YOUR INVESTMENTS AT WORK:

FY21 Operating and Capital Budget

July 1, 2020 - June 30, 2021

ALEXANDRIA RENEW ENTERPRISES

Alexandria, Virginia

Approved June 16, 2020

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Alexandria Renew Enterprises
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Chief Executive Officer's Message

To the Board of Directors, Alexandria Renew Enterprises:

Protecting public health through our water resources is one of the most critical responsibilities of any community. Our City's health and economic vitality depend on clean and safe water now and in our future. Water is our world's most precious resource, and AlexRenew works together with the City of Alexandria and Virginia American Water to manage our water resources in a collaborative manner, to support a thriving community.

At the time of this document's publication, the Alexandria community, along with other communities across the globe, are wrestling with the public health and economic impacts of the coronavirus outbreak. Critical infrastructure industries, like the water and wastewater sector, play an important role in a public health crisis of this nature, and AlexRenew has adjusted its operations to keep its essential workforce healthy and maintain continuity of service during this challenging time. AlexRenew has also incorporated adjustments to the budget estimate that follows, and will continue to evaluate potential impacts to both revenues and expenditures, guided by its ongoing goal to operate a fiscally sustainable utility at a fair cost to residential and commercial customers.

Despite the economic backdrop, AlexRenew must continue its mandate and make investments to support Alexandria's water future. Investing in clean water will continue to create jobs in our City, and will support Alexandria's local economy, as it has since 1956 when we first started transforming the City's used water into clean water and renewable resources. Since that time, AlexRenew has invested almost $1 billion in wastewater cleaning infrastructure on our 35-acre campus. However, there is still more work to do to improve water quality and ensure that our community and visitors can continue to enjoy recreational activities on our waterways.

AlexRenew continues to lead the RiverRenew program, the City's largest infrastructure project to date, in response to a 2017 legislative mandate by the Commonwealth of Virginia to fix four combined sewer outfalls in the older parts of Alexandria. RiverRenew will feature a new network of deep tunnels and sewers that will connect to the outfalls, which currently pollute our waterways on rainy days, to capture millions of gallons of sewage for treatment at AlexRenew. By law, RiverRenew must be completed by July 1, 2025, and the team continues to adapt to changing circumstances while meeting all major milestones that were set out at program inception in order to meet this deadline. RiverRenew also comes with significant financial obligations for our organization and community, which AlexRenew must balance along with the expenditures required to keep its existing wastewater infrastructure well maintained and capable of supporting increased demands in the future.

The budget and investments we are planning for Fiscal Year 2021 and over the next 20 years will support a sustainable water future for our City. For this fiscal year, we are proposing an Operating Budget of $28.3 million and a Capital Improvement Program budget of $69.0 million. The Operating Budget represents a year-over-year decline, reflecting reductions made to offset potential impacts to revenue due to COVID-19 and lowering of the previously planned FY21 rate increase from 11.4% to 6.6%. Our Capital Improvement Program budget has increased relative to last year's budget for increased investment needed to implement the RiverRenew program.

As we continue to improve our waterways and help make the environment a cleaner, healthier place, we look forward to continuing our strong community partnership to help us keep our waterways clean. Thank you for your passionate support of our clean water mission.

Karen Pallansch, Chief Executive Officer
Alexandria Renew Enterprises

2040 Vision

By 2040, we have effectively partnered with all watershed stakeholders to:

- Enable local citizens the opportunity to **embrace the best use of water resources and establish a personal connection with local waterways.**
- **Sustainably manage water as a single resource** through the entire water cycle.
- **Create a healthy environment and improve our quality of life** through the exceptional reclamation of used water resources.
- **Maximize use of multiple financial options** to continue our fiscal stability.

Strategic Outcomes

1. Operational Excellence

Continually enhance water resource and recovery procedures to provide exceptional quality products.

2. Public Engagement and Trust

Engage our community to help them to become informed consumers and supporters of clean water.

3. Watershed Stewardship

Facilitate collaboration to collectively manage and improve water resources.

4. Adaptive Culture

Establish an organization-wide commitment to exceptional outcomes through an enthusiasm for learning, adapting, and solving problems to achieve clean water.

5. Effective Financial Stewardship

Manage our financial resources to create an efficient and resilient organization that contributes to the health of the local economy.

What is AlexRenew's Budget?

AlexRenew's budget is a financial instrument, crafted within a financial, legal, policy, regulatory and capital investment framework to ensure financial sustainability, support public health, and provide a clean, healthy water environment for our community. Our budget is developed in a manner that ensures AlexRenew has the financial resources to efficiently construct, operate, and maintain a water resource recovery facility, intercepting system, and pump stations that comply with state and federal law.

Current expenses and capital outlays are estimates based on experience and judgment related to cost trends in labor, materials, and services required to operate and maintain our facilities. AlexRenew has no discretion with respect to the level of service it must provide to meet its regulatory requirements, and no discretionary programs within its assigned scope of activity. The primary purpose of our budget is to ensure AlexRenew maintains its mandated level of service, satisfies the requirements of our Master Indenture of Trust ("Indenture"), and achieves the objectives of our Financial Policies.

AlexRenew has only two major sources of revenue to fund all expenditures: wastewater treatment charges paid by Alexandria customers, and the reimbursement of a portion of our expenses paid by Fairfax County. Fairfax County makes payment to AlexRenew under an amended and restated Service Agreement dated October 1, 1998 ("Fairfax County Agreement"). In accordance with the Fairfax County Agreement, Fairfax County pays a percentage of our operations and maintenance expenses based upon sewer flow volume. Fairfax County also contributes to our Improvement, Renewal and Replacement Fund (IRR) and Capital Improvement Program (CIP), at predetermined levels, to allow for the upgrade and replacement of capital assets as they depreciate, and the acquisition of new assets associated with regulatory compliance.

What is AlexRenew's Strategic Plan?

The AlexRenew Strategic Plan drives the organization's budget. It is grounded in the Strategic Outcomes of our AlexRenew 2040 Vision ("2040 Vision"), created in 2012 and last updated in 2018 by our citizen-led Board. There are three (3) focus areas that support both our 2040 Vision and long-term outcomes for our community.

Focus Area: Well Managed AlexRenew
Long Term Outcome: Alexandria has abundant clean waterways that support a strong economy
Strategic Outcome Linkage: Operational Excellence, Effective Financial Stewardship

Focus Area: Smart and Resilient AlexRenew
Long Term Outcome: Alexandria is a clean, sustainable community and center for innovation
Strategic Outcome Linkage: Public Engagement and Trust, Adaptive Culture

Focus Area: Community Celebrated AlexRenew
Long Term Outcome: Alexandrians eat local fish and swim in local waterways
Supports: Watershed Stewardship

How is AlexRenew's Budget Organized?

AlexRenew builds its budget from a group of documents that provide either legal or internal policy direction. These documents include a Master Indenture of Trust (Indenture), the Fairfax County Service Agreement, a Service Agreement with the City of Alexandria; a service agreement between AlexRenew and Arlington County (Arlington County Agreement), and Financial Policies adopted by the AlexRenew Board of Directors (Financial Policies).

The Indenture is a legal agreement that mandates how AlexRenew will collect and use its revenues for operations, maintenance and capital expenses. This document requires that all wastewater treatment charges collected from City of Alexandria sewer system customers be deposited in a Revenue Fund. This document also requires that operating expense payments made by Fairfax County to AlexRenew, for access to our sewer system, also be deposited in the Revenue Fund. The amount due to AlexRenew from Fairfax County is established in the Fairfax County Agreement, also a legal document.

The Fairfax County Agreement further directs the amount and timing for additional monies to be paid by the County to AlexRenew for improvements and repairs to our sewer system infrastructure and for investments in major capital projects.

The Arlington County Agreement is much like the Fairfax County Agreement. However, this legal document establishes the amount and timing for monies paid by AlexRenew to Arlington County for agreed upon capacity in the Arlington County sewer system by the Northwestern quadrant of the City of Alexandria.

Lastly, AlexRenew builds its budget based on requirements levied by our Board of Directors to maintain a combined 120 days of reserves in our Operating Fund and General Reserve sub-Fund and to insure that revenues available to pay debt service are at least equal to 1.50 times the amount of debt service due in any fiscal year.

In the pages that follow, we present a Consolidated Enterprise Budget Statement that includes graphics to more fully represent the workings of our budget process and the building of our budget document.

Budget Timeline

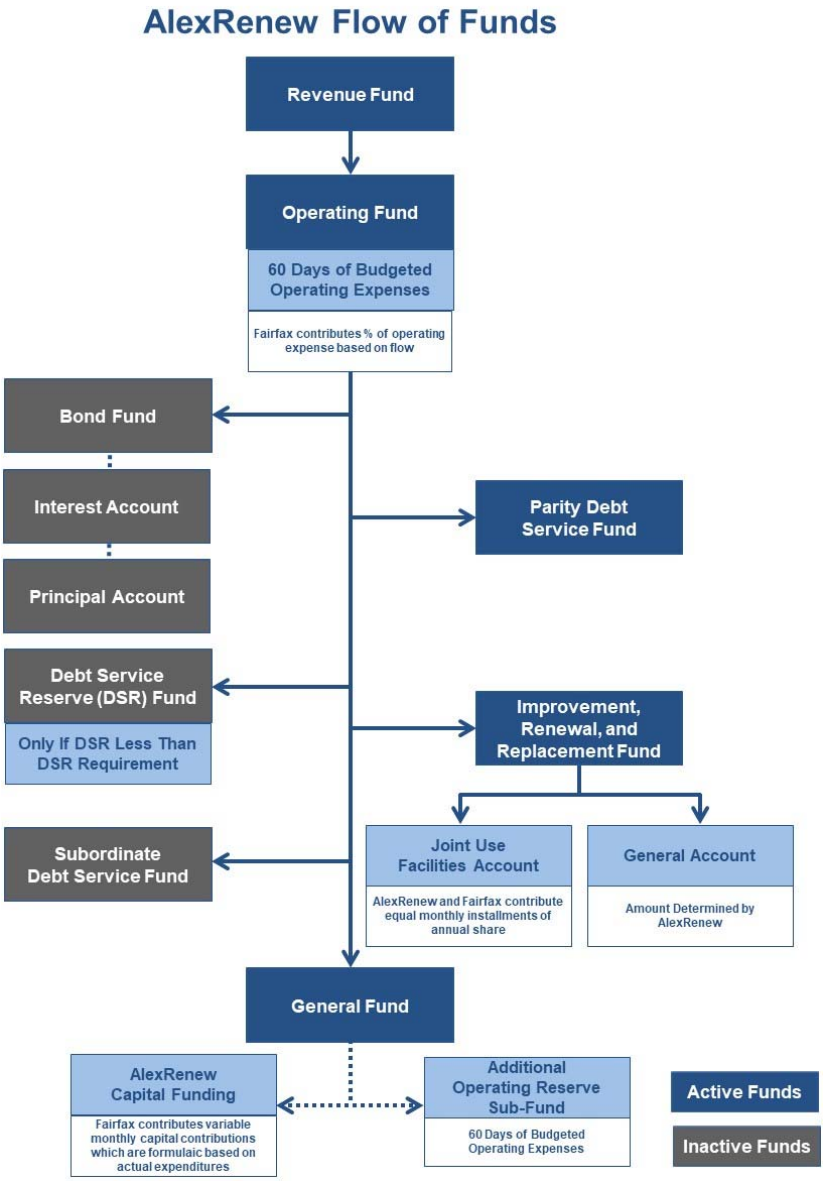
AlexRenew utilizes a fiscal year cycle ending June 30 so the FY 2021 budget will encompass the 12-month period from July 1, 2020 – June 30, 2021. AlexRenew typically develops the budget during the prior fiscal year before it undergoes review by the Board of Directors and then the public.

Month	*Customer*	*Board of Directors*	*Staff*
August - February			***Proposed Budget Development*** Departments prepare budget proposals; CEO develops a balanced proposed budget.
March-April		***Budget Review (March-April)*** Board of Directors request additional information on specific budget issues from staff.	The CEO presents the proposed budget to the Board of Directors.
May	Customers are informed of proposed budget via posting to the AlexRenew website and may provide written comments, if any.		
Late May/Early June		***Final Adoption*** Board of Directors makes final decisions and adopts the AlexRenew budget for the upcoming fiscal year.	Budget adoption 6/16/20 Execute adopted FY 2021 Budget starting 7/1/2020.

Consolidated Enterprise Budget Statement

AlexRenew begins its annual budget presentation by preparing a Consolidated Enterprise Budget Statement (Statement) that combines all of our estimated sources and uses of funds for the upcoming fiscal year. We organize this Statement in accordance with the terms mandated in Article VII of our Indenture. The primary purpose for this Statement is to demonstrate that our overall FY 2021 operating and capital budgets are in "structural" balance – which means all of our revenues and expenses are consistent with our historical financial performance, all balances that remain in our prescribed funds and accounts meet stated requirements, and if total revenues exceed total expenses, any potential excess funds are deposited in our General Fund to serve as reserves.

The graphic below provides a visual presentation of the flow of monies through the financial structure established in our Indenture. A definition for each fund and account is provided on the following page. In general, customer payments and Fairfax County operating expense charges are deposited in the Revenue Fund and are subsequently transferred to other Funds and Accounts in the order of priority (per below) and the amounts prescribed in the Indenture.



The chart below serves as a glossary that can be used to better understand the purpose, order of priority and funding method for each of the Funds and Accounts established in the Indenture.

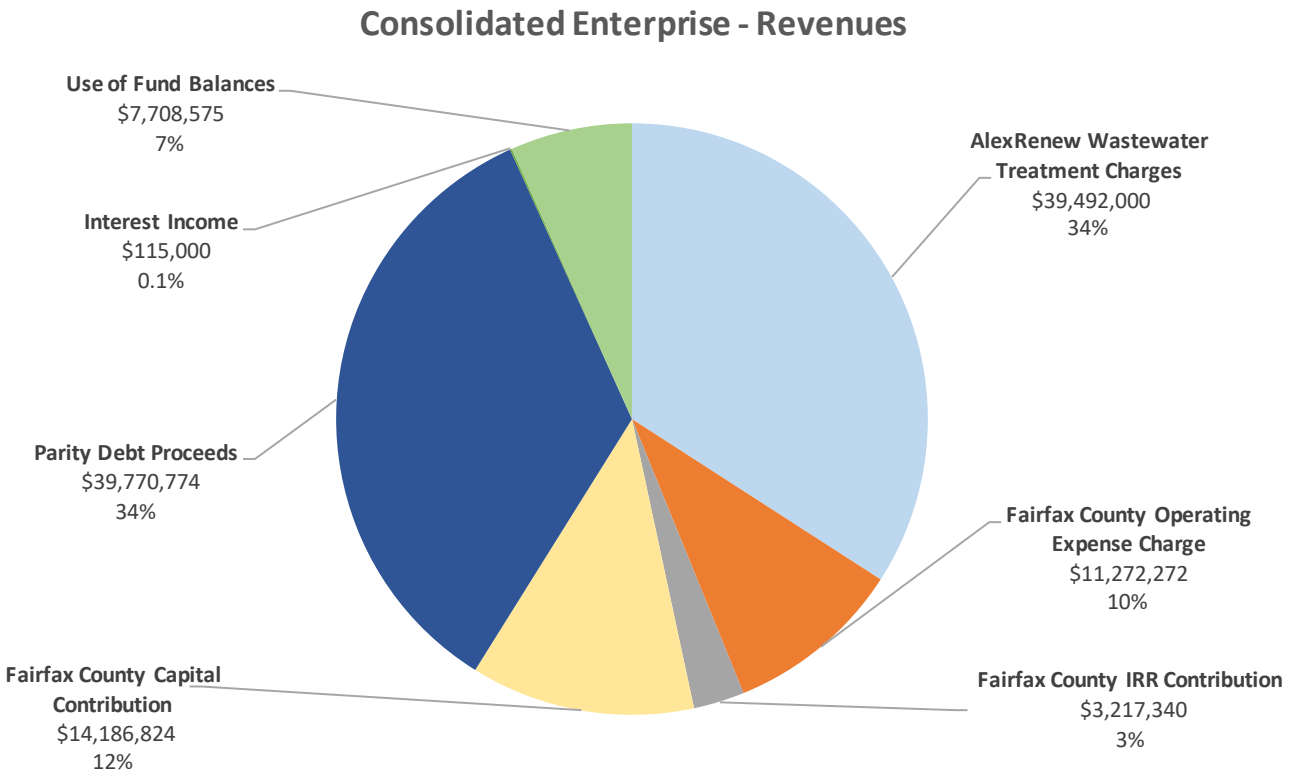
Master Indenture of Trust – *Flow of Funds*	
Revenues	Revenues means all revenues, receipts and other income derived or received by AlexRenew from owning and operating the utility system. This primarily includes AlexRenew Wastewater Treatment Charges and Fairfax County Operating Expense Charges.
Revenue Fund	Revenues are initially deposited into the Revenue Fund and then transferred to other Funds and Accounts in the following order of priority.
Operating Fund	To the Operating Fund to pay Operating Expenses. At the end of each month, AlexRenew must ensure at least 1/6th (or 60 days) of annual budgeted operating expenses are deposited into the Operating Fund.
Parity Debt Service Fund	To the Parity Debt Service Fund to make debt service payments. AlexRenew must make equal monthly deposits into the Parity Debt Service Fund such that debt service payments can be paid when due.
Improvement, Renewal and Replacement (IRR) Fund – Joint Use Facilities Account	To the Joint-Use Facilities Account of the IRR Fund in an amount equal to 1/12th of AlexRenew's annual share of the amount due to this Fund.
Improvement, Renewal and Replacement (IRR) Fund – General Account	To the General Account of the IRR Fund at times and in amounts predetermined by AlexRenew.
General Fund	To the General Fund, any revenues remaining.

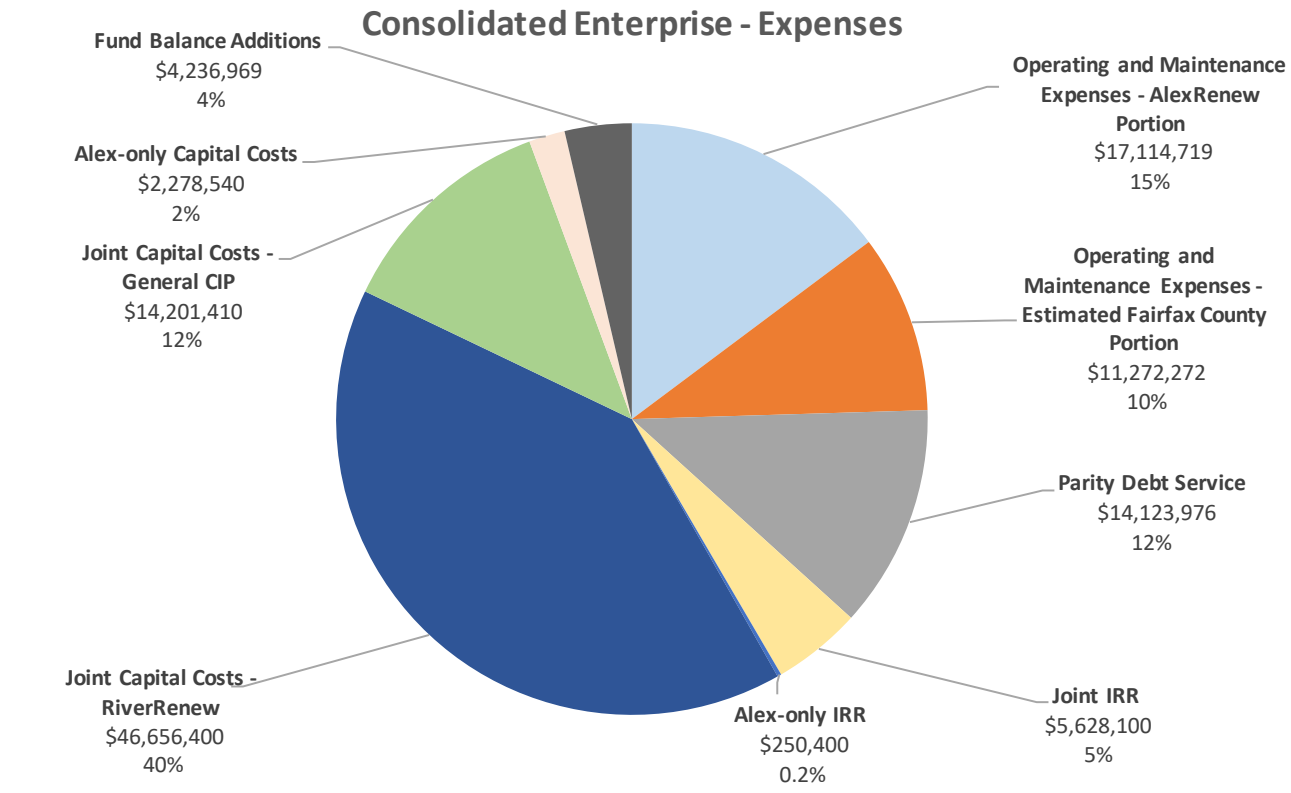
The Statement on the following page presents a consolidated profile of AlexRenew's overall operating and capital budgets for FY 2021. This schedule directly follows the flow of funds mandated in our Indenture.

In addition, we note that the revenue projections contained in the exhibits to follow are based on the rates and charges we anticipate will be in effect for FY 2021 as further detailed on pages 13-14 in the attached. A reduction of approximately 15% was made from the original FY 2021 estimate in order to account for potential revenue impacts from the current challenges related to COVID-19. Additionally, the rate increase of approximately 11.4% that was previously adopted for FY 2021 has also been lowered to 6.6% in this budget, in recognition of the fiscal stress the pandemic has caused for many of our customers. We also note that our operating expense budget, which typically increases by 2% annually to account for inflation, was reduced by approximately 3% from the original FY 2021 estimate, in order to help offset potential impacts related to COVID-19 and the lowered rate increase. AlexRenew will continue to monitor impacts to both revenues and expenditures to ensure we meet our clean water and community health mandates.

Consolidated Enterprise Budget Statement

Consolidated Enterprise Budget Statement	Adopted FY2020	Proposed FY2021
REVENUE FUND (Per Master Indenture)		
AlexRenew Wastewater Treatment Charges	$ 43,848,000	$ 39,492,000
Fairfax County Operating Expense Charge	11,653,647	11,272,272
Total Revenues	**55,501,647**	**50,764,272**
OPERATING FUND		
Beginning Balance	4,640,520	4,742,230
Revenue Fund Transfer	28,545,266	28,301,116
Interest Income	10,000	10,000
Operating Expenses	(28,453,556)	(28,386,991)
Ending Balance (Operating Fund Reserve)	**4,742,230**	**4,666,355**
REVENUE FUND BALANCE	26,956,381	22,463,156
PARITY DEBT SERVICE FUND		
Beginning Balance	1,131,581	7,632,700
Revenue Fund Transfer	14,130,146	6,401,276
Interest Income	90,000	90,000
Parity Debt Service Payment	(14,220,146)	(14,123,976)
Ending Balance	**1,131,581**	**(0)**
REVENUE FUND BALANCE	12,826,235	16,061,880
IMPROVEMENT, RENEWAL AND REPLACEMENT FUND		
Joint Use Facilities Account		
Beginning Balance	7,410,422	8,500,404
Revenue Fund Transfer	2,214,437	2,230,239
Fairfax County Annual Required Contribution	3,194,545	3,217,340
IRR Joint Use Facilities Expenses	(4,319,000)	(5,628,100)
Ending Balance	**8,500,404**	**8,319,883**
General Account (Alex-only)		
Beginning Balance	-	-
Revenue Fund Transfer	66,000	250,400
IRR Alex-Only Expenses	(66,000)	(250,400)
Ending Balance	**-**	**-**
REVENUE FUND BALANCE	10,545,798	13,581,241
GENERAL FUND		
Beginning Balance	39,748,679	43,427,845
Revenue Fund Transfer	10,545,798	13,581,241
Interest Income	15,000	15,000
Alex-Only Capital Costs	(1,764,000)	(2,278,540)
Transfer to CIP - Joint Use Facilities	(5,117,632)	(6,900,213)
Ending Balance	**43,427,845**	**47,845,334**
General Reserve sub-Fund	**(4,742,230)**	**(4,666,355)**
Available Balance	**38,685,615**	**43,178,979**
REVENUE FUND BALANCE	-	-
PROJECT FUND		
Beginning Balance	-	-
Parity Debt / Prior Issue Bond or Grant Proceeds	3,573,000	9,770,774
Parity Debt / New Bond or Grant Proceeds	16,693,968	30,000,000
Transfer to CIP - Joint Use Facilities	(20,266,968)	(39,770,774)
Ending Balance	**-**	**-**
CAPITAL IMPROVEMENT PROGRAM - JOINT USE FACILITIES		
Beginning Balance	-	-
General Fund Transfer	5,117,632	6,900,213
Project Fund Transfer	20,266,968	39,770,774
Fairfax County Contribution	17,058,400	14,186,824
Joint Capital Costs	(42,443,000)	(60,857,810)
Ending Balance	**-**	**-**


Consolidated Enterprise - Revenues
Use of Fund Balances
$7,708,575
7%
Interest Income
$115,000
0.1%
Parity Debt Proceeds
$39,770,774
34%
Fairfax County Capital Contribution
$14,186,824
12%
AlexRenew Wastewater Treatment Charges
$39,492,000
34%
Fairfax County Operating Expense Charge
$11,272,272
10%
Fairfax County IRR Contribution
$3,217,340
3%


Consolidated Enterprise - Expenses
Fund Balance Additions
$4,236,969
4%
Alex-only Capital Costs
$2,278,540
2%
Joint Capital Costs - General CIP
$14,201,410
12%
Joint Capital Costs - RiverRenew
$46,656,400
40%
Alex-only IRR
$250,400
0.2%
Joint IRR
$5,628,100
5%
Parity Debt Service
$14,123,976
12%
Operating and Maintenance Expenses - Estimated Fairfax County Portion
$11,272,272
10%
Operating and Maintenance Expenses - AlexRenew Portion
$17,114,719
15%

Determining Rates, Charges and Revenues

For more than a decade, beginning in 2006, AlexRenew has employed rate modeling to analyze, evaluate and implement an annual and long-term fee structure to support the financial obligations of our enterprise. We have engaged an independent, third-party consultant to develop and monitor a rate model designed specifically for AlexRenew. We use this model to manage our revenue performance in the current year and to forecast revenue requirements, based on anticipated operating and capital costs, each year over a 10-year time horizon.

In addition to rate modeling, the AlexRenew Board of Directors (Board) has adopted a body of financial policies (see Appendix A) to guide our approach to setting rates and maintaining a strong, stable and sustainable financial position. These policies target key financial metrics, represent industry best practices, and ensure AlexRenew maintains cost-efficient operations while delivering superior services for our customers and community.

