



Heritage Complex
2662 Riva Road
Annapolis, MD 21401

Christopher J. Phipps, P.E.
Director

July 26, 2019

Ms. Jennifer Smith
Manager, Sediment, Stormwater, and Dam Safety Program
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Dear Ms. Smith:

Thank you for the opportunity to provide additional information regarding Anne Arundel County's responses to the Maryland Department of the Environment's (MDE) Financial Capacity, Physical Capacity, and Restoration Project Portfolio requests, submitted to MDE on May 30, 2019. The County provided this information in support of MDE and the University of Maryland Environmental Finance Center's maximum extent practicable (MEP) determination for our fifth generation Municipal Separate Storm Sewer (MS4) permit. On June 26, 2019, Mr. Stewart Comstock provided the County with a set of questions and requested clarifications that would assist MDE in completing the MEP review. Accompanying this letter are the County's updated Restoration Portfolio and Financial Capacity Spreadsheet. While the questions and clarifications requested centered on the County's Restoration Portfolio, we believe the additions to the Portfolio necessitated an update to the Financial Capacity Spreadsheet, as well.

Restoration Project Portfolio Updates

The initial Restoration Project Portfolio submitted to MDE demonstrated how the County plans to address its unmet obligations from its previous permit, which includes the implementation of Capital Projects through 2023 and the use of Nutrient Credit Trading with the County's wastewater treatment facilities. The revised Restoration Portfolio now includes a suite of Capital Projects that are planned through 2026; during the next permit term these projects are anticipated to restore 127 acres of impervious surface, as well as reduce pollutant loads of total nitrogen (TN) and total suspended solids (TSS) by 5,904 pounds/year and 811 tons/year, respectively.

The previously submitted Portfolio indicated that the County would exceed the previous permit's impervious restoration requirement by 62 acres; three stream restoration projects providing 62 acres of equivalent impervious treatment were reallocated from the set of projects meeting the County's previous permit obligations to the set of projects providing TN and TSS pollutant load reductions during the next permit term. The County has included additional entries that demonstrate the continuation of Annual Operational Programs (required to be maintained from the previous permit) through 2025.

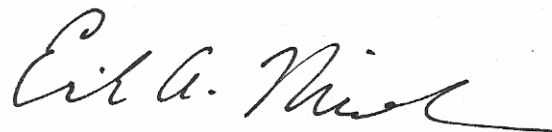
For all Capital Projects in the Portfolio, the County has now included total phosphorus (TP) pollutant load reductions. Information was also included to indicate if a Capital Project would reduce pollutant loads to a local waterbody with an approved Total Maximum Daily Load (TMDL). Co-benefits were also assigned to Capital Projects based on the type of best management practice (BMP) and in accordance with the factsheet series "Principles for Phase III Watershed Implementation Plans." Line items were added to the Portfolio for the cost of annual operations and maintenance associated with completed capital projects, and for the costs of capital projects that provide stormwater management or flood control (repairs or enhancement to stormwater to infrastructure, dams, emergency spillways, etc.) but are not eligible for water quality credit.

Financial Capacity Spreadsheet

There was a significant increase to the total implementation costs of the Portfolio, from \$111,367,879 to \$207,497,096, due to the addition of 24 Capital Projects, extending Annual Operations through 2025, and the incorporation of the line item costs noted above. The focus of Section 3 of the Financial Capacity Spreadsheet is the cost of impervious surface restoration and draws from projected total and annual cost information in the Restoration Portfolio. The County made adjustments to Items 3e (total Portfolio cost) and 3f (annual Portfolio cost) in the Spreadsheet, resulting in auto-recalculations of Items 3g (annual Portfolio cost per household) and 3h (annual Portfolio cost as a percent of mean household income).

We believe the above revisions to our Restoration Portfolio and Financial Capacity Spreadsheet should fully address Mr. Comstock's questions and request for clarifications. If you have any additional questions, please contact me at pwmich20@aacounty.org or (410) 222-7520.

Sincerely,



Erik Michelsen, Administrator
Watershed Protection and Restoration
Program

Enclosures

cc: Ginger Ellis, Planning Administrator, Watershed Protection and Restoration Program
Janis Markusic, Senior Planner, Watershed Protection and Restoration Program
Brenda Morgan, Engineer Manager, Watershed Protection and Restoration Program

Maryland Department of the Environment
Physical Capacity Questionnaire for Municipal Separate Storm Sewer System
(MS4) Permittees as Part of a Maximum Extent Practicable (MEP) Analysis
April 12, 2019

Anne Arundel County

1. What is the typical implementation time frame (from planning through construction) for a restoration project? Provide a typical Gantt chart for the following three main classes of BMPs and break down into planning, design, and construction phases: 1. Large upland stormwater projects (e.g., new and retrofits for ponds, bioretention, infiltration basins, etc.); 2. Instream restoration projects; and, 3. Alternative projects (not annual) (e.g., tree planting). Provide a written justification to explain the time frames for each BMP class and phase.

The typical implementation timeframe for projects is below:

- 1) Large upland stormwater projects
 - a. Planning (including landowner coordination) – 12-18 months.
 - b. Design – 12-18 months.
 - c. Construction – 3–6 months

Explanation: Though these projects tend to occur in areas where the County either owns the property or holds a stormwater easement, there generally needs to still be community education and buy-in in order to move forward with project implementation. This initial phase, as well as the design phase, are significantly longer than the construction phase, which can usually move fairly quickly if the weather is cooperative.

- 2) In-stream restoration projects
 - a. Planning (including landowner coordination) – 12-18 months.
 - b. Design & Permitting – 24-36 months.
 - c. Property acquisition – 6-12 months.
 - d. Construction – 12-18 months.

Explanation: These projects tend to be much more extensive, and can require significant additional public engagement, as well as the acquisition of easements on properties not already controlled by the County. Design and permitting tend to take much longer for these sorts of projects, and can be further delayed in cases where changes to FEMA floodplain elevations, additional environmental impact analyses, or other unforeseen circumstances arise. During the construction phase, these projects are particularly susceptible to wet weather delays. For instance, the excessive rains in 2018 and early 2019 likely led to construction extensions of 4-6 months. Project construction may also be affected by or delayed due to the stream closure period during the spring.

