

WASHINGTON COUNTY
SEWAGE PROVIDER
INVENTORY &
ASSESSMENT

DECEMBER 31, 2014

A guide for the
development of
wastewater facilities
and projects in
Washington County, PA





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INTRODUCTION/METHODOLOGY

The Washington County Sewage Provider Inventory Study was created to better prepare for short and long term plans of the authority and municipal sewage providers in the county. It was developed in a Mixed-Method approach: combining techniques from quantitative and qualitative research to create a unique methodology that is tailored to specific sewage infrastructure need in the county. The plan was developed by working one-on-one with representatives of the providers, review of relevant studies, basic survey for each provider and interview with local, state and federal agencies which impact advancement of sewage needs in the county.

The study details the intricacies of each provider system and proposed projects as well as the interrelationship between the providers. Since 2005, the 45 active providers have completed over \$188,000,000 worth of project. The sewage providers are in the process of developing the planning and engineering for well over \$150,000,000 of construction projects over the next 5-8 years. The Wastewater Improvement Plan (WWIP) developed in the study is a five to eight-year capital needs assessment which can be used to help steer local, state and federal funding sources to future projects.

The Washington County Commissioners have invested considerable financial and planning resources to assist the providers in advancing sewage projects. This funding complimented the state and federal government efforts to improve infrastructure over the last 10 years. The combined efforts made it possible to advance the projects at an affordable customer rate over the aforementioned time period. These efforts provided sewage to over 7,000 new customers.

There are 10-15 high priority capital projects remaining in the county addressing high density village areas (100-300 residents) that primarily have malfunctioning or no septic systems. Two-thirds (2/3) of the identified projects are to repair or replace older deteriorating systems. It is apparent that this will be an on-going issue as many of the systems are well over 50 years old and experiencing various wet weather issues. Advancement of many of the projects will be contingent on availability of local, state and federal grant or created financing.

This plan will be incorporated into the County Comprehensive Plan as a working document updated as projects advance. It is our hope that it not only projects the needs of our sewage providers but can be used to exemplify the funding needs across the state.

ACKNOWLEDGEMENT



The Washington County Sewage Provider Inventory and Development Plan was prepared by the Washington County Planning Commission under the auspices of the Washington County Board of Commissioners. The County Commissioners would like to thank all those who participated in the development of the Plan. The Plan was a combined effort of the County, State and Federal agencies, sewage providers and staff and participating wastewater engineering firms.

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ACKNOWLEDGEMENT



Washington County Sewage Providers with Service Communities

Multi County (+)

Portions of (P)

20. Midway Sewage Authority (MSA)
 - Midway
 - Cecil, Mt. Pleasant, Robinson, Smith (P)
21. Mon Valley Sewage Authority (MVSA) (+)
 - Donora
 - Monessen
 - Carroll (P)
22. Mount Pleasant Township Township Municipal Authority (MPTMA)
 - Mt. Pleasant
 - Cecil (P)
23. Municipal Authority of the City of Monongahela (MACM)
 - Monongahela City
 - Carroll (P)
24. New Eagle Municipal Sewage Authority (NEMSA)
25. North Strabane Township Municipal Authority (NSTMA)
26. Peters Creek Sanitary Authority (PCSA)
 - Finleyville
 - Nottingham
 - Peters
 - Union
27. Peters Township Sanitary Authority (PTSA)
 - Peters
28. Pigeon Creek Sanitary Authority (PCSA)
 - Bentleyville
 - Cokeburg
 - Ellsworth
 - Fallowfield, North Bethlehem, Somerset (P)
29. South Franklin Township
30. South Strabane Township Municipal Authority
31. Union Township
32. Vestaburg-New Hill Joint Authority (VNHJA)
 - East Bethlehem, Centerville (P)
33. Washington East Washington Joint Authority (WEWJA)
 - Washington City
 - East Washington
 - South Strabane, Canton, North Franklin, Chartiers, (P)
34. West Pike Run Township Municipal Authority (WPRTMA)



DEFINITIONS

**** in context of the document ****

CAPITAL MAINTENANCE PROJECTS - A complex, large-scale project involving planning, permitting and construction. Directly related to the rehabilitation or major maintenance of existing wastewater facilities including wet-weather related projects. The project funding will be a non-recurring expenditure.

CAPITAL PROJECT - A complex, large-scale project involving planning, permitting and construction. Directly related to Act 537 Sewage Facility Planning, primarily related to the extension of an existing system or new sewage facilities, to serve unsewered areas. The project funding will be a non-recurring expenditure.

COMBINED SEWER OVERFLOW (CSO) - An intermittent overflow, or other untreated discharge from a municipal combined sewer system (including domestic, industrial and commercial wastewater and Stormwater) which results from a flow in excess of the dry weather carrying capacity of the system.

<http://www.pa.code.com/secure/data/025/chapter94/s94.1.html>

CORRECTIVE ACTION PLAN (CAP) - A plan and schedule developed by the permittee of a sewerage facility which has an existing or projected overload. A CAP establishes actions needed and a schedule to reduce the overload and provide needed capacity.

<http://www.pacode.com/secure/data/025/chapter94/S94.1.html>

EQUIVALENT DWELLING UNITS (EDU's) - are units of measure that standardize all land use categories (housing, retail, office, food service, etc.) to the level of wastewater demand created by one single-family dwelling unit.

LONG TERM CONTROL PLAN (LTCP) - Planning document primarily developed to eliminate or limit Combined Sewage Overflows. Federally mandated through the Clean Water Act.

SANITARY PROVIDER - Typically a Municipal Authority or Municipality.

SANITARY SEWER OVERFLOW (SSO) - An intermittent overflow of wastewater, or other untreated discharge from a separate sanitary sewer system (which is not a combined sewer system), which results from a flow in excess of the carrying capacity of the system or from some other case prior to reaching the headworks of the plant.

<http://www.pa.code.com/secure/data/025/chapter94/s94.1.html>



DEFINITIONS *(continued)*

**** in context of the document ****

SEWAGE FACILITY PLAN (SFP) - "Official Plan" means a comprehensive plan for the provision of adequate sewage systems adopted by a municipality or municipalities possessing authority or jurisdiction over the provision of such systems and submitted to and approved by the State Department of Environmental Resources as provided herein.

<http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-52064/Act%20537%20of%201965.pdf>

WASTEWATER IMPROVEMENT PLAN (WWIP) - Active list of wastewater projects advanced through planning which are planned to be permitted and constructed in the next (5) years. Scheduled years will be contingent of serving financing and grant. The WWIP is broken into two (2) categories.

WWIP - Capital

WWIP - Capital Maintenance

WASTEWATER/SEWAGE PLANNING - Planning for a wastewater project based on State and/or Federal regulations and requirements.

