# Borough of Conshohocken Authority
# Sewer Rate Study

Prepared for

## The Borough of Conshohocken Authority

Prepared by

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April 26, 2022

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# 1. Executive Summary & Recommendations

The Borough of Conshohocken Authority commissioned this study to review the adequacy of its present sewer rates. The Authority last adjusted its volumetric rate for service provided to its Conshohocken area customers in 2018. At that time, the charge per thousand gallons of use was increased from $3.07 per thousand gallons to $3.30 per thousand gallons, an increase of about 7.5%. In addition to the volumetric charge, the Authority also bills a fixed service charge per equivalent dwelling unit ("EDU"). This charge of $45 per quarter was not changed in 2018 and it remains in effect today. In addition to the service provided in the Borough of Conshohocken service area, the Authority also provides wastewater service for customers in its West Conshohocken service area. This service area was acquired in 2018 and the rates charged to customers in this service area were reduced in 2020. Since that change, a customer in West Conshohocken has paid a quarterly fixed charge of $63 per EDU and a volumetric charge of $6.60 per thousand gallons of use. In addition to these basic charges, Industrial Customers pay a fixed fee for the cost of the Industrial Pretreatment Program administration. The Authority's rate structure also includes authorization to levy surcharges for excess biochemical oxygen demand, excess total suspended solids, and excess ammonia, but there have been no excess surcharges billed since at least 2015.

The cost of providing sewer service has and will continue to grow. The Authority has been able to manage increases in costs through close control of its expenses and they have benefited from modest customer growth, the addition of roughly 1,255 EDU's through the acquisition of the West Conshohocken service area and favorable weather patterns. This study evaluates the likely cost of providing sewer service over the coming five years and develops the rates that would be required to recover the full cost of service through sewer billings.

Since the mid-1990's water use throughout the United States has been declining. While there are many factors contributing to this, the principal reasons are related to changes in plumbing codes and conservation-oriented manufacturing standards for water-using appliances. In short,

new dish washers, clothes washers, toilets, and shower heads use less water than their historical counterparts. As homes are renovated and appliances are replaced, typical average residential water use declines. From a rate setting perspective, while the cost of service is increasing, the number of gallons sold over which that cost can be recovered is declining on a per customer basis. This decline is partially offset through the addition of new customers. This study reviews recent trends in declining average use in the Authority's service area to quantify the expected usage likely to occur during the period rates recommended by this study are to be in effect. Sewer rates are partially volume based. In both the Conshohocken and West Conshohocken service areas, the fixed service charge, which does not vary by volume used, represents about half of the typical residential bill. The remaining portion of the bill is sensitive to the volume used.

Historical actual costs have been evaluated on a budget line-item basis. Actual expenses for 2015 through 2021 were reviewed. Each line item was reviewed to determine linear growth trends, median values, and average values for this historical period. Compound rates of growth (or decline) were also identified for each account group. This analysis was used to forecast operating and maintenance expenses under current operating procedures for 2023 through 2026. The forecast for each line item is based an average of: (1) the linear trend exhibited by the historic actual expenses; (2) the change in expense from the mid-point of the historical data through the forecast year at the average year-over-year rate of charge; and (3) the average expense for 2019-2021 adjusted by the average rate of inflation. Additional adjustments to several line items were made based on the industry experience and input from the Authority's staff. These adjustments include the annual service fee to the Borough as well as additional amounts to ensure proper maintenance of the Authority's facilities. Overall, O&M expense are projected to increase at a compound annual rate of growth of 3.32%. Within this amount, plant expenses are forecast to grow at a rate of 2.44%, maintenance expense is forecast to grow at 2.66% per year and Administrative and General Expenses are forecast to grow at an average of 4.39% per year. The total of these line-item expenses added to the depreciation and interest expense represents the revenue requirement for the utility, and this is the amount that should be recovered in rates.

The study also reviewed the Authority's capital improvement plan. Recommendations are made in this study to maintain a construction fund balance near current levels to ensure that future capital needs can be adequately funded. Connection fees and the proceeds from operations along with capital payments from Plymouth Township are used in conjunction with a proposed financing in 2024 to fund the Authority's capital program. The Authority anticipates significant capital contributions through connection fees. The realization of these contributions is dependent on economic conditions outside of the control of the Authority. As a result, a conservative a conservative approach was taken in this study in the assumption that connection fees would not be realized during this plan period. This ensures that rates will be adequate if economic conditions prevent the anticipated development and redevelopment projects from proceeding within the planning period. Should the full amount of the anticipated connection fees be realized, the projected financing in this study may not be necessary and the rate adjustments recommended herein should be reconsidered. The use of connection fees to fund the capital program minimizes the need to issue new debt and results in a lower cost of service than that which would result if the Authority used debt exclusively to fund improvements. Various tests of the economic strength of the Authority were considered to ensure that the Authority operations resulted in a forecast increase in net position each year and that the results of operations would result in a debt service coverage ratio greater than 1.5. This will ensure that the Authority is in a financial position to continue to provide the safe, adequate and proper service expected of a modern sewer utility.

This study recommends increases in the fixed service charges and volumetric rates. An increase of 8% effective January 1, 2023, an additional annual 9% increases effective January 1, 2024, through January 1, 2026 are recommended for the Conshohocken service area. For the West Conshohocken service area, which already has a higher rate than the Conshohocken service area, an increase of 6% effective January 1, 2023 and an additional annual increase of 5% effective January 1, 2024 through January 1, 2026 are recommended. Current and proposed Authority rates for a typical residential customer have been compared to peer utilities throughout the region. The Authority's current rates result in charges that are 30% lower the median value for peer utilities and are also significantly lower than the charges typical of large

investor-owned utilities. The recommended rate increases contained in this study are modest and result in modest changes in the comparison to peer utility current rates. It is certain that peer utilities will implement increases to their current rates and these increases are generally unknown and not reflected in the comparisons. The large investor-owned utilities in the region have maintained a cadence of rate increases every two or three years with intervening quarterly increase to collection system improvement surcharges. Currently, Aqua Pennsylvania's Zone 1 wastewater service rates produce a quarterly charge of $173.51 for a customer using 3,000 gallons per month. This amount of use is comparable to that used by a typical residential customer in the Conshohocken service area who now pays $74.70 per quarter (almost 60% less than what an Aqua customer pays for the same service). If Aqua's current petition for new rates is approved by the Pennsylvania Public Utility Commission, these charges could jump to $203.68 in or about May 2022. With the rate adjustments recommended in this study fully implemented through 2026, the Authority's rates for this level of service will produce a quarterly bill of $104.43, about half of what Aqua will charge for the same service in 2022.

## 2. Customer and Sales Volume Analysis

The Authority utilizes metered use of drinking water to determine the volumetric portion of the wastewater service bills it renders to its customers. The way in which customers use water is becoming more efficient, particularly for indoor residential water use. There are many reasons for this. Generally, in the United States, average use per residential customer tended to increase in the years following World War II and that increasing trend continued until about the mid-1990's. At this point in time, average use per customer tended to level out and a general decline began that continues today.

In 1992, Congress passed the Energy Policy Act, which, among other things set energy efficiency standards for household appliances like dish washers and clothes washers. As a result of these standards, appliance manufacturers found that reducing the amount of hot water used in their appliances helped achieve compliance with the energy efficiency standards. Significant improvements in water efficiency have been realized as high-efficiency dish washers and clothes washers came to market. In addition to the impact of the Energy Policy Act, several plumbing code changes have been implemented and the US Environmental Protection Agency has launched the WaterSense program applicable to a host of plumbing fixtures like shower heads, toilets, and faucets. All of these initiatives have resulted in indoor plumbing devices that use less water. The trends resulting from these changes are meaningful and must be understood to properly anticipate water sales volumes, which are used to compute the Authority's sewer service bills, for budgeting and rate design. While customer use is generally gaining in efficiency, the addition of new customers to the service area tends to offset the decline in sales volume that would otherwise manifest itself in a static service area.

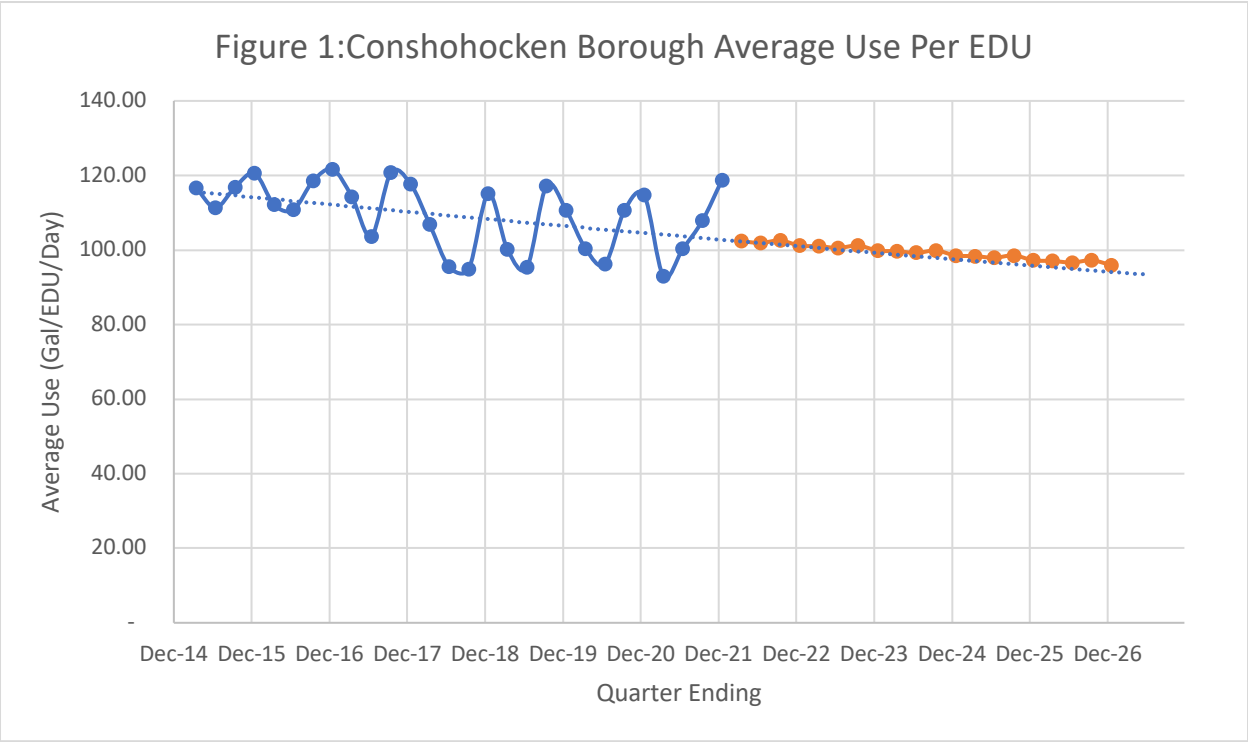
Table 1 shows the actual and forecast population data for the communities in the Authority's service area. The historical data are US Census population data, and the forecast is that compiled by the Delaware Valley Regional Planning Commission. These data were used to develop a composite rate of population growth for the planning period. Inter-period compound

growth rates for each community for 2020 through 2025 and 2030 were calculated and the average of these growth rates was determined to by 0.32% per year.

| Table 1: Local Unit Population Data | 2000 Census | 2010 Census | 2020 Census | 2025 Forecast | 2030 Forecast |
|---|---|---|---|---|---|
| Conshohocken Borough | 7,590 | 7,833 | 9,261 | 9,456 | 9,877 |
| West Conshohocken Borough | 1,445 | 1,320 | 1,493 | 1,472 | 1,499 |
| Total | 9,035 | 9,153 | 10,754 | 10,928 | 11,376 |
| | | | | | |
| Compound Annual Growth Rates | | | | | |
| Conshohocken Borough | | 0.32% | 1.69% | 0.42% | 0.87% |
| West Conshohocken Borough | | -0.90% | 1.24% | -0.28% | 0.36% |
| Total | | 0.13% | 1.63% | 0.32% | 0.81% |
| | | | | | |
| **Composite Planning Period Growth Rate** | | | | **0.32%** | |
| | | | | | |
| (1) Historical and forecast population data from Analytical Data Report, County and Municipal Level Population Forecasts 2015-2045, Delaware Valley Regional Planning Commission, ADR 022, July 2016, Appendix A Page 6 | | | | | |
| (2) 2020 Census from https://data.census.gov/cedsci/table?q=Conshohocken%20borough,%20Montgomery%20County,%20Pennsylvania&tid=DECENNIALPL2020.P1 | | | | | |

The composite growth rate was used to estimate the likely number of EDUs to be served through the planning period addressed by this Study. Starting with the actual EDU count for 2021, EDU additions at 0.32% per year are anticipated through 2026. This represents an average growth rate in the number of EDUs of 6 per quarter.

Average use per customer was also analyzed for the historical period (2015 through 2021) and the results of this analysis are shown for the Borough of Conshohocken in Figure 1. Here, it can be seen that there is an established trend toward greater water use efficiency and this trend is projected to continue into the near future.




