =	0	
Health Hazard:	No		
Construction Feasibility:	WWTP/Collection System Available	No	
	WWTP/Collection System Upgrades Required		
	WWTP/Collection System Not Available		
Growth Potential:	None.		
Total Project Cost:	\$407,400		
Present Worth Per Connection:	\$19,407		



STAFFORDSVILLE COMMUNITY SEWER SYSTEM (DC-10)

GILES COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

Project Background

Staffordsville is located in Giles County on Route 100 about four miles north of the Pulaski County line. It is situated on Walker Creek, a bacteria impaired stream which discharges into the New River between Pembroke and Pearisburg. This stream flows a long distance through karst areas with several significant caves present. These caves permit the ground water and surface waters to readily intermingle. This could potentially cause serious health problems since public water is not available in the community. The soils in the community of Staffordsville are slow to drain and are not conducive to long-life onsite septic systems. The project area includes Parcell Lane and the surrounding area above Route 100, and also the area between Route 100 and Walker Creek, which is accessed by the Cedar Lane Loop. The total project includes 40 homes and businesses.

Proposed Facilities

The proposed facilities associated with this project include approximately 9,000 feet of 4-inch effluent sewer line, with about an equal number of STEP and STEG Systems flowing into the main collection lines. A 10,000 gallon per day (gpd) treatment system is needed to treat the wastewater from the 40 residences and businesses. The proposed treatment would be provided by 2 AdvanTex AX100 Treatment Units, followed by a UV disinfection system with discharge into Walker Creek. This decentralized treatment system would be owned and operated by the Giles County PSA.

Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with this proposed system are \$597,800 and \$10,920, respectively. These costs result in an approximate present worth of \$18,018 per existing connection.

PRELIMINARY PROBABLE PROJECT COST

Construction Cost

20	EA.	STEP Systems	\$5,000	\$100,000
20	EA.	STEG Systems	\$3,000	\$60,000
9,000	LF	4" Sewer Line	\$10	\$90,000
10	EA.	Road Crossings	\$2,500	\$25,000
10,000	Gal.	Treatment System - AX100	\$10	\$100,000
8,000	Gal.	Treatment Tanks	\$1.50	\$12,000
10,000	Gal.	Discharge System - UV	\$2	\$20,000
40	EA.	Crush & Fill Existing Septic Tank	\$500	\$20,000

Total Construction Cost \$427,000

Related Cost

40 % Total Related Cost \$170,800

TOTAL PROJECT COST \$597,800

OPERATION AND MAINTENANCE (O&M) COST

<u>Conn.</u>	<u>Unit</u>	<u>Description</u>	<u>\$/Month</u>	<u>Monthly</u>	<u>Total Annual</u>
40	EA.	Plant Operations & Maintenance	\$12.50	\$500	\$6,000
20	EA.	STEP System Operations	\$10.50	\$210	\$2,520
20	EA.	STEG System Operations	\$5.50	\$110	\$1,320
		VPDES Permit Fee	\$2.25	\$90	\$1,080

TOTAL O&M COST \$910 \$10,920

PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%) \$122,935

TOTAL PROJECT PRESENT WORTH \$720,735

PRESENT WORTH PER CONNECTION (40 CONNECTIONS) \$18,018

Table 28 - PROJECT DATA SHEET

Project Name:	Staffordsville Community Sewer Project (DC-10)	
County:	Giles	
Type of Project:	Decentralized	
Utility Provider:	Giles County	
Responsible Mgmt Entity?	Giles County	
Existing Water System?	Private Wells	
Existing Conditions:	Parcell Lane and area above Route 100 has 14 homes and a church, while Cedar Crest Loop has 25 additional homes and businesses, totaling 40 EDUs. This area does not public water, and Walker Creek is impaired in this area.	
Proposed Project:	Combination of STEP/STEG systems. Advanced secondary treatment with UV disinfection and discharge point.	
Existing WWTP:	Name =	N/A
	Design Flow =	
	Average Flow =	
	Receiving Stream =	
	Stream Classification =	
	Impaired Stream	
Watershed or Adjacent Stream:	Name =	WALKER CREEK
	Impaired =	YES
	Within Vicinity =	YES
Equivalent Customers Served:	Residential =	38
	Industrial	0
	Commercial =	2
Health Hazard:	YES	
Construction Feasibility:	WWTP/Collection System Available	NO
	WWTP/Collection System Upgrades Required	
	WWTP/Collection System Not Available	
Growth Potential:	Minimal.	
Total Project Cost:	\$597,800	
Present Worth Per Connection:	\$18,018	

