

**CONSULTING SERVICES TO REVISE /UPDATE EXISTING  
SEWER RATE SCHEDULE & FEE STRUCTURE FOR THE  
WARWICK SEWER AUTHORITY  
FISCAL YEARS 2022 – 2026**

**FOR THE  
WARWICK SEWER AUTHORITY**

**July 2021**

# **EXECUTIVE OVERVIEW AND OUTLINE OF THE REPORT**

## **Executive Summary**

The Warwick Sewer Authority (WSA) was created by the Rhode Island Public Law 1962, Chapter 254, Section 2, as an enterprise fund of the City of Warwick. There are approximately 317 miles of sanitary sewer lines and 49 sewage pump stations within the City which convey wastewater to the treatment facility. Ongoing sewer construction projects continue to expand the WSA sewer collection system and service connections in order to eliminate and/or mitigate environmental, safety, and public health concerns.

WSA is operated as an independent enterprise fund. Revenues are generated from sewer use rates and other charges in amounts adequate to cover all of the costs of operating the WSA collection system and treatment facility. Revenues are also generated from sewer assessments used to cover the costs of expanding the WSA collection system. The WSA manages daily operations of the collection system and treatment facility independently of other City departments. WSA finances, however, are evaluated and processed collaboratively with the City's Finance Department. Of the utmost importance in this collaborative effort is ensuring adequate funding of the WSA's Renew and Replacement Fund, providing affordable sewer assessments while growing the sewer collection system and maintaining current user fees.

Prior to 2017, sewer construction projects were assessed for only the cost of the project. Both the principal and interest collected with project assessments covered only construction costs. Since all sewer construction funds are borrowed using municipal and revenue bonds, assessment revenues would cover only the principal portions of the debt service payments, not interest payments due on those bonds. Consequently, pre-payment of an assessment would result in coverage of only a portion of the construction costs. Furthermore, a frontage model was used to calculate the assessment. Essentially, assessments were calculated by multiplying the number of linear feet of property frontage by a uniform construction rate per foot. Construction rates used to calculate assessments remained relatively flat, often over a period of several years and several construction projects. Employment of the frontage model using antiquated rates resulted in insufficient assessment revenue collections due to actual project costs being much higher. Important to note, the frontage model was also prone to long term deferment for properties with

large acreage, as well as, abatement. Deferments and abatements further reduced assessment revenue thus requiring user rates to cover shortfalls in principal and interest costs.

Beginning in 2017, the WSA adopted changes in how assessments were calculated. These changes were applied to the last three sewer construction projects, i.e., Governor Francis III, Tidewater/Mill Cove and O'Donnell Hill. The WSA calculated the assessment for each of the aforementioned projects based on the project's actual cost. The interest portion of the assessment revenue would cover the interest portion of the debt service of the bonds used to fund the project. Furthermore, the assessments would be charged based upon an Equivalent Dwelling Unit (EDU) method. The EDU was implemented in order to mitigate revenue losses from abatements, however it has raised concerns due to the higher costs of assessments and the affordability of sewers for the City's ratepayers. City leadership, in response to community concerns over higher assessment costs recommended that the WSA provide these three projects a system improvement credit of 35%. This recommendation was approved by the WSA's Board of Directors. The credit reflects the indirect subsidy that past projects received due to project estimates, abatements, and debt service interest subsidy. As a result, B&E Consulting, LLC (B&E) has provided an option schedule to show the impact of offering a 35% subsidy for future assessment projects when evaluating the projected capital project program. See Schedule A-3 Option 2.

B&E has observed the sewer system operations, reviewed the financial statements and evaluated the WSA's current rate structure. B&E determined the "day-to-day" operations of WSA are efficient and well run. B&E is also pleased to report that since the last rate study, the WSA has improved its finance team and is working directly with the City Controller to assist the WSA in getting more timely financial information. WSA assets are in reasonably good condition; however, many capital projects have been postponed due to revenue shortfalls in the prior ten years. The WSA has repaid the Due to City General Fund for prior deficits. Now that the City's General Fund has been reimbursed and several Sewer Authority Bonds are being retired, there is an opportunity for the WSA to address much-needed system capital projects. Schedule A-1 shows that over the next twenty years, as current debt is retired, there will be approximately \$100,000,000 of prior debt service funding in current sewer use rates available for Capital needs.

Since there is sufficient sewer use funding to cover current and future operations and debt service, the bottom line is the funding of the capital project program. The WSA has greater flexibility in the timing of when projects are initiated. B&E, as a result, has presented its projected cash flow schedules (see Schedule A-2), showing the funding of a capital reserve for when revenues at current rates will generate surplus due to the retirement of debt. It should be noted that this schedule shows Renewal and Replacement (R&R) fully funding the reserve account since the expenditure equals the R&R revenue generated each year. Lastly, B&E has prepared Schedule A-3 to summarize the WSA prepared Capital Project and possible funding sources. This schedule has been prepared with two options; one has assessments being fully assessed and the other shows the assessments with a system improvement credit of 35%. While both schedules (see Schedule A-3 option 1 & Schedule A-3 option 2) show that assessment revenues in FY 22 and FY 23 will initially be insufficient to support the WSA capital program, revenues will later outpace expenditures as net WSA debt is retired. This outpacing of revenues to expenditures begins in FY 24 and will more than double by FY 27. The capital reserves will continue to grow even if assessments are moderated by 35%. This long-term result includes the assumption that Bayside, NW Gorton Pond, and Warwick Neck South will be initiated on a reasonably accelerated schedule. Therefore, the moderated assessments as presented on Option 2 are an acceptable response to ratepayer concerns that assessment rates are not financially viable while opening the affordability door for these environmentally necessary projects and preserving reserves for the continued rehabilitation of the existing collection system. B&E recommends that WSA utilize R&R funds to cover the capital shortfalls for FY 22 and FY 23 in order to maintain no rate increase. The WSA has an estimated \$4.7 million dollar fund balance for R&R so that the fund would meet those shortfalls.

Since rate design is prospective in nature, B&E calculates Pro-forma financial information for WW through 2027. B&E used its projections to identify the future revenue requirements of WSA and design adequate future rates. In summary, this engagement has provided WSA with a multi-year revenue requirement and rate design plan that will adequately charge each ratepayer for the services provided and allow for the financial stability and independence of the Sewer Authority. Further, this study was designed to eliminate the need for a complete and comprehensive rate study in each of the next five years. However, B&E recommends a minimal review be made each

year to review the assumptions used in the study to assure that the assumptions are still appropriate.

### **Outline**

**Section A** - This executive overview will provide the reader the highlights of the report and references to the various sections of the report. This section includes four executive summary schedules. One shows the funds available each year for capital and debt service as current bonds due are retired. The second schedule shows the Cash Flow proforma using the B&E proposed rates for the 5-year rate plan. The final two schedules show the Capital Project program with two options.

**Section B** provides the reader a description of the scope of the engagement. This “agreed-upon procedures” and rate study engagement was completed with the full cooperation and assistance of the Warwick Sewer Authority (WSA) Board, management team and staff. The findings and recommendations of the engagement are presented for the consideration of the WSA Board.

**Section C** lists the assumptions made for this study.

**Section D** contains a review of the financial condition of the WSA. The WSA’s projected revenues (at current rates) and expenses are presented using standard rate-making procedures. All projections were made on a “line item” basis and show the estimated non-rate revenues, expenses and net revenue required from rates. The net revenue requirements presented do not exceed the rate revenues at current rates. The net revenue needed for FY 2022 was used to develop a Cost of Service Allocation to properly assign costs to its function.

**Section E** shows the proposed Cost of Service Allocation for Sewer Use. After reviewing the current rate structure, B&E recommended that no rate changes will be required. (**Schedule E-1**). B&E also recommends maintaining a per unit customer charge approach for residential and commercial accounts based on meter size. (**Schedule C-2**).

**Section F** shows the proposed rate increases with a revenue proof, the projected proforma revenues through 2027 at proposed rates.

Lastly, in **Section G**, B&E summarized its recommendations and conclusion related to implementing the five-year plan. This section also provides the cash flow for B&E recommendations and the two alternative options for the capital program.

**Before concluding this executive overview, we would like to thank the Board, the financial officer, management and staff of the WSA, who provided excellent feedback and assistance to B&E during this engagement. Their efforts have helped us to complete this engagement in a proficient and professional manner.**

Projected Net Debt Service Savings based on FY 2022 Level of Funding  
Warwick Sewer Authority

Schedule A-1

	Total Debt Service Payments on Existing Debt	Revenue from Sewer Assessments on Current Assessed Projects	System Improvement Credit on last three projects	Net Debt Service Payments	FY 2022 funding Level	Additional Debt Service Funding Freed up for Capital
FY 22	\$ 9,925,570	\$ 2,458,127	\$ (192,974)	\$ 7,660,418	\$ 7,660,418	\$ -
FY 23	\$ 9,844,007	\$ 2,163,674	\$ (192,974)	\$ 7,873,307	\$ 7,660,418	\$ (212,889)
FY 24	\$ 7,114,195	\$ 1,632,588	\$ (192,974)	\$ 5,674,582	\$ 7,660,418	\$ 1,985,836
FY 25	\$ 7,086,093	\$ 1,439,466	\$ (192,974)	\$ 5,839,602	\$ 7,660,418	\$ 1,820,816
FY 26	\$ 5,468,328	\$ 1,250,754	\$ (192,974)	\$ 4,410,548	\$ 7,660,418	\$ 3,249,869
FY 27	\$ 3,708,940	\$ 1,164,056	\$ (192,974)	\$ 2,737,858	\$ 7,660,418	\$ 4,922,559
FY 28	\$ 3,438,172	\$ 997,345	\$ (192,974)	\$ 2,633,801	\$ 7,660,418	\$ 5,026,617
FY 29	\$ 2,633,055	\$ 997,345	\$ (192,974)	\$ 1,828,685	\$ 7,660,418	\$ 5,831,733
FY 30	\$ 2,284,314	\$ 689,844	\$ (192,974)	\$ 1,787,444	\$ 7,660,418	\$ 5,872,974
FY 31	\$ 2,218,066	\$ 565,000	\$ (192,974)	\$ 1,846,041	\$ 7,660,418	\$ 5,814,377
FY 32	\$ 2,215,888	\$ 565,000	\$ (192,974)	\$ 1,843,862	\$ 7,660,418	\$ 5,816,556
FY 33	\$ 2,214,950	\$ 565,000	\$ (192,974)	\$ 1,842,924	\$ 7,660,418	\$ 5,817,493
FY 34	\$ 2,215,315	\$ 565,000	\$ (192,974)	\$ 1,843,289	\$ 7,660,418	\$ 5,817,129
FY 35	\$ 2,206,165	\$ 565,000	\$ (192,974)	\$ 1,834,140	\$ 7,660,418	\$ 5,826,278
FY 36	\$ 781,914	\$ 565,000	\$ (192,974)	\$ 409,888	\$ 7,660,418	\$ 7,250,530
FY 37	\$ 252,822	\$ 565,000	\$ (192,974)	\$ (119,204)	\$ 7,660,418	\$ 7,779,621
FY 38	\$ -	\$ 565,000	\$ (192,974)	\$ (372,026)	\$ 7,660,418	\$ 8,032,444
FY 39	\$ -	\$ 565,000	\$ (192,974)	\$ (372,026)	\$ 7,660,418	\$ 8,032,444
FY 40	\$ -	\$ 145,881	\$ (192,974)	\$ 47,093	\$ 7,660,418	\$ 7,613,325
FY 41	\$ -	\$ -	\$ -	\$ -	\$ 7,660,418	\$ 7,660,418
						<u>\$ 103,958,129</u>