Actual billing data for Conshohocken and West Conshohocken were analyzed and a weather-normalized forecast for quarterly consumption was prepared. The details of this analysis are presented in Appendix A. The Authority's billings are in part determined by water consumption. Water consumption is impacted by long-term trends toward more efficient use, the number of EDU's served by the Authority and weather. To assess the impact of weather on water use, the billed consumption volumes were compared to quarterly rainfall and the number of cooling degree days in the quarter. Rainfall has a negative impact on water use. Temperature during the peak seasonal water use periods has a positive impact on water use. Stated another way, during cool, wet periods, customers are likely to use less water than they would during hot, dry periods and the amount billed for wastewater service declines. The results of this analysis, which was done independently for Conshohocken and West Conshohocken are shown in Figure 2. Here, it can be seen that a slight increase in the total number of gallons billed annually over the rate study planning period should be anticipated. While the average use per customer is declining slightly, consistent with regional and national trends, the additional customer growth is offsetting the decline and resulting in slight growth in volumetric sales.

Figure 2: Borough of Conshohocken Authority
Actual and Forecast
Quarterly Consumption (C-Gallons)

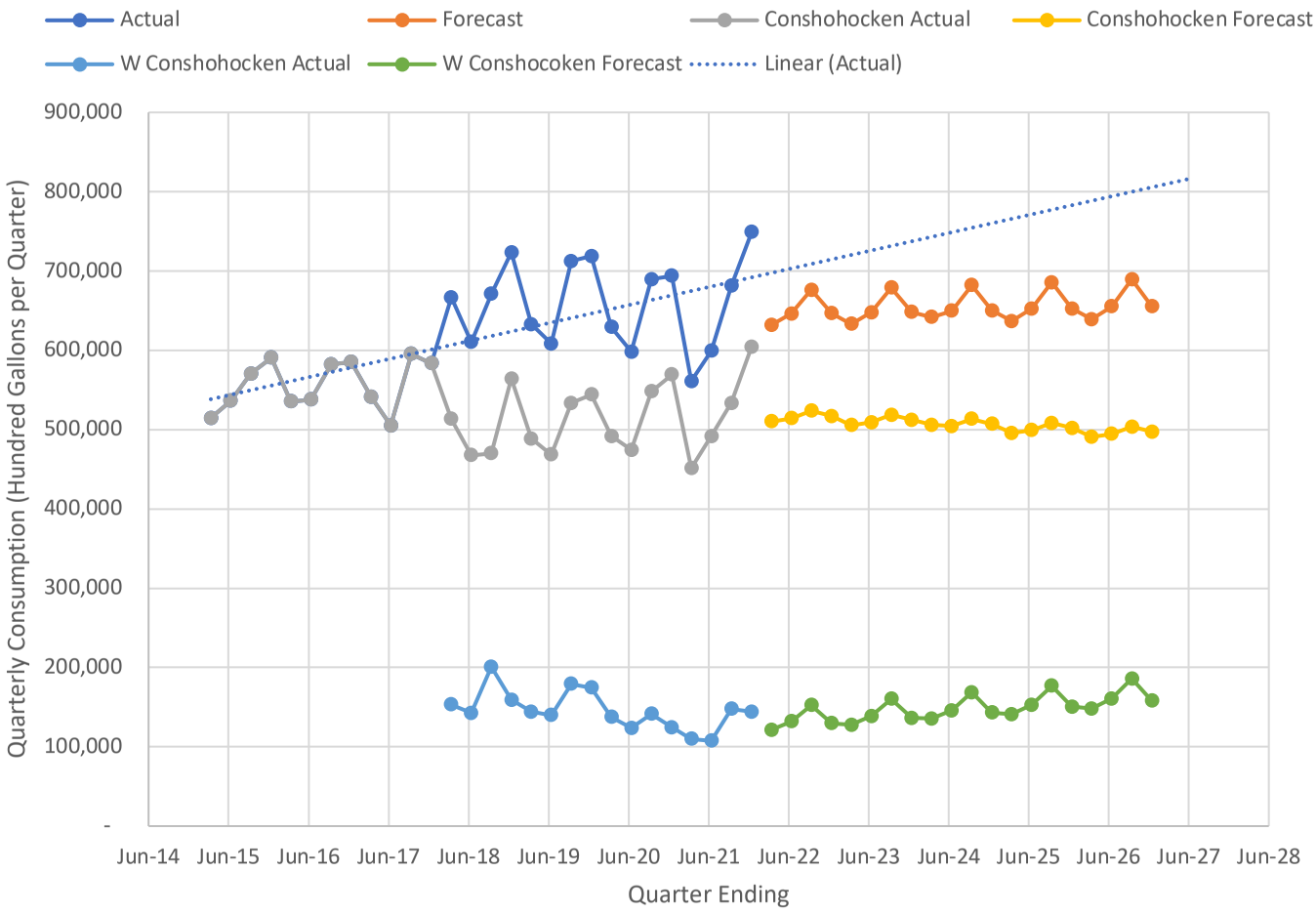


Table 2 presents a summary of the historical and projected billing determinants resulting from this analysis. The number of EDUs billed annually in Conshohocken and in West Conshohocken are shown along with the volume billed in hundred-gallon units each year. For the industrial customers, Table 2 also shows the number of EDUs and billed gallons along with the number of Industrial Pretreatment Program Class fees to be billed. While the Authority's rate structure authorizes the billing of excess load charges, no such charges have been levied. Excess load charges can be billed to industrial users who discharge wastewater to the system when the strength of the wastewater exceeds predetermined limits for biochemical oxygen demand, total suspended solids, and ammonia.

| Table 2: Summary of Billing Determinants | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Billing Determinants - Conshohocken** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | **2025** | **2026** |
| EDU's Billed Annually | 20,822 | 21,152 | 21,365 | 21,434 | 21,111 | 21,575 | 21,691 | 22,190 | 22,268 | 22,346 | 22,424 | 22,502 |
| Volume (CG) | 2,211,931 | 2,241,259 | 2,225,439 | 2,015,597 | 2,034,609 | 2,083,151 | 2,081,374 | 2,065,365 | 2,045,287 | 2,030,876 | 2,005,576 | 1,986,006 |
| | | | | | | | | | | | | |
| **Billing Determinants - West Conshohocken** | | | | | | | | | | | | |
| EDU's Billed Annually | | | | 2,773 | 2,842 | 4,004 | 5,022 | 5,138 | 5,156 | 5,174 | 5,192 | 5,210 |
| Excess Volume (CG) | | | | 378,853 | 353,613 | 383,177 | 509,386 | 535,432 | 562,680 | 592,884 | 621,475 | 653,078 |
| Allowance Volume (CG) | | | | 277,300 | 284,200 | 144,200 | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| **Industrial Users** | | | | | | | | | | | | |
| Conshohocken EDU's | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Conshohocken Volume (CG) | 7,539 | 6,573 | 6,508 | 4,780 | 4,098 | 4,170 | 3,453 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| West Conshohocken - Service Fee | | | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| West Conshohocken Excess Volume (CG) | | | | 10,766 | 10,865 | 6,560 | 6,642 | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 |
| Class 1 Accounts | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Class 2 Accounts | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Class 3 Accounts | 10 | 11 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Load Surcharges | | | | | | | | | | | | |
| BOD (lb) | - | - | - | - | - | - | - | - | - | - | - | - |
| TSS (lb) | - | - | - | - | - | - | - | - | - | - | - | - |
| Ammonia (lb) | - | - | - | - | - | - | - | - | - | - | - | - |

# 3. Capital Improvement Plan

Like all well managed sewer utilities, the Authority has anticipated the need to improve and renew its facilities to maintain safe, adequate, and proper service. As sewer utility systems age, some assets will need to be renewed or replaced. To address this, the Authority has identified a number of improvements to its wastewater treatment works and its sewer collection and conveyance systems. These projects are summarized in Table 3. Through a negotiated agreement with Plymouth Township, the capacity of the wastewater treatment system is shared. This arrangement includes an allocation of improvement costs between the Authority and Plymouth Township. The allocation is reflected in Table 3. Some of the more significant improvements planned at the wastewater treatment plant include the scheduled replacement of the Rotating Biological Contactor Units 1through 9 of Train B at a cost of $3,220,000 and the plant electrical substation upgrade at an estimated cost of $2,350,000.

The Authority plans to continue its ongoing Inflow & Infiltration control programs, and to incorporate the West Conshohocken collection network into the geographic information system. In addition, a number of pump station upgrades, including the provision of standby power in West Conshohocken are planned.

Over the next five years, the Authority plans to invest an average of $1.5 million per year in the assets of the system. The largest expenses are anticipated in 2026 ($3,830,000) and 2024 ($2,222,500). The Authority has time to plan for these higher expense years by ensuring that rates are adequate to cover the cost of implementing these improvements and making sure any necessary financings are in place when needed.

Table 4 shows an analysis of the Authority's construction fund. This analysis demonstrates the Authority's ability to fund the capital improvements and maintain a positive fund balance sufficient to fund, in advance, the maximum anticipated annual construction disbursements. Transfers to and from the operating fund are reflected in this table.

| Table 3: Capital Improvement Plan | | | | | | |
|---|---|---|---|---|---|---|
| **WWTP PROJECT** | **Depreciation Rate** | **2022** | **2023** | **2024** | **2025** | **2026** |
| Wet Well Submersible Pump Replacement | 0.1429 | $ 50,000 | $ 50,000 | | | $ 30,000 |
| Wet Well Control Panel Upgrade | 0.1429 | | $ 200,000 | | | |
| Rotating Biological Contactor Train B Units 1-9 Replacement | 0.0333 | | | $ 75,000 | | $ 3,145,000 |
| Solids Handling Upgrade Study (Digester A & B) | 0.1429 | | $ 10,000 | | | |
| Alarm Panel & SCADA System Upgrade | 0.1429 | | | | | $ 300,000 |
| Utility & Yard Piping | 0.0200 | | | $ 25,000 | $ 225,000 | |
| Driveway Resurfacing | 0.1429 | | | | | $ 185,000 |
| Electrical Substation Upgrade to Service Entire WWTP | 0.1000 | $ 100,000 | $ 250,000 | $ 2,000,000 | | |
| Thickener Tank Engineering Study | 0.1429 | | $ 8,500 | | | |
| Administration Building Rennovations (Engineering Study) | 0.1429 | $ 25,000 | $ 50,000 | $ 25,000 | | |
| Security Upgrade (Cameras, Fire/Alarm System) | 0.1429 | | | $ 22,500 | | |
| Belt Filter Press Replacement | 0.0200 | $ - | $ - | | | |
| Rehabilitation to Interceptor | 0.0200 | $ 113,807 | | | | |
| **Total WWTP Projects** | | **$ 288,807** | **$ 568,500** | **$ 2,147,500** | **$ 225,000** | **$ 3,660,000** |
| | | | | | | |
| Capital Shares Per Borough/Township (WWTP) | | | | | | |
| Conshohocken 73.8% | | $ 213,140 | $ 419,553 | $ 1,584,855 | $ 166,050 | $ 2,701,080 |
| Plymouth Township 26.2% | | $ 75,667 | $ 148,947 | $ 562,645 | $ 58,950 | $ 958,920 |
| | | | | | | |
| **Collection & Conveyance Project** | | **2022** | **2023** | **2024** | **2025** | **2026** |
| Collection Rehabilitation Engineering Study | 0.0200 | | $ 15,000 | | | |
| Rehabilitation to Collection System | 0.0200 | | | $ 75,000 | $ 75,000 | $ 75,000 |
| Easement Acquisitions | - | | $ 50,000 | | $ 50,000 | |
| West Conshohocken Collection System GIS Upgrade | 0.1000 | | | | $ 80,000 | |
| West Conshohocken Pump Station Pumps | 0.1429 | | $ 22,500 | | $ 24,500 | |
| West Conshohocken Pump Station Generator & Elec Upgrades | 0.1429 | | | | | |
| West Conshohocken Pump Station Control Panel & Elect Upgrades | 0.1429 | | | | | |
| Easement Jet Vac Machine | - | | | | | $ 95,000 |
| **Total Collection & Conveyance Costs** | | $ - | $ 87,500 | $ 75,000 | $ 229,500 | $ 170,000 |
| | | | | | | |
| **TOTAL CAPAITAL IMPROVEMENTS** | | **$ 288,807** | **$ 656,000** | **$ 2,222,500** | **$ 454,500** | **$ 3,830,000** |
| | | | | | | |
| Conshohocken Cost | | $ 213,140 | $ 507,053 | $ 1,659,855 | $ 395,550 | $ 2,871,080 |
| Plymouth Township Cost | | $ 75,667 | $ 148,947 | $ 562,645 | $ 58,950 | $ 958,920 |

| Table 4: Construction Fund Analysis | | | | | | |
|---|---|---|---|---|---|---|
| | | 2022 | 2023 | 2024 | 2025 | 2026 |
| Starting Balance | | $ 4,000,000 | $ 5,117,817 | $ 4,594,410 | $ 5,656,663 | $ 4,566,807 |
| Construction Disbursements | | $ (213,140) | $ (507,053) | $ (1,659,855) | $ (395,550) | $ (2,871,080) |
| Disbursements from Connection Fee Fund | | $ - | $ (760,000) | $ (850,000) | $ (760,000) | $ (650,000) |
| Transfer From Operating Fund - Prior Year | | $ 1,255,289 | $ 594,699 | $ 9,462 | $ 6,744 | $ 6,834 |
| Connection Fees Realized | | $ - | $ - | $ - | $ - | $ - |
| Plymouth Township Payments | | $ 75,667 | $ 148,947 | $ 562,645 | $ 58,950 | $ 958,920 |
| Financing | | $ - | $ - | $ 3,000,000 | $ - | $ - |
| Ending Balance | | $ 5,117,817 | $ 4,594,410 | $ 5,656,663 | $ 4,566,807 | $ 2,011,481 |

Note that Table 4 includes a line item titled "Connection Fees Realized" and for each of the plan years, the amount anticipated for purposes of this rate study is zero dollars. This is an intentionally conservative assumption, and it is also internally consistent with the anticipated low growth in the number of EDU's described earlier in Section 2. In the development of the billing determinants in Section 2, this study anticipates the connection of 96 customers during the plan period. In recent years, the Authority has realized significant connection fees as the service area has evolved and developed. At present, there are six known developments that could add as many as 1,125 EDU's to the system.[1] The timing of the addition of these developments is unknown and subject to the influence of many uncontrollable external economic factors. The amount of connection fees associated with these proposed developments is significant and could be as much as $6,000,000. Because the Authority cannot control the receipt of these funds, the study does not anticipate that the funds will be in hand and useable by the Authority during the planning period. If, however, significant connection fees are realized, these funds can be retained and used to fund improvements and capital additions to the system. This would offset or delay the need for a financing, as shown in Table 4 or increase the availability of funds to stabilize rates by offsetting other maintenance and renewal expenses reflected in the operating budget. In addition, the additional customers added to the system will produce operating revenues not included in the revenue projections on which rate recommendations are based.

