

## XI. PULASKI COUNTY

Thirty-four centralized and five de-centralized projects addressing water quality and human health issues were identified in Pulaski County.

The centralized projects focused on growth areas between and to the north of the Towns of Dublin and Pulaski. Several centralized projects also focused on areas developing around exits from I81. The de-centralized project areas are located on the south side of Claytor Lake, an area where the cost of extending centralized systems is prohibitively expensive.

### Primary Priorities

#### Centralized Projects

Project Name	Project Cost
Thorne Spring Branch Phase 1 (P-1)	\$ 4,130,660
Alum Spring Rd Phase 1 (P-4)	\$ 3,565,800
Pondlick Branch/Mt Olivet Phase 1 (P-9)	\$ 3,794,500
Rt 100 Dublin/Commerce Park (P-12)	\$ 5,870,360
Back Creek Area (P-13)	\$ 4,219,940
East Dublin/Stoneridge Dr (P-14)	\$ 5,246,740
Belspring/Gate 10 Rd (P-16)	\$ 4,067,870
North Claytor Lake (P-21)	\$ 4,343,695
South Dublin (P-33)	\$ 2,238,040
<i>Total</i>	\$ 37,477,6057

#### De-centralized Projects

Project Name	Project Cost
Painters Woods (DC-18)	\$ 770,000
<i>Total</i>	\$ 770,000

### Secondary Priorities

#### Centralized Projects

Project Name	Project Cost
Thorne Spring Branch Phase 2 (P-2)	\$ 4,786,550
Thorne Spring Branch Phase 3 (P-3)	\$ 4,968,800
Alum Spring Rd Phase 2 (P-5)	\$ 4,722,660
Robinson Tract Rd Phase 1 (P-6)	\$ 4,783,760
Robinson Tract Rd Phase 2 (P-7)	\$ 5,092,100
Brookmont Rd (P-8)	\$ 5,734,260
Pondlick Branch/Mt Olivet Phase 2 (P-10)	\$ 4,914,420
Rt 11 West Dublin (P-11)	\$ 3,683,200
Riverfront Area (P-15)	\$ 2,915,280
Belspring Rd Phase 1 (P-17)	\$ 3,181,210
Belspring Rd Phase 2 (P-18)	\$ 3,601,840
Belspring Rd Phase 3 (P-19)	\$ 4,331,780
Belspring Rd Phase 4 (P-20)	\$ 5,163,860
North Claytor Lake – Bear Dr (P-22)	\$ 927,200
Newbern Heights Area (P-23)	\$ 3,704,695
Old Rt 100 – I81 Exit 98 P-24)	\$ 3,418,955
Cougar Trail Dr (P-25)	\$ 4,663,300
Count Pulaski Dr (P-26)	\$ 2,263,610
Old Rt 100 – McAdam Area (P-27)	\$ 4,973,685
Draper (P-28)	\$ 4,742,105
Brown Rd (P-29)	\$ 3,573,805
Rt 11 – I81 Exit 92 (P-30)	\$ 7,075,300
I81 Pulaski/Wythe Border (P-31)	\$ 4,806,745
Main Interceptor Improvements (P-32)	\$ 1,869,640
Valley Branch Area (P-34)	\$ 642,100
<i>Total</i>	\$ 100,540,860

#### De-centralized Projects

Project Name	Project Cost
Plantation Estates (DC-16)	\$ 707,000
DeHaven Park (DC-15)	\$ 1,630,300
McCarthy Rd Subdivision (DC-14)	\$ 400,400
Little Wytheville (DC-17)	\$ 758,800
<i>Total</i>	\$ 3,496,500

**Total Funding Necessary for Pulaski County = \$142,284,965**

**Table 123 - Overall Project Ranking - Centralized Projects  
Pulaski 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
			<b>20</b>	<b>20</b>	<b>15</b>	<b>20</b>	<b>10</b>	<b>15</b>	<b>100</b>
Pulaski	P-1	212	15	15	10	10	10	15	75
Pulaski	P-12	206	15	10	15	10	10	15	75
Pulaski	P-4	219	15	15	10	10	10	10	70
Pulaski	P-33	167	10	20	15	0	10	15	70
Pulaski	P-14	427	20	20	0	10	10	10	70
Pulaski	P-13	116	10	5	15	20	10	10	70
Pulaski	P-9	126	10	5	10	20	10	10	65
Pulaski	P-16	133	10	5	10	20	10	10	65
Pulaski	P-21	257	15	15	15	0	10	10	65
Pulaski	P-8	222	15	10	15	10	0	10	60
Pulaski	P-10	112	10	0	10	20	10	10	60
Pulaski	P-11	200	10	15	0	10	10	15	60
Pulaski	P-15	127	10	10	0	20	10	10	60
Pulaski	P-20	150	10	5	15	20	0	10	60
Pulaski	P-23	184	10	15	15	10	0	10	60
Pulaski	P-24	184	10	5	15	20	0	10	60
Pulaski	P-22	52	5	15	15	0	10	10	55
Pulaski	P-25	153	10	5	15	10	0	15	55
Pulaski	P-3	179	10	10	10	10	0	10	50
Pulaski	P-19	90	5	0	15	20	0	10	50
Pulaski	P-34	41	5	15	0	10	10	10	50
Pulaski	P-6	104	10	0	15	10	0	10	45
Pulaski	P-7	106	10	0	15	10	0	10	45
Pulaski	P-17	103	10	5	10	10	0	10	45
Pulaski	P-26	53	5	0	0	20	10	10	45
Pulaski	P-31	113	10	0	15	0	0	15	40
Pulaski	P-5	161	10	5	10	0	0	10	35
Pulaski	P-2	95	5	0	10	10	0	10	35
Pulaski	P-18	97	5	0	10	10	0	10	35
Pulaski	P-30	150	10	0	0	10	0	15	35
Pulaski	P-28	131	10	5	0	0	0	15	30
Pulaski	P-29	57	5	0	15	0	0	10	30
Pulaski	P-32	0	0	0	0	20	10	0	30
Pulaski	P-27	82	5	0	0	10	0	15	30

**Table 124 - Overall Project Ranking - Decentralized Projects  
Pulaski 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
			<b>20</b>	<b>20</b>	<b>5</b>	<b>15</b>	<b>10</b>	<b>10</b>	<b>20</b>	<b>100</b>
Pulaski	DC-18	70	20	5	5	5	10	0	20	65
Pulaski	DC-16	26	15	5	5	5	10	0	0	40
Pulaski	DC-17	40	20	5	0	5	10	0	0	40
Pulaski	DC-15	100	15	5	0	5	10	0	0	35
Pulaski	DC-14	20	15	5	0	5	10	0	0	35

**LEGEND**

 PROJECT AREA  
 COUNTY LIMITS

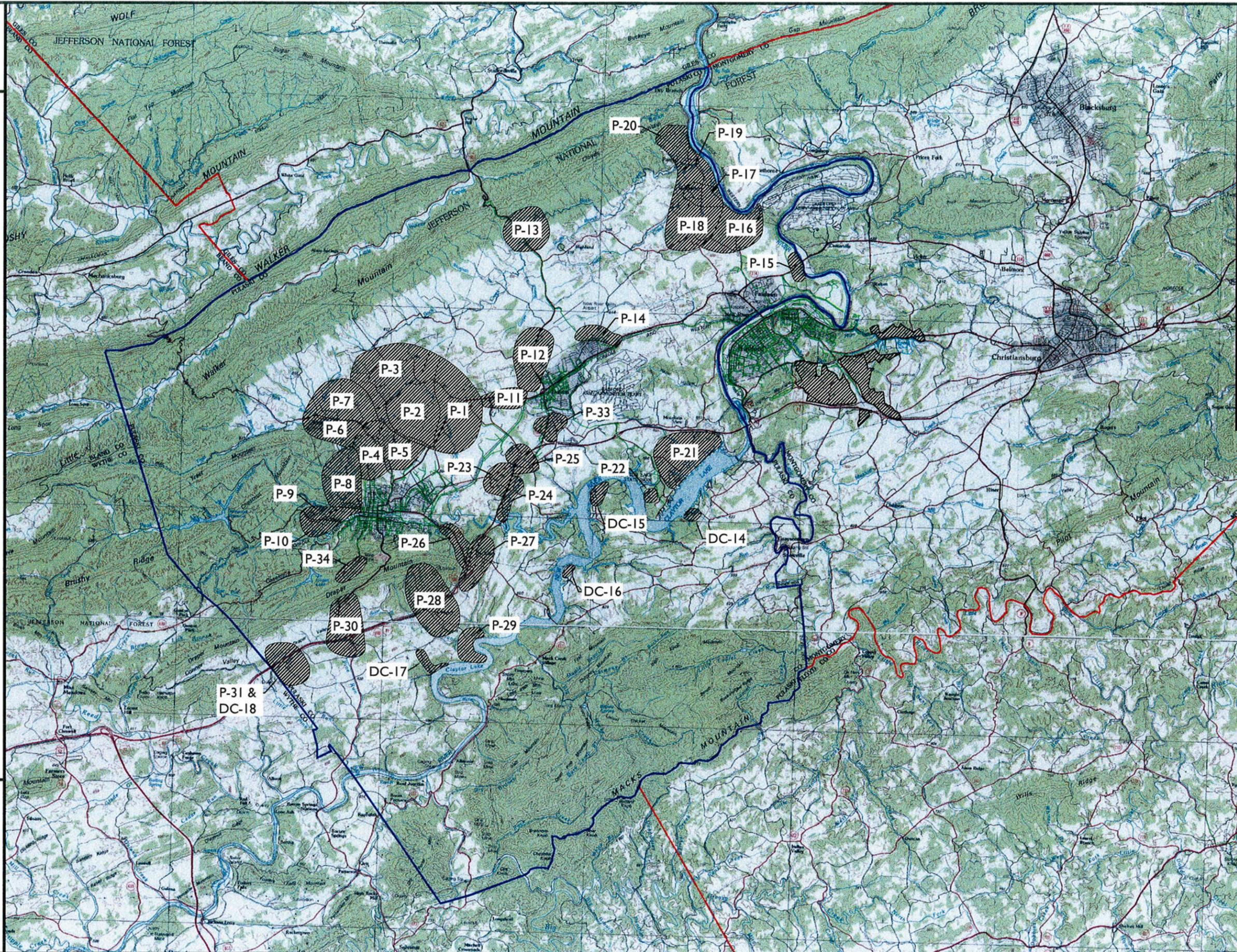
**Centralized Projects**

- P-1. Thorne Spring Branch Phase 1
- P-2. Thorne Spring Branch Phase 2
- P-3. Thorne Spring Branch Phase 3
- P-4. Alum Spring Road Phase 1
- P-5. Alum Spring Road Phase 2
- P-6. Robinson Tract Road Phase 1
- P-7. Robinson Tract Road Phase 2
- P-8. Brookmont Road
- P-9. Pondlick Branch/Mount Olivet Phase 1
- P-10. Pondlick Branch/Mount Olivet Phase 2
- P-11. Route 11-West Dublin/Cougar Trail Road
- P-12. Route 100-Dublin/Commerce Park
- P-13. Back Creek Area
- P-14. East Dublin/Stoneridge Drive
- P-15. Riverfront Area
- P-16. Belspring/Gate 10 Road
- P-17. Belspring Road/Highland to Parrott Phase 1
- P-18. Belspring Road/Highland to Parrott Phase 2
- P-19. Belspring Road/Highland to Parrott Phase 3
- P-20. Belspring Road/Highland to Parrott Phase 4
- P-21. North Claytor Lake
- P-22. North Claytor Lake - Bear Drive
- P-23. Newbern Heights Area
- P-24. Old Route 100-I81 Exit 98
- P-25. Cougar Trail Road
- P-26. Count Pulaski Drive
- P-27. Old Route 100/McAdam Area
- P-28. Draper
- P-29. Brown Road
- P-30. Route 11/I-81 Exit 92
- P-31. I81 Pulaski/Wythe Border
- P-32. Main Interceptor Improvements
- P-33. South Dublin
- P-34. Valley Branch Area

