



# FY20

# Fiscal Year Operating and Capital Budget

ALEXANDRIA RENEW ENTERPRISES | JULY 1, 2019 – JUNE 30, 2020



BOARD ADOPTED - JUNE 18, 2019

Transforming Our Community's Waterways for a Brighter Future

ALEXANDRIA, VA



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Liliana Maldonado, Deputy General Manager, Engineering and Planning  
Christine McIntyre, Director of Finance  
Lisa K. Van Riper, Director of Enterprise Communication

## Chief Executive Officer's Message

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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 holistically, ensuring a thriving community.

Our investments in clean water will continue to create jobs in our city, and will support Alexandria's economic growth as they did in 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. These investments have supported a cleaner Potomac River and local waterways for our City, and have improved the health of the Chesapeake Bay. In fact, in 2018, the Potomac Conservancy graded the Potomac River a B-, the highest grade ever. 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.

Now, our investments will support an even cleaner Potomac River and a water future for Alexandria that is brighter than ever. As a result of a legislative mandate by the Commonwealth of Virginia, AlexRenew is leading RiverRenew, a significant program to fix four combined sewer outfalls in older parts of Alexandria. During some rainstorms, an excess mixture of rainwater and sewage overflows from combined sewer pipes into Alexandria's waterways. These overflows can have a negative impact on the health of local rivers and streams. By law, RiverRenew must be completed by July 1, 2025. RiverRenew is the backbone of our plan to prepare for Alexandria's future, and it comes with large financial obligations for our organization and community.

We will also be making investments to ensure our city's wastewater infrastructure supports anticipated population growth and increased demands over the next 20 years. These investments help us manage our maintenance needs for our existing used water cleaning equipment and facilities, and to provide our current levels of service every minute of every day with an experienced, well-trained team of used water cleaning experts and the services to support their essential work.

The budget and investments we are planning for 2020 and over the next 20 years will support a sustainable water future for our City. For this fiscal year, we are proposing an Operating Fund budget of \$28.4 million and a capital improvement program budget of \$42.5 million. Our operating budget increase year-over-year is consistent with the current inflation rate of approximately two percent. Our capital improvement program budget has increased relative to last year's budget to accommodate the increased investment needed to implement the RiverRenew program.

We have much work ahead of us. 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 Enterprise

# 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.

# Understanding the Budget

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## 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

# Understanding the Budget

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## 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

While AlexRenew has historically utilized a fiscal year cycle ending each September 30, the FY2020 budget is presented as the first major financial document to reflect a new fiscal year cycle ending each June 30 that was approved by the Board in 2018. As such, the FY2020 budget will encompass the 12-month period from July 1, 2019 – June 30, 2020.

<b>Month</b>	<b>Customer</b>	<b>Board of Directors</b>	<b>Staff</b>
<b>August - February</b>			<b>Proposed Budget Development</b> Departments prepare budget proposals; CEO develops a balanced proposed budget.
<b>March</b>		<b>Budget Review (March-April)</b> Board of Directors request additional information on specific budget issues from staff.	The CEO presents the proposed budget to the Board of Directors.
<b>April</b>	Customers are informed of proposed budget via public notice and may provide written comments, if any.	Board adopts resolution to provide public notice of the proposed AlexRenew budget.	Public Notice of Hearing date and proposed rates (staff advertises via newspaper)
<b>May</b>			
<b>Late May/Early June</b>	Customers have an opportunity to comment in person during a public hearing.	<b>Final Adoption –</b> Board of Directors makes final decisions and adopts the AlexRenew budget for the upcoming fiscal year.	Public Hearing 6/18/19 Execute adopted FY2020 Budget starting 7/1/19.

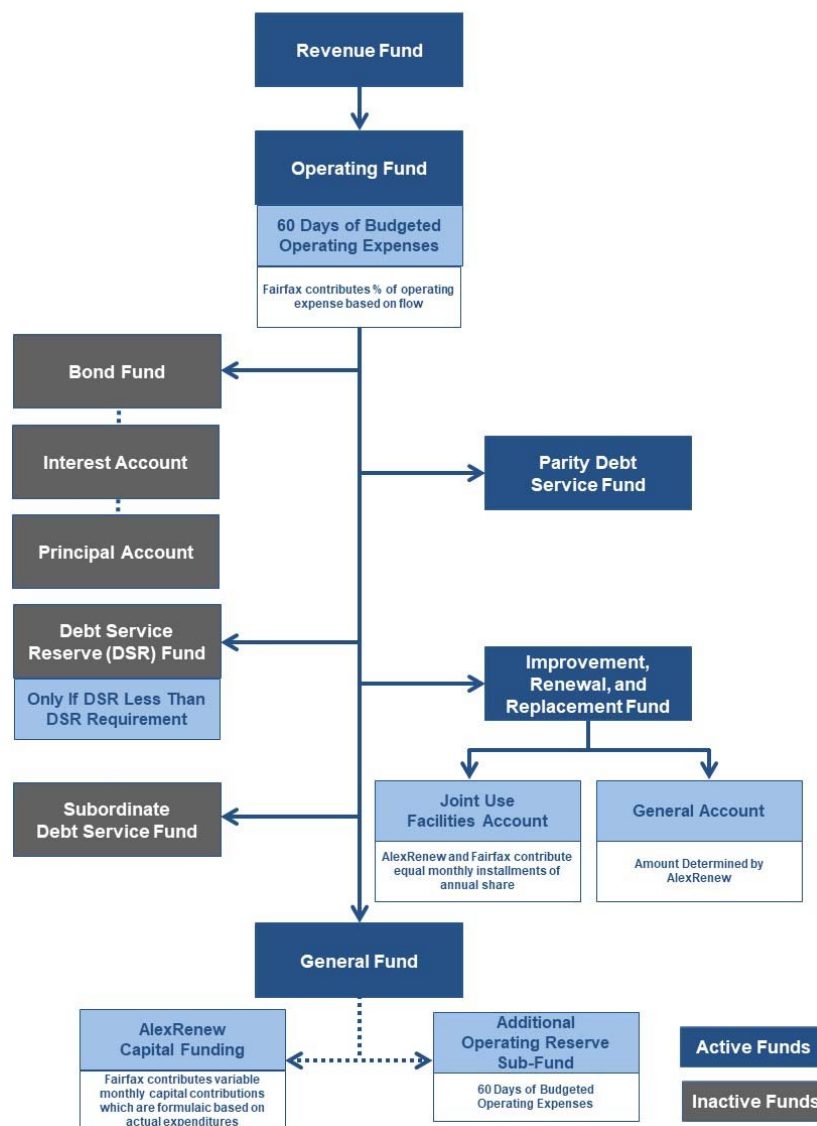


# Consolidated Enterprise Budget Statement

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 FY2020 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.

## AlexRenew Flow of Funds



# Consolidated Enterprise Budget Statement



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 – <i>Flow of Funds</i>	
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 1/6 <sup>th</sup> (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 1/12 <sup>th</sup> 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 FY2020. This schedule directly follows the flow of funds mandated in our Indenture.