## 4. Revenue Requirement & Rate Recommendation

The Authority's operating budget represents the principal portion of the total sewer revenue requirement. A Comparative Income Statement for 2015 through 2021 is shown in Table 5. In this table, the actual and budgeted sewer revenues are shown as are the actual and budgeted sewer expenses. In addition, annual depreciation expense and interest costs are shown. At the bottom of this table, the net change in position is calculated along with the debt service coverage ratio. The debt service coverage ratio is a measure of the financial strength of

[1] This represents 4,500 quarterly billed EDU's per year compared to 384 additional quarterly billed EDU's per year accounted for in the projected billing determinants and revenue calculations. The rates projected in this study should be re-evaluated based on the actual number of additional EDU's added to the system annually.

the Authority in that it compares utility operating income to the annual debt service payment requirements. Although the current Authority financings do not specify a minimum coverage ratio, it is common to see a minimum coverage ratio requirement of 1.10 in revenue bonds. This requirement means that the Authority would need to take in sufficient revenues to pay its expenses and have at least 110% of the annual debt service amount as net utility operating income. As can be seen in Table 5, the Authority has been able to surpass this typical minimum requirement. It is important to maintain the coverage ratio above minimum levels. This, among other metrics, are used by debt rating agencies to determine the quality of the Authority's debt. Higher debt ratings result in lower borrowing costs. This translates directly to a lower revenue requirement and therefore, lower customer rates. Because the Authority is a Pennsylvania Municipal Authority, any surplus revenues generated as a result of maintaining a higher coverage ratio than the minimum would be held in a construction reserve or rate stabilization fund for the ultimate benefit of the Authority's customers. Dollars held in a construction reserve would be used to fund future construction work without the need to incur new debt and this would also help to keep future rates as low as possible.

| Table 5: Comparitive Income Statement | Borough of Conshohocken Authority | | | | | | |
|---|---|---|---|---|---|---|---|
| | Revenues & Expenses for Year Ending December 31 | | | | | | |
| | Actual | | | | | | |
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| **Operating Revenues** | | | | | | | |
| Sewer Service | $ 1,560,514 | $ 1,549,675 | $ 1,821,395 | $ 2,232,202 | $ 2,203,036 | $ 2,210,018 | $ 2,254,477 |
| Connection Fees | $ 26,368 | $ 78,275 | $ 93,925 | $ 71,968 | $ 691,000 | $ 2,083,200 | $ 1,691,200 |
| Penalties | $ 26,326 | $ 17,481 | $ 28,301 | $ 30,646 | $ 30,609 | $ 15,329 | $ 31,422 |
| Certifications | $ 8,220 | $ 7,895 | $ 7,895 | $ 12,205 | $ 15,150 | $ 15,300 | $ 11,900 |
| NSF Fees | $ 340 | $ 160 | $ 100 | $ 100 | $ 270 | $ 90 | $ 60 |
| MIPP Fees | $ 8,200 | $ 6,795 | $ 9,268 | $ 9,350 | $ 8,300 | $ 9,000 | $ 5,500 |
| Misc Fees & Permits | $ 11,027 | $ 23,774 | $ 4,571 | $ 6,291 | $ 1,611 | $ 2,624 | $ 616 |
| Energy Curtailment Program | $ - | $ 2,642 | $ 963 | $ 162 | $ 143 | $ 247 | $ - |
| Lien Fees | $ 3,483 | $ 3,696 | $ 3,196 | $ 2,723 | $ 3,807 | $ 1,377 | $ - |
| Legal Fees | $ 11,783 | $ 16,108 | $ 9,864 | $ 6,923 | $ 9,953 | $ 3,600 | $ - |
| Contract Revenues - Plymouth Twp | $ 347,003 | $ 353,767 | $ 329,360 | $ 283,660 | $ 343,861 | $ 306,644 | $ 318,762 |
| Contract Revenues - Plymouth Twp - Capital | $ - | $ 177,837 | $ 438,986 | $ 604,568 | $ (1) | $ - | $ - |
| Contract Revenues - W. Conshohocken | $ 175,735 | $ 169,356 | $ 93,297 | $ - | $ - | $ - | $ - |
| Contract Revenues - W. Conshohocken - Capital | $ - | $ 131,290 | $ 252,829 | $ - | $ - | $ - | $ - |
| Interest Income | $ - | $ - | $ - | $ - | $ 67,052 | $ 10,623 | $ 5,511 |
| Capital Contributions | $ - | $ - | $ - | $ - | $ - | $ 8,998 | $ - |
| Transfer from Connection Fee Account | $ - | $ - | $ - | $ - | $ - | $ - | $ 90,000 |
| **Total Operating Revenues** | $ 2,178,999 | $ 2,538,751 | $ 3,093,950 | $ 3,260,798 | $ 3,374,791 | $ 4,667,050 | $ 4,409,448 |
| | | | | | | | |
| **Operating Expenses** | Actual | | | | | | |
| **Plant Expenses** | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Wages | $ 386,416 | $ 398,794 | $ 309,594 | $ 333,467 | $ 351,459 | $ 322,362 | $ 305,445 |
| Sick Pay | $ (27,377) | $ - | $ - | $ - | $ - | $ - | $ - |
| Payroll Taxes | $ 34,905 | $ 35,531 | $ 26,577 | $ 25,801 | $ 28,054 | $ 25,457 | $ 22,908 |
| Workers' Compensation Insurance | $ - | $ 14,919 | $ 16,952 | $ 14,975 | $ 11,975 | $ 13,955 | $ 13,536 |
| Pension | $ - | $ - | $ - | $ - | $ 29,934 | $ 8,398 | $ 8,223 |
| Medical & Dental Benefits | $ - | $ - | $ - | $ - | $ 64,371 | $ 56,853 | $ 63,845 |
| EEContribution Benefits | $ 137,974 | $ 151,250 | $ 115,677 | $ 85,905 | $ - | $ - | $ - |
| TASC Medical Copay | $ - | $ 8,540 | $ 16,872 | $ 27,828 | $ 34,778 | $ 15,776 | $ 6,493 |
| Life Insurance | $ - | $ - | $ - | $ - | $ 4,378 | $ 4,035 | $ 4,394 |
| Utilities - Gas & Electric | $ 120,462 | $ 121,368 | $ 121,680 | $ 126,246 | $ 133,592 | $ 128,810 | $ 124,820 |
| Utilities - Water | $ 2,297 | $ 2,658 | $ 3,688 | $ 4,075 | $ 2,745 | $ 3,408 | $ 3,396 |
| Plant Security | $ 1,610 | $ 1,220 | $ 952 | $ 1,635 | $ 1,271 | $ 1,598 | $ 400 |
| Vehicle Maintenance | $ 149 | $ 368 | $ 183 | $ - | $ - | $ 433 | $ 100 |
| Plant Maintenance | $ 13,707 | $ 13,135 | $ 19,884 | $ 18,626 | $ 17,533 | $ 20,266 | $ - |
| Plant Supplies | $ 405 | $ 566 | $ 365 | $ 1,485 | $ 831 | $ 1,900 | $ - |
| Repairs/Maintenance - Building | $ 137 | $ 1,298 | $ 3,013 | $ 6,736 | $ 176 | $ 416 | $ 1,519 |
| Repairs/Maintenance - Plant | $ 36,234 | $ 53,104 | $ 51,549 | $ 31,341 | $ 42,834 | $ 14,052 | $ 55,464 |
| Small Tools - Minor Repairs | $ 2,508 | $ 1,939 | $ 2,869 | $ 1,167 | $ 3,101 | $ 850 | $ - |
| Employee Drug Testing | $ 423 | $ 336 | $ 196 | $ 440 | $ 198 | $ 354 | $ 455 |
| Engineering Fees | $ 17,651 | $ 15,643 | $ 10,938 | $ 9,991 | $ 7,195 | $ 9,655 | $ 18,560 |
| Engineering - Wasteload Management | $ 4,989 | $ 4,915 | $ 4,101 | $ 3,994 | $ 3,160 | $ 3,219 | $ 3,719 |
| Uniforms/Safety Supplies | $ 3,720 | $ 5,450 | $ 6,849 | $ 7,136 | $ 5,522 | $ 6,565 | $ 4,623 |
| Inside Lab Costs | $ 1,865 | $ 1,847 | $ 2,523 | $ 2,613 | $ 2,332 | $ 1,836 | $ 1,373 |
| Outside Lab Costs | $ 19,453 | $ 19,069 | $ 23,405 | $ 33,480 | $ 35,290 | $ 30,877 | $ 28,419 |
| Sludge Removal | $ 92,606 | $ 117,322 | $ 106,556 | $ 127,934 | $ 232,529 | $ 121,351 | $ 148,635 |
| Treatment Chemical | $ 439 | $ - | $ - | $ - | $ - | $ - | $ - |
| Chlorine | $ 4,550 | $ 3,840 | $ 3,840 | $ 3,200 | $ 4,960 | $ 4,400 | $ 4,100 |
| Sodium Hypochlorite | $ - | $ - | $ - | $ - | $ 743 | $ 200 | $ 540 |
| Sodium Bisulfate | $ 2,354 | $ 2,540 | $ 1,128 | $ 1,692 | $ 3,384 | $ 1,692 | $ 2,800 |
| Lime | $ - | $ - | $ 968 | $ - | $ - | $ - | $ 500 |
| Polymer | $ 5,788 | $ 5,267 | $ 5,937 | $ 9,131 | $ 2,926 | $ 2,808 | $ 6,083 |
| Hydrogen Peroxide | $ 2,880 | $ 960 | $ - | $ - | $ - | $ - | $ - |
| Odor Control | $ 776 | $ 3,821 | $ - | $ - | $ - | $ - | $ 47,407 |
| Equipment Rentals and Lease Expense | $ 77 | $ 1,699 | $ - | $ - | $ - | $ 220 | $ - |
| Miscellaneous Operating Expenses | $ - | $ 4 | $ 68 | $ 1,250 | $ - | $ 21 | $ - |
| DEP Permit Fee | $ 1,914 | $ 1,400 | $ 2,220 | $ 980 | $ 2,242 | $ 2,258 | $ 1,250 |
| Plant mats, Deodorizers, Gloves | $ 1,547 | $ 1,346 | $ 1,209 | $ 1,475 | $ 1,128 | $ 2,702 | $ 2,359 |
| **Total Plant Expenses** | $ 870,459 | $ 990,149 | $ 859,793 | $ 882,603 | $ 1,028,641 | $ 806,727 | $ 881,366 |