The Rate Modeling Process

Annually, upon completion and acceptance of our audited financial statements, and more frequently as necessary, our rate consultants review and update the AlexRenew rate model. This process, and the model, is heavily data-driven and uses historical and projected data comprised of billing statistics, historical financial data, our current budget, and capital plan forecasts. Our rate consultants perform comprehensive due diligence exercises to validate all information provided by AlexRenew and obtained from other relevant sources. Once validation is complete, the rate consultants review their findings with AlexRenew leadership to discuss observed historical trends, how they compare to prior forecasts, what the current projections are, and whether the consultants should make adjustments for known conditions, as a contingency.

The resultant revenues, and assumptions of additional debt and capital funding, are evaluated relative to AlexRenew's annual cash flow requirements and likely financial position at year-end. This iterative process for each fiscal year over the forecast period allows AlexRenew and its rate consultants to examine how subtle changes to rates or assumptions today have the potential to materially influence financial position across the forecast. It also allows for sensitivity analysis and the ability to examine our financial profile under various hypothetical scenarios, which is instructive to management and provides a stronger basis for recommending the timing and magnitude of potential rate adjustments.

As a single, dominant revenue source that accounts for almost 50% of our operating revenues, our Wastewater Treatment Charges are critical to the funding of our current operations and long-term financial viability. As a result, it is imperative that we combine a thorough understanding of our rate modeling process, strict adherence to the terms of our Indenture, faithfulness to our financial policies, and the needs of our community when establishing our rates and charges.

Revenue Growth Assumptions

AlexRenew has historically modeled growth in Wastewater Treatment Charges of approximately 0.50% - 2.00% and Fairfax County Operating Expense Charges of approximately 1.00% - 3.00% when determining rates and revenues over our forecast period.

Expenditure Growth Assumptions

AlexRenew has historically used CPI to evaluate costs over our forecast period and has commonly assumed an inflation range of 2.0% to 3.5%.

The following schedule details the monthly rates and charges for all individually metered residential customers and commercial customers discharging sewage to and/or requiring wastewater treatment service from AlexRenew. Commercial wastewater customers include all commercial, industrial, government and other public agencies, master-metered residential, and all other accounts or customers not otherwise classified as individually metered residential customers.

A wastewater customer's monthly bill for wastewater interception, treatment and discharge services is based on the sum of their: (1) base charge and (2) wastewater treatment charge, as determined by water meter readings conducted by Virginia American Water, at the customer premise. The base charge serves as the minimum monthly bill for sewer service for all customers served by AlexRenew.

The AlexRenew Board of Directors approved rate adjustments in 2019 for a two-year period. New rates went into effect July 1, 2019 for Fiscal Year 2020 and an additional planned rate adjustment of approximately 11% was also scheduled to take effect July 1, 2020 for Fiscal Year 2021. Recognizing the economic stress the pandemic has caused for our residents and business community, AlexRenew elected to reduce the planned rate increase to approximately 6.6% for Fiscal Year 2021. Based on current projections, this modified, lower rate increase will allow AlexRenew to maintain its fiscal profile while funding the budget herein. The chart below details historic and current rates, along with rates that have been adopted along with the Fiscal Year 2021 budget.

Base Charge. Charge per account based on meter size at the customer premise.

Description	Meter Size	Prior (Effective October 1, 2017) Monthly	Current (Effective July 1, 2019) Monthly	Adopted (Effective July 1, 2020) Monthly
Residential Base Charge	All Meters	$9.61	$10.83	$11.54
Commercial Base Charge	5/8"	$28.83	$32.49	$34.63
	¾"	$28.83	$64.97	$69.27
	1"	$72.07	$81.22	$86.59
	1-1/2"	$144.16	$162.43	$173.17
	2"	$230.65	$259.88	$277.08
	3"	$432.47	$487.28	$519.52
	4"	$720.77	$812.13	$865.87
	6"	$1,441.56	$1,624.26	$1,731.74
	8"	$2,306.50	$2,598.81	$2,770.79
Residential Customer Activation Fee		$15.00	$15.00	$15.00

Treatment Charge. Charge per account based on water consumption as measured by Virginia American Water from meter at customer premise.

Description	Meter Size	Prior (effective October 1, 2017) Per 1,000 Gallons	Current (effective July 1, 2019) Per 1,000 Gallons	Adopted (effective July 1, 2020) Per 1,000 Gallons
Individual Meter Residential Wastewater Charge	All Meters	$6.77	$7.63	$8.13
Commercial Wastewater Treatment Charge	All Meters	$6.77	$7.63	$8.13

Revenue Fund Statement

AlexRenew's Indenture establishes nine (9) Funds into which monies may be deposited to manage our operating and maintenance, non-operating, and capital obligations. The collection and deposit of monies typically occurs monthly at specified times and in specified amounts, and in a prescribed order of priority.

AlexRenew is required to collect and deposit ***Revenues***, as defined in the Indenture, in the Revenue Fund and make monthly transfers to each of its actively managed Funds. Deposits to the Revenue Fund do not include Fairfax County Improvement, Renewal and Replacement (IRR) payments or Capital Contributions. These dollars are deposited by Fairfax County directly into the Joint Use Facilities Account of the IRR Fund or the Project or General Fund for capital outlay reimbursements, as appropriate.

The schedule below presents adopted, proposed and estimated Revenues expected to be received by AlexRenew for the period FY2020 - FY2025, respectively. In addition, proposed Revenue transfers to various operating and non-operating Funds are provided to highlight the use or purpose of the funds.

Revenue Fund	Adopted FY2020	Proposed FY2021	VAR %	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025
REVENUES							
AlexRenew Wastewater Treatment Charges	$ 43,848,000	$ 39,492,000	-9.93%	$ 47,964,816	$ 50,171,198	$ 52,378,730	$ 54,631,016
Fairfax County Operating Expense Charge	11,653,647	11,272,272	-3.27%	11,498,068	11,728,380	11,963,298	12,202,915
Total Revenues	**$ 55,501,647**	**$ 50,764,272**	**-8.54%**	**$ 59,462,884**	**$ 61,899,578**	**$ 64,342,028**	**$ 66,833,930**
TRANSFERS							
Transfer to Operating Fund[1]	$ 28,545,266	$ 28,301,116	-0.86%	$ 29,648,617	$ 30,413,032	$ 31,382,926	$ 32,246,231
Transfer to Parity Debt Service Fund	14,130,146	6,401,276	-54.70%	15,298,401	19,442,420	21,418,669	23,778,091
Transfer to IRR Fund - Joint Use Facilities Account	2,214,437	2,230,239	0.71%	2,206,263	2,262,222	2,301,183	2,335,770
Transfer to IRR Fund - General Account	66,000	250,400	279.39%	250,400	124,400	103,400	327,400
Transfer to General Fund	10,545,798	13,581,241	28.78%	12,059,204	9,657,504	9,135,850	8,146,438
Total Uses	**$ 55,501,647**	**$ 50,764,272**	**-8.54%**	**$ 59,462,884**	**$ 61,899,578**	**$ 64,342,028**	**$ 66,833,930**

[1] Includes entire Fairfax County Operating Expense Charge

Fairfax County Contributions

The following schedule demonstrates the method by which Fairfax County annual payments and contributions are determined based on the capacity rights Fairfax County currently receives under the Agreement. The County currently makes equal monthly Operating Expense Charge installments into the Revenue Fund, equal monthly contributions into the Joint Use Facilities Account of the IRR Fund, and variable monthly capital contributions (formulaic reimbursements based actual capital expenditures) into the General Fund.

Fairfax County Contributions	Adopted FY2020	Proposed FY2021	VAR %	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025
Operating Expense Charge:							
Total Estimated Operating Expenses	$ 28,453,556	$ 28,386,991	-0.23%	$ 28,954,731	$ 29,533,825	$ 30,124,502	$ 30,726,992
Less Estimated "Alexandria Only" Expenses	(4,634,836)	(4,866,578)	5.00%	(4,963,910)	(5,063,188)	(5,164,452)	(5,267,741)
Net Estimated Joint Operating Expenses	$ 23,818,720	$ 23,520,413	-1.25%	$ 23,990,821	$ 24,470,638	$ 24,960,050	$ 25,459,251
Estimated Fairfax County Net Flow	49.0%	48.0%		48.0%	48.0%	48.0%	48.0%
Estimated Fairfaix County Operating Expense Charge	11,671,173	11,289,798	-3.27%	11,515,594	11,745,906	11,980,824	12,220,441
Less Alexandria Only Flow Charge	(17,526)	(17,526)	0.00%	(17,526)	(17,526)	(17,526)	(17,526)
Fairfax County Operating Expense Charge	**$ 11,653,647**	**$ 11,272,272**	-3.27%	**$ 11,498,068**	**$ 11,728,380**	**$ 11,963,298**	**$ 12,202,915**
IRR Fund - Joint Account Contribution:							
Estimated Joint Use Plant Investment	$ 772,711,685	$ 778,225,549	0.71%	$ 793,106,223	$ 813,222,465	$ 827,228,123	$ 839,661,300
Estimated Joint Use IRR Funding Percentage	0.7%	0.7%	0.00%	0.7%	0.7%	0.7%	0.7%
Estimated Joint Use IRR Investment	$ 5,408,982	$ 5,447,579	0.71%	$ 5,551,744	$ 5,692,557	$ 5,790,597	$ 5,877,629
Investment Allocation at 60%	$ 5,030,353	$ 5,066,248	0.71%	$ 4,996,569	$ 5,123,302	$ 5,211,537	$ 5,289,866
Investment Allocation at 49%	324,539	326,855	0.71%	333,105	341,553	347,436	352,658
Investment Allocation at 32%	54,090	54,476	0.71%	55,517	56,926	57,906	58,776
Total IRR - Joint Account Investment	$ 5,408,982	$ 5,447,579	0.71%	$ 5,385,191	$ 5,521,781	$ 5,616,879	$ 5,701,300
Fairfax County Allocation at 60%	$ 3,018,212	$ 3,039,749	0.71%	$ 2,997,942	$ 3,073,981	$ 3,126,922	$ 3,173,920
Fairfax County Allocation at 49%	159,024	160,159	0.71%	163,221	167,361	170,244	172,802
Fairfax County Allocation at 32%	17,309	17,432	0.71%	17,766	18,216	18,530	18,808
Total Fairfax County IRR - Joint Account Contribution	**3,194,545**	**3,217,340**	0.71%	**3,178,928**	**3,259,558**	**3,315,696**	**3,365,530**
Alex Renew Joint IRR Contribution	2,214,437	2,230,239	0.71%	2,206,263	2,262,222	2,301,183	2,335,770
Capital Project Contribution - Joint Use Facilities:							
Estimated Joint Capital Improvements at 60%/40%	$ 18,761,000	$ 14,201,410	-24.30%	$ 11,224,310	$ 9,722,510	$ 5,681,910	$ 16,059,810
Fairfax County Allocation at 60%	11,256,600	8,520,846	-24.30%	6,734,586	5,833,506	3,409,146	9,635,886
Estimated Joint Capital Improvements at 49%/51%	150,000	-	-100.00%	85,000	1,200,000	-	-
Fairfax County Allocation at 49%	73,500	-	-100.00%	41,650	588,000	-	-
Estimated Joint Capital Improvements RiverRenew	23,232,000	46,656,400	100.83%	141,326,900	80,723,700	94,989,800	24,530,600
Fairfax County Allocation [1]	5,632,300	5,665,978	0.60%	13,426,056	7,668,752	9,024,031	2,330,407
Estimated Joint Capital Improvements at 32%/68%	300,000	-	-100.00%	-	-		-
Fairfax County Allocation at 32%	96,000	-	-100.00%	-	-		-
Total Fairfax County Capital Contribution	17,058,400	14,186,824	-16.83%	20,202,292	14,090,258	12,433,177	11,966,293
Total Fairfax County Contributions	**$ 31,906,591**	**$ 28,676,436**	-10.12%	**$ 34,879,289**	**$ 29,078,196**	**$ 27,712,171**	**$ 27,534,738**

[1] Fairfax County allocation based on the estimated project costs and percentages shown below

Project	FY21 Estimate	Estimated Fairfax %	Estimated Fairfax $
RiverRenew 108 to 116 mgd Expansion	740,000	60.0%	444,000
RiverRenew Bdg J Fac. Reloc. & Decom.	4,422,000	26.0%	1,149,720
RiverRenew Site Security and Access	258,000	60.0%	154,800
RiverRenew Tunnel System	41,236,400	9.5%	3,917,458
Total	46,656,400		5,665,978

Condensed Summary

The schedule below combines all of the funding sources and planned expenses associated with AlexRenew's FY 2021 budget. At approximately 59%, capital outlay represents the largest share of the budget. Together with the Parity Debt Service Fund at 12%, these combined expenses are 72% of the FY 2021 budget, demonstrating the capital-intensive nature of the water utility business.

In addition, it is notable that the operating budget has decreased significantly year-over-year, a departure from the historical trend to increase the operating budget at the approximate rate of inflation. This reflects an effort to decrease costs proactively to help balance potential revenue impacts related to COVID-19.

We also note continued funding for improvement, repair and replacement projects, reflecting our effort to ensure timely upgrades of our infrastructure to maintain efficient operations and prepare the plant for the RiverRenew program.

In the schedules that follow on the accompanying pages, each expense-related Fund is presented and reviewed in greater detail.

Consolidated Summary	Adopted FY2020	Proposed FY2021	VAR %
OPERATING REVENUES			
AlexRenew Wastewater Treatment Charges	$ 43,848,000	$ 39,492,000	-9.93%
Fairfax County Operating Expense Charge	11,653,647	11,272,272	-3.27%
	$ 55,501,647	$ 50,764,272	-8.54%
IR&R AND CAPITAL CONTRIBUTIONS			
Fairfax County IRR Contribution	$ 3,194,545	$ 3,217,340	0.71%
Fairfax County Capital Contribution	17,058,400	14,186,824	-16.83%
	$ 20,252,945	$ 17,404,164	-14.07%
DEBT PROCEEDS AND OTHER SOURCES			
Parity Debt Proceeds	$ 15,396,110	$ 39,770,774	158.32%
Interest Income	115,000	115,000	0.00%
Use of Fund Balances (Operating and Parity)	-	7,708,575	-
	$ 15,511,110	$ 47,594,350	206.84%
TOTAL FUNDING SOURCES	**$ 91,265,702**	**$ 115,762,786**	**26.84%**
OPERATING EXPENSES			
Operating and Maintenance Expenses - AlexRenew Portion	$ 16,799,909	$ 17,114,719	1.87%
Operating and Maintenance Expenses - Estimated Fairfax County Portion	11,653,647	11,272,272	-3.27%
	$ 28,453,556	$ 28,386,991	-0.23%
NON-OPERATING EXPENSES			
Parity Debt Service	14,220,146	14,123,976	-0.68%
Joint IRR	4,319,000	5,628,100	30.31%
Alex-only IRR	66,000	250,400	279.39%
Fund Balance Additions (IRR and General Fund)	-	4,236,968	-
	$ 18,605,146	$ 24,239,444	30.28%
CAPITAL OUTLAY			
Joint Capital Costs - RiverRenew	23,232,000	46,656,400	100.83%
Joint Capital Costs - General CIP	19,211,000	14,201,410	-26.08%
Alex-only Capital Costs	1,764,000	2,278,540	29.17%
	$ 44,207,000	$ 63,136,350	42.82%
TOTAL EXPENSES AND CAPITAL OUTLAY	**$ 91,265,702**	**$ 115,762,786**	**26.84%**

Operating Fund Statement

AlexRenew manages its Operating Fund by department and strategic outcome. This allows the enterprise to understand the impact of each department on the overall budget and how monies are being spent to achieve key business objectives.

Operational Excellence. This element of the operating budget primarily includes utilities and chemicals required to meet all regulatory compliance obligations for our cleaned water product as well as ongoing operating needs such as bio-solids reuse and solids disposal.

Public Engagement and Trust. This operating budget category includes community education and outreach, and customer collection and billing services.

Watershed Stewardship. This operating budget item encompasses the costs for our legal, financial, and engineering partners. It also includes the cost of supporting the operations and maintenance associated with the City's capacity rights at the Arlington County Water Pollution Control Plant.

Adaptive Culture. This operating budget category covers personnel services including all compensation related costs, required safety materials, training and professional development, and licensing and dues. This operating budget item also contains the ancillary services required to ensure clean, safe water for our community and environment, including laboratory testing and research support.

Effective Financial Stewardship. This component of the operating budget covers all preventative and corrective maintenance for infrastructure assets, technology investments, general back office support, and annual asset renewal and insurance needs.

Operating Fund	Adopted FY2020	Proposed FY2021	VAR %	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025
REVENUES							
Transfer from Revenue Fund	$ 28,545,266	$ 28,301,116		$ 29,648,617	$ 30,413,032	$ 31,382,926	$ 32,246,231
Interest Income	10,000	10,000		10,000	10,000	10,000	10,000
Total	**$ 28,555,266**	**$ 28,311,116**	**-0.86%**	**$ 29,658,617**	**$ 30,423,032**	**$ 31,392,926**	**$ 32,256,231**
EXPENSES							
Operational Excellence	$ 6,580,708	$ 7,005,864	6.46%	$ 7,198,525	$ 7,396,485	$ 7,599,888	$ 7,808,885
Public Engagement and Trust	2,282,186	2,404,946	5.38%	2,471,082	2,539,037	2,608,860	2,680,604
Watershed Stewardship	2,933,993	2,950,459	0.56%	3,031,597	3,114,966	3,200,627	3,288,644
Adaptive Culture	14,713,122	13,842,707	-5.92%	14,534,842	14,934,551	15,345,251	15,767,245
Effective Financial Stewardship	1,943,548	2,183,015	12.32%	2,243,048	2,304,731	2,368,112	2,433,235
Total	**$ 28,453,556**	**$ 28,386,991**	**-0.23%**	**$ 29,479,094**	**$ 30,289,769**	**$ 31,122,738**	**$ 31,978,613**
FUND BALANCE - Beginning	**$ 4,640,520**	**$ 4,742,230**		**$ 4,666,355**	**$ 4,845,878**	**$ 4,845,878**	**$ 4,979,141**
FUND BALANCE - Ending [1]	**$ 4,742,230**	**$ 4,666,355**		**$ 4,845,878**	**$ 4,979,141**	**$ 5,116,066**	**$ 5,256,759**

[1] Operating Reserve Requirement of 60 days cash

Adaptive Culture Highlights

AlexRenew continues to invest in its workforce in order to recruit and retain the best talent and over $12.8 million (45%) of AlexRenew's budgeted operating expenditures are utilized for personnel, consisting of salaries and benefits. Salaries are provided for full-time, part-time and seasonal employees, while fringe benefits for qualifying employees include healthcare, retirement, social security, short and long-term disability, personal protective gear and other competitive benefits. Paid time off is provided at a rate based on years of service.

Personnel Budget		
Salaries	$	9,308,227
Benefits		3,510,951
Total Personnel Budget	$	12,819,178

Operating Budget		
Personnel	$	12,819,178
Non-Personnel		15,567,813
Total Operating Budget	$	28,386,991

Other personnel and compensation highlights from the FY 2021 Budget include:

- Employees are eligible for performance-based pay increase ranging from 2.0 to 4.5% of salary. Currently, AlexRenew has 14 general salary grades. The Proposed FY 2021 Budget includes performance-based pay increases, which may be further evaluated depending on COVID impacts.
- In January 2020, AlexRenew received the employee health insurance renewal rates from United Healthcare. The aggregate renewal rates for both plans was 16.2%. In order to reduce the overall cost impact, we elected to eliminate the HMO option. AlexRenew will only offer one medical plan option, High Deductible with Health Savings Account. This resulted in net decrease of 2.8% overall, with an annual savings of $39,800.
- Furthermore, in an effort to provide an enhanced benefit for employee only coverage, we initiated a different cost share for employee only coverage versus dependent coverages. AlexRenew pays 85% for employee only premiums and continues to pay 83% of dependent coverage.
- Forty-eight (48) employees took part in the new Employee Wellness Incentive Program that ran from March 2019 through January 2020. The program encourages employees to participate in wellness program activities, events, or challenges. The second year will run from March 2020 through January 2021 and employees completing all program requirements will be eligible to earn up to $600 towards their health savings account, or a wellness-related gift card for those who do not participate in the AlexRenew health insurance program.

Retirement Benefit

Budgeted funds for staff retirement are the contributions AlexRenew pays into the Virginia Retirement System (VRS). VRS administers pension plans and other benefits for Virginia's covered public sector employees and updates the employer contribution every other even calendar year. AlexRenew's contribution to VRS will decrease from 7.27% in FY19 and FY20 to 6.44% in FY21 and FY22. This reduction will result in cost savings of approximately $85,000 in FY21 for AlexRenew.

Full-time, regular employees hired since January 1, 2014 have been placed into the VRS Hybrid plan unless they are already participating in VRS from previous employment. The VRS Hybrid plan does not offer disability benefits as part of its core provisions. VRS has offered the VLDP (Virginia Local Disability Plan) for jurisdictions who do not elect to opt out. AlexRenew has opted out of the VLDP Plan and provides a comparable disability plan.

AlexRenew currently has 36 employees in the VRS Plan 1 retirement plan, which allowed enrollment before July 1, 2010. AlexRenew has 9 employees in the VRS 2 retirement plan, which was available between July 1, 2010 and

December 31, 2013. Fifty-seven (57) employees are enrolled in the VRS Hybrid plan, which started on January 1, 2014 and is still in effect.

Other Post-Employment Benefits (OPEB)

OPEB funding supports retiree healthcare benefits. The FY21 budget provides for approximately $186,850 in OPEB funding. We currently have 7 retirees receiving this benefit.

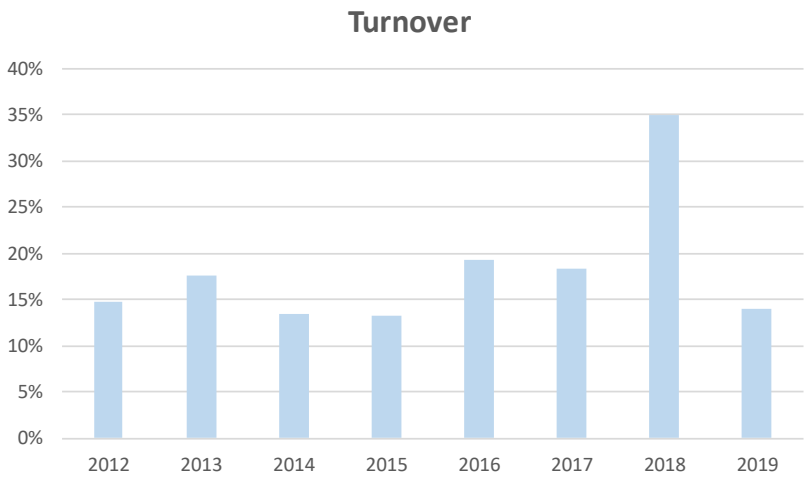
Workforce by Full Time Equivalent (FTE)

As shown below by Focus Area, the FY21 budget includes a net increase of 2.5 FTEs compared to the FY20 Approved Budget.

Focus Area	FY2020 Approved	FY2021 Approved	FTE Impact
Effective Financial Stewardship			
Board of Directors	5	5	0
Executive	3	3	0
Finance	11	12	+1
Subtotal	19	20	+1
Watershed Stewardship			
Environmental Performance	12	11	-1
Subtotal	12	11	-1
Public Engagement and Trust			
Communications	5	5.5	+0.5
Subtotal	5	5.5	+0.5
Operational Excellence			
Operations & Maintenance	68	70	+2
Engineering & Planning	11	11	0
Subtotal	79	81	+2
Adaptive Culture			
Human Resources	2	2	0
Information Systems	6	6	0
Subtotal	8	8	0
Grand Total	**123**	**125.5**	**+2.5**

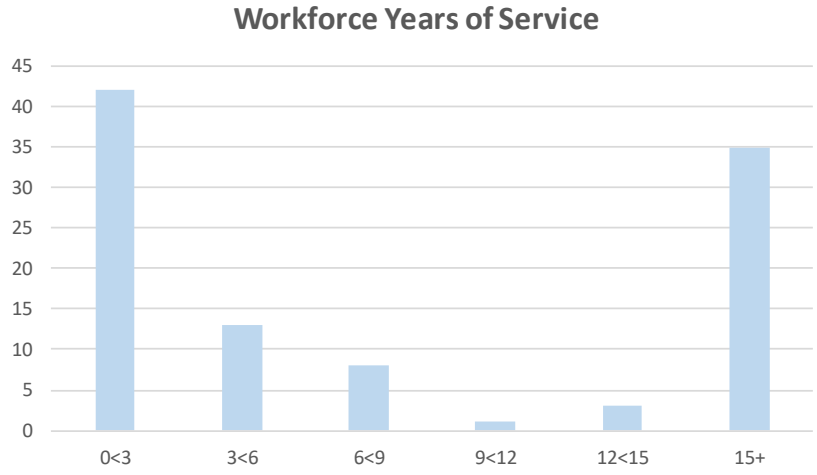
Many members of our workforce are nearing retirement, so we are seeing retirement numbers increase. We have planned for this eventuality, and are using our apprentice program for succession development.

FY19 Turnover	Total Number of Staff
Voluntary Turnover	4
Involuntary Turnover	5
Retirement	4
Total Turnover FY19	13
Total Turnover FY18	32



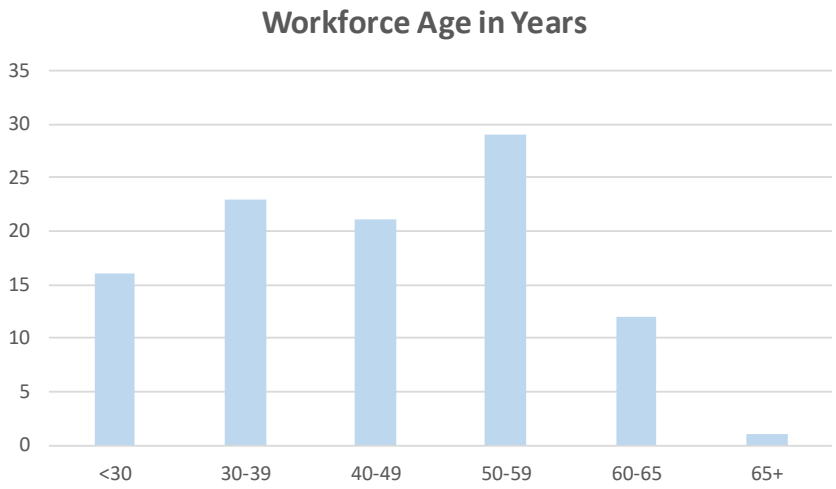
Years of Service

Almost two-thirds of the current workforce (63%) has been employed with AlexRenew for less than 12 years. 37% have worked for AlexRenew for over 12 years or more. The average years of service is currently 11 years.