Reference Types

Act 537 Official Sewage Facilities Planning (SFP)

Long Term Control Plan (LTCP)

Corrective Action Plan (CAP)

ADDITIONAL ACRONYMS:

WWTP - WASTEWATER TREATMENT PLANT

STP - SEWAGE TREATMENT PLAN

I/I - INFILTRATION AND INFLOW

O/M - OPERATION AND MAINTENANCE

WCSP INVENTORY SHEET BACKGROUND

2014

BACKGROUND

Act 537 Planning

In 1972, Washington County adopted a county-wide Act 537 Sewage Facilities Plan. The Plan developed policies and recommendations to provide a sound basis for sewage facility planning in the County. The Plan developed a proposal for the creation or improvement of 35 municipal or multi-municipal sewerage systems throughout the County, concentrating on urbanized and potential growth areas.

The objectives of the 1972 plan are still relevant today. The majority of short- and long-term plans of the current sewage providers laid out in this document are consistent with the 1972 Plan.

1972 Sewage Plan Objectives

The objectives of the Washington County Sewage Facilities Plan are:

- to protect the streams in the County from pollution from residential, commercial and industrial sources.
- to alleviate and prevent public health problems that could result from inadequate or non-existent sewerage systems.
- to plan and develop the lowest cost and most efficient sewerage systems regardless of municipal boundaries,
- to utilize and expand existing sewerage systems where possible.
- to insure that the construction of sewerage systems is coordinated with the development of water lines and water systems,
- to promote the economic use of land and financial resources by planning new development in areas which are closest to existing sewerage systems,
- to foster cooperation between local municipalities in the development of integrated sewerage systems, and
- to coordinate the plans of the municipalities with those of the County, the Region and the Commonwealth.

The 1972 Plan was developed, in part, to provide guidance to Washington County municipalities for future development of their individual sewage facilities plans. The responsibility for SFP development falls on the municipalities in cooperation with the provider/authorities. The 2005 Washington County Comprehensive Plan, Chapter 5, Public Infrastructure Section contains a brief overview and update of the 35 sewerage districts developed in the 1972 plan.

From 1972-2005 there were approximately 38 municipal SFP's completed many of which have been implemented or are currently advancing. Since the County Comprehensive Plan was adopted, there have been an additional 27+ municipal SFP's developed for various service areas throughout our municipalities. Prior to 2005, the majority of the SFPs were developed as the planning tool to extend or provide sewerage systems to higher density residential areas (300-700 residences) which previously did not have public sewers.

WCSP INVENTORY SHEET EXISTING CONDITIONS

2014

EXISTING CONDITIONS

Targeted Areas for Investment

The majority of the remaining unsewered areas are designated “Village Development-Targeted Areas for Investment (VD-TAI) or extensions into higher density Transition Areas (TA-TAI) as identified in the County Comprehensive Plan. These areas primarily relied on malfunctioning on-lot systems or a combination of on-lot and wildcat systems which typically provide no sewage treatment.

The remaining unsewered VD-TAI typically have limiting factors such as topography, distance to existing conveyance system, small number of EDU/residents, payer-to-debt ratio, etc., which make these projects very expensive and difficult to advance. Despite these obstacles, many of these projects are advancing through planning and will need to secure substantial grants (60-70%) to make them affordable to the residents and businesses in the remaining unsewered VD- or TA-TAI’s.

There are approximately 11 TAI locations remaining in the County which do not have public sewage or treatment plants. They are:

VD-TAI	Municipality	EDU
Lawrence	Cecil Township	336
Lagonda (Route 18)	South Franklin Township	314
Hickory	Mt. Pleasant Township	290
Hendersonville	Cecil Township	190
Scenery Hill*	North Bethlehem Township	137
VanVoorhis/Griffith Manor	Fallowfield Township	117
Taylorstown*	Blaine Township	106
Independence	Independence Township	103
Westland	Mt. Pleasant Township	102
Southview*	Mt. Pleasant Township	92
West Middletown+	W. Middletown Borough	75

* - on hold
 + - no planning
 (Please refer to provider inventory sheets.)

Long Term Control Plans

More recently, several of the SFP have been developed to facilitate implementation of the four (4) federal Long Term Control Plans (LTCP) and Corrective Action Plans (CAP) in the County that the providers are mandated to implement. Implementing the LTCP and CAP will have a major impact on monthly rates of the authorities.

The four (4) county LTCP are:

	Phase
Authority of the Borough of Charleroi	Planning/Construction
McDonald Sewage Authority	Construction Completed
Monongahela City Municipal Authority	Planning/Construction
Mon Valley Sewage Authority	Planning/Construction

Please see the provider’s inventory sheets for specific LTCP information. The four authorities are in various phases of implementing their LTCP, from finishing construction to implementing phased construction over the next 10 years.



Completed Projects and Funding Since 2005

Since 2005, the Washington County Commissioners have placed a major emphasis on improving and upgrading public infrastructure in Washington County. This has been consistent with the state emphasis on the keystone Principles for Growth, Investment, and Resource Conservation which also place an emphasis on maintaining and upgrading our existing infrastructure. With state sewer and water infrastructure programs such as H2O, Pennworks, PENNVEST (ARRA) and Growing Greener, coupled with county funding sources (LSA, County allocation of Growing Greener, and Act 13), Washington County providers have been able to construct over 25 Capital and Capital Maintenance sewage projects since 2005. The fourteen capital projects expanded public sewers to over 6,622 unsewered residents and businesses. Many of these projects would not have advanced due to financial constraints without the funding commitment of the County Commissioners and the numerous state/federal programs. (Please see the charts below and on following page). Many of these projects received well over 50 percent in grant, in order to be affordable to the sewage customer base. Additionally there have been a substantial number of projects under one million dollars that are not reflective in these numbers.