- 3) Alternative projects (e.g., tree planting)

- a. Planning (including landowner coordination) – 6-12 months.
- b. Design & Permitting – 2-3 months.
- c. Construction – 3-4 months.

Explanation: While these projects can take significantly less time to complete, once target sites are identified and permission granted, they tend to be much smaller yield, and perhaps paradoxically, quite a bit more expensive per acre treated than the other two classes of projects. Even working with public land holders, there is not a substantial amount of interest in permanently reforesting large swathes of property.

2. Provide the average time to authorize capital improvement project (CIP) budgets for the initial project planning phase and for the design phase of a typical restoration project (assumes CIP approval for each phase is required). Do you have the ability to combine these two phases or do you have to get CIP approval for each phase consecutively?

Capital Budget development generally begins in September of the current fiscal year, and that is when any new projects would provisionally be inserted into the CIP. If approved internally, and by the County Council, those dollars would be available for contracting July 1 of the following year (9 months later). We have the capacity to request authorization for funding all phases at once, though construction cost estimates are traditionally refined significantly as a result of design development, and it is not unusual to have full construction funding requested a year or two after design funding has been authorized.

3. Provide the average time to procure professional planning, design, and construction services. Is procurement done in phases (e.g., procurement for planning, then procurement for design, and then procurement for construction)? How would a pay for performance type of contract or a design-build-operation-maintenance contract affect these time frames? Please provide information on any innovative contracting mechanism you use to reduce procurement timeframes and what those reduced time frames are.

Under ideal circumstances, design procurement using an existing “open end” contract takes approximately 3 months for contract award. Utilizing competitive bid solicitations for design can routinely take 9 months for contract award. From that point, design generally takes 12-18 months for simpler projects, with an additional 6 month window for permitting. Depending on the construction contracting mechanism, it can take between 6 weeks (using our blanket order contractors) to 6 months (putting projects out to competitive bid) to get a contractor on board. At that point, depending on the complexity of construction, the project can take between 3 and 18 months.

Approximately three years ago, we put in place a pay for performance contracting mechanism – our “Full Delivery of Water Quality Improvements” solicitation. The process has been refined a bit, but the time from solicitation to contract award is still between 8-9 months. On average, the time to project completion, after award, ranges from 1 to 3 years. We have been satisfied with this contracting approach to meet a portion of our MS4 needs, but it is not likely to be a tool that we would use to accomplish all of our restoration requirements.

We have also used our restoration grant program through the Chesapeake Bay Trust to engage non-profit partners in our restoration efforts. The design/permitting/construction of these projects is completely handled by the non-profit, and the average time from grant award to project completion is in the range of 1 to 2 years (as the projects are often designed and permitted by the time of grant award).

4. Provide the number of requests for proposals (RFPs) for BMP construction and for BMP design advertised during the past 5 year permit term. Of these, how many bids were submitted for each RFP and how many required re-advertising? Was there a trend over the permit term in the number of bid submittals received? How many unique companies provided bids for all RFPs?

It is estimated that Anne Arundel County solicited upwards of 60 RFPs for design and 15 RFPs for construction during the past 5 year permit term (the construction RFP number may seem low, but that is because the County's two task order contractors perform a significant share of WPRP construction work on projects less than \$500k). On average, the number of bids submitted for design work were five, with the number of bids submitted for construction work around four. None of the RFPs had to be re-advertised. In terms of trends, the most notable was the increase in construction bidders as time went on. It appears that new firms have moved into the environmental construction space in Maryland over the past several years. The number of unique bidders on the design side is approximately 15-20, with approximately 5-7 unique bidders on the construction side. One element that should be mentioned, is that, while it may appear that there are a sufficient number of firms in this space, there is often a significant range in the technical skill of firms. For instance, while there may be ten firms willing to bid on stream restoration design work, there may actually only be 3 to 4 who wouldn't require an inordinate amount of management in order to deliver a high quality product in a reasonable timeframe.

5. Provide information on contracting limitations that result in longer project implementation times. Examples: Limited qualified construction contractors; Woman owned business enterprise (WBE) or minority owned business enterprise (MBE) requirements limit available qualified construction contractors and/or engineering contractors. Describe the issue and provide the time extension that results due to the issue.

Anne Arundel County does not have MBE/WBE requirements for contractors, so the primary contracting limitation that we have encountered has been a limited (through growing) pool of qualified contractors to do this work. Anne Arundel County currently has two task order restoration contractors who are responsible for the bulk of construction work done by the WPRP in the <\$500k range. These contractors, however, are only able to take on 5-8 projects apiece during each calendar year. Work beyond the load they can handle, and above their contracting threshold, must therefore be bid out. The urgency created by needing to bid out a large number of projects in a relatively small timeframe tilts the market to the advantage of the fairly small number of qualified contractors bidding on these sorts of jobs. A more sustainable, prolonged restoration implementation schedule prevents the creation of a work "bubble" and allows jurisdictions to get better pricing on their contracts for this specialized work.

6. Provide a typical time frame required to obtain permits from local, State, and federal agencies for the three main BMP project classes (i.e., upland stormwater ponds, instream restoration, and alternative projects) prior to construction. Describe how these time frames affect the overall project implementation time frames described in Question #1. How can these time frames be reduced to help get these projects out the door faster?

Stormwater Ponds – Generally speaking, these sorts of retrofits only require local grading permits. The grading permit process can range from 6 – 12 months depending upon extenuating factors (e.g., forest conservation area impacts, critical area impacts, modifications, etc.). We are currently working on legislation at the local level to try to expedite some of these processes. Pursuing a broader exemption of restoration work from forest conservation act (FCA) requirements at the State level would be very helpful as well.

In-Stream Restoration – After several years working to improve the State/Federal permitting process, in 2016-2017 those permitting timelines reduced significantly. Currently, those permits can take 6-12 months for issuance. They were routinely taking 12-24 months (and, in some cases, much longer) prior to this timeframe. These in-stream projects routinely take about the same amount of time for the local permitting as the stormwater pond retrofits do. The projects, in particular, would benefit from a change to the State FCA requirements.