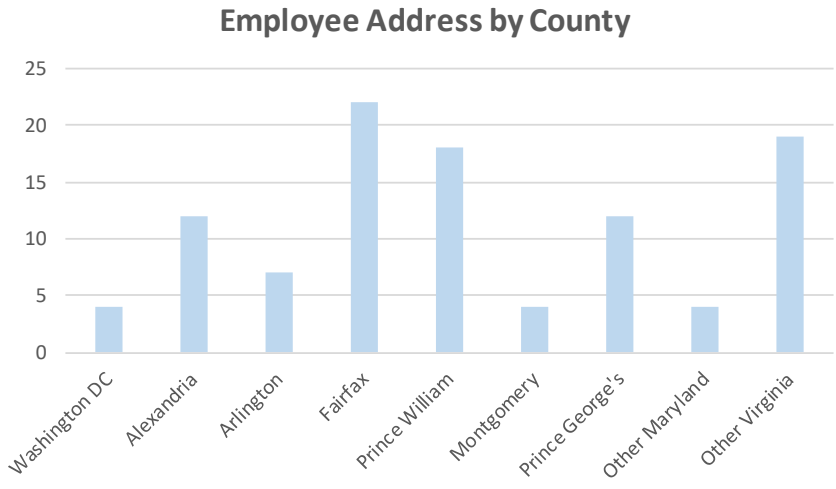
Employee Demographics

Almost three-quarters (72%) of AlexRenew's workforce fall within the ages of 30 and 60 years old with and average age of 45 years old.



Employee Home Address by County

Just over three-quarters (76%) of AlexRenew's workforce live in Virginia.



Parity Debt Service Fund Statement

The Parity Debt Service Fund includes the amounts due in FY 2021 to pay principal and interest on outstanding and projected AlexRenew debt. To date, AlexRenew has borrowed from the Virginia Clean Water Revolving Loan Fund (CWRLF) and Virginia Pooled Financing Program (VPFP) through the Virginia Resources Authority (VRA). Within the context of our Indenture, capital funding in this manner is deemed parity debt.

AlexRenew has expended all proceeds from its debt issuances with the exception of its Series 2017A and Series 2019 Bonds. There are remaining proceeds of approximately $3.5 million from the Series 2017A Bonds, which are invested in the Virginia SNAP fund and are expected to be spent in FY 2021. The Series 2019 Bonds were issued in an amount of up to $10.4 million, and based on current projections of related project spending, approximately $6.1 million in proceeds will remain at the end of the current fiscal year and are expected to be spent in FY 2021.

AlexRenew also maintains a $30 million line of credit with a commercial bank to provide cash flow flexibility. AlexRenew has drawn $8.3 million on the facility to pay capital improvement expenditures and expects to repay the line with proceeds of planned Series 2021 Bonds. The line of credit is considered subordinate debt under the Indenture and as such, projected interest and fees associated with the line of credit are budgeted as an operating expense rather than included in the Parity Debt Service fund.

AlexRenew's FY 2021 budget includes issuance of $30 million in additional debt. Additional future debt issuances are expected to fund the RiverRenew program and a preliminary estimate of that debt repayment is provided below. AlexRenew is pursuing funding from multiple sources and may close on some portion of that debt in FY 2021, although repayment of that debt is expected to begin after FY 2021.

Parity Debt Service Fund	Proposed FY2020	Estimated FY2021	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025
REVENUES						
Beginning Balance	$ 1,131,581	$ 7,632,700	$ (0)	$ (0)	$ (0)	$ 0
Transfer from Revenue Fund	14,130,146	6,401,276	15,298,401	19,442,420	21,418,669	23,778,091
Interest Income	90,000	90,000	90,000	90,000	90,000	90,000
Total Revenue	**15,351,727**	**14,123,976**	**15,388,401**	**19,532,420**	**21,508,669**	**23,868,091**
EXPENDITURES						
VRA BOND SERIES 00A INTEREST	$ 45,650	$ -	$ -	$ -	$ -	$ -
VRA BOND SERIES 00A PRINCIPAL	1,734,049	-	-	-	-	-
VRA BOND SERIES 00B INTEREST	781,238	592,209	345,827	77,464	-	-
VRA BOND SERIES 00B PRINCIPAL	4,440,351	6,336,945	6,589,727	4,024,113	-	-
VRA BOND SERIES 04 INTEREST	221,316	181,862	141,175	99,217	55,948	11,327
VRA BOND SERIES 04 PRINCIPAL	1,262,935	1,302,389	1,343,076	1,385,034	1,428,303	730,798
VRA BOND SERIES 06 INTEREST	160,998	139,969	118,401	96,279	73,588	50,315
VRA BOND SERIES 06 PRINCIPAL	832,120	853,149	874,717	896,839	919,530	837,743
VRA BOND SERIES 09 INTEREST	239,962	218,987	197,438	175,299	152,554	129,186
VRA BOND SERIES 09 PRINCIPAL	765,916	786,890	808,439	830,578	853,324	876,692
VRA BOND SERIES 11 INTEREST	147,468	138,633	129,590	120,332	110,856	101,157
VRA BOND SERIES 11 PRINCIPAL	373,742	382,577	391,620	400,877	410,353	420,053
VRA BOND SERIES 14A INTEREST	225,819	214,025	201,982	189,684	177,127	164,305
VRA BOND SERIES 14A PRINCIPAL	558,702	570,497	582,540	594,838	607,395	620,217
VRA BOND Reclaimed SERIES 14B INTEREST	43,991	41,607	39,173	36,688	34,150	31,558
VRA BOND Reclaimed SERIES 14B PRINCIPAL	112,914	115,297	117,731	120,217	122,755	125,346
VRA BOND SERIES 14C INTEREST	879,594	867,784	855,463	841,625	827,019	811,772
VRA BOND SERIES 14C PRINCIPAL	240,000	255,000	260,000	280,000	290,000	305,000
VRA BOND SERIES 17A INTEREST	907,506	907,506	907,506	892,772	862,534	830,759
VRA BOND SERIES 17A PRINCIPAL	-	-	-	575,000	605,000	635,000
VRA BOND SERIES 19 INTEREST	235,875	-	167,096	114,070	112,970	111,870
VRA BOND SERIES 19 PRINCIPAL	10,000	-	5,000	100,000	100,000	100,000
Future Bonds - Series 2021 Interest [1]	-	218,650	1,311,900	1,299,700	1,274,800	1,274,800
Future Bonds - Series 2021 Principal [1]	-	-	-	610,000	635,000	635,000
Estimated Future RiverRenew Principal & Interest [2]	-	-	-	5,771,794	11,855,464	15,065,193
TOTAL EXPENSES	**$ 14,220,146**	**$ 14,123,976**	**$ 15,388,401**	**$ 19,532,420**	**$ 21,508,669**	**$ 23,868,091**
Total Interest	3,889,417	3,302,582	2,936,554	8,911,153	14,784,240	17,830,572
Total Principal	10,330,729	10,821,394	12,284,751	10,507,196	6,611,459	5,925,649
	$ 14,220,146	**$ 14,123,976**	**$ 15,221,305**	**$ 19,418,350**	**$ 21,395,699**	**$ 23,756,221**
Excess (Deficiency)	**$ 1,131,581**	**$ (0)**	**$ (0)**	**$ 0**	**$ (0)**	**$ (0)**

[1] Assumes approximately $30 million borrowing amortized in 2022-2046 (25 years) at average historical interest rates

[2] Preliminary estimate of payments under loans expected to close in Fiscal Year 2021; final payment schedule to be negotiated with lenders

IRR Fund Statement - Joint Use Facilities Account

The Improvement, Renewal & Replacement (IRR) Fund – Joint Use Facilities Account funds the project costs associated with the upgrade of infrastructure and equipment for the portions of our facility used jointly by the City and Fairfax County.

As noted in the accompanying schedule, contributions to the Joint Use Facilities Account are made annually by both AlexRenew and Fairfax County in a combined amount equal to 0.7% of AlexRenew's estimated capital asset value for FY 2021. Fairfax County's portion of the total contribution is also based on the allocation percentages detailed on page 16 and affirmed in the Agreement.

IRR Fund - Joint Use Facilities Account	Adopted FY2020	Proposed FY2021	VAR %	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025
REVENUES							
Revenue Fund Transfer	$ 2,214,437	$ 2,230,239	0.71%	$ 2,206,263	$ 2,262,222	$ 2,301,183	$ 2,335,770
Fairfax County Contribution	3,194,545	3,217,340	0.71%	3,178,928	3,259,558	3,315,696	3,365,530
Total Revenues	**$ 5,408,982**	**$ 5,447,579**	**0.71%**	**$ 5,385,191**	**$ 5,521,781**	**$ 5,616,879**	**$ 5,701,300**
EXPENSES							
Preliminary / Primary Infrastructure	$ 333,333	$ 343,333	3.00%	$ 80,000	$ 80,000	$ 80,000	$ 80,000
Secondary Infrastructure	613,333	1,156,333	88.53%	513,000	573,000	50,000	370,000
Tertiary Infrastructure	761,333	890,333	16.94%	258,000	413,000	128,000	85,000
Solids Infrastructure	1,750,500	1,740,500	-0.57%	1,265,500	1,113,500	447,500	447,500
Campus Wide Projects	384,500	500,600	30.20%	215,600	265,600	335,600	1,043,600
Information Technology Projects	468,000	600,000	28.21%	575,000	250,000	250,000	150,000
Campus Digital Signage	-	140,000	-	-	-	-	-
Collection System Projects	8,000	-	-100.00%	15,000	15,000	-	-
Centrate Pretreatment Facility Improvements	-	185,000	-	258,000	-	-	-
Tertiary Treatment Improvements	-	72,000	-	17,000	-	-	-
WRRF Fire Alarm Upgrade	-	-	-	-	-	-	-
Joint IRR Expenses	**$ 4,319,000**	**$ 5,628,101**	**30.31%**	**$ 3,197,101**	**$ 2,710,101**	**$ 1,291,101**	**$ 2,176,101**
Excess (Deficiency)	$ 1,089,982	$ (180,522)		$ 2,188,090	$ 2,811,680	$ 4,325,778	$ 3,525,199
FUND BALANCE - Beginning	**$ 7,410,422**	**$ 8,500,404**		**$ 8,319,882**	**$ 10,507,972**	**$ 13,319,652**	**$ 17,645,430**
FUND BALANCE - Ending	**$ 8,500,404**	**$ 8,319,882**		**$ 10,507,972**	**$ 13,319,652**	**$ 17,645,430**	**$ 21,170,629**

IRR Fund Statement - General Account

The Improvement, Renewal & Replacement (IRR) Fund – General Account funds the project costs associated with the upgrade of infrastructure and equipment for the portions of our facility used for the benefit of the City only.

Contributions to the General Account are made annually for projects AlexRenew determines are necessary to maintain the safe and effective operation of our facility.

IRR Fund - General Account	Adopted FY2020	Proposed FY2021	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025
Revenues						
Revenue Fund Transfer	$ 66,000	$ 250,400	$ 124,400	$ 103,400	$ 327,400	$ 167,400
Total Revenue	**$ 66,000**	**$ 250,400**	**$ 124,400**	**$ 103,400**	**$ 327,400**	**$ 167,400**
Expenses						
Campus Wide Projects	$ -	$ 21,000	$ 21,000	$ 21,000	$ 195,000	$ 21,000
Collection System Projects	66,000	229,400	103,400	82,400	132,400	146,400
Total Expenses	**$ 66,000**	**$ 250,400**	**$ 124,400**	**$ 103,400**	**$ 327,400**	**$ 167,400**

General Fund Statement

The General Fund is the repository of all funds remaining after required deposits to all other actively managed Funds have been satisfied, and may be used for any lawful purpose of AlexRenew. AlexRenew principally uses the General Fund to finance City only capital improvements provide sufficient reserves to maintain strong credit worthiness, manage unanticipated expenditures experienced during operation, and maintain sufficient additional reserves to promote ongoing financial strength.

General Fund	Adopted FY2020	Proposed FY2021	VAR %	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025
REVENUES							
Revenue Fund Transfer	$ 10,545,798	$ 13,581,241	28.78%	$ 12,059,204	$ 9,657,504	$ 9,135,850	$ 8,146,438
Interest Income	15,000	15,000	0.00%	15,000	15,000	15,000	15,000
Total Revenues	**$ 10,560,798**	**$ 13,596,241**	**28.74%**	**$ 12,074,204**	**$ 9,672,504**	**$ 9,150,850**	**$ 8,161,438**
EXPENSES							
Alex-only Capital Exenses	$ 1,764,000	$ 2,278,540	29.17%	$ 3,452,940	$ 4,301,890	$ 5,615,040	$ 5,425,440
Transfer to Joint CIP Project Fund	5,117,632	6,900,213	34.83%	20,191,583	9,686,675	10,965,473	1,476,938
Total Expenses	**$ 6,881,632**	**$ 9,178,753**	**33.38%**	**$ 23,644,523**	**$ 13,988,565**	**$ 16,580,513**	**$ 6,902,378**
Excess (Deficiency)	$ 3,679,166	$ 4,417,489	20.07%	$ (11,570,319)	$ (4,316,061)	$ (7,429,663)	$ 1,259,061
Fund Balance - Beginning	$ 39,748,679	$ 43,427,845		$ 47,845,334	$ 36,275,015	$ 31,958,954	$ 24,529,292
Fund Balance - Ending	$ 43,427,845	$ 47,845,334	10.17%	$ 36,275,015	$ 31,958,954	$ 24,529,292	$ 25,788,352
General Reserve sub-Fund [1]	$ (4,742,230)	$ (4,666,355)		$ (4,845,878)	$ (4,979,140)	$ (5,116,066)	$ (5,256,758)
Available Balance	$ 38,685,615	$ 43,178,979	11.62%	$ 31,429,137	$ 26,979,814	$ 19,413,225	$ 20,531,594

[1] Additional Operating Reserve Requirement of 60 days cash per Board-approved Financial Policy

Capital Improvement Program

AlexRenew manages its capital outlay for both Joint Use and City only infrastructure and equipment through its Capital Improvement Program (CIP). Our CIP is summarized in our 10-year plan and is a key element in planning for and managing to future regulatory compliance through large-scale capital investments.

The 10-year plan is an important tool used to formulate future project financing plans, maximize federal and state grant opportunities, proactively plan for the replacement or reconstruction of essential assets nearing the end of their service life, and schedule and coordinate the execution of multiple projects to minimize operational impact. The FY21 – FY30 CIP includes project cost assumptions for the RiverRenew program as well as the Improvement, Renewal and Replacement program.

While the CIP provides a long-term roadmap for planned capital expenditures, AlexRenew retains the ability to defer projects if needed, and may elect to defer certain new capital projects, depending on revenue performance throughout the fiscal year.

Definition of Capital Projects

A capital project involves expenditures to construct or acquire assets of a relatively permanent nature such as property, plant, and equipment with a useful life that exceeds approximately two years.

CIP Funding

Potential funding sources for CIP projects include loans from the Virginia Department of Environmental Quality (VA DEQ), Clean Water Revolving Loan Fund (CWRLF), Virginia Pooled Financing Program (VPFP), state Grant programs, Water Infrastructure Finance and Innovation Act (WIFIA) loans, revenue bond issues, bank loans and lines of credit, and AlexRenew pay-as-you-go (cash) funds. To comply with its Board-adopted Financial Policy, AlexRenew funds at least 15% of the annual CIP with pay-as-you-go funds.

Alex-Only CIP

Capital projects that are the responsibility of AlexRenew only are funded pay-as-you-go from General Fund resources and/or through the use of various financing instruments. Costs associated with the Alex-only CIP are detailed on page 31 and specific project information is provided on pages 32-51.

Joint Use Facilities CIP

Capital projects for which AlexRenew and Fairfax County share joint responsibility are funded pay-as-you-go from General Fund resources and/or through the use of various financing instruments. Costs associated with the Joint Use Facilities CIP are detailed on pages 52-53 and specific project information is provided on pages 54-118.

10-year Capital Improvement Program Summary

SUMMARY OF ESTIMATED EXPENDITURES

	Adopted FY2020	Proposed FY2021	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025	Estimated FY2026	Estimated FY2027	Estimated FY2028	Estimated FY2029	Estimated FY2030	Project Totals FY21-30
IRR Program												
Alex-only IRR	$ 66,000	$ 250,400	$ 124,400	$ 103,400	$ 327,400	$ 167,400	$ 87,400	$ 153,400	$ 314,400	$ 130,400	$ 137,400	$ 1,796,000
Joint IRR	$ 4,319,000	$ 5,628,100	$ 3,197,100	$ 2,710,100	$ 1,291,100	$ 2,176,100	$ 2,136,100	$ 3,590,100	$ 2,430,100	$ 2,613,100	$ 1,900,100	$ 27,671,999
IRR Program Subtotal	$ 4,385,000	$ 5,878,500	$ 3,321,500	$ 2,813,500	$ 1,618,500	$ 2,343,500	$ 2,223,500	$ 3,743,500	$ 2,744,500	$ 2,743,500	$ 2,037,500	$ 29,467,999
General CIP												
Alex-only Capital Improvement Projects	$ 1,764,000	$ 2,278,540	$ 3,452,940	$ 4,301,890	$ 5,615,040	$ 5,425,440	$ 4,909,240	$ 3,286,740	$ 2,403,040	$ 6,052,040	$ 2,928,740	$ 40,653,650
Joint Capital Improvement Projects	$ 19,211,000	$ 14,201,410	$ 11,309,310	$ 10,922,510	$ 5,681,910	$ 16,059,810	$ 21,229,110	$ 26,776,610	$ 17,176,410	$ 5,338,910	$ 2,245,910	$ 130,941,900
General CIP Subtotal	$ 20,975,000	$ 16,479,950	$ 14,762,250	$ 15,224,400	$ 11,296,950	$ 21,485,250	$ 26,138,350	$ 30,063,350	$ 19,579,450	$ 11,390,950	$ 5,174,650	$ 171,595,550
RiverRenew Program												
RiverRenew 108 to 116 mgd Expansion	$ 2,550,000	$ 740,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 740,000
RiverRenew Bdg J Fac. Reloc. & Decom.	$ 11,510,000	$ 4,422,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,422,000
RiverRenew Site Security and Access	$ 472,000	$ 258,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 258,000
RiverRenew Tunnel System	$ 8,700,000	$ 41,236,400	$ 141,326,900	$ 80,723,700	$ 94,989,800	$ 24,530,600	$ 4,510,800	$ -	$ -	$ -	$ -	$ 387,318,200
RiverRenew Subtotal	$ 23,232,000	$ 46,656,400	$ 141,326,900	$ 80,723,700	$ 94,989,800	$ 24,530,600	$ 4,510,800	$ -	$ -	$ -	$ -	$ 392,738,200
Total CIP Expenditures	**$ 48,592,000**	**$ 69,014,850**	**$ 159,410,650**	**$ 98,761,600**	**$ 107,905,250**	**$ 48,359,350**	**$ 32,872,650**	**$ 33,806,850**	**$ 22,323,950**	**$ 14,134,450**	**$ 7,212,150**	**$ 593,801,749**

SUMMARY OF ESTIMATED FUNDING SOURCES

	Adopted FY2020	Proposed FY2021	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025	Estimated FY2026	Estimated FY2027	Estimated FY2028	Estimated FY2029	Estimated FY2030	Project Totals FY21-30
Joint IRR Fund	$ 4,319,000	$ 5,628,100	$ 3,197,100	$ 2,710,100	$ 1,291,100	$ 2,176,100	$ 2,136,100	$ 3,590,100	$ 2,430,100	$ 2,613,100	$ 1,900,100	$ 27,671,999
General Fund PAYGO	$ 6,631,050	$ 9,429,153	$ 23,344,523	$ 14,438,565	$ 15,830,513	$ 6,902,378	$ 9,594,013	$ 7,949,643	$ 5,654,358	$ 7,891,083	$ 3,842,337	$ 104,876,562
Fairfax Capital Contributions	$ 17,058,400	$ 14,186,824	$ 20,202,292	$ 14,090,258	$ 12,433,177	$ 11,966,293	$ 13,081,992	$ 16,065,966	$ 10,305,846	$ 3,203,346	$ 1,347,546	$ 116,883,539
Debt or Grant Funding	$ 20,583,550	$ 39,770,773	$ 112,666,735	$ 67,522,677	$ 78,350,460	$ 27,314,579	$ 8,060,545	$ 6,201,141	$ 3,933,646	$ 426,921	$ 122,165	$ 344,369,639
Total Estimated CIP Funding	**$ 48,592,000**	**$ 69,014,850**	**$ 159,410,650**	**$ 98,761,600**	**$ 107,905,250**	**$ 48,359,350**	**$ 32,872,650**	**$ 33,806,850**	**$ 22,323,950**	**$ 14,134,450**	**$ 7,212,150**	**$ 593,801,741**

10-year Capital Improvement Program Detailed Expenditures

FY21 10-YEAR CAPITAL IMPROVEMENT PROGRAM

	Adopted FY2020	Proposed FY2021	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025	Estimated FY2026	Estimated FY2027	Estimated FY2028	Estimated FY2029	Estimated FY2030	Project Totals FY21-30
Alex-Only Capital Projects												
Interceptor/ Trunk Sewers Rehabilitation Program												
Commonwealth Interceptor Rehabilitation	$ -	$ -	$ -	$ 18,500	$ -	$ -	$ -	$ -	$ -	$ -	$ 250,000	$ 268,500
Potomac Interceptor Rehabilitation	$ -	$ -	$ -	$ -	$ -	$ 423,000	$ 1,000,000	$ 1,545,000	$ 1,545,000	$ 3,090,000	$ -	$ 7,603,000
Improvement, Rehabilitation, Replacement Program												
IRR: Campus Wide Projects	$ -	$ 21,000	$ 21,000	$ 21,000	$ 195,000	$ 21,000	$ 21,000	$ 21,000	$ 195,000	$ 21,000	$ 21,000	$ 558,000
IRR: Information Technology Projects	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
IRR: Collection System Projects	$ 66,000	$ 229,400	$ 103,400	$ 82,400	$ 132,400	$ 146,400	$ 66,400	$ 132,400	$ 119,400	$ 109,400	$ 116,400	$ 1,238,000
RiverRenew Program		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Service Chambers and Pump Stations Upgrade Program												
Bush Hill Service Chamber	$ 150,000	$ -	$ 150,000	$ 300,000	$ 750,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,200,000
Mark Center Pump Station Study	$ 350,000	$ -	$ 250,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 250,000
Potomac Yards PS: Odor Control System Upgrade	$ -	$ 19,000	$ 236,000	$ 1,100,000	$ 1,178,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,533,000
Potomac Yards PS: Ventilation Improvement Project	$ -	$ 32,000	$ 100,000	$ 115,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 247,000
Potomac Yards PS: Wet Well Chimney Exhaust Stack Modifications	$ -	$ 31,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 31,000
WRRF Improvements Program		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
NMF Wet Well Elimination	$ -	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 200,000
Other Capital												
Arlington County Capital Contributions	$ 784,000	$ 1,173,000	$ 1,469,000	$ 1,577,000	$ 2,465,000	$ 3,894,000	$ 3,055,000	$ 1,029,000	$ 211,000	$ 2,000,000	$ 2,000,000	$ 18,873,000
Capital Financing Fees	$ 400,000	$ 750,000	$ 750,000	$ 750,000	$ 750,000	$ 600,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ 5,600,000
CONTINGENCY												
Contingency on Alex-Only Funding Excluding RR	$ -	$ 273,540	$ 297,940	$ 441,390	$ 472,040	$ 508,440	$ 454,240	$ 312,740	$ 247,040	$ 562,040	$ 278,740	$ 3,848,150
Alex-Only Capital Project Subtotal	**$ 2,020,500**	**$ 2,528,940**	**$ 3,577,340**	**$ 4,405,290**	**$ 5,942,440**	**$ 5,592,840**	**$ 4,996,640**	**$ 3,440,140**	**$ 2,717,440**	**$ 6,182,440**	**$ 3,066,140**	**$ 42,449,650**
Joint-Use Capital Projects												
Interceptor/ Trunk Sewers Rehabilitation Program												
Commonwealth Interceptor Pile Intrusion	$ -	$ -	$ -	$ -	$ -	$ -	$ 183,000	$ 607,000	$ -	$ -	$ -	$ 790,000
Upper Holmes Run Trunk Sewer Rehabilitation	$ -	$ -	$ -	$ -	$ 837,000	$ 354,000	$ 1,860,000	$ 1,860,000	$ 279,000	$ 279,000	$ 1,860,000	$ 7,329,000
Improvement, Rehabilitation, Replacement Program												
IRR: Preliminary/Primary Infrastructure	$ 333,333	$ 343,333	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 130,000	$ 130,000	$ 313,333	$ 1,396,666
IRR: Secondary Infrastructure	$ 613,333	$ 1,156,333	$ 513,000	$ 573,000	$ 50,000	$ 370,000	$ 293,000	$ 733,000	$ 292,000	$ 370,000	$ 233,333	$ 4,583,667
IRR: Tertiary Infrastructure	$ 761,333	$ 890,333	$ 258,000	$ 413,000	$ 128,000	$ 85,000	$ 328,000	$ 85,000	$ 256,000	$ 413,000	$ 439,333	$ 3,295,667
IRR: Solids Infrastructure	$ 1,750,500	$ 1,740,500	$ 1,265,500	$ 1,113,500	$ 447,500	$ 447,500	$ 694,500	$ 1,441,500	$ 1,536,500	$ 1,229,500	$ 683,500	$ 10,600,000
IRR: Campus Wide Projects	$ 384,500	$ 500,600	$ 215,600	$ 265,600	$ 335,600	$ 1,043,600	$ 285,600	$ 235,600	$ 215,600	$ 470,600	$ 215,600	$ 3,784,000
IRR: Information Technology Projects	$ 468,000	$ 600,000	$ 575,000	$ 250,000	$ 250,000	$ 150,000	$ -	$ -	$ -	$ -	$ -	$ 1,825,000
IRR: Campus Digital Signage	$ -	$ 140,000	$ -	$ -	$ -	$ -	$ 140,000	$ -	$ -	$ -	$ -	$ 280,000
IRR: Collection System Projects	$ 8,000	$ -	$ 15,000	$ 15,000	$ -	$ -	$ 15,000	$ 15,000	$ -	$ -	$ 15,000	$ 75,000
IRR: Centrate Pretreatment Facility Improvements	$ 185,000	$ 185,000	$ 258,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 443,000
IRR: Tertiary Treatment Improvements	$ -	$ 72,000	$ 17,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 89,000
IRR: WRRF Fire Alarm Upgrade	$ 250,000	$ -	$ -	$ -	$ -	$ -	$ 300,000	$ 1,000,000	$ -	$ -	$ -	$ 1,300,000
Non-Process Facilities Program												
Environmental Center: 5th Floor Build Out	$ -	$ -	$ -	$ 1,200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,200,000
Environmental Center: Lobby Upgrade	$ 150,000	$ -	$ 85,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 85,000
Holland Lane Re-Alignment	$ -	$ -	$ -	$ -	$ -	$ -	$ 300,000	$ -	$ -	$ -	$ -	$ 300,000
South Carlyle Partnership	$ 300,000	$ -	$ -	$ -	$ -	$ -	$ 300,000	$ -	$ -	$ -	$ -	$ 300,000
WRRF HVAC Automation System Upgrade	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500,000	$ 500,000	$ -	$ -	$ 1,000,000