Proforma Cash Flow Projections with Proposed Rate Increases  
Warwick Sewer Authority

Schedule A-2

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
<b>Sewer Revenues</b>						
Use	\$ 11,501,663	\$ 11,586,816	\$ 11,672,066	\$ 11,757,413	\$ 11,842,858	\$ 11,928,401
Renewal/Replacement	1,274,786	1,284,630	1,294,482	1,304,342	1,314,210	1,324,086
Minimum Service Charge	4,452,974	4,484,694	4,516,414	4,548,134	4,579,854	4,611,574
Other	982,288	982,288	982,288	982,288	982,288	982,288
Assessments (Presented below)	-	-	-	-	-	-
<b>Total Sewer Revenues</b>	<b>\$ 18,211,711</b>	<b>\$ 18,338,428</b>	<b>\$ 18,465,250</b>	<b>\$ 18,592,177</b>	<b>\$ 18,719,210</b>	<b>\$ 18,846,349</b>
<b>Sewer Expenses</b>						
Personnel	\$ 3,913,347	\$ 3,991,614	\$ 4,071,446	\$ 4,152,875	\$ 4,235,933	\$ 4,320,651
Commodities	2,168,019	2,211,379	2,255,607	2,300,719	2,346,733	2,393,668
Services	2,591,687	2,643,521	2,696,391	2,750,319	2,805,325	2,861,432
Debt Service (Net of Sewer Assessment)	7,660,417	7,873,307	5,674,581	5,839,601	4,410,548	2,737,011
Misc Capital Exp	525,000	525,000	525,000	525,000	525,000	525,000
Capital Reserve	78,455	-	1,947,742	1,719,320	3,081,460	4,684,500
Renew Replace funding of reserve	1,274,786	1,093,607	1,294,482	1,304,342	1,314,210	1,324,086
<b>Total Sewer Expenses</b>	<b>\$ 18,211,711</b>	<b>\$ 18,338,428</b>	<b>\$ 18,465,250</b>	<b>\$ 18,592,177</b>	<b>\$ 18,719,210</b>	<b>\$ 18,846,349</b>
<b>Sewer Net</b>	<b>\$ 0</b>	<b>\$ (0)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

Rate Increase

Use	0%	0%	0%	0%	0%
Renewal/Replacement	0%	0%	0%	0%	0%
Minimum Service Charge	0%	0%	0%	0%	0%

# Projected Capital Projects and Funding Warwick Sewer Authority

Schedule A-3  
Option 1  
Assessments without any subsidy

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
<b>Summary of Capital Projects</b>											
Collection System Projects	\$ 16,700,000	\$ -	\$ -	\$ 5,524,907	\$ 248,241	\$ 116,852	\$ 4,830,000	\$ 11,615,000	\$ 3,938,750	\$ 17,968,750	\$ 5,462,500
Interceptor Projects	-	500,000	500,000	9,482,289	6,823,269	3,638,301	500,000	500,000	500,000	500,000	500,000
Plant/Pump Station Projects	14,015,472	-	2,500,000	1,125,000	6,341,306	230,000	316,020	-	7,301,925	-	-
Total	30,715,472	500,000	3,000,000	16,132,196	13,412,816	3,985,152	5,646,020	12,115,000	11,740,675	18,468,750	5,962,500

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
<b>Funding</b>											
Misc. Capital -O&M	\$ 525,000	-	-	-	-	-	-	-	-	-	-
Capital Reserve	-	-	-	-	-	-	-	-	-	-	-
Renew Replace -Current Year Revenue	1,274,786	500,000	500,000	500,000	730,000	615,000	615,000	615,000	615,000	615,000	500,000
<b>Renew Replace -Prior Year Surplus</b>	<b>345,686</b>	-	-	-	-	-	-	-	-	-	-
New Debt Issue	28,570,000	-	2,500,000	15,632,196	12,682,816	3,370,152	5,031,020	11,500,000	11,125,675	17,853,750	5,462,500
Total	30,715,472	500,000	3,000,000	16,132,196	13,412,816	3,985,152	5,646,020	12,115,000	11,740,675	18,468,750	5,962,500

<b>Debt Service on New Debt Issue</b>											
System/Facility	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Interceptors	175,000	445,000	446,670	448,130	449,379	450,417	451,245	451,863	452,270	452,466	452,452
OB/CS/SCADA	215,125	515,125	521,625	526,775	531,600	536,100	541,275	546,100	550,575	554,700	558,475
Plant Upgrades	77,625	185,625	187,925	190,100	192,150	194,075	195,875	197,550	199,100	200,525	201,825
Interceptor Projects	-	-	-	224,557	574,557	576,307	577,795	579,020	579,982	580,682	581,120
Interceptor Projects	-	-	-	-	236,539	604,539	606,339	607,864	609,114	610,089	610,789
Plant/Pump Station	-	-	-	-	202,856	504,856	508,306	511,481	514,381	517,006	519,356
Plant/Pump Station	-	-	-	-	-	82,938	202,938	204,938	206,813	208,563	210,188
Plant/Pump Station	-	-	-	-	-	-	-	-	159,563	431,563	429,763
<b>Collection System (Assessments)</b>											
Bayside	417,500	1,092,500	1,092,625	1,092,325	1,091,600	1,090,450	1,088,875	1,086,875	1,084,450	1,081,600	1,078,325
NW Gorton Pond	-	-	-	-	-	245,000	645,000	640,000	639,875	639,500	638,875
Warwick Neck South	-	-	-	-	-	-	385,250	965,250	970,750	975,750	980,250
Greenwood East	-	-	-	-	-	-	-	-	-	425,500	1,025,500
PP/Strawberry II	-	-	-	-	-	-	-	-	-	166,750	406,750
Total	885,250	2,238,250	2,248,845	2,481,887	3,278,681	4,284,682	5,202,898	5,790,941	5,966,873	6,844,694	7,693,668

<b>Funding for New Debt Issue</b>											
	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
New Assessments-Bayside FY 22	\$ 417,500	\$ 1,092,500	\$ 1,092,625	\$ 1,092,325	\$ 1,091,600	\$ 1,090,450	\$ 1,088,875	\$ 1,086,875	\$ 1,084,450	\$ 1,081,600	\$ 1,078,325
New Assessments-NW Gorton Pond	-	-	-	-	-	245,000	645,000	640,000	639,875	639,500	638,875
New Assessments-Warwick Neck South	-	-	-	-	-	-	385,250	965,250	970,750	975,750	980,250
New Assessments-Greenwood East	-	-	-	-	-	-	-	-	-	425,500	1,025,500
New Assessments-PP/Strawberry	-	-	-	-	-	-	-	-	-	166,750	406,750
Misc. Capital -O&M	-	525,000	525,000	525,000	525,000	525,000	525,000	525,000	525,000	525,000	525,000
Capital Reserve	78,455	-	631,220	864,562	1,662,081	2,424,232	2,558,773	2,573,816	2,746,798	3,030,594	3,038,968
<b>Renew Replace -Prior Year Surplus</b>	<b>389,295</b>	<b>620,750</b>	-	-	-	-	-	-	-	-	-
Total	885,250	2,238,250	2,248,845	2,481,887	3,278,681	4,284,682	5,202,898	5,790,941	5,966,873	6,844,694	7,693,668

Remaining Current Year Capital Reserve Funding	\$ -	\$ -	\$ 1,316,522	\$ 854,758	\$ 1,419,379	\$ 2,260,268	\$ 2,467,844	\$ 3,257,917	\$ 3,126,176	\$ 2,783,783	\$ 2,777,588
Remaining Current Year R&R Funding	\$ -	\$ 784,630	\$ 794,482	\$ 804,342	\$ 584,210	\$ 709,086	\$ 709,086	\$ 709,086	\$ 709,086	\$ 709,086	\$ 824,086

Amount of Debt Service coverage provided by remaining current year Capital Reserve funding

59%	34%	43%	53%	47%	56%	52%	41%	36%
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<b>Funds Need from Prior Year Renewal &amp; Replacement Surplus to Avoid and Rate Increase</b>	\$ 734,981	\$ 620,750	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
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Rate Increase needed if R&R Surplus is not used

5%	0%	-5%
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# Projected Capital Projects and Funding Warwick Sewer Authority

Schedule A-3  
Option 2  
Assessments 35% subsidy

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
<b>Summary of Capital Projects</b>											
Collection System Projects	\$ 16,700,000	\$ -	\$ -	\$ 5,524,907	\$ 248,241	\$ 116,852	\$ 4,830,000	\$ 11,615,000	\$ 3,938,750	\$ 17,968,750	\$ 5,462,500
Interceptor Projects	-	500,000	500,000	9,482,289	6,823,269	3,638,301	500,000	500,000	500,000	500,000	500,000
Plant/Pump Station Projects	14,015,472	-	2,500,000	1,125,000	6,341,306	230,000	316,020	-	7,301,925	-	-
Total	30,715,472	500,000	3,000,000	16,132,196	13,412,816	3,985,152	5,646,020	12,115,000	11,740,675	18,468,750	5,962,500

<b>Funding</b>											
Misc. Capital -O&M	\$ 525,000	-	-	-	-	-	-	-	-	-	-
Capital Reserve	-	-	-	-	-	-	-	-	-	-	-
Renew Replace -Current Year Revenue	1,274,786	500,000	500,000	500,000	730,000	615,000	615,000	615,000	615,000	615,000	500,000
<b>Renew Replace -Prior Year Surplus</b>	<b>345,686</b>	-	-	-	-	-	-	-	-	-	-
New Debt Issue	28,570,000	-	2,500,000	15,632,196	12,682,816	3,370,152	5,031,020	11,500,000	11,125,675	17,853,750	5,462,500
Total	30,715,472	500,000	3,000,000	16,132,196	13,412,816	3,985,152	5,646,020	12,115,000	11,740,675	18,468,750	5,962,500