| Table 5: Comparitive Income Statement | Borough of Conshohocken Authority | | | | | | |
|---|---|---|---|---|---|---|---|
| | Revenues & Expenses for Year Ending December 31 | | | | | | |
| | Actual | | | | | | |
| **Maintenance Expenses** | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Wages - Road Crew | $ 108,900 | $ 130,406 | $ 124,929 | $ 112,727 | $ 116,798 | $ 122,577 | $ 134,446 |
| Payroll Taxes | $ 10,182 | $ 11,293 | $ 11,335 | $ 9,174 | $ 9,146 | $ 9,448 | $ 10,083 |
| Medical & Dental Benefits | $ 34,931 | $ 39,504 | $ 36,248 | $ 19,396 | $ 12,882 | $ 9,812 | $ 13,270 |
| Workers' Compensation Insurance | $ - | $ 4,834 | $ 5,651 | $ 5,054 | $ 3,783 | $ 4,764 | $ 4,684 |
| Pension | $ - | $ - | $ - | $ - | $ 9,948 | $ 3,359 | $ 3,289 |
| TASC Medical Copay | $ - | $ 3,274 | $ 3,049 | $ 3,939 | $ 2,549 | $ 7,833 | $ 5,053 |
| Life Insurance | $ - | $ - | $ - | $ - | $ 1,879 | $ 1,734 | $ 1,927 |
| Maintenance - Sewer | $ 7,946 | $ 6,828 | $ 2,116 | $ 5,282 | $ 12,166 | $ 10,159 | $ 10,279 |
| Maintenance - Supplies | $ 555 | $ 1,198 | $ 1,970 | $ 1,165 | $ 666 | $ 336 | $ - |
| Pump Station - Maintenance | $ - | $ - | $ 3,192 | $ 10,621 | $ 2,319 | $ 310 | $ - |
| Pump Station - Utilities | $ - | $ - | $ 2,775 | $ 2,883 | $ 7,931 | $ 7,478 | $ 7,398 |
| Small Tools & Minor Equipment | $ 576 | $ 3,575 | $ 981 | $ 3,334 | $ 289 | $ 733 | $ - |
| Equipment Rentals & Lease Expense | $ - | $ - | $ - | $ 167 | $ 605 | $ - | $ - |
| Vehicle Expenses | $ 2,076 | $ 4,683 | $ 6,196 | $ 5,805 | $ 5,074 | $ 6,790 | $ 6,080 |
| Jet Truck Expenses | $ 8,206 | $ 2,397 | $ 7,087 | $ 5,168 | $ 2,465 | $ 651 | $ 1,213 |
| Camera and Vacuum Trailer | $ - | $ 10,444 | $ 140 | $ 1,640 | $ 1,869 | $ 235 | $ 2,278 |
| Camera Truck | $ - | $ - | $ - | $ - | $ - | $ 4,414 | $ 605 |
| Uniforms - Road Crew | $ 1,310 | $ 1,511 | $ 1,433 | $ 1,717 | $ 1,532 | $ 1,811 | $ 1,568 |
| One Call Service | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Engineering Fees - Collection System | $ - | $ 24,934 | $ 5,937 | $ 13,626 | $ 52,923 | $ 8,730 | $ 1,524 |
| Misc Expenses - Collection System | $ 362 | $ 212 | $ 1,097 | $ 1,462 | $ 12 | $ 607 | $ 46 |
| **Total Maintenance Expenses** | $ 175,044 | $ 245,093 | $ 214,136 | $ 203,160 | $ 244,836 | $ 201,781 | $ 203,743 |
| | | | | | | | |
| | Actual | | | | | | |
| **Administrative Expenses** | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Wages | $ 114,084 | $ 121,180 | $ 232,752 | $ 223,833 | $ 273,098 | $ 225,871 | $ 320,372 |
| Payroll Taxes | $ 10,584 | $ 11,037 | $ 20,420 | $ 17,932 | $ 22,136 | $ 17,194 | $ 24,028 |
| Medical & Dental Benefits | $ 23,047 | $ 28,860 | $ 45,168 | $ 36,887 | $ 33,294 | $ 23,285 | $ 30,869 |
| Workers' Compensation Insurance | $ 15,063 | $ 4,467 | $ 1,966 | $ 804 | $ (107) | $ 808 | $ 2,036 |
| Pension | $ - | $ - | $ - | $ - | $ 23,260 | $ 5,039 | $ 4,934 |
| TASC Medical Copay | $ - | $ 4,218 | $ 10,334 | $ 7,065 | $ 19,929 | $ 16,381 | $ 8,112 |
| Life Insurance | $ - | $ - | $ - | $ - | $ 2,940 | $ 2,505 | $ 2,841 |
| Insurance | $ 54,382 | $ 56,950 | $ 55,555 | $ 59,568 | $ 59,815 | $ 69,543 | $ 72,572 |
| Legal | $ 97,028 | $ 87,013 | $ 91,446 | $ 153,390 | $ 147,114 | $ 97,487 | $ 82,690 |
| Legal - Plant | $ 10,806 | $ 4,140 | $ 21,841 | $ 4,275 | $ 2,375 | $ 950 | $ 1,275 |
| Legal - Collection & Liens | $ 13,882 | $ 21,554 | $ 13,599 | $ 39,873 | $ 41,731 | $ 13,262 | $ 14,494 |
| Plymouth Sewer Acquisition | $ - | $ - | $ - | $ - | $ 13,235 | $ - | $ - |
| Auditing & Accounting | $ 55,321 | $ 62,204 | $ 53,269 | $ 67,468 | $ 80,013 | $ 115,666 | $ 95,258 |
| Engineering Fees | $ - | $ 722 | $ 3,370 | $ 18,661 | $ 10,800 | $ 14,327 | $ 11,124 |
| Board Expense Payment | $ 3,950 | $ 7,500 | $ 7,500 | $ 7,500 | $ 7,475 | $ 7,500 | $ 6,575 |
| Consulting Fees | $ 3,430 | $ 39,889 | $ 32,660 | $ 15,218 | $ 18,379 | $ 7,950 | $ - |
| Administrative Service Fee | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Dues, Subscriptions & Conferences | $ 17,404 | $ 12,775 | $ 9,387 | $ 6,211 | $ 8,015 | $ 4,573 | $ 13,172 |
| Office Supplies & Expenses | $ 20,310 | $ 19,890 | $ 20,278 | $ 21,947 | $ 22,145 | $ 20,130 | $ 21,755 |
| Computer Expense | $ 3,773 | $ 2,387 | $ 5,694 | $ 23,827 | $ 5,943 | $ 32,016 | $ 18,534 |
| Covid-19 Expenses | $ - | $ - | $ - | $ - | $ - | $ 22,194 | $ - |
| Maintenance | $ - | $ - | $ - | $ 468 | $ 29 | $ - | $ - |
| Telephone | $ 4,867 | $ 5,291 | $ 4,826 | $ 5,214 | $ 7,166 | $ 6,122 | $ 6,368 |
| Advertising | $ 10,623 | $ 3,149 | $ 3,337 | $ 1,425 | $ 3,502 | $ 6,490 | $ 7,043 |
| Community Outreach | $ - | $ - | $ - | $ - | $ 1,642 | $ - | $ - |
| Postage - Billing & General | $ 7,364 | $ 8,281 | $ 6,898 | $ 8,980 | $ 14,605 | $ 10,278 | $ 10,978 |
| Billing Services | $ - | $ - | $ - | $ - | $ - | $ - | $ 3,433 |
| Collection Expense | $ 4,516 | $ 5,533 | $ 6,557 | $ 8,806 | $ 11,911 | $ 10,766 | $ 7,704 |
| Upper Merion Sewer Rental Contract | $ - | $ - | $ - | $ - | $ 7,650 | $ 7,475 | $ 7,774 |
| Miscellaneous | $ 2,370 | $ 4,983 | $ 9,319 | $ 7,843 | $ 366 | $ 453 | $ 170 |
| Bank Fees | $ 4,749 | $ 5,214 | $ 5,334 | $ 5,157 | $ 5,269 | $ 5,560 | $ 5,146 |
| Bad Debt (Recovery), Settlement (Recovery) | $ (45,065) | $ - | $ - | $ (35,000) | $ - | $ - | $ - |
| Donations | $ - | $ - | $ - | $ - | $ 2,643 | $ 3,350 | $ 3,000 |
| Payroll Processing Fees | $ 3,785 | $ 4,055 | $ 3,663 | $ 4,387 | $ 4,099 | $ 4,078 | $ 3,983 |
| **Total Administrative Expenses** | $ 436,273 | $ 521,292 | $ 665,173 | $ 711,739 | $ 850,472 | $ 751,253 | $ 786,240 |
| | | | | | | | |
| **Total Operating, General & Administrative Expenses** | $ 1,481,776 | $ 1,756,534 | $ 1,739,102 | $ 1,797,502 | $ 2,123,949 | $ 1,759,761 | $ 1,871,349 |

| Table 5: Comparitive Income Statement | Borough of Conshohocken Authority | | | | | | |
|---|---|---|---|---|---|---|---|
| | Revenues & Expenses for Year Ending December 31 | | | | | | |
| | Actual | | | | | | |
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Operating Income Before Depreciation | $ 697,223 | $ 782,217 | $ 1,354,848 | $ 1,463,296 | $ 1,250,842 | $ 2,907,289 | $ 2,538,099 |
| Depreciation | $ (556,887) | $ (565,904) | $ (657,237) | $ (801,257) | $ (901,598) | $ (979,728) | $ (1,009,570) |
| **Operating Income** | $ 140,336 | $ 216,313 | $ 697,611 | $ 662,039 | $ 349,244 | $ 1,927,561 | $ 1,528,529 |
| | | | | | | | |
| **Non-Operating Revenues (Expense)** | | | | | | | |
| Interest Income | $ 4,432 | $ 6,109 | $ 7,057 | $ 28,976 | $ 67,052 | | |
| Grant Revenue | | $ - | $ 200,000 | $ 337,023 | $ - | | |
| Interest Expense | $ (95,158) | $ (40,747) | $ (278,625) | $ (353,596) | $ (340,076) | $ (282,114) | $ (273,240) |
| **Net Non-Operating Revenues (Expense)** | $ (90,726) | $ (34,638) | $ (71,568) | $ 12,403 | $ (273,024) | $ (282,114) | $ (273,240) |
| | | | | | | | |
| **Income Before Capital Contributions** | $ 49,610 | $ 181,675 | $ 626,043 | $ 674,442 | $ 76,220 | $ 1,645,447 | $ 1,255,289 |
| Capital Contributions | | | $ - | $ 17,820 | $ - | | |
| **Increase in Net Position** | $ 49,610 | $ 181,675 | $ 626,043 | $ 692,262 | $ 76,220 | $ 1,645,447 | $ 1,255,289 |
| | | | | | | | |
| **Debt Service** | $ 95,158 | $ 99,497 | $ 270,371 | $ 666,186 | $ 660,936 | $ 826,581 | $ 827,353 |
| **Coverage Ratio** | 7.33 | 7.86 | 5.01 | 2.20 | 1.89 | 3.52 | 3.07 |

The historical periods shown in Table 5 were analyzed to develop a forecast of the revenue requirement for the Authority. On average, operations and maintenance expense, including administration had a median value of $1.76 million per year in these test periods. The compound rate of growth has been limited to 3.97% from 2015 through 2021. Generally, water and sewer rates nationally have been growing at a rate in excess of inflation and have been on the order of 3% to 4% per year, so this experience is in line with national trends.

Each expense line item in Table 5 was reviewed individually to estimate the level of expense that should be anticipated in the planning period. Each line item was reviewed to determine linear growth trends, median values and average values for this historical period. Compound rates of growth (or decline) were also identified for each account group. This analysis was used to forecast operating and maintenance expenses under current operating procedures for 2023 through 2026. The forecast for each line item is based an average of: (1) the linear trend exhibited by the historic actual expenses; (2) the change in expense from the mid-point of the historical data through the forecast year at the average year-over-year rate of change; and (3) the average expense for 2019-2021 adjusted by the average rate of inflation. If a definable trend could not be seen in the test period data, an average for the test period was calculated and that average was increased at the annual rate of inflation for the 2012 through 2020 period. This rate of growth was calculated to be 2.29% per year. Additional adjustments to several line items were made based on the author's experience in the industry and input from the Authority's staff. For

example, the level of effort required to maintain equipment at the wastewater treatment plant was increased by $100,000 starting in 2023 and maintained at this higher level through the plan period. Similarly, additions to the forecast years were made to account for annual payments of $200,000 to the Borough, to allow a contract service to be used for One-Call mark-outs ($30,000 per year) and to allow additional operating/maintenance staff to be retained ($80,000 per year). Overall, O&M expense are projected to increase at a compound annual rate of growth of 3.32%. Within this amount, plant expenses are forecast to grow at a rate of 2.44%, maintenance expense is forecast to grow at 2.66% per year and Administrative and General Expenses are forecast to grow at an average of 4.39% per year. Table 6 shows the Authority's Budget for 2022 and the forecast for 2023 through 2026. The revenues shown in Table 6 are factored to include the rate adjustments recommended in this study.

Historically, the Authority has received connection fees for new services provided throughout the service territory. In some years, the amounts receive were significant. The receipt of connection fees is not under the control of the Authority. Rather, the activity that results in the generation of connection fees is largely under the control of the entities who require service for prospective developments and redevelopment projects. At present, the Authority is anticipating additional developments that could add over 1,125 EDUs to the system. The corresponding connection fees associated with these additions is over $6 million. As discussed earlier, based on anticipated changes in the service area population, growth has been accounted for in the revenue projections with an average of 6 EDUs being added per quarter. This would conservatively account for the actual connection of 96 of the total anticipated EDUs within the planning period. Depending on the economic conditions actually experienced within the service area, many more connections could actually be made, and the collection of connection fees could be materially higher than what is forecast here. If that occurs, the need for an additional financing in 2024 could be deferred and the rate increases anticipated in 2024 and 2025 could be reduced or delayed.

Rate adjustments were considered and tested to provide sufficient sewer revenues to cover the anticipated expenses so that a positive change in net position occurred each year in the plan and the debt service coverage ratio was maintained at a level greater than 150%.