Continued on following page

10-year Capital Improvement Program Detailed Expenditures - continued

Continued from previous page

RiverRenew Program														
RiverRenew 108 to 116 mgd Expansion	$ 2,550,000	$ 740,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 740,000
RiverRenew Bdg J Fac. Reloc. & Decom.	$ 11,510,000	$ 4,422,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,422,000
RiverRenew Site Security and Access	$ 472,000	$ 258,000												$ 258,000
RiverRenew Tunnel System	$ 8,700,000	$ 41,236,400	$ 141,326,900	$ 80,723,700	$ 94,989,800	$ 24,530,600	$ 4,510,800	$ -	$ -	$ -	$ -	$ -	$ -	$ 387,318,200
WRRF Improvements Program														
Biosolids Management: Biosolids Master Plan	$ 40,000	$ -	$ 490,000	$ 141,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 631,000
Biosolids Management: Building 55: Additional Cooling for Digesters	$ -	$ -	$ 312,000	$ 208,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 520,000
Biosolids Management: Building 55: Replace Valves on W3 Cooling System	$ -	$ -	$ 20,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000
Biosolids Management: Building 55: Solids Screen Replacement	$ -	$ -	$ 498,000	$ 332,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 830,000
Biosolids Management: Solids/Resource Recovery Upgrades	$ -	$ -	$ -	$ -	$ -	$ 3,039,000	$ 5,628,000	$ 5,628,000	$ 5,628,000	$ 901,000	$ -	$ -	$ -	$ 20,824,000
Building 22: Primary Weir Observation House	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,094,000	$ 3,101,000	$ 517,000	$ -	$ -	$ -	$ -	$ 5,712,000
Building 60: NMF SCADA Improvements	$ -	$ 150,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 150,000
Building F: Effluent W3 System Improvements	$ 136,000	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 200,000
Building G/3: Filter Underdrain Replacement	$ -	$ -	$ -	$ -	$ -	$ 330,000	$ 330,000	$ 2,200,000	$ -	$ -	$ -	$ -	$ -	$ 2,860,000
Building L: Centrifuge Replacement	$ -	$ -	$ -	$ -	$ -	$ 1,461,000	$ 1,461,000	$ 4,591,000	$ 4,591,000	$ 1,531,000	$ -	$ -	$ -	$ 13,635,000
Campus Wide FOB Network Planning and Installation	$ 1,186,000	$ 395,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 395,000
Campus-wide Electrical Upgrade Sub-Program	$ -	$ -	$ -	$ -	$ 781,000	$ 3,334,000	$ 3,278,000	$ 4,301,000	$ 2,652,000	$ 646,000	$ -	$ -	$ -	$ 14,992,000
HMI Upgrade	$ 2,182,000	$ 1,730,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,730,000
Intermediate Pump Station Pump Study	$ 250,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Main Campus Galleries Improvements	$ -	$ -	$ -	$ -	$ -	$ 500,000	$ 500,000	$ 300,000	$ -	$ -	$ -	$ -	$ -	$ 1,300,000
Odor Control System Upgrade	$ -	$ -	$ -	$ -	$ -	$ 500,000	$ -	$ -	$ 1,000,000	$ 1,000,000	$ -	$ -	$ -	$ 2,500,000
PLC Equipment and Network Upgrade	$ 1,671,000	$ 718,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 718,000
Power Distribution Monitors	$ -	$ -	$ -	$ -	$ -	$ 50,000	$ 100,000	$ 100,000	$ -	$ 250,000	$ -	$ -	$ -	$ 500,000
Preliminary /Primary System Upgrades	$ 890,000	$ 1,000,000	$ 8,009,000	$ 7,415,000	$ 3,030,000	$ 4,434,000	$ 1,802,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,690,000
Pre-Pasteurization System Improvements	$ 50,000	$ -	$ 91,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 91,000
Process Air Compressor (PAC) System Upgrade	$ 11,521,000	$ 7,758,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,758,000
Security Services During Construction	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,400,000
SST Evaluation	$ -	$ -	$ 125,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 125,000
Stormwater System - Struct./Nonstruct. BMPs	$ -	$ -	$ -	$ -	$ -	$ -	$ 783,000	$ 828,000	$ 227,000	$ 9,000	$ 9,000	$ -	$ -	$ 1,856,000
Truck Scale Rehabilitation	$ -	$ -	$ -	$ -	$ -	$ -	$ 86,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 86,000
CONTINGENCY														
Contingency on Joint Funding Excluding RR	$ -	$ 1,850,410	$ 1,279,310	$ 1,226,510	$ 633,910	$ 1,657,810	$ 2,124,110	$ 2,760,610	$ 1,782,410	$ 722,910	$ 376,910	$ 14,414,900
Joint Capital Project Subtotal	**$ 46,571,500**	**$ 66,485,910**	**$ 155,833,310**	**$ 94,356,310**	**$ 101,962,810**	**$ 42,766,510**	**$ 27,876,010**	**$ 30,366,710**	**$ 19,606,510**	**$ 7,952,010**	**$ 4,146,010**	**$ 551,352,099**
ALEXRENEW 10-YEAR CIP TOTAL	**$ 48,592,000**	**$ 69,014,850**	**$ 159,410,650**	**$ 98,761,600**	**$ 107,905,250**	**$ 48,359,350**	**$ 32,872,650**	**$ 33,806,850**	**$ 22,323,950**	**$ 14,134,450**	**$ 7,212,150**	**$ 593,801,749**

Alexandria-Only CIP Project Details

The table below details the FY 2021-30 Alexandria-only CIP Projects and the strategic outcome to which they are attached. Following this summary are detailed project sheets for each project that include the project description, benefits, community impacts, lifetime budget, and other relevant details.

FY 2021-30 Capital Improvement Program – Alexandria Only

Projects	Watershed Stewardship	Operational Excellence	Adaptive Culture	Public Engagement and Trust	Effective Financial Stewardship
Arlington County Capital Contributions	●				
Bush Hill Service Chamber		●			
Capital Financing Fees					●
Commonwealth Interceptor Rehabilitation					●
IRR: Campus Wide Project		●			
IRR: Collection System Projects (Alex-only)		●			
Mark Center Pump Station Study		●			
NMF Wet Well Elimination		●			
Potomac Interceptor Rehabilitation					●
Potomac Yards Pump Station - Odor Control System Upgrades				●	
Potomac Yards Pump Station - Ventilation Improvement Project		●			
Potomac Yards Pump Station - Wet Well Chimney Exhaust Stack Modifications				●	

Arlington County Capital Contributions

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Finance	Various	Other Capital ☒ Alexandria Only ☐ Joint Use	20 Years	Ongoing

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$784,000	$1,173,000	$1,469,000	$1,577,000	$2,465,000	$3,894,000	$3,055,000	$1,029,000	$211,000	$2,000,000	$2,000,000	$18,873,000
Financing												
AlexRenew	$784,000	$1,173,000	$1,469,000	$1,577,000	$2,465,000	$3,894,000	$3,055,000	$1,029,000	$211,000	$2,000,000	$2,000,000	$18,873,000
Fairfax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- AlexRenew maintains 3.0 MGD in capacity rights for the City at the Arlington County Water Pollution Control Plant. Per the service agreement with the County, AlexRenew makes annual contributions to fund allocable portions of various capital improvements at the Arlington plant's facilities. Current capital projects to which AlexRenew has budgeted contributions include: Improvements to the Arlington plant's Eads Street Property (the plant's off-site warehouse which requires work to a retaining wall), Non-Expansion Maintenance Capital (includes HVAC improvements and energy optimization studies), Technology Enhancements (Process Control System projects to protect critical infrastructure), Odor Control, Primary Clarifier Upgrades (work to pumps, motors, and instrumentation), Secondary Clarifiers (necessary rehabilitation to support permit compliance), Solids Master Plan (both immediate needs such as replacing the motor control center and future phases that support a long-term solution to producing a Class A biosolids project) and the relining of the Four Mile Run Interceptor.

Benefits	Strategic Outcome Area
• This project ensures the Arlington plant remains in good condition to accommodate AlexRenew's capacity rights	• Watershed Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• While these milestones are the County's to manage, work is expected to begin on the odor control and solids master plan projects in FY 21	• Results in other operational efficiencies for the Arlington plant

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• None

Bush Hill Service Chamber

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Bush Hill	Service Chambers & PS Upgrades ☒ Alexandria Only ☐ Joint Use	20 Years	$1,350,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$150,000	$0	$150,000	$300,000	$750,000	$0	$0	$0	$0	$0	$0	$1,200,000
Financing												
AlexRenew	$150,000	$0	$150,000	$300,000	$750,000	$0	$0	$0	$0	$0	$0	$1,200,000
Fairfax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The Bush Hill Service Chamber was constructed in November 2002 to service the Holiday Inn located at 2460 Eisenhower Avenue. The Holiday Inn previously experienced sewer back-ups resulting from the surcharged Holmes Run Trunk Sewer, so the service chamber was constructed to prevent these backups from occurring on the property. This project begins with a condition study and follows up with a thorough equipment rehabilitation or replacement, as needed.
- This project will also consider the retrofitting of the inflow orifice with a bar screen if the wet weather load is considered significant.

Benefits	Strategic Outcome Area
• This project maintains the service chamber that eliminates the back-ups.	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• Start of evaluation	• Decreases/increases future O&M costs • Results in other operational efficiencies

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Bar screen portion: August 2017 Greeley & Hansen Condition Assessment Summary and Recommendations	• Start of project moved to FY21.

Capital Financing Fees

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Finance	Various	Service Chambers & PS Upgrades ☒ Alexandria Only ☐ Joint Use	20 Years	Ongoing

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$400,000	$750,000	$750,000	$750,000	$750,000	$600,000	$400,000	$400,000	$400,000	$400,000	$400,000	$6,000,000
Financing												
AlexRenew	$400,000	$750,000	$750,000	$750,000	$750,000	$600,000	$400,000	$400,000	$400,000	$400,000	$400,000	$6,000,000
Fairfax												
VRLF												
Grant												
Line of Credit												

Project Description and Justification

- AlexRenew has set aside funds in its capital budget to accommodate various fees associated with the financing of the capital program. These fees could include financial advisory fees related to the structuring of debt to fund both the General CIP and the RiverRenew program, legal fees such as Bond Counsel work to review legal documentation, rate consultant work to consider the impact of funding mechanism on rates, and application fees to potential grant or loan programs.

Benefits	Strategic Outcome Area
• Investing in capital finance fees helps ensure that capital financing is executed in the most efficient manner	• Effective Financial Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• Submit application fees to potential grant or loan programs • Initiate credit ratings process	• None

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Per Board guidance on capital and debt planning	• Modest increase in FY 21 budget to accommodate expected upfront loan fees

Commonwealth Interceptor Rehabilitation

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Commonwealth Avenue	Interceptor/Trunk Sewers Rehab. ☒ Alexandria Only ☐ Joint Use	20-30 years	$268,500

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$0	$0	$0	$18,500	$0	$0	$0	$0	$250,000	$0	$0	$268,500
Financing												
AlexRenew	$0	$0	$0	$18,500	$0	$0	$0	$0	$250,000	$0	$0	$268,500
Fairfax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

Based upon cleaning and inspection conducted in early 2018, the Commonwealth Interceptor is in good condition, having experienced a variety of rehabilitation projects in 1997, 2001, and 2008. However, there are recommendations based upon inspection:

- Monitor the excess grout detected downstream of MH6974, at the intersection of Wyatt and Commonwealth, for retention of debris
- Monitor the detached sliplining downstream of MH 9669, at the intersection of Myrtle and Commonwealth, for increased rates of infiltration or degradation
- Monitor failed slipliner repair downstream of MH 9593, as soon as practical, to determine if immediate action is required.

Benefits	Strategic Outcome Area
• Appropriate minor repairs and maintenance activities maximize asset life.	• Effective Financial Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Any cleaning and/or inspection on the Commonwealth requires coordination with Operations and Maintenance personnel to actively manage the flow downstream of the Four Mile Run Pumping Station. Cleaning activities require City permitting for traffic control, and parking impacts. • Citizens are to be notified if contractor equipment will be in their neighborhood.

Commonwealth Interceptor Rehabilitation (Continued)	
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Draft Sept. 2018 Greeley & Hansen Report "Commonwealth Interceptor Condition Assessment"	• Budget now reflects escalation to FY20 dollars.

IRR: Collection System Projects (Alex-Only)

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Operations & Maintenance Steve Hill	Four Mile Run PS Mark Center PS Outfalls Potomac Yards Slater's Lane PS	Improve., Rehab., Replacement ☒ Alexandria Only ☐ Joint Use	3 years for pumps and grinders	$1,242,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY2030	10 Yr Total
Total	$74,000	$229,400	$103,400	$82,400	$132,400	$146,400	$66,400	$132,400	$119,400	$109,400	$,,6,400	$1,168,000
Financing												
AlexRenew	$74,000	$229,400	$103,400	$82,400	$132,400	$146,400	$66,400	$132,400	$119,400	$109,400	$,,6,400	$1,168,000
Fairfax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This subprogram covers all improvement, rehabilitation and replacement projects associated with the pump stations, service chambers, and outfalls that are funded solely by AlexRenew.

Benefits	Strategic Outcome Area
• Full redundancy and reliability of Four Mile Run Pump Station, Mark Center Pump Station, outfalls, Potomac Yards and Slater's Lane Pump Station.	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• 100% compliance on all outfall maintenance related tasks • Rebuilt pumps at PYPS	• Elimination of possible basement backups • Increase equipment availability for high flow events • Increase equipment availability to process

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• Addition of FY 30 funding

IRR: Information Technology Projects

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Information Technology and River Renew (Business Owner) Holdren / Maldonado	Main and West Campus	Improve., Rehab., Replacement ☒ Alexandria Only ☐ Joint Use	10 years for Data Center and Network Improvements	$1,875,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$468,000	$350,000	$570,000	$250,000	$250,000	$150,000	$0	$0	$0	$0	$0	$1,575,000
Financing												
AlexRenew	$187,200	$140,000	$230,000	$100,000	$100,000	$60,000	$0	$0	$0	$0	$0	$630,000
Fairfax	$280,800	$210,000	$345,000	$150,000	$150,000	$90,000	$0	$0	$0	$0	$0	$945,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

This subprogram to the Improvement, rehabilitation and Replacement program covers the comprehensive enterprise-wide records management policy that complies with the Virginia Public Records Act (VPRA) guidelines provided by the Library of Virginia (LVA); supporting infrastructure and network to minimize outages , disruptions and extended unavailability; monitoring and securing the AlexRenew environment and updating the emergency notification systems.

Benefits	Strategic Outcome Area
• 24/7 near real time security monitoring and incident response. • Ensure and improve compliance with federal, state and local regulatory recordkeeping directives, • Establish a classification scheme that facilitates the capture, storage and speedy retrieval of records by staff when needed to conduct day-to-day business activities, preserve historically and culturally important records as well as provide support in litigation, • Prevention of technological obsolesces • Reduce physical storage space and staff resources required to maintain current paper records, and support continued and on-going awareness of staff recordkeeping responsibilities through the use of training. • Up to date security patching for critical assets. • And upgrading the emergency notification systems. • Vulnerability management and monitoring of network and hosts.	• Adaptive Culture

IRR: Information Technology Projects (continued)	
Key Milestones for FY 21	**Impact on Operations or Community**
• Development of detailed roadmap and roll out plan • Pilot of VDI solution • Security Event Monitoring and Incident Response	• Data is more secure • Decreased bandwidth requirements. • Information access is better controlled and managed • Operational, reputational, and legal risks are managed. • Provides secure, available, and accurate systems and data • Reduced hardware costs • Regulatory Compliance • Results in operational efficiencies
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Cybersecurity Assessment completed by AchillesShield, including assessment of vulnerabilities and hacker exploitation; and a physical security assessment • Electronic Records Management (ERM) As-Is Observation Report Contract: 14-016 Task Order 2015-1	• Additions to program • Change in timing • Reduction in outyear costs due to new planning

Mark Center Pump Station Study

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Mark Center Pump Station	Service Chambers & PS Upgrades. ☒ Alexandria Only ☐ Joint Use	N/A	$600,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$350,000	$0	$250,000	$0	$0	$0	$0	$0	$0	$0	$0	$250,000
Financing												
AlexRenew	$350,000	$0	$250,000	$0	$0	$0	$0	$0	$0	$0	$0	$250,000
Fairfax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The Mark Center Pump Station (MCPS) needs to be evaluated for potential upgrades.

Benefits	Strategic Outcome Area
• Full redundancy and reliability of the MCPS	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• Completion of study	• Increase equipment availability to process

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• Project delayed until FY21 • Costs reduced to reflect study only occurring in FY21.

NMF Wet Well Elimination

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building 60	WRRF Improvements ☒ Alexandria Only ☐ Joint Use	N/A	$200,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$200,000	$0	$0	$0	$0	$0	$0	$0	$0	$200,000
Financing												
AlexRenew	$0	$0	$80,000	$0	$0	$0	$0	$0	$0	$0	$0	$80,000
Fairfax	$0	$0	$120,000	$0	$0	$0	$0	$0	$0	$0	$0	$120,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The wet well in the NMF were originally designed for the tunnel wet weather pumping station connection. As the location of the wet weather pumping station has changed, the wet well is no longer needed. This project is for the design and construction of the elimination of the wet well.
- As the extent of the construction costs are unknown, the budget only reflects the design costs.

Benefits	Strategic Outcome Area
• This will eliminate an unused structure.	• Operational Excellence

Key Milestones for FY21	Impact on Operations or Community
• Design NTP	• Decrease future O&M costs

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• New Project

Potomac Interceptor Rehabilitation

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	East Alexandria	Interceptor/Trunk Sewers Rehab. ☒ Alexandria Only ☐ Joint Use	20-30 years	$7,603,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$0	$0	$0	$423,000	$1,000,000	$1,545,000	$1,545,000	$3,090,000	$0	$7,603,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$423,000	$1,000,000	$1,545,000	$1,545,000	$3,090,000	$0	$7,603,000
Fairfax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

Based upon CCTV inspection of the interceptor in 2015/2016, the largest finds were settlement in the area of Jones Point Park. Recommendations include:

- Replace the 1,450 linear feet of 42-inch pipe within Jones Point Park
- Rehabilitate all 26 manholes of Potomac Interceptor
- Reinspect the entire length of the Potomac Interceptor
- Phased lining of the entire length, which is now exhibiting exposed aggregate, and in some segments, staining from reinforcing steel.

Due to RiverRenew, all work prior to FY2025 has been postponed. Work in FY2025 includes CCTV to reconfirm the repairs and some immediate manhole repairs.

Benefits	Strategic Outcome Area
• Maximize asset life.	• Effective Financial Stewardship

Key Milestones for FY21	Impact on Operations or Community
• N/A	• Any cleaning and/or inspection on the Potomac Interceptor requires City permitting for traffic control, and parking impacts. • Citizens are to be notified if contractor equipment will be in their neighborhood. • Permits required for work in the National Park Service jurisdiction.

Potomac Interceptor Rehabilitation (continued)	
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• 2017 Greeley and Hansen Report, "Potomac Interceptor Condition Assessment Summary and Recommendations"	• Budget updated to reflect dollars as FY20.

Potomac Yards Pump Station – Odor Control System Upgrade Project

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Potomac Yards Pumping Station	Service Chambers and PS Upgrades ☒ Alexandria Only ☐ Joint Use	20 years	$2,533,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$19.000	$236,000	$1,100,000	$1,178,000	$0	$0	$0	$0	$0	$0	$2,533,000
Financing												
AlexRenew	$0	$19.000	$236,000	$1,100,000	$1,178,000	$0	$0	$0	$0	$0	$0	$2,533,000
Fairfax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Project Purpose: Minimize odor impacts of Potomac Yards Pumping Station on adjacent community. Upgrade Potomac Yards Pumping Station odor control system to treat entire exhaust air flow of 14,000 cfm.
- Background: The Potomac Yards Pumping Station was installed by a developer in 2009 and officially transferred to AlexRenew in 2018. The Potomac Yards Pumping Station has been experiencing elevated odors due to the configuration of the ventilation and odor control system installed by the developer. The existing carbon odor control system located in the Compactor Room currently treats 4,000 cfm of exhaust air. The remaining portion of exhaust air bypasses treatment and exits through the chimney. The proposed work associated with the Ventilation System Improvements CIP Project will increase the exhaust airflow rate to 14,000 cfm. This leaves 10,000 cfm of exhaust air that will bypass treatment. It is recommended that a separate study be prepared for the odor control system to determine if upsizing the system is warranted. For cost estimating purposes, it has been assumed that a new odor control system is required to treat the full exhaust airflow rate of 14,000 cfm. Due to limited space, the new odor control system is proposed outside the pump station building with a new concrete pad and architectural wall for screening.
- Project Components: This project includes the installation of a new 14,000 cfm carbon odor control vessel with architectural screen walls and associated duct work.
- Procurement Method: Design-bid-build

Potomac Yards Pump Station – Odor Control System Upgrade Project (continued)	
Benefits	**Strategic Outcome Area**
• Sizing the odor control system to treat all exhaust air minimizes the impacts on the community and builds trust.	• Public Engagement and Trust
Key Milestones for FY 21	**Impact on Operations or Community**
• Study: July 2027 • Preliminary Engineering Report: November 2027 • Final Design / Bid: August 2028 • Notice to Proceed: January 2029 • Final Completion: December 2029	• Reduces impacts on community by controlling objectionable odors from the Potomac Yards Pumping Station.
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Recommendations from the Technical Memorandum for the Potomac Yards Pump Station Ventilation and Odor Control System Evaluation, August 26, 2019	• New Project • Assumptions: Estimated costs are presented in FY 2021 dollars.

Potomac Yards Pump Station – Ventilation Improvement Project

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Potomac Yards Pumping Station	Service Chambers and PS Upgrades ☒ Alexandria Only ☐ Joint Use	20 years	$247,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$32,000	$100,000	$115,000	$0	$0	$0	$0	$0	$0	$0	$247,000
Financing												
AlexRenew	$0	$32,000	$100,000	$115,000	$0	$0	$0	$0	$0	$0	$0	$247,000
Fairfax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Project Purpose: Improve the ventilation of the screen room and compactor room in the Potomac Yards Pumping Station to achieve the 12 Air Changes per Hour (ACH) required by NFPA 820 to declassify the rooms and protect operation and maintenance staff from potential sewer gas.
- Background: The Potomac Yards Pumping Station was installed by a developer in 2009 and officially transferred to AlexRenew in 2018. The Potomac Yards Pumping Station has been experiencing elevated odors due to the configuration of the ventilation and odor control system installed by the developer. Several defects have been identified within the existing air extraction and discharge system. Due to these defects, the system is inadequately discharging exhaust air from the building which is causing the presence of foul air around the pump station. It is recommended that fan EF-4 be upsized to a capacity of 4,500 cfm to achieve the minimum supply air change rate of 12 air changes per hour (ACH) in the building. This will allow the building to remain as a declassified space in accordance with NFPA 820 requirements. To produce a negative pressure on the building and prevent fugitive emissions from the pump station, it is also recommended that the exhaust air flow rate be increased to 14,000 cfm. This requires the installation of two new in-line exhaust fans within the exhaust air ducts in the Compactor Room. These exhaust fans will also help promote the movement of exhaust air towards the chimney. Lastly, there are four areas within the existing air ducts where upgrades are recommended to promote proper circulation of airflow.
- Project Components: This project includes the relocation of two supply air duct release points in the Screen Room closer to the potent foul air to promote better circulation of airflow; extension of an exhaust air duct to the opposite side of the Screen Room to improve foul air capture and reduce the potential for short-circuiting; installation of two volume dampers on the exhaust air ducts and a new exhaust air intake in the Compactor Room to improve airflow and move exhaust air towards the chimney.
- Procurement Method: Design-bid-build

Potomac Yards Pump Station – Ventilation Improvement Project (continued)	
Benefits	**Strategic Outcome Area**
• Improving the system will enhance airflow throughout the building and better disperse foul air into the atmosphere.	• Operational Excellence
Key Milestones for FY 21	**Impact on Operations or Community**
• Preliminary Engineering Report: July 2025 • Final Design / Bid: August 2026 • Notice to Proceed: December 2026 • Final Completion: December 2027	• Provides safe working environment for operation and maintenance staff.
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Recommendations from the Technical Memorandum for the Potomac Yards Pump Station Ventilation and Odor Control System Evaluation, August 26, 2019	• New Project

Potomac Yards Pump Station – Wet Well Chimney Exhaust Stack Modifications

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Potomac Yards Pumping Station	Service Chambers and PS Upgrades ☒ Alexandria Only ☐ Joint Use	20 years	$31,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$0	$31,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$31,000
Financing												
AlexRenew	$0	$31,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$31,000
Fairfax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Project Purpose: Improve air dispersion from the Wet Well Chimney Exhaust Stack to reduce odors adjacent to the Potomac Yards Pumping Station.
- Background: The Potomac Yards Pumping Station was installed by a developer in 2009 and officially transferred to AlexRenew in 2018. The Potomac Yards Pumping Station has been experiencing elevated odors due to the configuration of the ventilation and odor control system installed by the developer. The Wet Well Chimney Exhaust Stack Modifications will improve the air dispersion and reduce the odors adjacent to the pumping station.
- Project Components: This project includes the modification of the chimney exhaust stack from 44" x 44" square to a round 34" FRP duct at the top of the chimney, elimination of chimney's side louvers and remove steel cap at top to direct air flow vertical.
- Procurement Method: Assign to Annual Contractor

Benefits	Strategic Outcome Area
• Improving the system will better disperse foul air into the atmosphere. This will improve air quality outside the building and address recent complaints of strong odor on the adjacent recreational courts.	• Public Engagement and Trust

Key Milestones for FY 21	Impact on Operations or Community
• Final Design / NTP to Annual Contractor: July 2020 • Final Completion: December 2027	• Better dispersion of exhaust air into the atmosphere will improve air quality at the pump station and help alleviate foul air at the adjacent recreational courts.

Potomac Yards Pump Station – Wet Well Chimney Exhaust Stack Modifications (continued)

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Recommendations from the Technical Memorandum for the Potomac Yards Pump Station Ventilation and Odor Control System Evaluation, August 26, 2019	• New Project • Assumptions: The estimated costs have been escalated to FY 2021 dollars based on an inflation rate of 3%.

Joint Use Facilities CIP Project Details

The table below and on the following page detail the FY 2021-30 Joint-use CIP Projects and the strategic outcome to which they are attached. Following this summary are detailed project sheets for each project including the project description, benefits, community impacts, lifetime budget, and other relevant details. Also included are descriptions of the Improvement, Renewal and Replacement Projects that are funded from the Joint IRR Fund.