COUNTY TOTALS BY PROJECT TYPE

ALL PROJECT TYPES (over \$1,000,000)

# of Projects	Total Project Cost	Total Loan	Percent Loan	Total Grant	Percent Grant	Capital Projects EDU
25	\$188,640,575	\$103,807,285	55%	\$80,986,146	43%	6622

CAPITAL MAINTENANCE PROJECTS (over \$1,000,000)

# of Projects	Total Project Cost	Total Loan	Percent Loan	Total Grant	Percent Grant	EDU
11	\$54,260,450	\$34,551,900	64%	\$19,798,048	36%	N/A

CAPITAL PROJECTS (over \$1,000,000)

# of Projects	Total Project Cost	Total Loan	Percent Loan	Total Grant	Percent Grant	Capital Projects EDU
14	\$134,380,125	\$69,255,385	51%	\$61,188,098	45%	6622

CAPITAL PROJECT COST PER EDU

Total Average Cost	\$ 20,050
Total Average Loan	\$ 10,333
Total Average Grant	\$ 9,129

Due to soft cost some project cost analysis will not equal 100%
 Please see inventory sheets for additional historic projects.
 CP - Capital Projects CM - Capital Maintenance Projects



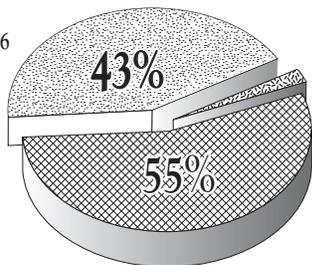
Sewer Projects Since 2005 - Debt to Grant Ratio

Total Project	Project Type	Total Project cost	Total Loan	Percent Loan	Total Grant	Percent Grant	EDU
Completed 2005-2013							
Vestaburg/New Hill Joint Authority Sanitary Sewer System	CM	\$4,172,209	\$0	0%	\$4,172,209	100%	
Canton/Chartiers Townships Sewer System Route 18 Corridor	CP	\$5,620,000	\$2,027,008	36%	\$3,592,912	64%	266
Center-West JSA Sanitary Collection and Treatment System	CP	\$21,283,660	\$9,012,000	42%	\$12,271,660	58%	1028
Midway Treatment Plant and Collection System (\$3,482,000 tap-inn 19%)	CP	\$18,110,000	\$8,781,000	48%	\$5,846,000	32%	1400
Cross Creek/Independence Townships	CP	\$15,419,000	\$3,675,000	23%	\$11,744,000	76%	611
Donora Place Plan Unsewered Area	CP	\$2,600,000	\$261,000	10%	\$2,339,000	89%	182
Pigeon Creek Sewage Authority Sewer rehab/plant upgrade	CM	\$3,900,000	\$3,280,000	84%	\$620,000	15%	
Chartiers Parallel Interceptor	CM	\$710,000	\$210,000	30%	\$500,000	70%	
Carroll Township Authority - Phase III Toll 43 Corridors Sanitary Sewer Rehabilitation	CM	\$1,884,933	\$1,501,154	79%	\$383,779	21%	
McDonald Sewage Authority - Sewer Separation Project	CM	\$5,180,000	\$4,221,746	82%	\$958,254	18%	
Union Township - Erama Sanitary Sewer Project	CP	\$4,125,297	\$1,841,089	44%	\$2,168,650	52%	240
Hanover Township SA (Washington County) Wastewater Capital Improvement Project	CP	\$20,218,000	\$12,165,172	60%	\$8,052,824	40%	650
MVSA CSO/ITCP Phase I Donora Borough	CM	\$4,860,000	\$4,850,000	99%	\$100,000	1%	
California Borough - STP - and extension improvements	CM	\$12,500,000	\$7,500,000	60%	\$5,000,000	40%	
Cecil Township MA - Millers Run Project	CP	\$20,090,566	\$13,645,666	67%	\$6,444,900	33%	1100
North Strabane Township MA Linden Creek/Fifeshire Sewer Project	CP	\$7,405,000	\$4,945,000	67%	\$2,460,000	33%	220
Charleroi Borough - Stormwater Separation System	CM	\$7,764,502	\$7,139,000	92%	\$625,000	8%	
PTSA Brush Run Treatment Plant	CM	\$1,500,000	\$900,000	60%	\$600,000	40%	
West Alexander Sewage Plant/Collection	CP	\$3,767,643	\$1,314,091	35%	\$2,453,552	65%	268
Amwell Township Waynesburg Rd. Sewer Project	CP	\$2,750,000	\$400,000	15%	\$2,012,000	73%	88
WEWJA - Wastewater Treatment Plant and Chartiers Creek Interceptor Upgrades	CM	\$2,600,000	\$2,150,000	83%	\$450,000	17%	
Lower Ten Mile JSA Phase II System Rehabilitation	CM	\$9,188,806	\$2,800,000	31%	\$6,388,806	69%	
North Strabane Township Sewer Extensions (est.) Route 519, Rt. 19 Pump Station, Thomas 84 Rd., Linden Creek	CP	\$7,675,000	\$7,533,400	98%	\$141,600	2%	230.
Burgettstown-Smith Twp. JSA- Plum Run Sewer Extension	CP	\$1,654,959	\$1,659,959	100%	\$0	0%	51
Chartiers Township - Midland Sewer System Project	CP	\$3,661,000	\$2,000,000	56%	\$1,661,000	45%	288

DEBT TO GRANT

Total Project Cost \$188,640,575

GRANT
\$80,986,146

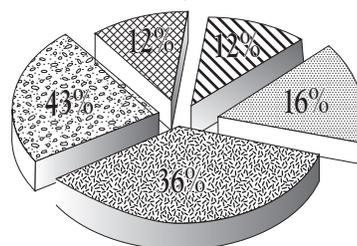


OTHER
\$3,847,144
2%

LOAN
\$103,807,285

CHART 3 - PROJECT COSTS

Total Projects since 2005 - 25



- Less than \$2 million (Total projects - 4)
- \$2 million to \$5 million (Total projects - 9)
- \$5 million to \$10 million (Total projects - 6)
- \$10 million to \$20 million (Total projects - 3)
- \$20 million + (Total projects - 3)

SYSTEMS INVENTORY

The Washington County Sewage Provider Inventory Study was created to better prepare for the short-term and long-term projects of the sewage providers in the county. A sewage provider in Washington County is typically a municipal authority or municipality with one non-public owner (e.g., PA American Water owns the Claysville-Donegal Sewage System.) There are 26 authorities and approximately 20 municipalities which own and operate the roughly 1,042 miles of sewer conveyance system, 133 pump stations and 30 WWTPs. See Table 2 (System Inventory, page 7) for details. Many of the systems ownership overlaps between the municipal authorities and municipalities so it is difficult to determine the exact number of active providers.

COUNTY TOTALS SYSTEM INVENTORY (Table 2)

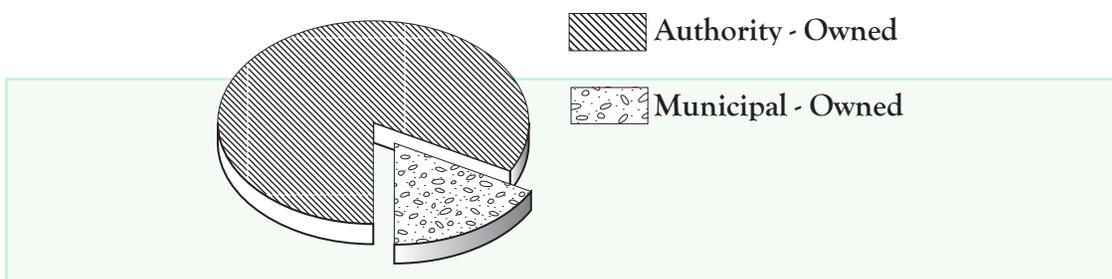
# of Providers	Service Areas	Total WWTP/STPs	Total Miles of Conveyance...		Total Pump Stations	Total Customers
			...for Authority	...for Municipality		
Est. 45	See Table 2	30	871.65'	180.70'	134	75,661

Totals do not reflect privately owned systems

Eight (8) of the authorities provide treatment and interceptor conveyance for 13 municipal providers. The municipal providers convey sewage through the municipal-owned sewage conveyance system to the authority's system and, ultimately, to the authority treatment facility. Many of the municipal providers will actively develop projects through planning and construction. When completed, the system is turned over to the Authority who will then own and maintain the system.