<b>Debt Service on New Debt Issue</b>												
<b>System/Facility</b>												
Interceptors	FY22	175,000	445,000	446,670	448,130	449,379	450,417	451,245	451,863	452,270	452,466	452,452
OBI/CS/SCADA	FY22	215,125	515,125	521,625	526,775	531,600	536,100	541,275	546,100	550,575	554,700	558,475
Plant Upgrades	FY22	77,625	185,625	187,925	190,100	192,150	194,075	195,875	197,550	199,100	200,525	201,825
Interceptor Projects	FY25	-	-	-	224,557	574,557	576,307	577,795	579,020	579,982	580,682	581,120
Interceptor Projects	FY26	-	-	-	-	236,539	604,539	606,339	607,864	609,114	610,089	610,789
Plant/Pump Station	FY26	-	-	-	-	202,856	504,856	508,306	511,481	514,381	517,006	519,356
Plant/Pump Station	FY27	-	-	-	-	-	82,938	202,938	204,938	206,813	208,563	210,188
Plant/Pump Station	FY30	-	-	-	-	-	-	-	-	159,563	431,563	429,763
<b>Collection System (Assessments)</b>												
Bayside	FY22	417,500	1,092,500	1,092,625	1,092,325	1,091,600	1,090,450	1,088,875	1,086,875	1,084,450	1,081,600	1,078,325
NW Gorton Pond	FY27	-	-	-	-	-	245,000	645,000	640,000	639,875	639,500	638,875
Warwick Neck South	FY28	-	-	-	-	-	-	385,250	965,250	970,750	975,500	980,250
Greenwood East	FY31	-	-	-	-	-	-	-	-	-	425,500	1,025,500
PP/Strawberry II	FY31	-	-	-	-	-	-	-	-	-	166,750	406,750
Total		885,250	2,238,250	2,248,845	2,481,887	3,278,681	4,284,682	5,202,898	5,790,941	5,966,873	6,844,694	7,693,668

<b>Funding for New Debt Issue</b>											
0.65											
New Assessments-Bayside FY 22	\$ 271,375	\$ 710,125	\$ 710,206	\$ 710,011	\$ 709,540	\$ 708,793	\$ 707,769	\$ 706,469	\$ 704,893	\$ 703,040	\$ 700,911
New Assessments-NW Gorton Pond	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 159,250	\$ 419,250	\$ 416,000	\$ 415,919	\$ 415,675	\$ 415,269
New Assessments-Warwick Neck South	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 250,413	\$ 627,413	\$ 630,988	\$ 634,238	\$ 637,163
New Assessments-Greenwood East	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 276,575	\$ 666,575
New Assessments-PP/Strawberry	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,388	\$ 264,388
Misc. Capital -O&M	\$ -	\$ 525,000	\$ 525,000	\$ 525,000	\$ 525,000	\$ 525,000	\$ 525,000	\$ 525,000	\$ 525,000	\$ 525,000	\$ 525,000
Capital Reserve	\$ 78,455	\$ -	\$ 1,013,639	\$ 1,246,876	\$ 2,044,141	\$ 2,891,640	\$ 3,300,467	\$ 3,516,060	\$ 3,690,074	\$ 4,181,779	\$ 4,484,363
<b>Renew Replace -Prior Year Surplus</b>	<b>\$ 535,420</b>	<b>\$ 1,003,125</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Total	885,250	2,238,250	2,248,845	2,481,887	3,278,681	4,284,682	5,202,898	5,790,941	5,966,873	6,844,694	7,693,668

Remaining Current Year Capital Reserve Funding	\$ -	\$ -	\$ 934,103	\$ 472,445	\$ 1,037,319	\$ 1,792,861	\$ 1,726,150	\$ 2,315,673	\$ 2,182,900	\$ 1,632,598	\$ 1,332,193
Remaining Current Year R&R Funding	\$ -	\$ 784,630	\$ 794,482	\$ 804,342	\$ 584,210	\$ 709,086	\$ 709,086	\$ 709,086	\$ 709,086	\$ 709,086	\$ 824,086
Amount of Debt Service coverage provided by remaining current year Capital Reserve funding			42%	19%	32%	42%	33%	40%	37%	24%	17%

<b>Funds Need from Prior Year Renewal &amp; Replacement Surplus to Avoid and Rate Increase</b>	<b>\$ 881,106</b>	<b>\$ 1,003,125</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Rate Increase needed if R&R Surplus is not used	6%	1%	-7%								

## SCOPE OF ENGAGEMENT

**Section B** – the WSA engaged B&E to provide consulting services and assistance to provide a complete review of WSA Use, Assessment and Pretreatment rates. The Pretreatment rates were evaluated along with other miscellaneous revenues in the revenue expense projections. This report will concentrate on the Sewer Use and Sewer Assessment revenues. To complete the engagement, B&E was required to review the existing rate structure, project revenues and expenditures for the future and assist the WSA Management team in addressing the following:

1. B&E reviewed and evaluated the current revenues and expenditures of the WSA and made appropriate adjustments in order to prepare what is commonly referred to in the ratemaking process as a “normalized test year.” This first step provides a firm footing on which B&E can develop its subsequent financial models. B&E utilized WSA’s Approved FY 2022 budget as the basis for the normalized test year. The main focus of this area was to evaluate the usage patterns over the past years. Since B&E’s focus was to demonstrate that current rates and projected usage are sufficient to cover future expenditures, it was necessary to keep usage factors conservative to prevent any revenue shortfalls. The opposite approach was taken for expenditures. Compared to actual, the expenditures are a little more optimistic and have room to be reduced if revenues do not materialize. This step provided some additional use and minimum charge, which was offset by funding a capital reserve.
2. B&E then calculated by using a B&E developed rate design model the Pro-forma non-rate revenues and expenses for the WSA for the five-year period 2022-2026. This period was expanded to six years by B&E to demonstrate the overall potential of future capital reserve surpluses resulting from the retirement of existing WSA Debt Service less the smaller amount of reduction in current sewer assessment revenues. This additional funding available in current rates from the reduction in current debt service payments will allow the

WSA to cover the significant capital expenditure related to future capital renewal and replacement. These calculations resulted in a net revenue requirement used in a B&E-developed cost of service rate model. The developed rates provided sufficient Pro-forma revenues to obtain one of the initial goals, financial stability for the WSA, while properly assigning rates based upon which ratepayers are causing demands to the system.

The above steps resulted in the preparation of numerous schedules. Attached to this report are schedules and the necessary supporting sub-schedules, which reflect certain statistical data plus actual and projected financial information for the WSA. These schedules are kept together by a section of the report which they support. Each section begins with a summary listing the schedule in that section.

B&E reviewed the financial condition of the WSA and found that cash flow and future revenue projections showed no signs that a usage rate increase, rate redesign, or both were required.

## **ASSUMPTIONS USED FOR THE DEVELOPMENT OF THE RATE MODEL**

**Section C** – It is an accounting requirement of an “agreed-upon procedures” engagement to provide a list of assumptions used in the study. The following is the list of assumptions that were agreed upon by B&E and the WSA.

1. Customer growth is projected at a rate of 250 new sewer customers per year based upon recent history. It was agreed that our projection could have been higher, but the assumption made is a conservative one.
2. Consumption was reviewed in detail by residential and commercial customer class. B&E had reviewed the cubic feet usage of the residential and commercial class for the past three fiscal years and the last four calendar years. See Schedule C-1 for the analysis of historical consumption patterns. B&E believes that using a three-year average of the past three fiscal years would present a conservative usage pattern and minimizes the impact of COVID restrictions. Since there are constant new connections, each cycle billed was averaged to consumption per unit. The units by cycle billed are then averaged. No other growth factors other than consumption from new connections are used in the model. See Schedule C-2 for consumption and customer counts used in this model.
3. Renewal and replacement were projected as \$1,274,786 of revenue and \$1,274,786 of expense. If the \$1,274,786 is not spent, additional dollar reserves will be available. Therefore, these two line items have no impact on the future net revenue of the WSA.
4. Assessments were divided into two categories: 1) current assessed projects which are currently included in the cash flow projections and 2) future assessment projects which will have a net-zero impact on the cash flow schedule since future assessments are calculated to cover the principal and interest costs of debt taken out to cover the assessment project.

5. Historical expense levels were increased for an inflation rate of 2% on personnel, commodities and service costs. Debt Service and Capital are analyzed separately.
  
6. Principal and interest payments are projected to cover actual current debt service. The projected debt service for future borrowing has been included on the projected Capital Projects and Funding schedule.

Analysis of Historic Usage  
Warwick Sewer Authority

	Residential	Commercial
FY 2018	155,422,160	53,649,689
FY 2019	163,834,387	54,148,906
FY 2020	159,426,265	50,911,829
3 year Average	159,560,937	52,903,475
CY 2017	157,012,837	54,372,879
CY 2018	161,966,302	52,357,870
CY 2019	158,709,885	52,079,506
CY 2020	175,622,923	55,370,428
4 Year Average	163,327,987	53,545,171

Projected Consumptions  
Warwick Sewer Authority

Schedule C-2

Sewer Use Data

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
	CF	CF	CF	CF	CF	CF
Retail Sales						
Consumption per Unit	5,505	5,505	5,505	5,505	5,505	5,505
Units	28,987	29,237	29,487	29,737	29,987	30,237
<b>Residential</b>	<b>159,560,937</b>	<b>160,937,079</b>	<b>162,313,221</b>	<b>163,689,364</b>	<b>165,065,506</b>	<b>166,441,648</b>
Consumption per Unit	39,014	39,209	39,405	39,603	39,801	40,000
Units	1,356	1,356	1,356	1,356	1,356	1,356
<b>Commercial</b>	<b>52,903,475</b>	<b>53,167,992</b>	<b>53,433,832</b>	<b>53,701,001</b>	<b>53,969,507</b>	<b>54,239,354</b>
Proforma Year	212,464,412	214,105,072	215,747,054	217,390,365	219,035,012	220,681,002

Meters By Size

Meter Size	Total Accounts	Total Accounts	Total Accounts	Total Accounts	Total Accounts	Total Accounts
<b>5/8 Residential</b>	<b>21,442</b>	<b>22,072</b>	<b>22,702</b>	<b>23,332</b>	<b>23,962</b>	<b>24,592</b>
5/8	703	703	703	703	703	703
3/4	134	134	134	134	134	134
1	236	236	236	236	236	236
1 1/2	89	89	89	89	89	89
2	151	151	151	151	151	151
3	11	11	11	11	11	11
4	16	16	16	16	16	16
6	16	16	16	16	16	16
8	12	12	12	12	12	12
10	1	1	1	1	1	1
	22,811	23,441	24,071	24,701	25,331	25,961
Total Accounts	26,101	26,101	26,101	26,101	26,101	26,101
Connect Cabable	3,290	2,660	2,030	1,400	770	140
	-	-	-	-	-	-
	-	-	-	-	-	-
New Accounts		250	250	250	250	250
Residential						
# of Units	28,987	29,237	29,487	29,737	29,987	30,237
Commercial						
5/8"	703	703	703	703	703	703
3/4"	134	134	134	134	134	134
1"	236	236	236	236	236	236
1 1/2"	89	89	89	89	89	89
2"	151	151	151	151	151	151
3"	11	11	11	11	11	11
4"	16	16	16	16	16	16
6"	16	16	16	16	16	16
8"	12	12	12	12	12	12
10"	1	1	1	1	1	1

Number of Bills

	Total	Total	Total	Total	Total	Total
Total Billing	121,424	122,424	123,424	124,424	125,424	126,424

## WSA REVENUE AND EXPENSE PROJECTIONS

**Section D** - B&E has prepared five schedules for this section of the report as follows:

- **Schedules D-1** – Proof of Revenues at Current Rates
- **Schedules D-2** – Proforma Expenditure and Non-rate Revenues.
- **Schedules D-3** – Cash Flow Projections with Current Rates.