Changes made to the capital improvement plan or in the amount of connection fees realized in any year would impact the need for the 2024 financing and the rate increases proposed for 2024 and beyond. Unless the annual connection fees materially exceed what is forecast for 2022 and the capital improvement plan is reduced during the planning period, the 2023 rate increase should not be deferred. Following the 2023 increase, additional annual increases are recommended through the planning period. In making these recommendations, we have not anticipated the receipt of connection fees and we have endeavored to put the Authority on track to generate sufficient revenues to sustain the normal amount of routine and recurring capital replacements needed to maintain safe, adequate and proper service without incurring new debt beyond what is recommended in 2024. As many similar authorities have found, being in a position to sustain routine and recurring capital additions and replacements without increasing the debt burden on customers leads to a lower overall revenue requirement and lower rates. Routine and recurring expenses, like pump replacements or Inflow and Infiltration control expenses occur every year and these expenses should be supported by current customers in current rates. The forward-looking rate projections put the Authority on course to achieve the objective of sustainably funding routine and recurring improvements without growing the Authority debt burden.

| Table 6: Comparitive Income Statement | Borough of Conshohocken Authority | | | | |
|---|---|---|---|---|---|
| | Revenues & Expenses for Year Ending December 31 | | | | |
| | Budget | Forecast | | | |
| | 2022 | 2023 | 2024 | 2025 | 2026 |
| **Operating Revenues** | | | | | |
| Sewer Service | $ 2,280,000 | $ 2,557,871 | $ 2,780,151 | $ 3,015,766 | $ 3,275,528 |
| Connection Fees | $ 1,200,000 | $ 760,000 | $ 850,000 | $ 760,000 | $ 650,000 |
| Penalties | $ 20,000 | $ 26,000 | $ 26,000 | $ 26,000 | $ 26,000 |
| Certifications | $ 11,900 | $ 11,000 | $ 11,000 | $ 11,000 | $ 11,000 |
| NSF Fees | $ 140 | $ 160 | $ 160 | $ 160 | $ 160 |
| MIPP Fees | $ 5,500 | $ 5,775 | $ 5,775 | $ 6,064 | $ 6,064 |
| Misc Fees & Permits | $ 3,500 | $ 7,000 | $ 7,000 | $ 7,000 | $ 7,000 |
| Energy Curtailment Program | $ - | $ - | $ - | $ - | $ - |
| Lien Fees | $ 2,500 | $ 3,000 | $ 3,000 | $ 3,000 | $ 3,000 |
| Legal Fees | $ 10,000 | $ 8,000 | $ 8,000 | $ 8,000 | $ 8,000 |
| Contract Revenues - Plymouth Twp | $ 340,000 | $ 340,000 | $ 340,000 | $ 340,000 | $ 340,000 |
| Contract Revenues - Plymouth Twp - Capital | $ - | $ - | $ - | $ - | $ - |
| Contract Revenues - W. Conshohocken | $ - | $ - | $ - | $ - | $ - |
| Contract Revenues - W. Conshohocken - Capital | $ - | $ - | $ - | $ - | $ - |
| Interest Income | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 |
| Capital Contributions | $ - | $ - | $ - | $ - | $ - |
| Transfer from Connection Fee Account | $ 50,000 | $ - | $ - | $ - | $ - |
| **Total Operating Revenues** | $ 3,928,540 | $ 3,723,806 | $ 4,036,086 | $ 4,181,989 | $ 4,331,752 |
| | | | | | |
| **Operating Expenses** | Budget | Forecast | | | |
| **Plant Expenses** | 2022 | 2023 | 2024 | 2025 | 2026 |
| Wages | $ 348,916 | $ 429,000 | $ 437,000 | $ 446,000 | $ 454,000 |
| Sick Pay | $ - | $ - | $ - | $ - | $ - |
| Payroll Taxes | $ 26,169 | $ 27,000 | $ 28,000 | $ 29,000 | $ 29,000 |
| Workers' Compensation Insurance | $ 15,169 | $ 18,000 | $ 19,000 | $ 20,000 | $ 21,000 |
| Pension | $ 9,257 | $ 17,000 | $ 17,000 | $ 17,000 | $ 18,000 |
| Medical & Dental Benefits | $ 58,708 | $ 66,000 | $ 68,000 | $ 69,000 | $ 71,000 |
| EEContribution Benefits | $ - | $ - | $ - | $ - | $ - |
| TASC Medical Copay | $ 22,079 | $ 27,000 | $ 29,000 | $ 30,000 | $ 32,000 |
| Life Insurance | $ 4,183 | $ 5,000 | $ 6,000 | $ 6,000 | $ 7,000 |
| Utilities - Gas & Electric | $ 130,000 | $ 135,000 | $ 137,000 | $ 139,000 | $ 141,000 |
| Utilities - Water | $ 3,500 | $ 4,000 | $ 4,000 | $ 4,000 | $ 4,000 |
| Plant Security | $ 1,500 | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 |
| Vehicle Maintenance | $ 500 | $ - | $ - | $ - | $ - |
| Plant Maintenance | $ - | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 |
| Plant Supplies | $ - | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 |
| Repairs/Maintenance - Building | $ 25,000 | $ 3,000 | $ 3,000 | $ 3,000 | $ 3,000 |
| Repairs/Maintenance - Plant | $ 53,000 | $ 40,000 | $ 41,000 | $ 42,000 | $ 43,000 |
| Small Tools - Minor Repairs | $ - | $ - | $ - | $ - | $ - |
| Employee Drug Testing | $ 500 | $ - | $ - | $ - | $ - |
| Engineering Fees | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 |
| Engineering - Wasteload Management | $ 4,000 | $ 4,000 | $ 4,000 | $ 4,000 | $ 4,000 |
| Uniforms/Safety Supplies | $ 7,000 | $ 7,000 | $ 7,000 | $ 7,000 | $ 7,000 |
| Inside Lab Costs | $ 4,000 | $ 2,000 | $ 2,000 | $ 2,000 | $ 2,000 |
| Outside Lab Costs | $ 30,000 | $ 39,000 | $ 41,000 | $ 42,000 | $ 44,000 |
| Sludge Removal | $ 170,000 | $ 183,000 | $ 192,000 | $ 201,000 | $ 209,000 |
| Treatment Chemical | $ - | $ - | $ - | $ - | $ - |
| Chlorine | $ 5,000 | $ 4,000 | $ 4,000 | $ 4,000 | $ 4,000 |
| Sodium Hypochlorite | $ 500 | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 |
| Sodium Bisulfate | $ 2,000 | $ 2,000 | $ 3,000 | $ 3,000 | $ 3,000 |
| Lime | $ - | $ - | $ - | $ - | $ - |
| Polymer | $ 4,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 |
| Hydrogen Peroxide | $ - | $ - | $ - | $ - | $ - |
| Odor Control | $ - | $ - | $ - | $ - | $ - |
| Equipment Rentals and Lease Expense | $ - | $ - | $ - | $ - | $ - |
| Miscellaneous Operating Expenses | $ - | $ - | $ - | $ - | $ - |
| DEP Permit Fee | $ 2,000 | $ 2,000 | $ 2,000 | $ 2,000 | $ 2,000 |
| Plant mats, Deodorizers, Gloves | $ 3,000 | $ 2,000 | $ 3,000 | $ 3,000 | $ 3,000 |
| **Total Plant Expenses** | $ 939,981 | $ 1,134,000 | $ 1,165,000 | $ 1,191,000 | $ 1,219,000 |

| Table 6: Comparitive Income Statement | Borough of Conshohocken Authority | | | | |
|---|---|---|---|---|---|
| | Revenues & Expenses for Year Ending December 31 | | | | |
| | Budget | Forecast | | | |
| **Maintenance Expenses** | 2022 | 2023 | 2024 | 2025 | 2026 |
| Wages - Road Crew | $ 140,480 | $ 133,000 | $ 136,000 | $ 140,000 | $ 143,000 |
| Payroll Taxes | $ 10,536 | $ 10,000 | $ 10,000 | $ 11,000 | $ 11,000 |
| Medical & Dental Benefits | $ 13,618 | $ 13,000 | $ 13,000 | $ 13,000 | $ 14,000 |
| Workers' Compensation Insurance | $ 5,207 | $ 6,000 | $ 6,000 | $ 7,000 | $ 7,000 |
| Pension | $ 3,703 | $ 6,000 | $ 6,000 | $ 6,000 | $ 6,000 |
| TASC Medical Copay | $ 4,150 | $ 6,000 | $ 6,000 | $ 6,000 | $ 6,000 |
| Life Insurance | $ 2,091 | $ 2,000 | $ 3,000 | $ 3,000 | $ 3,000 |
| Maintenance - Sewer | $ 15,000 | $ 11,000 | $ 12,000 | $ 12,000 | $ 13,000 |
| Maintenance - Supplies | $ - | $ - | $ - | $ - | $ - |
| Pump Station - Maintenance | $ 10,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 |
| Pump Station - Utilities | $ 7,500 | $ 10,000 | $ 11,000 | $ 12,000 | $ 13,000 |
| Small Tools & Minor Equipment | $ - | $ 1,000 | $ 1,000 | $ - | $ - |
| Equipment Rentals & Lease Expense | $ - | $ - | $ - | $ - | $ - |
| Vehicle Expenses | $ 6,000 | $ 8,000 | $ 8,000 | $ 8,000 | $ 9,000 |
| Jet Truck Expenses | $ 2,000 | $ 2,000 | $ 2,000 | $ 2,000 | $ 2,000 |
| Camera and Vacuum Trailer | $ 1,000 | $ 2,000 | $ 2,000 | $ 2,000 | $ 2,000 |
| Camera Truck | $ 3,000 | $ 2,000 | $ 2,000 | $ 3,000 | $ 3,000 |
| Uniforms - Road Crew | $ 2,000 | $ 2,000 | $ 2,000 | $ 2,000 | $ 2,000 |
| One Call Service | $ - | $ 30,000 | $ 30,000 | $ 30,000 | $ 30,000 |
| Engineering Fees - Collection System | $ 8,000 | $ 19,000 | $ 20,000 | $ 21,000 | $ 21,000 |
| Misc Expenses - Collection System | $ - | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 |
| **Total Maintenance Expenses** | $ 234,285 | $ 269,000 | $ 276,000 | $ 284,000 | $ 291,000 |
| | | | | | |
| | Budget | Forecast | | | |
| **Administrative Expenses** | 2022 | 2023 | 2024 | 2025 | 2026 |
| Wages | $ 334,908 | $ 347,000 | $ 370,000 | $ 393,000 | $ 416,000 |
| Payroll Taxes | $ 25,118 | $ 26,000 | $ 27,000 | $ 29,000 | $ 30,000 |
| Medical & Dental Benefits | $ 31,001 | $ 33,000 | $ 34,000 | $ 34,000 | $ 34,000 |
| Workers' Compensation Insurance | $ 2,264 | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 |
| Pension | $ 5,554 | $ 12,000 | $ 12,000 | $ 12,000 | $ 13,000 |
| TASC Medical Copay | $ 10,379 | $ 16,000 | $ 16,000 | $ 17,000 | $ 17,000 |
| Life Insurance | $ 3,082 | $ 3,000 | $ 4,000 | $ 4,000 | $ 5,000 |
| Insurance | $ 77,871 | $ 74,000 | $ 77,000 | $ 79,000 | $ 82,000 |
| Legal | $ 90,000 | $ 117,000 | $ 119,000 | $ 122,000 | $ 125,000 |
| Legal - Plant | $ 3,000 | $ 2,000 | $ 2,000 | $ 2,000 | $ 2,000 |
| Legal - Collection & Liens | $ 29,000 | $ 31,000 | $ 31,000 | $ 32,000 | $ 32,000 |
| Plymouth Sewer Acquisition | $ - | $ - | $ - | $ - | $ - |
| Auditing & Accounting | $ 58,000 | $ 67,000 | $ 76,000 | $ 85,000 | $ 94,000 |
| Engineering Fees | $ 10,000 | $ 21,000 | $ 23,000 | $ 25,000 | $ 27,000 |
| Board Expense Payment | $ 7,500 | $ 8,000 | $ 9,000 | $ 9,000 | $ 9,000 |
| Consulting Fees | $ 5,000 | $ 5,100 | $ 5,200 | $ 5,300 | $ 5,400 |
| Administrative Service Fee | $ 200,000 | $ 200,000 | $ 200,000 | $ 200,000 | $ 200,000 |
| Dues, Subscriptions & Conferences | $ 13,000 | $ 9,000 | $ 9,000 | $ 10,000 | $ 10,000 |
| Office Supplies & Expenses | $ 20,000 | $ 23,000 | $ 23,000 | $ 23,000 | $ 24,000 |
| Computer Expense | $ 15,000 | $ 31,000 | $ 34,000 | $ 37,000 | $ 39,000 |
| Covid-19 Expenses | $ - | $ - | $ - | $ - | $ - |
| Maintenance | $ - | $ - | $ - | $ - | $ - |
| Telephone | $ 6,500 | $ 7,000 | $ 7,000 | $ 7,000 | $ 8,000 |
| Advertising | $ 5,000 | $ 4,000 | $ 4,000 | $ 4,000 | $ 4,000 |
| Community Outreach | $ - | $ - | $ 1,000 | $ 1,000 | $ 1,000 |
| Postage - Billing & General | $ 11,000 | $ 13,000 | $ 14,000 | $ 14,000 | $ 15,000 |
| Billing Services | $ 4,000 | $ 2,000 | $ 2,000 | $ 2,000 | $ 3,000 |
| Collection Expense | $ 8,000 | $ 12,000 | $ 13,000 | $ 14,000 | $ 14,000 |
| Upper Merion Sewer Rental Contract | $ 7,500 | $ 8,000 | $ 8,000 | $ 9,000 | $ 9,000 |
| Miscellaneous | $ 170 | $ - | $ - | $ - | $ - |
| Bank Fees | $ 5,500 | $ 6,000 | $ 6,000 | $ 6,000 | $ 6,000 |
| Bad Debt (Recovery), Settlement (Recovery) | $ - | $ - | $ - | $ - | $ - |
| Donations | $ 5,000 | $ 4,000 | $ 4,000 | $ 5,000 | $ 5,000 |
| Payroll Processing Fees | $ 4,500 | $ 4,000 | $ 4,000 | $ 4,000 | $ 5,000 |
| **Total Administrative Expenses** | $ 997,847 | $ 1,086,100 | $ 1,135,200 | $ 1,185,300 | $ 1,235,400 |
| | | | | | |
| **Total Operating, General & Administrative Expenses** | $ 2,172,113 | $ 2,489,100 | $ 2,576,200 | $ 2,660,300 | $ 2,745,400 |