Alternative Projects – Anne Arundel County also undertakes a fair number of living shoreline projects which require State/Federal permits. These permits also generally take 6-12 months, and are usually processed without much issue.

7. What type of a project do you consider as “low-hanging fruit”? What is your remaining capacity of available “low-hanging fruit” projects (estimate the number and impervious acre treatment total)?

“Low hanging fruit” projects are generally those where the County already owns or has access to a piece of property that is being used in some programmatic capacity for stormwater management (e.g., dry pond, outdated wet pond, etc.). Nearly all of these projects were targeted for retrofit in our 2014-2019 permit cycle. In the case of those sites where we could accomplish the retrofits, most are completed or in process. A number of dry pond retrofit opportunities fell by the wayside as a result of community opposition and/or the fact that those areas also served as community open space. Nearly all of the County’s largest wet facilities have also either been retrofitted or analyzed for feasibility. In terms of “low hanging fruit” opportunities, I would estimate there are perhaps 20 sites left totaling around 200 impervious acres of treatment.

Restoration Projects To Be Planned, Designed, and/or Constructed from CY 2019 Through CY 2027
Anne Arundel County

Remaining Unmet Restoration Obligation from Previous Permit 2,549

REST BMP ID	REST BMP TYPE ¹	BMP CLASS ¹	NUM BMP	IMP ACRES	TSS REDUCTION (lbs/year)	TN ² REDUCTION (lbs/year)	IMPLEMENTATION COST	IMPLEMENTATION STATUS ²	PROJECTED IMPLEMENTATION YEAR	TMDL PARAMETER OR WQ OBJECTIVE ADDRESSED ⁴	GENERAL COMMENTS ^{5**7}
Remaining Unmet Restoration Obligations from Previous Permit											
Annual Operational Programs (Unmet Obligations from Previous Permit)³⁻⁴											
Street Sweeping	VSS	A	0								The County does not plan any additional street sweeping to meet its obligations under the previous permit.
Catch Basin Cleaning	CBC	A	0								The County does not plan any additional inlet cleaning to meet its obligations under the previous permit.
Septic System Pumping	SEPP	A	0								The County does not plan any additional septic system pumping to meet its obligations under the previous permit.
Subtotal Operations ⁵			0	0			\$0				
Capital Projects (Unmet Obligations from Previous Permit Term)											
AA18RST00009	SPSC	S	1	2.9	4,758.0	115.1	\$528,187	Complete	2019	9.64	
AA18RST00044	SPSC	S	1	0.5	1,224.4	42.4	\$102,303	Complete	2019	2.77	
AA18RST00006	SPSC	S	1	1.8	3,104.8	77.0	\$528,187	Complete	2019	6.33	
AA19RST00002	SPSC	S	1	11.1	7,686.4	190.5	\$677,983	Complete	2019	15.56	
AA19ALN000013	OUT	A	1	0.2	0.0	0.0	\$199,110	Complete	2019	0.00	
AA19ALN000012	OUT	A	1	0.2	0.0	0.0	\$24,087	Complete	2019	0.00	
AA19ALN000011	OUT	A	1	1.0	0.0	0.0	\$321,820	Complete	2019	0.00	
AA19ALN000009	OUT	A	1	0.2	0.0	0.0	\$249,878	Complete	2019	0.00	
AA19ALN000014	OUT	A	1	0.3	0.0	0.0	\$68,755	Complete	2019	0.00	
AA19ALN000010	OUT	A	1	0.3	0.0	0.0	\$23,948	Complete	2019	0.00	
AA19ALN000015	OUT	A	1	2.0	0.0	0.0	\$42,824	Complete	2019	0.00	
AA19ALN000024	OUT	A	1	0.7	0.0	0.0	\$677,983	Complete	2019	0.00	
AA19ALN000040	OUT	A	1	2.0	0.0	0.0	\$34,101	Complete	2019	0.00	
	OUT	A	1	1.6	0.0	0.0	\$102,960	Complete	2019	0.00	
AA19ALN000018	OUT	A	1	0.7	0.0	0.0	\$583,869	Complete	2019	0.00	
AA19ALN000017	OUT	A	1	0.3	0.0	0.0	\$182,147	Complete	2019	0.00	
AA19ALN000016	OUT	A	1	0.9	0.0	0.0	\$90,944	Complete	2019	0.00	
AA19ALN000026	SHST	A	1	11.7	40,004.0	21.9	\$0	Complete	2019	19.86	Climate Adaptation, Recreation
AA18RST000013	FBIO	S	1	0.5	376.6	7.0	\$165,237	Complete	2019	0.71	Sediment TMDL for the Non-Tidal South River, Flood Risk Mitigation
AA18RST000012	FSND	S	1	3.1	2,090.6	28.3	\$206,031	Complete	2019	3.46	Sediment TMDL for the Non-Tidal South River
AA16RST000043	PWED	S	1	13.7	11,658.6	197.8	\$596,701	Complete	2019	20.51	Nutrient TMDL for the Baltimore Harbor