**Decentralized Projects**

- DC-14. Plantation Estates Road
- DC-15. Dehaven Park/Owen Road
- DC-16. McMarthy Road
- DC-17. Little Wytheville
- DC-18. Painters Woods Subdivision

  
 SCALE: 1" = 15,000'  
 SOURCE: RADFORD, VA & GALAX, VA  
 U.S.G.S. QUADRANGLE



**FIGURE 53:**  
**PULASKI COUNTY PROJECT AREAS**  
 New River Valley Planning District

## THORNE SPRING BRANCH PHASE I SEWER EXTENSION (P-I)

PULASKI COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

### Project Background

The Thorne Spring Branch Phase I project area is located northeast of the Town of Pulaski and extends primarily along U.S. Route 11. The project area includes approximately 212 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 watershed of Thorne Spring Branch which discharges into Peak Creek, Peak Creek 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 and a moderate potential will exist for commercial/industrial growth.

### Proposed Facilities

The proposed facilities associated with the Thorne Spring Branch Phase I Sewer Extension include approximately 8,985 linear feet of 12-inch gravity sewer and 23,900 linear feet of 8-inch gravity sewer. The extension will connect to the existing Town of Pulaski sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Peppers Ferry Wastewater Treatment Plant (WWTP). The Peppers Ferry WWTP has a permitted capacity of 9.0 million gallons per day (MGD) and currently treats an average of 3.98 MGD. Treated effluent from the Peppers WWTP discharges into the New River which has been identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 259 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 77,700 GPD or 0.078 MGD. Therefore, adequate capacity is available at the Peppers Ferry WWTP to treat the anticipated wastewater generated in the Thorne Spring Branch Phase I project area.

### Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Thorne Spring Branch Phase I Sewer Extension are \$4,130,660 and \$3,289, respectively. These costs result in an approximate present worth of \$19,658 per existing connection.

### PRELIMINARY PROBABLE PROJECT COST

<u>Construction Cost</u>				
8,985	L.F.	12" Gravity Sewer @	\$102/L.F.	\$862,560
23,900	L.F.	8" Gravity Sewer @	\$80/L.F.	\$1,912,000
212	EA.	Gravity Sewer Connections @	\$1,900/EA.	\$402,800
Total Construction Cost				\$3,177,360
 <u>Related Cost</u>				
30	%	Total Construction Cost		\$953,300
Total Related Cost				\$953,300
TOTAL PROJECT COST				\$4,130,660

### ANNUAL OPERATION AND MAINTENANCE (O&M) COST

<u>Operation and Maintenance Cost</u>				
8,985	L.F.	12" Gravity Sewer @	\$0.10/L.F.	\$899
23,900	L.F.	8" Gravity Sewer @	\$0.10/L.F.	\$2,390
TOTAL ANNUAL O&M COST				\$3,289

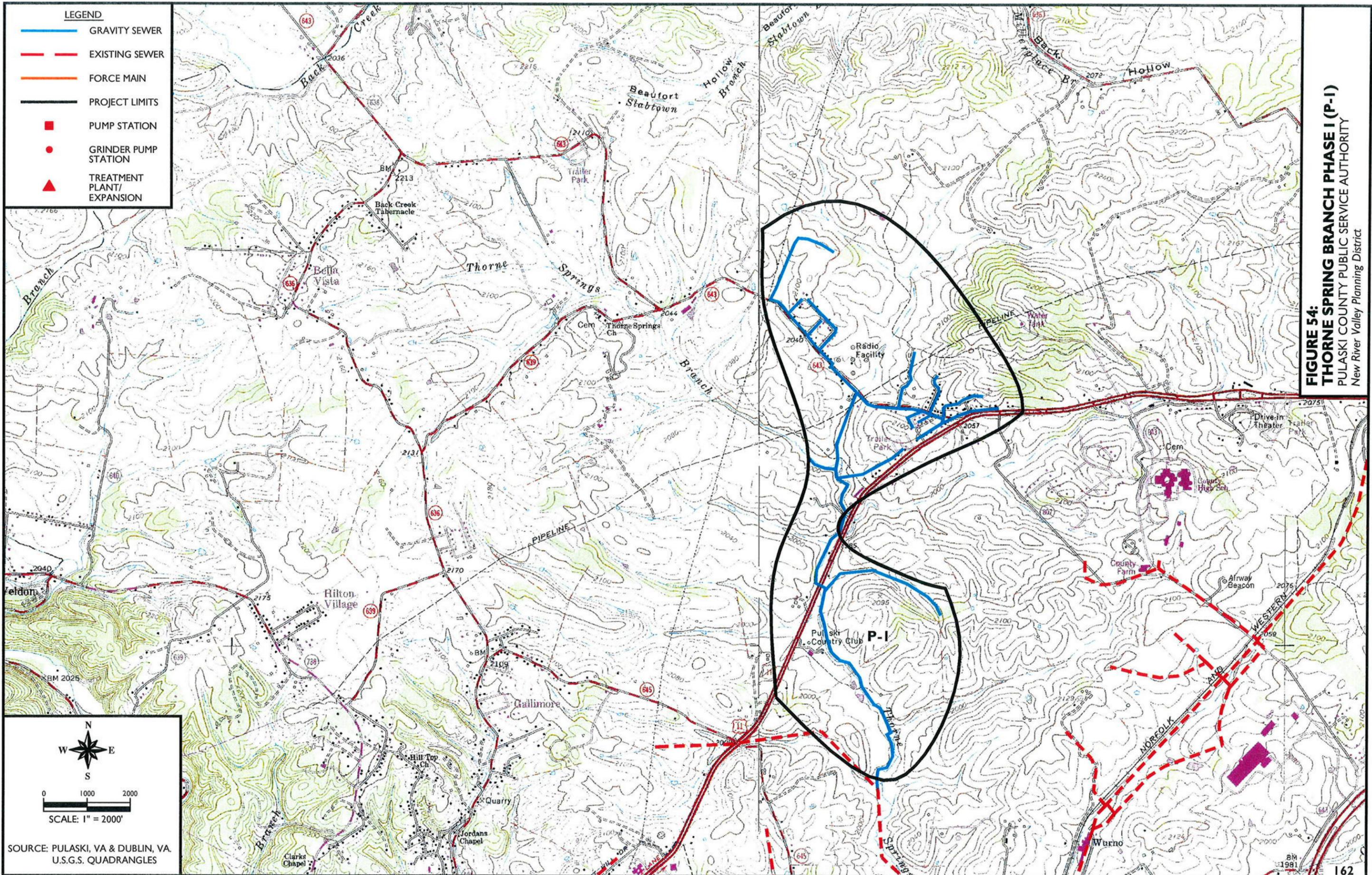
**PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%)** \$37,030

**TOTAL PROJECT PRESENT WORTH** \$4,167,690

**PRESENT WORTH PER CONNECTION (212 CONNECTIONS)** \$19,658

Table 125 - PROJECT DATA SHEET

Project Name:	Thorne Spring Branch Phase 1 (P-1)	
County:	Pulaski	
Type of Project:	Centralized	
Utility Provider:	Pulaski County PSA	
Responsible Mgmt Entity?	Pulaski County PSA	
Existing Water System?	Yes	
Existing Conditions:	The project area is currently not served by a public sewage system.	
Proposed Project:	This project consists of approximately 8,985 L.F. of 12-inch gravity sewer and 23,900 L.F. of 8-inch gravity sewer.	
Existing WWTP:	Name =	Peppers Ferry
	Design Flow =	9 mgd
	Average Flow =	3.98 mgd
	Receiving Stream =	New River
	Stream Classification =	IV
	Impaired Stream	Yes
Watershed or Adjacent Stream:	Name =	Thorne Springs Branch - Tributary of Peak Creek
	Impaired =	Yes
	Within Vicinity =	No
Equivalent Customers Served:	Residential =	212
	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:	Industrial and Residential	
Total Project Cost:	\$4,130,660	
Present Worth Per Connection:	\$19,658	



**LEGEND**

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

N  
W E  
S

0 1000 2000  
SCALE: 1" = 2000'

SOURCE: PULASKI, VA & DUBLIN, VA  
U.S.G.S. QUADRANGLES

**FIGURE 54:**  
**THORNE SPRING BRANCH PHASE I (P-1)**  
PULASKI COUNTY PUBLIC SERVICE AUTHORITY  
New River Valley Planning District

## ALUM SPRING ROAD PHASE I SEWER EXTENSION (P-4)

PULASKI COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

### Project Background

The Alum Spring Road Phase I project area is located north of the Town of Pulaski and extends primarily along State Route 636. The project area includes approximately 219 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 watershed of an unnamed tributary which discharges into Peak Creek, Peak Creek 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 Alum Spring Road Phase I Sewer Extension include approximately 8,000 linear feet of 10-inch gravity sewer, 19,610 linear feet of 8-inch gravity sewer, and 750 linear feet of 6-inch gravity sewer. The extension will connect to the existing Town of Pulaski sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Peppers Ferry Wastewater Treatment Plant (WWTP). The Peppers Ferry WWTP has a permitted capacity of 9.0 million gallons per day (MGD) and currently treats an average of 3.98 MGD. Treated effluent from the Peppers WWTP discharges into the New River which has been identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 268 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 80,400 GPD or 0.081 MGD. Therefore, adequate capacity is available at the Peppers Ferry WWTP to treat the anticipated wastewater generated in the Alum Spring Road Phase I project area.

### Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Alum Spring Road Phase I Sewer Extension are \$3,565,800 and \$2,836, respectively. These costs result in an approximate present worth of \$16,428 per existing connection.