| Table 6: Comparitive Income Statement | Borough of Conshohocken Authority | | | | |
|---|---|---|---|---|---|
| | Revenues & Expenses for Year Ending December 31 | | | | |
| | Budget | Forecast | | | |
| | 2022 | 2023 | 2024 | 2025 | 2026 |
| Operating Income Before Depreciation | $ 1,756,427 | $ 1,234,706 | $ 1,459,886 | $ 1,521,689 | $ 1,586,352 |
| Depreciation | $ (1,013,884) | $ (1,055,166) | $ (1,191,839) | $ (1,264,995) | $ (1,323,205) |
| **Operating Income** | $ 742,543 | $ 179,540 | $ 268,047 | $ 256,695 | $ 263,147 |
| | | | | | |
| **Non-Operating Revenues (Expense)** | | | | | |
| Interest Income | | | | | |
| Grant Revenue | | | | | |
| Interest Expense | $ (147,844) | $ (170,078) | $ (261,302) | $ (249,860) | $ (238,180) |
| **Net Non-Operating Revenues (Expense)** | $ (147,844) | $ (170,078) | $ (261,302) | $ (249,860) | $ (238,180) |
| | | | | | |
| **Income Before Capital Contributions** | $ 594,699 | $ 9,462 | $ 6,744 | $ 6,834 | $ 24,967 |
| Capital Contributions | | | | | |
| **Increase in Net Position** | **$ 594,699** | **$ 9,462** | **$ 6,744** | **$ 6,834** | **$ 24,967** |
| | | | | | |
| **Debt Service** | $ 548,394 | $ 692,988 | $ 853,415 | $ 853,669 | $ 853,750 |
| **Coverage Ratio** | **3.20** | **1.78** | **1.71** | **1.78** | **1.86** |

Total operating expenses, excluding debt service are projected to average $2.5 million per year and the compound annual rate of growth of these expenses is forecast to be 3.32%. This is typical of most water and sewer utilities. The rate of growth is also consistent and slightly lower than the Authority's actual experience (3.97% per year) between 2015 and 2021.

The rate adjustments used to arrive at the results in Table 6 are shown in Table 7. Rates should be sufficient to:

I. Provide sufficient operating income before the collection of capital charges to cover operating expenses and debt service with a minimum coverage ratio of 1.50. The Authority's current debt instruments do not require this, however, future financings could be revenue bonds which would have such an obligation. For planning purposes, this level was used to ensure the financial strength of the Authority to support favorable debt ratings and access to low cost capital;

II. Result in net adjusted operating income sufficient to replenish reserves and support the Authority's capital improvements, including those that may require external financing;

III. Result in an annual positive change in net position; and

IV. Allow the Authority to move toward a sustainable position where routine and recurring capital maintenance and replacement work is funded with current cash.

| Table 7: Rate Adjustments | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| Conshohocken | 2022 | 2023 | 2024 | 2025 | 2026 |
| Service Fees | 0% | 8% | 9% | 9% | 9% |
| Volume Charge ($/Th) | 0% | 8% | 9% | 9% | 9% |
| | | | | | |
| West Conshohocken | | | | | |
| Service Fees | 0% | 6% | 5% | 5% | 5% |
| Volume Charge ($/Th) Vol > 10,000 Gal | 0% | 6% | 5% | 5% | 5% |
| | | | | | |
| Industrial Users ($/Year) | | | | | |
| Class 1 | 0% | 5% | 0% | 5% | 0% |
| Class 2 | 0% | 5% | 0% | 5% | 0% |
| Class 3 | 0% | 5% | 0% | 5% | 0% |
| | | | | | |
| Surcharges | | | | | |
| BOD ($/lb) | 0% | 0% | 0% | 0% | 0% |
| TSS ($/lb) | 0% | 0% | 0% | 0% | 0% |
| Ammonia ($/lb) | 0% | 0% | 0% | 0% | 0% |

The resulting rates with the recommended adjustments fully implemented are shown in Table 8.

| Table 8: Rates Table | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **Conshohocken** | **2022** | **2023** | **2024** | **2025** | **2026** |
| Service Fees | $ 45.00 | $ 48.60 | $ 52.97 | $ 57.74 | $ 62.94 |
| Volume Charge ($/Th) | $ 3.30 | $ 3.56 | $ 3.88 | $ 4.23 | $ 4.61 |
| | | | | | |
| **West Conshohocken** | | | | | |
| Service Fees | $ 63.00 | $ 66.78 | $ 70.12 | $ 73.63 | $ 77.31 |
| Volume Charge ($/Th) Vol > 10,000 Gal | $ 6.60 | $ 7.00 | $ 7.35 | $ 7.72 | $ 8.11 |
| | | | | | |
| Industrial Users ($/Year) | | | | | |
| Class 1 | $ 3,500.00 | $ 3,675.00 | $ 3,675.00 | $ 3,858.75 | $ 3,858.75 |
| Class 2 | $ 2,000.00 | $ 2,100.00 | $ 2,100.00 | $ 2,205.00 | $ 2,205.00 |
| Class 3 | $ 350.00 | $ 367.50 | $ 367.50 | $ 385.88 | $ 385.88 |
| | | | | | |
| Surcharges | | | | | |
| BOD ($/lb) | $ 0.49 | $ 0.49 | $ 0.49 | $ 0.49 | $ 0.49 |
| TSS ($/lb) | $ 0.51 | $ 0.51 | $ 0.51 | $ 0.51 | $ 0.51 |
| Ammonia ($/lb) | $ 1.70 | $ 1.70 | $ 1.70 | $ 1.70 | $ 1.70 |

Table 9 shows the typical residential bill rendered by the Authority for its Conshohocken and West Conshohocken service areas at present and with the proposed rate adjustments implemented. The bill calculations are impacted by the projected changes in average use per

customer. In Conshohocken, this will result in a lower billing for 2022, but the forecast changes are small enough to have no material impact on the typical bill. In Conshohocken, the average use is forecast at 3,000 gallons per month. In West Conshohocken, the average use has been and is projected to be slightly higher at 3,800 gallons per month. Given that the trend analysis discussed earlier and shown in Appendix A shows a slight uptick in consumption for West Conshohocken within the planning period, the typical bills for these customers will increase even without rate adjustments.

| **Table 9: Typical Residential Billing** | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **Conshohocken** | | | | | |
| **Year** | **2022** | **2023** | **2024** | **2025** | **2026** |
| Fixed Service Charge ($/Qtr) | $ 45.00 | $ 48.60 | $ 52.97 | $ 57.74 | $ 62.94 |
| Volume Charge ($/THGal) | $ 3.30 | $ 3.56 | $ 3.88 | $ 4.23 | $ 4.61 |
| Consumption (ThGal/Qtr) | 9 | 9 | 9 | 9 | 9 |
| Quarterly Bill | $ 74.70 | $ 80.64 | $ 87.89 | $ 95.81 | $ 104.43 |
| Increase (Decrease) | $ (3.30) | $ 5.94 | $ 7.25 | $ 7.92 | $ 8.62 |
| | | | | | |
| **West Conshohocken** | | | | | |
| **Year** | **2022** | **2023** | **2024** | **2025** | **2026** |
| Fixed Service Charge ($/Qtr) | $ 63.00 | $ 66.78 | $ 70.12 | $ 73.63 | $ 77.31 |
| Volume Charge ($/THGal) | $ 6.60 | $ 7.00 | $ 7.35 | $ 7.72 | $ 8.11 |
| Billed Consumption (ThGal/Q | 10 | 11 | 11 | 12 | 13 |
| Quarterly Bill | $ 129.00 | $ 143.78 | $ 150.97 | $ 166.27 | $ 182.74 |
| Increase (Decrease) | $ - | $ 14.78 | $ 7.19 | $ 15.30 | $ 16.47 |

## 5. Rate Comparison

A review of the Authority's rates relative to other sewer service providers in the region was undertaken. While the revenue requirement and customer base of each utility are unique, it is useful to compare rates as an overall performance measure of the utility. In this Study, we accumulated the rates for 41 sewer service areas. During the planning period covered by this Study, water sales to Authority customers are projected to average 3,000 gallons per month in the Conshohocken service area. Using this average rate of consumption, we calculated the

typical monthly bill that would be rendered by the Authority and the peer group of regional sewer utilities at existing rates. The results of these calculations are shown in Table 10 these are shown graphically in Figure 3. The Authority rates compare favorably with peer utilities. The Authority's typical monthly sewer bill is now 30% below the calculated median value for the peer utilities, and the cost of service for a typical customer is well below the cost of service billed by the region's large investor-owned utilities and regional authorities. The Authority's typical bill is 63% lower than the average bill rendered by Aqua Pennsylvania, Pennsylvania American, Bucks County Water & Sewer Authority, DELCORA and Lower Makefield.

The rates recommended by this Study will marginally close these gaps and it is a certainty that these peer entities will also adjust rates within the planning period. The recommended rate adjustment for 2023 of 8% will increase the typical Authority sewer bill of $74.70 by $5.94 per quarter (about 6.5 cents per day) to a revised total of $80.64. The additional 9% rate adjustment recommended annually for 2024 through 2026 would add an average of $7.93 per quarter to the sewer bill, bringing the revised total in 2026 to $104.43 per quarter. Each of these adjustments is shown in Table 10 and Figure 3. The overall recommended increase from present rates to the proposed rates in 2026 amounts to about $0.33 per day more for wastewater service.

This analysis assumes that there will be no increases in the peer utility rates during this period. We note that DELCORA and Lower Makefield have entered into agreements with Aqua to sell their sewer systems to this investor-owned utility. If the DELCORA acquisition is approved by the Pennsylvania Public Utility Commission, DELCORA rates will increase by 12.55% and Aqua Wastewater rates will increase by 14.32% according to public notices already issued by Aqua and DELCORA. Similarly, in the Lower Makefield transaction, which has been approved by the Public Utility Commission, will increase by Lower Makefield rates by 28.17% and Aqua Wastewater rates by another 3.82%. Aqua Pennsylvania has a Petition before the Public Utility Commission, and a recommended decision has been issued by the Office of Administrative Law. That recommended decision, which can be modified by the Commission, will result in a 32% increase in base rates for Aqua's main service area wastewater customers, a 75% increase in Limerick wastewater rates, a 56% increase in Cheltenham wastewater rates, and a 52% increase in East Norriton rates. Aqua

is on a roughly three-year cycle of base rate adjustments, so these rates will continue to go higher and will remain well in excess of the rates recommended for the Authority in this study.

Table 10 and Figure 3 show existing Aqua Wastewater main service area quarterly bills and the bills that will result if the recommended decision in the current rate case are approved. In addition, current and proposed rates in Aqua's Limerick service area are also highlighted.