CHART 2 - Conveyance by Ownership in Miles

Total Miles - 1,042.35 (Estimated)



As described in this narrative, Washington County has an ever-evolving, complex network of sewage providers. The number of active providers will change from year to year but should stay around 45, based on projects completed and the future 10 year plans of all the providers.

FINANCIAL INVENTORY

The System and Financial Inventory information was developed to act as a reference source for the various entities related to sewage planning funding and management. Through the interview process with State and Federal agencies, engineers and providers, it was identified that this type of information would be a valuable tool used in many aspects of sewage planning, funding and management. The System and Financial Inventory was not necessarily developed to compare individual system and financial statistics between authorities, but the relationship between financial and system statistics to their overall systems.

The wastewater professionals representing our providers have had minimal comparisons to help educate the public and board members. Using the information provided in Table 2 (Systems Inventory - page 7) and Table 3 (Financing Inventory - page 8), combined with the sewage inventory sheets, the professionals should be able to build scenarios based on similar providers/authorities in the County. The information will assist wastewater engineers, managers and boards in making better decisions on the long-term management of the provider's wastewater system.

For example, comparing the monthly rate of an Authority with 14,000 customers to a provider with 610 customers is not a valid comparison. Spreading debt service and operation/maintenance cost over 14,000 customers as opposed to 610 customers will show a large difference in monthly rates. The information provided in the inventories will help providers develop accurate comparisons based on the systems and associate finances of each provider to those that have similar attributes.

COUNTY TOTALS - FINANCIAL INVENTORY (Table 3)

Average per EDU customer			Total per providers		
Monthly Rate	Debt Service	O/M Treatment	Debt	Budgets	EDU Customers
\$41.27	\$20.07	\$27.03	\$149,163,428	\$36,954,980	75,537

Totals do not reflect privately owned systems

TABLE 2 - SYSTEM INVENTORY

Avg. Monthly Rate (Per Customer)
Avg. Monthly Rate (Per Authority)
estimated MOC *



Provider	Service Area	WWTP/STP (public)	Miles of Conveyance (estimated *)		pump stations	No. of customers	
			Authority	Municipality			
Beallsville Borough		0		3	2	186	
Burgettstown-Smith JSA	Burgettstown Borough	1	50				
	Smith Township						
	Mount Pleasant Township						
California Municipal	California Borough	1		16	6	1,577	
	Coal Center Borough						
Canonsburg-Houston JSA	Canonsburg Borough	1	10	37	2	14,181	
	Houston Borough						
	Chartiers Township*			6			
	Cecil Township*						
	North Strabane Township*						
Carroll Township Authority	Donora Borough	0	42		15	2,500	
	Carroll Township						
Cecil Township Municipal Authority	Cecil Township (Cherrybrook STP and Tedori STP)	3	50		8	3,163	
	Cecil Township (Millers Run STP)						
Center-West Joint Sewage Authority	Centerville Borough	1	25		4	1,100	
	West Brownsville Borough						
Centerville Sanitary Authority	Centerville Borough	1	17		2	614	
	Beallsville Borough						
Authority of the Borough of Charleroi (ABC)	Charleoi Borough	1	6	18*	8	4,319	
	North Charleroi Borough			6*			
	Speers Borough			5*			
	Dunlevy Borough			2*			
	Twilight Borough			1*			
	Fallowfield Township			46.7			
				4			
Chartiers Township	WEWJA	0		0	0	265	
	CHJA	0		30		1,822	
Claysville-Donegal (PA American)		1	12		1	500	
Donegal Township - West Alexander Village	Donegal Township	1	10		3	289	
East Bethlehem Sanitary Authority	V-NHJSA	1	18		3	725	
	East Bethlehem Township						
Hanover Township Sanitary Authority	Hanover Township (Paris Area)	1	14.25		3	650	
	Hanover Township (Florence Area)						
Independence Cross Creek Sewage Authority	Independence Township	1	20		1	611	
	Cross Creek Township						
Lower Ten Mile Sewage Authority	Greene County	1	2		6	1,450	
	Washington County						
Marianna-West Bethlehem JSA	Marianna Borough	1	25		2	430	
	West Bethlehem Township						
McDonald Borough		0	10.4		0	992	
Mid Mon Valley WPC Authority	Elco Borough	1	5.5	3*	6	1,001	
	Roscoe Borough			6*			
	Stockdale Borough			4*			
	Allenport Borough			4*			
Midway Sewage Authority	Midway Borough	1	30		4	1,400	
	Smith Township						
	Robinson Township						
	Mount Pleasant Township						
	Cecil Township						
Mon Valley Sewage Authority	Monessen Borough	1	5.5	20	6	2,000 (Wash. Co.)	
	Donora Borough						
	Carroll Township						
Municipal Authority of the City of Monongahela	MCAM	1	5		3	2,057	
	City of Monongahela	0		15	0		
New Eagle Sewage Authority	New Eagle Borough	1	15		3	908	
North Strabane Municipal Authority	North Strabane Township	2	98		11	4,600	
Peters Creek Sanitary Authority	Peters Township	0	96		2	3,900	
	Nottingham Township						
	Union Township						
	North Strabane Township						
	Finleyville Borough						
Peters Township Sanitary Authority	Peters Township	2	120		8	5,929	
Pigeon Creek Sanitary Authority	Bentleyville Borough	1	43		0	2,517	
	Cokeburg Borough						
	Ellsworth Borough						
	Fallowfield Township						
	North Bethlehem Township						
	Somerset Township						
South Franklin Township	South Franklin Township	1		2	0	183	
South Strabane Municipal Authority	South Strabane Township	0			0		
Union Township	Union Township	0		5	1	240	
Vestaburg-New Hill Joint Authority	Centerville Borough	0	7		2	272	
	East Bethlehem Township*						
Washington-East Washington Joint Authority	Washington City	1	130		10	14,288	
	East Washington Borough						
	South Strabane Township						
	North Franklin Township						
	Canton Township						
	Chartiers Township						
Amwell Township							
West Pike Run Municipal Authority	West Pike Run Township	2	5		1	232	
Total		30	871.65'	180.70'	129	75,661	



