



# FY20-29 Proposed CIP Budget

Presentation to the Environmental Quality and Operations Committee

January 16, 2020

Adam Ortiz, Chair

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**District of Columbia Water and Sewer Authority**

Leonard R. Benson, Senior Vice President and Chief Engineer



DC Water Headquarters from the Anacostia River

# Proposed Capital Improvement Program Leonard Benson

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# 10-Year Engineering CIP Options Compared

| Service Area                       | Approved Baseline<br>\$4.4B (FY19-28)   | Proposed Baseline<br>\$4.9B (FY20-29)  | Asset Management<br>\$5.4B (FY19-28)                                | Fully Funded<br>\$5.8B (FY20-29)                                    |
|------------------------------------|---|--|---|---|
| <b>Clean Rivers</b>                | Fully funded to meet Consent Decree   | Fully funded to meet Consent Decree  | Fully funded to meet Consent Decree                                 | Fully funded to meet Consent Decree                                 |
| <b>Wastewater</b>                  | Fully funded to meet NPDES Permit and established levels of service                             | Fully funded to meet NPDES Permit and established levels of service                                  | Fully funded to meet NPDES Permit and established levels of service | Fully funded to meet NPDES Permit and established levels of service |
| <b>Stormwater</b>                  | Fully funded  | Fully funded   | Fully funded  | Fully funded  |
| <b>Water</b>                       |   |  |   |   |
| Pump Stations & Storage Facilities | Generally funded  | Generally funded   | Fully Funded  | Fully Funded  |
| Small Diameter Water Mains         | Underfunded; (Funded to meet 1% per year replacement level - [11 mi/year])                      | Increased funding to ramp up to 1.5% per year replacement level from FY 2027 onwards. [16.5 mi/year] | Fully funded to ramp up to 2% replacement level [22 mi/year]        | Fully funded to ramp up to 2% replacement level [22 mi/year]        |
| Large Diameter Water Mains         | Generally funded  | Generally funded   | Generally funded  | Fully Funded  |
| <b>Sewer</b>                       |   |  |   |   |
| Pump Stations                      | Fully funded  | Fully funded   | Fully funded  | Fully funded  |
| Sewer Lines < 60" diameter         | Underfunded (Funded to ramp up to 1.0% per year rehabilitation level [17.5 mi/year] by FY 2023) | Increased funding to ramp up to 1.5% per year replacement level from FY 2027 onwards. [26 mi/year]   | Fully funded to ramp up to 2.3% rehabilitation level [40 mi/year]   | Fully funded to ramp up to 2.3% rehabilitation level [40 mi/year]   |
| Sewer Lines ≥ 60"                  | Generally Funded  | Generally Funded   | Generally Funded  | Fully funded  |
| <b>Non Process</b>                 | Fully funded  | Fully funded   | Fully funded  | Fully funded  |

'Generally Funded' = What we know or expect to find can be rehabilitated 'Underfunded' = What we know or expect to find is not all funded  
 'Fully Funded' = All needs known or expected are met

## The 10-year capital program Engineering Projects:

- Begins the implementation of the “Modified Baseline” approved last year, and adds additional funds to reach 1.5% replacement plans for water and sewer infrastructure within the ten-year plan, balancing infrastructure renewal and affordability
- Fully funds the **Clean Rivers** program to meet all consent decree deadlines
- Funds **non-process facilities** including the new Fleet and Sewer Facilities, renovations to the Historic Main Pump Station, and restoration of the Main & O campus seawall
- At **Blue Plains** funds upgrades to Screens, Grit and Primary Facilities, and Process Control Computer System, Efficiency Improvements, and Long-term Concrete Rehabilitation projects
- Advances major rehabilitation of **sanitary collection sewers**, upgrades to sewer pump stations, rehabilitation of the Potomac Interceptor and increased funding to ramp up to 1.5% replacements per year starting FY 2027 and onwards for the **small diameter water mains** and **small sewer lines**
- Includes carryover from prior year to complete the Enterprise Resource Planning (ERP) and Advanced Meter Infrastructure (AMI) projects, and increased funding for Fleet, pumps and other equipment



Screens, Grit & Primary Facilities Upgrades



6<sup>th</sup> St SW

## Capital Equipment and Washington Aqueduct:

- Capital Equipment – Funded at \$333 million for planned equipment spending including the procurement of backhoes, jet-vacs, catch basin trucks and other aged vehicles to meet operational needs
- Washington Aqueduct (WAD) – Total of \$195.2 million, an increase of \$8.1 million for DC Water’s share of WAD’s capital program



Jet-Vac



Washington Aqueduct

The CIP balances financial and affordability concerns with additional investment in our assets that begin to address aging water and sewer infrastructure during this 10-year period

💧 Capital Construction Projects - \$4.92 billion, highlights include:

- \$1.2 billion fully funds the DC Clean Rivers' project to meet Consent Decree requirements
- \$57 million increase in the Sewer Service area to ramp up to 1.5% small sewer lines replacement from FY 2027 onwards, ten-year total of \$1.2 billion in Sewer
- \$102 million increase in the Water Service area to ramp up to the 1.5% of small diameter water mains replacement per year from FY 2027 onwards, ten-year total of \$1.1 billion in Water
- \$55 million for Efficiency Improvement projects FY 2021 and FY 2022
- \$72 million for New Project– Blue Plains Long Term Concrete Rehabilitation, applied asset management principles to prioritize and re-schedule out-year projects to maintain ten-year total of \$1.0 billion in Wastewater Treatment