Attached to this report are Schedule D-1 and Schedule D-2 that relate to the projection of future other revenues and expenditures using the current rate structure.

These schedules provide the basis for B&E's review and evaluation of the test year (2022). B&E utilized WSA's Approved FY 2022 budget as the basis for the normalized test year. The only modifications B&E made to the FY 2022 budget were adjusting Sewer Use revenue for a three-year average of usage and adjusting the minimum charge to reflect the current unit and meter counts. In addition, the sewer assessment revenue was reduced to reflect the City's management request to provide a system improvement credit of 35%. The net effect of these revenue adjustments provided a surplus reflected on Schedule D-3. The subsequent proforma expenses reflect inflation at 2% for general expenses and 2% for personnel and health insurance.

Capital projections are presented on schedule A-3 and were obtained from WSA management. Under this, B&E recommended approach capital reserve funding for the surplus created from the debt being retired. In addition, this will allow for a smaller borrowing to cover these projects. The capital reserve can be utilized to pay for capital as revenue is generated or allow for additional debt funding to provide the capital projects to be finished in a short time. Schedule A-3 has been presented with two options. One option has the future assessments calculated without a system improvement credit and the second option calculates future assessments with a system improvement credit of 35%.



The cash flow projections on Schedule D-3 demonstrate that except for FY 2023, the cash flow will provide surplus and fully fund the Renewal and Replacement fund without requiring a rate increase. Therefore, B&E recommends, as presented, that R&R funds will finance the shortfall of \$191,023 in FY 2023. If the WSA were to raise rates to cover FY 2023, they would need to increase rates by 2% and reduce rates the following year.

Revenue Check  
Warwick Sewer Authority

Schedule D-1

**Current Rates**

0

<u>Retail Use Rate</u>		FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Residential	\$ 47.80	\$ 7,627,013	\$ 7,692,792	\$ 7,758,572	\$ 7,824,352	\$ 7,890,131	\$ 7,955,911
Commercial	\$ 73.24	\$ 3,874,651	\$ 3,894,024	\$ 3,913,494	\$ 3,933,061	\$ 3,952,727	\$ 3,972,490
		\$ 11,501,663	\$ 11,586,816	\$ 11,672,066	\$ 11,757,413	\$ 11,842,858	\$ 11,928,401

<u>Renewal &amp; Replacement Rate</u>		FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Residential & Comm	\$ 6.00	\$ 1,274,786	\$ 1,284,630	\$ 1,294,482	\$ 1,304,342	\$ 1,314,210	\$ 1,324,086

<u>Minimum Service Charge</u>		FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Residential per Unit	\$ 126.88	\$ 3,677,871	\$ 3,709,591	\$ 3,741,311	\$ 3,773,031	\$ 3,804,751	\$ 3,836,471
<u>Meter Size</u>							
5/8	\$ 260.64	\$ 183,230	\$ 183,230	\$ 183,230	\$ 183,230	\$ 183,230	\$ 183,230
3/4	\$ 357.72	\$ 47,934	\$ 47,934	\$ 47,934	\$ 47,934	\$ 47,934	\$ 47,934
1	\$ 435.88	\$ 102,868	\$ 102,868	\$ 102,868	\$ 102,868	\$ 102,868	\$ 102,868
1 1/2	\$ 783.08	\$ 69,694	\$ 69,694	\$ 69,694	\$ 69,694	\$ 69,694	\$ 69,694
2	\$ 1,087.04	\$ 164,143	\$ 164,143	\$ 164,143	\$ 164,143	\$ 164,143	\$ 164,143
3	\$ 1,485.80	\$ 16,344	\$ 16,344	\$ 16,344	\$ 16,344	\$ 16,344	\$ 16,344
4	\$ 2,243.08	\$ 35,889	\$ 35,889	\$ 35,889	\$ 35,889	\$ 35,889	\$ 35,889
6	\$ 3,936.12	\$ 62,978	\$ 62,978	\$ 62,978	\$ 62,978	\$ 62,978	\$ 62,978
8	\$ 6,862.64	\$ 82,352	\$ 82,352	\$ 82,352	\$ 82,352	\$ 82,352	\$ 82,352
10	\$ 9,671.24	\$ 9,671	\$ 9,671	\$ 9,671	\$ 9,671	\$ 9,671	\$ 9,671
		\$ 4,452,974	\$ 4,484,694	\$ 4,516,414	\$ 4,548,134	\$ 4,579,854	\$ 4,611,574

**Proforma Expenditure Projections**  
**Warwick Sewer Authority**

Schedule D-2

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
<b>O&amp;M Expense</b>						
80-1 Sick Leave	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
80-1 Salaries	2,575,156	2,626,659	2,679,192	2,732,776	2,787,432	2,843,180
80-1 Mun Overtime	84,100	85,782	87,498	89,248	91,033	92,853
80-1 Overtime Storm	10,000	10,200	10,404	10,612	10,824	11,041
80-1 Temporary Services	1,500	1,530	1,561	1,592	1,624	1,656
80-1 Fringe Benefits	1,242,591	1,267,443	1,292,792	1,318,648	1,345,020	1,371,921
<b>Personnel</b>	<b>3,913,347</b>	<b>3,991,614</b>	<b>4,071,446</b>	<b>4,152,875</b>	<b>4,235,933</b>	<b>4,320,651</b>
80-2 Office Supplies	8,750	8,925	9,104	9,286	9,471	9,661
80-2 Printing, Bind & Reproduction	19,980	20,380	20,787	21,203	21,627	22,060
80-2 Advertising	2,056	2,097	2,139	2,182	2,225	2,270
80-2 Postage	34,032	34,713	35,407	36,115	36,837	37,574
80-2 Lab Supplies	26,200	26,724	27,258	27,804	28,360	28,927
80-2 Fuel & diesel	30,000	30,600	31,212	31,836	32,473	33,122
80-2 Natural Gas	42,000	42,840	43,697	44,571	45,462	46,371
80-2 Electricity	720,000	734,400	749,088	764,070	779,351	794,938
80-2 Supplies	14,150	14,433	14,722	15,016	15,316	15,623
80-2 Chem. Polymer & Root	149,880	152,878	155,935	159,054	162,235	165,480
80-2 Chem. Chlorine	64,058	65,339	66,646	67,979	69,338	70,725
80-2 Chem. - Dechlor	31,518	32,148	32,791	33,447	34,116	34,798
80-2 Chem. - Oder Control	224,618	229,110	233,693	238,366	243,134	247,996
80-2 Chem. - Alum	144,252	147,137	150,080	153,081	156,143	159,266
80-2 Chem. - Caustic	261,596	266,828	272,164	277,608	283,160	288,823
80-2 Clothing	12,530	12,781	13,036	13,297	13,563	13,834
80-2 Maint Materials & by pass	165,000	168,300	171,666	175,099	178,601	182,173
80-2 Other Equipment	201,899	205,937	210,056	214,257	218,542	222,913
80-2 Other Commodities	15,500	15,810	16,126	16,449	16,778	17,113
<b>Commodities</b>	<b>2,168,019</b>	<b>2,211,379</b>	<b>2,255,607</b>	<b>2,300,719</b>	<b>2,346,733</b>	<b>2,393,668</b>
80-3 Travel	750	765	780	796	812	828
80-3 Training & Education	5,340	5,447	5,556	5,667	5,780	5,896
80-3 Telephone	17,400	17,748	18,103	18,465	18,834	19,211
80-3 Water Usage	10,720	10,934	11,153	11,376	11,604	11,836
80-3 Equip Repair	90,000	91,800	93,636	95,509	97,419	99,367
80-3 Tax Sale	125,000	127,500	130,050	132,651	135,304	138,010
80-3 Insurance	361,281	368,507	375,877	383,394	391,062	398,883
80-3 Auto Maintenance	30,000	30,600	31,212	31,836	32,473	33,122
emergency assistance	25,000	25,500	26,010	26,530	27,061	27,602
80-3 Service Contracts	153,080	156,142	159,264	162,450	165,699	169,013
80-3 Implementation Service	-	-	-	-	-	-
80-3 Professional Service	109,500	111,690	113,924	116,202	118,526	120,897
80-3 Construction Serv.	155,000	158,100	161,262	164,487	167,777	171,133
80-3 Nutrient Reduction	-	-	-	-	-	-
80-3 Sludge Removal	1,117,665	1,140,018	1,162,819	1,186,075	1,209,797	1,233,992
80-3 Administration	126,741	129,276	131,861	134,499	137,189	139,932
80-3 Gen Service	-	-	-	-	-	-
80-3 Testing & Lab Samples	57,160	58,303	59,469	60,659	61,872	63,109
80-3 Engineering Service	150,000	153,000	156,060	159,181	162,365	165,612
80-3 Services - Other	57,050	58,191	59,355	60,542	61,753	62,988
<b>Services</b>	<b>2,591,687</b>	<b>2,643,521</b>	<b>2,696,391</b>	<b>2,750,319</b>	<b>2,805,325</b>	<b>2,861,432</b>

