# 2022 Potomac Interceptor Cost of Service Study and Rate Update

## District of Columbia Water and Sewer Authority

### DC Retail Water and Sewer Rates Committee Meeting

**April 26, 2022**

# Agenda

1 Background

2 Objectives and Methodology

3 True-Up Evaluation Results

4 Wastewater Rate Projections

5 Recommendations

# Background

- **The 86th U.S. Congress authorized the design and construction of the Potomac Interceptor (PI) on June 12, 1960.**

- **DC Water charges the "Smaller PI Users" (Dulles, National Park Service, Navy, Vienna) for wholesale wastewater services pursuant to separate but similar Agreements signed in the 1960s.**

  - These Agreements are separate from the IMA agreements and the Loudoun County Sanitation Authority Agreement – no duplication of cost recovery.

  - Under the Agreement, the Small PI Users' rates are to be adjusted periodically (three-year or greater intervals).

  - Charges are based on a proportionate allocation of operating and capital costs, and are recovered through a calculated rate per million gallons of wastewater flow.

  - Small PI Users are billed quarterly, based on actual flows.

# Objectives and Methodology

# Study Objectives

- **Determine the cost of providing wastewater service to the Smaller PI customers**
  - Prepare a true-up evaluation for FY 2019 - FY 2021.
    - Using actual costs and wastewater flows.
    - FY 2022 will be calculated in a future true-up using actual costs and flows.
  - Calculate projected rates per MG for cost recovery purposes for FY 2023 – FY 2025.
    - Using estimated costs and wastewater flows.

# Cost of Service Methodology

**Capital Cost Allocation:**

$$\frac{\text{Annualized Capital Costs}}{\text{Reserve Capacity}} = \text{Capital Cost Share}$$

+

**Operating Expense Allocation:**

$$\frac{\text{Annual Operating Expenses}}{\text{Annual Wastewater Flows}} = \text{Operating Cost Share}$$

$$\frac{\text{Total Small PI User Costs}}{\text{Wastewater Flow (MG)}} = \text{Rate / MG}$$

# True-Up Evaluation Results (FY 2019 – FY 2021)

# Eligible Operating Expenses

- **Eligible operating expenses are those related to:**
  - Wastewater Treatment Operations (95.0%)
  - Wastewater Treatment Process Engineering (100.0%)
  - Maintenance Services (100.0%)
  - Distribution/Conveyance System (35.3%)
  - Administration (29.8% to 31.3%)
  - WSSC Biosolids (100.0%)
- **Eligible cost percentages provided by DC Water**

# Eligible Operating Expenses (in $1,000s)

| Department | FY 2019 | FY 2020 | FY 2021 |
|---|---|---|---|
| WWT Operations | $74,940 | $67,241 | $70,825 |
| WWT Process Engineer | 6,892 | 6,557 | 5,870 |
| Maintenance Services | 18,867 | 18,690 | 19,047 |
| Distribution/Conveyance | 19,359 | 7,897 | 7,323 |
| **Subtotal** | **$120,058** | **$100,384** | **$103,065** |
| Administration | 35,753 | 31,430 | 32,270 |
| WSSC Biosolids | 1,740 | 2,159 | 1,649 |
| Capital Equipment | 2,500 | 3,887 | 4,066 |
| **Total** | **$160,052** | **$137,862** | **$141,050** |

# Eligible Capital Costs

- **Eligible capital costs are those related to:**
  - Potomac Pump Station
  - Blue Plains WWTP
  - Montgomery County Composting Facility
  - Common-to-all CSO Related
  - Common-to-all Sanitary Sewer Related
- **Annual costs are amortized and recovered over a period of 30 years using historical bond yields sourced from the Bond Buyer Revenue Bond Index**