# 10-Year CIP - Service Area Summary

- 💧 The proposed FY 2020 disbursement includes the underspending from FY 2019 to remain congruent with previously approved rate increases
- 💧 Ramp-up to the Modified Baseline CIP beginning in FY 2021

| Service Area (\$000's)             | FY20              | FY21              | FY22              | FY23              | FY24              | FY25              | FY26              | FY27              | FY28              | FY29              | 10-Yr Total         | Last Year's CIP     | (Increase) /Decrease |
|------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------|---------------------|----------------------|
| Non-Process Facilities             | \$ 42,066         | \$ 31,849         | \$ 20,665         | \$ 6,831          | \$ 11,058         | \$ 10,396         | \$ 3,901          | \$ 3,553          | \$ 3,560          | \$ 3,600          | \$ 137,479          | \$ 138,067          | \$ 588               |
| Wastewater Treatment               | 77,536            | 102,976           | 113,378           | 107,232           | 107,312           | 70,680            | 97,878            | 101,839           | 132,256           | 138,165           | 1,049,252           | 978,738             | (70,514)             |
| Clean Rivers                       | 162,197           | 147,565           | 179,833           | 129,272           | 67,536            | 59,909            | 148,771           | 103,265           | 88,890            | 115,049           | 1,202,288           | 1,262,589           | 60,301               |
| Combined Sewer                     | 9,239             | 9,493             | 12,816            | 16,553            | 16,731            | 8,568             | 6,699             | 7,572             | 8,972             | 12,435            | 109,078             | 79,178              | (29,900)             |
| Stormwater                         | 6,869             | 9,631             | 7,535             | 4,170             | 5,392             | 4,660             | 4,201             | 4,306             | 6,869             | 5,057             | 58,690              | 68,608              | 9,918                |
| Sanitary Sewer                     | 44,933            | 63,926            | 115,541           | 88,110            | 91,562            | 138,341           | 159,814           | 176,789           | 175,873           | 174,032           | 1,228,922           | 957,135             | (271,787)            |
| Water                              | 62,163            | 88,677            | 108,878           | 109,000           | 92,905            | 101,765           | 116,319           | 146,791           | 154,916           | 154,697           | 1,136,112           | 945,015             | (191,097)            |
| <b>CAPITAL PROJECTS</b>            | <b>405,004</b>    | <b>454,118</b>    | <b>558,645</b>    | <b>461,168</b>    | <b>392,496</b>    | <b>394,318</b>    | <b>537,584</b>    | <b>544,115</b>    | <b>571,337</b>    | <b>603,035</b>    | <b>4,921,821</b>    | <b>4,429,330</b>    | <b>(492,491)</b>     |
| Capital Equipment                  | 31,703            | 37,207            | 33,790            | 32,315            | 33,000            | 33,000            | 33,000            | 33,000            | 33,000            | 33,000            | 333,015             | 340,324             | 7,309                |
| Washington Aqueduct                | 15,515            | 16,266            | 18,572            | 37,841            | 12,699            | 33,875            | 9,508             | 12,863            | 24,068            | 13,971            | 195,178             | 187,127             | (8,051)              |
| <b>ADDITIONAL CAPITAL PROGRAMS</b> | <b>47,218</b>     | <b>53,473</b>     | <b>52,362</b>     | <b>70,156</b>     | <b>45,698</b>     | <b>66,875</b>     | <b>42,509</b>     | <b>45,863</b>     | <b>57,068</b>     | <b>46,971</b>     | <b>528,193</b>      | <b>527,450</b>      | <b>(743)</b>         |
| <b>TOTAL CIP</b>                   | <b>\$ 452,223</b> | <b>\$ 507,590</b> | <b>\$ 611,008</b> | <b>\$ 531,322</b> | <b>\$ 438,194</b> | <b>\$ 461,193</b> | <b>\$ 580,093</b> | <b>\$ 589,978</b> | <b>\$ 628,404</b> | <b>\$ 650,006</b> | <b>\$ 5,450,013</b> | <b>\$ 4,956,780</b> | <b>\$ (493,233)</b>  |
| Last Years CIP                     | 420,342           | 467,016           | 561,724           | 530,006           | 422,607           | 450,358           | 585,454           | 535,666           | 544,490           | 439,117           | 4,956,780           |                     |                      |
| (Increase)/Decrease                | (31,880)          | (40,574)          | (49,284)          | (1,317)           | (15,587)          | (10,835)          | 5,361             | (54,312)          | (83,914)          | (210,890)         | (493,232)           |                     |                      |