TABLE 3 - FINANCIAL INVENTORY

Provider	Service Area	Monthly Rate	Debt Service	O/M Treatment	Total Debt	Annual Budget		
Beallsville Borough		\$45.00	\$0	\$22.00	\$0	\$100,440		
Burgettstown-Smith JSA	Burgettstown Borough	\$45.00	\$20.00	\$25.00	\$11,862,040	\$1,423,194		
	Smith Township							
	Mount Pleasant Township							
California Municipal	California Borough Coal Center Borough	\$42.00	\$20.00	\$20.00	\$7,190,000	\$1,857,500		
Canonsburg-Houston JSA	Canonsburg Borough	\$20.70	\$14.40	\$6.30	\$6,100,000	\$3,341,000		
	Houston Borough							
	Chartiers Township*							
	Cecil Township*							
	North Strabane Township*							
Carroll Township Authority	Donora Borough Carroll Township	\$68.60	\$18.00	\$20.80	\$400,000	\$2,500,000		
Cecil Township Municipal Authority	Cecil Township (Cherrybrook STP and Teodori STP)	\$38.00	\$0	\$38.00	\$13,951,084	\$2,650,289		
	Cecil Township (Millers Run STP)	\$51.00	\$11.25					
Center-West Joint Sewage Authority	Centerville Borough West Brownsville Borough	\$55.00	\$35.00	\$20.00	\$5,857,000	\$170,000		
Centerville Sanitary Authority	Centerville Borough	\$39.00	\$2.00	\$37.00	\$36,090	\$300,000		
	Beallsville Borough							
Authority of the Borough of Charleroi (ABC)	ABC	\$15.00	\$5.87	\$9.13	\$10,044,275	\$2,500,000		
	Twilight Borough							
	North Charleroi Borough							
	Speers Borough							
	Dunlevy Borough							
	Charleroi Borough						N/A	\$6,155,724
	Fallowfield Township						\$40.00	\$35.00
Chartiers Township	WEWJA	\$31.00						
	CJA	\$33.00						
Claysville-Donnegal (PA American)	Claysville Borough Donnegal Township	\$47.00	Tariff		\$825,000			
Donnegal Township - West Alexander Village	Donnegal Township	\$31.00	\$6.00	\$25.00	\$1,375,242	\$203,000		
East Bethlehem Township Municipal Authority	V-NHJSA* East Bethlehem Township	\$63.00	\$27.00	\$27.00	\$5,500,000	\$20,000		
Hanover Township Sewer Authority	Hanover Township (Paris Area)	\$75.00 - \$80.00	\$51.00	\$24.00	\$10,044,275	\$700,000		
	Hanover Township (Florence Area)	\$78.00	\$43.00	\$32.00				
Independence-Cross Creek Sewage Authority	Independence Township Cross Creek Township	\$55.00	\$27.80	\$27.20	\$3,600,000	\$346,000		
Lower Ten Mile Sewer Authority	Greene County Washington County	\$45.00	\$10.00	\$35.00	\$2,913,308	\$833,700		
Marianna -West Bethlehem JSA	Marianna Borough West Bethlehem Township	\$38.00	\$0	\$38.00	\$0	\$176,000		
McDonald Borough		\$51.00	\$24.70	\$26.30	\$5,027,000	\$762,462		

Avg. Monthly Rate (Per Customer)
Avg. Monthly Rate (Per Authority)
estimated MOC*

TABLE 5 CONTINUED ON NEXT PAGE



TABLE 3 - FINANCIAL INVENTORY (continued)

Provider	Service Area	Monthly Rate	Debt Service	O/M Treatment	Total Debt	Annual Budget
Mid Mon Valley WPC Authority	Elco Borough Roscoe Borough Stockdale Borough Allenport Borough	\$26.27	\$11.52	\$15.15	\$1,617,191	\$398,350
Midway Sewage Authority	Midway Borough	\$56.00	\$31.00	\$25.00	\$8,432,641	\$999,000
	Smith Township					
	Robinson Township					
	Mount Pleasant Township					
	Cecil Township					
Mon Valley Sewage Authority	Monessen Borough Donora Borough Carroll Township	\$43.00	\$14.24	\$28.76	\$14,670,000	\$3,395,000
Municipal Authority of the City of Monongahela	MACM	\$46.74	\$15.58	\$31.16	\$7,729,655	\$2,133,070
	City of Monongahela				\$200,000	
Mount Pleasant Municipal Authority						
New Eagle Sewage Authority	New Eagle Borough	\$51.00	\$30.00	\$21.00	\$4,100,290	\$590,175
North Strabane Municipal Authority	North Strabane Township	\$40.00	\$8.90	\$31.10	\$8,505,000	\$2,600,000
Peters Creek Sanitary Authority	Peters Township	\$35.00	\$8.00	\$27.00	\$10,645,000	\$1,600,000
	Nottingham Township					
	Union Township					
	North Strabane Township					
	Finleyville Borough					
Peters Township Sanitary Authority	Peters Township	\$36.93	\$10.33	\$24.41	\$3,300,000	\$2,600,000
Pigeon Creek Sanitary Authority	Bentleyville Borough	\$35.00	\$19.05	\$16.00	\$4,390,000	\$663,800
	Cokeburg Borough					
	Ellsworth Borough					
	Fallowfield Township					
	North Bethlehem Township					
	Somerset Township					
South Franklin Township	South Franklin Township	\$40.00	\$20.00	\$20.00	\$260,000	
South Strabane Municipal Authority		\$15.00			\$0	
Union Township		\$62.00	\$29.00	\$33.00	\$1,841,089	\$86,000
Vestaburg-New Hill Joint Authority	Centerville Borough East Bethlehem Township*	\$45.00	\$0	\$45.00	\$0	\$140,000
Washington-East Washington Joint Authority	Washington City	\$15.00			\$5,000,000	\$3,500,000
	East Washington Borough	\$15.00				
	South Strabane Township	\$15.00				
	North Franklin Township	\$15.00				
	Canton Township	\$52.00				
	Chartiers Township	\$15.00				
	Amwell Township					
West Pike Run Township Municipal Authority	West Pike Run Township	\$30.00	\$0	\$30.00	\$0	\$86,000
	Abraham Plant	\$40.00		\$40.00		

Avg. Monthly Rate (Per Customer)
Avg. Monthly Rate (Per Authority)
estimated MOC*

TOTAL

\$160,299,129 \$37,254,980

PLANNED PROJECTS

WASTEWATER IMPROVEMENT PLANS

To help better understand the overall flow and funding needs of sewage projects in the County, the Waste Water Improvement Plan (WWIP) for Washington County was developed. The WWIP is a combined list of all the short-term (0-5 years) active projects in the County. The WWIP is broken into two (2) categories: WWIP - Capital Projects (WWIP - Capital) and WWIP - Capital Maintenance Projects (WWIP - CM).