# Eligible Capital Costs

## Total Eligible Capital Costs

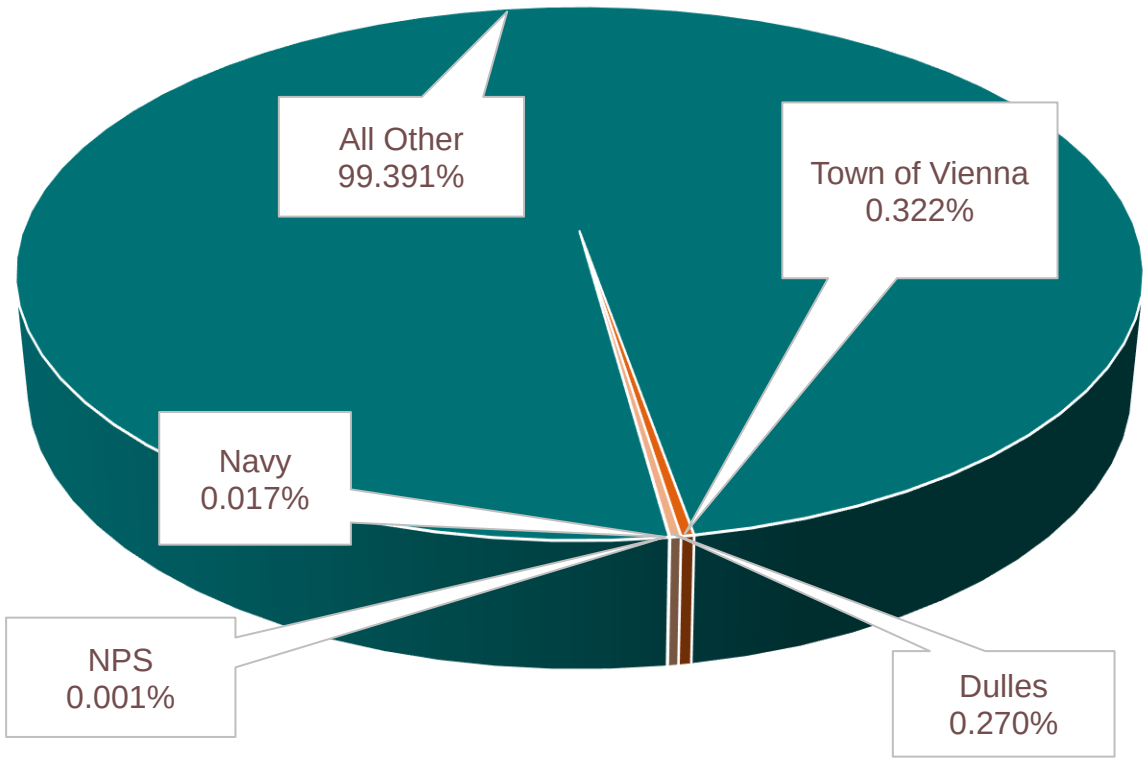
| Fiscal Year | Potomac PS | Blue Plains WWTP | Montgomery County Composting Facility | Common-to-all CSO | Common-to-all Sanitary Sewer |
|---|---|---|---|---|---|
| 1990 – 2018 | $2,788,700 | $2,867,840,645 | $22,259,600 | $690,977,716 | $240,193,521 |
| 2019 | 0 | 54,116,528 | 0 | 203,951,447 | 32,992,573 |
| 2020 | 0 | 63,632,587 | 0 | 188,483,127 | 26,126,027 |
| 2021 | 0 | 61,185,121 | 0 | 159,510,576 | 30,518,227 |

## Total Eligible Amortized Capital Costs

| Fiscal Year / Interest Rate | Potomac PS | Blue Plains WWTP | Montgomery County Composting Facility | Common-to-all CSO | Common-to-all Sanitary Sewer |
|---|---|---|---|---|---|
| 1990–2018 / Various | $219,803 | $187,568,735 | $1,782,709 | $39,997,001 | $14,426,256 |
| 2019 / 3.518% | 0 | 3,089,612 | 0 | 11,643,963 | 1,883,607 |
| 2020 / 3.895% | 0 | 3,147,355 | 0 | 9,322,634 | 1,292,229 |
| 2021 / 4.452% | 0 | 2,937,541 | 0 | 7,658,216 | 1,465,202 |