AA16RST000044	PWET	S	1	4.5	2,777.8	39.7	\$417,136	Complete	2019	4.67	Nutrient TMDL for the Baltimore Harbor
AA19RST000016	WEDW	S	1	1.4	1,249.2	22.9	\$71,426	Complete	2019	2.25	Flood Risk Mitigation
AA18RST000043	MSGW	E	1	0.2	229.2	3.3	\$0	Complete	2019	0.39	Sediment TMDL for the Non-Tidal South River
AA18RST000042	MSWB	E	1	1.2	944.0	16.6	\$355,549	Complete	2019	1.68	Flood Risk Mitigation
AA19APY000004	FPU	A	1	0.5	692.2	13.9	\$72,948	Complete	2019	1.80	Energy Efficiency
AA19APY000003	IMPF	A	1	0.1	82.6	0.4	\$50,903	Complete	2019	0.14	Energy Efficiency
AA18ALN000008	STRE	A	1	11.0	0.0	254.5	\$1,007,880	Complete	2019	0.00	Healthy Watersheds, Flood Risk Mitigation
AA18ALN000017	STRE	A	1	46.6	610,000.0	696.0	\$2,445,682	Complete	2019	321.00	Nutrient TMDL for the Baltimore Harbor, Healthy Watersheds, Flood Risk Mitigation
AA19ALN000004	STRE	A	1	14.0	45,146.0	2,016.0	\$164,122	Complete	2019	316.00	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation
AA18ALN000028	STRE	A	1	8.4	6,000.0	30.0	\$2,479,485	Complete	2019	27.20	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation
AA18RST000003	IBAS	S	1	3.8	4,703.8	169.3	\$331,333	Under Construction	2019	10.78	
AA16RST000047	IBAS	S	1	2.4	2,853.2	52.7	\$416,504	Under Construction	2019	5.93	Sediment TMDL for the Patapsco River Lower North Branch Watershed, Nutrient TMDL for the Baltimore Harbor
AA16RST000066	PWED	S	1	14.8	8,886.9	84.6	\$564,879	Under Construction	2019	14.79	Sediment TMDL for the Patapsco River Lower North Branch Watershed, Nutrient TMDL for the Baltimore Harbor
AA16RST000061		S									Sediment TMDL for the Patapsco River Lower North Branch Watershed, Nutrient TMDL for the Baltimore Harbor, Flood Risk Mitigation
	WEDW	S	1	26.6	22,827.0	296.7	\$485,737	Under Construction	2019	41.36	Mitigation
AA17RST000010	WPWS	S	1	18.6	13,652.1	227.5	\$1,621,537	Under Construction	2019	23.91	Nutrient TMDL for the Baltimore Harbor, Flood Risk Mitigation
AA16RST000060		S									Sediment TMDL for the Patapsco River Lower North Branch Watershed, Nutrient TMDL for the Baltimore Harbor, Flood Risk Mitigation
	WSHW	S	1	9.0	8,303.2	84.9	\$826,353	Under Construction	2019	14.04	Mitigation
AA16RST000062		S									Sediment TMDL for the Patapsco River Lower North Branch Watershed, Nutrient TMDL for the Baltimore Harbor, Flood Risk Mitigation
	WSHW	S	1	4.5	4,167.1	39.7	\$317,293	Under Construction	2019	6.92	Mitigation
AA19ALN000028	SHST	A	1	10.8	36,990.0	20.3	\$0	Under Construction	2019	18.36	Climate Adaptation, Recreation
AA17ALN000009	STRE	A	1	145.9	113,700.0	1,678.9	\$5,754,269	Under Construction	2019	166.70	Nutrient TMDL for the Baltimore Harbor, Healthy Watersheds, Flood Risk Mitigation
	STRE	A	1	6.3	4,500.0	22.5	\$0	Under Construction	2019	20.40	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation
AA18ALN000003	SHST	A	1	64.0	1,206,856.0	112.0	\$4,511,312	Under Construction	2020	6.82	Sediment TMDL for the Other West Chesapeake Bay Watershed, Climate Adaptation, Recreation
AA18RST000028	FBIO	S	1	3.8	5,913.8	43.8	\$762,774	Design	2019	4.98	Nutrient TMDL for the Baltimore Harbor, Flood Risk Mitigation
AA18RST000029	FBIO	S	1	1.7	2,294.4	16.1	\$337,226	Design	2019	2.00	Nutrient TMDL for the Baltimore Harbor, Flood Risk Mitigation
AA19RST000006	JTRN	S	1	0.7	482.1	7.3	\$0	Design	2019	0.88	Sediment TMDL for the Non-Tidal South River
AA17RST000007	MIBR	S	1	3.4	2,001.9	37.3	\$492,157	Design	2019	3.78	Nutrient TMDL for the Baltimore Harbor
AA19RST000026	PWED	S	1	262.6	139,826.4	1,478.0	\$104,231	Design	2019	219.38	Sediment TMDL for the Non-Tidal South River
AA19RST000025	PWED	S	1	7.9	5,422.5	66.7	\$175,000	Design	2019	8.77	Sediment TMDL for the Non-Tidal South River
AA18RST000019	PWET	S	1	2.9	4,669.3	137.2	\$641,448	Design	2019	10.00	
AA18RST000008	SPSC	S	1	0.8	1,515.5	37.4	\$528,187	Design	2019	3.13	
AA17RST000011	SPSC	S	1	12.7	11,058.3	188.4	\$1,534,272	Design	2019	19.48	
AA17RST000005	SPSC	S	1	4.5	3,524.7	78.1	\$840,768	Design	2019	6.97	Nutrient TMDL for the Baltimore Harbor