WWIP - Capital

Year-to-year estimated list of all capital projects that will expand existing system. (Please see Table 4 on page 11 of this Study)

WWIP - Capital Maintenance

Year-to-year estimated list of all capital maintenance projects typically associated with capacity, wet weather issues, and/or replacement of deficient or aging systems. Often associated with LTCP or CAPs. (Please see Table 5)

The WWIP is not a fiscally constrained projection; which means that many of the projects will need to secure substantial grants or favorable loan terms to advance to the project as scheduled. The WWIP-Capital has an estimated \$55,308,487 worth of projects which may be constructed over the next 5+ years, providing public sewers to an additional 2,300 Washington County residents and businesses.

The WWIP-CM has an estimated \$96,644,591 worth of project which may be constructed over the next 5 years. Many of the projects are due to the implementation of mandated LTCPs of CAPs. Construction cost will cause substantial monthly rate increases for residents and businesses. In many cases the monthly rate will triple over the next 5-10 years.

PLANNED PROJECTS TOTALS BY PROJECT TYPE (over \$1,000,000)

WWIP - ALL PROJECTS

# of Projects	Total Project Cost	EDU'S	
		Capital	Capital Maintenance
47	\$204,404,084	2298	N/A

WWIP - CAPITAL MAINTENANCE PROJECTS

# of Projects	Total Project Cost	EDU	Estimated Grant Total Needed
25	\$155,944,591	N/A	*Determined as Project develops

WWIP - CAPITAL PROJECTS

# of Projects	Total Project Cost	EDU	Estimated Grant Total Needed
22	\$48,459,493	2298	\$22,545,068



**TABLE 4A- WASTEWATER IMPROVEMENT PLAN (WWIP)
CAPITAL PROJECTS*
ACTIVE ** (0-5 YEAR TIME FRAME)**

Provider	Service Area	Project	537?	Permit	Construction	Cost	EDU	Needed Grants	
Burgettstown-Smith JSA	Burgettstown Borough								
	Smith Township	Plum Run Extension	2008	2013	2014	\$1,600,000	51	Secured	
	Mount Pleasant Township								
Canonsburg-Houston JSA	Canonsburg Borough								
	North Strabane Township	See NST							
	Houston Borough								
	Cecil Township	See Cecil							
	Chartiers Township	See Chartiers							
Cecil Township Municipal Authority	Lawrence	Lawrence Sewage Project (336 New EDU)	2014	2014-15	2017-18	\$8,698,270	804	\$2,940,800 Secured \$1,500,000 Needed	
Center-West JSA	Centerville Borough	Phase III- Extension Malden/Binnstown	2002	2013-14	2015-16	\$1,824,525	50	Secured	
	West Brownsville Borough								
Chartiers Township		Midland Area Ext.	2011	2013	2014-15	\$2,800,000	288	Secured	
		McClane Farm Road Ext.	2014	2015	2015-16	\$1,200,000	60	\$500,000	
Hanover Township Sewage Authority	Hanover Twp. (Paris Area)	Whipper Drive Ext.					7		
	Hanover Twp. (Florence Area)	Steubenville Pike Ext.	2013	2014	2015-16	\$1,200,000	35	\$700,000	
Independence - Cross Creek Sewage Authority	Independence Township	Village of Independence Ext.	2010	2014	Contingent on Grant	\$3,288,900	103	\$2,849,000	
	Cross Creek Township	Village of Cross Creek Ext.				\$2,114,100	33		
Marianna West-Bethlehem JSA		Fairfield Extension	2015	2015	2016-17	\$1,670,000	50	\$1,250,000	
Midway Sewage Authority	Midway Borough								
	Smith Township								
	Robinson Township	980 Corridor	2002	Contingent on Grant	Contingent on Grant	\$3,894,442	120	\$2,900,000	
	Mt. Pleasant Township								
Mount Pleasant		Southview and Antil Street Conveyance System	2002	2014-15	2016-18	\$19,262,250	570	\$1,250,000 Secured	
		Westland Conveyance and STP Project						\$7,314,068 Needed	
		Hickory Conveyance System							
North Strabane Municipal Authority	North Strabane Township	Thomas Road Extension	2000	2013-14	2015	\$2,042,000	200	\$3,932,000	
		Linden Creek Extension	2000	2013-14	2015	\$2,740,000			
		Rt. 519 Sewage Extension	2000	2013	2014-15	\$2,050,000			
South Franklin Township		Rt. 18/Airport SA Phase I	2014	2014-15	2015-16	\$1,750,000	89	\$1,100,000	
		Rt. 18 Franklin Manor Phase III	2014	2014-15	2015-16	\$774,000	40	\$500,000	
						TOTAL COST FOR ALL PROJECTS	\$55,308,487	2298	\$22,545,068 NEEDED

* Scheduling will vary based on Funding and Grant availability

** See website for complete list of Provider Information

PLEASE CHECK WITH PROVIDER FOR UPDATED PROJECT SCHEDULING AND FINANCIAL INFORMATION.

NEEDED GRANT

For Capital projects, needed grant is an estimate based on securing enough grant to end up with a monthly customer rate of \$50 - \$55. The monthly rate includes an O/M rate of \$25 and estimated debt service of \$20 - \$35. These figures are rough estimates; actual needed grant will be determined for each project as the project develops.