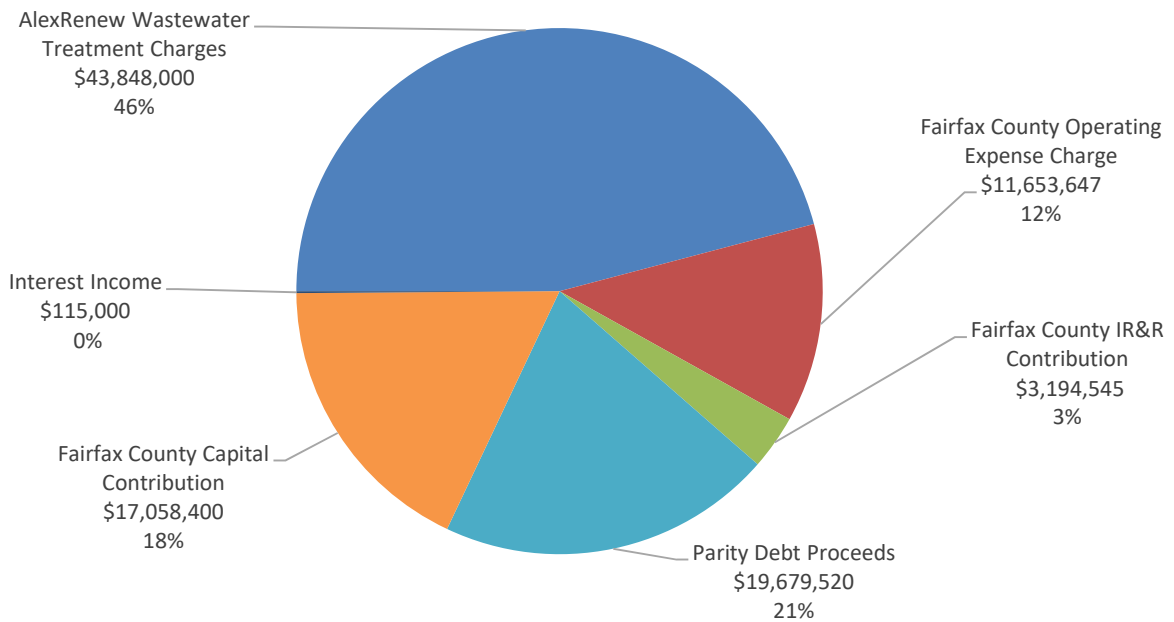
In addition, we note that the revenue projections contained in the exhibits to follow are based on the rates and charges we anticipate will be in effect for FY2020 upon adoption of such rates and charges by the Board. Additional detail regarding the development of rates, charges and revenues can be found on page 13-14 of this document. The Board is expected to adopt these rates and charges to be effective on July 1, 2019 and July 1, 2020. We also note that our operating expense budget will increase by approximately 2% (in line with the current rate of inflation) and we will continue to invest prudently in plant infrastructure and equipment to meet our clean water and community health mandates.