**Proforma Expenditure Projections**  
**Warwick Sewer Authority**

Schedule D-2

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
<b><u>Capital</u></b>						
80-7 Misc Capital Exp	525,000	525,000	525,000	525,000	525,000	525,000
Capital Reserve	78,455	-	1,947,742	1,719,320	3,081,460	4,684,500
80-5 Renew Replace	1,274,786	1,093,607	1,294,482	1,304,342	1,314,210	1,324,086
<b>Capital</b>	<b>1,878,241</b>	<b>1,618,607</b>	<b>3,767,225</b>	<b>3,548,663</b>	<b>4,920,670</b>	<b>6,533,586</b>
<b><u>Debt Service</u></b>						
Total Debt Service	9,925,570	9,844,007	7,114,195	7,086,093	5,468,328	3,708,093
Assessment Revenue	(2,265,153)	(1,970,700)	(1,439,614)	(1,246,492)	(1,057,780)	(971,082)
<b>Debt Service</b>	<b>7,660,417</b>	<b>7,873,307</b>	<b>5,674,581</b>	<b>5,839,601</b>	<b>4,410,548</b>	<b>2,737,011</b>
<b>Net O&amp;M, Capital &amp; Debt Service</b>	<b>18,211,711</b>	<b>18,338,428</b>	<b>18,465,250</b>	<b>18,592,177</b>	<b>18,719,210</b>	<b>18,846,349</b>
<b><u>Reserves</u></b>						
Net Operating Reserve	-	-	-	-	-	-
Debt Service Sinking Fund	-	-	-	-	-	-
General Fund Repayment	-	-	-	-	-	-
<b>Reserves</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b><u>Other Revenues</u></b>						
80-9 Energy Buyback Revenue	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)
80-9 Cr-Amort. Of Bond						
80-9 Grant Revenue						
80-9 Federal Reimbursement	-	-	-	-	-	-
80-9 Engineering Review	(6,600)	(6,600)	(6,600)	(6,600)	(6,600)	(6,600)
80-9 Surcharge Revenue						
80-9 Septage Dumping Fees	(24,000)	(24,000)	(24,000)	(24,000)	(24,000)	(24,000)
80-9 Discharge Fees	(6,000)	(6,000)	(6,000)	(6,000)	(6,000)	(6,000)
80-9 License/Permits	(47,000)	(47,000)	(47,000)	(47,000)	(47,000)	(47,000)
80-9 Misc Income	(4,000)	(4,000)	(4,000)	(4,000)	(4,000)	(4,000)
80-9 Sewer Connect Fees	(50,000)	(50,000)	(50,000)	(50,000)	(50,000)	(50,000)
80-9 Grinder Pumps	(30,000)	(30,000)	(30,000)	(30,000)	(30,000)	(30,000)
80-9 Sewer Tax Title Fees	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)
80-9 Earnings on Invest.	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)
80-9 Insurance Proceeds	-	-	-	-	-	-
80-9 Interest Income	(145,000)	(145,000)	(145,000)	(145,000)	(145,000)	(145,000)
80-9 SLA Admin	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)
80-9 SLA Inspection	(6,000)	(6,000)	(6,000)	(6,000)	(6,000)	(6,000)
80-9 Misc Dept Credits						
Contribution from Pretreatment	(499,188)	(499,188)	(499,188)	(499,188)	(499,188)	(499,188)
Contributed Capital	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)
<b>Total Other Revenue</b>	<b>(982,288)</b>	<b>(982,288)</b>	<b>(982,288)</b>	<b>(982,288)</b>	<b>(982,288)</b>	<b>(982,288)</b>
<b>Net Revenue Requirement</b>	<b>17,229,423</b>	<b>17,356,140</b>	<b>17,482,962</b>	<b>17,609,889</b>	<b>17,736,922</b>	<b>17,864,061</b>

Proforma Cash Flow Projections with Current Rates  
Warwick Sewer Authority

Schedule D-3

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
<b>Sewer Revenues</b>						
Use	\$ 11,501,663	\$ 11,586,816	\$ 11,672,066	\$ 11,757,413	\$ 11,842,858	\$ 11,928,401
Renewal/Replacement	1,274,786	1,284,630	1,294,482	1,304,342	1,314,210	1,324,086
Minimum Service Charge	4,452,974	4,484,694	4,516,414	4,548,134	4,579,854	4,611,574
Other	982,288	982,288	982,288	982,288	982,288	982,288
Assessments (Presented below)	-	-	-	-	-	-
<b>Total Sewer Revenues</b>	<b>\$ 18,211,711</b>	<b>\$ 18,338,428</b>	<b>\$ 18,465,250</b>	<b>\$ 18,592,177</b>	<b>\$ 18,719,210</b>	<b>\$ 18,846,349</b>
<b>Sewer Expenses</b>						
Personnel	\$ 3,913,347	\$ 3,991,614	\$ 4,071,446	\$ 4,152,875	\$ 4,235,933	\$ 4,320,651
Commodities	2,168,019	2,211,379	2,255,607	2,300,719	2,346,733	2,393,668
Services	2,591,687	2,643,521	2,696,391	2,750,319	2,805,325	2,861,432
Debt Service (Net of Sewer Assessment)	7,660,417	7,873,307	5,674,581	5,839,601	4,410,548	2,737,011
Misc Capital Exp	525,000	525,000	525,000	525,000	525,000	525,000
Renew Replace funding of reserve	1,274,786	1,093,607	1,294,482	1,304,342	1,314,210	1,324,086
<b>Total Sewer Expenses</b>	<b>\$ 18,133,256</b>	<b>\$ 18,338,428</b>	<b>\$ 16,517,508</b>	<b>\$ 16,872,856</b>	<b>\$ 15,637,750</b>	<b>\$ 14,161,848</b>
<b>Sewer Net</b>	<b>\$ 78,455</b>	<b>\$ (0)</b>	<b>\$ 1,947,742</b>	<b>\$ 1,719,320</b>	<b>\$ 3,081,460</b>	<b>\$ 4,684,500</b>
Funds Available for Capital Reserve to cover future Capital/Debt Service Needs	78,455	-	1,947,742	1,719,320	3,081,460	4,684,500
R&R funding need to cover Capital		(191,023)				

## **WSA SEWER USE COST OF SERVICE**

**Section E** - B&E has prepared one schedule for this section of the report as follows:

➤ **Schedules E-1** – Proforma Cost Allocation.

Using the base projected year FY 2022 developed in Section D, this data is used to allocate each cost based upon what function these expenditures impact. These functions are later used to generate a specific revenue source based on which ratepayers are causing demands to the system.

Schedule E-1 allocates these expenditures to each function based upon the Allocation factors used in WSA's prior 5-year plan. The previous allocations factors had no material changes in their calculations based upon current expenditures.

The Cost of Service Model results resulted in a minor shift of less than \$200,000 of cost to be allocated on Minimum Service charge from Retail Use rates. B&E is not recommending any change in rates for this minor shift in the rate structure. B&E believes that the current rate structure is still adequate and rates are fairly presented to each customer's rate class.

Proforma Cost Allocation  
Warwick Sewer Authority

Schedule E-1

<i>Account #</i>	<i>Account Name</i>	<i>FY 2022</i>	<i>Flow &amp; Strength</i>	<i>Service</i>	<i>Billing</i>
<b><u>O&amp;M Expense</u></b>					
80-100	Sick Leave	\$ -	-		
80-101	Salaries	2,575,156	1,699,603	463,528	412,025
80-106	Mun Overtime	84,100	62,234	6,728	15,138
80-107	Overtime Storm	10,000	10,000	-	-
80-140	Temporary Services	1,500	990	150	360
80-150	Fringe Benefits	1,242,591	820,110	223,666	198,815
	<b>Personnel</b>	<b>3,913,347</b>	<b>2,592,937</b>	<b>694,072</b>	<b>626,338</b>
80-201	Office Supplies	8,750	-	6,563	2,188
80-202	Printing, Bind & Reproductic	19,980	-	14,985	4,995
80-203	Advertising	2,056	-	1,542	514
80-205	Postage	34,032	-	25,524	8,508
80-210	Lab Supplies	26,200	26,200		
80-220	Fuel & diesel	30,000		30,000	
80-222	Natural Gas	42,000	42,000		
80-224	Electricity	720,000	720,000		
80-234	Supplies	14,150	14,150		
80-243	Chem. Polymer & Root	149,880	149,880		
80-245	Chem. Chlorine	64,058	64,058		
80-246	Chem. - Dechlor	31,518	31,518		
80-247	Chem. - Oder Control	224,618	224,618		
80-248	Chem. - Alum	144,252	144,252		
80-249	Chem. - Caustic	261,596	261,596		
80-260	Clothing	12,530	12,530		
80-281	Maint Materials & by pass	165,000	165,000		
80-298	Other Equipment	201,899	201,899		
80-299	Other Commodities	15,500	15,500	-	-
	<b>Commodities</b>	<b>2,168,019</b>	<b>2,073,201</b>	<b>78,614</b>	<b>16,205</b>
80-300	Travel	750		750	
80-301	Training & Education	5,340		5,340	
80-303	Telephone	17,400		17,400	
80-304	Water Usage	10,720	10,720		
80-313	Equip Repair	90,000	90,000		
80-323	Tax Sale	125,000		125,000	
80-325	Insurance	361,281	361,281		
80-330	Auto Maintenance	30,000		30,000	
	emergency assistance	25,000	25,000		
80-340	Service Contracts	153,080		153,080	
80-353	Implementation Service	-		-	
80-360	Professional Service	109,500		109,500	
80-370	Construction Serv.	155,000		155,000	
80-371	Nutrient Reduction	-	-		
80-378	Sludge Removal	1,117,665	1,117,665		
80-379	Administration	126,741		126,741	
80-380	Gen Service		-		