# Prioritization of Spending – Capital Projects

## Proposed Baseline CIP

Higher Priority → Lower Priority

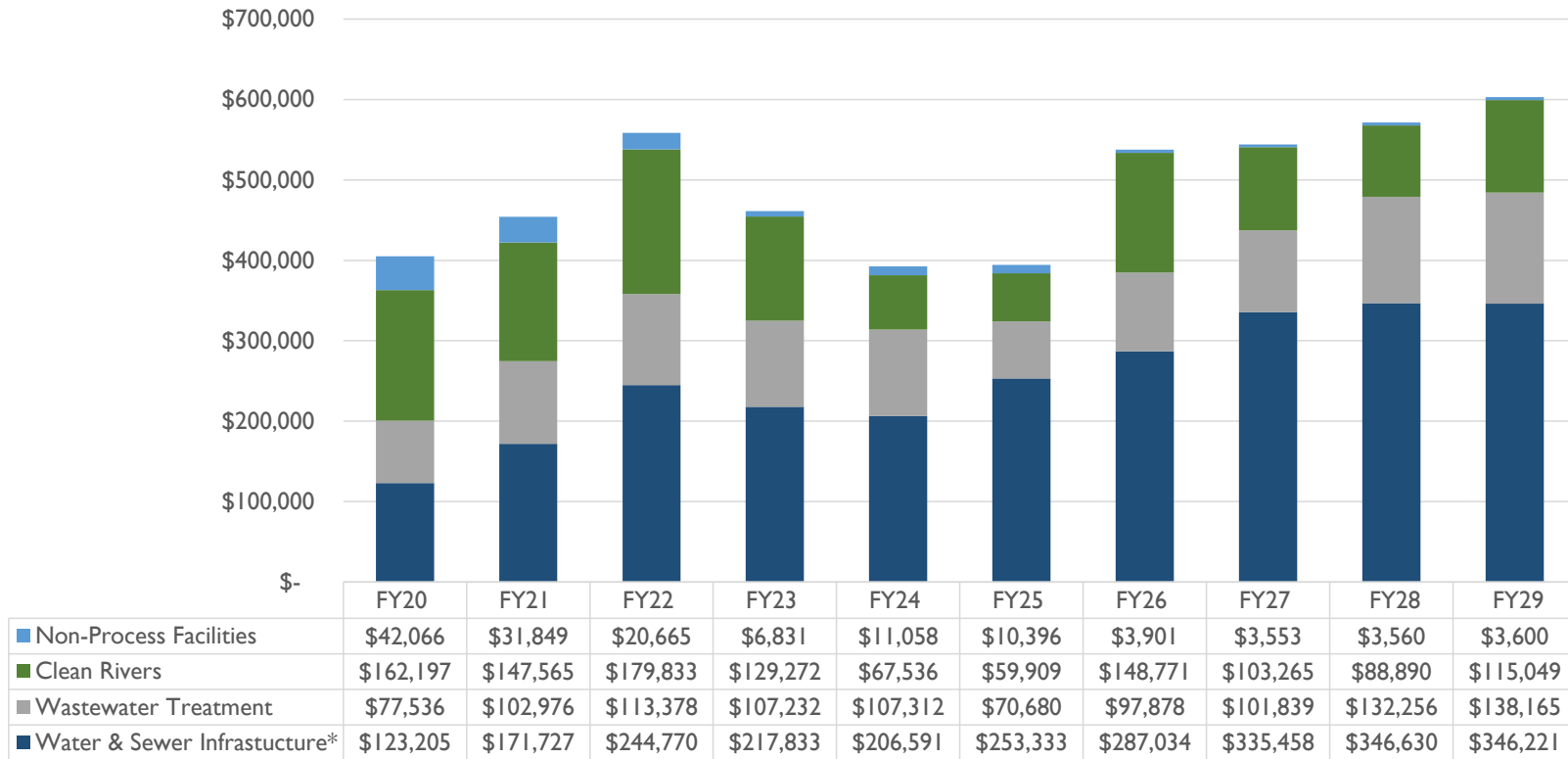
|                   | 1A   |     | 2A                                | 2B   | 2C   | 2D                         | 3A   |     | 3B   |                    |
|-------------------|--|-----|-----------------------------------|--|--|----------------------------|--|-----|--|--------------------|
|                   | Mandates   |     | Health & Safety                   | Board Policy   | Potential Failure  | High Profile Good Neighbor | Good Engineering High Payback                  |     | Good Engineering   |                    |
|                   | Agreements, Regulatory standards, Court orders, Issues and Permits requirements, Stipulated Agreements, Etc. |     | Required to address Public Safety | Undertaken as a result of the Board's commitment to outside agencies | Related to Facilities in danger of failing, or critical to meeting permit requirements | Address Public concerns    | Need to fulfill Mission and upgrade Facilities |     | Need to fulfill Mission and upgrade Facilities (Lower priority Projects) | (\$000's)          |
| FY 2019           | 174,384  | 43% | 4,332                             | 63,844   | 30,328   | 2,280                      | 69,201   | 17% | 60,636   | \$405,004          |
| FY 2020           | 147,209  | 32% | 5,490                             | 72,762   | 24,593   | 821                        | 114,837  | 25% | 88,405   | \$454,118          |
| FY 2021           | 179,572  | 32% | 12,019                            | 59,755   | 36,803   | 5,403                      | 164,558  | 29% | 100,536  | \$558,645          |
| FY 2022           | 129,073  | 28% | 9,469                             | 53,835   | 28,274   | 2,403                      | 130,057  | 28% | 108,055  | \$461,168          |
| FY 2023           | 67,830   | 17% | 18,788                            | 41,514   | 21,997   | 190                        | 136,794  | 35% | 105,384  | \$392,496          |
| FY 2024           | 60,177   | 15% | 19,009                            | 46,213   | 22,496   | 788                        | 169,952  | 43% | 75,684   | \$394,318          |
| FY 2025           | 148,771  | 28% | 13,180                            | 49,037   | 23,766   | 2,837                      | 191,721  | 36% | 108,272  | \$537,584          |
| FY 2026           | 103,265  | 19% | 6,062                             | 83,507   | 21,349   | 105                        | 210,855  | 39% | 118,971  | \$544,115          |
| FY 2027           | 88,890   | 16% | 717                               | 99,437   | 21,629   | -                          | 209,161  | 37% | 151,501  | \$571,336          |
| FY 2028           | 115,049  | 19% | 1,516                             | 104,227  | 18,768   | -                          | 207,451  | 34% | 156,024  | \$603,035          |
| <b>Total</b>      | <b>\$1,214,221</b>   |     | <b>\$90,582</b>                   | <b>\$674,131</b>   | <b>\$250,004</b>   | <b>\$14,826</b>            | <b>\$1,604,588</b>                             |     | <b>\$1,073,468</b>   | <b>\$4,921,820</b> |
| <b>% of Total</b> | <b>24.7%</b>   |     | <b>1.8%</b>                       | <b>13.7%</b>   | <b>5.1%</b>  | <b>0.3%</b>                | <b>32.6%</b>                                   |     | <b>21.8%</b>   |                    |

- Cash disbursements basis



# 10-Year CIP Disbursement Forecast

\$ in thousands



\* Includes the following Service Areas: Water, Sanitary Sewer, Stormwater, and non-Clean Rivers portion of Combined Sewer Overflow

- Cash disbursements basis

# Major Initiatives Funded in Proposed CIP

## DC Clean Rivers (\$1,202 million)

- Anacostia LTCP Projects (\$471 million)
- Potomac LTCP Projects (\$510 million)
- Rock Creek LTCP Projects (\$221 million)

## Wastewater Blue Plains (\$1,049 million)

- Enhanced Nitrogen Removal Facilities (\$36 million)
- Liquid Processing (\$574 million)
- Solids Processing (\$258 million)
- Plantwide (\$181 million)

## Water Program (\$1,136 million)

- Water Distribution System (\$748 million)
- Water Lead Program (\$55 million)
- Water Ongoing (\$165 million)
- Water Pumping Facilities (\$43 million)
- Water Storage Facilities (\$68 million)
- Water Program Management (\$55 million)



