

2022 BRF Analysis Findings

Methodology

The Maryland Department of Planning (Planning) conducts a BRF analysis for each calendar year, as directed by Chapter 257 (HB 893) of 2007 - *Bay Restoration Fund - Wastewater Treatment Facilities Upgrades - Reporting Requirements*. The purpose is to provide the BRAC and legislature with information on the impact that ENR-upgraded WWTPs may have on growth in the municipalities and counties in which the facility is located. Growth is measured before and after ENR upgrades within existing sewer service area boundaries and PFAs using Geographical Information System mapping software. These findings help assess changes in growth patterns, the capacity of the upgraded facility to meet the demands of current and future users, and possible changes in development patterns that could be influenced by upgrades.

Planning works with every county and many municipalities to maintain and annually update the Statewide Sewer Service Data layer to ensure as accurate a representation as possible. Planning has successfully conducted a BRF analysis each year since 2009 by utilizing the most recently published data from Maryland Property View and Planning's Sewer Service Data layers. It should be noted that data for each of these datasets affects the annual findings.

In 2018, Planning updated the BRF analysis methodology to confirm data boundary discrepancies within the existing sewer service areas both before and after ENR technology implementation, resulting in improved data outputs. Planning is committed to continuous improvement to its processes, contributing to the overarching goal of restoring water quality in the Chesapeake Bay.

Available Capacity

An ENR upgrade can create the possibility for capacity expansion beyond the original design capacity. However, the limitations of the WWTP nutrient discharge caps established by Maryland's Point Source Policy for the Bay^[1] heavily influence whether that possibility can become reality, notwithstanding new treatment technologies or the use of multiple discharge means or wastewater reuse. As required by state regulations that guide county water and sewer plans, to date, all ENR upgrades and plant expansions have been found to be consistent with locally-adopted and -approved comprehensive plans. Our analyses show that the nutrient discharge caps following the ENR upgrades have not had any noted compromising effects on development.

Planning's Findings

For this year's reporting period, Planning reviewed development served by 63 WWTPs with ENR upgrades completed within the timeframe specified in Chapter 257 (HB 893) of 2007 - *Bay Restoration Fund - Wastewater Treatment Facilities Upgrades - Reporting Requirements*. The selection of ENR upgrades to be analyzed in this annual report is based on the following criteria: (1) ENR upgrades completed before January 1, 2021, and (2) have been operational for one calendar year. One new ENR WWTP upgrade is included in this year's report, the Patapsco WWTP which became operational in January 2020. This report also now includes the Mattawoman WWTP, which had inadvertently been left out previously; it became operational in November 2007. Table 1 (Attachment 1) summarizes the ENR upgrades that are completed, operational, and meet the criteria.

Table 1 depicts growth activity by the number of connections before and after an ENR upgrade. The starting point for each plant's reporting is the calendar year prior to the start of ENR funding; the year in which the ENR upgrade was completed and became operational is included. The number of connections before ENR funding, and the current number of connections, which includes connections to new development on sewer as well as connections of existing septic systems to sewer is summarized by WWTP. Existing sewer service area boundaries are depicted as "S1" in Table 1, and are typically defined as areas where a sewer system is existing, the system is under construction, or an area is in the final planning stages and service is intended within two years.

The table compares development in and outside PFAs (see Columns D, G, and K), which are designated by local governments and recognized by the state as areas to concentrate growth and development due to the presence of existing or planned infrastructure. BRF funding is not restricted to PFAs, but PFAs provide a useful geographic frame of reference for reviewing possible effects of BRF upgrades on growth as required by the legislation.

Table 1 distinguishes new ENR upgrades since the last reporting period. Columns J and K in the table show the difference between last year's data and this year's data. This indicates how many improved parcels were connected within each sewer shed and how many parcels within the PFA had connections in the sewer shed within the last year.

Planning's analysis shows the Little Patuxent WWTP has had the largest total increase of connections since conversion to ENR (which was completed in 2012), with an increase of 8,408 connections (see Column I in Table 1). Overall, the Washington D.C. region had the largest regional total increase of new connections since conversion of WWTPs to ENR with 17,613 connections. Statewide, there was an increase of 4,878 additional improved parcels within "S1" (existing sewer) connected during this year's reporting period. Overall, 46,941 improved parcels have been connected since WWTPs statewide have been upgraded to ENR.