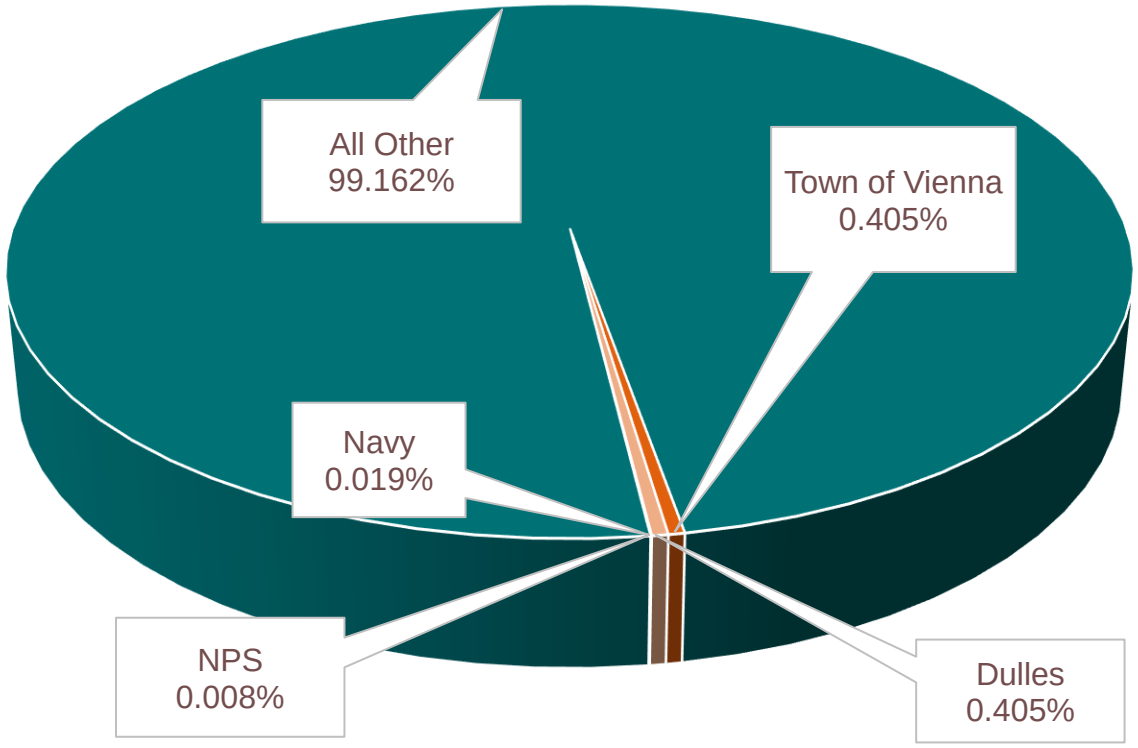
# Allocation of Costs to Small PI Users

**Operating Expenses Allocated Based Wastewater Flows**




**Capital Costs Allocated Based on Reserve Capacity Shares**

**Blue Plains WWTP**



# True-Up Evaluation Results

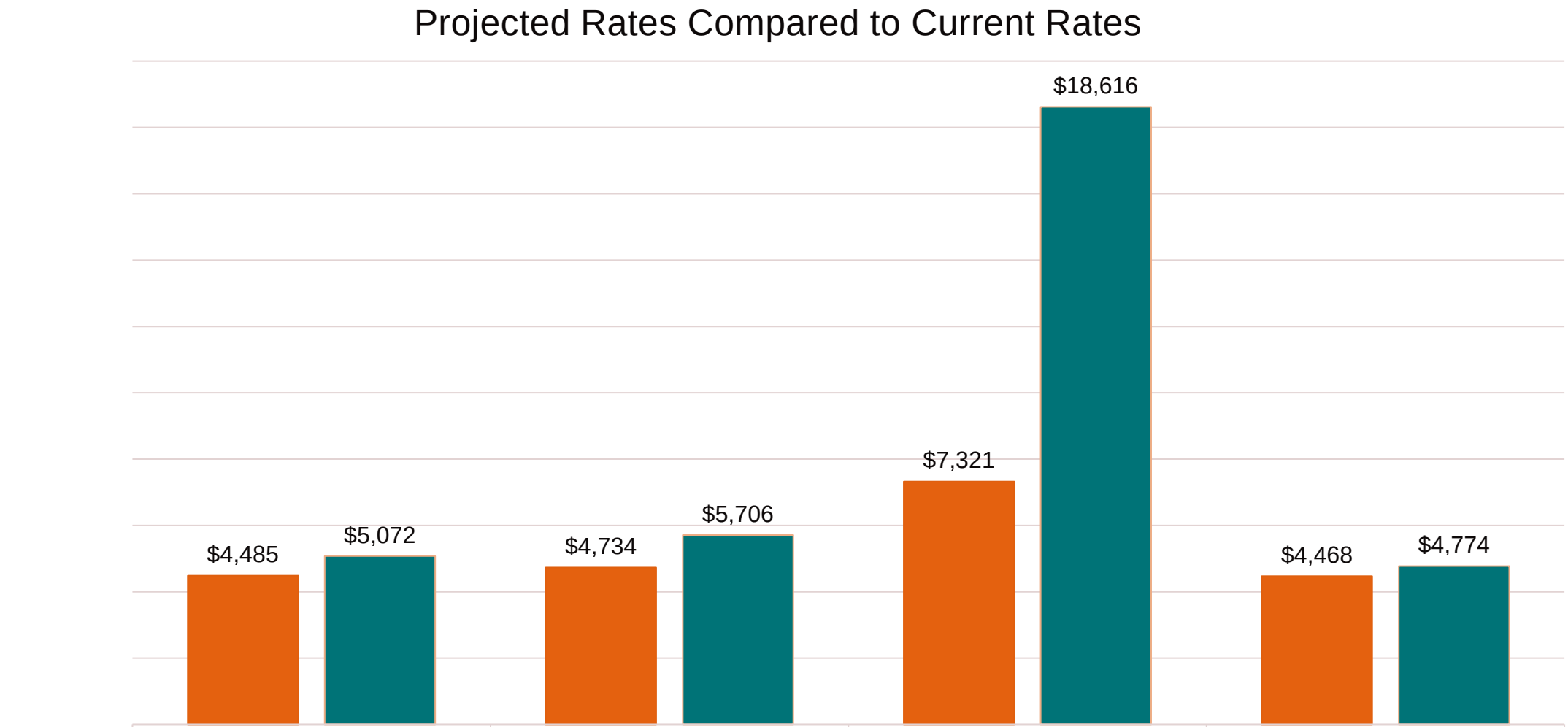
| Description | Vienna | Dulles | NPS | Navy | Total |
|---|---|---|---|---|---|
| FY 2019 (Actual) | $ 1,473,210 | $ 1,582,437 | $ 22,428 | $ 75,663 | $ 3,153,738 |
| Amount Paid | 1,190,675 | 1,327,656 | 4,408 | 60,667 | 2,583,407 |
| Difference | $ (282,535) | $ (254,781) | $ (18,020) | $ (14,996) | $ (570,332) |
| | | | | | |
| FY 2020 (Actual) | $ 1,477,408 | $ 1,429,981 | $ 22,852 | $ 73,562 | $ 3,003,803 |
| Amount Paid | 1,387,900 | 1,284,779 | 6,005 | 81,057 | 2,759,741 |
| Difference | $ (89,509) | $ (145,201) | $ (16,847) | $ 7,495 | $ (244,062) |
| | | | | | |
| FY 2021 (Actual) | $ 1,716,229 | $ 1,446,314 | $ 23,738 | $ 75,570 | $ 3,261,851 |
| Amount Paid | 2,115,551 | 1,230,243 | 8,249 | 81,280 | 3,435,323 |