AA16RST000065	SPSC	S	1	7.8	5,148.7	118.7	\$475,321	Design	2019	10.23	Nutrient TMDL for the Baltimore Harbor
AA19RST000005	SPSC	S	1	1.5	1,747.9	39.9	\$0	Design	2019	3.48	Sediment TMDL for the Non-Tidal South River
AA19RST000018	MSGW	E	1	0.3	204.1	2.8	\$0	Design	2019	0.37	
AA19RST000019	MSGW	E	1	0.7	870.0	23.5	\$0	Design	2019	1.82	
AA18ALN000011	SHST	A	1	29.6	267,670.2	22.0	\$247,928	Design	2019	1.34	Sediment TMDL for the Non-Tidal South River, Climate Adaptation, Recreation
AA18ALN000007	STRE	A	1	10.0	7,125.0	35.6	\$520,805	Design	2019	32.30	Healthy Watersheds, Flood Risk Mitigation
AA16RST000063	FSND	S	1	6.4	5,120.7	60.7	\$475,321	Design	2020	8.22	Nutrient TMDL for the Baltimore Harbor
AA19RST000023	IBAS	S	1	6.3	3,798.1	72.0	\$309,900	Design	2020	7.20	Nutrient TMDL for the Baltimore Harbor
AA17RST000003	ITRN	S	1	2.7	2,099.1	21.4	\$700,167	Design	2020	3.55	Sediment TMDL for the Patapsco River Lower North Branch Watershed, Nutrient TMDL for the Baltimore Harbor
AA17RST000002	ITRN	S	1	2.6	1,765.8	13.6	\$659,334	Design	2020	2.79	Sediment TMDL for the Patapsco River Lower North Branch Watershed, Nutrient TMDL for the Baltimore Harbor
AA18RST000023	SPSC	S	1	6.5	10,819.5	486.0	\$1,654,214	Design	2020	26.92	
AA19RST000004	SPSC	S	1	1.4	1,399.8	23.5	\$536,190	Design	2020	2.60	Nutrient TMDL for the Baltimore Harbor
AA18RST000014	SPSC	S	1	21.6	29,887.9	623.6	\$1,810,679	Design	2020	61.69	Sediment TMDL for the Little Patuxent River
AA17RST000001	SPSC	S	1	4.7	3,309.0	28.1	\$995,071	Design	2020	5.34	Sediment TMDL for the Patapsco River Lower North Branch Watershed, Nutrient TMDL for the Baltimore Harbor
AA18RST000002	WEDW	S	1	2.4	2,627.7	44.6	\$307,094	Design	2020	4.62	Flood Risk Mitigation
	SEPC	A	1	33.9	0.0	0.0	\$510,143	Design	2020		
	SEPC	A	1	2.0	0.0	0.0	\$30,097	Design	2020		Nutrient TMDL for the Baltimore Harbor
	SEPC	A	1	38.6	0.0	0.0	\$580,870	Design	2020		Nutrient TMDL for the Baltimore Harbor
	SEPC	A	1	39.0	0.0	0.0	\$586,890	Design	2020		Sediment TMDL for the Patapsco River Lower North Branch Watershed, Nutrient TMDL for the Baltimore Harbor
AA19ALN000005	SHST	A	1	12.0	41,100.0	22.5	\$1,523,415	Design	2020	20.40	Climate Adaptation, Recreation
AA18ALN000012	SHST	A	1	36.4	280,580.0	87.7	\$363,964	Design	2020	5.34	Climate Adaptation, Recreation
AA17ALN000008	SHST	A	1	55.0	168,027.0	102.4	\$2,013,797	Design	2020	6.23	Climate Adaptation, Recreation
AA19ALN000027	SHST	A	1	16.4	56,170.0	30.8	\$1,606,000	Design	2020	27.88	Nutrient TMDL for the Baltimore Harbor, Climate Adaptation, Recreation
	SHST	A	1	100.0	342,500.0	187.5	\$0	Design	2020	170.00	Sediment TMDL for the Other West Chesapeake Bay Watershed, Climate Adaptation, Recreation
AA17ALN000011	STRE	A	1	65.0	76,400.0	621.0	\$3,373,174	Design	2020	48.50	Healthy Watersheds, Flood Risk Mitigation
AA18ALN000005	STRE	A	1	8.0	6,980.0	111.2	\$482,405	Design	2020	8.65	Healthy Watersheds, Flood Risk Mitigation
AA18ALN000026	STRE	A	1	31.5	22,500.0	112.5	\$1,007,289	Design	2020	102.00	Healthy Watersheds, Flood Risk Mitigation
AA19ALN000020	STRE	A	1	7.5	268,655.0	400.0	\$564,000	Design	2020	144.00	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation
AA19ALN000008	STRE	A	1	30.1	9,472.0	369.0	\$1,915,000	Design	2020	81.00	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation
AA19ALN000022	STRE	A	1	31.5	11,352.0	517.0	\$5,270,000	Design	2020	26.70	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation
AA19ALN000006	STRE	A	1	19.0	81,000.0	2,446.0	\$378,487	Design	2020	697.00	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation
	STRE	A	1	7.4	2,000.0	73.0	\$192,940	Design	2020	20.00	Sediment TMDL for the Other West Chesapeake Bay Watershed, Healthy Watersheds, Flood Risk Mitigation
AA18ALN000006	STRE	A	1	2.9	343,000.0	490.5	\$878,526	Design	2020	132.40	Sediment TMDL for the Patuxent River Upper Watershed, Healthy Watersheds, Flood Risk Mitigation
AA17ALN000010	STRE	A	1	57.1	28,480.0	761.2	\$2,052,373	Design	2021	74.71	Nutrient TMDL for the Baltimore Harbor, Healthy Watersheds, Flood Risk Mitigation
AA18ALN000015	STRE	A	1	39.8	28,395.0	142.0	\$1,287,601	Design	2021	128.72	Nutrient TMDL for the Baltimore Harbor, Healthy Watersheds, Flood Risk Mitigation
AA19ALN000023	STRE	A	1	39.4	2,044,928.0	2,682.4	\$1,805,161	Design	2021	1088.50	Nutrient TMDL for the Baltimore Harbor, Healthy Watersheds, Flood Risk Mitigation
AA19ALN000021	STRE	A	1	61.8	18,582.8	759.3	\$500,000	Design	2021	124.40	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation
AA18ALN000016	STRE	A	1	83.5	26,763.0	850.3	\$2,950,340	Design	2022	207.90	Healthy Watersheds, Flood Risk Mitigation
AA19ALN000002	STRE	A	1	93.9	51,501.4	1,108.4	\$5,139,504	Design	2022	148.40	Nutrient TMDL for the Baltimore Harbor, Healthy Watersheds, Flood Risk Mitigation
AA19ALN000001	STRE	A	1	132.6	61,140.0	1,814.7	\$5,150,315	Design	2022	173.30	Nutrient TMDL for the Baltimore Harbor, Healthy Watersheds, Flood Risk Mitigation
AA18ALN000018	STRE	A	1	102.5	450,945.0	262.6	\$1,090,932	Design	2022	205.52	Sediment TMDL for the Patuxent River Upper Watershed, Healthy Watersheds, Flood Risk Mitigation
AA19ALN000019	STRE	A	1	408.7	2,622,600.0	2,012.1	\$14,347,462	Design	2023	737.70	Sediment TMDL for the Little Patuxent River, Healthy Watersheds, Flood Risk Mitigation
	PWET	S	1	9.6	7,202.1	68.5	\$629,500	Planning	2020	11.04	
	JMPF	A	1	0.0	35.9	1.4	\$9,590	Planning	2020	6.09	Energy Efficiency
	SHST	A	1	18.9	64,732.5	35.4	\$702,925	Planning	2020	32.13	Sediment TMDL for the Non-Tidal South River, Climate Adaptation, Recreation
	SHST	A	1	53.6	183,580.0	100.5	\$702,925	Planning	2020	91.12	Sediment TMDL for the Non-Tidal South River, Climate Adaptation, Recreation
	STRE	A	1	7.0	5,250.0	26.3	\$1,730,000	Planning	2020	23.80	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation
	SHST	A	1	30.4	104,120.0	57.0	\$50,000	Planning	2021	51.68	Sediment TMDL for the Non-Tidal West River, Climate Adaptation, Recreation
	STRE	A	1	17.8	13,312.5	66.6	\$1,127,079	Planning	2021	60.35	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation
	N/A	N/A	N/A	0.0	0.0	0.0	\$1,550,000	Complete	2019	0.00	Annual Operations & Maintenance Costs
	N/A	N/A	N/A	0.0	0.0	0.0	\$8,117,000	Complete	2019	0.00	Stormwater/flood control projects not eligible for water quality credit (includes culvert and closed storm drain rehabilitation; emergency storm drain repairs; and stormwater management or infrastructure projects designed to relieve ponding or flooding). Climate Adaptation, Flood Risk Mitigation
Subtotal Capital			101	2,549	N/A - Data not required for this section, provided for informational purposes only	N/A - Data not required for this section, provided for informational purposes only	\$111,629,195				N/A - Data not required for this section, provided for informational purposes only
Other (Unmet Obligations from Previous Permit Term)											
		A	1	1,812			\$0	Planning	2019		Nutrient Credit Trading with County WWTPs - to be replaced by capital projects listed above.
		A	1	1,068			\$0	Planning	2020		Nutrient Credit Trading with County WWTPs - to be replaced by capital projects listed above.
		A	1	822			\$0	Planning	2021		Nutrient Credit Trading with County WWTPs - to be replaced by capital projects listed above.
		A	1	409			\$0	Planning	2022		Nutrient Credit Trading with County WWTPs - to be replaced by capital projects listed above.
Subtotal Other							\$0				Credits accessed through nutrient credit trading each year. Subtotal not applicable.
Total of Remaining Obligations from The Previous Permit			101	2,549			\$111,629,195				
Obligations from Previous Permit That Must Be Continued											
Annual Operational Programs Required to be Maintained from Previous Permit¹⁴											