Although every effort is made to ensure data is current and correct, there may be significant increases or decreases of new connections from year-to-year. For example, the number of total improved parcels with existing sewer (Column F) may appear to decrease from one year to the next. However, the reason for the decrease may not be related to the number of improved parcels no longer having sewer, but rather adjustments in the MDProperty View data, the PFA layer, or the sewer layer. Planning evaluates many factors that play a part in source data and findings, and makes adjustments or corrections, where necessary. This year's report used August 2022 Statewide Points and Polygons MDProperty View data available on our open data downloads site: planning.maryland.gov/Pages/OurProducts/downloadFiles.aspx.

[1] Annual nutrient load caps for major WWTPs were based on an annual average concentration of

3 mg/l total nitrogen and 0.3 mg/l total phosphorus, at the approved design capacity of the plant. Design capacity for major WWTPs met both of the following two conditions: (1) A discharge permit was issued based on the plant capacity, or MDE issued a letter to the jurisdiction with design effluent limits based on the new capacity as of April 30, 2003; (2) Planned capacity was either consistent with the MDE-approved County Water and Sewer Plan as of April 30, 2003, or shown in the locally-adopted Water and Sewer Plan Update or Amendment to the County Water and Sewer Plan, which was under review by MDE as of April 30, 2003 and subsequently approved by MDE.

Table 1: Connections to Wastewater Treatment Facilities Upgraded to ENR

			Connections Before ENR Funding					Total Connections Upgraded since Conversion to ENR				Upgraded Connections Since Last Reporting Period	
ENR WWTP	County	ENR Upgrade Completed and Operational (Month-Year)	Column A: Reporting Year before ENR Funding	Column B: Number of Improved Parcels in the Sewer-shed	Column C: Number of Improved Parcels in Existing Service Area ("S1")	Column D: Number of Improved Parcels in "S1" within PFA	Column E: % of Connections Located in "S1" & PFA (Column D ÷ C)	Column F: Total Improved Parcels in S1	Column G: Total Improved Parcels in S1 & PFA	Column H: % Total Improved Parcels Located in "S1" within PFA (Column G ÷ F)	Column I: Total Increased Improved Parcels in S1 (Total Number New Connections)	Column J: Difference in Improved Parcels in S1	Column K: Difference in Improved Parcels in S1 & PFA
Western Region													
North Branch	ALLE	Nov-06	2005	1,913	1,801	1,794	99.6%	1,835	1,818	99.1%	34	3	3
George's Creek	ALLE	Nov-10	2009	2,069	1,938	1,876	96.8%	1,980	1,921	97.0%	42	0	0
City of Cumberland	ALLE	Feb-11	2010	17,656	16,412	16,243	99.0%	16,740	16,586	99.1%	328	10	10
City of Hagerstown	WASH	Dec-10	2009	21,975	18,825	17,769	94.4%	20,536	20,260	98.7%	1,711	87	87
Winebrenner	FRED/WASH	Feb-17	2016	455	455	446	98.0%	463	454	98.1%	8	11	11
Conococheague	WASH	Mar-18	2017	6,550	5,980	5,980	100.0%	6,187	6,187	100.0%	207	34	34
Western Region Total				50,618	45,411	44,108	97%	47,741	47,226	98.9%	2,330	145	145
Washington Region													
City of Brunswick	FRED	Sep-08	2007	2,446	1,957	1,957	100.0%	2,286	2,286	100.0%	329	7	7
Town of Thurmont	FRED	Apr-13	2012	2,385	2,345	2,204	94.0%	2,399	2,272	94.7%	54	-1	1
Town of Poolesville	MONT	Jul-10	2009	1,742	1,719	1,651	96.0%	1,802	1,731	96.1%	83	58	58