Projects	Watershed Stewardship	Operational Excellence	Adaptive Culture	Public Engagement and Trust	Financial Stewardship
Biosolids Management: Biosolids Master Plan		●			
Biosolids Management Building 55: Additional Cooling for Digesters		●			
Biosolids Management: Building 55: Replace Valves on W3 Cooling System		●			
Biosolids Management Building 55: Solids Screen Replacement		●			
Biosolids Management: Solids/Resource Recovery Upgrade					●
Building 22 Primary Weir Observation House		●			
Building 60: NMF SCADA Improvements		●			
Building F: Effluent W3 System Improvements					●
Building G/3 Filter Underdrain Replacement		●			
Campus-Wide Electrical Upgrade Sub-Program					●
Campus-Wide FOB Network Planning and Installation					●
Commonwealth Interceptor Pile Intrusion		●			
Environmental Center - 5th Floor Build Out			●		
Environmental Center - Lobby Upgrade				●	
HMI Upgrade			●		
Holland Lane Realignment					●
IRR: Campus Wide Projects					●
IRR: Collection System Projects					●
IRR: Campus Digital Signage			●		
IRR: Centrate Pretreatment Facility		●			
IRR: Information Technology Projects			●		
IRR: Preliminary/Primary Infrastructure		●			
IRR: Secondary Infrastructure		●			
IRR: Solids Infrastructure					●
IRR: Tertiary Infrastructure		●			
IRR: Tertiary Treatment Improvements		●			
IRR: WRRF Fire Alarm Upgrade			●		
Main Campus Galleries Improvements		●			
Odor Control System Upgrade				●	

Continued on following page

Joint Use Facilities CIP Project Details

Continued from previous page

Projects	Watershed Stewardship	Operational Excellence	Adaptive Culture	Public Engagement & Trust	Financial Stewardship
PLC Equipment and Network Upgrade					●
Power Distribution Monitors		●			
Preliminary /Primary System Upgrades					●
Pre-Pasteurization System Improvements		●			
Process Air Compressor (PAC) System Upgrade					●
RiverRenew 108 to 116 mgd Expansion		●			
RiverRenew Bdg J Fac. Reloc. & Decom.		●			
RiverRenew Site Security and Access	●				
RiverRenew Tunnel System	●				
Security Services During Construction					●
South Carlyle Partnership	●				
SST Evaluation	●				
Stormwater System - Struct./Nonstruct. BMPs	●				
Upper Holmes Run Trunk Sewer Rehabilitation					●
WRRF HVAC Automation System Upgrade					●
WRRF: Truck Scale Rehabilitation	●				

Biosolids Management: Biosolids Master Plan

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building L Building 55	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	N/A	$671,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$40,000	$0	$490,000	$141,000	$0	$0	$0	$0	$0	$0	$0	$631,000
Financing												
AlexRenew	$16,000	$0	$196.000	$56,400	$0	$0	$0	$0	$0	$0	$0	$216,000
Fairfax	$24,000	$0	$294,000	$84,600	$0	$0	$0	$0	$0	$0	$0	$324,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Biosolids Master Plan: This project is to create a master plan for the AlexRenew biosolids. This will look at final uses of the biosolids, pre-pasteurization, upcoming regulations, compare options for use with what others are doing in the metropolitan area, and way to reduce volume. As a part of the planning process, the selected engineer will perform an analysis of the current polymer system. Also, the selected engineer will study the Building L odor scrubber and piping and determine if improvements can be made.
- The following CIP/IRR projects will be effected by the results of the plan:
  - Biosolids Management: Building 55: Additional Cooling for Digesters
  - Biosolids Management: Building 55: Replace Valves on W3 Cooling System
  - Biosolids Management: Solids/Resource Recovery
  - Odor Control System Upgrade
  - Pre-Pasteurization System Improvements
  - IRR: Solids Infrastructure

Benefits	Strategic Outcome Area
• Determination of how to handle biosolids for the upcoming 20 years. • Improve performance and increased solids processing capacity.	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• Biosolids Master Plan NTP	• Determination of how to handle biosolids for the upcoming 20 years.

Biosolids Management: Biosolids Master Plan

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Solids Handling and Energy Optimization Update to the Long Range Plan (CH2M, January 2017) • AlexRenew BOA 14-017-2 Task Order WA2-2015-4, Pre-pasteurization System Evaluation, Heat Exchangers Recommendations – Draft, January 2016 • AlexRenew BOA 14-017-2 Task Order WA2-2015-4, Pre-pasteurization Tank Exhaust System Replacement, Preliminary Design, December 2015 • Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• Combination of Building L: Odor Scrubber and Piping Study, and Building L: Polymer System Study • Addition of Biosolids Master Plan and Additional Cooling for Digesters • Changing of timing for polymer study

Biosolids Management: Building 55: Additional Cooling for Digesters

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building 55	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	N/A	$520,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$312,000	$208,000	$0	$0	$0	$0	$0	$0	$0	$520,000
Financing												
AlexRenew	$0	$0	$124,800	$83,200	$0	$0	$0	$0	$0	$0	$0	$208,000
Fairfax	$0	$0	$187,200	$124,800	$0	$0	$0	$0	$0	$0	$0	$312,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

Historically, the heat exchangers have used plant effluent water and have been unable to cool the pasteurized sludge to mesophilic anaerobic digestion temperatures (95 deg F) during summer months. Digester upset will occur if the digesters operate above the healthy digester operating range. This project will install a new chiller system, pumps, and a heat exchange to increase the cooling capacity in the summer. The need for this project will be confirmed by the Biosolids Master Plan project.

Benefits	Strategic Outcome Area
• Improved digester performance during summer months. Minimize risk of digester upset.	This project supports the Board of Directors' strategic outcomes for: • Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Improved operations during summer months.

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Solids Handling and Energy Optimization Update to the Long Range Plan (CH2M, January 2017) • Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• New Project

Biosolids Management: Building 55: Replace Valves on W3 Cooling System

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building 55	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	N/A	$20,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$20,000	$0	$0	$0	$0	$0	$0	$0	$0	$20,000
Financing												
AlexRenew	$0	$0	$8,000	$0	$0	$0	$0	$0	$0	$0	$0	$8,000
Fairfax	$0	$0	$12,000	$0	$0	$0	$0	$0	$0	$0	$0	$12,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

Pre-pasteurization heat exchanges have not been able to cool down the sludge to the desired temperature in summer. This may be due to insufficient cooling water being provided to the system due to faulty pressure regulating valves. This project would replace the pressure regulating valves and check their setting (minimum 50 psig). This project will be completed based on the results of the Biosolids Management: Biosolids Master Plan project.

Benefits	Strategic Outcome Area
• Improve pre-pasteurization performance by operating at lower capacity per unit and increase total capacity	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Increase operational efficiencies

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• New project

Biosolids Management: Building 55: Solids Screen Replacement

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building 55	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	N/A	$830,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$498,000	$332,000	$0	$0	$0	$0	$0	$0	$0	$830,000
Financing												
AlexRenew	$0	$0	$199,200	$132,800	$0	$0	$0	$0	$0	$0	$0	$332,000
Fairfax	$0	$0	$298,800	$199,200	$0	$0	$0	$0	$0	$0	$0	$498,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

Solids screen are a current process limitation, since they cannot pass the design flow at the design percent solids concentration (200 gpm @5.4% solids each screen). This project would replace the screens with new technology to improve solids capture. This project is dependent upon the results of the Biosolids Management:Biosolids Master Plan.

Benefits	Strategic Outcome Area
• Improve performance and increased solids processing capacity.	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Increased operational efficiencies

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Solids Handling and Energy Optimization Update to the Long Range Plan (CH2M, January 2017) • Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• New project

Biosolids Management: Solids/Resource Recovery Upgrades

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building L Building A Building C	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	20 Years for Equipment	$20,824,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$0	$0	$0	$0	$0	$3,039,000	$5,628,000	$5,628,000	$5,628,000	$901,000	$0	$20,824,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$1,215,600	$2,251,200	$2,251,200	$2,251,200	$360,400	$0	$8,329,600
Fairfax	$0	$0	$0	$0	$0	$1,823,400	$3,376,800	$3,376,800	$3,376,800	$540,600	$0	$12,494,400
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

In FY2017, an update to the Long Range Plan was performed looking specifically at the solids handling processes. This project would implement the recommendations related to improved carbon utilization and resource recovery at the facility. These include: Gravity Thickener evaluation and improvements (due to impacts of chemically enhanced primary treatment), digestion process evaluation and implementation of recuperative thickening, combined heat-and-power evaluation and implementation, co-digestion (FOG or food waste) evaluation and implementation, onsite energy use and HVAC evaluation and improvements.
The design and construction project would be preceded by the following studies and evaluations as outlined in the Long Range Plan Update:

- Gravity Thickener Evaluation
- Digestion Evaluation
- Combined Heat and Power (CHP) Study
- Co-Digestion FOG Evaluation
- These evaluations will also be preceded by the Biosolids Management: Biosolids Master Plan project completion.

These can be contracted separately or together. The project is proposed to be procured through a Design-Bid-Build method. Key milestones are TBD.

Benefits	Strategic Outcome Area
The tunnel system and plant upgrades will significantly reduce the volume and frequency of combined sewer overflows to Alexandria's waterways. Increasing the peak flow through the WRRF is an important component of the proposed approach that will provide full treatment to the pumped flows and help protect the environment.	• Effective Financial Stewardship

Building 22: Primary Weir Observation House

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building 22	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	N/A	$5,712,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$0	$0	$0	$0	$2,094,000	$3,101,000	$517,000	$0	$0	$5,712,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$0	$837,600	$1,240,000	$206,800	$0	$0	$2,284,800
Fairfax	$0	$0	$0	$0	$0	$0	$1,256,400	$1,860,000	$310,200	$0	$0	$3,427,200
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

Based on the results of the Primary Weir Observation House Condition Evaluation (see Preliminary/Primary System Upgrades project), the house will be repaired or replaced.

- Repaired: Recommendation for repairs may include sandblasting interior walls and the ceiling to remove any corroded or rusted materials; painting exposed metallic elements; and replacing instrumentation & control equipment that cannot be rehabilitated.
- Replacement: Recommendation for replacement to include removing the building and installing aluminum flat covers over the weir area. Installation of the flat covers requires the existing 60-in odorous air pipe to be rerouted; however, no additional odor treatment capacity is required. Eliminates safety risks since fall risk (into the tanks) is mitigated.

The replacement costs are budgeted.

Benefits	Strategic Outcome Area
• Update control and instrumentation equipment • Update important infrastructure	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Increase operational efficiencies/safety

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP

Building 60: NMF SCADA Improvements

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Operations and Maintenance TBD	Building 60	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	N/A	$150,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$150,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$150,000
Financing												
AlexRenew	$0	$60,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$60,000
Fairfax	$0	$90,000e	$0	$0	$0	$0	$0	$0	$0	$0	$0	$90,000e
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The Nutrient Management Facility (NMF) is located on the West Plant Site and balances the nutrient loading to the BRBs by storing diverted primary effluent (PE) and returning stored flows to the BRBs during below-average loading periods. The nutrient management pumps are used for recirculating, mixing the NMF contents, and for flushing the NMF tank floors.
- This project will modify SCADA programming to reduce tank recirculation and flushing times to improve operations.

Benefits	Strategic Outcome Area
• Reduced tank recirculation and flushing times.	• Operational Excellence

Key Milestones for FY21	Impact on Operations or Community
• Project NTP	• Improved operations

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• New project

Building F: Effluent W3 System Improvements

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building F	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	TBD	$336,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$136,000	$200,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$200,000
Financing												
AlexRenew	$54,400	$80,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$80,000
Fairfax	$81,600	$120,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$120,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- A review of the entire system via BOA is anticipated in FY 2021.

Benefits	Strategic Outcome Area
• Full redundancy and reliability of the W3 Water System that feed water throughout AlexRenew's Wastewater processing • Maintain AlexRenew W3 output pressure • Maintain the cleanliness of the W3 Water output	• Effective Financial Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• Start study for future improvements	• Increase equipment availability for high flow events • Increase equipment reliability for future RiverRenew Project

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• None

Building G/3: Filter Underdrain Replacement

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building G/3	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	N/A	$2,860,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$0	$0	$0	$330,000	$330,000	$2,200,000	$0	$0	$0	$2,860,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$132,000	$132,000	$880,000	$0	$0	$0	$1,144,000
Fairfax	$0	$0	$0	$0	$0	$198,000	$198,000	$1,320,000	$0	$0	$0	$1,716,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Based on the results of the assessment of the filter underdrain (see Tertiary Treatment Improvements Project), the recommendation may be to repair all 22 filter underdrains. This includes the cost of removing filter media, repairing underdrains, and replacing filters one filter at a time to maintain plant operations. Assessment results to determine extent of repairs required.

Benefits	Strategic Outcome Area
• Improve operation	• Operational Excellence

Key Milestones for FY21	Impact on Operations or Community
• N/A	• Improve ease of operation

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• New project

Campus-Wide Electrical Upgrade Sub-Program

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Main Campus	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	20 -30 years	$14,992,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$0	$0	$0	$0	$781,000	$3,334,000	$3,278,000	$4,301,000	$2,652,000	$646,000	$0	$14,992,000
Financing												
AlexRenew	$0	$0	$0	$0	$312,400	$1,333,600	$1,311,200	$1,720,400	$1,060,800	$258,400	$0	$5,996,800
Fairfax	$0	$0	$0	$0	$468,600	$2,000,400	$1,966,800	$2,580,600	$1,591,200	$387,600	$0	$8,995,200
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

In 2011 Greeley and Hanson performed an Energy Master Plan Study. As a result of the study, 9 projects were identified to plant reliability and safety. The UV disinfection upgrades recommended are not included in this project.

Project C-2: Switchgear 1A Upgrades: Switchgear "1A" was installed in 1978 to serve the Carbon Facilities in Building "G" and the Tertiary Sedimentation Tanks. The Carbon Facilities were removed in the early 2000s. The Tertiary Sedimentation Tanks remain in-service along with the building loads (HVAC and lighting). Switchgear "1A" has reached the end of its useful life. The Switchgear bus has corrosion and spare parts are difficult to find. The primary feed to Switchgear "1A" should also be replaced as part of the Switchgear "1A" upgrades.

Project C-3: Electrical Boiler Study: This study is to reassess the functionality of the electric boilers within a larger context of energy neutrality, sustainability and cost effectiveness. Since the size of Switchgear "C" and associated transformers are directly related to the outcome of this study, it should be performed before specifying the replacement for Switchgear "C".

Project C-4: Arc Flash Hazard Reduction Project: Switchgears SS-1 and SS-2 and Switchgears "L-1" and "L-2" have very dangerous arc flash ratings. This would retrofit Switchgears SS-1 and SS-2 with remote Trip/Racking devices and Switchgears "L-1" and "L-2 with ARMs devices to lower arc flash hazards for electricians performing routine maintenance.

Project C-5: Emergency Power for Control Room: The power supply to the control room is currently backed up with a single UPS. This UPS is fed from a single plant bus, and there is currently no second feed from the other plant bus to the control room. In the event of the total loss of the bus feeding the UPS, the control room will be out of power when the UPS batteries are exhausted, which will result in a loss of the SCADA system used to monitor and operate the treatment plant.

Campus-Wide Electrical Upgrade Sub-Program Continued

It is recommended that improvements to the control room power supply include an ATS connected to both busses of Switchgear "1A" that will provide a real time emergency power backup system for the plant's SCADA system including UPS power. Step the second source down to 208 volts from 480 volts and connect the two sources to the control room UPS power system through a new ATS. Provide an external manual maintenance bypass switch to remove the UPS from the circuit for maintenance without losing power to the control room. A separate standby generator should also be considered.

Project C-6: Switchgear "C" Upgrades: Switchgear "C" was installed in 1976 to serve the Rotating Biological Contactors (RBCs) and the gravity thickening facilities. As new improvements were incorporated into the plant processes, more loads and MCCs have been added to Switchgear "C". Currently Switchgear "C" supplies power to the following Motor Control Centers (MCCs) and facilities:

- MCC-MC-2: Abandon RBC Equipment and building loads including MCC-MC-1
- MCC-MT-1: Gravity Thickening Facility installed in 1981
- MCC-N-A1B1: UV Disinfection Facility
- MCC-F-1A1B: Post Aeration and Plant Water (W3)
- MCC-55 and 55-C: Pre-Pasteurization
- Electrical Boilers 1 and 2

Switchgear "C" has reached the end of its useful life and is currently overloaded. If one of the electrical feeds is lost and the tie breaker must be closed to restore service, Switchgear "C" cannot support the downstream loads without intentionally disabling the electric boilers. MCCs MT-1, MC-1, and MC-2 have also reached the end of their useful life and each has several buckets/breakers that are abandoned. MCC-MC-1, and MCC-MC-2 should be consolidated into a single double ended MCC. The UV Disinfection Facility upgrades should be separated from Switchgear "C" upgrades. Transformers TC-1 and TC-2 serving Switchgear "C" should be replaced during Switchgear "C" upgrades with transformers sized for the remaining loads on the switchgear less the UV processes. New conductors should be installed from SS-1 to the new TC-1 and TC-2 transformers and from the TC-1 and TC-2 transformers to the transformers servicing MCC-20-1A1B. New conductors will also be required between Switchgear "C" and the downstream MCCs.

Project C-7: Utility Supply Improvements: Analysis of power reliability requirements for this site indicates that the provisions of the Virginia DEQ SCAT Regulations define the mandatory level of electrical reliability. There are two aspects of the current utility delivery system required modification to improve the regulatory compliance and electrical reliability of utility supply, which are described are relocation of one of the two Dominion aerial distribution feeders and addition of a fire block between the Dominion transformers.

Project C-8: Access Building 23 Electrical Upgrades: The switchboard in Access Building 23 provides power to Return Activated Sludge Pumps, Waste Activated Sludge Pumps, and the Secondary Sedimentation Tank Sludge Collection equipment. The two main breakers and the tie breaker in Switchboard 23 are no longer supported. A complete shutdown of the switchboard will be required to replace the tie breaker.

Project C-9: Building "G" Electrical Upgrades: Building "G" was installed in the late 1970s to house the Carbon Facilities and the Tertiary Sedimentation.

Campus-Wide Electrical Upgrade Sub-Program Continued

Tanks support facilitates. The Carbon Facilities were removed in the early 2000s. The Tertiary Sedimentation Tanks remain in-service along with miscellaneous Building "G" loads (HVAC and lighting). The major Motor Control Centers (MCCs) that supply power to these facilities are as follows:

- MA-1: Building "G" loads, and Intermediate Pump ValvesMA-2: Building "G" loads, and abandon Carbon Facilities
- MA-3, MCC G1, MCC G2, and PA-1: Building "G" loads
- PA-2 and PA-3: Building "G" loads and Tertiary Sedimentation Tanks

MCCs MA-1, MA-2, MA-3, PA-1, PA-2, and PA-3 have reached the end of their useful life and spare parts are difficult to find. It is recommended that these MCCs be upgraded to improve the electrical reliability of Intermediate Pumping Station and the Tertiary Sedimentation Tanks.

Benefits	Strategic Outcome Area
• Ensure aged or intermediate projects have not compromised electrical reliability.	• Effective Financial Stewardship
Key Milestones for FY 21	**Impact on Operations or Community**
• N/A	• Remedial efforts may require coordination with operations and/or maintenance teams at AlexRenew.
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• 2011 Greeley and Hansen report "Energy Master Plan Study."	• None

Campus Wide FOB Network Planning and Installation

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering Jeff Lindsay	Main Campus	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	25 years	$1,881,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$1,186,000	$395,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$395,000
Financing												
AlexRenew	$474,400	$158,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$158,000
Fairfax	$711,600	$237,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$237,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This project is for a complete rebuilding of the fiber backbone.
- This upgrade/replacement is due to the undersizing of the system to meet emerging needs.
- This project is task order 001 of AlexRenew Contract 19-062. The task order includes planning and construction of the campus-wide network backbone to existing assets.
- The entire construction portion will be completed by November 2020.

Benefits	Strategic Outcome Area
• This will increase the available speed. • Increase scalability of system to account for an increase in the number of smart devices being used	• Effective Financial Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• Complete construction • Train AlexRenew Staff • Commission	• Completion of the project will require some outages. • A follow-on project will be needed to place all current devices on the new system

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Current five digital signs across campus	• New Project

Commonwealth Interceptor Pile Intrusion

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	88 feet south of Junction Box 34	Interceptor/Trunk Sewers Rehab. ☐ Alexandria Only ☒ Joint Use	40 years	$790,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$0	$0	$0	$0	$183,000	$607,000	$0	$0	$0	$790,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$0	$73,200	$242,800	$0	$0	$0	$316,000
Fairfax	$0	$0	$0	$0	$0	$0	$109,800	$364,200	$0	$0	$0	$474,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- During a closed circuit television inspection of the 72-inch CI conducted in 2006, an intrusion was discovered approximately 88 feet downstream of Junction Box 34. The intrusion appears to be from the installation of a pile supporting the odorous airline that crosses the Commonwealth Interceptor in this area. This project will eliminate the intrusion.

Benefits	Strategic Outcome Area
• More than 80% of the dry weather flow treated at AlexRenew is conveyed by the CI. Although being monitored, the pipe requires rehabilitation to ensure extended, reliable performance.	• Operational Excellence

Key Milestones for FY21	Impact on Operations or Community
• N/A	• Decreases future O&M costs • Reduces risk

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• 2014 Report "72 Inch Commonwealth Interceptor Repair Plan"	• Budget now reflects escalation to FY20 dollars.

Environmental Center-5th Floor Build-Out

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Environmental Center	Non-Process Facilities ☐ Alexandria Only ☒ Joint Use	40 years	$1,200,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$0	$0	$0	$1,200,000	$0	$0	$0	$0	$0	$0	$0	$1,200,000
Financing												
AlexRenew	$0	$0	$0	$612,000	$0	$0	$0	$0	$0	$0	$0	$612,000
Fairfax	$0	$0	$0	$588,000	$0	$0	$0	$0	$0	$0	$0	$588,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- As originally constructed, the Environmental Center was left with a customizable 5th floor. This future buildout is intended to provide full functionality for that space.

Benefits	Strategic Outcome Area
• Optimize use of existing infrastructure	• Adaptive Culture

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Results in other operational efficiencies.

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• Change in project timing

Environmental Center: Lobby Upgrade

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Communications TBD	Environmental Center Lobby	Non-Process Facilities ☐ Alexandria Only ☒ Joint Use	8 years	$235,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 20230	10 Yr Total
Total	$150,000	$0	$85,000	$0	$0	$0	$0	$0	$0	$0	$0	$85,000
Financing												
AlexRenew	$76,500	$0	$43,350	$0	$0	$0	$0	$0	$0	$0	$0	$43,350
Fairfax	$73,500	$0	$41,650	$0	$0	$0	$0	$0	$0	$0	$0	$41,650
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This project will update the lobby and enhance the visitor experience
- The project includes a changing display in Environmental Center front lobby to reflect the water system in Alexandria, adding RiverRenew elements to multiple display areas, and creating a setup to display TBM footage in the lobby.

Benefits	Strategic Outcome Area
• Update displays to reflect the RiverRenew elements, enhancing community understanding of the program and AlexRenew's expanded role • Updated displays encourages return visitors	• Public Engagement & Trust

Key Milestones for FY21	Impact on Operations or Community
• Change "Renewing Your Connection" display to Alexandria water system display • Add TBM signage and model to house display • Add tunnel as addition to pipes in PYP area • Create two TBM soft sculptures • Add a video setup to display TBM footage in the lobby	• Will require coordination with RiverRenew on installation, maintenance and output of camera system.

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• Compressed phases into one phase. • Change in project timing

HMI Upgrade

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering Felicia Glapion	WRRF	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	10 years	$4,017,193

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$2,182,000	$1,730,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,730,000
Financing												
AlexRenew	$872,800	$692,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$692,000
Fairfax	$1,309,200	$1,038,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,038,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This is a 5-phase project to replace WinCC with Factory Talk View SE. Screens will be updated to new standards. PLC code will be rewritten to reference the new standards. Phases 1-3 are complete.
- Phase 4 will be detailed design/HMI Dev/PLC Programing
- Phase 5 is the final rollout, testing and completion.

Benefits	Strategic Outcome Area
• Reduce the number of screens to provide concise graphical information • Reduce the number of ghost alarms • Eliminate stability issues inherent to WinCC • Develop scalable control system to meet future demands • Improve fault tolerance • Develop HMI and PLC standards	• Adaptive Culture

Key Milestones for FY 21	Impact on Operations or Community
• Complete project	• Increase operational efficiencies through improved user experience • Reduce ghost alarms

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• 2016 SCADA Master Plan	• Updated for costs based on current estimates

Holland Lane Realignment

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Holland Lane	Non-Process Facilities ☐ Alexandria Only ☒ Joint Use	N/A	$300,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$0	$0	$0	$0	$0	$0	$300,000	$0	$0	$0	$0	$300,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$0	$120,000	$0	$0	$0	$0	$120,000
Fairfax	$0	$0	$0	$0	$0	$0	$180,000	$0	$0	$0	$0	$180,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Per developer agreement, this project accounts for the AlexRenew share for the realignment of Holland Lane.

Benefits	Strategic Outcome Area
• N/A	• Effective Financial Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• This project will disrupt activities on Holland Lane.

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• Project moved to FY2026.

IRR: Campus Wide Projects

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Operations and Maintenance Paul Lamphier	WRRF	Improve., Rehab., Replacement ☐ Alexandria Only ☒ Joint Use	4 years for odor media 6 years for cranes 10 years for vehicles 10 years for NMF media 15 year for odor scrubber and piping	$5,590,500

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$384,500	$500,600	$215,600	$265,600	$335,600	$1,043,600	$285,600	$235,600	$215,600	$470,600	$215,600	$3,784,000
Financing												
AlexRenew	$153,800	$200,240	$86,240	$106,240	$134,240	$417,440	$114,240	$94,240	$86,240	$188,240	$86,240	$1,513,600
Fairfax	$230,700	$300,360	$129,360	$159,360	$201,360	$626,160	$171,360	$141,360	$129,360	$282,360	$129,360	$2,270,400
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This subprogram covers all improvement, rehabilitation and replacement projects associated with non-process facilities work at the WRRF. This includes, but is not limited to roof, concrete, HVAC, reclaimed water system, vehicles, and odor control repairs/replacement. This subprogram also includes the AlexRenew website.