## PRELIMINARY PROBABLE PROJECT COST

<u>Construction Cost</u>				
8,000	L.F.	10" Gravity Sewer @	\$88/L.F.	\$704,000
19,610	L.F.	8" Gravity Sewer @	\$80/L.F.	\$1,568,800
750	L.F.	6" Gravity Sewer @	\$72/L.F.	\$54,000
219	EA.	Gravity Sewer Connections @	\$1,900/EA.	\$416,100
Total Construction Cost				\$2,742,900
<u>Related Cost</u>				
30	%	Total Construction Cost		\$822,900
Total Related Cost				\$822,900
TOTAL PROJECT COST				\$3,565,800

## ANNUAL OPERATION AND MAINTENANCE (O&M) COST

<u>Operation and Maintenance Cost</u>				
28,360	L.F.	Gravity Sewer @	\$0.10/L.F.	\$2,836
TOTAL ANNUAL O&M COST				\$2,836

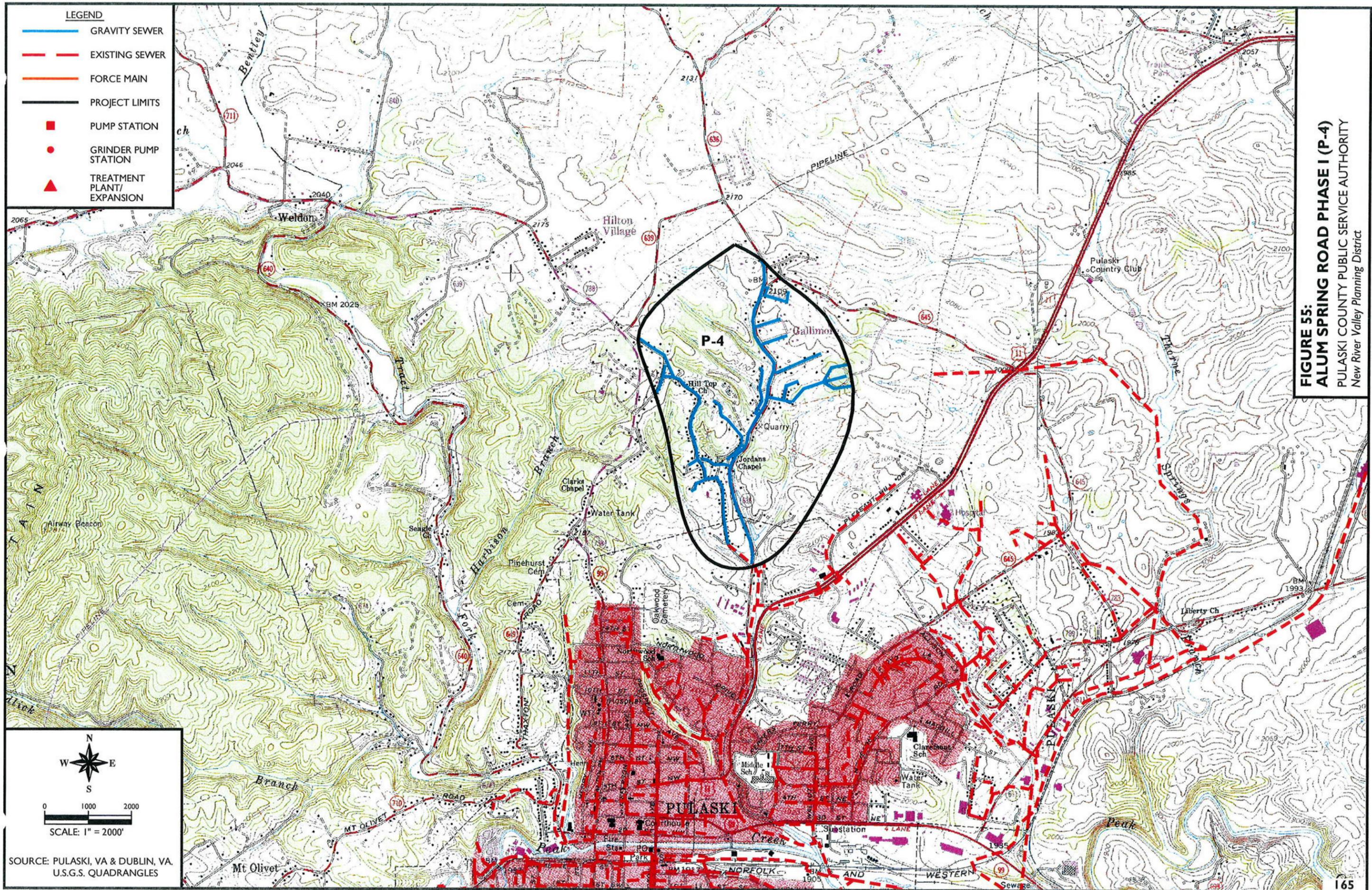
**PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%)** \$31,930

**TOTAL PROJECT PRESENT WORTH** \$3,597,730

**PRESENT WORTH PER CONNECTION (219 CONNECTIONS)** \$16,428

Table 126 - PROJECT DATA SHEET

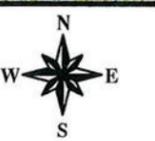
Project Name:	Alum Spring Road Phase 1 (P-4)		
County:	Pulaski		
Type of Project:	Centralized		
Utility Provider:	Pulaski County PSA		
Responsible Mgmt Entity?	Pulaski County PSA		
Existing Water System?	Yes		
Existing Conditions:	The project area is currently not served by a public sewage system.		
Proposed Project:	This project consists of approximately 8,000 L.F. of 10-inch gravity sewer, 19,610 L.F. of 8-inch gravity sewer, and 750 L.F. of 6-inch gravity sewer.		
Existing WWTP:	Name =	Peppers Ferry	
	Design Flow =	9 mgd	
	Average Flow =	3.98 mgd	
	Receiving Stream =	New River	
	Stream Classification =	IV	
	Impaired Stream	Yes	
Watershed or Adjacent Stream:	Name =	UT - tributary of Peak Creek	
	Impaired =	Yes	
	Within Vicinity =	No	
Equivalent Customers Served:	Residential =	219	
	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		
Total Project Cost:	\$3,565,800		
Present Worth Per Connection:	\$16,428		



**LEGEND**

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

**FIGURE 55:**  
**ALUM SPRING ROAD PHASE I (P-4)**  
 PULASKI COUNTY PUBLIC SERVICE AUTHORITY  
 New River Valley Planning District



0 1000 2000  
 SCALE: 1" = 2000'

SOURCE: PULASKI, VA & DUBLIN, VA,  
 U.S.G.S. QUADRANGLES

## PONDICK BRANCH/MOUNT OLIVET PHASE I SEWER EXTENSION (P-9)

PULASKI COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

### Project Background

The Pondlick Branch/Mount Olivet Phase I project area is located west of the Town of Pulaski and extends primarily along State Routes 640 and 710. The project area includes approximately 126 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 watershed of Peak 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 Pondlick Branch/Mount Olivet Phase I Sewer Extension include approximately 4,400 linear feet of 12-inch gravity sewer and 22,275 linear feet of 8-inch gravity sewer. The extension will connect to the existing Town of Pulaski sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Peppers Ferry Wastewater Treatment Plant (WWTP). The Peppers Ferry WWTP has a permitted capacity of 9.0 million gallons per day (MGD) and currently treats an average of 3.98 MGD. Treated effluent from the Peppers WWTP discharges into the New River which has been identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 154 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 46,200 GPD or 0.046 MGD. Therefore, adequate capacity is available at the Peppers Ferry WWTP to treat the anticipated wastewater generated in the Pondlick Branch/Mount Olivet Phase I project area.

### Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Pondlick Branch/Mount Olivet Phase I Sewer Extension are \$3,794,500 and \$5,668, respectively. These costs result in an approximate present worth of \$30,621 per existing connection.

## PRELIMINARY PROBABLE PROJECT COST

### Construction Cost

4,400	L.F.	12" Gravity Sewer @	\$102/L.F.	\$422,400
22,275	L.F.	8" Gravity Sewer @	\$80/L.F.	\$1,782,000
1	EA.	Grinder Pump Stations @	\$75,000/EA.	\$75,000
4	EA.	Railroad Crossings @	\$100,000/EA.	\$400,000
126	EA.	Gravity Sewer Connections @	\$1,900/EA.	\$239,400
		Total Construction Cost		\$2,918,800

### Related Cost

30	%	Total Construction Cost		\$875,700
		Total Related Cost		\$875,700
		TOTAL PROJECT COST		\$3,794,500

## ANNUAL OPERATION AND MAINTENANCE (O&M) COST

### Operation and Maintenance Cost

26,675	L.F.	Gravity Sewer @	\$0.10/L.F.	\$2,668
1	EA.	Grinder Pump Stations @	\$3,000/EA.	\$3,000
		TOTAL ANNUAL O&M COST		\$5,668

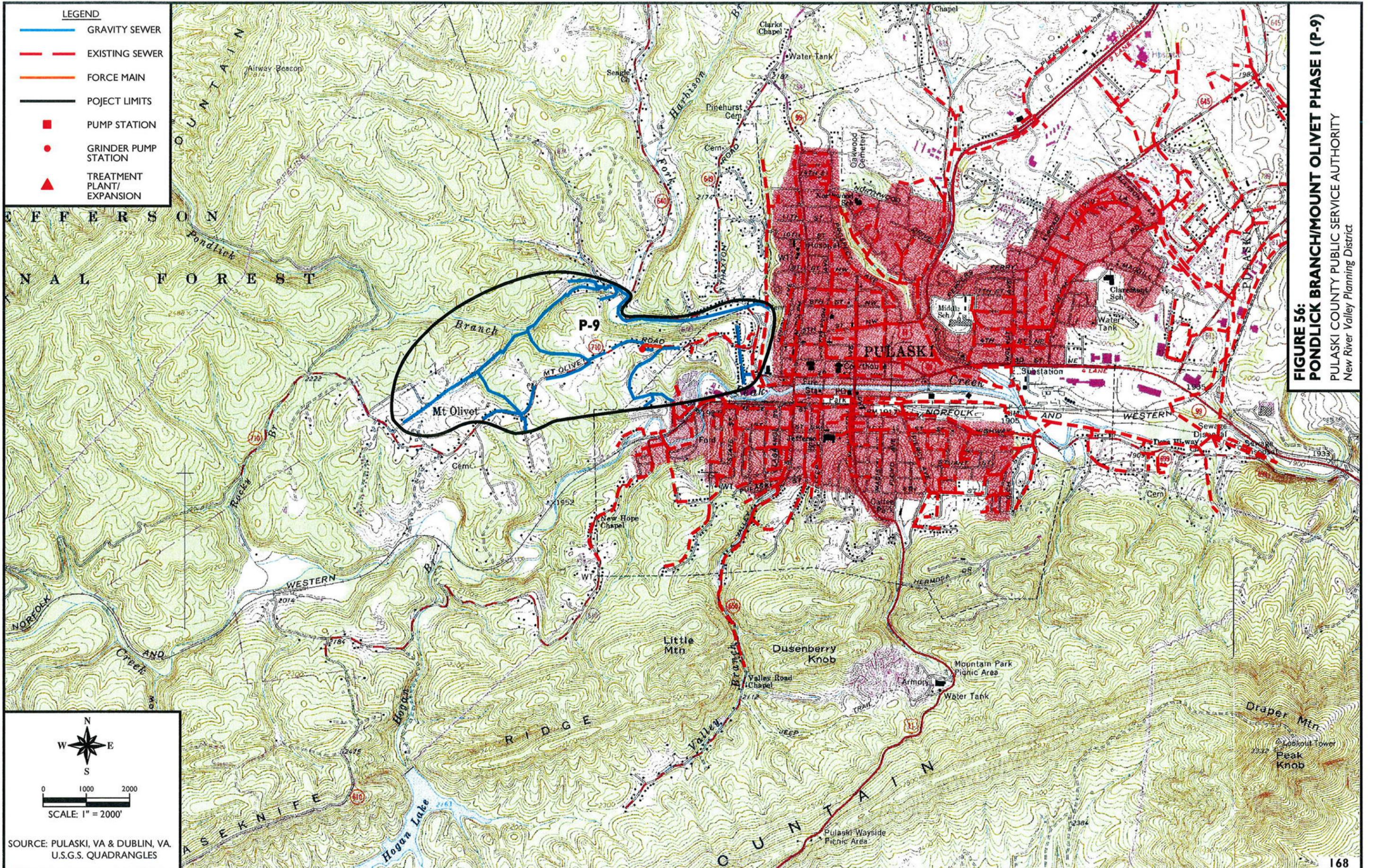
**PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%)** \$63,810