# Consolidated Enterprise Budget Statement

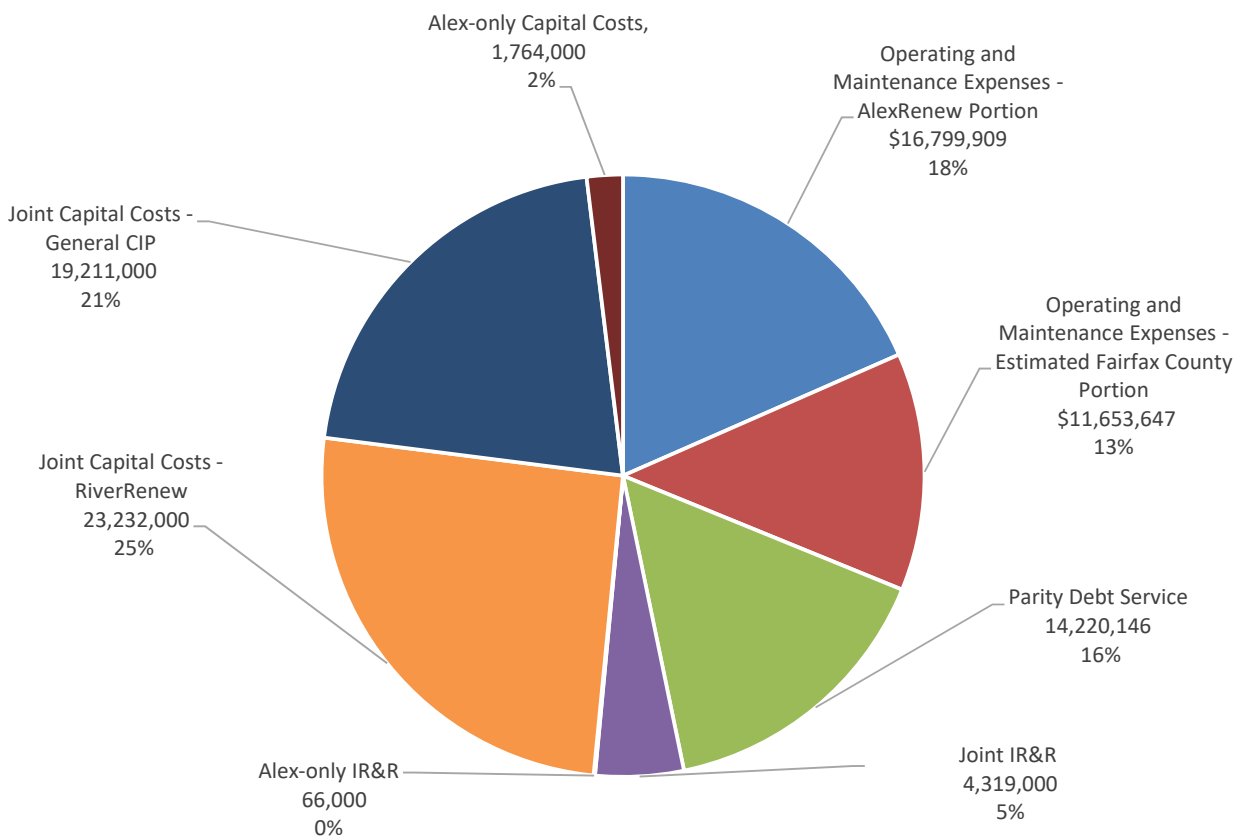


Consolidated Enterprise Budget Statement	Adopted	FY2019	Proposed	FY2020
<b>REVENUE FUND (Per Master Indenture)</b>				
AlexRenew Wastewater Treatment Charges	\$	39,195,503	\$	43,848,000
Fairfax County Operating Expense Charge		11,329,663		11,653,647
Interest Income		-		-
<b>Total Revenues</b>		<b>50,525,166</b>		<b>55,501,647</b>
<b>OPERATING FUND</b>				
Beginning Balance		4,538,320		4,640,520
Revenue Fund Transfer		27,935,311		28,545,266
Interest Income		10,000		10,000
Transfer to General Fund		-		-
Operating Expenses		(27,843,111)		(28,453,556)
Excess Retained to meet FY20 Operating Reserve Requirement		102,200		101,710
<b>Ending Balance (Operating Fund Reserve)</b>		<b>4,640,520</b>		<b>4,742,230</b>
<b>REVENUE FUND BALANCE</b>		<b>22,589,855</b>		<b>26,956,381</b>
<b>PARITY DEBT SERVICE FUND</b>				
Beginning Balance		1,131,581		1,131,581
Revenue Fund Transfer		15,155,561		14,130,146
Interest Income		90,000		90,000
Parity Debt Service Payment		(15,245,561)		(14,220,146)
<b>Ending Balance</b>		<b>1,131,581</b>		<b>1,131,581</b>
<b>REVENUE FUND BALANCE</b>		<b>7,434,294</b>		<b>12,826,235</b>
<b>IMPROVEMENT, RENEWAL AND REPLACEMENT FUND</b>				
Joint Use Facilities Account				
Beginning Balance		7,765,590		7,410,422
Revenue Fund Transfer		2,157,469		2,214,437
Fairfax County Annual Required Contribution		3,112,363		3,194,545
Interest Income		-		-
IR&R Joint Use Facilities Expenses		(5,625,000)		(4,319,000)
<b>Ending Balance</b>		<b>7,410,422</b>		<b>8,500,404</b>
General Account (Alex-only)				
Beginning Balance		156,052		-
Revenue Fund Transfer		446,948		66,000
Interest Income		-		-
IR&R Alex-Only Expenses		(603,000)		(66,000)
<b>Ending Balance</b>		<b>-</b>		<b>-</b>
<b>REVENUE FUND BALANCE</b>		<b>4,829,877</b>		<b>10,545,798</b>
<b>GENERAL FUND</b>				
Beginning Balance		43,587,382		39,748,679
Revenue Fund Transfer		4,829,876		10,545,798
Project Fund Transfer		-		-
Operating Fund Transfer		-		-
Interest Income		15,000		15,000
Alex-Only Capital Costs		(8,169,000)		(1,764,000)
Transfer to CIP - Joint Use Facilities		(514,579)		(5,117,632)
<b>Ending Balance</b>		<b>39,748,679</b>		<b>43,427,845</b>
<b>General Reserve sub-Fund</b>		<b>(4,640,520)</b>		<b>(4,742,230)</b>
<b>Available Balance</b>		<b>35,108,159</b>		<b>38,685,615</b>
<b>REVENUE FUND BALANCE</b>		<b>(0)</b>		<b>(0)</b>
<b>PROJECT FUND</b>				
Beginning Balance		3,573,000		-
Parity Debt / Prior Issue Bond Proceeds		-		3,573,000
Parity Debt / New Bond Proceeds		8,706,021		16,693,968
Transfer to General Fund / Alex-only Capital Costs		-		-
Transfer to CIP - Joint Use Facilities		(12,279,021)		(20,266,968)
<b>Ending Balance</b>		<b>-</b>		<b>-</b>
<b>CAPITAL IMPROVEMENT PROGRAM - JOINT USE FACILITIES</b>				
Beginning Balance		-		-
General Fund Transfer		514,579		5,117,632
Project Fund Transfer		12,279,021		20,266,968
Fairfax County Contribution		13,805,400		17,058,400
Joint Capital Costs		(26,599,000)		(42,443,000)
<b>Ending Balance</b>		<b>-</b>		<b>-</b>

## Funding Sources - Consolidated Budget



## Expenses - Consolidated Budget





# 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 over 70% 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%.

# Determining Rates, Charges and Revenues

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 proposed rate adjustments for 2019 and 2020 are designed to fund the operations, maintenance, and capital needs of our existing system in addition to the improvements associated with the RiverRenew program.

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

Description	Meter Size	Existing (Effective October 1, 2017) Monthly	Proposed (Effective July 1, 2019) Monthly	Proposed (Effective July 1, 2020) Monthly
Residential Base Charge	All Meters	\$9.61	\$10.83	\$12.05
Commercial Base Charge	5/8"	\$28.83	\$32.49	\$36.14
	¾"	\$28.83	\$64.97	\$72.29
	1"	\$72.07	\$81.22	\$90.36
	1-1/2"	\$144.16	\$162.43	\$180.71
	2"	\$230.65	\$259.88	\$289.14
	3"	\$432.47	\$487.28	\$542.14
	4"	\$720.77	\$812.13	\$903.56
	6"	\$1,441.56	\$1,624.26	\$1,807.13
	8"	\$2,306.50	\$2,598.81	\$2,891.40
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	Current (since October 1, 2017) Per 1,000 Gallons	Proposed as of July 1, 2019 Per 1,000 Gallons	Proposed as of July 1, 2020 Per 1,000 Gallons
Individual Meter Residential Wastewater Charge	All Meters	\$6.77	\$7.63	\$8.50
Commercial Wastewater Treatment Charge	All Meters	\$6.77	\$7.63	\$8.50

# 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 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 FY2019 - FY2023, 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 FY2019	Proposed FY2020	Var %	Estimated FY2021	Estimated FY2022	Estimated FY2023
<b>REVENUES</b>						
AlexRenew Wastewater Treatment Charges	\$ 39,195,503	\$ 43,848,000	11.87%	\$ 49,548,240	\$ 49,795,981	\$ 50,044,961
Fairfax County Operating Expense Charge	11,329,663	11,653,647	2.86%	11,887,070	12,125,162	12,368,016
<b>Total Revenues</b>	<b>50,525,165</b>	<b>55,501,647</b>	<b>9.85%</b>	<b>61,435,310</b>	<b>61,921,143</b>	<b>62,412,977</b>
<b>TRANSFERS</b>						
Transfer to Operating Fund <sup>1</sup>	\$ 27,935,311	\$ 28,545,266	2.18%	\$ 29,022,627	\$ 29,603,080	\$ 30,195,141
Transfer to Parity Debt Service Fund	15,155,561	14,130,146	-6.77%	15,217,675	15,178,662	16,398,184
Transfer to IRR Fund - Joint Use Facilities Account	2,157,469	2,214,437	2.64%	2,331,141	2,424,387	2,545,606
Transfer to IRR Fund - General Account	446,948	66,000	-85.23%	67,320	68,666	70,040
Transfer to General Fund	4,829,876	10,545,798	118.35%	14,796,547	14,646,349	13,204,006
<b>Total Transfers</b>	<b>\$ 50,525,165</b>	<b>\$ 55,501,647</b>	<b>9.85%</b>	<b>\$ 61,435,310</b>	<b>\$ 61,921,144</b>	<b>\$ 62,412,977</b>
Excess (Deficiency)	0	0		0	0	0

<sup>1</sup> 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 FY2019	Proposed FY2020	Var %	Estimated FY2021	Estimated FY2022	Estimated FY2023
<b>Operating Expense Charge:</b>						
Total Estimated Operating Expenses	\$ 27,843,111	\$ 28,453,556	2%	\$ 29,022,627	\$ 29,603,080	\$ 30,195,141
Less Estimated "Alexandria Only" Expenses	(4,685,583)	(4,634,836)	-1%	(4,727,533)	(4,822,083)	(4,918,525)
Net Estimated Joint Operating Expenses	\$ 23,157,528	\$ 23,818,720	3%	\$ 24,295,094	\$ 24,780,996	\$ 25,276,616
Estimated Fairfax County Net Flow	49.0%	49.0%		49.0%	49.0%	49.0%
Estimated Fairfax County Operating Expense Charge	11,347,189	11,671,173	3%	11,904,596	12,142,688	12,385,542
Less Alexandria Only Flow Charge	(17,526)	(17,526)	0%	(17,526)	(17,526)	(17,526)
<b>Fairfax County Operating Expense Charge</b>	<b>\$ 11,329,663</b>	<b>\$ 11,653,647</b>	<b>3%</b>	<b>\$ 11,887,070</b>	<b>\$ 12,125,162</b>	<b>\$ 12,368,016</b>
<b>IRR Fund - Joint Account Contribution:</b>						
Estimated Joint Use Plant Investment	\$ 752,833,105	\$ 772,711,685	3%	\$ 803,620,152	\$ 835,764,958	\$ 877,553,206
Estimated Joint Use IRR Funding Percentage	0.7%	0.7%		0.7%	0.7%	0.7%
Estimated Joint Use IRR Investment	\$ 5,269,832	\$ 5,408,982	3%	\$ 5,625,341	\$ 5,850,355	\$ 6,142,872
Investment Allocation at 60%	4,900,944	5,030,353	3%	5,062,807	5,265,319	5,528,585
Investment Allocation at 36%	316,190	324,539	3%	450,027	468,028	491,430
Investment Allocation at 32%	52,698	54,090	3%	112,507	117,007	122,857
<b>Total IRR - Joint Account Investment</b>	<b>\$ 5,269,832</b>	<b>\$ 5,408,982</b>	<b>3%</b>	<b>\$ 5,625,341</b>	<b>\$ 5,850,355</b>	<b>\$ 6,142,872</b>
Fairfax County Allocation at 60%	2,940,566	3,018,212	3%	3,037,684	3,159,192	3,317,151
Fairfax County Allocation at 49%	154,933	159,024	3%	220,513	229,334	240,801
Fairfax County Allocation at 32%	16,863	17,309	3%	36,002	37,442	39,314
<b>Total Fairfax County IRR - Joint Account Contribution</b>	<b>3,112,363</b>	<b>3,194,545</b>	<b>3%</b>	<b>3,294,200</b>	<b>3,425,968</b>	<b>3,597,266</b>
Alex Renew Joint IRR Contribution	2,157,469	2,214,437	3%	2,331,141	2,424,387	2,545,606
<b>Capital Project Contribution - Joint Use Facilities:</b>						
Estimated Joint Capital Improvements at 60%/40%	\$ 19,149,000	\$ 18,761,000	-2%	\$ 11,525,000	\$ 7,849,000	\$ 8,320,000
Fairfax County Allocation at 60%	11,489,400	11,256,600	-2%	6,915,000	4,709,400	4,992,000
Estimated Joint Capital Improvements at 49%/51%	400,000	150,000	-	20,000	-	-
Fairfax County Allocation at 49%	196,000	73,500	-	9,800	-	-
Estimated Joint Capital Improvements RiverRenew	6,800,000	23,232,000	242%	47,528,000	75,500,000	104,700,000
Fairfax County Allocation <sup>1</sup>	2,040,000	5,632,300	176%	5,782,100	7,172,500	9,946,500
Estimated Joint Capital Improvements at 32%/68%	250,000	300,000	20%	-	-	-
Fairfax County Allocation at 32%	80,000	96,000	20%	-	-	-
Total Fairfax County Capital Contribution	13,805,400	17,058,400	24%	12,706,900	11,881,900	14,938,500
<b>Total Fairfax County Contributions</b>	<b>\$ 28,247,426</b>	<b>\$ 31,906,591</b>	<b>13%</b>	<b>\$ 27,888,170</b>	<b>\$ 27,433,030</b>	<b>\$ 30,903,782</b>