PSW Pump - Seal Failures



SDWM unlined Cast Iron pipe

\$'s – Projected FY 2020 - FY 2029 Disbursements

# Major Initiatives Funded in Proposed CIP (cont.)

- 💧 Sewer Program (\$1,229 million)
  - Sanitary Collection Sewers (\$370 million)
  - Sewer Ongoing (\$141 million)
  - Sanitary Pumping Facilities (\$124 million)
  - Sanitary Interceptor/Trunk/Force Sewers (\$549 million)
  - Sewer Program Management (\$44 million)
- 💧 Combined Sewer Overflow (\$85 million)
  - Pump Station & Facilities (\$63 million)
  - Large Sewers (\$22 million)
- 💧 Stormwater (\$59 million)
  - Local storm drainage & program mgt (\$16 million)
  - DSS Stormwater ongoing projects (\$9 million)
  - Pump Stations Rehabilitation (\$34 million)
- 💧 Non-Process (\$137 million)
  - New Headquarters Building (\$3 million)
  - Main & O Redevelopment Efforts (\$43 million)
  - Roof and HVAC Replacements (\$26 million)
  - Historic Building Restoration (\$17 million)
  - Main & O Seawall Restoration (\$12 million)



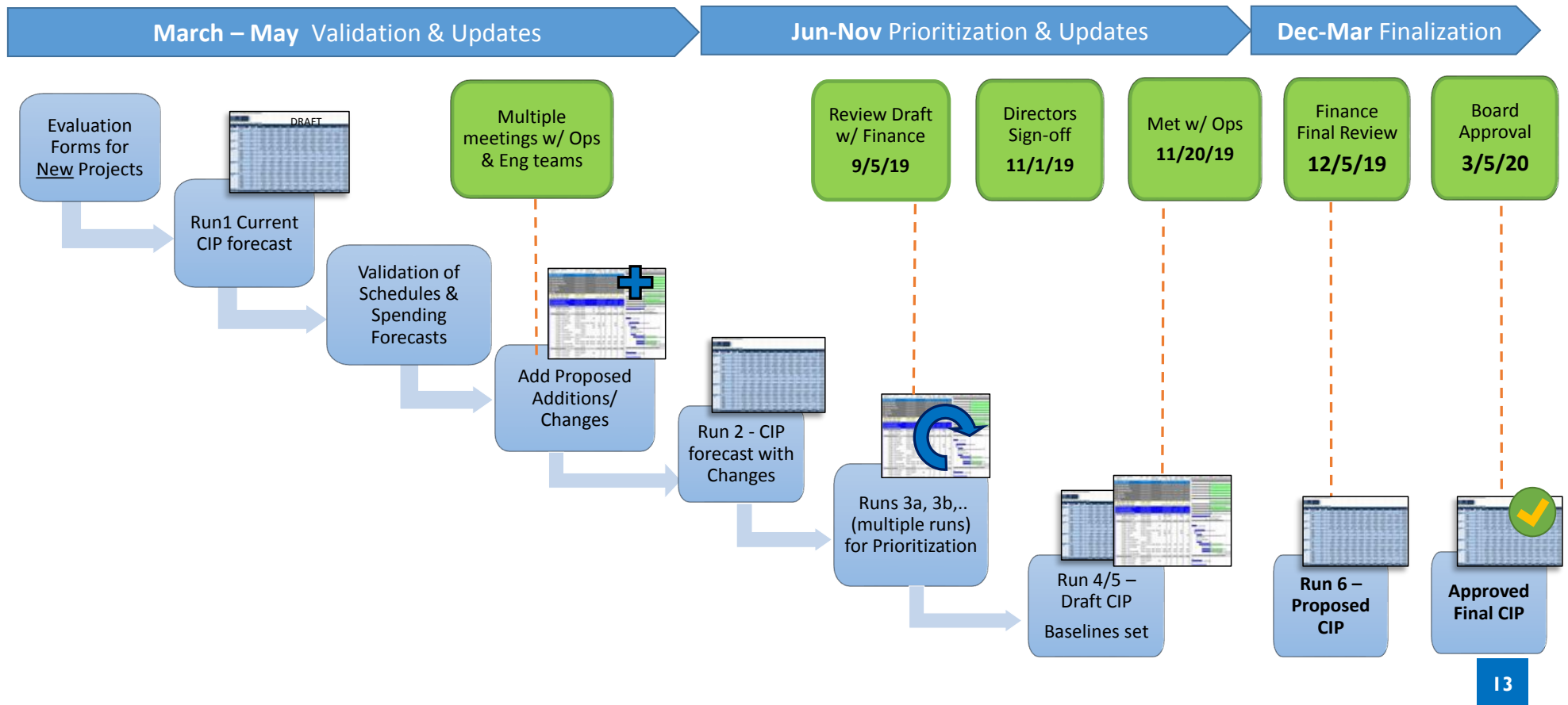
10th St at Otis St, NE (10"VCP, deformed, broken)