			Connections Before ENR Funding					Total Connections Upgraded since Conversion to ENR				Upgraded Connections Since Last Reporting Period	
Damascus	MONT	Feb-13	2012	3,997	3,793	3,437	90.6%	3,804	3,444	90.5%	11	2	0
City of Bowie	PRIN	Feb-11	2010	20,712	20,559	20,269	98.6%	20,783	20,547	98.9%	224	54	53
Parkway	PRIN	Jul-13	2012	15,470	15,394	15,383	99.9%	15,843	15,714	99.2%	449	87	87
Piscataway	PRIN	May-13	2012	56,296	55,007	51,954	94.4%	58,516	53,663	91.7%	3,509	194	93
Western Branch (WSSC)	PRIN	Apr-16	2015	45,533	43,438	38,554	88.8%	48,159	40,371	83.8%	4,721	92	17
Blue Plains	PRIN/MONT	Apr-16	2015	330,121	327,437	319,529	97.6%	334,276	325,994	97.5%	6,839	1,136	882
Seneca (WSSC)	MONT	Apr-16	2015	60,161	57,387	56,911	99.2%	58,087	57,609	99.2%	700	274	274
Ballenger Creek	FRED	Apr-16	2015	21,554	17,110	17,105	100.0%	17,545	17,540	100.0%	435	24	24
Town of Emmitsburg	FRED	Mar-16	2015	927	824	791	96.0%	840	807	96.1%	16	2	2
Frederick	FRED	Jun-18	2017	24,627	22,666	22,666	100.0%	22,909	22,909	100.0%	243	8	8
Washington Region Total				585,971	569,636	552,411	97%	587,249	564,887	96.2%	17,613	1,937	1,506
Upper Eastern Shore Region													
Town of Elkton	CECI	Dec-09	2008	6,000	4,926	4,925	100%	5,165	5,162	99.9%	239	41	41
Town of Perryville	CECI	Dec-10	2009	1,704	1,508	1,508	100%	1,565	1,564	99.9%	57	2	2
Rising Sun	CECI	Apr-16	2015	1,052	856	846	98.8%	866	859	99.2%	10	4	4
Town of Chestertown	KENT	Jun-08	2007	1,772	1,742	1,562	89.7%	1,929	1,724	89.4%	187	11	11
Kent Island (KNSG)	QUEE	Aug-07	2006	6,590	6,401	5,974	93.3%	7,382	6,989	94.7%	981	74	72

			Connections Before ENR Funding					Total Connections Upgraded since Conversion to ENR				Upgraded Connections Since Last Reporting Period	
Town of Denton	CARO	May-12	2011	1,508	1,097	1,095	99.8%	1,585	1,578	99.6%	488	21	21
Town of Federalsburg	CARO	Aug-10	2009	881	827	817	98.8%	829	818	98.7%	2	-1	1
Town of Easton	TALB	Jun-07	2006	5,810	5,831	5,822	99.8%	6,708	6,651	99.2%	877	37	37
Talbot Region II	TALB	Oct-08	2007	2,289	2,214	1,981	89.5%	3,185	2,203	69.2%	971	14	11
Northeast River	CECI	Oct-16	2015	5,714	4,459	3,931	88.2%	4,795	4,709	98.2%	336	26	25
Town of Queenstown	QUEE	Oct-16	2015	333	300	299	99.7%	334	334	100.0%	34	9	10
Greensboro	CARO	Jun-17	2016	727	687	687	100%	691	691	100.0%	4	1	1
Sudlersville	QUEE	Mar-18	2017	187	186	186	100%	186	186	100.0%	0	1	1
Galena	KENT	Dec-18	2017	374	296	274	92.6%	296	274	92.6%	0	0	0
Upper Eastern Shore Total				34,941	31,330	29,907	95%	35,516	33,742	95%	4,186	240	237
Lower Eastern Shore Region													
City of Cambridge	DORC	Dec-13	2012	5,861	5,418	5,293	97.7%	5,421	5,402	99.6%	3	9	9
Town of Hurlock	DORC	May-06	2005	769	703	703	100%	809	807	99.8%	106	2	2
Town of Delmar	WICO	Sep-11	2010	1,107	932	824	88.4%	1,024	906	88.5%	92	37	37
City of Pocomoke	WORC	Oct-11	2010	1,893	1,607	1,585	98.6%	1,633	1,607	98.4%	26	5	0
City of Crisfield	SOME	Aug-10	2009	2,495	2,044	1,735	84.9%	2,043	1,810	88.2%	9	2	0
Town of Snow Hill	WORC	Jun-14	2013	900	930	882	94.8%	955	913	95.6%	25	51	50