The Authority's current rates are competitive with regional peer water and sewer service providers and even with the recommended rate adjustments in 2023, 2024, 2025 and 2026. While this study recommends a series of annual rate adjustments, and the proposed 2026 rates will produce a quarterly charge of $104.43, by comparison, the proposed 2022 rates for Aqua Pennsylvania Wastewater would produce a quarterly charge of $203.68. This amount is 95% more than the amount recommended by this study and it should be anticipated that Aqua Pennsylvania will have two additional rate adjustments between 2022 and 2026.

| Table 10: Sewer Rate Comparison | | |
|---|---|---|
| System | Quarterly Charge | Percent Above or Below Median |
| Buckingham Sewer District 2 | $ 444.27 | 315.0% |
| Upper Makefield Township - Enclave | $ 400.00 | 273.7% |
| DELCORA - Edgemont | $ 318.75 | 197.8% |
| DELCORA - Rose Valley | $ 243.00 | 127.0% |
| Aqua Zone 1 Proposed | $ 203.68 | 90.3% |
| Lower Makefield Township Municipal Sewer Authority | $ 199.81 | 86.7% |
| Buckingham Sewer District 1 | $ 189.63 | 77.1% |
| PA American Zone 1 | $ 183.67 | 71.6% |
| Aqua Zone 7 Limerick Proposed | $ 177.07 | 65.4% |
| Lower Frederick Township | $ 175.00 | 63.5% |
| Bedminster Municipal Authority | $ 174.28 | 62.8% |
| Aqua Pennsylvania Zone 1 | $ 173.51 | 62.1% |
| Upper Hanover Authority | $ 168.75 | 57.6% |
| Schwenksville Borough Authority | $ 157.29 | 46.9% |
| Yardley Borough Sewer Authority | $ 150.00 | 40.1% |
| New Hanover Township Authority | $ 150.00 | 40.1% |
| Lower Salford Township Authority | $ 140.00 | 30.8% |
| BCWSA (Warrington Dist 4) | $ 139.27 | 30.1% |
| Northampton Bucks County Municipal Authority | $ 135.45 | 26.5% |
| BCWSA (Warrington Dist 3) | $ 133.24 | 24.5% |
| Horsham Water & Sewer Authority | $ 130.89 | 22.3% |
| Perkasie Regional Authority | $ 117.85 | 10.1% |
| Montgomery Township Municipal Sewer Authority | $ 113.15 | 5.7% |
| Pottstown Borough Authority | $ 107.89 | 0.8% |
| Telford Borough Authority | $ 106.20 | -0.8% |
| Conshohocken 2026 | $ 104.43 | -2.4% |
| North Wales Water Authority | $ 104.34 | -2.5% |
| BCWSA (Warrington Dist 5) | $ 101.60 | -5.1% |
| Hilltown Water & Sewer Auth | $ 101.45 | -5.2% |
| Limerick Township (Aqua Pennsylvania Zone 7) | $ 101.19 | -5.5% |
| Conshohocken 2025 | $ 95.81 | -10.5% |
| Upper Southampton Municipal Authority | $ 88.74 | -17.1% |
| Conshohocken 2024 | $ 87.89 | -17.9% |
| Warwick Township | $ 87.19 | -18.6% |
| Warminster Township Municipal Authority | $ 86.41 | -19.3% |
| Morrissville Municipal Authority - Falls District | $ 83.97 | -21.6% |
| Conshohocken 2023 | $ 80.64 | -24.7% |
| Township of Falls Authority | $ 78.71 | -26.5% |
| BCWSA (Zone 1 - Bensalem, Doylestown, Middletown) | $ 76.60 | -28.4% |
| BCWSA (Warrington Dist 1) | $ 75.35 | -29.6% |
| BCWSA (Warrington Dist 2) | $ 75.35 | -29.6% |
| Conshohocken 2022 | $ 74.70 | -30.2% |
| Upper Moreland-Hatboro Joint Authority | $ 72.93 | -31.9% |
| DELCORA - Marcus Hook | $ 71.92 | -32.8% |
| Newtown Bucks County Joint Munic Auth | $ 68.00 | -36.5% |
| Morrissville Municipal Authority | $ 67.14 | -37.3% |
| Philadelphia Water Department | $ 59.57 | -44.4% |
| DELCORA - Chester City | $ 34.61 | -67.7% |

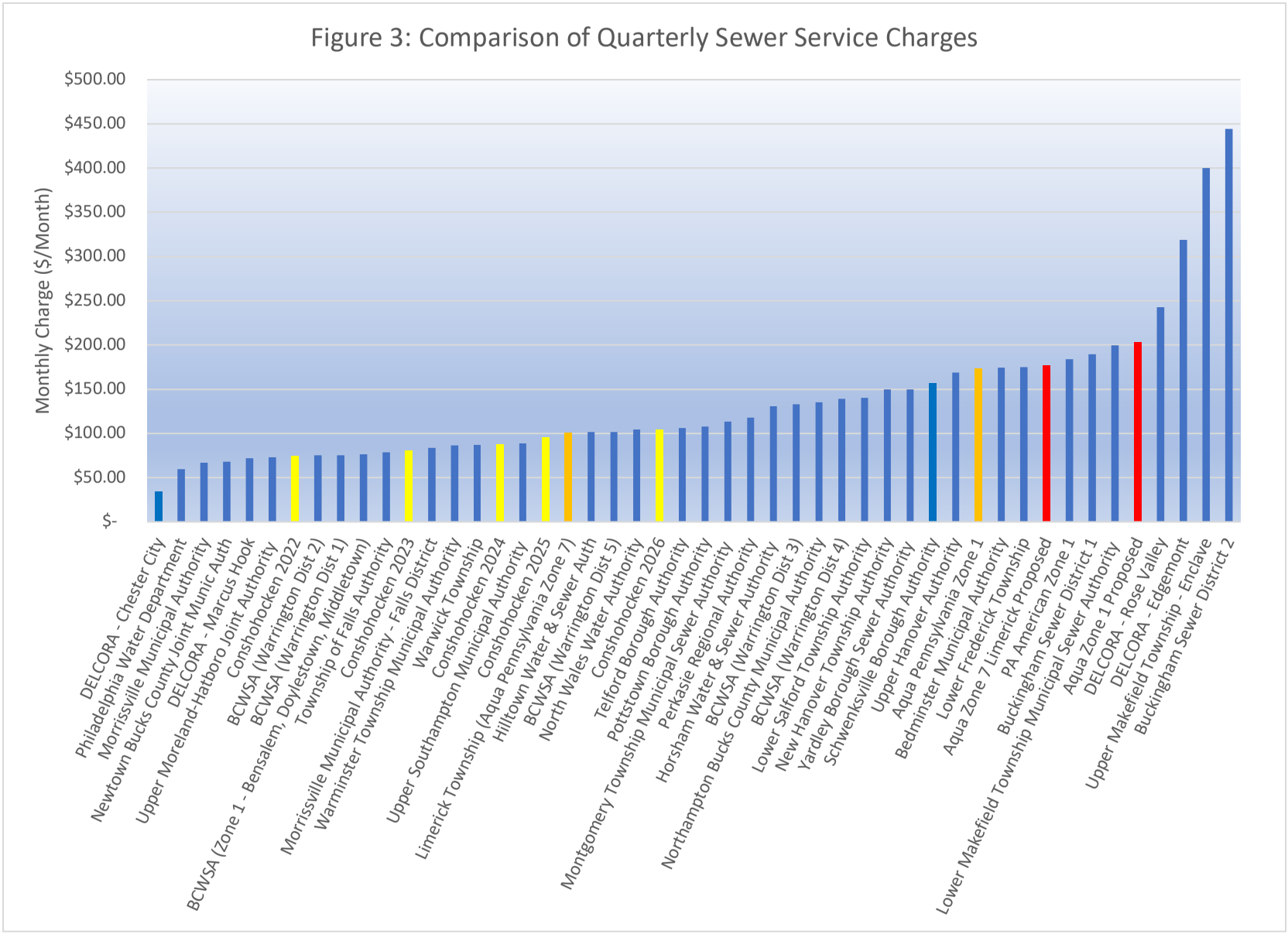


Figure 3: Comparison of Quarterly Sewer Service Charges
Monthly Charge ($/Month)
$500.00
$450.00
$400.00
$350.00
$300.00
$250.00
$200.00
$150.00
$100.00
$50.00
$-
DELCORA - Chester City
Philadelphia Water Department
Morrisville Municipal Authority
Newtown Bucks County Joint Munic Auth
Upper Moreland-Hatboro Joint Authority
DELCORA - Marcus Hook
Conshohocken 2022
BCWSA (Warrington Dist 2)
BCWSA (Zone 1 - Bensalem, Doylestown, Middletown)
Warminster Township (Warrington Dist 1)
Township of Falls Authority
Conshohocken 2023
Morrissville Municipal Authority - Falls District
Warwick Township Municipal Authority
Warwick Township
Conshohocken 2024
Upper Southampton Municipal Authority
Conshohocken 2025
Limerick Township (Aqua Pennsylvania Zone 7)
Hilltown Water & Sewer Auth
BCWSA (Warrington Dist 5)
North Wales Water Authority
Conshohocken 2026
Telford Borough Authority
Pottstown Borough Authority
Montgomery Township Municipal Sewer Authority
Perkasie Regional Authority
Horsham Water & Sewer Authority
BCWSA (Warrington Dist 3)
Northampton Bucks County Municipal Authority
BCWSA (Warrington Dist 4)
Lower Salford Township Authority
New Hanover Township Authority
Yardley Borough Sewer Authority
Schwenksville Borough Authority
Upper Hanover Authority
Aqua Pennsylvania Zone 1
Bedminster Municipal Authority
Lower Frederick Township
Aqua Zone 7 Limerick Proposed
PA American Zone 1
Buckingham Sewer District 1
Lower Makefield Township Municipal Sewer Authority
Aqua Zone 1 Proposed
DELCORA - Rose Valley
DELCORA - Edgemont
Upper Makefield Township - Enclave
Buckingham Sewer District 2

# APPENDIX A: Water Use Normalization and Forecast

| Conshohocken Actual | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| Year | Quarter | Rainfall (in) | CDD | EDUs | Consumption Volume (CG) | Days | Average Use Per Customer (Gal/EDU/Day) |
| 2015 | 31-Mar-15 | 9.38 | - | 4899 | 514,669 | 90 | 116.73 |
| 2015 | 30-Jun-15 | 12.18 | 294.00 | 5293 | 536,300 | 91 | 111.34 |
| 2015 | 30-Sep-15 | 12.02 | 723.00 | 5307 | 570,527 | 92 | 116.85 |
| 2015 | 31-Dec-15 | 10.17 | - | 5323 | 590,436 | 92 | 120.57 |
| 2016 | 31-Mar-16 | 9.38 | - | 5247 | 535,650 | 91 | 112.18 |
| 2016 | 30-Jun-16 | 9.96 | 213.00 | 5334 | 538,008 | 91 | 110.84 |
| 2016 | 30-Sep-16 | 12.11 | 897.00 | 5341 | 582,406 | 92 | 118.53 |
| 2016 | 31-Dec-16 | 6.96 | 10.00 | 5230 | 585,195 | 92 | 121.62 |
| 2017 | 31-Mar-17 | 8.34 | - | 5260 | 541,073 | 90 | 114.30 |
| 2017 | 30-Jun-17 | 12.43 | 208.00 | 5356 | 505,315 | 91 | 103.68 |
| 2017 | 30-Sep-17 | 14.92 | 638.00 | 5361 | 595,401 | 92 | 120.72 |
| 2017 | 31-Dec-17 | 7.67 | 27.00 | 5388 | 583,650 | 92 | 117.74 |
| 2018 | 31-Mar-18 | 12.49 | - | 5336 | 513,338 | 90 | 106.89 |
| 2018 | 30-Jun-18 | 14.85 | 247.00 | 5382 | 467,630 | 91 | 95.48 |
| 2018 | 30-Sep-18 | 25.92 | 842.00 | 5387 | 470,234 | 92 | 94.88 |
| 2018 | 31-Dec-18 | 16.75 | 9.00 | 5329 | 564,395 | 92 | 115.12 |
| 2019 | 31-Mar-19 | 12.04 | - | 5420 | 488,452 | 90 | 100.13 |
| 2019 | 30-Jun-19 | 16.20 | 223.00 | 5402 | 468,498 | 91 | 95.30 |
| 2019 | 30-Sep-19 | 11.76 | 805.00 | 4946 | 533,404 | 92 | 117.22 |
| 2019 | 31-Dec-19 | 12.82 | 13.00 | 5343 | 544,255 | 92 | 110.72 |
| 2020 | 31-Mar-20 | 9.72 | - | 5383 | 491,614 | 91 | 100.36 |
| 2020 | 30-Jun-20 | 11.07 | 215.00 | 5416 | 474,214 | 91 | 96.22 |
| 2020 | 30-Sep-20 | 16.34 | 829.00 | 5383 | 548,119 | 92 | 110.68 |
| 2020 | 31-Dec-20 | 12.58 | 9.00 | 5393 | 569,204 | 92 | 114.72 |
| 2021 | 31-Mar-21 | 9.83 | - | 5392 | 451,371 | 90 | 93.01 |
| 2021 | 30-Jun-21 | 9.62 | 241.00 | 5390 | 491,850 | 91 | 100.28 |
| 2021 | 30-Sep-21 | 20.57 | 802.00 | 5377 | 533,556 | 92 | 107.86 |
| 2021 | 31-Dec-21 | 6.24 | 35.00 | 5532 | 604,597 | 92 | 118.79 |
| | | | | | | | |
| | Linear Regression Statistics | | | | | | |
| | | | | | | | |
| | 0.99991 | 1.00009 | 0.98998 | 0.99997 | 771.96364 | | |
| | 0.00013 | 0.00006 | 0.00441 | 0.00002 | 0.86863 | | |
| | 0.36308 | 0.07390 | #N/A | #N/A | #N/A | | |
| | 3.27781 | 23.00000 | #N/A | #N/A | #N/A | | |
| | 0.07160 | 0.12560 | #N/A | #N/A | #N/A | | |