<sup>1</sup> Fairfax County allocation based on 30% for FY19 and based on the estimated FY20 project costs and percentages shown below for FY20

Project	FY20 Estimate	Fairfax %	Fairfax \$
RiverRenew 108 to 116 mgd Expansion	2,550,000	60%	1,530,000
RiverRenew Bdg J Fac. Reloc. & Decom.	11,510,000	26%	2,992,600
RiverRenew Site Security and Access	472,000	60%	283,200
RiverRenew Tunnel System	8,700,000	9.5%	826,500
RiverRenew Wet Weather Treatment	-	60%	-
<b>Total</b>	<b>23,232,000</b>		<b>5,632,300</b>



## Condensed Expense Summary

The schedule below combines all of the expenses associated with AlexRenew's FY2020 budget. At approximately 45%, capital outlay represents the largest share of the budget. Together with the Parity Debt Service Fund at 15%, these combined expenses are nearly 60% of the FY2020 budget, demonstrating the capital-intensive nature of the water utility business.

In addition, it is notable that growth in the operating budget has increased at a rate consistent with the approximate current inflation rate. This reflects an effort to balance increased costs, achieve cost efficiencies, and keep costs and rates relatively stable.

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.

Condensed Expense Summary	Adopted FY2019	Proposed FY2020	Var %
<b>OPERATING EXPENSES</b>			
Operating Fund	\$ 27,843,111	\$ 28,453,556	
Operating Reserve Contribution	102,200	101,710	
<b>Total</b>	<b>27,945,311</b>	<b>28,555,266</b>	<b>2%</b>
<b>NON-OPERATING EXPENSES</b>			
Parity Debt Service Fund	15,245,561	14,220,146	-7%
Joint IR&R Fund	5,625,000	4,319,000	-23%
Alex-only IR&R Fund	603,000	66,000	-89%
<b>Total Expenses</b>	<b>21,473,561</b>	<b>18,605,146</b>	<b>-13%</b>
<b>CAPITAL OUTLAY</b>			
RiverRenew Program	\$ 12,000,000	\$ 23,232,000	
General CIP	22,768,000	20,975,000	
<b>Total Capital Outlay</b>	<b>34,768,000</b>	<b>44,207,000</b>	<b>27%</b>
<b>TOTAL EXPENSES AND CAPITAL OUTLAY</b>	<b>\$ 84,186,872</b>	<b>\$ 91,367,412</b>	<b>9%</b>

# 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.

**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, bio-solids reuse, solids disposal 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 FY 2019	Proposed FY 2020	Var %	Adopted FY 2021	Adopted FY 2022	Adopted FY 2023
<b>REVENUES</b>						
Transfer from Revenue Fund	\$ 27,935,311	\$ 28,545,266		\$ 28,830,719	\$ 29,119,026	\$ 29,410,216
Interest Income	10,000	10,000		10,000	10,000	10,000
<b>Total</b>	<b>\$ 27,945,311</b>	<b>\$ 28,555,266</b>	<b>2.18%</b>	<b>\$ 28,840,719</b>	<b>\$ 29,129,026</b>	<b>\$ 29,420,216</b>
<b>EXPENSES</b>						
Operational Excellence	\$ 6,312,400	\$ 6,580,708		\$ 6,646,515	\$ 6,712,980	\$ 6,780,110
Public Engagement and Trust	1,947,400	2,282,186		2,305,007	2,328,057	2,351,338
Watershed Stewardship	3,165,700	2,933,993		2,963,333	2,992,966	3,022,896
Adaptive Culture	14,703,111	14,713,122		14,860,253	15,008,856	15,158,944
Effective Financial Stewardship	1,714,500	1,943,548		1,962,983	1,982,613	2,002,439
<b>Total</b>	<b>\$ 27,843,111</b>	<b>\$ 28,453,556</b>	<b>2.19%</b>	<b>\$ 28,738,091</b>	<b>\$ 29,025,472</b>	<b>\$ 29,315,727</b>
<b>Excess (Deficiency) <sup>1</sup></b>	<b>\$ 102,200</b>	<b>\$ 101,710</b>	<b>-0.48%</b>	<b>\$ 102,627</b>	<b>\$ 103,553</b>	<b>\$ 104,489</b>
<b>Transfer to General Fund</b>	<b>\$ -</b>	<b>\$ -</b>		<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>FUND BALANCE - Beginning</b>	<b>\$ 4,538,320</b>	<b>\$ 4,640,520</b>		<b>\$ 4,742,230</b>	<b>\$ 4,844,857</b>	<b>\$ 4,948,411</b>
<b>FUND BALANCE - Ending <sup>2</sup></b>	<b>\$ 4,640,520</b>	<b>\$ 4,742,230</b>	<b>2.19%</b>	<b>\$ 4,844,857</b>	<b>\$ 4,948,411</b>	<b>\$ 5,052,900</b>

<sup>1</sup> Balance required to fully fund mandated Operating Reserve per Master Trust Indenture

<sup>2</sup> Operating Reserve Requirement

## Organizational Highlights

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AlexRenew continues to invest in its workforce to recruit and retain the best talent. Salaries are provided for full-time and part-time employees. Healthcare benefits, including medical, dental, and vision, are also provided. Other benefits for employees include retirement, social security, short and long term disability, life insurance, workers compensation, unemployment tax, and legal services. Paid time off is provided at a rate based on years of service.