**TABLE 4 - WASTEWATER IMPROVEMENT PLAN
WET WEATHER AND CAPITAL MAINTENANCE PROJECTS*
ACTIVE** (0-5 YEAR TIMEFRAME)**

2 of 2

Provider	Service Area	Project	Planning	Permit	Construction	Cost
California Municipal	California Borough	New Wastewater Treatment Facility	2009	2013	2014-15	\$6,500,000
		Peach Alley Sanitary Sewer Renovation	2012	2013	2013-14	\$512,000
	Coal Center Borough	Coal Center Borough Station	2012	2014	2014-15	\$350,000
Canonsburg-Houston JSA	Canonsburg Borough	Phase I WWTP Upgrade	2010	2013	2014-15	\$20,000,000
	North Strabane Township					
	Houston Borough					
	Cecil Township					
	Chartiers Township					
Carroll Township Authority	Donora Borough	Upgrade to Eldora Pump Station	CAP	2014	2015	\$600,000
	Carroll Township	CAP Implementation Phase III	2011	2011-12	2013-14	\$940,000
Cecil Township Municipal Authority	Cecil Township (Cherrybrook STP and Teodori STP)	Sandlewood Drive Pump Station Elimination	2013	2013	2013-14	\$362,086
	Cecil Township (Millers Run STP)	Timber Crest Pump Station Elimination	2013	2013	2013-14	\$128,713
Centerville Sanitary Authority		Richeyville WWTP Aerobic Digestion Improvement Project	N/A	2014	2015-16	\$514,300
Authority of the Borough of Charleroi (ABC)	ABC	Speers Dunlevy CSO Management Facility	LTCP	2014	2014-15	\$9,900,000
	Charleroi Borough					
	North Charleroi Borough					
	Speers Borough					
	Dunlevy Borough					
	Twilight Borough					
Fallowfield Township						
Claysville-Donegal (PA American)		Wet Weather Storage Tank	2013	2014	2014-15	\$825,000
Mid Mon Valley WPC Authority	Elco Borough	Interceptor/Pump Station #5 Replacement to Mon Valley Industrial Park	N/A	2014	2015-16	\$1,372,492
	Roscoe Borough					
	Stockdale Borough					
	Allenport Borough					
Mon Valley Sewage Authority (MVSA)	MVSA	Phase II LTCP	2008	2013-14	2015-2020	\$16,400,000
	Donora Borough	Donora Sewage Separation	2008	2013	2014-16	\$3,600,000
	Carroll Township					
Municipal Authority of the City of Monongahela		West Valley Interceptor Improvement	LTCP	2014	2015-16	\$2,200,000
New Eagle Sewage Authority		Capital Maintenance & I/I Removal	On-going	On-going	On-going	\$1,000,000
North Strabane Municipal Authority	North Strabane Township	Rt. 19 Pump Station Upgrade	2000	2013-14	2015	\$790,000
Peters Creek Sewage Authority	Peters Township	Venetia Road and Bower Hill Road Capacity Augmentation	2011	2014	2014-15	\$630,000
	Nottingham Township	PCSA Interceptor Refurbish	2011	2014	2015	\$640,000
	Union Township	Clairton MA-STP/Peters Creek Interceptor Upgrade	2014	2014-15	2016-18	\$10,400,000
	North Strabane Township					
Peters Township Sanitary Authority	Peters Township	Donaldson's Crossroads WPCP Upgrade	2012	2013-14	2015-16	\$23,300,000
		Oakwood Road/Giant Oak Interceptor Capacity Augmentation	2012	2014-15	2016-17	\$2,330,000
		Yearly Capital Improvements	On-going	On-going	On-going	\$700,000 (Annual)
Pigeon Creek Sanitary Authority	Bentleyville Borough Cokeburg Borough Ellsworth Borough Fallowfield Township North Bethlehem Township Somerset Township	Capital Maintenance of Collection System	On-going	On-going	On-going	On-going
Washington-East Washington Joint Authority	Washington City East Washington Borough South Strabane Township North Franklin Township Canton Township Chartiers Township	Chartiers Creek Interceptor Replacement	N/A	2014	2014-15	\$1,150,000

Grant will be determined for each project as the project develops.

TOTAL COST for all Projects

\$104,244,591

* Scheduling will vary based on Funding and Grant availability

** See website for complete list of Provider Information

PLEASE CHECK WITH PROVIDER FOR UPDATED PROJECT SCHEDULING AND FINANCIAL INFORMATION.

Conclusion and Recommendations

Over the last 10-15 years the Washington County Board of Commissioners have been proactive in assisting sewage providers in advancing wastewater projects from the planning stage and securing funding through permitting and construction. The intent of this document to develop a capital needs assessment and system inventory of wastewater providers in Washington County. The Plan will not only help to guide wastewater funding needs in our county but identifies many issues which our providers, their staff and engineers will have to mitigate in the upcoming years.

From the start it was evident that each wastewater provider is very diverse in their needs ranging from mitigating wet weather issues and maintaining aging malfunctioning plant and conveyance systems to providing public sewers for unsewered Targeted Areas of Investment as previously discussed. Overall, many of the providers have done an excellent job taking advantage of the historic funding levels which were available since 2005. County-wide, 25 capital wastewater infrastructure projects at a cost of over \$188,000,000 have been completed since 2005.

To satisfy the Clean Streams Act (State) and the Clean Water Act (Federal), mandated regulations and county development needs, similar historic County, State and Federal funding levels will need to continue. As in the past, most projects will need to secure over 45 percent in grants to be completed through construction, while maintaining an affordable monthly rate for customers.

General Recommendations:

- A Present and review the Washington County Sewage Inventory Study with State and Federal Legislators, Regulatory agencies and funding sources.*
- B Maintain and update the information developed in the study on the Washington County Planning Commission website (www.co.washington.pa.us)*
- C Contact providers when potential local, state and federal funding sources are announced, **concentrating on project specific opportunities.***
- D Create a sewage provider email address list to announce educational opportunities and promote better communication between providers and local, state and federal legislators and agencies.*
- E Work with DEP to promote the planning and advancement of Capital Sewage Projects in the Village Development - Targeted Areas of Investment.*
- F Coordinate and Prioritize projects to ensure funding opportunities are available and projects are not competing.*



County-wide Issues and Recommendations

1. The overall system is aging and requires substantial upgrades or complete replacement of the wastewater treatment plant and conveyance systems.

Recommendation:

1. **A** Provide educational opportunities for providers and municipalities concentrating on planning and funding for long term improvement upgrades of aging wastewater systems.
 1. **B** Identify and coordinate the use of federal and state funding opportunities for providers.
 1. **C** Coordinate wastewater improvements projects with other infrastructure (PennDOT, Columbia Gas of PA, water providers, etc.) improvement plan and construction. Primary goal is to limit project disturbances and optimize cost savings associated with restoration of project areas.
 1. **D** Educate county, state and federal officials as to the continued need for substantial grant and creative financial opportunities, which will be needed to advance wastewater Capital and Capital Maintenance projects in the County and Commonwealth.
2. The majority of remaining capital projects will need 50-70% of the total cost to be funded through grants (based on a \$50-\$55 monthly rate) to advance through construction.

Recommendation:

2. **A** Identify and coordinate the use of state and federal funding sources for providers.
 2. **B** Continue the proactive approach of assisting providers in planning and funding of wastewater projects in the County.
Example: The use of **Local Share Funds** and county allocated **Growing Greener Funds** as gap funding to make projects affordable.
 2. **C** Continue County Wastewater Planning Partners meetings with DEP, PENNVEST and RUS concentrating on affordable project development and funding.
3. The municipal systems are typically older with minimal information about condition and location of the conveyance systems. They are maintained reactively with no planned upgrades.