**TOTAL PROJECT PRESENT WORTH** \$3,858,310

**PRESENT WORTH PER CONNECTION (126 CONNECTIONS)** \$30,621

Table 127 - PROJECT DATA SHEET

Project Name:	Pondlick Branch / Mount Olivet Phase 1 (P-9)		
County:	Pulaski		
Type of Project:	Centralized		
Utility Provider:	Pulaski County PSA		
Responsible Mgmt Entity?	Pulaski County PSA		
Existing Water System?	No		
Existing Conditions:	The project area is currently not served by a public sewage system.		
Proposed Project:	This project consists of approximately 4,400 L.F. of 12-inch gravity sewer and 22,275 L.F. of 8-inch gravity sewer.		
Existing WWTP:	Name =	Peppers Ferry	
	Design Flow =	9 mgd	
	Average Flow =	3.98 mgd	
	Receiving Stream =	New River	
	Stream Classification =	IV	
	Impaired Stream	Yes	
Watershed or Adjacent Stream:	Name =	Peak Creek	
	Impaired =	Yes	
	Within Vicinity =	Yes	
Equivalent Customers Served:	Residential =	126	
	Industrial	0	
	Commercial =	0	
Health Hazard:	Known older homes with septic systems.		
Construction Feasibility:	WWTP/Collection System Available		X
	WWTP/Collection System Upgrades Required		
	WWTP/Collection System Not Available		
Growth Potential:	Residential		
Total Project Cost:		\$3,794,500	
Present Worth Per Connection:		\$30,621	



## ROUTE 100 - DUBLIN/COMMERCE PARK SEWER EXTENSION (P-12)

PULASKI COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

### Project Background

The Route 100 - Dublin/Commerce Park project area is located northeast of the Town of Dublin and extends primarily along U.S. Route 11 and State Routes 100, 636, and 746. The project area includes approximately 208 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 Back Creek, Peak Creek, and the New River, which have been identified by the Virginia Department of Environmental Quality (DEQ) as impaired streams. It is anticipated that, with the provision of public sewage service, a moderate to high potential will exist for residential growth, and a moderate to high potential will exist for industrial/commercial growth.

### Proposed Facilities

The proposed facilities associated with the Route 100 - Dublin/Commerce Park Sewer Extension include approximately 43,410 linear feet of 8-inch gravity sewer, 7,100 linear feet of 2-inch force main, and two grinder pump stations. The extension will connect to the existing Town of Dublin sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Peppers Ferry Wastewater Treatment Plant (WWTP). The Peppers Ferry WWTP has a permitted capacity of 9.0 million gallons per day (MGD) and currently treats an average of 3.98 MGD. Treated effluent from the Peppers WWTP discharges into the New River which has been identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 252 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 75,600 GPD or 0.076 MGD. Therefore, adequate capacity is available at the Peppers Ferry WWTP to treat the anticipated wastewater generated in the Route 100 - Dublin/Commerce Park project area.

### Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Route 100 - Dublin/Commerce Park Sewer Extension are \$5,870,360 and \$15,051, respectively. These costs result in an approximate present worth of \$29,040 per existing connection.

## PRELIMINARY PROBABLE PROJECT COST

<u>Construction Cost</u>				
43,410	L.F.	8" Gravity Sewer @	\$80/L.F.	\$3,472,800
7,100	L.F.	2" Force Main @	\$19/L.F.	\$134,900
2	EA.	Sewage Pump Stations @	\$250,000/EA.	\$500,000
2	EA.	Force Main Connections @	\$8,280/EA.	\$16,560
206	EA.	Gravity Sewer Connections @	\$1,900/EA.	\$391,400
Total Construction Cost				\$4,515,660
<u>Related Cost</u>				
30	%	Total Construction Cost		\$1,354,700
Total Related Cost				\$1,354,700
TOTAL PROJECT COST				\$5,870,360

## ANNUAL OPERATION AND MAINTENANCE (O&M) COST

<u>Operation and Maintenance Cost</u>				
43,410	L.F.	Gravity Sewer @	\$0.10/L.F.	\$4,341
7,100	L.F.	Force Main @	\$0.10/L.F.	\$710
2	EA.	Sewage Pump Stations @	\$5,000/EA.	\$10,000
TOTAL ANNUAL O&M COST				\$15,051

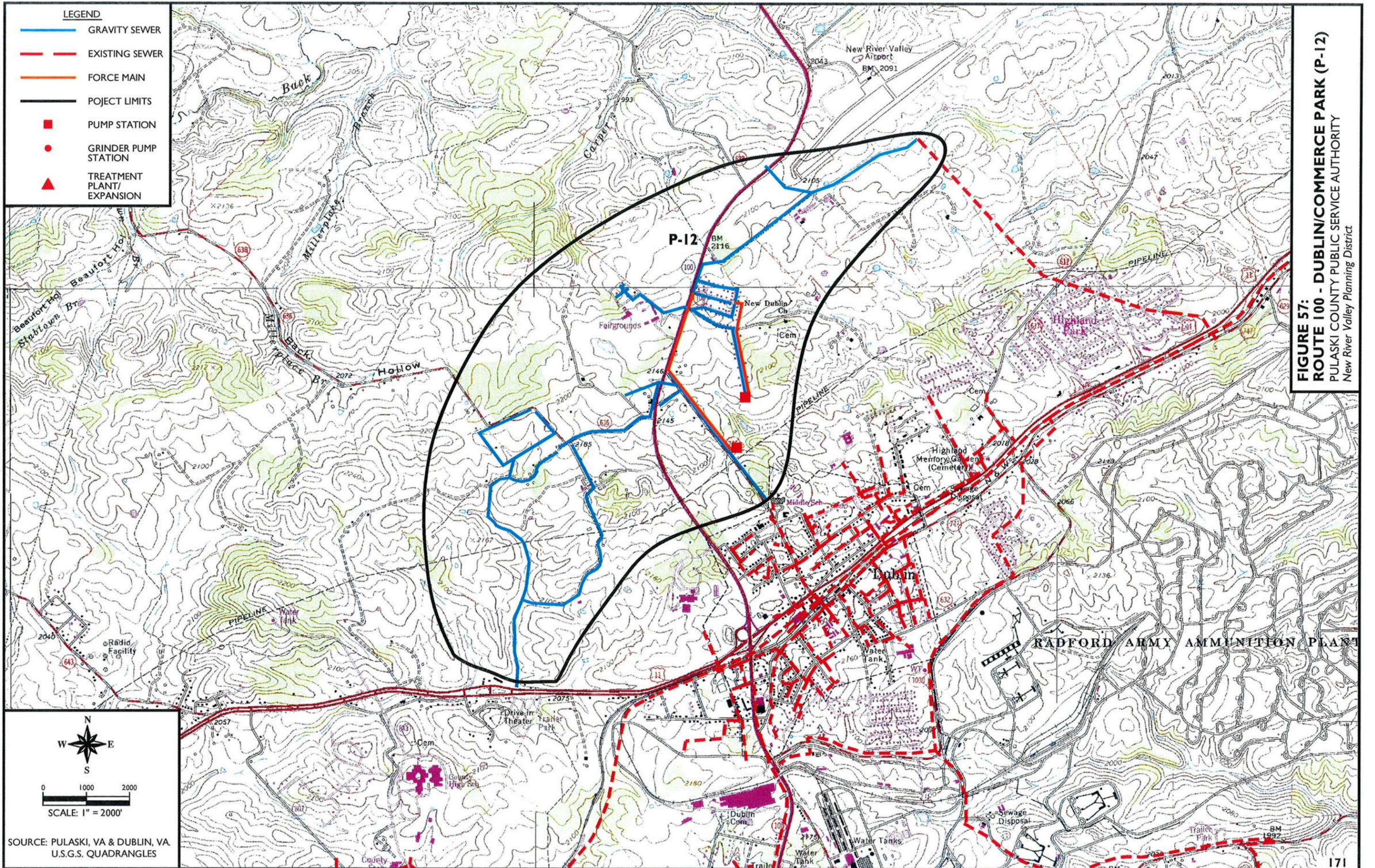
**PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%)** \$169,450

**TOTAL PROJECT PRESENT WORTH** \$6,039,810

**PRESENT WORTH PER CONNECTION (206 CONNECTIONS)** \$29,040

Table 128 - PROJECT DATA SHEET

Project Name:	Route 100 - Dublin / Commerce Park (P-12)		
County:	Pulaski		
Type of Project:	Centralized		
Utility Provider:	Pulaski County PSA		
Responsible Mgmt Entity?	Pulaski County PSA		
Existing Water System?	Yes		
Existing Conditions:	The project area is currently not served by a public sewage system.		
Proposed Project:	This project consists of approximately 43,410 L.F. of 8-inch gravity sewer, 7,100 L.F. of 2-inch force main, and two grinder pump stations.		
Existing WWTP:	Name =	Peppers Ferry	
	Design Flow =	9 mgd	
	Average Flow =	3.98 mgd	
	Receiving Stream =	New River	
	Stream Classification =	IV	
	Impaired Stream	Yes	
Watershed or Adjacent Stream:	Name =	Millerplace Branch - tributary of Back Creek, UT - tributary of New River, Thorne Spring Branch - tributary of Peak Creek	
	Impaired =	Yes	
	Within Vicinity =	No	
Equivalent Customers Served:	Residential =	208	
	Industrial	0	
	Commercial =	0	
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:	Industrial and Residential		
Total Project Cost:	\$5,870,360		
Present Worth Per Connection:	\$29,040		



## BACK CREEK SEWER EXTENSION (P-13)

PULASKI COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

### Project Background

The Back Creek project area is located north of the Town of Dublin at the Base of Walker Mountain and extends primarily along State Route 100. The project area includes approximately 120 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 watershed of Back 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 potential will exist for residential growth.