### **Retirement Benefit**

Budgeted funds for staff retirement is the contribution AlexRenew pays into the Virginia Retirement System (VRS). VRS administers pension plans and other benefits for Virginia's covered public sector employees. AlexRenew's contribution to VRS decreased in FY19 to 7.27%, down from 8.95% in FY18 as directed by VRS. The VRS employer contribution is updated every other even calendar year and will be next updated around March 2020.

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 38 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. The VRS Hybrid plan, which started on January 1, 2014 and is still in effect, is the plan in which 57 of our employees are enrolled.

### **Other Post-Employment Benefits (OPEB)**

OPEB funding supports retiree healthcare benefits. The FY2020 budget provides for approximately \$185,000 in OPEB funding to support both current and future retirees. We currently have 7 retirees receiving this benefit.

### **Healthcare Benefit**

Budgeted healthcare costs represent the share that AlexRenew pays for employee healthcare benefits. Currently the cost share for the AlexRenew healthcare benefit is 83% employer and 17% employee for the High Deductible medical and dental plan, and 80% employer and 20% employee for the HMO medical plan.

# Organizational Highlights

## Workforce by Full Time Equivalent (FTE)

As shown below, the FY2020 budget provides for the same number of FTEs as was approved in FY2019.

Department	Approved FY 2019	Proposed FY 2020	FTE Impact
Executive	6	3	-3
Engineering & Planning / RiverRenew Program Staff	8	13	+5
Communications	6	5	-1
Finance	10	11	+1
Operations & Maintenance	80	66	-14
Environmental Performance	0	12	+12
Human Resources	2	2	0
Information Systems	6	6	0
<b>TOTAL</b>	<b>118</b>	<b>118</b>	<b>0</b>



# Organizational Highlights

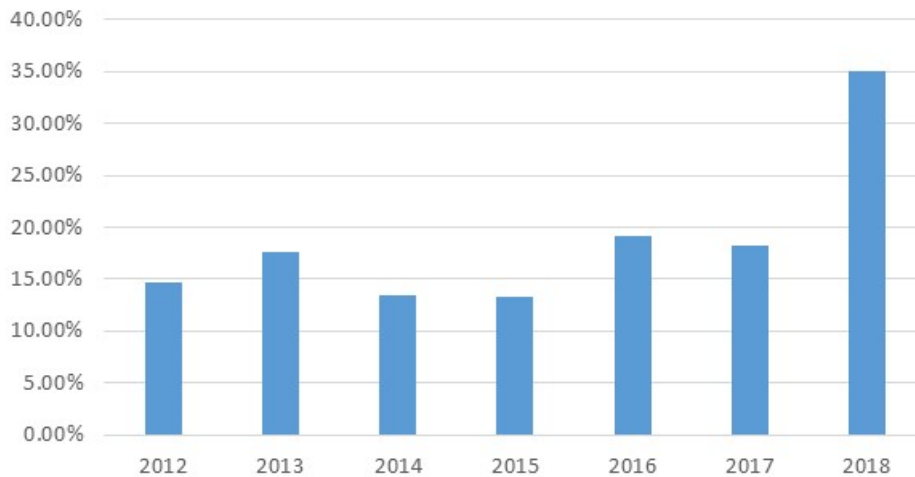


## Calendar Year 2018 Turnover

In Calendar Year 2018, overall employee turnover increased by 14 staff; from 18 in CY 2017 to 32 in CY 2018. Of the 32 employees, 6 retired in CY 2018, which is an increase of 4 from CY 2017. The remaining turnover included employees who relocated with their families, left their position for personal reasons, or received job opportunities that built upon their training and experience at AlexRenew. Our total employment for the year averaged 93 employees.

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.

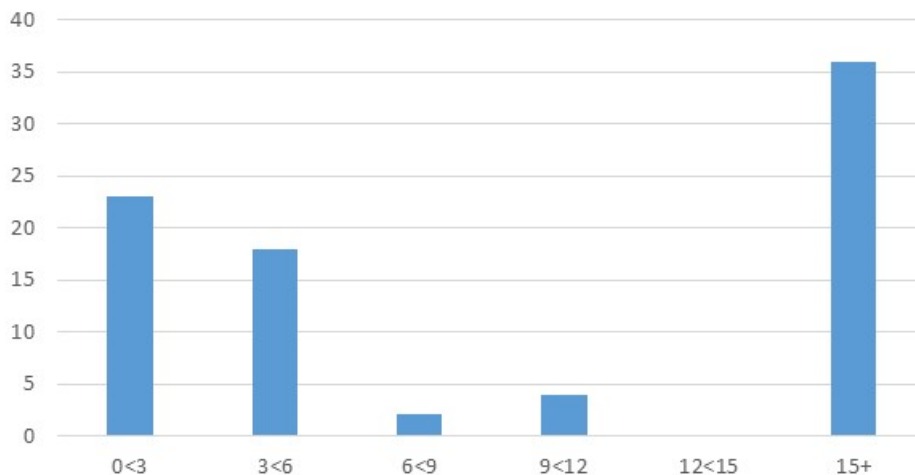
Total Turnover



## Years of Service

More than half of the current workforce (57%) has been employed with AlexRenew for 12 years or fewer. 43% have worked for AlexRenew for over 15 years or more.

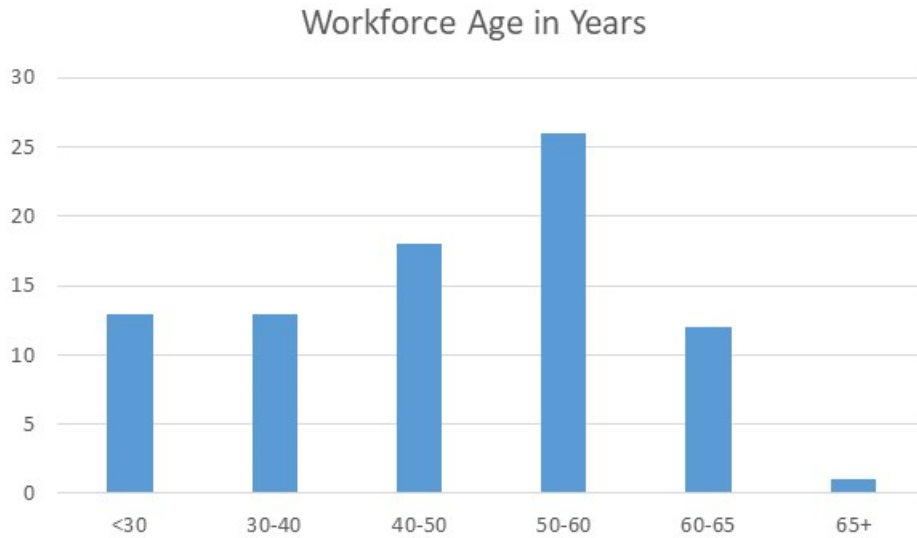
Workforce Years of Service



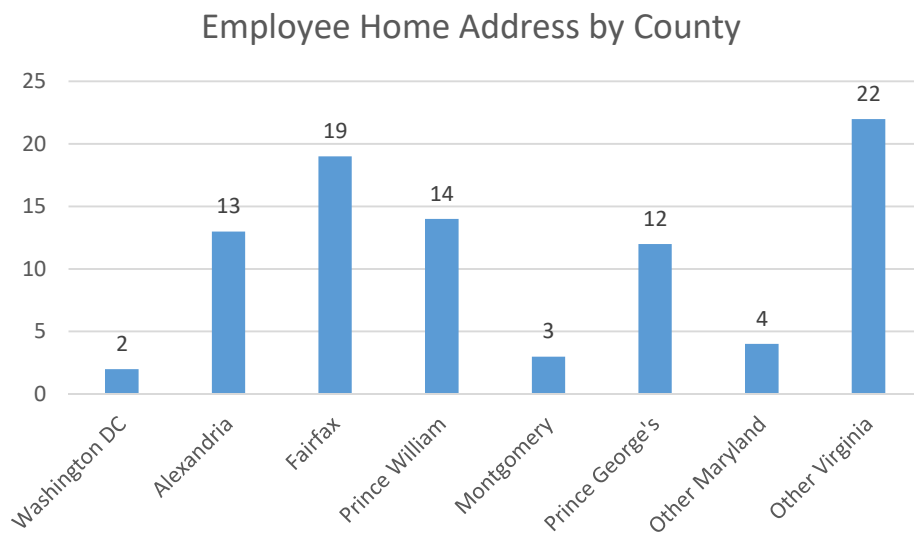
# Organizational Highlights

## Employee Demographics

Almost three quarters (69%) of AlexRenew’s workforce fall within the ages of 30 and 60 years old.