			Connections Before ENR Funding					Total Connections Upgraded since Conversion to ENR				Upgraded Connections Since Last Reporting Period	
City of Fruitland	WICO	Nov-16	2015	2,237	1,847	1,788	96.8%	2,043	1,929	94.4%	196	67	31
Salisbury	WICO	Jan-18	2017	10,794	10,705	10,500	98.1%	11,036	10,827	98.1%	331	97	97
Lower Eastern Shore Total				26,056	24,186	23,310	96%	24,974	24,201	96.9%	778	270	231
Baltimore Region													
Town of Mount Airy	CARR/FRED	Nov-10	2009	3,336	3,145	3,145	100%	3,439	3,437	99.9%	294	4	4
Joppatowne/Sod Run	HARF	Nov-13	2012	51,174	48,459	48,195	99.5%	49,253	48,987	99.5%	794	26	26
City of Havre De Grace	HARF	May-10	2009	5,098	4,898	4,782	97.6%	5,682	5,679	99.9%	784	13	13
Little Patuxent	HOWA	Sep-12	2011	56,997	50,848	50,833	100%	59,256	59,183	99.9%	8,408	265	265
City of Aberdeen	HARF	Mar-15	2014	5,098	4,524	4,443	98.2%	4,551	4,470	98.2%	27	8	8
Broadneck	ANNE	May-15	2014	30,847	21,172	20,454	96.6%	21,867	21,066	96.3%	695	22	13
Maryland City	ANNE	Mar-15	2014	4,522	4,394	4,376	99.6%	4,564	4,539	99.5%	170	1	-15
Patuxent	ANNE	Mar-15	2014	24,037	22,886	22,440	98.1%	23,915	23,529	98.4%	1,029	20	94
City of Annapolis	ANNE	Apr-16	2015	31,823	28,384	27,466	96.8%	28,846	27,922	96.8%	462	752	752
Broadwater	ANNE	Apr-16	2015	4,919	4,694	3,902	83.1%	4,745	3,940	83.0%	51	14	14
City of Taneytown	CARR	Jul-16	2015	2,647	2,486	2,485	100%	2,500	2,499	100.0%	14	3	3

			Connections Before ENR Funding					Total Connections Upgraded since Conversion to ENR				Upgraded Connections Since Last Reporting Period		
Back River	BACI/BACO	Sep-17	2016	313,624	311,468	309,249	99%	312,894	310,929	99.4%	1,426	604	607	
Mayo	ANNE	Oct-17	2016	3,410	3,316	3,066	92%	3,387	3,130	92.4%	71	21	17	
Cox Creek	ANNE	Jan-18	2017	48,105	42,688	41,792	98%	42,991	42,027	97.8%	303	90	83	
Freedom District	CARR	Mar-18	2017	8,535	7,336	7,336	100%	7,574	7,554	99.7%	238	72	72	
Patapsco (new)	BACI/BACO	Jan-20	2019	152,850	148,409	147,691	100%	148,634	147,894	99.5%	225	N/A	N/A	
New Facilities Upgraded During Reporting Period				152,850	148,409	147,691	100%	148,634	147,894	99.5%	225	N/A	N/A	
Baltimore Region Total				747,022	709,107	701,655	99%	724,098	716,785	99.0%	14,991	1,915	1,956	
Southern Maryland Region														
Mattawoman	CHAR/PRIN	Nov-07	2006	29,453	27,029	23,576	87.2%	32,960	27,481	83.4%	5,931	112	21	
Town of Indian Head	CHAR	Jan-09	2008	1,409	1,317	1,317	100%	1,479	1,479	100.0%	162	75	75	
Town of La Plata	CHAR	Dec-14	2013	3,164	3,213	3,132	97.5%	3,775	3,759	99.6%	562	151	151	
Marlay Taylor	STMA	Aug-16	2015	12,420	7,996	7,984	99.8%	8,336	8,324	99.9%	340	28	28	
Chesapeake Beach	CALV	Nov-17	2016	4,041	3,320	2,694	81.1%	3,345	2,714	81.1%	25	5	4	
Leonardtown	STMA	Aug-17	2016	1,640	1,089	936	86.0%	1,102	948	86.0%	13	0	0	
Southern Maryland Total				52,127	43,964	39,639	90%	50,997	44,705	87.7%	7,033	371	279	
Statewide														
New Facilities Upgraded During Reporting Period				N/A	152,850	148,409	147,691	100%	148,634	147,660	99.3%	225	N/A	N/A

	Connections Before ENR Funding				Total Connections Upgraded since Conversion to ENR			Upgraded Connections Since Last Reporting Period	
Statewide Totals	1,496,735	1,423,634	1,391,030	98%	1,470,575	1,431,546	97.3%	46,941	4,878 4,349

Notes:
(new) = Facilities upgraded to ENR during the reporting period.
There are a few instances since reporting began in 2009 where the total number of improved parcels in Column C varied slightly due to service boundary discrepancies. Planning has worked diligently to resolve this issue.