Proforma Cost Allocation  
Warwick Sewer Authority

Schedule E-1

<b>Account #</b>	<b>Account Name</b>	<b>FY 2022</b>	<b>Flow &amp; Strength</b>	<b>Service</b>	<b>Billing</b>
80-384	Testing & Lab Samples	57,160	57,160		
80-392	Engineering Service	150,000		150,000	
80-399	Services - Other	57,050	57,050		
	<b>Services</b>	<u>2,591,687</u>	<u>1,718,876</u>	<u>872,811</u>	<u>-</u>
<b>Capital</b>					
	Misc Capital Exp	525,000	525,000		
	Capital Reserve	78,455	58,841	19,614	
80-560	Renew Replace	-			
	<b>Capital</b>	<u>603,455</u>	<u>583,841</u>	<u>19,614</u>	<u>-</u>
<b>Debt Service</b>					
	Debt Service Principal	8,563,959	6,422,969	2,140,990	
	Debt Service Interest	1,361,611	1,021,208	340,403	
	Sewer Assessment Revenue	(2,265,153)	(2,265,153)	-	
	DEBT ON NEW SEWER PROJECTS	-	-	-	
	<b>Debt Service</b>	<u>7,660,417</u>	<u>5,179,025</u>	<u>2,481,393</u>	<u>-</u>
<b>Net O&amp;M, Capital &amp; Debt Service</b>					
		<u>16,936,925</u>	<u>12,147,880</u>	<u>4,146,503</u>	<u>642,542</u>
			72%	24%	4%
<b>Other Revenues</b>					
80-906	Energy Buyback Revenue	(10,000)	(7,172)	(2,448)	(379)
80-914	Cr-Amort. Of Bond		-	-	-
80-930	Grant Revenue		-	-	-
80-931	Federal Reimbursement	-	-	-	-
80-940	Engineering Review	(6,600)	(4,734)	(1,616)	(250)
80-942	Surcharge Revenue		-	-	-
80-944	Septage Dumping Fees	(24,000)	(17,214)	(5,876)	(910)
80-945	Pretreatment application	(6,000)	(4,303)	(1,469)	(228)
80-946	Lease Income	(47,000)	(33,710)	(11,507)	(1,783)
80-956	Misc Income	(4,000)	(2,869)	(979)	(152)
80-958	Sewer Connect Fees	(50,000)	(35,862)	(12,241)	(1,897)
80-960	Grinder Pumps	(30,000)	(21,517)	(7,345)	(1,138)
80-966	Sewer Tax Title Fees	(125,000)	(89,655)	(30,603)	(4,742)
80-969	Earnings on Invest.	(25,000)	(17,931)	(6,121)	(948)
80-969	Insurance Proceeds	-	-	-	-
80-970	Interest Income	(145,000)	(104,000)	(35,499)	(5,501)
80-989	SLA Admin	(2,000)	(1,434)	(490)	(76)
80-990	SLA Inspection	(6,000)	(4,303)	(1,469)	(228)
80-999	Misc Dept Credits		-	-	-
	Contrib. from Pretreatment	(499,188)	(499,188)		
	Contributed Capital	(2,500)	(1,793)	(612)	(95)
	<b>Total Other Revenue</b>	<u>(982,288)</u>	<u>(845,688)</u>	<u>(118,273)</u>	<u>(18,328)</u>
<b>Net Revenue Requirement</b>					
		<u>15,954,637</u>	<u>11,302,192</u>	<u>4,028,231</u>	<u>624,214</u>
					4,652,445
		Current	Revenue		
		Revenue	Structure per Cost		
		Structure	of Service	Difference	
Retail Use Rate		\$ 11,501,663	\$ 11,302,191.99	\$ (199,471.30)	
Minimum Service Charge		\$ 4,452,974	\$ 4,652,445.01	\$ 199,471.29	
		<u>\$ 15,954,637</u>	<u>\$ 15,954,637</u>		



## **PROJECTED REVENUE, RATE INCREASES and RATEPAYER IMPACT**

**Section F** - B&E has prepared three schedules for this section of the report as follows:

- **Schedules F-1** – Proof of Revenues at Proposed Rates.
- **Schedules F-2** – Cash Flow Projections with Proposed Rates.

Schedule F-1, along with detailing the current rates and current revenues at current rates, this schedule presents proposed rates and total revenues at the proposed rates. In addition, this schedule describes the overall increase in revenue over revenues at current rates. As previously mentioned in the prior section, B&E believes that no modification of the existing rate structure is required. The current rates are sufficient to meet the capital/debt service needs for the next five years. Furthermore, the cost of service demonstrates that there would be a de minimus change from revenue generated from usage revenue and service charge revenue to warrant a change in rates. Therefore, since B&E is not recommending any change, a ratepayer impact schedule was not needed for this report.

Revenue Check  
Warwick Sewer Authority

Schedule F-1

**Proposed Rates**

0

<u>Retail Use Rate</u>		FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Residential	\$ 47.80	\$ 7,627,013	\$ 7,692,792	\$ 7,758,572	\$ 7,824,352	\$ 7,890,131	\$ 7,955,911
Commercial	\$ 73.24	\$ 3,874,651	\$ 3,894,024	\$ 3,913,494	\$ 3,933,061	\$ 3,952,727	\$ 3,972,490
		\$ 11,501,663	\$ 11,586,816	\$ 11,672,066	\$ 11,757,413	\$ 11,842,858	\$ 11,928,401

<u>Renewal &amp; Replacement Rate</u>		FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Residential & Comm	\$ 6.00	\$ 1,274,786	\$ 1,284,630	\$ 1,294,482	\$ 1,304,342	\$ 1,314,210	\$ 1,324,086

<u>Minimum Service Charge</u>		FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Residential per Unit	\$ 126.88	\$ 3,677,871	\$ 3,709,591	\$ 3,741,311	\$ 3,773,031	\$ 3,804,751	\$ 3,836,471
<u>Meter Size</u>							
5/8	\$ 260.64	\$ 183,230	\$ 183,230	\$ 183,230	\$ 183,230	\$ 183,230	\$ 183,230
3/4	\$ 357.72	\$ 47,934	\$ 47,934	\$ 47,934	\$ 47,934	\$ 47,934	\$ 47,934
1	\$ 435.88	\$ 102,868	\$ 102,868	\$ 102,868	\$ 102,868	\$ 102,868	\$ 102,868
1 1/2	\$ 783.08	\$ 69,694	\$ 69,694	\$ 69,694	\$ 69,694	\$ 69,694	\$ 69,694
2	\$ 1,087.04	\$ 164,143	\$ 164,143	\$ 164,143	\$ 164,143	\$ 164,143	\$ 164,143
3	\$ 1,485.80	\$ 16,344	\$ 16,344	\$ 16,344	\$ 16,344	\$ 16,344	\$ 16,344
4	\$ 2,243.08	\$ 35,889	\$ 35,889	\$ 35,889	\$ 35,889	\$ 35,889	\$ 35,889
6	\$ 3,936.12	\$ 62,978	\$ 62,978	\$ 62,978	\$ 62,978	\$ 62,978	\$ 62,978
8	\$ 6,862.64	\$ 82,352	\$ 82,352	\$ 82,352	\$ 82,352	\$ 82,352	\$ 82,352
10	\$ 9,671.24	\$ 9,671	\$ 9,671	\$ 9,671	\$ 9,671	\$ 9,671	\$ 9,671
		\$ 4,452,974	\$ 4,484,694	\$ 4,516,414	\$ 4,548,134	\$ 4,579,854	\$ 4,611,574

Rate Increase							
Use		0%	0%	0%	0%	0%	0%
Renewal/Replacement		0%	0%	0%	0%	0%	0%
Minimum Service Charge		0%	0%	0%	0%	0%	0%

Proforma Cash Flow Projections with Proposed Rate Increases  
Warwick Sewer Authority

Schedule F-2

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
<b>Sewer Revenues</b>						
Use	\$ 11,501,663	\$ 11,586,816	\$ 11,672,066	\$ 11,757,413	\$ 11,842,858	\$ 11,928,401
Renewal/Replacement	1,274,786	1,284,630	1,294,482	1,304,342	1,314,210	1,324,086
Minimum Service Charge	4,452,974	4,484,694	4,516,414	4,548,134	4,579,854	4,611,574
Other	982,288	982,288	982,288	982,288	982,288	982,288
Assessments (Presented below)	-	-	-	-	-	-
<b>Total Sewer Revenues</b>	<b>\$ 18,211,711</b>	<b>\$ 18,338,428</b>	<b>\$ 18,465,250</b>	<b>\$ 18,592,177</b>	<b>\$ 18,719,210</b>	<b>\$ 18,846,349</b>
<b>Sewer Expenses</b>						
Personnel	\$ 3,913,347	\$ 3,991,614	\$ 4,071,446	\$ 4,152,875	\$ 4,235,933	\$ 4,320,651
Commodities	2,168,019	2,211,379	2,255,607	2,300,719	2,346,733	2,393,668
Services	2,591,687	2,643,521	2,696,391	2,750,319	2,805,325	2,861,432
Debt Service (Net of Sewer Assessment)	7,660,417	7,873,307	5,674,581	5,839,601	4,410,548	2,737,011
Misc Capital Exp	525,000	525,000	525,000	525,000	525,000	525,000
Capital Reserve	78,455	-	1,947,742	1,719,320	3,081,460	4,684,500
Renew Replace funding of reserve	1,274,786	1,093,607	1,294,482	1,304,342	1,314,210	1,324,086
<b>Total Sewer Expenses</b>	<b>\$ 18,211,711</b>	<b>\$ 18,338,428</b>	<b>\$ 18,465,250</b>	<b>\$ 18,592,177</b>	<b>\$ 18,719,210</b>	<b>\$ 18,846,349</b>
<b>Sewer Net</b>	<b>\$ 0</b>	<b>\$ (0)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

Rate Increase

Use	0%	0%	0%	0%	0%
Renewal/Replacement	0%	0%	0%	0%	0%
Minimum Service Charge	0%	0%	0%	0%	0%

## RECOMMENDATIONS, ALTERNATIVES AND CONCLUSIONS

**Section G** - The following recommendations are presented to assist the WSA in improving its overall operations. They are intended to be helpful and not critical. B&E is prepared to assist the WSA in the implementation of any or all of the following recommendations.

1. Because the WSA is a stand-alone enterprise fund, each ratepayer must pay all of the cost incurred in providing them with sewer disposal. Therefore, B&E recommends that the WSA utilize prior-year Renewal and Replacement surplus funds for fiscal years 2022 and 2023 since the subsequent years would have capital reserve surplus to cover the capital needs of the WSA without requiring any future rate increases. In addition, utilizing prior-year Renewal and Replacement surplus funds for fiscal years 2022 and 2023 would negate the need for a minor FY 2022 increase would lead to an FY 2024 rate reduction. See Schedule A-3.
2. To balance future assessments, B&E recommends that the WSA use calculating assessment rates to cover the cost of the project and charging for interest to cover the interest portion of debt service taken out to cover the assessment projects. If subsidies are to be provided, the capital budget should be adjusted accordingly to prevent any budget shortfalls. See Schedule A-3 option 1 and See Schedule A-3 option 2.

One of the most important goals of this engagement was to maintain the financial independence and strength of the WSA. Therefore it is essential to this engagement to identify what level of rate increase and restructuring of rates would be needed to provide for the WSA needs through FY 2026. Schedule A-2 shows that there would be sufficient revenue to meet all of the WSA needs and carry forward surplus balance for the capital/debt service reserve.