Street Sweeping	VSS	A	256	168.9	177,381.4	1,478.2	\$283,780	Design	2019	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). Credit averages are based on program maturity (FY16-FY18). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits. Street sweeping frequency twice monthly.
Street Sweeping	VSS	A	256	168.9	177,381.4	1,478.2	\$292,293	Planning	2020	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits. Street sweeping frequency twice monthly.
Street Sweeping	VSS	A	256	168.9	177,381.4	1,478.2	\$301,062	Planning	2021	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits. Street sweeping frequency twice monthly.
Street Sweeping	VSS	A	256	168.9	177,381.4	1,478.2	\$310,094	Planning	2022	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits. Street sweeping frequency twice monthly.
Street Sweeping	VSS	A	256	168.9	177,381.4	1,478.2	\$319,397	Planning	2023	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits. Street sweeping frequency twice monthly.
Street Sweeping	VSS	A	256	168.9	177,381.4	1,478.2	\$328,979	Planning	2024	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits. Street sweeping frequency twice monthly.
Street Sweeping	VSS	A	256	168.9	177,381.4	1,478.2	\$338,848	Planning	2025	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits. Street sweeping frequency twice monthly.
Catch Basin Cleaning	CBC	A	3,291	69.8	73,294.2	610.8	\$614,960	Design	2019	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). Credit averages are based on FY17-FY18 (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Catch Basin Cleaning	CBC	A	3,291	69.8	73,294.2	610.8	\$633,409	Planning	2020	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). Credit averages are based on FY17-FY18 (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Catch Basin Cleaning	CBC	A	3,291	69.8	73,294.2	610.8	\$652,411	Planning	2021	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). Credit averages are based on FY17-FY18 (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Catch Basin Cleaning	CBC	A	3,291	69.8	73,294.2	610.8	\$671,984	Planning	2022	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). Credit averages are based on FY17-FY18 (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Catch Basin Cleaning	CBC	A	3,291	69.8	73,294.2	610.8	\$692,144	Planning	2023	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). Credit averages are based on FY17-FY18 (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Catch Basin Cleaning	CBC	A	3,291	69.8	73,294.2	610.8	\$712,908	Planning	2024	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). Credit averages are based on FY17-FY18 (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Catch Basin Cleaning	CBC	A	3,291	69.8	73,294.2	610.8	\$734,296	Planning	2025	Crediting is based on mass-loading methodology in MDE's WLA and impervious crediting guidance (August 2014). Credit averages are based on FY17-FY18 (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Septic System Pumping	SEPP	A	6,214	186.4	0	0	\$0	Design	2019	Credit averages are based on FY16-FY18 data (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Septic System Pumping	SEPP	A	6,214	186.4	0	0	\$0	Planning	2020	Credit averages are based on FY16-FY18 data (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Septic System Pumping	SEPP	A	6,214	186.4	0	0	\$0	Planning	2021	Credit averages are based on FY16-FY18 data (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Septic System Pumping	SEPP	A	6,214	186.4	0	0	\$0	Planning	2022	Credit averages are based on FY16-FY18 data (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Septic System Pumping	SEPP	A	6,214	186.4	0	0	\$0	Planning	2023	Credit averages are based on FY16-FY18 data (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Septic System Pumping	SEPP	A	6,214	186.4	0	0	\$0	Planning	2024	Credit averages are based on FY16-FY18 data (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Septic System Pumping	SEPP	A	6,214	186.4	0	0	\$0	Planning	2025	Credit averages are based on FY16-FY18 data (program maturity). The County will demonstrate the same level of programmatic effort to show compliance in maintenance of these credits.
Subtotal Operations ³					250,675.6	2,089.0	\$6,886,565			Number of BMPs is not additive for annual operational practices. Subtotal not applicable.
Capital Projects (Proposed to Replace Annual Obligations)										
Subtotal Capital			0	0	0	0	\$0			The County plans to maintain its annual operation programs (and associated credits) at current levels and does not propose replacement with capital projects at this time.
Other (Proposed to Replace Annual Obligations)										
Subtotal Other			0	0	0	0	\$0			The County plans to maintain its annual operation programs (and associated credits) at current levels and does not propose replacement with other projects at this time.
Total of Obligations from Previous Permit That Must Be Continued			0	425.1	250,675.6	2,089.0	\$6,886,565			These credit values represent the maintenance of credits achieved under the previous permit term.
Operational Programs⁴										
Subtotal Operations ⁵			0	0	0	0	\$0			The County does not plan any additions to its operations programs to meet its obligations under the previous permit.