| Difference | $ 399,322 | $ (216,071) | $ (15,489) | $ 5,709 | $ 173,472 |
| | | | | | |
| **Total** | **$ 27,278 Overpayment** | **$ (616,053) Underpayment** | **$ (50,355) Underpayment** | **$ (1,792) Underpayment** | **$ (640,922) Underpayment** |

# Wastewater Rate Projections (FY 2023 – FY 2025)

# Projected Rates for FY 2023 – FY 2025

| Description | Vienna | Dulles | NPS | Navy |
|---|---|---|---|---|
| Estimated Cost of Service: | | | | |
| FY 2023 | $ 1,739,098 | $ 1,658,191 | $ 26,575 | $ 83,423 |
| FY 2024 | 1,818,022 | 1,737,809 | 27,919 | 87,105 |
| FY 2025 | 1,897,837 | 1,818,471 | 29,278 | 90,826 |
| Total | $ 5,454,956 | $ 5,214,471 | $ 83,773 | $ 261,355 |
| | | | | |
| Projected Flows (FY 2023 – 2025) | 1,075.42 | 913.82 | 4.50 | 54.75 |
| **Projected Rate per MG** | **$5,072.41** | **$5,706.26** | **$18,616.15** | **$4,773.69** |
| **Current Rate per MG** | **$4,485.27** | **$4,733.67** | **$7,321.20** | **$4,467.80** |
| $ Change | $587.14 | $972.59 | $11,294.95 | $305.89 |