### Proposed Facilities

The proposed facilities associated with the Back Creek Sewer Extension includes approximately 4,170 linear feet of 10-inch gravity sewer, 29,180 linear feet of 8-inch gravity sewer, 1,470 linear feet of 4-inch force main, and one sewage pump station. The extension will connect to the existing Pulaski County PSA sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Peppers Ferry Wastewater Treatment Plant (WWTP). The Peppers Ferry WWTP has a permitted capacity of 9.0 million gallons per day (MGD) and currently treats an average of 3.98 MGD. Treated effluent from the Peppers WWTP discharges into the New River which has been identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 143 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 42,600 GPD or 0.043 MGD. Therefore, adequate capacity is available at the Peppers Ferry WWTP to treat the anticipated wastewater generated in the Back Creek project area.

### Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Back Creek Sewer Extension are \$4,219,940 and \$8,482, respectively. These costs result in an approximate present worth of \$35,970 per existing connection.

## PRELIMINARY PROBABLE PROJECT COST

### Construction Cost

4,170	L.F.	10" Gravity Sewer @	\$88/L.F.	\$366,960
29,180	L.F.	8" Gravity Sewer @	\$80/L.F.	\$2,334,400
1,470	L.F.	4" Force Main @	\$28/L.F.	\$41,160
1	EA.	Sewage Pump Stations @	\$250,000/EA.	\$250,000
4	EA.	Force Main Connections @	\$8,280/EA.	\$33,120
116	EA.	Gravity Sewer Connections @	\$1,900/EA.	\$220,400
		Total Construction Cost		<u>\$3,246,040</u>

### Related Cost

30	%	Total Construction Cost		<u>\$973,900</u>
		Total Related Cost		\$973,900
		<b>TOTAL PROJECT COST</b>		<b>\$4,219,940</b>

## ANNUAL OPERATION AND MAINTENANCE (O&M) COST

### Operation and Maintenance Cost

33,350	L.F.	Gravity Sewer @	\$0.10/L.F.	\$3,335
1,470	L.F.	Force Main @	\$0.10/L.F.	\$147
1	EA.	Sewage Pump Stations @	\$5,000/EA.	<u>\$5,000</u>
		TOTAL ANNUAL O&M COST		<u>\$8,482</u>

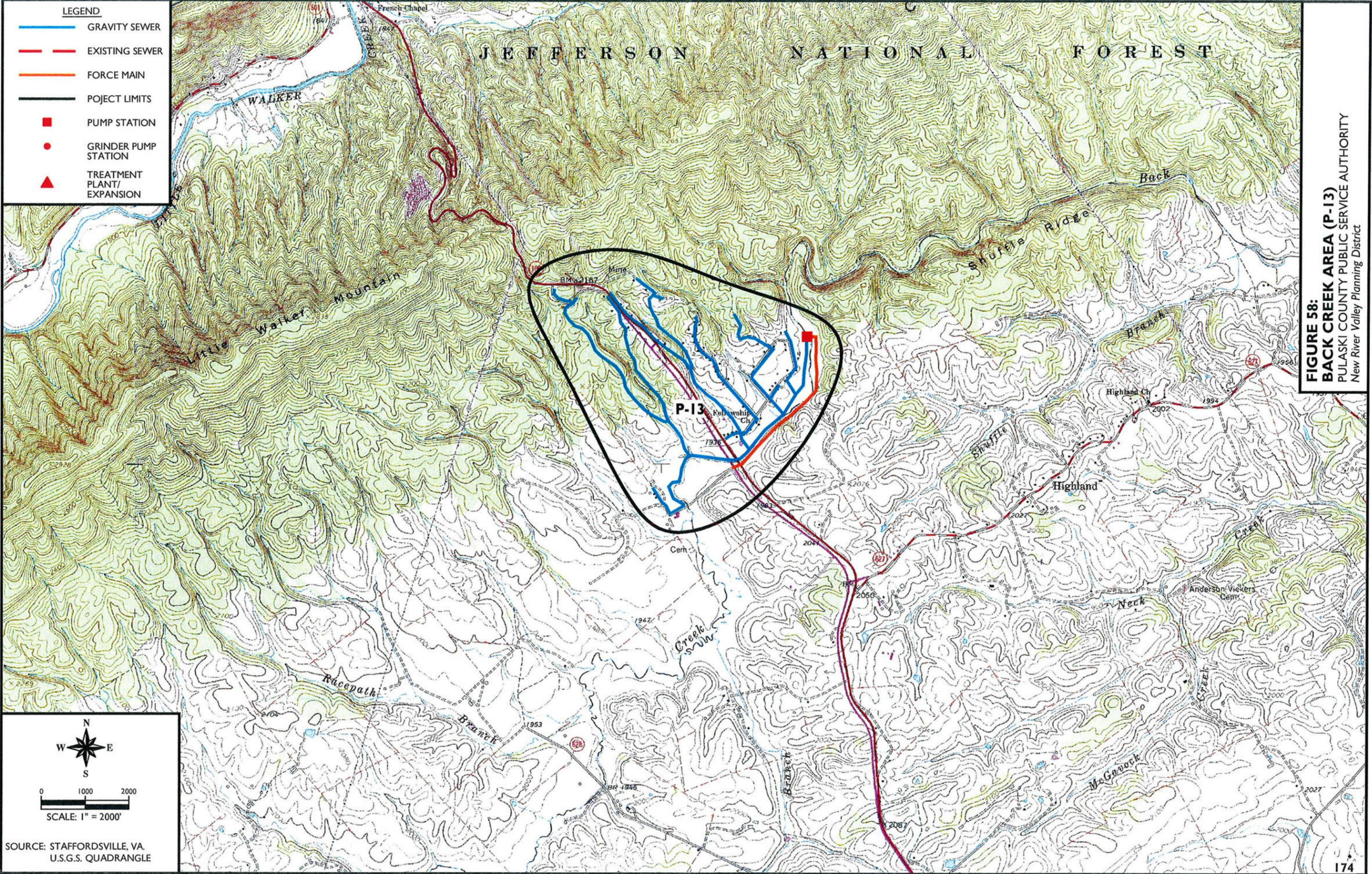
**PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%)** \$95,490

**TOTAL PROJECT PRESENT WORTH** \$4,315,430

**PRESENT WORTH PER CONNECTION (116 CONNECTIONS)** \$35,970

Table 129 - PROJECT DATA SHEET

Project Name:	Back Creek Area (P-13)		
County:	Pulaski		
Type of Project:	Centralized		
Utility Provider:	Pulaski County PSA		
Responsible Mgmt Entity?	Pulaski County PSA		
Existing Water System?	No		
Existing Conditions:	The project area is currently not served by a public sewage system.		
Proposed Project:	This project consists of approximately 4,170 L.F. of 10-inch gravity sewer, 29,180 L.F. of 8-inch gravity sewer, 1,470 L.F. of 4-inch force main, and one sewage pump station.		
Existing WWTP:	Name =	Peppers Ferry	
	Design Flow =	9 mgd	
	Average Flow =	3.98 mgd	
	Receiving Stream =	New River	
	Stream Classification =	IV	
	Impaired Stream	Yes	
Watershed or Adjacent Stream:	Name =	Back Creek	
	Impaired =	Yes	
	Within Vicinity =	Yes	
Equivalent Customers Served:	Residential =	120	
	Industrial	0	
	Commercial =	0	
	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		
Total Project Cost:	\$4,219,940		
Present Worth Per Connection:	\$35,970		



## EAST DUBLIN/STONERIDGE DRIVE SEWER EXTENSION (P-14)

PULASKI COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

### Project Background

The East Dublin/Stoneridge Drive project area is located east of the Town of Dublin and extends primarily along U.S. Route 11. The project area includes approximately 427 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 watershed of Hazel Hollow which discharges into the New River 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 potential will exist for residential growth.

### Proposed Facilities

The proposed facilities associated with the East Dublin/Stoneridge Drive Sewer Extension includes approximately 6,510 L.F. of 10-inch gravity sewer, 29,525 L.F. of 8-inch gravity sewer, 1,420 L.F. of 4-inch force main, and one sewage pump station. The extension will connect to the existing Pulaski County Public Service Authority sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Peppers Ferry Wastewater Treatment Plant (WWTP). The Peppers Ferry WWTP has a permitted capacity of 9.0 million gallons per day (MGD) and currently treats an average of 3.98 MGD. Treated effluent from the Peppers WWTP discharges into the New River which has been identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 522 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 156,600 GPD or 0.092 MGD. Therefore, adequate capacity is available at the Peppers Ferry WWTP to treat the anticipated wastewater generated in the East Dublin/Stoneridge Drive project area.

### Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the East Dublin/Stoneridge Drive Sewer Extension are \$5,246,740 and \$8,746, respectively. These costs result in an approximate present worth of \$12,518 per existing connection.

## PRELIMINARY PROBABLE PROJECT COST

### Construction Cost

6,510	L.F.	10" Gravity Sewer @	\$88/L.F.	\$572,880
29,525	L.F.	8" Gravity Sewer @	\$80/L.F.	\$2,362,000
1,420	L.F.	4" Force Main @	\$28/L.F.	\$39,760
1	EA.	Sewage Pump Stations @	\$250,000/EA.	\$250,000
427	EA.	Gravity Sewer Connections @	\$1,900/EA.	\$811,300
Total Construction Cost				\$4,035,940

### Related Cost

30	%	Total Construction Cost	\$1,210,800
Total Related Cost			\$1,210,800

**TOTAL PROJECT COST** **\$5,246,740**

## ANNUAL OPERATION AND MAINTENANCE (O&M) COST

### Operation and Maintenance Cost

36,035	L.F.	Gravity Sewer @	\$0.10/L.F.	\$3,604
1,420	L.F.	Force Main @	\$0.10/L.F.	\$142
1	EA.	Sewage Pump Stations @	\$5,000/EA.	\$5,000
TOTAL ANNUAL O&M COST				\$8,746