| Conshohocken Forecast | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year | Quarter | Rainfall (in) | CDD | EDUs | Consumption Volume (CG) | Days | Average Use Per Customer (Gal/EDU/Day) |
| 2022 | 31-Mar-22 | 10.17 | - | 5,540 | 510,410 | 90 | 102.36 |
| 2022 | 30-Jun-22 | 12.33 | 234.43 | 5,545 | 514,236 | 91 | 101.91 |
| 2022 | 30-Sep-22 | 16.23 | 790.86 | 5,550 | 523,621 | 92 | 102.55 |
| 2022 | 31-Dec-22 | 10.46 | 14.71 | 5,555 | 517,099 | 92 | 101.18 |
| 2023 | 31-Mar-23 | 10.17 | - | 5,560 | 505,450 | 90 | 101.01 |
| 2023 | 30-Jun-23 | 12.33 | 234.43 | 5,565 | 509,238 | 91 | 100.56 |
| 2023 | 30-Sep-23 | 16.23 | 790.86 | 5,570 | 518,529 | 92 | 101.20 |
| 2023 | 31-Dec-23 | 10.46 | 14.71 | 5,574 | 512,069 | 92 | 99.85 |
| 2024 | 31-Mar-24 | 10.17 | - | 5,579 | 506,078 | 91 | 99.68 |
| 2024 | 30-Jun-24 | 12.33 | 234.43 | 5,584 | 504,266 | 91 | 99.23 |
| 2024 | 30-Sep-24 | 16.23 | 790.86 | 5,589 | 513,465 | 92 | 99.86 |
| 2024 | 31-Dec-24 | 10.46 | 14.71 | 5,594 | 507,067 | 92 | 98.53 |
| 2025 | 31-Mar-25 | 10.17 | - | 5,599 | 495,641 | 90 | 98.36 |
| 2025 | 30-Jun-25 | 12.33 | 234.43 | 5,604 | 499,352 | 91 | 97.93 |
| 2025 | 30-Sep-25 | 16.23 | 790.86 | 5,608 | 508,460 | 92 | 98.54 |
| 2025 | 31-Dec-25 | 10.46 | 14.71 | 5,613 | 502,123 | 92 | 97.23 |
| 2026 | 31-Mar-26 | 10.17 | - | 5,618 | 490,807 | 90 | 97.07 |
| 2026 | 30-Jun-26 | 12.33 | 234.43 | 5,623 | 494,480 | 91 | 96.63 |
| 2026 | 30-Sep-26 | 16.23 | 790.86 | 5,628 | 503,498 | 92 | 97.24 |
| 2026 | 31-Dec-26 | 10.46 | 14.71 | 5,633 | 497,221 | 92 | 95.95 |

| West Conshohocken Actual | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year | Quarter | Rainfall (in) | CDD | EDU's | Consumption Volume (CG) | Days | Average Use Per Customer (Gal/EDU/Day) |
| | | | | | | | |
| 2018 | 31-Mar-18 | 12.49 | - | 680 | 153,426 | 90 | 250.70 |
| 2018 | 30-Jun-18 | 14.85 | 247.00 | 696 | 142,686 | 91 | 225.28 |
| 2018 | 30-Sep-18 | 25.92 | 842.00 | 693 | 200,889 | 92 | 315.09 |
| 2018 | 31-Dec-18 | 16.75 | 9.00 | 704 | 159,152 | 92 | 245.73 |
| 2019 | 31-Mar-19 | 12.04 | - | 712 | 144,360 | 90 | 225.28 |
| 2019 | 30-Jun-19 | 16.20 | 223.00 | 714 | 140,039 | 91 | 215.53 |
| 2019 | 30-Sep-19 | 11.76 | 805.00 | 705 | 179,073 | 92 | 276.09 |
| 2019 | 31-Dec-19 | 12.82 | 13.00 | 711 | 174,341 | 92 | 266.53 |
| 2020 | 31-Mar-20 | 9.72 | - | 719 | 137,523 | 91 | 210.19 |
| 2020 | 30-Jun-20 | 11.07 | 215.00 | 723 | 123,831 | 91 | 188.21 |
| 2020 | 30-Sep-20 | 16.34 | 829.00 | 1283 | 141,527 | 92 | 119.90 |
| 2020 | 31-Dec-20 | 12.58 | 9.00 | 1279 | 124,496 | 92 | 105.80 |
| 2021 | 31-Mar-21 | 9.83 | - | 1185 | 109,818 | 90 | 102.97 |
| 2021 | 30-Jun-21 | 9.62 | 241.00 | 1272 | 107,541 | 91 | 92.91 |
| 2021 | 30-Sep-21 | 20.57 | 802.00 | 1280 | 147,758 | 92 | 125.47 |
| 2021 | 31-Dec-21 | 6.24 | 35.00 | 1285 | 144,269 | 92 | 122.03 |
| | | | | | | | |
| | Linear Regression Statistics | | | | | | |
| | | | | | | | |
| | 0.9985 | 1.0001 | 1.0135 | 1.0001 | 1.0000 | | |
| | 0.0001 | 0.0001 | 0.0095 | 0.0000 | #N/A | | |
| | 0.9996 | 0.1269 | #N/A | #N/A | #N/A | | |
| | 6,724.5982 | 12.0000 | #N/A | #N/A | #N/A | | |
| | 433.1913 | 0.1933 | #N/A | #N/A | #N/A | | |

| West Conshohocken Forecast | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year | Quarter | Rainfall (in) | CDD | EDU's | Consumption Volume (CG) | Days | Average Use Per Customer (Gal/EDU/Day) |
| 2022 | 31-Mar-22 | 10.17 | - | 1,283 | 121,455 | 90 | 105.21 |
| 2022 | 30-Jun-22 | 12.33 | 234.43 | 1,284 | 131,826 | 91 | 112.84 |
| 2022 | 30-Sep-22 | 16.23 | 790.86 | 1,285 | 152,526 | 92 | 129.02 |
| 2022 | 31-Dec-22 | 10.46 | 14.71 | 1,286 | 129,625 | 92 | 109.55 |
| 2023 | 31-Mar-23 | 10.17 | - | 1,287 | 127,636 | 90 | 110.17 |
| 2023 | 30-Jun-23 | 12.33 | 234.43 | 1,288 | 138,535 | 91 | 118.16 |
| 2023 | 30-Sep-23 | 16.23 | 790.86 | 1,289 | 160,288 | 92 | 135.11 |
| 2023 | 31-Dec-23 | 10.46 | 14.71 | 1,291 | 136,221 | 92 | 114.73 |
| 2024 | 31-Mar-24 | 10.17 | - | 1,292 | 135,641 | 91 | 115.39 |
| 2024 | 30-Jun-24 | 12.33 | 234.43 | 1,293 | 145,604 | 91 | 123.76 |
| 2024 | 30-Sep-24 | 16.23 | 790.86 | 1,294 | 168,467 | 92 | 141.51 |
| 2024 | 31-Dec-24 | 10.46 | 14.71 | 1,295 | 143,172 | 92 | 120.16 |
| 2025 | 31-Mar-25 | 10.17 | - | 1,296 | 140,974 | 90 | 120.84 |
| 2025 | 30-Jun-25 | 12.33 | 234.43 | 1,297 | 153,011 | 91 | 129.60 |
| 2025 | 30-Sep-25 | 16.23 | 790.86 | 1,299 | 177,036 | 92 | 148.19 |
| 2025 | 31-Dec-25 | 10.46 | 14.71 | 1,300 | 150,453 | 92 | 125.83 |
| 2026 | 31-Mar-26 | 10.17 | - | 1,301 | 148,144 | 90 | 126.54 |
| 2026 | 30-Jun-26 | 12.33 | 234.43 | 1,302 | 160,792 | 91 | 135.72 |
| 2026 | 30-Sep-26 | 16.23 | 790.86 | 1,303 | 186,038 | 92 | 155.19 |
| 2026 | 31-Dec-26 | 10.46 | 14.71 | 1,304 | 158,104 | 92 | 131.77 |

| Aggregate Actual | | | | | |
|---|---|---|---|---|---|
| Quarter | Rainfall (In) | CDD | EDU's | Average Use Per Customer (Gal/EDU/Day) | Consumption (CG) |
| 31-Mar-15 | 9.38 | - | 4899 | 116.73 | 514,669 |
| 30-Jun-15 | 12.18 | 294.00 | 5293 | 111.34 | 536,300 |
| 30-Sep-15 | 12.02 | 723.00 | 5307 | 116.85 | 570,527 |
| 31-Dec-15 | 10.17 | - | 5323 | 120.57 | 590,436 |
| 31-Mar-16 | 9.38 | - | 5247 | 112.18 | 535,650 |
| 30-Jun-16 | 9.96 | 213.00 | 5334 | 110.84 | 538,008 |
| 30-Sep-16 | 12.11 | 897.00 | 5341 | 118.53 | 582,406 |
| 31-Dec-16 | 6.96 | 10.00 | 5230 | 121.62 | 585,195 |
| 31-Mar-17 | 8.34 | - | 5260 | 114.30 | 541,073 |
| 30-Jun-17 | 12.43 | 208.00 | 5356 | 103.68 | 505,315 |
| 30-Sep-17 | 14.92 | 638.00 | 5361 | 120.72 | 595,401 |
| 31-Dec-17 | 7.67 | 27.00 | 5388 | 117.74 | 583,650 |
| 31-Mar-18 | 12.49 | - | 6016 | 123.15 | 666,764 |
| 30-Jun-18 | 14.85 | 247.00 | 6078 | 110.35 | 610,316 |
| 30-Sep-18 | 25.92 | 842.00 | 6080 | 119.98 | 671,123 |
| 31-Dec-18 | 16.75 | 9.00 | 6033 | 130.36 | 723,547 |
| 31-Mar-19 | 12.04 | - | 6132 | 114.66 | 632,812 |
| 30-Jun-19 | 16.20 | 223.00 | 6116 | 109.34 | 608,537 |
| 30-Sep-19 | 11.76 | 805.00 | 5651 | 137.04 | 712,477 |
| 31-Dec-19 | 12.82 | 13.00 | 6054 | 129.02 | 718,596 |
| 31-Mar-20 | 9.72 | - | 6102 | 113.30 | 629,137 |
| 30-Jun-20 | 11.07 | 215.00 | 6139 | 107.05 | 598,045 |
| 30-Sep-20 | 16.34 | 829.00 | 6666 | 112.45 | 689,646 |
| 31-Dec-20 | 12.58 | 9.00 | 6672 | 113.01 | 693,700 |
| 31-Mar-21 | 9.83 | - | 6577 | 94.81 | 561,189 |
| 30-Jun-21 | 9.62 | 241.00 | 6662 | 98.87 | 599,391 |
| 30-Sep-21 | 20.57 | 802.00 | 6657 | 111.25 | 681,314 |
| 31-Dec-21 | 6.24 | 35.00 | 6817 | 119.41 | 748,866 |
| | | | | | |
| Linear Regression Statistics | | | | | |
| | | | | | |
| 0.99987679 | 0.9999988 | 1.00494166 | 1.00006109 | 15.77 | |
| 8.09356E-05 | 5.8269E-05 | 0.00495323 | 5.9176E-05 | 2.14 | |
| 0.154902388 | 0.07732153 | #N/A | #N/A | #N/A | |
| 1.053947758 | 23 | #N/A | #N/A | #N/A | |
| 0.025204606 | 0.13750822 | #N/A | #N/A | #N/A | |

| Aggregate Forecast | | | | | | |
|---|---|---|---|---|---|---|
| Quarter | Rainfall (In) | CDD | EDU's | Average Use Per Customer (Gal/EDU/Day) | Days | Consumption (CG) |
| 31-Mar-22 | 10.17 | - | 6,823 | 109.47 | 90 | 672,204 |
| 30-Jun-22 | 12.33 | 234.43 | 6,829 | 111.14 | 91 | 690,686 |
| 30-Sep-22 | 16.23 | 790.86 | 6,835 | 113.78 | 92 | 715,480 |
| 31-Dec-22 | 10.46 | 14.71 | 6,841 | 111.23 | 92 | 700,052 |
| 31-Mar-23 | 10.17 | - | 6,847 | 111.60 | 90 | 687,742 |
| 30-Jun-23 | 12.33 | 234.43 | 6,853 | 113.31 | 91 | 706,649 |
| 30-Sep-23 | 16.23 | 790.86 | 6,859 | 116.00 | 92 | 732,014 |
| 31-Dec-23 | 10.46 | 14.71 | 6,865 | 113.40 | 92 | 716,228 |
| 31-Mar-24 | 10.17 | - | 6,871 | 113.79 | 91 | 711,493 |
| 30-Jun-24 | 12.33 | 234.43 | 6,877 | 115.53 | 91 | 723,017 |
| 30-Sep-24 | 16.23 | 790.86 | 6,883 | 118.28 | 92 | 748,967 |
| 31-Dec-24 | 10.46 | 14.71 | 6,889 | 115.62 | 92 | 732,813 |
| 31-Mar-25 | 10.17 | - | 6,895 | 116.01 | 90 | 719,923 |
| 30-Jun-25 | 12.33 | 234.43 | 6,901 | 117.79 | 91 | 739,709 |
| 30-Sep-25 | 16.23 | 790.86 | 6,907 | 120.59 | 92 | 766,257 |
| 31-Dec-25 | 10.46 | 14.71 | 6,913 | 117.88 | 92 | 749,728 |
| 31-Mar-26 | 10.17 | - | 6,919 | 118.28 | 90 | 736,537 |
| 30-Jun-26 | 12.33 | 234.43 | 6,925 | 120.09 | 91 | 756,778 |
| 30-Sep-26 | 16.23 | 790.86 | 6,931 | 122.94 | 92 | 783,936 |
| 31-Dec-26 | 10.46 | 14.71 | 6,937 | 120.18 | 92 | 767,023 |