Appendix  
Warwick Sewer Authority

The following pages have been prepared by the WSA  
The pages detail the capital projects and debt service presented on Schedule A-3



Project - Additional Projects identified by Earl	Estimated Useful Life	FY23 and subsequent Projects and Estimated Cost											Total Project Cost	Request	Funding Sources ?				
		FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31				FY32			
<b>* These costs include 15% soft cost/contingency</b>																			
<b>Collection System Projects</b>																			
Northwest Gorton Pond (updated to 9.8M)	75+					5,524,907		18,241	1,852	4,255,000						9,800,000	9,800,000	FY25	New Debt Authorization Request/R&R
Warwick Neck South Sewer Extension	75+									460,000	11,500,000	3,450,000				15,410,000	15,410,000	FY29	New Debt Authorization Request/R&R
Greenwood East	75+									57,500	11,500,000	862,500	5,462,500			17,020,000	17,020,000	FY31	New Debt Authorization Request/R&R
Strawberry Field Road II	75+											287,500	862,500			1,150,000			New Debt Authorization Request/R&R
Pilgrim Park	75+											28,750	5,491,250			5,520,000	6,670,000	FY31	New Debt Authorization Request/R&R
Miscellaneous Sewer Extensions	75+							230,000	115,000	115,000	115,000	115,000	115,000			805,000	805,000	R&R	New Debt Authorization Request/R&R
<b>Interceptor Projects</b>																			
Norwood Interceptor	50+									1,231,156						1,231,156			New Debt Authorization Request/R&R
Apponaug Interceptor	50+									522,688						522,688			New Debt Authorization Request/R&R
Loveday Interceptor	50+									3,223,738						3,223,738			New Debt Authorization Request/R&R
Three Ponds Interceptor Segment 1	50+									4,004,708						4,004,708	8,982,289	FY25	New Debt Authorization Request/R&R
Three Ponds Interceptor Segment 2	50+								1,964,591							1,964,591			New Debt Authorization Request/R&R
Three Ponds Interceptor Segment 3	50+								2,006,054							2,006,054			New Debt Authorization Request/R&R
Post Road North Interceptor	50+								829,466							829,466			New Debt Authorization Request/R&R
Emmons Ave Interceptor	50+								397,143							397,143			New Debt Authorization Request/R&R
Bellows Interceptor	50+								1,126,014							1,126,014			New Debt Authorization Request/R&R
Warwick Ave Interceptor	50+									1,519,797						1,519,797			New Debt Authorization Request/R&R
Suburban Parkway Interceptor	50+									1,618,503						1,618,503	9,461,570	FY27	New Debt Authorization Request/R&R
Pipe Replacement/Lining Program	50+					500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	5,000,000	5,000,000	R&R	New Debt Authorization Request/R&R
<b>Plant/Pump Station Projects</b>																			
Air Ejector Station Repairs	30+					1,100,000										1,100,000			New Debt Authorization Request/R&R
New Flushing Vector Vehicle	12+								550,000							550,000			New Debt Authorization Request/R&R
Grease Removal System	30+								575,000							575,000			New Debt Authorization Request/R&R
Utility Garage/Storage	40+									862,500						862,500			New Debt Authorization Request/R&R
Inlet Diminuter	12+										115,000					115,000			New Debt Authorization Request/R&R
Inlet Channel Muffin Monster	12+										115,000					115,000	3,317,500	FY27	New Debt Authorization Request/R&R
Warwick Neck Pump Station Upgrades	30+												3,220,000			3,220,000			New Debt Authorization Request/R&R
Emmons Ave Pump Station Upgrades	30+												345,000			345,000			New Debt Authorization Request/R&R
Warwick Ave Pump Station Upgrades	30+												517,500			517,500			New Debt Authorization Request/R&R
Lockwood Pump Station Force Main Relocation	30+												1,610,000			1,610,000			New Debt Authorization Request/R&R
Loveday Pump Station Upgrades	30+												345,000			345,000			New Debt Authorization Request/R&R
Apponaug Pump Station Upgrades	30+												345,000			345,000	6,382,500	FY30	New Debt Authorization Request/R&R
250KW Portable Generator	30+									230,000						230,000			New Debt Authorization Request/R&R
Miscellaneous Project Repairs/pipe lining	7-30+									3,898,806		316,020		919,425		5,134,251			New Debt Authorization Request/R&R
Treatment Facility Sludge Dewatering System (Cake removal?)	20+						1,400,000									1,400,000			New Debt Authorization Request/R&R
Dewatering System	15+										1,350,000					1,350,000	8,114,251	FY26	New Debt Authorization Request/R&R
						500,000	3,000,000	16,132,196	13,412,816	3,985,152	5,646,020	12,115,000	11,740,675	18,468,750	5,962,500	90,963,110	90,963,110		

City of Warwick Sewer Fund Debt Service Analysis																	
Existing Bond Issues				FY20 P&I	FY21 P&I	FY22 P&I	FY23 P&I	FY24 P&I	FY25 P&I	FY26 P&I	FY27 P&I	FY28 P&I	FY29 P&I	FY30 P&I	FY31 P&I	FY32 P&I	
Issue Date	Type	Issuer	Orig Amt														
6/26/1998	SRF	RIIB	10,200,000	656,431	-	-	-	-	-	-	-	-	-	-	-	-	
8/25/1999	SRF	RIIB	14,750,000	1,045,629	-	-	-	-	-	-	-	-	-	-	-	-	
12/19/2000	SRF	RIIB	20,232,323	1,338,839	1,331,848	-	-	-	-	-	-	-	-	-	-	-	
4/25/2002	SRF8	RIIB	12,000,000	762,422	771,140	780,140	789,409	-	-	-	-	-	-	-	-	-	
10/24/2002	SRF9	RIIB	20,000,000	1,276,442	1,288,351	1,300,558	1,313,070	-	-	-	-	-	-	-	-	-	
11/13/2003	SRF10	RIIB	20,000,000	1,211,004	1,211,198	1,210,633	1,210,400	1,209,480	1,208,917	-	-	-	-	-	-	-	
12/30/2004	SRF11	RIIB	20,000,000	1,201,258	1,201,559	1,201,208	1,200,223	1,200,576	1,200,237	1,199,196	-	-	-	-	-	-	
12/15/2005	SRF12	RIIB	5,000,000	288,156	283,175	278,156	273,106	268,031	262,919	257,769	252,594	-	-	-	-	-	
12/21/2006	SRF13	RIIB	9,500,000	549,029	540,455	531,834	523,177	514,484	505,756	496,993	488,193	479,394	-	-	-	-	
12/12/2007	SRF14	RIIB	6,942,000	415,428	408,505	401,513	394,452	387,321	380,121	372,860	365,547	358,182	352,743	-	-	-	
4/30/2008	CONDUIT	RIIB	4,000,000	317,186	316,988	316,291	320,098	318,158	315,720	317,785	314,104	314,925	-	-	-	-	
10/6/2009	SRF&STIM	RIIB	1,169,026	77,612	75,950	74,232	72,468	70,667	68,833	66,970	65,084	63,181	61,257	65,821	-	-	
5/26/2011	REF	BOND	2,164,129	289,452	290,095	87,103	-	-	-	-	-	-	-	-	-	-	
6/26/2012	CONDUIT	RIIB	2,400,000	282,716	281,042	281,097	279,861	-	-	-	-	-	-	-	-	-	
3/6/2014	SRF	RIIB	7,000,000	476,665	476,542	476,436	475,453	475,658	475,042	474,711	474,621	473,716	473,116	472,821	472,801	472,080	
3/31/2015	SRF	RIIB	3,500,000	237,921	237,000	236,855	237,375	236,543	236,460	237,218	236,684	236,702	236,310	235,561	235,480	236,057	
7/30/2015	SRF	RIIB	10,574,900	733,612	733,243	732,653	731,711	731,564	730,534	730,268	728,427	729,338	728,167	727,954	727,713	726,467	
8/12/2015	REF	BOND	10,234,394	1,222,840	1,223,140	1,230,138	1,237,867	915,616	917,542	530,540	-	-	-	-	-	-	
6/2/2016	SRF	RIIB	8,000,000	532,553	532,530	532,929	531,775	532,100	530,864	531,021	530,145	530,080	529,181	529,586	529,426	528,757	
4/13/2017	SRF	RIIB	3,730,000	254,242	253,666	253,793	253,562	253,998	253,149	252,999	253,542	252,654	252,282	252,570	252,646	252,527	
<b>Existing Bond Issues Total</b>			<b>191,396,772</b>	<b>13,169,435</b>	<b>11,456,427</b>	<b>9,925,570</b>	<b>9,844,007</b>	<b>7,114,195</b>	<b>7,086,093</b>	<b>5,468,328</b>	<b>3,708,940</b>	<b>3,438,172</b>	<b>2,633,055</b>	<b>2,284,314</b>	<b>2,218,066</b>	<b>2,215,888</b>	
<b>Estimated New Bond Issue</b>																	
Interceptors	FY22		7,000,000	-	-	175,000	445,000	446,670	448,130	449,379	450,417	451,245	451,863	452,270	452,466	452,452	
OB/CS/SCADA	FY22		8,605,000	-	-	215,125	515,125	521,625	526,775	531,600	536,100	541,275	546,100	550,575	554,700	558,475	
Plant Upgrades	FY22		3,105,000	-	-	77,625	185,625	187,925	190,100	192,150	194,075	195,875	197,550	199,100	200,525	201,825	
Interceptor Projects	FY25		8,982,289	-	-	-	-	-	224,557	574,557	576,307	577,795	579,020	579,982	580,682	581,120	
Interceptor Projects	FY26		9,461,570	-	-	-	-	-	-	236,539	604,539	606,339	607,864	609,114	610,089	610,789	
Plant/Pump Station	FY26		8,114,251	-	-	-	-	-	-	202,856	504,856	508,306	511,481	514,381	517,006	519,356	
Plant/Pump Station	FY27		3,317,500	-	-	-	-	-	-	-	82,938	202,938	204,938	206,813	208,563	210,188	
Plant/Pump Station	FY30		6,382,500	-	-	-	-	-	-	-	-	-	-	159,563	431,563	429,763	
<b>System/Facility</b>			<b>54,968,110</b>	<b>-</b>	<b>-</b>	<b>467,750</b>	<b>1,145,750</b>	<b>1,156,220</b>	<b>1,389,562</b>	<b>2,187,081</b>	<b>2,949,232</b>	<b>3,083,773</b>	<b>3,098,816</b>	<b>3,271,798</b>	<b>3,555,594</b>	<b>3,563,968</b>	
Bayside	FY22		16,700,000	-	-	417,500	1,092,500	1,092,625	1,092,325	1,091,600	1,090,450	1,088,875	1,086,875	1,084,450	1,081,600	1,078,325	
NW Gorton Pond	FY27		9,800,000	-	-	-	-	-	-	-	245,000	645,000	640,000	639,875	639,500	638,875	
Warwick Neck South	FY28		15,410,000	-	-	-	-	-	-	-	-	385,250	965,250	970,750	975,750	980,250	
Greenwood East	FY31		17,020,000	-	-	-	-	-	-	-	-	-	-	-	425,500	1,025,500	
PP/Strawberry II	FY31		6,670,000	-	-	-	-	-	-	-	-	-	-	-	166,750	406,750	
<b>Collection System (Assessments)</b>			<b>65,600,000</b>	<b>-</b>	<b>-</b>	<b>417,500</b>	<b>1,092,500</b>	<b>1,092,625</b>	<b>1,092,325</b>	<b>1,091,600</b>	<b>1,335,450</b>	<b>2,119,125</b>	<b>2,692,125</b>	<b>2,695,075</b>	<b>3,289,100</b>	<b>4,129,700</b>	
<b>Total Projected Debt Load</b>				<b>13,169,435</b>	<b>11,456,427</b>	<b>10,810,820</b>	<b>12,082,257</b>	<b>9,363,040</b>	<b>9,567,980</b>	<b>8,747,009</b>	<b>7,993,622</b>	<b>8,641,070</b>	<b>8,423,996</b>	<b>8,251,187</b>	<b>9,062,760</b>	<b>9,909,556</b>	
<b>Estimated Debt Load Annual Change with Projected Bonds</b>				<b>-</b>	<b>(1,713,008)</b>	<b>(645,607)</b>	<b>1,271,437</b>	<b>(2,719,217)</b>	<b>204,940</b>	<b>(820,971)</b>	<b>(753,387)</b>	<b>647,448</b>	<b>(217,074)</b>	<b>(172,810)</b>	<b>811,573</b>	<b>846,795</b>	
<b>Estimated Debt Load Annual Change not including Assessments</b>				<b>-</b>	<b>(1,713,008)</b>	<b>(1,063,107)</b>	<b>596,437</b>	<b>(2,719,342)</b>	<b>205,240</b>	<b>(820,246)</b>	<b>(997,237)</b>	<b>(136,227)</b>	<b>(790,074)</b>	<b>(175,760)</b>	<b>217,548</b>	<b>6,195</b>	
<b>Cumulative Debt Drop Off</b>				<b>-</b>	<b>-</b>	<b>(1,063,107)</b>	<b>(466,670)</b>	<b>(3,186,012)</b>	<b>(2,980,772)</b>	<b>(3,801,018)</b>	<b>(4,798,255)</b>	<b>(4,934,482)</b>	<b>(5,724,556)</b>	<b>(5,900,315)</b>	<b>(5,682,767)</b>	<b>(5,676,571)</b>	