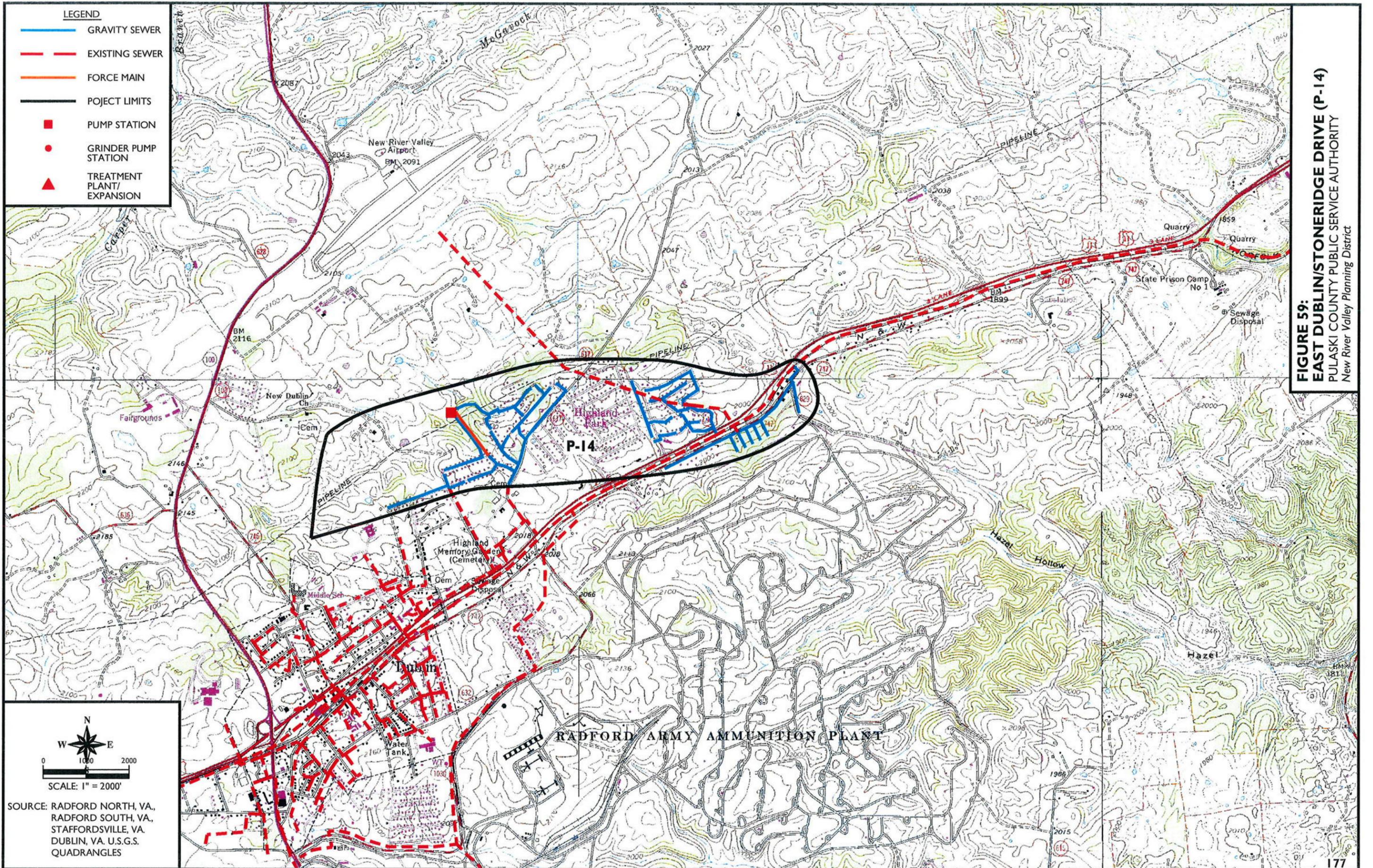
**PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%)** **\$98,460**

**TOTAL PROJECT PRESENT WORTH** **\$5,345,200**

**PRESENT WORTH PER CONNECTION (427 CONNECTIONS)** **\$12,518**

Table 130 - PROJECT DATA SHEET

Project Name:	East Dublin / Stoneridge Drive (P-14)		
County:	Pulaski		
Type of Project:	Centralized		
Utility Provider:	Pulaski County PSA		
Responsible Mgmt Entity?	Pulaski County PSA		
Existing Water System?	Yes		
Existing Conditions:	The project area is currently not served by a public sewage system.		
Proposed Project:	This project consists of approximately 6,510 L.F. of 10-inch gravity sewer and 29,525 L.F. of 8-inch gravity sewer, 1,420 L.F. of 4-inch force main, and one sewage pump station.		
Existing WWTP:	Name =	Peppers Ferry	
	Design Flow =	9 mgd	
	Average Flow =	3.98 mgd	
	Receiving Stream =	New River	
	Stream Classification =	IV	
	Impaired Stream	Yes	
Watershed or Adjacent Stream:	Name =	Hazel Hollow - tributary of the New River	
	Impaired =	Yes	
	Within Vicinity =	No	
Equivalent Customers Served:	Residential =	427	
	Industrial	0	
	Commercial =	0	
Health Hazard:	None.		
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		
Total Project Cost:	\$5,246,740		
Present Worth Per Connection:	\$12,518		



**FIGURE 59:**  
**EAST DUBLIN/STONERIDGE DRIVE (P-14)**  
 PULASKI COUNTY PUBLIC SERVICE AUTHORITY  
 New River Valley Planning District

N  
 W E  
 0 1000 2000  
 SCALE: 1" = 2000'  
 SOURCE: RADFORD NORTH, VA.,  
 RADFORD SOUTH, VA.,  
 STAFFORDSVILLE, VA.,  
 DUBLIN, VA. U.S.G.S.  
 QUADRANGLES

## BELSPRING/GATE 10 ROAD SEWER EXTENSION (P-16)

PULASKI COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

### Project Background

The Belspring/Gate 10 Road project area is located north of the community of Fairlawn and extends primarily along State Routes 600 and 623. The project area includes approximately 133 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 watershed of the New River 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 Belspring/Gate 10 Road Sewer Extension includes approximately 1,980 L.F. of 15-inch gravity sewer, 20,900 L.F. of 8-inch gravity sewer, 7,185 L.F. of 6-inch force main, 6,825 L.F. of 2-inch force main, two grinder pump stations, and two sewage pump stations. The extension will connect to the existing Pulaski County Public Service Authority sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Peppers Ferry Wastewater Treatment Plant (WWTP). The Peppers Ferry WWTP has a permitted capacity of 9.0 million gallons per day (MGD) and currently treats an average of 3.98 MGD. Treated effluent from the Peppers WWTP discharges into the New River which has been identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 163 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 48,900 GPD or 0.05 MGD. Therefore, adequate capacity is available at the Peppers Ferry WWTP to treat the anticipated wastewater generated in the Belspring/Gate 10 Road project area.

### Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Belspring/Gate 10 Road Sewer Extension are \$4,067,870 and \$19,689, respectively. These costs result in an approximate present worth of \$32,252 per existing connection.

## PRELIMINARY PROBABLE PROJECT COST

### Construction Cost

1,980	L.F.	15" Gravity Sewer @	\$102/L.F.	\$201,960
20,900	L.F.	8" Gravity Sewer @	\$80/L.F.	\$1,672,000
7,185	L.F.	6" Force Main @	\$31/L.F.	\$222,735
6,825	L.F.	2" Force Main @	\$19/L.F.	\$129,675
2	EA.	Sewage Pump Stations @	\$250,000/EA.	\$500,000
2	EA.	Grinder Pump Stations @	\$75,000/EA.	\$150,000
133	EA.	Gravity Sewer Connections @	\$1,900/EA.	\$252,700
Total Construction Cost				\$3,129,070

### Related Cost

30	%	Total Construction Cost	\$938,800
Total Related Cost			\$938,800
TOTAL PROJECT COST			\$4,067,870

## ANNUAL OPERATION AND MAINTENANCE (O&M) COST

### Operation and Maintenance Cost

22,880	L.F.	Gravity Sewer @	\$0.10/L.F.	\$2,288
14,010	L.F.	Force Main @	\$0.10/L.F.	\$1,401
2	EA.	Sewage Pump Stations @	\$5,000/EA.	\$10,000
2	EA.	Grinder Pump Stations @	\$3,000/EA.	\$6,000
TOTAL ANNUAL O&M COST				\$19,689

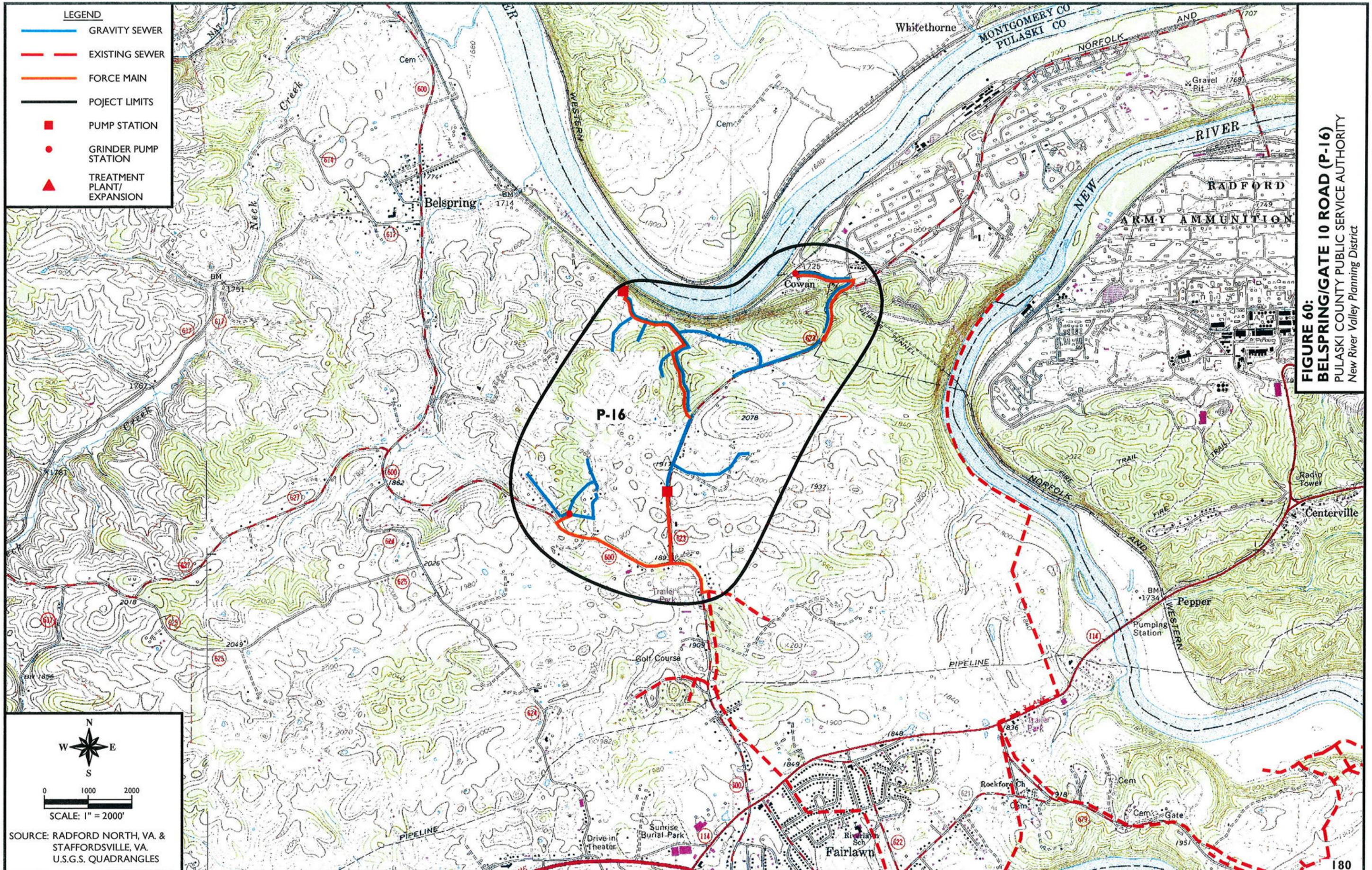
**PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%)** \$221,660