Benefits	Strategic Outcome Area
• Full optimization of the Methane Gas supply generation using the Absorption Chillers • Increased brand recognition • Increased brand recognition. • Maintain AlexRenew's odor quality control • Maintain reliability and effectiveness of the steam, chiller, odor control, plant air, and HVAC systems • Maintain the availability and integrity of the cranes and buildings • More efficient and reliable vehicles for employee transportation • Reduce carbon emissions • Reduce citizen and city official complaints about website. • Use of reclaimed water allows for AlexRenew to reduce its water usage	• Operational Excellence

IRR: Campus Wide Projects (continued)

Key Milestones for FY 21	Impact on Operations or Community
• Accept delivery of new vehicle • Complete plant air system, chiller, HVAC system and crane repairs • Complete rebuilt/replace of one (1) Odor Scrubber • Complete review of valve exercising program • Complete roof and drain replacements • Pass boiler inspection Complete Plant Air System repairs • Replace front entry doors with a more reliable system for staff and public use • Start of reclaimed water system testing	• Environmental Air Quality Control • Increase availability of reclaimed water. • Increase equipment availability for process and high flow events • Increase equipment reliability for future RiverRenew Project • Lessen the carbon footprint • Maintain proper air change in Class I DIV II environments • Maintain roof integrity to prevent equipment damage. • Maintain safety for crane operators • Maintain the esthetic of the plant to blend in the surrounding community
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• SOP-X-NMF Odor Control System Carbon Replacement (by CH2M 12/30/15) • Website Reinvention Business Case (12/19/17) • GHD Site Visit report from 06/14/2018	• Addition of FY30 funding • Updated to reflect rehabilitation timing changes.

IRR: Collection System Projects (Joint Use)

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Operations & Maintenance Steve Hill	Pumping Stations	Improve., Rehab., Replacement ☐ Alexandria Only ☒ Joint Use	4 years for pumps	$80,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$8,000	$0	$15,000	$15,000	$0	$0	$15,000	$15,000	$0	$0	$15,000	$75,000
Financing												
AlexRenew	$3,200	$0	$6,000	$6,000	$0	$0	$6,000	$6,000	$0	$0	$6,000	$30,000
Fairfax	$4,800	$0	$9,000	$9,000	$0	$0	$9,000	$9,000	$0	$0	$9,000	$45,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This subprogram covers all improvement, rehabilitation and replacement projects associated with the pump stations, service chambers, and outfalls that are funded by AlexRenew and Fairfax.

Benefits	Strategic Outcome Area
• Full redundancy and reliability of pumping stations • Maintain the buildings integrity. • Secure equipment from water damage	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Increase equipment availability to process • Maintain roof integrity to prevent equipment damage • Maintain the esthetic of the plant to blend in the surrounding community

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• Addition of FY 30 funding

IRR: Campus Digital Signage

Managing Department and Champion	Project Location	Project Category	Estimated Useful Life	Lifetime Budget
Communications TBD	WRRF and EC	Non-Process Facilities ☐ Alexandria Only ☒ Joint Use	5 years	$280,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$0	$140,000	$0	$0	$0	$0	$140,000	$0	$0	$0	$0	$280,000
Financing												
AlexRenew	$0	$140,000	$0	$0	$0	$0	$140,000	$0	$0	$0	$0	$280,000
Fairfax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This project will upgrade the digital signage across campus. This upgrade will enable more comprehensive and informative communications across campus to all staff, in an efficient, simultaneous, and visually appealing manner. It will include the digital signs, software, installation, programming, and training. Annual maintenance will also be required.

Benefits	Strategic Outcome Area
• Allows for fast and efficient communications with AlexRenew staff. • Staff feedback indicated that the digital signs are the preferred method of communication about news and events across our campus. • The upgrade will allow the placement of more signs in high traffic areas. The upgrade will also allow for more dynamic and static content to the used on the signs.	• Adaptive Culture

Key Milestones for FY 21	Impact on Operations or Community
• Acquire, program and start up new digital signage network, with an option to add additional signage at the completion of RiverRenew.	• Installation will require minor electrical maintenance team assistance. • Will provide team with the information to communicate more effectively with each other, and to attend key events.

IRR: Centrate Pre-Treatment Facility Improvements

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building 69 (CPT Facility) Building L (Basement)	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	20 Years for Equipment	$516,000

Expenditure	Prior Year	FY 2021	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr Total
Total	$0	$185,000	$258,000	$0	$0	$0	$0	$0	$0	$0	$0	$443,000
Financing												
AlexRenew	$0	$74,000	$103,200	$0	$0	$0	$0	$0	$0	$0	$0	$177,200
Fairfax	$0	$111,000	$154,800	$0	$0	$0	$0	$0	$0	$0	$0	$265,800
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The centrate pre-treatment facility uses the DEMON™ process to reduce the nitrogen content of the dewatering centrate prior to return to the BRBs. The facility was placed into operation in 2015 and operates well but requires capital improvements for improved performance. Improvements include replacing the existing cyclone feed pumps which are prone to frequent clogging and implementing some modifications to the centrate transfer piping to divert poor quality centrate to gravity thickener 5 or the blended sludge tank.
- The project is proposed to be procured through a Design-Bid-Build method with AlexRenew using one of their on-call contractors. Some of the work will be done by the blower vendor (Neuros) on their equipment.

Benefits	Strategic Outcome Area
• Increase reliability of the system. • Reduce downtime and maintenance needed on the pumps and process upsets caused by poor quality centrate.	• Operational Excellence

IRR: Centrate Pre-Treatment Facility Improvements (continued)

Key Milestones for FY 21	Impact on Operations or Community
• Perform study on type of pumps to use for replacement • Develop engineering concept for piping modifications for centrate diversion	• Improving capture of dirty centrate away from the CPT system would reduce the amount of manual cleaning that has to be performed on the strainers and the pumps by plant personnel. • Automating the blower operation would reduce/eliminate the need for manual cycling/exercising of the blowers and improve air flow control and process performance. • Operations and maintenance personnel should be engaged in identifying possible solutions and selecting alternatives to be implemented.
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Centrate Pre-Treatment Recycle Pumps Performance Deterioration TM (CH2M, May 2016) • Summary of Centrate Pre-Treatment Blower Failure Investigation, Evaluation and Recommendations TM (CH2M, February 2017) • Email correspondence from Grace Richardson/AlexRenew on July 5, 2017 providing direction on how to proceed.	• Pump replacement and centrate piping modifications were moved to FY 2021.

IRR: Information Technology Projects

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Information Technology and River Renew (Business Owner) Holdren / Maldonado	Main and West Campus	Improve., Rehab., Replacement ☒ Alexandria Only ☐ Joint Use	10 years for Data Center and Network Improvements	$1,875,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$468,000	$600,000	$570,000	$250,000	$250,000	$150,000	$0	$0	$0	$0	$0	$1,575,000
Financing												
AlexRenew	$187,200	$240,000	$230,000	$100,000	$100,000	$60,000	$0	$0	$0	$0	$0	$630,000
Fairfax	$280,800	$360,000	$345,000	$150,000	$150,000	$90,000	$0	$0	$0	$0	$0	$945,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

This subprogram to the Improvement, rehabilitation and Replacement program covers the comprehensive enterprise-wide records management policy that complies with the Virginia Public Records Act (VPRA) guidelines provided by the Library of Virginia (LVA); supporting infrastructure and network to minimize outages , disruptions and extended unavailability; monitoring and securing the AlexRenew environment and updating the emergency notification systems.

Benefits	Strategic Outcome Area
• 24/7 near real time security monitoring and incident response. • Ensure and improve compliance with federal, state and local regulatory recordkeeping directives, • Establish a classification scheme that facilitates the capture, storage and speedy retrieval of records by staff when needed to conduct day-to-day business activities, preserve historically and culturally important records as well as provide support in litigation, • Prevention of technological obsolesces • Reduce physical storage space and staff resources required to maintain current paper records, and • Support continued and on-going awareness of staff recordkeeping responsibilities through the use of training. • Up to date security patching for critical assets. • And upgrading the emergency notification systems. • Vulnerability management and monitoring of network and hosts.	• Adaptive Culture

IRR: Information Technology Projects (continued)

Key Milestones for FY 21	Impact on Operations or Community
• Development of detailed roadmap and roll out plan • Pilot of VDI solution. • Security Event Monitoring and Incident Response	• Data is more secure • Decreased bandwidth requirements. • Information access is better controlled and managed • Operational, reputational, and legal risks are managed. • Provides secure, available, and accurate systems and data • Reduced hardware costs • Regulatory Compliance • Results in operational efficiencies
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Cybersecurity Assessment completed by AchillesShield, including assessment of vulnerabilities and hacker exploitation; and a physical security assessment. • Electronic Records Management (ERM) As-Is Observation Report Contract: 14-016 Task Order 2015-1	• Additions to program • Change in timing • Reduction in outyear costs due to new planning

IRR: Preliminary/Primary Infrastructure

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Operations and Maintenance Paul Lamphier	WRRF	Improve., Rehab., Replacement ☐ Alexandria Only ☒ Joint Use	6 Years for raw sewage pump Yearly for probes and instruments 10 years for >100 Hp Motors 10 years for Large VFDs	$1,743,333

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$333,333	$343,333	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000	$130,000	$130,000	$313,333	$1,396,666
Financing												
AlexRenew	$133,333	$137,333	$32,000	$32,000	$32,000	$32,000	$32,000	$32,000	$52,000	$52,000	$125,333	$558,666
Fairfax	$200,000	$206,000	$48,000	$48,000	$48,000	$48,000	$48,000	$48,000	$78,000	$78,000	$188,000	$838,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This subprogram covers all improvement, rehabilitation and replacement projects associated with liquid unit processes in preliminary and primary facilities. This includes, but is not limited to VFDs, settling tanks, probes, motors, pumps and instrumentation.

Benefits	Strategic Outcome Area
• Reliability of the preliminary/primary infrastructure • Improve accuracy on flow, level, pressure, etc. • Improved and advanced automation	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• Upgrade VFDs • Complete replacement or repair of process instruments • Complete rebuilt or replacement of a Raw Sewage Pump • Replacement of motors with >100 Hp • Rehabilitation of primary settling tank system.	• Decreases future O&M costs • Reduces risk • Increase equipment availability to process

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• This project complements Building A: Raw Sewage Pump Replacement	• Costs updated to reflect newest quote and scheduling • FY30 funding

IRR: Secondary Infrastructure

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Operations and Maintenance Paul Lamphier	WRRF	Improve., Rehab., Replacement ☐ Alexandria Only ☒ Joint Use	12 years for BRB actuators 5 years for large BRB mixers 10 years for small BRB mixers 5 years for RAS pumps 10 years for VFDs 15 years for NMF actuators 6 years for BRB mix liquor pumps	$6,119,333

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$613,333	$1,156,333	$513,000	$573,000	$50,000	$370,000	$293,000	$733,000	$292,000	$370,000	$233,333	$3,483,667
Financing												
AlexRenew	$245,333	$462,533	$205,200	$229,200	$20,000	$148,000	$117,200	$293,200	$116,800	$148,000	$93,333	$1,833,467
Fairfax	$ 368,000	$693,800	$307,800	$343,800	$30,000	$222,000	$175,800	$259,800	$175,800	$222,000	$140,000	$2,750,200
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This subprogram covers all improvement, rehabilitation and replacement projects associated with liquid unit processes in secondary facilities. This includes, but is not limited to, BRB AUMA actuators, NMF actuators, BRB mixers, VFDs, probes, motors, pumps and instrumentation repair and replacement; and additional air flow monitoring in SST Influent Channel.

Benefits	Strategic Outcome Area
• Improve accuracy on flow, level, pressure, etc. • Reliable diversion and transfer of flow using NMF • Reliability and efficiency of the secondary infrastructure	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• Complete rebuilt or replacement of 4 BRB Mixers • Complete rebuilt or replacement of 6 Mixed Liquor Pumps • Complete replacement of all actuators for one (1) BRB Tank • Complete replacement or repair of process instruments • Delivery of new NMF actuators • NMF Actuators installed, tested and online • Replace 6 of the 12 RAS pumps • Robicon VFDs replaced	• Increase equipment availability to process • Increase equipment availability for high flow events

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• Addition of FY 30 funding • Change in funding to meet new replacement/rehabilitation schedule

IRR: Solids Infrastructure

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Operations and Maintenance Paul Lamphier	WRRF	Improve., Rehab., Replacement ☐ Alexandria Only ☒ Joint Use	Yearly for probes 2 years for screen presses 12 years for heat exchanger actuators 10 years for >100 hp motors	$13,202,500

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$1,750,500	$1,744,500	$1,280,500	$1,128,500	$457,500	$447,500	$694,500	$1,441,500	$1,536,500	$1,254,500	$683,500	$10,669,000
Financing												
AlexRenew	$700,200	$697,800	$512,200	$451,400	$183,000	$179,000	$277,800	$576,600	$614,600	$501,800	$273,400	$4,267,600
Fairfax	$1,050,300	$1,046,700	$768,300	$677,100	$274,500	$268,500	$416,700	$864,900	$921,900	$752,700	$410,100	$6,401,400
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This subprogram covers all improvement, rehabilitation and replacement projects associated with the solids processing flow train. This includes, but is not limited to, digestors, actuators, motors, screen presses, pumps, probes and instrumentation

Benefits	Strategic Outcome Area
• Full redundancy and reliability of the solids processing equipment • Maintain AlexRenew Bio-solids Class A output • Extended equipment life associated with polymer feed • Maintain consistent solids percentage • Full optimization of the Methane Gas supply generation • Reduce Carbon Emissions • Reduced pump maintenance due to excessive ragging • Reduced pump and pipe maintenance due to excessive ragging	• Financial Stewardship

IRR: Solids Infrastructure (continued)

Key Milestones for FY 21	Impact on Operations or Community
• 2 Polymer Feed Pumps installed, tested and online • 8-10 VFDs installed, tested and online • Complete 1 screen press replacement • Complete rebuild of one (1) TCEN • Complete rebuild of one (1) DCEN • Complete rehab of one (1) digester tank • Complete replacement of all actuators for one (1) Pre-Past Heat Exchanger • Delivery of 4 new and rebuilt Seepex Pumps • Complete rebuilt of two 30HP Explosion Proof Heat Exchangers motor • Complete rehab of one (1) Thickening Tank • Complete replacement of one (1) Centrate Recycle pump • Complete initial investigatory testing to confirm if fecal regrowth is occurring in AlexRenew biosolids. • Complete replacement or repair of process instruments	• Increase equipment availability for high flow events • Increase equipment availability for solids process • Increase equipment reliability for future RiverRenew Project • Requires DMR reporting at sample point of compliance and evaluating process equipment to ensure no negative impacts to process or equipment from Pre-Pas temperatures.
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Biosolids testing/sampling action plan approved October 2019 • Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• Addition of FY 30 funding • Change in rehabilitation/replacement timing

IRR: Tertiary Infrastructure

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Operations and Maintenance Paul Lamphier	WRRF	Improve., Rehab., Replacement ☐ Alexandria Only ☒ Joint Use	6 years for UV system parts Yearly for probes 10 years for >100 Hp motors 10 years for Inter. PS pumps 10 years for VFD replacements	$4,525,333

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$761,333	$890,333	$258,000	$413,000	$128,000	$85,000	$328,000	$85,000	$256,000	$413,000	$439,333	$3,295,667
Financing												
AlexRenew	$304,533	$356,133	$103,200	$165,200	$51,200	$34,000	$131,200	$34,000	$102,400	$165,200	$175,733	$1,318,267
Fairfax	$456,800	$534,200	$154,800	$247,800	$76,800	$51,000	$196,800	$51,000	$153,600	$247,800	$263,600	$1,977,400
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- This subprogram covers all improvement, rehabilitation and replacement projects associated with liquid unit processes in tertiary and disinfection treatment facilities. This includes, but is not limited to, UV system parts, instruments, probes, motors, pumps, VFDs replacements.

Benefits	Strategic Outcome Area
• Redundancy and reliability of the tertiary and disinfection systems • Improve accuracy on flow, level, pressure, etc. • Improved and advanced automation	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• Building G/3: Install TST Solids Meters • Building G/3: Pilot Program for New Solids Meters • Complete rebuilt or replacement of an Intermediate Pump • Complete rebuilt or replacement of equipment for a Tertiary Tank • Complete rebuilt or replacement one (1) Wash Water Pump • Installation, and testing of Robicon VFD replacements • Replace of motors with >100 Hp • Replacement or repair of process instruments • UV System Parts installed, tested and online	• Increase equipment availability to process • Increase equipment reliability for future high flow events

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• Addition of FY 30 funding • Change in project timing

IRR: Tertiary Treatment Improvements

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building G/3	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	N/A	$89,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$72,000	$17,000	$0	$0	$0	$0	$0	$0	$0	$0	$89,000
Financing												
AlexRenew	$0	$28,800	$6,800	$0	$0	$0	$0	$0	$0	$0	$0	$35,600
Fairfax	$0	$43,200	$10,200	$0	$0	$0	$0	$0	$0	$0	$0	$53,400
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Building G/3: Automate TST Flow Control: Typical flow through each tertiary settling tank (TST) is 5 to 10 MGD, which is significantly below the design criteria of 18 MGD. Low-flow operation of the TSTs allows for a slow build-up of material on the settling plates that is flushed out during high flows or wet weather events. Intermittent operation at higher flow rates of one or two TSTs will mitigate the impact of the solids flush compared to when the flow rates to all TSTs suddenly increase, such as during wet weather. Furthermore, regular high-flow operation allows more TSTs to be offline, which would support the routine deep cleaning schedule. The project will update SCADA programming to automate the influent flow control valves and the flow split between the TSTs.
- Building G/3: Upgrade System for Sludge Recirculation: Sludge recirculation is a recognized industry practice to improve tertiary settling tank (TST) operations and reduce alum dosing. AlexRenew previously used the sludge recirculation system regularly but discontinued the practice since significant operator time was required to operate the manual valves. This project will motorize and automate 24 valves to simplify the sludge recirculation system for regular use in TST operations. It assumes 2 valves for each of the 12 pumps (i.e. 24 valves total) would be automated; the automated valves would be used to direct sludge to recirculation or wasting.
- Building G/3: Assess Filter Underdrain: The tertiary treatment filtration system includes 22 mono-media, gravity filters. The condition of the underdrains cannot be directly assessed or observed without hiring a specialty contractor to remove the media. As part of the Filter & TST Risk Assessment (2019), O&M personnel were advised to monitor surface boils since the boils can indicate damaged air headers or underdrains. If filter performance is affected or boils significantly worsen, the project will include hiring a specialty contractor to remove the media in one of the filters, inspect the underdrains and air headers, and develop a condition report that could be used to estimate the required repairs for the system. If the existing filter media is of good quality, recommendation may include re-balancing media between the filters (using existing media) while this equipment is on-site.

IRR: Tertiary Treatment Improvements

Benefits	Strategic Outcome Area
• Intermittent high-flow operation will reduce large solids flushes during wet weather events and will allow more TSTs to be offline for routine deep cleaning. • Automating the system for high-flow operation will provide improve wet weather operations and facilitate O&M activities. • Upgrading existing equipment to reduce Operator effort required and improve usability. • Sludge recirculation will decrease chemical spending (i.e. alum) and improve final effluent quality. • Assessment of equipment condition and remaining life will be used to maintain filter system and increase equipment lifetime and performance.	• Operational Excellence
Key Milestones for FY21	**Impact on Operations or Community**
• TBD	• Improves wet weather operations. • Assists regular maintenance activities. • Improve ease of operation; reduced O&M costs; and better final effluent quality • Assessment will be used for operational improvements that will improve solids removal and plant performance.
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4), Pending, draft final submitted in September 2019. • Filters and Tertiary Settling Tanks Engineering Evaluation Report (BOA WA2-2019-3), Pending, draft final submitted in September 2019.	• New project

IRR: WRRF Fire Alarm Upgrade

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Safety Alex Rigby	WRRF	Non-Process Facilities Program ☐ Alexandria Only ☒ Joint Use	15 Years	$1,550,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$250,0000	$0	$0	$0	$0	$0	$300,000	$1,000,000	$0	$0	$0	$1,300,000
Financing												
AlexRenew	$100,000	$0	$0	$0	$0	$0	$120,000	$400,000	$0	$0	$0	$520,000
Fairfax	$150,000	$0	$0	$0	$0	$0	$180,000	$600,000	$0	$0	$0	$780,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The WRRF Fire Alarm System was scheduled to be upgraded in FY18/19, but those upgrades have been delayed. The panels remain obsolete, and parts availability is becoming more and more difficult to source out for replacement and repairs. AlexRenew has an existing NJPA contract vehicle to use for future work.

Benefits	Strategic Outcome Area
• Full redundancy and reliability of the Campus Fire Alarm System	• Adaptive Culture

Key Milestones for FY 21	Impact on Operations or Community
• Complete upgrade of the Campus Fire Alarm System	• Increase employee safety within the campus buildings and grounds

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Johnson Controls' Memo on existing panels being obsolete.	• Delays in timing of replacements of panels based on previous years' priorities.

Main Campus Galleries Improvements

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	WRRF	WRRF Improvement Program ☐ Alexandria Only ☒ Joint Use	TBD	$1,300,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$0	$0	$0	$500,000	$500,000	$300,000	$0	$0	$0	$1,300,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$200,000	$200,000	$120,000	$0	$0	$0	$520,000
Fairfax	$0	$0	$0	$0	$0	$300,000	$300,000	$180,000	$0	$0	$0	$780,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

AlexRenew's walkable gallery system, some of which was constructed as early as the 1950s, houses mechanical and electrical utilities and piping. This project involves rehabilitation tasks recommended after conducting an assessment of the tunnels and utility piping, during the process of creating of a unified and comprehensive map of utilities within the tunnel system.

Benefits	Strategic Outcome Area
• This project will help better identify, quantify and maintain existing assets.	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• This project will reduce future maintenance costs and renew existing assets, preventing unforeseen failure.

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• Project start moved to 2025.

Odor Control System Upgrade

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	WRRF	WRRF Improvement Program ☐ Alexandria Only ☒ Joint Use	TBD	$2,500,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$0	$0	$0	$500,000	$0	$0	$1,000,000	$1,000,000	$0	$2,500,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$200,000	$0	$0	$400,000	$400,000	$0	$1,000,000
Fairfax	$0	$0	$0	$0	$0	$300,000	$0	$0	$600,000	$600,000	$0	$1,500,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

This project involves the assessment of the odor control system and identification of needs for new capital improvements to ensure AlexRenew is minimizing its effect on current and future neighbors. The first phase would a study/evaluation that would include:

- System wide analysis (confirming all air loads/ventilation rates are still good, as aeration in BRBs has dropped, etc.)
- Updated dispersion modeling
- System wide re-balancing

The scope of this project will be affected by the results of the Biosolids Management: Biosolids Master Plan.

Benefits	Strategic Outcome Area
• This project will ensure our campus remains a good neighbor by minimizing the likelihood of receiving odor complaints.	• Public Engagement and Trust

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• This project will ensure our campus remains a good neighbor by minimizing the likelihood of receiving odor complaints.

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• Project moved to 2025 to account for RiverRenew

PLC Equipment and Network Upgrade

Managing Department and Champion	Project Location	Project Category	Estimated Useful Life	Lifetime Budget
Operations and Maintenance Jeff Lindsay	WRRF	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	15 years	$2,750,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$1,671,000	$718,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$718,000
Financing												
AlexRenew	$668,400	$287,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$287,200
Fairfax	$1,002,600	$430,800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$430,800
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Replacement of legacy Allen Bradley PLCs with modern hardware and network is necessary due to the old PLC5 no longer be supported.
- Installing new PLC hardware will expand processing power while ensuring the control system remains operational and hardware remains supported by the manufacturer.

Benefits	Strategic Outcome Area
• Installing new PLC hardware will expand processing power while ensuring the control system remains operational and hardware remains supported by the manufacturer.	• Effective Financial Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• Complete project	• Will require outage for each PLC upgrade

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• SCADA Master Plan	• Costs updated to reflect the newest estimates.

Power Distribution Monitors

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	WRRF	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	10 years	$500,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$0	$0	$0	$0	$0	$50,000	$100,000	$100,000	$0	$250,000	$0	$500,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$20,000	$40,000	$40,000	$0	$100,000	$0	$200,000
Fairfax	$0	$0	$0	$0	$0	$30,000	$60,000	$60,000	$0	$150,000	$0	$300,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The current power distribution monitors are obsolete and rely on proprietary communication technology. Replacement of existing power monitors with Ethernet connectivity and network replacement of DH+ with Ethernet will be required. The current system of power consumption monitoring is inadequate in terms of the number of power monitors and its ability to interpret data.
- Power monitor audit will begin in FY 2025 and the results will determine the number and location of additional monitors needed.

Benefits	Strategic Outcome Area
• Enhance the system so that data interpretation can be used to make operational changes. • Enhance understanding of resource consumption	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• A series of outages will be necessary to transition every device onto the new system. • Identification of cost savings opportunities in terms of power consumption

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• SCADA Master Plan	• None

Preliminary/Primary System Upgrades

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building A Building K Building 22	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	20 years for Raw Sewage Pump 20 Years for Coarse Screens 15 Years for Sluice Gates	$26,580,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$890,000	$1,000,000	8,009,000	$7,415,000	$3,030,000	$4,434,000	$1,802,000	$0	$0	$0	$0	$25,690,000
Financing												
AlexRenew	$356,000	$400,000	$3,203,600	$2,966,000	$1,212,000	$1,773,600	$720,800	$0	$0	$0	$0	$10,276,000
Fairfax	$534,000	$600,000	$4,805,400	$4,449,000	$1,818,000	$2,660,400	$1,081,200	$0	$0	$0	$0	$15,414,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The first step of this project is to perform an evaluation, alternative analysis and sub project prioritization for the entire preliminary/primary systems. As a result of this evaluation, the subprojects listed below may be completed. The evaluation may result in different subprojects.
- The primary sludge pumping system consists of twelve (12) pumps which remove sludge from the bottom of the primary settling tanks and pump it to the gravity thickeners. The primary sludge pumps need rehabilitation and/or replacement due to corrosion and age. The primary sludge pumps may not have adequate capacity should CEPT be implemented. This project also includes new variable frequency drives (VFDs) for the pumps and improvements to the ferric chloride and polymer distribution systems for improved CEPT performance. These are proposed to be procured through a Design-Bid-Build method.
- The Wet Well Sluice Gates 1 and 2 are scheduled to be rebuilt based on O&M recommended runtime hours.
- Building A: Operate Coarse Screens with New Level Sensors: Trash accumulates in processes downstream of coarse screens. Coarse screens to operate on head differential instead of on a timer, which will increase solids capture and extend the screen life. Recommendation is to install a different type of level sensors (e.g. ultrasonic; radar) downstream and upstream of the screens to monitor differential level across the screen. Controls (SCADA programming) will be modified to incorporate new sensors and set points.
- Building K: Operate Fine Screens with New level Sensors: Trash accumulates in processes downstream of fine screens. Fine screens to operate on head differential instead of on a timer, which will increase solids capture and extend the screen life. Recommendation is to install a different type of level sensors (e.g. ultrasonic; radar) downstream and upstream of the screens to monitor differential level across the screen. Controls (SCADA programming) will be modified to incorporate new sensors and set points.
- Building K: Replace Grit Cyclone Underflow Boxes: Grit underflow boxes were installed in 2001 and are nearing the end of their useful life with clear signs of corrosion. Failure of the boxes could result in grit spills and lost equipment functionality/redundancy. Recommendation is to replace corroded grit cyclone underflow boxes since these are easily replaced and will increase the overall lifespan of the entire grit system.
- Building 22: Remove Obsolete Piston Pumps: The piston pumps are no longer in-service nor needed since the existing pumps are redundant/obsolete.