AlexRenew’s employees reside in a variety of locations across the region with 15% living in the City, 21% in Fairfax County, 16% in Prince William County and 21% in Maryland. Just two employees reside in Washington, D.C. and the remainder live in other locations in Virginia.



# Parity Debt Service Fund Statement

The Parity Debt Service Fund includes the amounts due in FY2020 to pay principal and interest on outstanding AlexRenew debt. To date, AlexRenew has borrowed from the Virginia Clean Water Revolving Loan Fund (CWRLF) and Virginia Pooled Financing Program (VFPF) through the Virginia Resources Authority (VRA). Within the context of our Indenture, capital funding in this manner is deemed parity debt.

Parity Debt Service Fund	Adopted FY2019 <sup>1</sup>	Proposed FY2020	Estimated FY2021	Estimated FY2022	Estimated FY2023
<b>REVENUES</b>					
Beginning Balance	\$ 1,131,581	\$ 1,131,581	\$ 1,131,581	\$ 1,131,581	\$ 1,131,581
Transfer from Revenue Fund	\$ 7,906,655	\$ 14,130,146	\$ 14,732,201	\$ 14,736,051	\$ 12,963,197
Interest Income	90,000	90,000	90,000	90,000	90,000
<b>Total Revenue</b>	<b>9,128,236</b>	<b>15,351,727</b>	<b>15,953,782</b>	<b>15,957,632</b>	<b>14,184,778</b>
<b>EXPENDITURES</b>					
VRA BD SERIES 98A INTEREST	3,679	-	-	-	-
VRA BD SERIES 98A PRINCIPAL	313,098	-	-	-	-
VRA BD SERIES 00A INTEREST	45,128	45,650	-	-	-
VRA BD SERIES 00A PRINCIPAL	844,721	1,734,049	-	-	-
VRA BD SERIES 00B INTEREST	447,231	781,238	592,209	345,827	77,464
VRA BD SERIES 00B PRINCIPAL	1,841,650	4,440,351	6,336,945	6,589,727	4,024,113
VRA BOND SERIES 04 INTEREST	125,079	221,316	181,862	141,175	99,217
VRA BOND SERIES 04 PRINCIPAL	617,047	1,262,935	1,302,389	1,343,076	1,385,034
VRA BD SERIES 06 INTEREST	88,220	160,998	139,969	118,401	96,279
VRA BD SERIES 06 PRINCIPAL	408,339	832,120	853,149	874,717	896,839
VRA BOND SERIES 08B INTEREST	4,572	-	-	-	-
VRA BOND SERIES 08B PRINCIPAL	215,000	-	-	-	-
VRA BOND SERIES 09 INTEREST	127,671	239,962	218,987	197,438	175,299
VRA BOND SERIES 09 PRINCIPAL	375,268	765,916	786,890	808,439	830,578
VRA BOND SERIES 11 INTEREST	76,983	147,468	138,633	129,590	120,332
VRA BOND SERIES 11 PRINCIPAL	183,622	373,742	382,577	391,620	400,877
VRA BOND SERIES 14A Interest	117,256	225,819	214,025	201,982	189,684
VRA BOND SERIES 14A PRINCIPAL	275,005	558,702	570,497	582,540	594,838
VRA BOND Reclaimed SERIES 14B Interest	22,874	43,991	41,607	39,173	36,688
VRA BOND Reclaimed SERIES 14B PRINCIPAL	55,578	112,914	115,297	117,731	120,217
VRA BOND SERIES 14C Interest	886,128	879,594	867,784	855,463	841,625
VRA BOND SERIES 14C PRINCIPAL	15,000	240,000	255,000	260,000	280,000
VRA BOND SERIES 17A Interest	907,506	907,506	907,506	907,506	892,772
VRA BOND SERIES 17A Principal	-	-	-	-	575,000
Future Bonds - Series 2019 Interest <sup>2</sup>	-	235,875	235,875	235,875	235,875
Future Bonds - Series 2019 Principal <sup>2</sup>	-	5,000	5,000	5,000	5,000
Future Bonds - Series 2020 Interest <sup>3</sup>	-	-	671,000	670,771	670,466
Future Bonds - Series 2020 Principal <sup>3</sup>	-	5,000	5,000	10,000	505,000
<b>TOTAL EXPENSES</b>	<b>\$ 7,996,655</b>	<b>\$ 14,220,146</b>	<b>\$ 14,822,201</b>	<b>\$ 14,826,051</b>	<b>\$ 13,053,197</b>
Total Interest	2,852,327	3,889,417	4,209,457	3,843,200	3,435,701
Total Principal	5,144,328	10,330,729	10,612,744	10,982,851	9,617,496
	<b>\$ 7,996,655</b>	<b>\$ 14,220,146</b>	<b>\$ 14,822,201</b>	<b>\$ 14,826,051</b>	<b>\$ 13,053,197</b>
<b>Fund Balance - Beginning</b>	<b>\$ 1,131,581</b>	<b>\$ 1,131,581</b>	<b>\$ 1,131,581</b>	<b>\$ 1,131,581</b>	<b>\$ 1,131,581</b>
<b>Fund Balance - Ending</b>	<b>\$ 1,131,581</b>	<b>\$ 1,131,581</b>	<b>\$ 1,131,581</b>	<b>\$ 1,131,581</b>	<b>\$ 1,131,581</b>

<sup>1</sup> Adjusted for 9-month Fiscal Year (October 1, 2018 - June 30, 2019); adopted FY19 figure was \$13,967,366, reflecting full 12-month Fiscal Year

<sup>2</sup> Assumes \$9.4 million borrowing amortized primarily in 2024-2048 at 2.50%

<sup>3</sup> Assumes \$22 million borrowing amortized primarily in 2023-2050 at 3.05%

## 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 FY2020. 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 FY2019	Proposed FY2020	Var (%)	Estimated FY2021
<b>REVENUES</b>				
Revenue Fund Transfer	\$ 2,157,469	\$ 2,214,437		\$ 3,294,200
Fairfax County Contribution	3,112,363	3,194,545		2,331,141
Interest Income	-	-		-
<b>Total Revenues</b>	<b>\$ 5,269,832</b>	<b>\$ 5,408,982</b>	<b>3%</b>	<b>\$ 5,625,341</b>
<b>EXPENSES</b>				
Preliminary / Primary Infrastructure	\$ 1,670,000	\$ 333,333		
Secondary Infrastructure	250,000	613,333		
Tertiary Infrastructure	250,000	761,333		
Solids Infrastructure	1,145,000	1,750,500		
Process Improvements	615,000	-		
Campus Wide Projects	755,000	384,500		
Information Technology Projects	290,000	468,000		
Collection System Projects		8,000		
Communications Projects	250,000	-		
Contingency (7%)	400,000	-		
Joint IRR Expenses	5,625,000	4,319,000	-23%	4,405,380
<b>Excess (Deficiency)</b>	<b>\$ (355,168)</b>	<b>\$ 1,089,982</b>	<b>-407%</b>	<b>\$ 1,219,961</b>
<b>FUND BALANCE - Beginning</b>	<b>\$ 7,765,590</b>	<b>\$ 7,410,422</b>		<b>\$ 8,500,404</b>
<b>FUND BALANCE - Ending</b>	<b>\$ 7,410,422</b>	<b>\$ 8,500,404</b>	<b>15%</b>	<b>\$ 9,720,365</b>