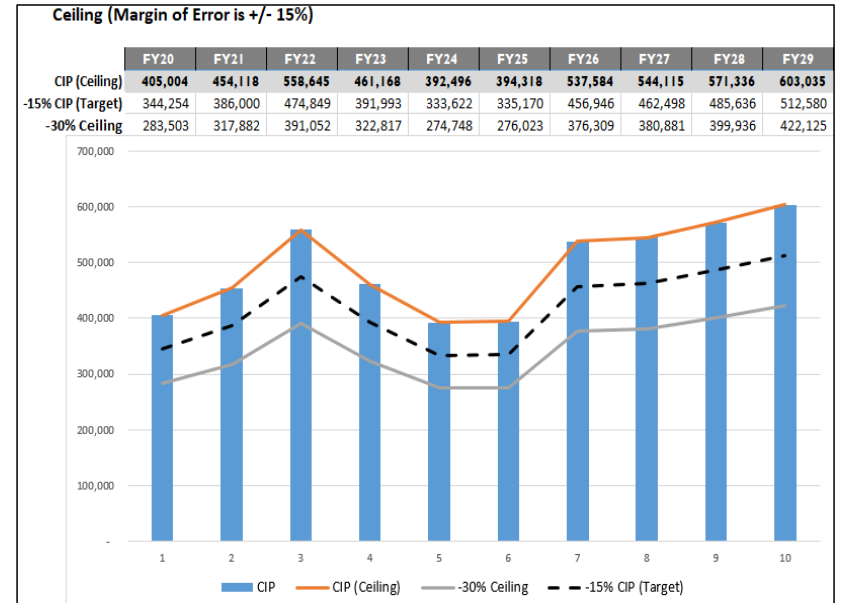
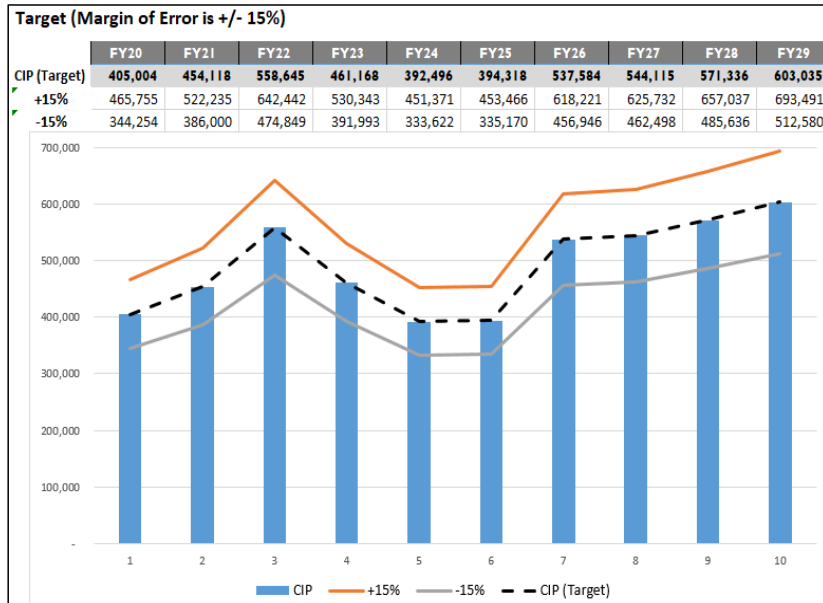
Pumps with leaking seal

\$'s – Projected FY 2020 - FY 2029 Disbursements

## FY20-29 10-year Budget Cycle Plan – Engineering



- The forecasts for FY19 and FYs onwards are considered not-to-exceed ceilings, rather than targets
- FY19 the Ceiling was \$392M, Actual disbursements were \$367M (within 6% of Ceiling)
- A margin of error of +/-15% is the expectation set for forecasting one year out based on previous experience



- Future Performance is measured based on CIP disbursements occurring within this CIP bandwidth



# Proposed FY20 – FY29 CIP

- The overall increase to Capital Projects compared to the FY19-28 plan is \$493M
- The increase from the 10-year window shifting accounts for \$211M of this overall increase, i.e. FY19 (\$391M) vs FY29 (\$603M)
- The remaining increase of \$281M is mainly from the Water (\$98M) & Sewer (\$143M) service areas