Recommendation:

3. **A** Develop educational and outreach programs for customer municipalities concentrating on Long Range planning for aging systems.
 3. **B** Promote consolidation planning between providers and customer municipalities.
 3. **C** Coordinate with Columbia Gas of PA Cross Bore Program to take advantage of mapping and video.
4. Many of the municipal providers have no direct operation and maintenance (O/M) monthly fee for yearly capital maintenance charged to customers.

Recommendation:



5. Due to the advancement of LTCP, monthly rates throughout the Monongahela Valley will substantially increase over the next 10 years. Attracting and retaining businesses and residents to the valley could be impacted by advancement of LTCP.

Recommendation:

5. A Explore creative financing opportunities using county, state and federal grant resources to help maintain affordable monthly rates. Example: Cecil Township Municipal Authority's "Rate Subsidy Plan".
6. Addressing mandated wet weather issues (sanitary sewer overflows, combined sewer overflows, and inflow and infiltration) when systems have multiple owners is exceptionally difficult. Typically, the Authority owns the plant and main interceptor and municipal providers own the conveyance system to the interceptors.

Recommendation:

6. A Promote consolidation planning between providers and customer municipalities.
6. B Educate customer municipalities as to the value of long term planning.
7. Board representation for all service areas is lacking. Municipal authorities were formed to address the sewage needs of a growing community. The Boards that govern these authorities were largely made up of residents of that specific community. As communities grew and population trends changed, sewer lines were extended into neighboring communities in a collaborative effort to provide for sewage needs, which in turn provided new customers for the Authority. These arrangements worked well for many years, but as those customer bases enlarged to new service areas proper board representation was not afforded to these new areas. This issue is not only on the local level but is seen regionally and will have a large impact on systems that cross county lines:

McDonald Borough - Alcosan

Peters Creek SA - Clairton

Elrama/Union - West Elizabeth

Hanover Township Sewage Authority - Weirton

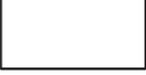
Hanover Township Sewage Authority - Paris Service Area

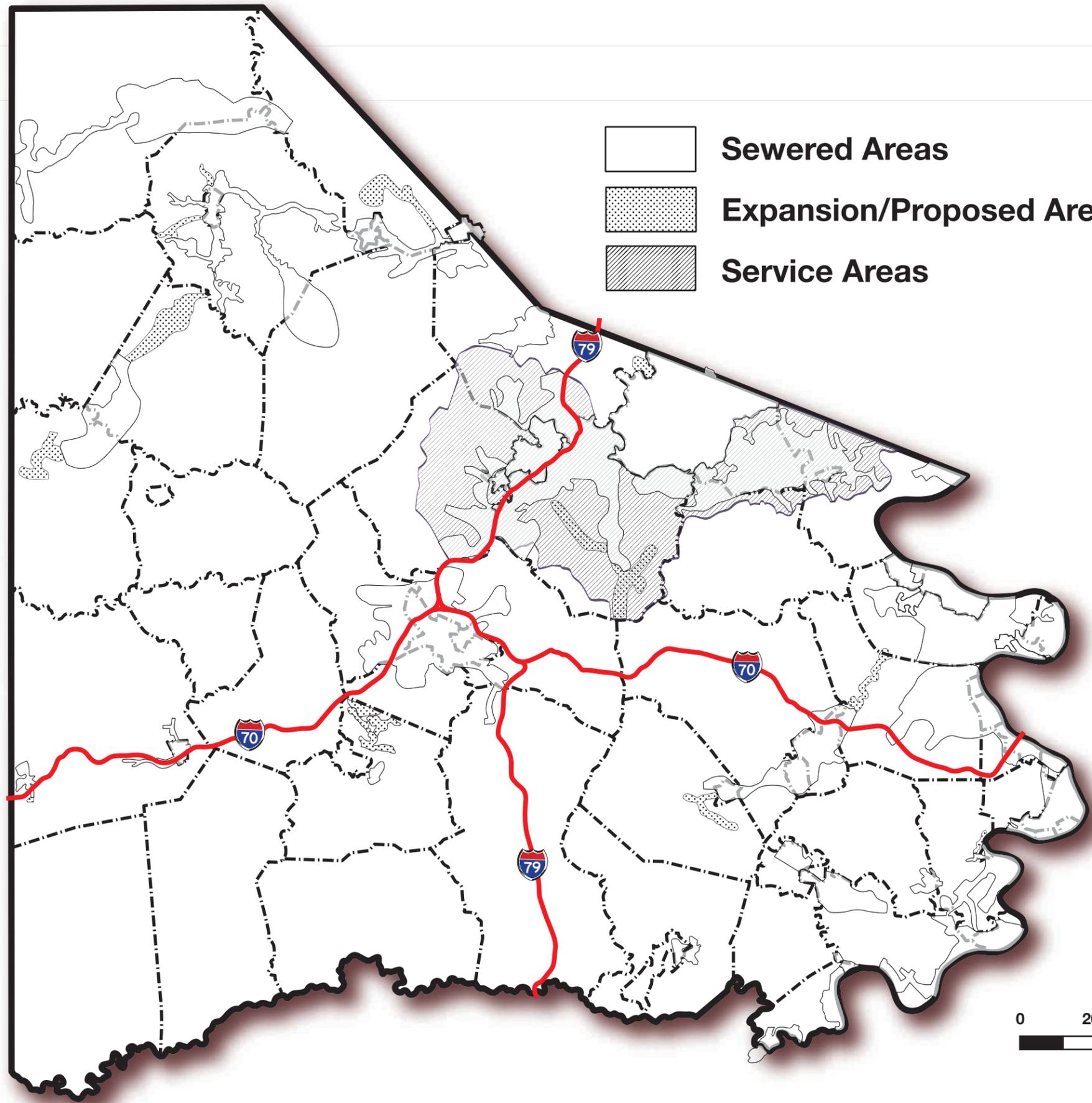
Recommendation:

7. A Promote Regional Inclusion in brand selection based on the service area.

SEWAGE/MUNICIPAL AUTHORITY SERVICE AREAS AND PROPOSED EXPANSION WASHINGTON COUNTY



-  Sewered Areas
-  Expansion/Proposed Areas
-  Service Areas



LEGEND

-  Municipal Boundary
-  Interstate

*This map was originally created for Washington County's Geographic Information System (GIS) and include data from various municipal, county, state and federal sources, which may contain errors. Maps should not be used for exact measurement of distance, direction, ground, position, precise location of geographic features, or a vulnerability assessment at a specific location. Maps are provided "As-Is" without warranties of any kind, either expressed or implied, and are intended for use only at the published scale. Detailed on-the-ground surveys and historical analyses of sites may differ from this map.