Preliminary/Primary System Upgrades Continued

Recommendation is to remove the old piston pumps, especially if equipment is already mobilized in the area to replace the primary pumps. The work can then be completed for very negligible additional cost.

- Building K: Scum Concentrator Replacement: The existing primary scum handling system has experienced extended outages. However, primary scum disposal is fundamental to reduce solids loadings; to improve performance of preliminary, primary, and secondary treatment; and to reduce the risk of foaming and Nocardia growth in the secondary treatment. This project will replace the existing scum concentrator system with a new scum screening system. Scum screening, comprised of a rotary wedgewire drum screen, a dewatering press/conveyor, and ancillary equipment, has similar layout/area requirements and has successfully replaced scum concentrators at other plants.
- Building A: Install Coarse Screen Platform: There is limited access to the rake motor at the top of each coarse screen impacts maintenance. Equipment reliability is critical, because the process does not have a redundant unit, and problems due to trash/solids can become amplified in downstream processes. Furthermore, limited access increases safety risk for staff. Recommendation to install a platform for accessing the top of the screens, which will facilitate regular maintenance of the motor and drive and improve plant safety.
- Building A: Coarse Screen Replacement: Recommendation is to replace coarse screens with either in-kind (same technology) or with new technology, including a smaller bar rack (e.g. 2-inch spacing vs. 3-inch).
- Building K: Fine Screens Replacement: The fine screening system consists of four screening channels located in Building K and was placed into operation in 2001. Each screening channel has an automatically cleaned fine screen with 6 mm (1/4-inch) openings. The capacity of this system is adequate to treat the planned peak raw influent flow (116 MGD) plus 2-3 MGD of recycles (drains and stormwater) with three channels in service (one redundant channel). The existing screens (Parkson AquaGuard) have been identified as candidates for replacement because of their poor performance. The screens do not effectively remove debris from the plant flow due to the configuration/design of the screen. Undesirable rags and trash frequently pass through the screening process and cause equipment problems/clogging downstream. The project will replace the fine screening equipment with newer technology such as center-flow band screens with 6 mm perforated plate openings or other technology that provides better capture. The screenings washer/press would also be replaced.
- Building K: Grit Handling Reconfiguration: Reconfigure grit handling system to discharge directly into truck bay below and to bypass the existing conveyor system. This will remove two conveyors from the system. By keeping the abrasive grit material out of the other conveyors, it will reduce maintenance and increase equipment life on the remaining system. A material distribution system will be installed on the chutes that drop into the truck bay to avoid mounding of grit in the trailers.
- Building K: Grit Handling Install V-force Baffle: Grit has been observed downstream of the grit chambers (Pista Grits). Recommendation is to improve Pista-Grit performance with V-force baffle (by Smith & Loveless) or equivalent technology. Modifications increase the grit extraction path, thus increasing the amount of grit captured on the chamber's floor and reducing grit build-up near the inlet channel.
- Building K: Replace Grit Handling Equipment: Recommendation to replace grit cyclones/classifiers with newer technology (i.e. Huber or Vulcan). With the new system, the equipment layout can be reconfigured to eliminate the grit transfer conveyors and result in long-term O&M savings.
- Building 22: Assess Primary Weir House Observation Condition: The Primary Weir Observation House shows evidence of rusting and metal corrosion, likely due to the high humidity environment. Recommendation is to assess the corrosion of the existing Primary Weir Observation House and identify the required repairs/schedule.
- The Raw Sewage Pump Station was originally constructed in 1954. The pump station consists of six vertical, end-suction, centrifugal type pumps that pump the full influent flow of the plant. The pumps are re-built on a scheduled basis (about 1 per year). The pump station can pump the design peak flow of 116 MGD plus 2-3 MGD of internal recycles (stormwater and drains). However, the pump station is still not performing as indicated by the pump curves. Newly rebuilt pumps tend to pump 5-6 MGD more flow than older pumps.

Pre-Pasteurization System Improvements

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building K	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	20 years for equipment	$241,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$50,000	$0	$91,000	$0	$0	$0	$0	$0	$0	$0	$0	$91,000
Financing												
AlexRenew	$20,000	$0	$36,400	$0	$0	$0	$0	$0	$0	$0	$0	$36,400
Fairfax	$30,000	$0	$54,600	$0	$0	$0	$0	$0	$0	$0	$0	$54,600
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Pre-pasteurization capacity is currently limited by the number of heat exchanger units that can be operated simultaneously in auto-mode. This project will adjust controls on the pre-pasteurization system to allow all three heat exchangers to operate simultaneously at lower capacity with no redundancy. This adjustment reviewed as a part of the Biosolids Management: Biosolids Master Plan Project.

Benefits	Strategic Outcome Area
• This will improve the efficiency of the system.	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Increase operational efficiencies

Pre-Pasteurization System Improvements (continued)	
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Solids Handling and Energy Optimization Update to the Long Range Plan (CH2M, January 2017) • AlexRenew BOA 14-017-2 Task Order WA2-2015-4, Pre-pasteurization System Evaluation, Heat Exchangers Recommendations – Draft, January 2016 • AlexRenew BOA 14-017-2 Task Order WA2-2015-4, Pre-pasteurization Tank Exhaust System Replacement, Preliminary Design, December 2015 • Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• Addition of heat exchanger control modifications.

Process Air Compressor (PAC) System Upgrades

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering Nyika Roberson-Ramos	WRRF	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	20 years	$20,507,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$11,521,000	$7,758,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,758,000
Financing												
AlexRenew	$4,608,400	$3,103,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,103,200
Fairfax	$6,912,6000	$4,654,800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,654,800
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

The current Process Air Compressor (Blower) system consists of five blowers designed to provide air to the Biological Reactor Basins (BRBs) for aeration and to the Secondary Settling Tanks (SSTs) for mixing. This project involves replacing existing blowers with High Speed Turbos within a new building located on the BRB tanks. The aeration header and all of the diffusers in BRB 2 will also be replaced under this project. The project will be constructed by February 2021 in order to out of the way for the Wet Weather tunnel contractor to be onsite.

Benefits	Strategic Outcome Area
• This project will improve energy efficiency and provide operational flexibility	• Effective Financial Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• Complete construction • Train AlexRenew Staff • Commission • Project Completion, February 16, 2021	• Decrease future O&M costs for blowers, electrical gear, and aeration header • Improved BRB operational flexibly & efficiencies (better blower turn-down) • Blower Building on top of BRB tanks will be visible to public

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• 30% Design/PER, December 2018 (HDR) • 100%Design/Bid Documents, April 2019 (HDR) • Construction NTP, July 7, 2019 (ACE, Inc.)	• The project has moved from design into construction.

RiverRenew 108 to 116 mgd Expansion

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering Caitlin Feehan	Building L (PEPS) Building K (Gallery)	RiverRenew ☐ Alexandria Only ☒ Joint Use	25 Years for Equipment	$6,072,615

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$2,909,000	$740,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$740,000
Financing												
AlexRenew	$1,163,600	$296,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$296,000
Fairfax	$1,745,400	$444,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$444,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

In April 2017, a new Virginia law was passed requiring that all four of Alexandria's existing combined sewer outfalls be brought into compliance by July 1, 2025.

In compliance with the new law, AlexRenew and the City of Alexandria submitted a joint Long Term Control Plan Update (LTCPU), which was approved by the Virginia Department of Environmental Quality (VDEQ) in June 2018. The LTCPU recommends construction of a storage/conveyance tunnel system coupled with upgrades to AlexRenew's Water Resources Recovery Facility (WRRF) to capture and treat combined sewer overflows. This program was branded as RiverRenew in July 2018.

One of the elements of the LTCPU is an increase in the peak instantaneous raw influent flowrate that is treated at the AlexRenew WRRF from 108 to 116 MGD. The WRRF will treat the increased peak flow through preliminary and primary treatment and store a portion of the treated primary effluent in the Nutrient Management Facility in order to maintain the current peak hydraulic conditions through the secondary and tertiary treatment. The 108 to 116 MGD expansion project involves upgrades needed to increase the peak flow through the preliminary and primary processes which include: increasing the capacity of the primary effluent pump station (PEPS) pumps and re-routing the filter backwash wastewater (FBWW) recycle to relieve hydraulic constraints in the preliminary treatment facility (Building K). The selected approach for increasing the PEPS capacity is to replace the pump's pull-out assembly (POA) which includes the impeller, the shaft, the bearings and the seals. The pump motors and VFDs will not be replaced. Additional improvements include suction flow straighteners for each pump, new seal water assemblies and instruments for each pump, and an additional cooling system for the electrical room that houses the pump drives to dissipate the heat load.

The project was procured through a Design-Bid-Build method with AlexRenew pre-selecting and pre-purchasing the pump POAs from the manufacturer as this element is on the critical path in order to meet the schedule.

RiverRenew 108 to 116 mgd Expansion (continued)	
Benefits	**Strategic Outcome Area**
The tunnel system and plant upgrades will significantly reduce the volume and frequency of combined sewer overflows to Alexandria's waterways. Increasing the peak flow through the WRRF is an important component of the proposed approach that will provide full treatment to the pumped flows and help protect the environment.	• Operational Excellence
Key Milestones for FY 21	**Impact on Operations or Community**
• Installation and testing of all POAs by August 2020. • Complete construction • Train AlexRenew Staff • Commission • Project Completion, December 16, 2020	• Operation of the Primary Effluent Pump Station may be impacted during construction. Pump modifications will be completed one pump at a time to ensure adequate pumping capacity during construction. • Primary Settling Tanks 7/8 and 5/6 will have to be taken out of service for tie-in of FBWW re-routing pipe. FBWW routing to Building K will be unavailable during this time (FBWW will have to be routed to IPS).
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• City of Alexandria Wastewater Capacity and Wet Weather Management Evaluation (Task Order 11 Report, CH2M, November 2010) • Primary Effluent Pump Station (PEPS) Evaluation Technical Report (CH2M, February 2016) • Long Term Control Plan Update (June 2018) • 108 to 116 100% Design/Bid Submittal (CH2M/Jacobs, April 2019)	The project has moved from design into construction.

RiverRenew Building J Facilities Relocation and Decommissioning

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering Nyika Roberson-Ramos	Building J Building G Field Labs (in K, N, and 69)	RiverRenew ☐ Alexandria Only ☒ Joint Use	20 Years for Laboratory 25 Years for Equipment	$26,054,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$11,510,000	$4,422,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,422,000
Financing												
AlexRenew	$8,517,400	$1,768,800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,768,800
Fairfax	$2,992,600	$2,653,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,653,200
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

In April 2017, a new Virginia law was passed requiring that all four of Alexandria's existing combined sewer outfalls be brought into compliance by July 1, 2025.

In compliance with the new law, AlexRenew and the City of Alexandria submitted a joint Long Term Control Plan Update (LTCPU), which was approved by the Virginia Department of Environmental Quality (VDEQ) in June 2018. The LTCPU recommends construction of a storage/conveyance tunnel system coupled with upgrades to AlexRenew's Water Resources Recovery Facility (WRRF) to capture and treat combined sewer overflows. This program was branded as RiverRenew in July 2018.

The RiverRenew project includes construction of a tunnel access shaft on the AlexRenew property. Construction of this shaft will affect operation of Building J, which currently houses the laboratory, the chilled water plant (which serves the entire campus), a multi-purpose room (break room and/or training room) and a communications and I&C ductbank which connects the Main Plant Site to the NMF and the Environmental Center.

The Building J Decommissioning project includes: Construction of a new lab (approx. 4,000-5,000 sf) on the ground floor of Bldg. G/2 (where the existing locker rooms are currently located), reconfiguration/remodeling of the existing lockers to fit current staffing needs (approx. 70 lockers), a new training/break room located in the first floor of G/1, a new server room located in the second floor of G/2 and a corresponding electrical room, a new chilled water plant located in the basement level of Bldg. G/2, relocation of existing ductbank, a new walkway from the new laboratory in Bldg. G/2 to the people spaces in Bldg. G/1, a new control room on the first floor of Bldg. G/1, a new roof on Bldg G/2, relocation of the PBX room, relocation of the fire alarm panel/autodialer, temporary locker rooms, new egress stairwell from Bldg G/2 and demolition of Building J. The scope of this project was expanded in FY20 to include:The replacement of the roof of Building G/2; A walkway from the new laboratory in Building G/2 to the new people spaces in Building G/1; A new control room in Building G/1; Expansion of the break/training space in Building G/1; and Temporary locker room facilities.

The driver of this project is rapid construction of the systems and spaces needed for plant operations (including the lab) to allow demolition of Building J and shaft

RiverRenew Building J Facilities Relocation and Decommissioning (continued)

construction on schedule.

The project was procured through a Design-Bid-Build method with AlexRenew pre-selecting and pre-purchasing critical equipment with long procurement lead times such as the chillers, the air handling units, the motor control centers (MCC) and laboratory casework.

Benefits	Strategic Outcome Area
• Relocation of the laboratory and other functions currently housed in Building J prior to start of tunnel shaft construction will minimize disruption to plant operations, increase plant personnel safety and will consolidate operator/maintenance/lab spaces in one area of the plant (Building G).	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• Complete construction • Train AlexRenew Staff • Commission • Project Completion, January 9, 2020	• Laboratory operations may be impacted during transition to temporary spaces and new spaces. Impact will be mitigated by sending samples for outside analysis if/when needed. • Capacity of staff to perform analysis for research and process-optimization purposes may be limited during the interim lab operation. • Existing locker rooms in Building G/2 will be closed for construction of new lab and reconfiguration of locker spaces. Personnel will have to use the locker rooms in the Environmental Center and other temporary locker room facilities.

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• Long Term Control Plan Update (June 2018) • Preliminary Engineering Report (Brown and Caldwell, projected for October 2018) • Buildings J and G Facility Needs Assessment (CH2M/Jacobs, May 2018) • Buildings J and G Conceptual Workplan Report (CH2M/Jacobs, July 2018) • Decommissioning of Building J Alternatives Evaluation Report (CH2M/Jacobs, October 2018) • 100% Design/Bid Submittal (CH2M/Jacobs, April 2019)	• The project has moved from design into construction.

RiverRenew Site Security and Access

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
RiverRenew Caitlin Feehan	WRRF	RiverRenew ☐ Alexandria Only ☒ Joint Use	25 years	$1,043,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$472,000	$258,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$258,000
Financing												
AlexRenew	$427,160	$233,490	$0	$0	$0	$0	$0	$0	$0	$0	$0	$233,490
Fairfax	$44,840	$24,510	$0	$0	$0	$0	$0	$0	$0	$0	$0	$24,510
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- For both construction during the RiverRenew program and facility operations thereafter, the WRRF and NMF site security and access must be improved. Existing gates are either non-functional or in locations not suitable for efficient construction traffic flow and security.
- Site security and access to the WRRF and NMF site has been installed piecemeal through various construction projects over the years of service for the facilities. A complete review of site security and access is needed with new gates, security points, and access to the facilities.
- This project includes new automatic gates in three access points to the WRRF, three new security booths at these locations, repairs to two gates, removal of two gates, changes to parking garage access, installation of a sidewalk across Hooffs Run culvert, layout for construction trailer and parking, and review of general site security fencing.

Benefits	Strategic Outcome Area
• The project will improve access to the WRRF both during construction of the River Renew program and thereafter. By improving security with new gates and security booths, the public will be protected from dangers associated with plant operations and construction.	• Watershed Stewardship

RiverRenew Site Security and Access (continued)	
Key Milestones for FY 21	**Impact on Operations or Community**
• Construction completed.	• Improved access to the WRRF with three new automated gates • Improved security for the WRRF with three new security booths • Repair of two poorly functioning gates will improve site access for WRRF • Modified access to the parking garage at the Administration Building. Garage exit will be restricted to single point on Holland for cars without access remotes/cards. This will provide additional security to WRRF site. • New gate on S. Payne Street will reduce public access to south end of road
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Project includes a Technical Memorandum documenting the need and recommendations for the project	• None

RiverRenew Tunnel System

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering and Planning - RiverRenew Caitlin Feehan	Building J Parking Lot Multiple Locations in the City of Alexandria	RiverRenew ☐ Alexandria Only ☒ Joint Use	100 years for tunnel and structures 25 years for equipment	$430,951,200

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$8,700,000	$41,236,400	$141,326,900	$80,723,700	$94,989,800	$24,530,600	$4,510,800	$ 0	$ 0	$ 0	$ 0	$ 387,318,200
Financing												
AlexRenew	$7,873,500	$ 39,047,814	$132.522.940	$ 78,466,649	$81,981,708	$21,625,730	$ 4,187,789	$ 0	$ 0	$ 0	$ 0	$357,832,630
Fairfax	$826,500	$2,188,586	$8,803,960	$2,257,051	$13,008,092	$2,904,870	$323,011	$ 0	$ 0	$ 0	$ 0	$29,485,570
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

Need: In April 2017, a new Virginia law was passed requiring that all four of Alexandria's existing combined sewer outfalls be brought into compliance by July 1, 2025.

Background: In compliance with the new law, AlexRenew and the City of Alexandria submitted a joint Long Term Control Plan Update (LTCPU), which was subsequently approved by the Virginia Department of Environmental Quality (VDEQ) in late June 2018. The LTCPU recommends the construction of a storage/conveyance tunnel system coupled with upgrades to AlexRenew's Water Resource Recovery Facility to capture and treat combined sewer overflows. In July 2018, the plan presented in the LTCPU was branded as RiverRenew.

Project Components: The RiverRenew Tunnel System includes:

- Waterfront Tunnel – construction of a 2-mile long, 12'0"ID (min)/19'0" OD (max) tunnel
- Hooffs Run Interceptor – construction of 2,700 LF of a 6'0" diversion sewer, including replacement of 1,400 LF of a portion of the Commonwealth Interceptor.
- Tunnel Dewatering and Wet Weather Pumping Station – construction of a 20-mgd tunnel dewatering and 130-mgd wet weather pumping station, including new superstructure located at the WRRF.

Procurement Method: The project is proposed to be procured through a 2-step Fixed-Price Design-Build model with a collaborative Request for Proposal Documents process.

Schedule: Key milestones for the Tunnel System include:

- Request for Proposal Documents provided to Shortlisted Design-Builders – February 2020
- Selected Design-Builder is given Notice to Proceed – December 2020
- Project Controls Placed in Operation – July 1, 2025

Security Services During Construction

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	WRRF	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	N/A	$4,770,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$0	$0	$0	$0	$2,400,000
Financing												
AlexRenew	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$0	$0	$0	$0	$960,000
Fairfax	$240,000	$240,000	$240,000	$240,000	$240,000	$240,000	$240,000	$0	$0	$0	$0	$1,440,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Security services for capital projects.

Benefits	Strategic Outcome Area
• This effort provides essential support when construction activities disrupt normal physical and procedural safeguards.	• Effective Financial Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Creates operational efficiencies so staff can focus on the construction activity rather than temporary security deficiencies.

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• N/A	• Deletion FY27-FY30. This will be funded from O&M.

South Carlyle Partnership

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	West Campus	Non-Process Facilities ☐ Alexandria Only ☒ Joint Use	40 years	$600,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$300,000	$0	$0	$0	$0	$0	$300,000	$0	$0	$0	$0	$300,000
Financing												
AlexRenew	$204,000	$0	$0	$0	$0	$0	$204,000	$0	$0	$0	$0	$204,000
Fairfax	$96,000	$0	$0	$0	$0	$0	$96,000	$0	$0	$0	$0	$96,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Engineering services and inspection affiliated with CP2 construction on adjacent property.
- This ensures proper coordination and physical connections to AlexRenew infrastructure.

Benefits	Strategic Outcome Area
• Proper coordination between CP2 and AlexRenew.	• Watershed Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• Completion of work	• Decreases future O&M costs

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
• None	• Change in project timing.

SST Evaluation

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	Building 23	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	N/A	$125,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$125,000	$0	$0	$0	$0	$0	$0	$0	$0	$125,000
Financing												
AlexRenew	$0	$0	$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$50,000
Fairfax	$0	$0	$75,000	$0	$0	$0	$0	$0	$0	$0	$0	$75,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- Building 23: SST Field Tracer Study: Secondary settling tanks (SST) were installed by two separate projects – SSTs 1 through 4 were original to the facility; SSTs 5 and 6 were installed in the early 2000s. Flow between the two groups of SSTs does not split evenly, which has affected equipment performance and caused uneven wear-and-tear. This project will hire a contractor to conduct a field tracer study. The study would determine the flow path through the SSTs to verify if there is any short-circuiting. If the field tracer study is not a feasible option, the contractor could conduct a computational fluid dynamics (CFD) model or scaled physical modeling.
- Building 23: SST Structural Evaluation: Secondary settling tanks (SST) were installed by two separate projects – SSTs 1 through 4 were original to the plant; SSTs 5 and 6 were installed in the early 2000s. The Risk Review (2019) identified signs of corrosion in some of the SSTs. This project will inspect tanks walls with exposed aggregate to determine structural longevity and identify any needed repairs.

Benefits	Strategic Outcome Area
• Studying the flow path in the SSTs can be used to identify issues or short-circuiting. Resolving the cause of the SST flow issues will mitigate other resultant issues such as breaking chains/flights in SST 5 and 6. • Structural evaluations will used to improve equipment longevity.	• Operational Excellence

Key Milestones for FY21	Impact on Operations or Community
• TBD	• Assessment will be used to address and prevent existing issues. • Assessment will be used to improve equipment reliability.

SST Evaluation (continued)	
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Risk Review of Processes and Assets, Risk Review Assessment (BOA WA2-2019-3, Task 4)	• New project

Stormwater System - Structural and Nonstructural BMPs

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	WRRF	WRRF Improvements ☐ Alexandria Only ☒ Joint Use	40 years	$1.856,000

Expenditure	Prior Year	FY2021	FY2022	FY2023	FY2024	FY2025	FY 2026	FY 2027	FY 2028	FY 2029	FY2030	10 Yr Total
Total	$0	$0	$0	$0	$0	$0	$783,000	$828,000	$227,000	$9,000	$9,000	$1,856,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$0	$313,200	$331,200	$90,800	$3,600	$3,600	$742,400
Fairfax	$0	$0	$0	$0	$0	$0	$469,800	$496,800	$136,200	$5,400	$5,400	$1,113,600
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

The AlexRenew WRRF storm sewer system is subdivided into seven drainage areas (DAs). Stormwater runoff within the three drainage areas on the western side of the facility (DAs 1, 2, and 3) discharge directly to Hooff's Run. DAs 4 and 6 discharge to the Virginia Department of Transportation (VDOT) Municipal Separate Storm Sewer System (MS4) and to the City of Alexandria MS4, respectively. Stormwater inlets within the final two drainage areas (DAs 5 and 7) convey stormwater directly to the Potomac Yard Interceptor and the Commonwealth Interceptor, respectively. Stormwater from these drainage areas (DAs 5 and 7) are directed to the AlexRenew wastewater treatment plant headworks. Drainage areas that discharge to the interceptors are not a part of this project as additional pretreatment stormwater BMPs is not a priority. Proposed stormwater BMPs in this analysis are located within the five drainage areas which discharge to adjacent surface water bodies or to adjoining storm sewer systems (DAs 1, 2, 3, 4, and 6). 8 BMP are recommended. Ponding that was also studied in the report is not a part of this project.

Benefits	Strategic Outcome Area
• Alternative treatment facilities to support AlexRenew's sustainability initiatives and commitment to environmental stewardship.	• Watershed Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Potential to increase O&M costs to an annual cost of approximately 5% of construction costs • Results in reduction of pollutant loading of permitted stormwater conveyed.

Stormwater System - Structural and Nonstructural BMPs Continued	
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• April 2016 URS Report "Stormwater Improvement Analysis Report"	• Escalation added to bring to FY21 dollars.

Upper Holmes Run Trunk Sewer Rehabilitation

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	West Alexandria	Interceptor/Trunk Sewers Rehab. ☐ Alexandria Only ☒ Joint Use	20-30 years	$7,329,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr Total
Total	$0	$0	$0	$0	$837,000	$354,000	$1,860,000	$1,860,000	$279,000	$279,000	$1,860,000	$7,329,000
Financing												
AlexRenew	$0	$0	$0	$0	$334,800	$141,600	$744,000	$ 744,000	$111,600	$111,600	$ 744,000	$ 2,931,600
Fairfax	$0	$0	$0	$0	$502,200	$212,400	$1,116,000	$1,116,000	$167,400	$167,400	$1,116,000	$ 4,397,400
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The pipes in Reach 9 were not inspected as part of the June 2017 Interceptor System Condition Assessment Report. These pipes were last inspected in 2009. In order to address capacity limitations, the HRTS upstream of North Van Dorn Street will be lined as a part of the HRTS improvements conceived under RiverRenew.
- Phase 1: Rehabilitate 30”/36” pipe in Reach 8 and 9 from the Reach 7 to Dowden Terrance. This is approximately 5,700 feet. This was previously included in the CIP for FY2016, to address capacity limitations, but work has not yet begun. Reinspection is necessary. Design is scheduled for FY24-25. Construction is scheduled for FY26-27.
- Phase 2: Surface aggregate visible defects are present throughout many pipe segments in Reaches 4 &5. The proposed rehabilitation extents span over 3,000 linear feet, beginning with manhole 5514 at the Fairfax County sewer connection in Cameron Run Regional Park, through manhole 4243 downstream of the original County sewer connection at Cameron Station. Pipe diameters range from 48” to 72”.

Benefits	Strategic Outcome Area
• Minor Repairs and maintenance activities to maximize asset life	• Effective Financial Stewardship

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• Any cleaning and/or inspection on HRTS require City permitting for traffic control, and parking impacts. • Citizens are to be notified if contractor equipment will be in their neighborhood.

Upper Holmes Run Trunk Sewer Rehabilitation Continued	
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• Last inspection of reach 8 & 9 was in 2009, per the 2017 Greeley and Hansen report, "Holmes Run Trunk Inceptor System Condition Assessment." • Last inspection of reaches 4 & 5 were in 2016.	• Costs are now in FY20 dollars. • Costs were included for complete design and start of construction for phase 2.

WRRF HVAC Automation System Upgrade

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering TBD	WRRF	Non-Process Facilities ☐ Alexandria Only ☒ Joint Use	N/A	$1,000,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$0	$0	$0	$0	$0	$500,000	$500,000	$0	$0	$1,000,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$0	$0	$200,000	$200,000	$0	$0	$400,000
Fairfax	$0	$0	$0	$0	$0	$0	$0	$300,000	$300,000	$0	$0	$600,000
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The project goal is to upgrade the WRRF HVAC system computer software and field devices. A study will be performed to evaluate all the HVAC and recommend improvements for efficiency.

Benefits	Strategic Outcome Area
• Full redundancy and reliability of the HVAC System	• Effective Financial Stewardship
Key Milestones for FY 21	**Impact on Operations or Community**
• N/A	• Increase equipment availability to process
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• N/A	• Project delayed one year.