|                                      | Run 6 - FY2020-2029 Proposed Disbursement Plan |                |                |                |                |                |                |                |                |                | Approved Base (FY20-29) |                   |                  |                  |
|--------------------------------------|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|------------------|------------------|
|                                      | FY20*  | FY21           | FY22           | FY23           | FY24           | FY25           | FY26           | FY27           | FY28           | FY29           | 10-Yr Total             | **Lifetime        | ^10-Yr Total     | Delta            |
| <b>NON PROCESS FACILITIES</b>        |  |                |                |                |                |                |                |                |                |                |                         |                   |                  |                  |
| Facility Land Use                    | 42,066   | 31,849         | 20,665         | 6,831          | 11,058         | 10,396         | 3,901          | 3,553          | 3,560          | 3,600          | 137,479                 | 221,841           | 126,358          | (11,121)         |
| Subtotal                             | <b>42,066</b>                                  | <b>31,849</b>  | <b>20,665</b>  | <b>6,831</b>   | <b>11,058</b>  | <b>10,396</b>  | <b>3,901</b>   | <b>3,553</b>   | <b>3,560</b>   | <b>3,600</b>   | <b>137,479</b>          | <b>221,841</b>    | <b>126,358</b>   | <b>(11,121)</b>  |
| <b>WASTEWATER TREATMENT</b>          |  |                |                |                |                |                |                |                |                |                |                         |                   |                  |                  |
| Liquid Processing                    | 24,516   | 42,496         | 43,069         | 48,748         | 44,909         | 31,792         | 66,989         | 68,544         | 99,413         | 103,740        | 574,216                 | 1,266,857         | 635,675          | 61,459           |
| Plantwide                            | 17,387   | 32,784         | 42,213         | 30,735         | 37,879         | 23,127         | 18,231         | 25,062         | 20,506         | 9,902          | 257,826                 | 525,997           | 209,807          | (48,019)         |
| Solids Processing                    | 19,847   | 27,314         | 27,424         | 25,852         | 22,754         | 15,761         | 12,658         | 6,027          | 10,476         | 12,858         | 180,971                 | 924,507           | 138,068          | (42,903)         |
| Enhanced Nitrogen Removal Facilities | 15,786   | 382            | 672            | 1,897          | 1,770          | -              | -              | 2,206          | 1,861          | 11,665         | 36,239                  | 980,940           | 63,374           | 27,135           |
| Subtotal                             | <b>77,536</b>                                  | <b>102,976</b> | <b>113,378</b> | <b>107,232</b> | <b>107,312</b> | <b>70,680</b>  | <b>97,878</b>  | <b>101,839</b> | <b>132,256</b> | <b>138,165</b> | <b>1,049,252</b>        | <b>3,698,301</b>  | <b>1,046,924</b> | <b>(2,328)</b>   |
| <b>COMBINED SEWER OVERFLOW</b>       |  |                |                |                |                |                |                |                |                |                |                         |                   |                  |                  |
| DC Clean Rivers Program              | 162,197  | 147,565        | 179,833        | 129,272        | 67,536         | 59,909         | 148,771        | 103,265        | 88,890         | 115,049        | 1,202,288               | 2,764,255         | 1,189,779        | (12,509)         |
| Combined Sewer Program Management    | 1,287  | 1,792          | 2,237          | 2,972          | 3,028          | 2,050          | 2,629          | 2,515          | 3,125          | 2,519          | 24,154                  | 77,756            | 24,327           | 173              |
| Combined Sewer Overflow Program      | 7,952  | 7,701          | 10,579         | 13,581         | 13,703         | 6,518          | 4,070          | 5,057          | 5,847          | 9,916          | 84,924                  | 199,729           | 59,795           | (25,129)         |
| Subtotal                             | <b>171,436</b>                                 | <b>157,058</b> | <b>192,649</b> | <b>145,824</b> | <b>84,267</b>  | <b>68,476</b>  | <b>155,470</b> | <b>110,837</b> | <b>97,863</b>  | <b>127,484</b> | <b>1,311,366</b>        | <b>3,041,740</b>  | <b>1,273,901</b> | <b>(37,465)</b>  |
| <b>STORMWATER</b>                    |  |                |                |                |                |                |                |                |                |                |                         |                   |                  |                  |
| Storm Local Drainage Program         | 12   | 22             | 688            | 594            | 1,267          | 1,948          | 1,164          | 1,792          | 1,970          | 1,709          | 11,166                  | 18,025            | 9,749            | (1,417)          |
| Storm On-Going Program               | 1,011  | 631            | 1,109          | 837            | 866            | 526            | 875            | 843            | 1,084          | 1,287          | 9,069                   | 11,540            | 7,591            | (1,478)          |
| Storm Pumping Facilities             | 5,310  | 8,392          | 4,923          | 2,259          | 2,854          | 1,865          | 1,698          | 1,353          | 3,430          | 1,755          | 33,839                  | 61,204            | 49,311           | 15,472           |
| Storm DDOT Projects                  | -  | -              | -              | -              | -              | -              | -              | -              | -              | -              | -                       | 3,237             | -                | -                |
| Stormwater Program Management        | 410  | 445            | 582            | 367            | 405            | 321            | 464            | 318            | 385            | 306            | 4,003                   | 12,889            | 2,538            | (1,465)          |
| Stormwater Trunk/Force Sewers        | 126  | 141            | 233            | 113            | -              | -              | -              | -              | -              | -              | 613                     | 15,510            | 255              | (358)            |
| Subtotal                             | <b>6,869</b>                                   | <b>9,631</b>   | <b>7,535</b>   | <b>4,170</b>   | <b>5,392</b>   | <b>4,660</b>   | <b>4,201</b>   | <b>4,306</b>   | <b>6,869</b>   | <b>5,057</b>   | <b>58,690</b>           | <b>122,404</b>    | <b>69,444</b>    | <b>10,754</b>    |
| <b>SANITARY SEWER</b>                |  |                |                |                |                |                |                |                |                |                |                         |                   |                  |                  |
| Sanitary Collection System           | 4,613  | 8,134          | 33,564         | 18,009         | 24,312         | 33,040         | 52,923         | 68,745         | 65,771         | 61,043         | 370,154                 | 569,040           | 297,321          | (72,833)         |
| Sanitary On-Going Projects           | 12,099   | 12,327         | 13,711         | 13,667         | 14,185         | 15,019         | 15,253         | 15,111         | 15,312         | 14,842         | 141,529                 | 217,969           | 143,428          | 1,899            |
| Sanitary Pumping Facilities          | 2,570  | 5,995          | 6,924          | 8,240          | 5,068          | 10,468         | 11,639         | 11,933         | 27,732         | 33,628         | 124,196                 | 270,778           | 121,119          | (3,077)          |
| Sanitary Program Management          | 4,150  | 5,464          | 7,014          | 5,132          | 3,913          | 3,103          | 3,174          | 3,900          | 4,064          | 4,335          | 44,250                  | 119,050           | 42,933           | (1,317)          |
| Interceptor/Trunk Force Sewers       | 21,501   | 32,006         | 54,327         | 43,062         | 44,084         | 76,710         | 76,826         | 77,100         | 62,993         | 60,184         | 548,794                 | 918,096           | 481,440          | (67,354)         |
| Subtotal                             | <b>44,933</b>                                  | <b>63,926</b>  | <b>115,541</b> | <b>88,110</b>  | <b>91,562</b>  | <b>138,341</b> | <b>159,814</b> | <b>176,789</b> | <b>175,873</b> | <b>174,032</b> | <b>1,228,922</b>        | <b>2,094,934</b>  | <b>1,086,241</b> | <b>(142,681)</b> |
| <b>WATER</b>                         |  |                |                |                |                |                |                |                |                |                |                         |                   |                  |                  |
| Water Distribution Systems           | 33,872   | 60,464         | 62,606         | 65,093         | 58,654         | 64,372         | 65,350         | 99,075         | 117,595        | 121,131        | 748,211                 | 1,446,953         | 669,041          | (79,170)         |
| Water Lead Program                   | 4,711  | 5,408          | 5,387          | 5,456          | 5,627          | 5,719          | 5,496          | 5,744          | 5,877          | 5,692          | 55,117                  | 243,504           | 64,536           | 9,419            |
| Water On-Going Projects              | 10,532   | 11,075         | 12,297         | 13,351         | 15,199         | 16,789         | 18,583         | 20,447         | 22,981         | 23,506         | 164,761                 | 217,972           | 163,517          | (1,243)          |
| Water Pumping Facilities             | 1,525  | 2,650          | 12,169         | 6,284          | 2,567          | 4,218          | 7,446          | 4,163          | 2,328          | -              | 43,350                  | 85,344            | 35,794           | (7,556)          |
| DDOT Water Projects                  | 1,721  | 10             | 8              | -              | -              | -              | -              | -              | -              | -              | 1,739                   | 33,933            | 84               | (1,655)          |
| Water Storage Facilities             | 6,216  | 4,318          | 10,399         | 13,963         | 5,610          | 4,783          | 11,334         | 8,985          | 694            | 1,360          | 67,662                  | 155,164           | 49,158           | (18,504)         |
| Water Service Program Management     | 3,587  | 4,752          | 6,012          | 4,854          | 5,248          | 5,884          | 8,110          | 8,376          | 5,441          | 3,008          | 55,272                  | 90,944            | 55,698           | 426              |
| Subtotal                             | <b>62,163</b>                                  | <b>88,677</b>  | <b>108,878</b> | <b>109,000</b> | <b>92,905</b>  | <b>101,765</b> | <b>116,319</b> | <b>146,791</b> | <b>154,916</b> | <b>154,697</b> | <b>1,136,112</b>        | <b>2,273,813</b>  | <b>1,037,828</b> | <b>(98,284)</b>  |
| <b>CAPITAL PROJECTS</b>              | <b>405,004</b>                                 | <b>454,118</b> | <b>558,645</b> | <b>461,168</b> | <b>392,496</b> | <b>394,318</b> | <b>537,584</b> | <b>544,115</b> | <b>571,336</b> | <b>603,035</b> | <b>4,921,820</b>        | <b>11,453,033</b> | <b>4,640,696</b> | <b>(281,124)</b> |