**TOTAL PROJECT PRESENT WORTH** \$4,289,530

**PRESENT WORTH PER CONNECTION (133 CONNECTIONS)** \$32,252

Table 131 - PROJECT DATA SHEET

Project Name:	Belspring / Gate 10 Road (P-16)		
County:	Pulaski		
Type of Project:	Centralized		
Utility Provider:	Pulaski County PSA		
Responsible Mgmt Entity?	Pulaski County PSA		
Existing Water System?	Yes		
Existing Conditions:	The project area is currently not served by a public sewage system.		
Proposed Project:	This project consists of approximately 1,980 L.F. of 15-inch gravity sewer, 20,900 L.F. of 8-inch gravity sewer, 7,185 L.F. of 6-inch force main, 6,825 L.F. of 2-inch force main, two grinder pump stations, and two sewage pump stations.		
Existing WWTP:	Name =	Peppers Ferry	
	Design Flow =	9 mgd	
	Average Flow =	3.98 mgd	
	Receiving Stream =	New River	
	Stream Classification =	IV	
	Impaired Stream	Yes	
Watershed or Adjacent Stream:	Name =	New River	
	Impaired =	Yes	
	Within Vicinity =	Yes	
Equivalent Customers Served:	Residential =	133	
	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		
Total Project Cost:	\$4,067,870		
Present Worth Per Connection:	\$32,252		



## NORTH CLAYTOR LAKE SEWER EXTENSION (P-21)

PULASKI COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

### Project Background

The North Claytor Lake project area is located southeast of the Town of Dublin and extends primarily along State Route 660. The project area includes approximately 257 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 watershed of the Claytor Lake which is not 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 North Claytor Lake Sewer Extension includes approximately 3,835 L.F. of 10-inch gravity sewer, 14,225 L.F. of 8-inch gravity sewer, 11,495 L.F. of 4-inch force main, 7,185 L.F. of 2-inch force main, two grinder pump station and three sewage pump stations. The extension will connect to the existing Pulaski County Public Service Authority sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Peppers Ferry Wastewater Treatment Plant (WWTP). The Peppers Ferry WWTP has a permitted capacity of 9.0 million gallons per day (MGD) and currently treats an average of 3.98 MGD. Treated effluent from the Peppers WWTP discharges into the New River which has been identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 316 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 94,200 GPD or 0.094 MGD. Therefore, adequate capacity is available at the Peppers Ferry WWTP to treat the anticipated wastewater generated in the North Claytor Lake project area.

### Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the North Claytor Lake Sewer Extension are \$4,343,695 and \$24,674, respectively. These costs result in an approximate present worth of \$17,982 per existing connection.

## PRELIMINARY PROBABLE PROJECT COST

### Construction Cost

3,835	L.F.	10" Gravity Sewer @	\$88/L.F.	\$337,480
14,225	L.F.	8" Gravity Sewer @	\$80/L.F.	\$1,138,000
11,495	L.F.	4" Force Main @	\$28/L.F.	\$321,860
7,185	L.F.	2" Force Main @	\$19/L.F.	\$136,515
3	EA.	Sewage Pump Stations @	\$250,000/EA.	\$750,000
2	EA.	Grinder Pump Stations @	\$75,000/EA.	\$150,000
3	EA.	Force Main Connections @	\$8,280/EA.	\$24,840
257	EA.	Gravity Sewer Connections @	\$1,900/EA.	\$482,600
Total Construction Cost				<u>\$3,341,295</u>

### Related Cost

30	%	Total Construction Cost	<u>\$1,002,400</u>
----	---	-------------------------	--------------------

Total Related Cost \$1,002,400

**TOTAL PROJECT COST \$4,343,695**

## ANNUAL OPERATION AND MAINTENANCE (O&M) COST

### Operation and Maintenance Cost

18,060	L.F.	Gravity Sewer @	\$0.10/L.F.	\$1,806
18,680	L.F.	Force Main @	\$0.10/L.F.	\$1,868
3	EA.	Sewage Pump Stations @	\$5,000/EA.	\$15,000
2	EA.	Grinder Pump Stations @	\$3,000/EA.	\$6,000

TOTAL ANNUAL O&M COST \$24,674

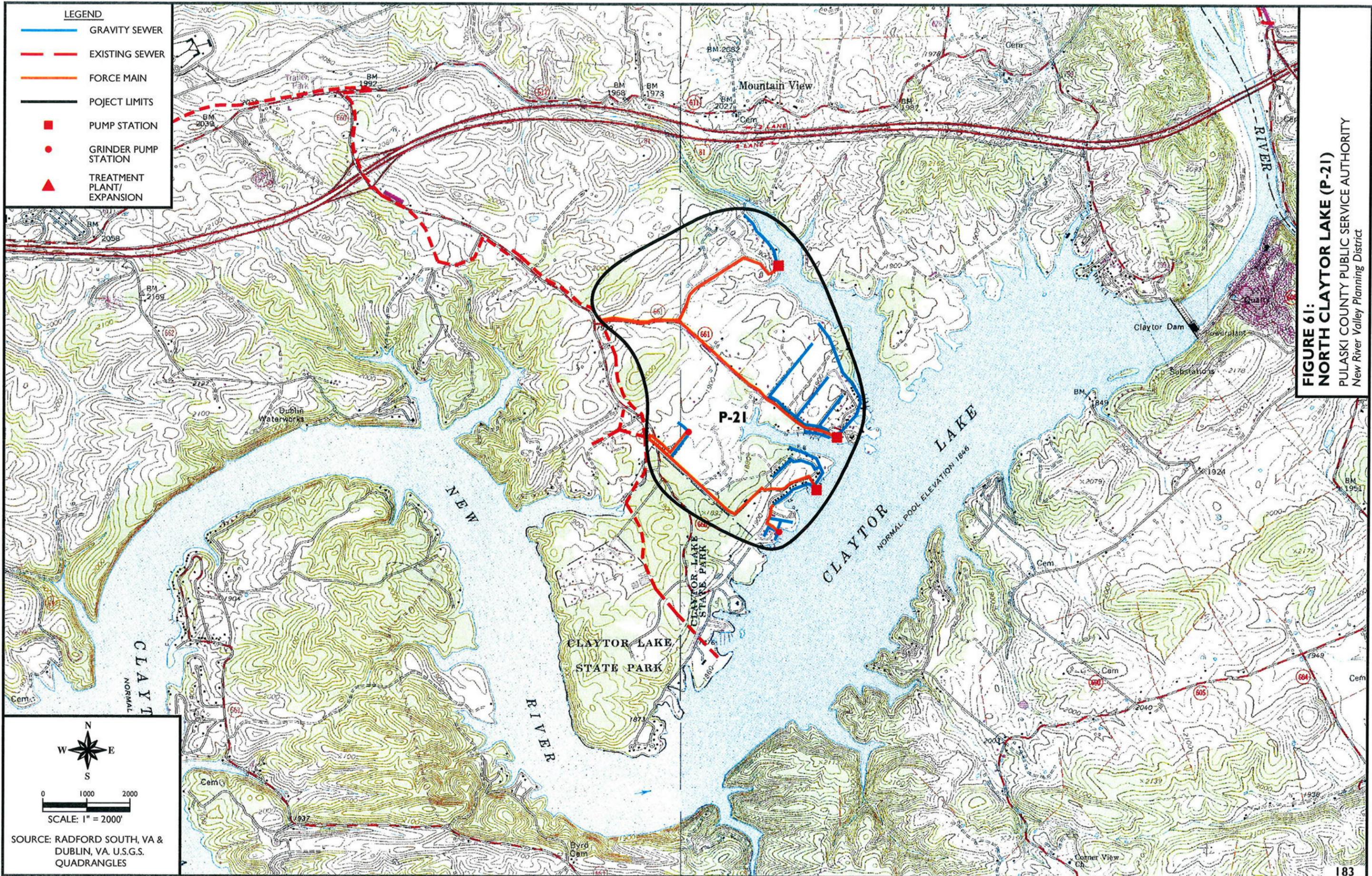
**PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%) \$277,780**

**TOTAL PROJECT PRESENT WORTH \$4,621,475**

**PRESENT WORTH PER CONNECTION (257 CONNECTIONS) \$17,982**

Table 132 - PROJECT DATA SHEET

Project Name:	North Claytor Lake (P-21)		
County:	Pulaski		
Type of Project:	Centralized		
Utility Provider:	Pulaski County PSA		
Responsible Mgmt Entity?	Pulaski County PSA		
Existing Water System?	Yes		
Existing Conditions:	The project area is currently not served by a public sewage system.		
Proposed Project:	This project consists of approximately 3,835 L.F. of 10-inch gravity sewer, 14,225 L.F. of 8-inch gravity sewer, 11,495 L.F. of 4-inch force main, 7,185 L.F. of 2-inch force main, one grinder pump station and three sewage pump stations.		
Existing WWTP:	Name =	Peppers Ferry	
	Design Flow =	9 mgd	
	Average Flow =	3.98 mgd	
	Receiving Stream =	New River	
	Stream Classification =	IV	
	Impaired Stream	Yes	
Watershed or Adjacent Stream:	Name =	Claytor Lake	
	Impaired =	No	
	Within Vicinity =	Yes	
Equivalent Customers Served:	Residential =	257	
	Industrial	0	
	Commercial =	0	
Health Hazard:	Documented septic failure.		
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		
Total Project Cost:	\$4,343,695		
Present Worth Per Connection:	\$17,982		



**LEGEND**

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

**FIGURE 61:**  
**NORTH CLAYTOR LAKE (P-21)**  
 PULASKI COUNTY PUBLIC SERVICE AUTHORITY  
 New River Valley Planning District

SOURCE: RADFORD SOUTH, VA &  
 DUBLIN, VA. U.S.G.S.  
 QUADRANGLES

## SOUTH DUBLIN SEWER EXTENSION (P-33)

PULASKI COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

### Project Background

The South Dublin project area is located south of the Town of Dublin and extends primarily along State Routes 100 and 682. The project area includes approximately 167 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 watershed of the Claytor Lake which is not 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 South Dublin Sewer Extension include approximately 4,080 L.F. of 10-inch gravity sewer and 13,065 L.F. of 8-inch gravity sewer. The extension will connect to the existing Town of Dublin sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Peppers Ferry Wastewater Treatment Plant (WWTP). The Peppers Ferry WWTP has a permitted capacity of 9.0 million gallons per day (MGD) and currently treats an average of 3.98 MGD. Treated effluent from the Peppers WWTP discharges into the New River which has been identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 204 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 61,200 GPD or 0.061 MGD. Therefore, adequate capacity is available at the Peppers Ferry WWTP to treat the anticipated wastewater generated in the South Dublin project area.

### Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the South Dublin Sewer Extension are \$2,228,040 and \$1,715, respectively. These costs result in an approximate present worth of \$13,517 per existing connection.

### PRELIMINARY PROBABLE PROJECT COST

<u>Construction Cost</u>				
4,080	L.F.	10" Gravity Sewer @	\$88/L.F.	\$359,040
13,065	L.F.	8" Gravity Sewer @	\$80/L.F.	\$1,045,200
167	EA.	Gravity Sewer Connections @	\$1,900/EA.	\$317,300
Total Construction Cost				\$1,721,540
<u>Related Cost</u>				
30	%	Total Construction Cost		\$516,500
Total Related Cost				\$516,500
TOTAL PROJECT COST				\$2,238,040

### ANNUAL OPERATION AND MAINTENANCE (O&M) COST

<u>Operation and Maintenance Cost</u>				
17,145	L.F.	Gravity Sewer @	\$0.10/L.F.	\$2,988
TOTAL ANNUAL O&M COST				\$2,988

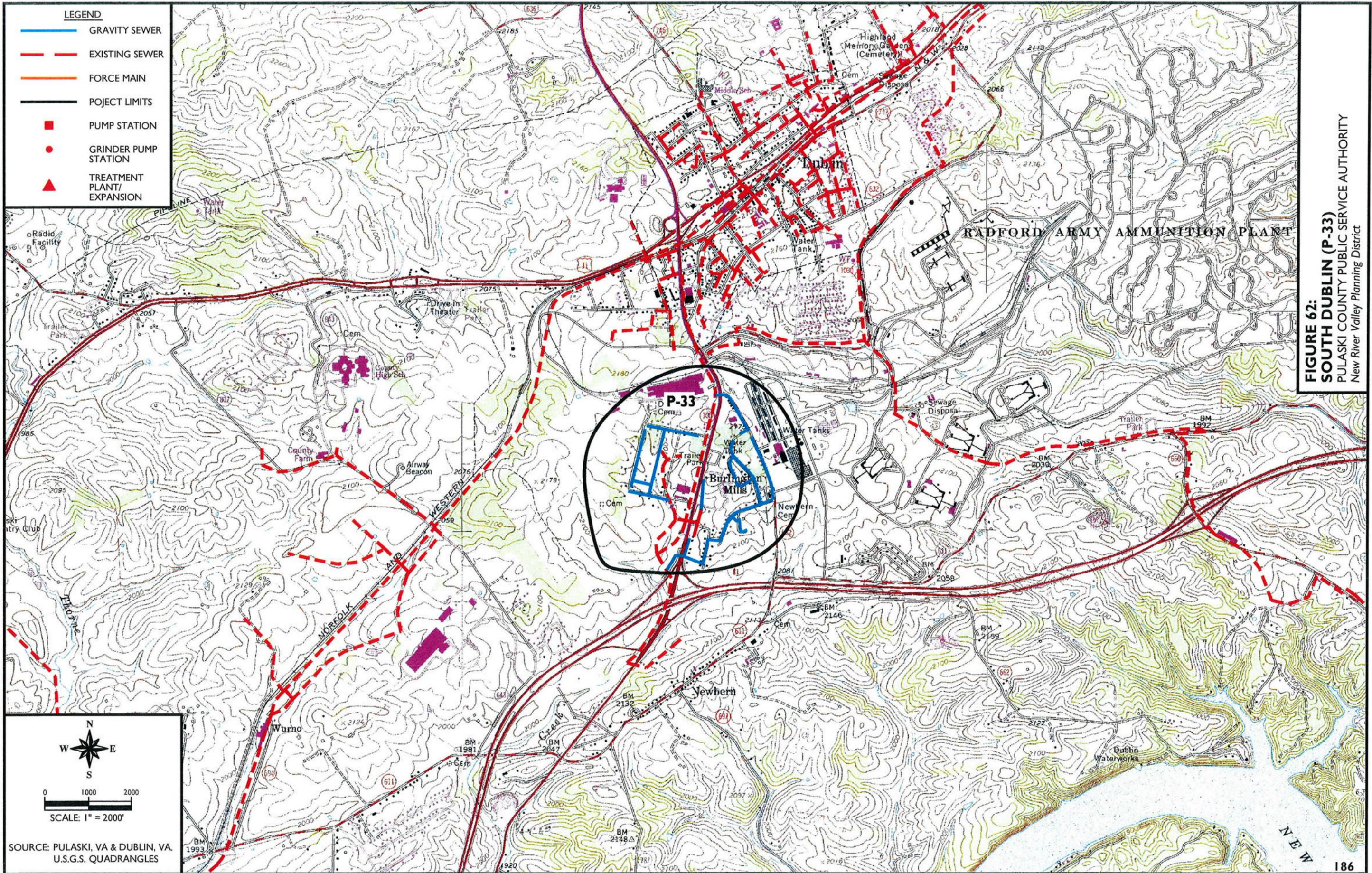
**PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%)** \$19,310

**TOTAL PROJECT PRESENT WORTH** \$2,257,350

**PRESENT WORTH PER CONNECTION (167 CONNECTIONS)** \$13,517

Table 133 - PROJECT DATA SHEET

Project Name:	South Dublin (P-33)		
County:	Pulaski		
Type of Project:	Centralized		
Utility Provider:	Pulaski County PSA		
Responsible Mgmt Entity?	Pulaski County PSA		
Existing Water System?	Yes		
Existing Conditions:	The project area is currently not served by a public sewage system.		
Proposed Project:	This project consists of approximately 5,500 L.F. of 10-inch gravity sewer and 24,380 L.F. of 8-inch gravity sewer.		
Existing WWTP:	Name =	Peppers Ferry	
	Design Flow =	9 mgd	
	Average Flow =	3.98 mgd	
	Receiving Stream =	New River	
	Stream Classification = Impaired Stream	IV Yes	
Watershed or Adjacent Stream:	Name =	UT - tributary to Claytor Lake	
	Impaired =	No	
	Within Vicinity =	No	
Equivalent Customers Served:	Residential =	167	
	Industrial	0	
	Commercial =	0	
Health Hazard:	Documented septic failure.		
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:	Industrial and Residential		
Total Project Cost:	\$2,238,040		
Present Worth Per Connection:	\$13,517		



## PAINTERS WOODS SUBDIVISION SEWER SYSTEM (DC-18)

PULASKI COUNTY PUBLIC SERVICE AUTHORITY

New River Valley Planning District

### Project Background

The Painters Woods Subdivision is located just off the service road paralleling the northbound lane of Interstate 81 in Pulaski County very near the Wythe County Line. The project area includes 70 residential connections. The distance of this community from the nearest conventional sewer line makes it hard to serve, and poor draining soils and karst terrain makes the community a prime candidate for a decentralized collection and treatment system. Onsite septic systems have short lives, and some of the residences have systems that have been repaired two times. The project area drains to Little Pine Run, a tributary of New River.

### Proposed Facilities

The proposed treatment is a 15,000 gallon per day AdvanTex AX100 system, which uses a man-made textile fabric for the media. Since the soils are poor draining clays, an ultraviolet disinfection system/discharging system is proposed. The effluent collection system consists of a water-tight septic tank on each lot flowing by gravity to a collection system consisting of approximately 7,300 linear feet of small diameter effluent sewer lines. Since the proposed system discharges to the stream, a discharge permit will be required from the Virginia Department of Environmental Quality. The permit must be renewed every 5 years.

### Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with operating the system by the Pulaski County PSA are \$770,000 and \$16,320, respectively. These costs result in an approximate present worth of \$13,625 per existing connection.

### PRELIMINARY PROBABLE PROJECT COST

<u>Construction Cost</u>				
70	EA.	STEG Systems	\$3,000	\$210,000
6,300	LF	4" Sewer Line	\$10	\$63,000
1,000	LF	6" Sewer Line	\$14	\$14,000
15	EA.	Road Crossings	\$2,000	\$30,000
15,000	Gal.	Treatment System - AX100	\$10	\$150,000
12,000	Gal.	Treatment Tanks	\$1.50	\$18,000
15,000	Gal.	Discharge System - UV	\$2	\$30,000
70	EA.	Crush and Fill Existing Tanks	\$500	<u>\$35,000</u>
			Total Construction Cost	\$550,000
40	%	Total Related Cost		\$220,000
<b>TOTAL PROJECT COST</b>				<b>\$770,000</b>

### 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>
70	EA.	Plant Operations & Maintenance	\$12.50	\$875	\$10,500
70	EA.	STEG System Operations	\$5.50	\$385	\$4,620
		VPDES Permit Fee	\$1.43	\$100	\$1,200
<b>TOTAL O&amp;M COST</b>				<b>\$1,360</b>	<b>\$16,320</b>

**PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%)** \$183,727

**TOTAL PROJECT PRESENT WORTH** \$953,727

**PRESENT WORTH PER CONNECTION (70 CONNECTIONS)** \$13,625

Table 134 - PROJECT DATA SHEET

Project Name:	Painters Woods Subdivision	
County:	Pulaski	
Type of Project:	Decentralized Wastewater System	
Utility Provider:	Pulaski County	
Responsible Mgmt Entity?	Pulaski County	
Existing Water System?	Yes	
Existing Conditions:	70 homes on medium size lots. Poor draining soils with lots of septic tank failures. Nice homes older than 30 years of age. Karst terrain.	
Proposed Project:	Septic tank effluent gravity system proposed for this community. Use community treatment system with UV disinfection and discharge into stream. Three (3) AdvanTex Ax100 Treatment Units required.	
Existing WWTP:	Name =	N/A
	Design Flow =	
	Average Flow =	
	Receiving Stream =	
	Stream Classification = Impaired Stream	
Watershed or Adjacent Stream:	Name =	Unnamed Tributary
	Impaired =	No
	Within Vicinity =	No
Equivalent Customers Served:	Residential =	70
	Industrial	0
	Commercial =	0
Health Hazard:	Groundwater Contaminated	
Construction Feasibility:	WWTP/Collection System Available	No
	WWTP/Collection System Upgrades Required	
	WWTP/Collection System Not Available	
Growth Potential:	Three other small clusters of homes nearby, including the Draper Valley Presbyterian Church. These communities could be served by a slightly larger treatment system.	
Total Project Cost:	\$770,000	
Present Worth Per Connection:	\$13,625	