# 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 FY2019	Proposed FY2020	Var (%)
<b>Revenues</b>			
Revenue Fund Transfer	\$ 446,948	\$ 66,000	
<b>Total Revenue</b>	<b>\$ 446,948</b>	<b>\$ 66,000</b>	
<b>Expenses</b>			
<b>Total Expenses</b>	<b>\$ 603,000</b>	<b>\$ 66,000</b>	<b>-89.05%</b>
<b>Excess (Deficiency)</b>	\$ (156,052)	\$ -	
<b>Fund Balance - Beginning</b>	\$ 156,052	\$ -	
<b>Fund Balance - Ending</b>	\$ -	\$ -	

# 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 insure ongoing financial strength.

General Fund	Adopted FY2019	Proposed FY2020	Var %	Estimated FY2021	Estimated FY2022	Estimated FY2023
<b>REVENUES</b>						
Revenue Fund Transfer	\$ 4,829,876	\$ 10,545,798		\$ 14,796,547	\$ 14,646,349	\$ 13,204,006
Interest Income	15,000	15,000		15,000	15,000	15,000
Operating Fund Transfer	-	-		-	-	-
Project Fund Transfer	-	\$ -		-	-	-
<b>Total Revenues</b>	<b>\$ 4,844,876</b>	<b>\$ 10,560,798</b>	<b>118%</b>	<b>\$ 14,811,547</b>	<b>\$ 14,661,349</b>	<b>\$ 13,219,006</b>
<b>EXPENSES</b>						
Alex-Only Capital Expenses	\$ 8,169,000	\$ 1,764,000	-78%	\$ 2,223,000	\$ 2,969,000	\$ 2,345,000
Transfer to Joint Project Fund	\$ 514,579	\$ 5,117,632		\$ 6,971,400	\$ 9,978,700	14,959,750
<b>Total General Fund Expenses</b>	<b>\$ 8,683,579</b>	<b>\$ 6,881,632</b>	<b>-21%</b>	<b>\$ 9,194,400</b>	<b>\$ 12,947,700</b>	<b>17,304,750</b>
<b>Excess (Deficiency)</b>	<b>\$ (3,838,703)</b>	<b>\$ 3,679,166</b>		<b>\$ 5,617,147</b>	<b>\$ 1,713,649</b>	<b>\$ (4,085,744)</b>
<b>Beginning Fund Balance</b>	<b>\$ 43,587,382</b>	<b>\$ 39,748,679</b>		<b>\$ 43,427,845</b>	<b>\$ 49,044,992</b>	<b>50,758,641</b>
<b>Ending Fund Balance</b>	<b>\$ 39,748,679</b>	<b>\$ 43,427,845</b>	<b>9%</b>	<b>\$ 49,044,992</b>	<b>\$ 50,758,641</b>	<b>46,672,897</b>
General Reserve sub-Fund <sup>1</sup>	\$ (4,640,520)	\$ (4,742,230)		\$ (4,789,682)	\$ (4,837,579)	(4,885,955)
<b>Available Balance</b>	<b>\$ 35,108,159</b>	<b>\$ 38,685,615</b>	<b>10%</b>	<b>\$ 44,255,310</b>	<b>\$ 45,921,062</b>	<b>41,786,942</b>

<sup>1</sup> Additional Operating Reserve Requirement per Board approved Financial Policy

# 10-year Capital Improvement Program

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## **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 FY20 – FY29 CIP includes project cost assumptions for the RiverRenew program as well as the Improvement, Renewal and Replacement program.

## **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**

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), Virginia Water Quality Improvement Fund (VA WQIF) Point Source Grant, United States Environmental Protection Agency (US EPA) Special Appropriations Grant, Municipal Bond issues, bank loans and lines of credit, and AlexRenew discretionary 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 30 and specific project information is provided on pages 31-38.

## **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 39-40 and specific project information is provided on pages 41-87.