NOTES: \* FY20 ceiling includes FY19 carry over of \$24,517 M  
 \*\* Lifetime budget is the total budget, including available budget and the actual spent to date  
 ^ The 10-yr total comparison is calculated for the same period FY20-29, i.e. last years Approved (Run5c) years FY20-28 plus this year's new FY29, compared to this proposed Run 6 FY20-29

## Regulatory/Consent Decree/Permitting

- E. Coli Total Maximum Daily Load (TMDL) – lawsuit by environmental groups seeking more restrictive TMDL
- EPA developing new Anacostia River trash TMDL
- MS4 permit – rehabilitation of Stormwater Outfalls, total scope and cost unknown (currently \$5 million approved)
- National Parks Service permitting requirements for sewer projects
- Anacostia River Sediment Clean-up
- Chesapeake Bay TMDL – Phase 3 Watershed Implementation Plans being prepared, possible TMDL reassessment in the future
- Potential regulation requirements for contaminants (e.g. Polychlorinated Biphenyls (PCBs))
- Green Infrastructure (GI) Practicability Assessment - Clean Rivers practicability assessment of GI to be performed in 2020. Currently, construction of GI in the District is more expensive than originally estimated
- Sanitary Sewer Overflows (SSO) – Risk of SSO Consent Decree
- Odor control for secondary treatment at Blue Plains



### 💧 Blue Plains Process Optimization & Revenue Opportunities

- Full Plant Deammonification (>\$60 million)
- Additional capacity for Digesters, Thermal Hydrolysis and Combined Heat and Power
- Resource Recovery (Hot Water Heating Loop; Sludge Drying)

### 💧 Other:

- Lead Service Replacement Program
- DDOT and Pepco DC Power Line Undergrounding (DC PLUG) – (\$57 million, DC Water Share is 50% = \$28 million)
- Condition assessment of large sewers could lead to additional CIP needs
- Washington Aqueduct
  - Federally Owned Water Main Repairs (\$86 million, all DC Water)
  - Travilah Quarry Acquisition & Outfitting  
(Current discussion in range of \$750 million to \$1 Billion, cost sharing unknown)
  - Advanced Treatment Facilities (\$375 million, DC Water share = \$280 million)
  - Transmission and Storage upgrades (\$300 million, DC Water Share = \$225 million)



# 10-Year CIP

- The proposed ten-year CIP comprises of the capital projects and additional capital programs

| Service Area (\$000's)             | FY20              | FY21              | FY22              | FY23              | FY24              | FY25              | FY26              | FY27              | FY28              | FY29              | 10-Yr Total         | Last Year's CIP     | (Increase) /Decrease |
|------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------|---------------------|----------------------|
| Non-Process Facilities             | \$ 42,066         | \$ 31,849         | \$ 20,665         | \$ 6,831          | \$ 11,058         | \$ 10,396         | \$ 3,901          | \$ 3,553          | \$ 3,560          | \$ 3,600          | \$ 137,479          | \$ 138,067          | \$ 588               |
| Wastewater Treatment               | 77,536            | 102,976           | 113,378           | 107,232           | 107,312           | 70,680            | 97,878            | 101,839           | 132,256           | 138,165           | 1,049,252           | 978,738             | (70,514)             |
| Clean Rivers                       | 162,197           | 147,565           | 179,833           | 129,272           | 67,536            | 59,909            | 148,771           | 103,265           | 88,890            | 115,049           | 1,202,288           | 1,262,589           | 60,301               |
| Combined Sewer                     | 9,239             | 9,493             | 12,816            | 16,553            | 16,731            | 8,568             | 6,699             | 7,572             | 8,972             | 12,435            | 109,078             | 79,178              | (29,900)             |
| Stormwater                         | 6,869             | 9,631             | 7,535             | 4,170             | 5,392             | 4,660             | 4,201             | 4,306             | 6,869             | 5,057             | 58,690              | 68,608              | 9,918                |
| Sanitary Sewer                     | 44,933            | 63,926            | 115,541           | 88,110            | 91,562            | 138,341           | 159,814           | 176,789           | 175,873           | 174,032           | 1,228,922           | 957,135             | (271,787)            |
| Water                              | 62,163            | 88,677            | 108,878           | 109,000           | 92,905            | 101,765           | 116,319           | 146,791           | 154,916           | 154,697           | 1,136,112           | 945,015             | (191,097)            |
| <b>CAPITAL PROJECTS</b>            | <b>405,004</b>    | <b>454,118</b>    | <b>558,645</b>    | <b>461,168</b>    | <b>392,496</b>    | <b>394,318</b>    | <b>537,584</b>    | <b>544,115</b>    | <b>571,337</b>    | <b>603,035</b>    | <b>4,921,821</b>    | <b>4,429,330</b>    | <b>(492,491)</b>     |
| Capital Equipment                  | 31,703            | 37,207            | 33,790            | 32,315            | 33,000            | 33,000            | 33,000            | 33,000            | 33,000            | 33,000            | 333,015             | 340,324             | 7,309                |
| Washington Aqueduct                | 15,515            | 16,266            | 18,572            | 37,841            | 12,699            | 33,875            | 9,508             | 12,863            | 24,068            | 13,971            | 195,178             | 187,127             | (8,051)              |
| <b>ADDITIONAL CAPITAL PROGRAMS</b> | <b>47,218</b>     | <b>53,473</b>     | <b>52,362</b>     | <b>70,156</b>     | <b>45,698</b>     | <b>66,875</b>     | <b>42,509</b>     | <b>45,863</b>     | <b>57,068</b>     | <b>46,971</b>     | <b>528,193</b>      | <b>527,450</b>      | <b>(743)</b>         |
| <b>TOTAL CIP</b>                   | <b>\$ 452,223</b> | <b>\$ 507,590</b> | <b>\$ 611,008</b> | <b>\$ 531,322</b> | <b>\$ 438,194</b> | <b>\$ 461,193</b> | <b>\$ 580,093</b> | <b>\$ 589,978</b> | <b>\$ 628,404</b> | <b>\$ 650,006</b> | <b>\$ 5,450,013</b> | <b>\$ 4,956,780</b> | <b>\$ (493,233)</b>  |
| Last Years CIP                     | 420,342           | 467,016           | 561,724           | 530,006           | 422,607           | 450,358           | 585,454           | 535,666           | 544,490           | 439,117           | 4,956,780           |                     |                      |
| (Increase)/Decrease                | (31,880)          | (40,574)          | (49,284)          | (1,317)           | (15,587)          | (10,835)          | 5,361             | (54,312)          | (83,914)          | (210,890)         | (493,232)           |                     |                      |