# Rate Comparison




| | Town of Vienna | Dulles | NPS | Navy |
|---|---|---|---|---|
| Current | $4,485 | $4,734 | $7,321 | $4,468 |
| Projected | $5,072 | $5,706 | $18,616 | $4,774 |

# Recommendations

# Recommendations

- **Settle the true-up for FY 2019, FY 2020, and FY 2021 as outlined in the Cost of Service Study and in accordance with the "Small PI User Agreements"**
- **Adopt Projected Small PI User wastewater rates**
  - Effective October 1, 2022, to September 30, 2025
- **Continue to monitor billed vs. actual costs and projected vs. actual flows on an annual basis**
- **In order to mitigate large changes in rates, consider modifying the agreements to include capital (fixed) and operating (variable) rate components**

# NPS PI Cost and Rate History

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| Year | Operating Expenses | Amortized Capital Costs | Total Cost of Service | Flow (MG) | Rate | Amount Paid |
| 2016 | $ 5,217 | $ 17,186 | $ 22,403 | 4.17 | $ 6,467 | $ 26,988 |
| 2017 | $ 5,367 | $ 19,046 | $ 24,413 | 3.81 | $ 4,988 | $ 18,982 |
| 2018 | $ 1,822 | $ 20,419 | $ 22,241 | 1.50 | $ 4,988 | $ 7,494 |
| 2019 | $ 1,282 | $ 21,146 | $ 22,428 | 0.88 | $ 4,988 | $ 4,408 |
| 2020 | $ 1,023 | $ 21,829 | $ 22,852 | 0.82 | $ 7,321 | $ 6,005 |
| 2021 | $ 1,436 | $ 22,302 | $ 23,738 | 1.13 | $ 7,321 | $ 8,249 |
| 2022 | $ 5,966 | $ 24,652 | $ 30,618 | 3.99 | $ 7,321 | $ 29,211 |
| 2023 | $ 2,233 | $ 25,691 | $ 27,924 | 1.50 | $ 18,616 | $ 27,924 |
| 2024 | $ 2,233 | $ 25,691 | $ 27,924 | 1.50 | $ 18,616 | $ 27,924 |
| 2025 | $ 2,233 | $ 25,691 | $ 27,924 | 1.50 | $ 18,616 | $ 27,924 |

2016 – 2021- Actual Data ; 2022 – Projected Data from 2019 Report ; 2023- 2025 – Projected Data from 2022 Report

# Dulles PI Cost and Rate History

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| Year | Operating Expenses | Amortized Capital Costs | Total Cost of Service | Flow (MG) | Rate | Amount Paid |
| 2016 | $ 467,290 | $ 859,269 | $ 1,326,559 | 373.78 | $ 2,158 | $ 806,626 |
| 2017 | $ 472,711 | $ 952,284 | $ 1,424,995 | 335.25 | $ 3,668 | $ 1,229,803 |
| 2018 | $ 398,589 | $ 1,020,963 | $ 1,419,552 | 328.68 | $ 3,668 | $ 1,205,709 |
| 2019 | $ 525,153 | $ 1,057,284 | $ 1,582,437 | 361.92 | $ 3,668 | $ 1,327,656 |
| 2020 | $ 338,552 | $ 1,091,429 | $ 1,429,981 | 271.41 | $ 4,734 | $ 1,284,779 |
| 2021 | $ 331,242 | $ 1,115,073 | $ 1,446,315 | 259.89 | $ 4,734 | $ 1,230,243 |
| 2022 | $ 542,563 | $ 1,232,604 | $ 1,775,166 | 362.85 | $ 4,734 | $ 1,717,732 |
| 2023 | $ 453,623 | $ 1,284,534 | $ 1,738,157 | 301.90 | $ 5,757 | $ 1,738,157 |
| 2024 | $ 453,623 | $ 1,284,534 | $ 1,738,157 | 304.60 | $ 5,706 | $ 1,738,157 |
| 2025 | $ 453,623 | $ 1,284,534 | $ 1,738,157 | 307.32 | $ 5,656 | $ 1,738,157 |

2016 – 2021- Actual Data ; 2022 – Projected Data from 2019 Report ; 2023- 2025 – Projected Data from 2022 Report