WRRF: Truck Scale Rehabilitation

Managing Department and Champion	Project Location	Program and Project Category	Estimated Useful Life	Lifetime Budget
Engineering Steve Hill	WRRF Campus	WRRF Improvement Program ☐ Alexandria Only ☒ Joint Use	10 Years	$86,000

Expenditure	Prior Year	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	10 Yr. Total
Total	$0	$0	$0	$0	$0	$0	$86,000	$0	$0	$0	$0	$86,000
Financing												
AlexRenew	$0	$0	$0	$0	$0	$0	$34,400	$0	$0	$0	$0	$34,400
Fairfax	$0	$0	$0	$0	$0	$0	$51,600	$0	$0	$0	$0	$51,600
VRLF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Line of Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Project Description and Justification

- The truck scale is utilized to authenticate the weight of biosolids transferred from the WRRF, and the information is used in the Annual Biosolids report.
- The Mettler Toledo 7560SD scale was replaced, and software upgraded, in August 2016, for $81,000. PO 24292.
- This project is for periodic rehabilitation of the Truck Scale.
- If an upgraded product of the same manufacturer is used, installation and calibration may be as short as 3 days. This allows it to be accomplished on a long weekend, during which no biosolids are being hauled. Longer duration installation will require use of alternate methods to weigh the outgoing truckloads, and/or storage of biosolids until they can be weighed.

Benefits	Strategic Outcome Area
• Periodic rehabilitation of the truck scale provides reliable recordation of outgoing biosolid weights for regulatory reporting.	• Operational Excellence

Key Milestones for FY 21	Impact on Operations or Community
• N/A	• If an upgraded product of the same manufacturer is used, installation and calibration may be as short as 3 days. This allows it to be accomplished on a long weekend, during which no biosolids are being hauled. Longer duration installation will require use of alternate methods to weigh the outgoing truckloads, and/or storage of biosolids until they can be weighed.

WRRF: Truck Scale Rehabilitation (continued)	
External or Internal Adopted Plan or Recommendation	**Changes from Prior Year CIP**
• N/A	• None

Indenture and Financial Policy Compliance

The schedule below demonstrates AlexRenew's financial profile as it relates to two conditions established by our Indenture and Board-approved financial policies. As indicated below, AlexRenew's FY 2021 budget has been developed to meet our (1) liquidity requirement to maintain at least 60 days-cash-on-hand in the Operating Fund and 60 days cash-on-hand in the General Reserve sub-Fund and (2) debt service coverage requirement of at least 1.10x and 1.50x of total annual debt service per our Indenture and Financial Policy, respectively.

Indenture and Financial Policy Compliance	Adopted FY2020	Proposed FY2021
Reserve Requirement		
Operating Fund		
60 Days Current Year Budgeted Expenses	4,742,230	4,666,355
Projected Ending Balance	4,742,230	4,666,355
Excess (Deficiency)	-	-
General Reserve sub-Fund		
60 Days Current Year Budgeted Expenses	4,742,230	4,666,355
Projected Ending Balance	4,742,230	4,666,355
Excess (Deficiency)	-	-
Total Reserve Requirement - 120 Days	**9,484,460**	**9,332,709**
Debt Service Coverage (DSC) Requirement		
Wastewater Treatment Charges	$ 43,848,000	$ 39,492,000
Fairfax County Operating Expense Charge	11,653,647	11,272,272
Interest Income	115,000	115,000
Gross Revenue Available for Debt Service:	$ 55,616,647	$ 50,879,272
Operating Expenses	$ (28,453,556)	$ (28,386,991)
Net Revenues Available for Debt Service	$ 27,163,091	$ 22,492,281
Total Annual Debt Service	$ 14,220,146	$ 14,123,976
All-in Debt Service Coverage	**1.91x**	**1.60x**
Financial Policy Target	**1.50x**	**1.50x**
Indenture Target	**1.10x**	**1.10x**

Appendix A – Financial Policy

Alexandria Sanitation Authority

Financial Policies

The Alexandria Sanitation Authority (ASA or Authority) is a special purpose governmental unit created by the City Council of Alexandria, Virginia (City Council) in 1952 for the purpose of constructing, operating and maintaining a wastewater treatment system (System) for the City of Alexandria, Virginia (City). ASA is governed and administered by a Board of Directors (Board) with five members who serve staggered terms and are appointed by the City Council. The General Manager oversees ASA's operations and plans for the construction, maintenance, repair and financing of the System. ASA operates as an enterprise fund, has no taxing power and receives no financial assistance from the City.

ASA recognizes that one of the keys to sound financial management is the development of a formal financial policy. This view is confirmed by bond rating agencies, investors and the Government Finance Officers Association. Establishing formal financial policies is also a common practice among comparable water and wastewater authorities throughout the Commonwealth and the United States.

The financial policy is designed to help protect ASA's financial resources by:

1. Promoting sound financial management;
2. Guiding ASA and its managers in policy and debt issuance decisions;
3. Establishing appropriate levels of operating cash reserves;
4. Developing a system to efficiently finance necessary capital improvements;
5. Ensuring the legal and prudent use of ASA's debt issuance authority;
6. Providing a framework for ASA to achieve a strong credit rating, and
7. Maintaining reasonable and well justified levels of rates and fees in accordance with the financial policy.

In general, these financial policies are more restrictive and require higher standards than the legal requirements contained in the Master Indenture of Trust (Bond Indenture), which is the agreement between ASA and debt holders. These financial policies will be reviewed periodically and updated as appropriate.

The following are the financial policies that will guide ASA's financial management, capital planning and debt financing.

1. **Debt Service Coverage**
    a. For FY2011 through and including FY2013, ASA will adopt budgets that it projects will enable ASA to maintain annual debt service coverage (Coverage) of 1.40 times Net Revenues, as defined in the Bond Indenture, on all senior and parity debt. Beginning in FY2014 and thereafter, ASA will maintain Coverage of at least 1.50 times on all senior and parity debt.

2. **Reserves**
    a. An important metric of ASA's financial flexibility is its liquidity as measured by available cash and reserves. These reserve policies identify amounts

available for known risks and obligations and set minimum funding goals that may be used in emergency or other unexpected situations as they arise. The reserves represent an earmarking for budgetary and financial policy purposes. These reserves are in addition to existing legal reserves required by the Master Indenture of Trust (Bond Indenture) and any funds earmarked for capital improvements.

b. ASA will maintain a balance equal to at least 120 days of the current years budgeted amount for operating and maintenance expenses. As required by the Bond Indenture, one sixth of the current year's budgeted amount for operating expenses (60 days) will be held in the Operating Fund. The remainder of the reserves will be held in the General Reserve Fund, a subfund of the General Fund. In the event the General Reserve Fund is used to provide funding for unanticipated expenses or otherwise drops below the policy level, the General Manager will submit a plan in writing to the Board that will restore the General Reserve Fund to the policy level over a period not to exceed four years.

c. All other funds will be funded as required by the Bond Indenture, with a summary as follows:
    i. Senior Debt Service Fund: An amount that will cause the balance on deposit to be sufficient to pay the principal and interest on the respective payment dates.
    ii. Improvement, Renewal and Replacement Fund (IRR): An amount equal to the Alexandria portion (40%) of the annual calculation of the required contribution to the IRR Fund.
    iii. General Fund: Any remaining amounts after the required deposits.
    iv. Debt Service Reserve Fund: For senior debt, an amount equal to the Debt Service Reserve Fund Requirement as defined in the Bond Indenture. There is no Debt Service Reserve Fund Requirement for ASA's parity debt.

d. When necessary and prudent, ASA may create additional accounts within the General Fund for specific purposes. These accounts could include accounts for capital projects, risk management and revenue stabilization, among others.

3. Budgetary Principles

a. Annual Operating Budget Proposals
    i. Per Section 9.3 of the Bond Indenture, ASA is required to adopt a budget for the System for the ensuing fiscal year before the beginning of each fiscal year. The annual budget is required to be prepared in such a manner as to show in reasonable detail the estimated revenues, operating expenses, IRR amounts, debt service amounts, other costs and expenses and the amount of Net Revenues available to meet the Revenue Covenant per the Bond Indenture.
    ii. In conjunction with the budget requirements in the Bond Indenture, the Board will strive to adopt an operating budget that:

1. Is structurally balanced whereby current budgetary revenues are sufficient to meet current budgetary expenses (those that are ongoing in nature);
2. Has fees and user charges at levels intended to support the direct and indirect cost of the activity;
3. Sets fees and user charges with the intent to provide the lowest reasonable fees and user charges over time, not necessarily the lowest fees and user charges right now.
4. Is at a level necessary to ensure the adequate maintenance and operations of the wastewater system;
5. Includes amounts necessary to maintain the required reserve balances as defined in these policies;
6. Enables ASA to meet the debt service coverage policy defined herein; and
7. Funds at least 15 percent of its capital improvement program in cash.

iii. Capital Improvement Program (CIP)

1. Each year ASA will adopt a ten-year CIP that identifies projects to be undertaken over next ten years to meet projected needs for infrastructure renewal, expansion, and replacing old or new facilities.
2. The term of any debt financing will not exceed the aggregate useful lives of the related projects.
3. The CIP will identify anticipated capital improvement costs and associated operating costs.

b. Long-Range Financial Forecast

i. Beginning with the planning for the FY2012 budget and in each fiscal year thereafter, the General Manager will submit to the Board at least a three year financial forecast of anticipated revenues and expenses.

4. Debt Management

a. ASA may issue long-term debt per the guidelines in this financial policy. Long-term borrowing will not be used to finance current operations. Long-term debt will be structured such that the term of financial obligations will not exceed the aggregate expected useful lives of the assets financed.

b. Short-term borrowing may be utilized for the temporary funding of operational cash flow deficits or interim construction requirements.

c. Permitted Debt by Type: ASA may issue the debt instruments described below. The most appropriate instrument for a proposed sale of debt shall be determined by financing needs and expected market conditions at the time of sale.

i. Lease Financing – ASA may use lease financing for equipment if (i) it can be demonstrated that this is the most cost effective or appropriate way to secure financing, or (ii) on projects that do not warrant entry into the bond market.

ii. Bond Anticipation Notes (BANs) - which include Commercial Paper, are typically an interim means of financing and, by their very nature,

expose ASA to interest rate risk upon renewal. BANS may be used to (i) to finance projects until such time as the project or projects can be incorporated into a long-term bond sale, (ii) during times of high interest rates and when the expectation is that interest rates will stabilize in the future or trending downward, (iii) when market conditions are such that a BAN may be more readily received in the market than long-term debt, or (iv) on an interim basis during the construction period for a project until such time as the project is placed into service.

iii. Long-Term Revenue Bonds - ASA may issue long-term revenue bonds to fund capital projects. These bonds may be issued by ASA in a number of ways, including, but not limited to, those listed below. ASA will evaluate multiple methods for issuing long-term revenue bonds and use the method that is most advantageous to ASA.
    1. ASA may issue the bonds through a public sale under its own name in the capital markets.
    2. ASA may issue the bonds through a private placement under its own name.
    3. ASA may issue the bonds to the Virginia Resources Authority (VRA) under one of VRA's loan programs.

iv. Revenue Anticipation Notes (RANs) - may be issued to meet ASA's operational cash flow needs.

v. Lines of Credit - may be considered as an alternative to other short-term borrowing options.

d. Guidelines on Debt Issuance
    i. Bond Indenture – ASA will abide by the covenants contained in the Bond Indenture. ASA considers these covenants to be minimum requirements, and generally expects to exceed the requirements of each covenant.
    ii. Authorization – Prior to the issuance of debt, the Board will pass a resolution authorizing the financing arrangements and setting appropriate limits and parameters for the anticipated financing in accordance with applicable laws.
    iii. Lowest Cost Financing – ASA intends to pursue the lowest cost of financing within the parameters of these financial policies, the Bond Indenture and ASA's enabling legislation.
    iv. Method of Issuance – Prior to each debt issuance, ASA will evaluate the available methods of issuance and pursue the method of issuance that is most advantageous to ASA, whether a stand-alone issue by ASA or use of a third party financing approach such as Revolving Fund Loans or pooled borrowing programs available through the Virginia Resources Authority (VRA). Some considerations for evaluating the method of issuance, particularly when determining whether to issue debt through VRA or under ASA's name, include:
        1. Financing Cost. This analysis should evaluate the overall cost of the financing, including borrowing rates, upfront fees

(such as the cost of obtaining a credit rating), whether a Debt Service Reserve Fund is required, ongoing costs and any other costs of the financing.

2. Permitted Uses of Funds. Some project costs are not eligible to be funded through certain financing programs. For example, land purchase costs are not eligible to be funded through the Department of Environmental Quality's Revolving Loan Fund program that ASA has used in the past.
3. Structural Flexibility. When selecting a financing program, ASA will consider the flexibility of debt features available under each program. For example, ASA will consider how flexible repayment features, call provisions, and borrowing terms are under each program.

v. Project Costs Prior to Debt Issue – If project costs are incurred prior to the issuance of debt, the Board will pass a resolution documenting its intent to be reimbursed from bond proceeds as appropriate.

vi. Variable Rate Debt (VRD) – VRD carries inherent interest rate risk. Such securities historically have interest rates lower than long-term fixed rate securities and offer the potential for lower debt service costs over the term of the bond issue. ASA will consider using VRD when it: (i) Improves matching of assets and liabilities, (ii) potentially lowers debt service costs, (iii) adds flexibility to ASA's capital structure, or (iv) diversifies ASA's investor base.

1. Debt service on VRD will be budgeted at a conservative rate based on historical fluctuations in interest activity and current market assumptions. Before issuing VRD, ASA will determine how potential spikes in the debt service will be funded and consider the impact of various interest rate scenarios on its financial position and on various debt ratios.
2. ASA will not issue VRD in excess of 20 percent of its total debt portfolio. This limitation does not apply to other VRD which ASA has endeavored to offset with an operating investment portfolio intended to act as an economic hedge to interest rate fluctuations associated with the VRD. This limitation also excludes any VRD that may be hedged through an appropriate derivative agreement, if such technique is approved by the ASA Board.

e. Method of Sale

i. ASA will select a method of sale (competitive, negotiated, or private placement) it believes is the most appropriate in light of financial, market, transaction-specific and ASA-related conditions.

f. Term of Debt

i. ASA will not issue debt with a term or final maturity longer than the aggregate useful lives of the projects being financed. ASA does not expect to issue debt with a final maturity more than 40 years from the date of issuance. Factors to be considered when determining the final

maturity of debt include: the average life of the assets being financed, relative level of interest rates, and the year-to-year differential in interest rates.

g. Debt Structure
   i. Interest Rate Structure – ASA may use both variable and fixed rate debt in accordance with limitations set forth in this policy.
   ii. Maturity Structure – ASA's long-term debt may include serial and term bonds. Other maturity structures may also be considered when demonstrated to be advantageous to ASA.
   iii. Coupon Structure – Fixed rate debt may include par, discount, premium and capital appreciation bonds.
   iv. Redemption Features – In order to preserve flexibility and refinancing opportunities, ASA debt shall generally be issued with call provisions. ASA may consider call provisions that are shorter than traditional and/or non-callable debt when warranted by market conditions and opportunities. For each transaction, various call option scenarios will be evaluated so that the most beneficial can be utilized.
   v. Credit Enhancement – ASA may use bond insurance and/or line and letters of credit for credit enhancement when it is economically advantageous to do so.
   vi. Debt Service Reserve Fund – ASA will fund a Debt Service Reserve Fund (DSRF) if required by the Bond Indenture.
   vii. Capitalized Interest – By definition, capitalization of interest increases the amount of debt that is issued. ASA will capitalize interest for a period not longer than 12 months after the project being financed is expected to be placed in service.
   viii. Refinancing of Debt – ASA will refinance debt from time to time to achieve debt service savings as market opportunities arise. Since federal regulations limit a tax-exempt issue to one advance refunding (a refinancing more than 90 days prior to a bond's call date), ASA will ensure that the advance refunding results in a significant present value savings. A proposed refinancing must achieve a minimum cumulative, net present value savings of 3 percent of the amount refinanced. An exception to this minimum refinancing savings policy will be if the refinancing is being done for debt restructuring purposes and the Board determines that it is in the best interests of ASA to complete the refinancing without achieving the refinancing savings policy. In addition, ASA will consider the efficiency of a proposed refinancing transaction. The efficiency evaluation will consider the value realized by ASA when exercising its option to redeem its bonds early calculated under a variety of different interest rate environments, versus the savings garnered. In general, ASA will consider refinancing bonds when the aggregate efficiency is equal to or greater than 70 percent.

ix. In any refinancing transaction, ASA maintains a bias to not extend maturities.

h. Escrow Structuring
   i. ASA will utilize the least costly securities available in structuring refinancing escrows. Unless state and local government securities (SLGS) are used, a certificate will be provided by a third party agent stating that the securities were procured through an arms-length, competitive bid process (in the case of open market securities), and that the price paid for the securities was reasonable within federal guidelines.
   ii. Under no circumstances will an underwriter, agent or financial advisor or ASA affiliates or affiliated accounts of an underwriter or financial advisor to ASA sell escrow securities to ASA from its own account.

i. Hiring of Professionals – All members of the financial advisory team including underwriter, financial advisor, bond counsel, and other professionals will be selected in a manner consistent with ASA's procurement policy for professional services.
   i. Underwriter Selection
      1. Senior Manager Selection – ASA will select a senior manager for any proposed negotiated sale. The selection criteria will include but not be limited to the following:
         a. The firm's ability and experience in managing transactions similar to that contemplated by ASA.
         b. Prior knowledge and experience with ASA.
         c. The firm's ability and willingness to risk capital and demonstration of the firm's capital availability and underwriting of unsold balances.
         d. Quality and experience of personnel assigned to ASA's engagement.
         e. Financing plan presented.
         f. Cost including underwriting fees and anticipated pricing.
      2. Co-Manager Selection – Co-manager may be selected on the same bases as the senior manager with the exception of underwriting fees, which are determined by the senior manager. In addition to their qualifications, co-managers appointed to specific transactions will be a function of transaction size and the necessity to ensure maximum distribution of ASA's bonds.
      3. Underwriter's Counsel – In any negotiated sale of ASA debt in which legal counsel is required to represent the underwriter, the appointment will be made by the Senior Manager with final approval from ASA.
      4. Underwriter's Discount – ASA will evaluate the proposed underwriter's discount against comparable issues in the

market. If there are multiple underwriters in the transaction, ASA will determine the allocation of underwriting liability and management fees. The allocation of fees will be determined prior to the sale date. A cap on management fees, expenses and underwriter's counsel fee will be established and communicated to all parties by ASA. The senior manager shall submit an itemized list of expenses.

5. Evaluation of Underwriter Performance – ASA will evaluate each bond sale after completion to assess the following: costs of issuance including underwriters' compensation, pricing of the bonds in terms of the overall interest cost and on a maturity-by-maturity basis, and the distribution of bonds.
6. Syndicate Policies – For each negotiated transaction, ASA will establish syndicate policies that will describe the priority of orders and designation policies governing the upcoming sale. ASA shall require the senior manager to:
    a. Fairly allocate bonds to other managers and the selling group.
    b. Comply with the Municipal Securities Rulemaking Board's (MRSB) regulations governing the priority of orders and allocations.
    c. Within 10 working days after the sale date, submit to ASA a detail of orders, allocations and other relevant information pertaining to ASA's sale.

ii. Consultants

1. Financial Advisor – ASA will select a financial advisor to assist in its debt issuance and debt administration processes. Selection of the ASA's financial advisor will be based on, but not limited to, the following criteria:
    a. Experience in providing consulting services to entities similar to ASA.
    b. Knowledge and experience in structuring and analyzing bond issues.
    c. Experience and reputation of assigned personnel.
    d. Fees and expenses.
2. Bond Counsel – ASA will include a written opinion by legal counsel affirming that ASA is authorized to issue the proposed debt, that ASA has met all legal requirements necessary for issuance, and a determination of the proposed debt's federal income tax status. The approving opinion and other documents relating to the issuance of debt will be prepared by counsel with extensive experience in public finance and tax issues. The Bond Counsel will be selected by ASA.
3. Conflicts of Interest – ASA requires that its consultants and advisors provide objective advice and analysis, maintain the

confidentiality of ASA financial plans, and be free from any conflict of interest that has not been fully disclosed to, and waived by, ASA. In no case will ASA's financial advisor be permitted to underwrite any portion of ASA's bond issues, whether sold competitively or negotiated.

4. Disclosure by Financing Team Members – All financing team members will be required to provide full and complete disclosure, relative to agreements with other financing team members and outside parties. The extent of disclosure may vary depending on the nature of the transaction. However, in general terms, no agreements will be permitted which could compromise the firm's ability to provide independent advice which is solely in ASA's best interests or which could reasonably be perceived as a conflict of interest.

j. Communication and Disclosure
   i. Continuing Disclosure – ASA recognizes that accurate and complete disclosure is imperative. ASA will comply with all state and federal disclosure obligations and will meet its disclosure requirements in a timely and thorough manner.
k. Arbitrage Compliance
   i. ASA will maintain a system of record keeping and reporting in order to comply with the Arbitrage Rebate Compliance Requirements of the Internal Revenue Code of 1986, as amended.

5. Derivatives

a. Derivatives such as interest rate swaps and options are financial tools that can help ASA meet important financial objectives, however they introduce multiple risks which must be understood and managed. Properly used, these instruments may increase ASA's financial flexibility, provide opportunities for interest rate savings or enhanced investment yields, and help ASA manage its balance sheet through matching of assets and liabilities.
b. ASA will <u>not</u> enter into any financial derivative or swap until the following have occurred:
   i. The Board has adopted a comprehensive derivatives/swaps policy outlining the following related to the use of derivatives/swaps:
      1. Approach and Objectives
         a. Specific objectives for utilizing swaps
         b. Prohibited swap features
      2. Legal Authority
      3. Permitted Instruments
      4. Procedure for Submission and Execution
      5. Swap Analysis and Participant Requirements
         a. Swap risks
         b. Counterparty risk assessment
         c. Benefit expectation
      6. Legal and Contractual Requirements
         a. Legal terms of swaps

b. Notional amount
c. Final maturity
d. Termination provisions
e. Collateral

7. Ongoing Management
8. Ongoing Reporting Requirements
9. Acceptable Collateral

ii. The Board has approved the execution of the specific financial derivative or swap transaction.

Appendix A – Definitions

Bond Anticipation Note (*BANs*): Notes which are paid from the proceeds of the issuance of long-term bonds. Typically issued for capital projects.

Call Provisions: The terms of the bond giving the issuer the right to redeem all or a portion of a bond prior to its stated date of maturity at a specific price, usually at or above par.

Capital Improvement Program (*CIP*): Plan for major non-recurring facility, infrastructure, or acquisition expenditures that expand or improve the system and/or community assets. Projects included in the CIP include physical descriptions, implementation schedules, year of expenditure cost and funding source estimates, and an indication of priorities and community benefits.

Capitalized Interest: A portion of the proceeds of a bond issue which is set aside to pay interest on the same bond issue for a specific period of time. Interest is commonly capitalized for the construction period of the project.

Commercial Paper: Short-term, unsecured promissory notes issued by corporations to finance receivables for a maturity specified by the purchaser that ranges from three days to 270 days. Notes are generally sold at a discount, and carry credit ratings issued by an NRSRO.

Competitive Sale: A sale/auction of securities by an issuer in which underwriters or syndicates of underwriters submit sealed bids to purchase the securities. Contrast to a negotiated sale.

Continuing Disclosure: The principle that accurate and complete information material to the transaction which potential investors would be likely to consider material in making investment decisions with respect to the securities be made available on an ongoing basis.

Credit Enhancement: Credit support purchased by the issuer to raise the credit rating of a debt issue. The most common credit enhancements consist of bond insurance, direct or standby letters of credit, and lines of credit.

Debt Service Reserve Fund: The fund in which moneys are placed which may be used to pay debt service if pledged revenues are insufficient to satisfy the debt service requirements.

Derivatives: A financial product whose value is derived from some underlying asset value.

Designation Policies: Outline how an investor's order is filled when a maturity is oversubscribed when there is an underwriting syndicate. The senior managing underwriter and issuer decide how the bonds will be allocated among the syndicate. There are three primary classifications of orders which form the designation policy: Group Net Orders; Net Designated orders and Member orders.

Escrow: A fund established to hold moneys pledged and to be used to pay debt service on an outstanding issue.

Expenses: Compensates senior managers for out-of-pocket expenses including: underwriters counsel; DTC charges, travel, syndicate expenses, dealer fees, overtime expenses, communication expenses, computer time and postage.

Letters of Credit: A bank credit facility wherein the bank agrees to lend a specified amount of funds for a limited term.

LIBOR: The London InterBank Offered Rate is the rate on U.S. dollar denominated deposits with maturities from 1 day to 12 months transacted between banks in London. LIBOR is the benchmark swap floating index in the taxable or corporate swap market.

Liquidity: The ability of ease with which an asset can be converted into cash without a substantial loss of value.

Management Fee: The fixed percentage of the gross spread which is paid to the managing underwriter for the structuring phase of a transaction

Maturity: The date upon which the principal or stated value of an investment becomes due and payable.

Members: Underwriters in a syndicate other than the senior underwriter.

Nationally Recognized Statistical Rating Organization (*NRSRO*): A credit rating agency which issues credit ratings that the U.S. Securities and Exchange Commission (*the "SEC")* permits other financial firms to use for certain regulatory purposes. Examples include Moody's Investor Service, Standard & Poor's and Fitch Ratings.

Negotiated Sale: A method of sale in which the issuer chooses an underwriter to negotiate terms pursuant to which such underwriter will purchase and market the bonds.

Original Issue Discount: The amount by which the original par amount of an issue exceeds its public offering price at the time it is originally offered to an investor.

Portfolio: Collection of securities held by an investor.

Present Value: The current value of a future cash flow.

Private Placement: The original placement of an issue with one or more investors versus being publicly offered or sold.

Revenue Bonds: Bonds secured by a specific revenue pledge of rates, rents or fees.

Securities and Exchange Commission *("SEC")*: Agency created by Congress to protect investors in securities transactions by administering securities legislation.

Selling Groups: The group of securities dealers who participate in an offering not as underwriters but rather who receive securities less the selling concession from the managing underwriter for distribution at the public offering price.

SIFMA: The Securities Industry and Financial Markets Association is a high grade market index of 7-day variable rate demand notes that is produced by Municipal Market Data. SIFMA is the benchmark swap floating index in the tax-exempt swap market.

Syndicate Policies: The contractual obligations placed on the underwriting group relating to distribution, price limitations and market transactions.

Underwriter: A dealer that purchases new issues of municipal securities from the Issuer and resells them to investors.

Underwriter's Discount: The difference between the price at which bonds are bought by the Underwriter from the Issuer and the price at which they are offered to investors, representing the compensation earned by the Underwriter for placing the bonds with investors.

Variable Rate Debt: An interest rate on a security which changes at intervals according to an index or a formula or other standard of measurement as stated in the bond contract.

Yield: The rate of annual income return on an investment, expressed as a percentage.

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