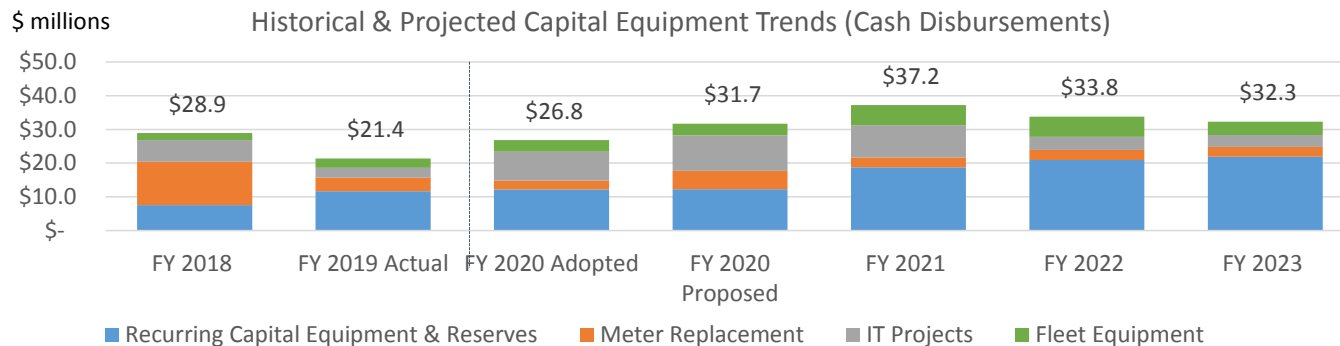


## Washington Aqueduct Capital Projects

| \$000's      | Washington Aqueduct | DC Water's Share |
|--------------|---------------------|------------------|
| FY 2020      | \$21,095            | \$15,515         |
| FY 2021      | \$22,115            | \$16,266         |
| FY 2022      | \$25,251            | \$18,572         |
| FY 2023      | \$51,449            | \$37,841         |
| FY 2024      | \$17,266            | \$12,699         |
| FY 2025      | \$46,057            | \$33,875         |
| FY 2026      | \$12,927            | \$9,508          |
| FY 2027      | \$17,489            | \$12,863         |
| FY 2028      | \$32,723            | \$24,068         |
| FY 2029      | \$18,995            | \$13,971         |
| <b>Total</b> | <b>\$265,368</b>    | <b>\$195,178</b> |

- 💧 **Washington Aqueduct (WAD)** – Total ten-year budget of \$265.4 million
  - Presented a risk-based asset management CIP using decision-making tools to prioritize and grade projects to achieve established service levels
  - Major projects include the Old Conduit Rehabilitation, North Clearwell Replacement, and Dalecarlia Back-up Power Generation
  - Budget proposal excludes the Federally Owned Water Mains, Travilah Quarry Acquisition & Outfitting and Advanced Treatment Facilities
- 💧 **DC Water's Share** – Total of \$195.2 million represents 73.6% of WAD's capital programs

- ◆ Ten-year disbursements of \$333 million for capital equipment includes
  - The proposed FY 2020 budget includes the carryover of \$5 million from prior year for the Enterprise Resource Planning (ERP) and Advanced Meter Infrastructure (AMI) projects
  - Recurring Capital Equipment – This covers the purchase/replacement of pumps, motors, HVACs, roof, labtops, computers, servers, fire hydrants and includes the Authority-wide reserves for future facilities and other equipment needs
  - Meter Replacement – Funding requirement for equipment, labor and installation of small and large meters including completion of the AMI project
  - IT Projects – Funds new and upgrades to various Authority-wide technology systems such as the ERP, Maximo, Vertex One, GIS, Facilities Mobility, and Third Party Portal Enhancements
  - Fleet Equipment – increases funds for procurement of backhoes, jet-vacs, catch basin trucks and other aged vehicles to meet operational needs



- ◆ Board Member Questions & Follow Up
  - Submit budget-related questions to Board Secretary
  - Board Secretary will distribute questions to appropriate staff

◆ Wholesale Customer Briefing – **January 10**

◆ Committee Reviews, Recommendations & Actions – **January & February**



|   | Environmental Quality & Operations | DC Retail Water & Sewer Rates | Finance & Budget |
|---|------------------------------------|-------------------------------|------------------|
| FY 2020 - FY 2029 Capital Budget (Disbursements & Lifetime)           | Action Required                    |                               | Action Required  |
| FY 2021 Operating Budget  |                                    |                               | Action Required  |
| Intent to Reimburse Capital Expenditures with Proceeds of a Borrowing |                                    |                               | Action Required  |
| FY 2020 – FY 2029 Financial Plan                                      |                                    | Action Required               | Action Required  |
| FY 2021 & 2022 Rates, Charges & Fees                                  |                                    | Action Required               |                  |

◆ Board Adoption – **March 5**