Capital Projects												
AA17ALN000018	SHST	A	1	0.0	186,764.0	69.3	\$2,879,500	Under Construction	2025	4.2	Nutrient TMDL for the Baltimore Harbor, Climate Adaptation, Recreation	
AA16ALN000008	STRE	A	1	0.0	277,720.0	403.7	\$1,400,202	Design	2021	145.8	Healthy Watersheds, Flood Risk Mitigation	
AA19ALN000029	STRE	A	1	0.0	625,486.0	736.3	\$1,031,065	Design	2021	328.0	Sediment TMDL for the Little Patuxent River, Healthy Watersheds, Flood Risk Mitigation	
AA19ALN000003	STRE	A	1	0.0	2,120.0	91.9	\$397,724	Design	2023	5.9	Nutrient TMDL for the Baltimore Harbor, Healthy Watersheds, Flood Risk Mitigation	
AA19RST000010	PWED	S	1	45.7	26,057.8	324.3	\$592,000	Design	2023	42.4	Nutrient TMDL for the Baltimore Harbor	
AA16RST000069	SPSC	S	1	4.7	3,415.5	67.4	\$1,114,290	Design	2023	6.6	Sediment TMDL for the Non-Tidal South River	
AA19RST000007	SPSC	S	1	1.0	2,362.6	85.9	\$165,531	Design	2024	5.4		
AA19RST000008	SPSC	S	1	1.0	2,121.7	106.2	\$163,893	Design	2024	5.5		
AA17ALN000017	SHST	A	1	0.0	247,141.0	0.0	\$1,670,948	Design	2024	0.0	Nutrient TMDL for the Baltimore Harbor, Climate Adaptation, Recreation	
AA19RST000012	WEDW	S	1	9.2	6,987.6	98.7	\$680,846	Design	2024	11.7	Nutrient TMDL for the Baltimore Harbor, Flood Risk Mitigation	
AA19ALN000007	STRE	A	1	0.0	24,975.0	100.2	\$2,453,562	Design	2025	113.2	Sediment TMDL for the Little Patuxent River, Healthy Watersheds, Flood Risk Mitigation	
AA18RST000047	PWED	S	1	11.0	12,575.4	205.8	\$557,002	Design	2026	21.9		
AA18RST000049	PWED	S	1	0.3	316.9	8.2	\$12,920	Design	2026	0.6		
AA18RST000048	PWED	S	1	31.5	22,316.8	390.0	\$1,509,266	Design	2026	39.7		
AA17RST000024	SPSC	S	1	2.5	3,595.4	73.2	\$176,047	Design	2026	6.7		
AA17ALN000007	STRE	A	1	0.0	98,000.0	2,655.9	\$7,048,937	Design	2026	420.9	Healthy Watersheds, Flood Risk Mitigation	
AA19ALN000025	STRE	A	1	0.0	2,657.6	13.2	\$177,054	Design	2026	12.0	Healthy Watersheds, Flood Risk Mitigation	
	ESD	E	1	0.2	187.4	4.0	\$9,590	Planning	2023	0.4		
	MIBR	E	1	0.1	138.7	4.5	\$9,590	Planning	2023	0.3		
	MIBR	E	1	0.0	224.8	11.7	\$9,590	Planning	2023	0.6		
	FBIO	S	1	0.4	585.9	14.8	\$47,331	Planning	2023	1.2	Sediment TMDL for the Non-Tidal South River, Flood Risk Mitigation	
	WEDW	S	1	1.8	3,220.4	80.4	\$204,750	Planning	2024	6.4	Nutrient TMDL for the Baltimore Harbor, Flood Risk Mitigation	
	SHST	A	1	0.0	32,880.0	18.0	\$1,127,079	Planning	2024	16.3	Sediment TMDL for the Non-Tidal South River, Climate Adaptation, Recreation	
	SPSC	S	1	7.5	6,616.0	123.1	\$629,500	Planning	2025	12.6		
	ESD	E	1	10.7	7,894.7	91.5	\$900,000	Planning	2025	13.7	Nutrient TMDL for the Baltimore Harbor	
	STRE	A	1	0.0	11,850.0	59.3	\$1,395,000	Planning	2025	53.7	Nutrient TMDL for the Baltimore Harbor, Healthy Watersheds, Flood Risk Mitigation	
	STRE	A	1	0.0	13,500.0	67.5	\$4,616,121	Planning	2025	61.2	Sediment TMDL for the Non-Tidal South River, Healthy Watersheds, Flood Risk Mitigation	
	N/A	N/A	N/A	0.0	0.0	0.0	\$1,550,000	Planning	2020	0.0	Annual Operations & Maintenance Costs	
	N/A	N/A	N/A	0.0	0.0	0.0	\$8,117,000	Planning	2021	0.0	Stormwater/flood control projects not eligible for water quality credit (includes culvert and closed storm drain rehabilitation; emergency storm drain repairs; and stormwater management or infrastructure projects designed to relieve ponding or flooding). Climate Adaptation, Flood Risk Mitigation	
	N/A	N/A	N/A	0.0	0.0	0.0	\$1,550,000	Planning	2021	0.0	Annual Operations & Maintenance Costs	
	N/A	N/A	N/A	0.0	0.0	0.0	\$8,117,000	Planning	2021	0.0	Stormwater/flood control projects not eligible for water quality credit (includes culvert and closed storm drain rehabilitation; emergency storm drain repairs; and stormwater management or infrastructure projects designed to relieve ponding or flooding). Climate Adaptation, Flood Risk Mitigation	
	N/A	N/A	N/A	0.0	0.0	0.0	\$1,550,000	Planning	2022	0.0	Annual Operations & Maintenance Costs	
	N/A	N/A	N/A	0.0	0.0	0.0	\$8,117,000	Planning	2022	0.0	Stormwater/flood control projects not eligible for water quality credit (includes culvert and closed storm drain rehabilitation; emergency storm drain repairs; and stormwater management or infrastructure projects designed to relieve ponding or flooding). Climate Adaptation, Flood Risk Mitigation	
	N/A	N/A	N/A	0.0	0.0	0.0	\$1,550,000	Planning	2023	0.0	Annual Operations & Maintenance Costs	
	N/A	N/A	N/A	0.0	0.0	0.0	\$8,117,000	Planning	2023	0.0	Stormwater/flood control projects not eligible for water quality credit (includes culvert and closed storm drain rehabilitation; emergency storm drain repairs; and stormwater management or infrastructure projects designed to relieve ponding or flooding). Climate Adaptation, Flood Risk Mitigation	
	N/A	N/A	N/A	0.0	0.0	0.0	\$1,550,000	Planning	2024	0.0	Annual Operations & Maintenance Costs	
	N/A	N/A	N/A	0.0	0.0	0.0	\$8,117,000	Planning	2024	0.0	Stormwater/flood control projects not eligible for water quality credit (includes culvert and closed storm drain rehabilitation; emergency storm drain repairs; and stormwater management or infrastructure projects designed to relieve ponding or flooding). Climate Adaptation, Flood Risk Mitigation	
	N/A	N/A	N/A	0.0	0.0	0.0	\$1,550,000	Planning	2025	0.0	Annual Operations & Maintenance Costs	
	N/A	N/A	N/A	0.0	0.0	0.0	\$8,117,000	Planning	2025	0.0	Stormwater/flood control projects not eligible for water quality credit (includes culvert and closed storm drain rehabilitation; emergency storm drain repairs; and stormwater management or infrastructure projects designed to relieve ponding or flooding). Climate Adaptation, Flood Risk Mitigation	
Subtotal Capital			27	128	1,621,711	5,905	\$ 88,981,336					
Other												
Subtotal Other			0	0	0	0	\$0				The County does not plan any water quality improvement projects classified as "Other" at this time.	
Total for Next Permit			27	127.6	1,621,711.2	5,904.9	\$88,981,336					
Total for Remaining Obligations from The Previous Permit and Prosed Activities for the Next Permit			128	2,676	1,621,711.2	5,904.9	\$207,497,096				TSS and TN metrics only apply under the next permit, therefore totals for these metrics only include the obligations to be met under the next permit.	