City of Warwick Sewer Fund Debt Service Analysis																Total Debt
Existing Bond Issues			FY33 P&I	FY34 P&I	FY35 P&I	FY36 P&I	FY37 P&I	FY38 P&I	FY39 P&I	FY40 P&I	FY41 P&I	FY42 P&I	Thereafter	Balance		
Issue Date	Type	Issuer	Orig Amt													
6/26/1998	SRF	RIIB	10,200,000	-	-	-	-	-	-	-	-	-	-	656,431		
8/25/1999	SRF	RIIB	14,750,000	-	-	-	-	-	-	-	-	-	-	1,045,629		
12/19/2000	SRF	RIIB	20,232,323	-	-	-	-	-	-	-	-	-	-	2,670,687		
4/25/2002	SRF8	RIIB	12,000,000	-	-	-	-	-	-	-	-	-	-	3,103,111		
10/24/2002	SRF9	RIIB	20,000,000	-	-	-	-	-	-	-	-	-	-	5,178,420		
11/13/2003	SRF10	RIIB	20,000,000	-	-	-	-	-	-	-	-	-	-	7,261,632		
12/30/2004	SRF11	RIIB	20,000,000	-	-	-	-	-	-	-	-	-	-	8,404,258		
12/15/2005	SRF12	RIIB	5,000,000	-	-	-	-	-	-	-	-	-	-	2,163,906		
12/21/2006	SRF13	RIIB	9,500,000	-	-	-	-	-	-	-	-	-	-	4,629,314		
12/12/2007	SRF14	RIIB	6,942,000	-	-	-	-	-	-	-	-	-	-	3,836,671		
4/30/2008	CONDUIT	RIIB	4,000,000	-	-	-	-	-	-	-	-	-	-	2,851,254		
10/6/2009	SRF&STIM	RIIB	1,169,026	-	-	-	-	-	-	-	-	-	-	762,074		
5/26/2011	REF	BOND	2,164,129	-	-	-	-	-	-	-	-	-	-	666,649		
6/26/2012	CONDUIT	RIIB	2,400,000	-	-	-	-	-	-	-	-	-	-	1,124,716		
3/6/2014	SRF	RIIB	7,000,000	471,691	472,011	472,097	-	-	-	-	-	-	-	7,585,461		
3/31/2015	SRF	RIIB	3,500,000	235,327	235,485	235,538	-	-	-	-	-	-	-	3,782,517		
7/30/2015	SRF	RIIB	10,574,900	726,258	726,604	719,545	-	-	-	-	-	-	-	11,664,059		
8/12/2015	REF	BOND	10,234,394	-	-	-	-	-	-	-	-	-	-	7,277,683		
6/2/2016	SRF	RIIB	8,000,000	529,539	528,774	527,491	530,610	-	-	-	-	-	-	9,017,359		
4/13/2017	SRF	RIIB	3,730,000	252,135	252,441	251,494	251,304	252,822	-	-	-	-	-	4,551,826		
<b>Existing Bond Issues Total</b>			<b>191,396,772</b>	<b>2,214,950</b>	<b>2,215,315</b>	<b>2,206,165</b>	<b>781,914</b>	<b>252,822</b>	-	-	-	-	-	<b>88,233,659</b>		
<b>Estimated New Bond Issue</b>																
Interceptors	FY22		7,000,000	452,228	451,793	451,147	450,291	449,225	447,948	446,460	444,762	442,854	440,935	9,152,535		
OB/CS/SCADA	FY22		8,605,000	561,900	564,975	567,700	570,075	572,100	573,775	575,100	576,075	576,700	572,975	11,308,850		
Plant Upgrades	FY22		3,105,000	203,000	204,050	204,975	205,775	206,450	207,000	207,425	207,725	207,900	202,950	4,079,625		
Interceptor Projects	FY25		8,982,289	581,295	581,207	580,857	580,245	579,370	578,232	576,832	575,170	573,245	571,057	1,684,711		
Interceptor Projects	FY26		9,461,570	611,214	611,364	611,239	610,839	610,164	609,214	607,989	606,489	604,714	602,664	2,396,226		
Plant/Pump Station	FY26		8,114,251	521,431	523,231	523,756	525,031	526,031	526,756	527,206	527,381	527,281	526,906	2,094,625		
Plant/Pump Station	FY27		3,317,500	211,688	212,063	212,338	213,513	214,563	215,488	216,288	216,963	217,513	217,938	1,086,190		
Plant/Pump Station	FY30		6,382,500	427,838	425,788	423,613	421,313	418,888	416,338	413,663	410,863	407,938	404,888	3,106,804		
<b>System/Facility</b>			<b>54,968,110</b>	<b>3,570,594</b>	<b>3,574,471</b>	<b>3,575,625</b>	<b>3,577,082</b>	<b>3,576,791</b>	<b>3,574,751</b>	<b>3,570,963</b>	<b>3,565,428</b>	<b>3,558,145</b>	<b>3,540,313</b>	<b>10,368,556</b>	<b>71,922,263</b>	
Bayside	FY22		16,700,000	1,074,625	1,070,500	1,065,950	1,060,975	1,054,575	1,047,775	1,040,575	1,032,975	1,024,975	1,007,575	21,777,625		
NW Gorton Pond	FY27		9,800,000	638,000	636,875	635,500	633,875	632,000	629,875	627,500	624,875	622,000	618,875	3,033,750		
Warwick Neck South	FY28		15,410,000	984,250	987,750	990,750	993,250	995,250	996,750	997,750	998,250	998,250	997,750	5,958,000		
Greenwood East	FY31		17,020,000	1,037,000	1,047,838	1,058,013	1,067,525	1,076,375	1,084,563	1,092,088	1,098,950	1,105,150	1,110,688	10,121,065		
PP/Strawberry II	FY31		6,670,000	410,750	414,500	418,000	421,250	424,250	427,000	429,500	431,750	433,750	435,500	3,928,875		
<b>Collection System (Assessments)</b>			<b>65,600,000</b>	<b>4,144,625</b>	<b>4,157,463</b>	<b>4,168,213</b>	<b>4,176,875</b>	<b>4,182,450</b>	<b>4,185,963</b>	<b>4,187,413</b>	<b>4,186,800</b>	<b>4,184,125</b>	<b>4,170,388</b>	<b>23,041,690</b>	<b>85,833,130</b>	
<b>Total Projected Debt Load</b>				<b>9,930,169</b>	<b>9,947,249</b>	<b>9,950,003</b>	<b>8,535,871</b>	<b>8,012,063</b>	<b>7,760,714</b>	<b>7,758,376</b>	<b>7,752,228</b>	<b>7,742,270</b>	<b>7,710,701</b>	<b>33,410,246</b>	<b>245,989,052</b>	
<b>Estimated Debt Load Annual Change with Projected Bonds</b>				<b>20,613</b>	<b>17,080</b>	<b>2,754</b>	<b>(1,414,132)</b>	<b>(523,808)</b>	<b>(251,349)</b>	<b>(2,338)</b>	<b>(6,148)</b>	<b>(9,958)</b>	<b>(31,569)</b>	<b>25,699,545</b>		
<b>Estimated Debt Load Annual Change not including Assessments</b>				<b>5,688</b>	<b>4,242</b>	<b>(7,996)</b>	<b>(1,422,794)</b>	<b>(529,383)</b>	<b>(254,862)</b>	<b>(3,788)</b>	<b>(5,535)</b>	<b>(7,283)</b>	<b>(17,832)</b>	<b>6,828,243</b>		
<b>Cumulative Debt Drop Off</b>				<b>(5,670,883)</b>	<b>(5,666,641)</b>	<b>(5,674,637)</b>	<b>(7,097,431)</b>	<b>(7,626,814)</b>	<b>(7,881,676)</b>	<b>(7,885,464)</b>	<b>(7,890,999)</b>	<b>(7,898,282)</b>	<b>(7,916,114)</b>	<b>(1,087,871)</b>		