Check with MDE Geodatabase:

Rest BMP ID, type, class, number of BMPs, impervious acres, built date, implementation cost should match the various geodatabase tables for BMPs (AltBMPLine, AltBMPPoint, AltBMPPoly, and RestBMP)-- aggregated by type and status.

Notes:

1 Use BMP types and classes from the MDE Geodatabase.

Financial Capacity Spreadsheet

1	County/City Name	Anne Arundel County
2	Cost As A Percent Of Household Income	
2a	Median Household Income (MHI)	
2b	Total Number Of Households In Jurisdiction	
2c	Average Annual Cost For Public Stormwater Related Management Programs	
2d	Annual Cost For Public Stormwater Related Management Programs Per Household	
2e	% Of MHI Spent On Public Stormwater Related Management Programs	
2f	Total Annual Stormwater Remediation Fee Per Household	
2g	% Of MHI Spent Annually On Stormwater Remediation Fee	
3	Cost Of Impervious Surface Restoration As A Percent Of Household Income	
3a	Total In Previous Permit Term Spent On The Impervious Surface Restoration Plan (ISRP)	
3b	Average Annual Cost Of The ISRP During The Previous Permit Term	
3c	Annual Cost Of The ISRP Per Household During The Previous Permit Term	
3d	% Of MHI Spent On The ISRP During The Previous Permit Term	
3e	Total Projected Cost For Restoration Portfolio	
3f	Projected Annual Cost For Restoration Portfolio	
3g	Projected Annual Cost For Restoration Portfolio Per Household	
3h	% Of MHI Spent On Projected Cost Of Restoration Portfolio	
4	Cost For Low-Income Residential Customers As A Percent Of Household Income	
4a	Percentage Of Households With Annual Income <\$25,000	
4b	% Of Income For Low Income Households Spent On Public Stormwater Related Management	
4c	% Of Income For Low Income Households Spent On Stormwater Remediation Fees	
4d	% Of Income For Low Income Household Spent On The ISRP	
4e	% Of MHI For Low Income House Spent On Projected Cost Of Restoration Portfolio	
5	Key Socioeconomic Indicators	
5a	Percentage Unemployed	
5b	Median Household Income	
5c	Percent Of Individuals (All People) Below Poverty Level	
6	Financial Capacity Indicators	
6a	Debt Indicators	Bond Rating – GO ¹ Bonds
6b		Bond Rating – Revenue Bonds
6c		Net Debt As A % Of FMPV ²
6d	Financial Management Indicators	Property Tax Revenues As % Of FMPV
6e		Property Tax Revenue Collection Rate

Notes:

1. GO = General Obligation
2. FMPV = Full Market Property Value

\$ 94,502
189,711
\$ 37,241,629.88
\$ 196.31
0.21%
\$71.75
0.08%
\$ 69,165,553.98
\$ 13,833,110.80
\$ 72.92
0.08%
\$207,497,096.00
\$29,642,442.29
\$ 156.25
0.17%
9.01%
0.79%
0.29%
0.29%
0.63%
5.22%
\$ 94,502
5.78%
Aaa
Aaa
1.34%
0.78%
99.84%

Moody's	Aaa
	Aa
	A
	Baa
	Ba
	B
	Caa
	Ca
	C
S&P	AAA
	AA
	A
	BBB
	BB
	B
	CCC
	CC
	R
	SD
	D

Parameter from 2017 ACS	2017 Value
National Average MHI	\$ 57,652.00
National Percent Unemployed	4.1%
National Percent of Individuals Below Poverty Level	14.6%