# 10-year Capital Improvement Program Detailed Expenditures

	Proposed FY2020	Estimated FY2021	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025	Estimated FY2026	Estimated FY2027	Estimated FY2028	Estimated FY2029	Project Totals
<b>Alex-Only Capital Projects</b>											
<b>Interceptor/ Trunk Sewers Rehabilitation Program</b>											
Commonwealth Interceptor Rehabilitation	\$ -	\$ -	\$ -	\$ 18,000	\$ -	\$ -	\$ -	\$ -	\$ 245,000	\$ -	\$ 263,000
Potomac Interceptor Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 414,000	\$ 1,000,000	\$ 1,500,000	\$ 1,500,000	\$ 3,000,000	\$ 7,414,000
<b>Improvement, Renewal, Replacement Program</b>											
IRR: Collection System Projects	\$ 66,000	\$ -	\$ 37,000	\$ 66,000	\$ 16,000	\$ 37,000	\$ 50,000	\$ 16,000	\$ 53,000	\$ 50,000	\$ 391,000
<b>Non-Process Facilities Program</b>											
Mobile Vehicle with Popup/Out Elements	\$ 80,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 230,000
<b>RiverRenew Program</b>											
<b>Service Chambers and Pump Stations Upgrade Program</b>											
Bush Hill Service Chamber	\$ 150,000	\$ 300,000	\$ 750,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,200,000
Mark Center Pump Station Study	\$ 350,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 350,000
<b>WRRF Improvements Program</b>											
<b>Other Capital</b>											
Arlington County Capital Contribution	\$ 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	\$ 17,657,000
Capital Financing Fees	\$ 400,000	\$ 600,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 600,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 5,450,000
<b>Alex-Only Capital Project Subtotal</b>	<b>\$ 1,830,000</b>	<b>\$ 2,223,000</b>	<b>\$ 3,006,000</b>	<b>\$ 2,411,000</b>	<b>\$ 3,231,000</b>	<b>\$ 4,945,000</b>	<b>\$ 4,505,000</b>	<b>\$ 2,945,000</b>	<b>\$ 2,409,000</b>	<b>\$ 5,450,000</b>	<b>\$ 32,955,000</b>
<b>Joint-Use Capital Projects</b>											
<b>Interceptor/ Trunk Sewers Rehabilitation Program</b>											
Commonwealth Interceptor Pile Intrusion	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 177,000	\$ 587,000	\$ -	\$ -	\$ -	\$ 764,000
Upper Holmes Run Trunk Sewer Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ 833,000	\$ 351,000	\$ 1,850,000	\$ 1,850,000	\$ 100,000	\$ 55,000	\$ 5,039,000
<b>Improvement, Renewal, Replacement Program</b>											
IRR: Preliminary/Primary Infrastructure	\$ 333,333	\$ 283,333	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 70,000	\$ 70,000	\$ 876,667
IRR: Secondary Infrastructure	\$ 613,333	\$ 796,333	\$ 533,000	\$ 273,000	\$ 70,000	\$ 70,000	\$ 313,000	\$ 433,000	\$ 312,000	\$ 70,000	\$ 3,483,667
IRR: Tertiary Infrastructure	\$ 761,333	\$ 391,333	\$ 85,000	\$ 276,000	\$ 65,000	\$ 108,000	\$ 105,000	\$ 128,000	\$ 85,000	\$ 148,000	\$ 2,152,667
IRR: Solids Infrastructure	\$ 1,750,500	\$ 851,500	\$ 1,195,500	\$ 1,374,500	\$ 729,500	\$ 377,500	\$ 624,500	\$ 1,201,500	\$ 1,490,500	\$ 1,121,500	\$ 10,717,000
IRR: Campus Wide Projects	\$ 384,500	\$ 267,000	\$ 142,000	\$ 367,000	\$ 437,000	\$ 820,000	\$ 162,000	\$ 377,000	\$ 167,000	\$ 845,000	\$ 3,968,500
IRR: Information Technology Projects	\$ 468,000	\$ 350,000	\$ 750,000	\$ 650,000	\$ 300,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 3,018,000
IRR: Collection System Projects	\$ 8,000	\$ 51,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ 51,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ 51,000	\$ 209,000
<b>Non-Process Facilities Program</b>											
Environmental Center: 5th Floor Build Out	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,200,000	\$ -	\$ -	\$ -	\$ 1,200,000
Environmental Center: Lobby Upgrade	\$ 150,000	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 170,000
South Carlyle Partnership	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 300,000
WRRF Fire Alarm Upgrade	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 250,000
WRRF HVAC Automation System Upgrade	\$ -	\$ -	\$ -	\$ 500,000	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000
<b>RiverRenew Program</b>											
RiverRenew 108 to 116 mgd Expansion	\$ 2,550,000	\$ 640,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,190,000
RiverRenew Bdg J Fac. Reloc. & Decom.	\$ 11,510,000	\$ 4,930,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 16,440,000
RiverRenew Site Security and Access	\$ 472,000	\$ 258,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 730,000
RiverRenew Tunnel System	\$ 8,700,000	\$ 41,700,000	\$ 75,500,000	\$ 104,700,000	\$ 51,800,000	\$ 44,500,000	\$ -	\$ -	\$ -	\$ -	\$ 326,900,000
RiverRenew Wet Weather Treatment	\$ -	\$ -	\$ -	\$ 100,000	\$ 1,700,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,800,000
<b>Service Chambers and Pump Stations Upgrade Program</b>											
<b>WRRF Improvements Program</b>											
Building 60: NMF Odor Media Study	\$ -	\$ 350,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 350,000
Building F: Effluent W3 System Improvements	\$ 136,000	\$ 350,000	\$ -	\$ 10,000	\$ -	\$ -	\$ 10,000	\$ -	\$ -	\$ 10,000	\$ 516,000
Building L: Odor Scrubber and Piping Study	\$ -	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 150,000
Building L: Polymer System Study	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,000
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
Centrate Pretreatment Facility	\$ 185,000	\$ 258,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 443,000
Fiber Optic Backbone Replacement	\$ 1,186,000	\$ 334,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,520,000
HMI Upgrade	\$ 2,182,000	\$ 1,385,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,567,000
Intermediate Pump Station Pump Study	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 250,000
Long Range Plan	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 350,000	\$ -	\$ -	\$ -	\$ 350,000
PLC Equipment and Network Upgrade	\$ 1,671,000	\$ 697,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,368,000
Power Distribution Monitors	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000	\$ 100,000	\$ 100,000	\$ -	\$ 250,000	\$ 500,000
Preliminary/Primary System Upgrades	\$ 890,000	\$ 1,637,000	\$ 6,907,000	\$ 7,097,000	\$ 6,516,000	\$ 2,302,000	\$ -	\$ -	\$ -	\$ -	\$ 25,349,000
Pre-Pasteurization System Improvements	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Process Air Compressor (PAC) System Upgrade	\$ 11,521,000	\$ 5,964,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,485,000
Security Services During Construction	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 4,000,000
Solids/Resource Recovery Upgrades	\$ -	\$ -	\$ 542,000	\$ 213,000	\$ -	\$ 2,865,000	\$ 5,305,000	\$ 5,305,000	\$ 5,305,000	\$ 849,000	\$ 20,384,000
Stormwater System - Struct./Nonstruct. BMPs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,134,000	\$ 1,236,000	\$ 349,000	\$ 13,000	\$ 2,732,000
Truck Scale Rehabilitation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,000	\$ -	\$ -	\$ -	\$ 86,000
<b>OTHER CAPITAL</b>											
<b>Joint Capital Project Subtotal</b>	<b>\$ 46,762,000</b>	<b>\$ 62,063,500</b>	<b>\$ 86,082,500</b>	<b>\$ 115,988,500</b>	<b>\$ 64,159,500</b>	<b>\$ 55,525,500</b>	<b>\$ 15,632,500</b>	<b>\$ 15,459,500</b>	<b>\$ 11,038,500</b>	<b>\$ 4,628,500</b>	<b>\$ 477,340,500</b>
<b>ALEXRENEW 10-YEAR CIP TOTAL</b>	<b>\$ 48,592,000</b>	<b>\$ 64,286,500</b>	<b>\$ 89,088,500</b>	<b>\$ 118,399,500</b>	<b>\$ 67,390,500</b>	<b>\$ 60,470,500</b>	<b>\$ 20,137,500</b>	<b>\$ 18,404,500</b>	<b>\$ 13,447,500</b>	<b>\$ 10,078,500</b>	<b>\$ 510,295,500</b>

# 10-year Capital Improvement Program Summary Expenditures

	Proposed FY2020	Estimated FY2021	Estimated FY2022	Estimated FY2023	Estimated FY2024	Estimated FY2025	Estimated FY2026	Estimated FY2027	Estimated FY2028	Estimated FY2029	Project Totals
<b>IRR Program</b>											
Alex-only IRR	\$ 66,000	\$ -	\$ 37,000	\$ 66,000	\$ 16,000	\$ 37,000	\$ 50,000	\$ 16,000	\$ 53,000	\$ 50,000	\$ 391,000
Joint IRR	\$ 4,319,000	\$ 2,990,500	\$ 2,733,500	\$ 2,968,500	\$ 1,629,500	\$ 1,546,500	\$ 1,332,500	\$ 2,267,500	\$ 2,232,500	\$ 2,405,500	\$ 24,425,500
<b>General CIP</b>											
Alex-only Capital Projects	\$ 1,764,000	\$ 2,223,000	\$ 2,969,000	\$ 2,345,000	\$ 3,215,000	\$ 4,908,000	\$ 4,455,000	\$ 2,929,000	\$ 2,356,000	\$ 5,400,000	\$ 32,564,000
Joint Capital Projects	\$ 19,211,000	\$ 11,545,000	\$ 7,849,000	\$ 8,220,000	\$ 9,030,000	\$ 9,479,000	\$ 14,300,000	\$ 13,192,000	\$ 8,806,000	\$ 2,223,000	\$ 103,855,000
<b>General CIP Sub-Total</b>	<b>\$ 25,360,000</b>	<b>\$ 16,758,500</b>	<b>\$ 13,588,500</b>	<b>\$ 13,599,500</b>	<b>\$ 13,890,500</b>	<b>\$ 15,970,500</b>	<b>\$ 20,137,500</b>	<b>\$ 18,404,500</b>	<b>\$ 13,447,500</b>	<b>\$ 10,078,500</b>	<b>\$ 161,235,500</b>
<b>RiverRenew Program</b>											
RiverRenew 108 to 116 mgd Expansion	\$ 2,550,000	\$ 640,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,190,000
RiverRenew Bdg J Fac. Reloc. & Decom.	\$ 11,510,000	\$ 4,930,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 16,440,000
RiverRenew Site Security and Access	\$ 472,000	\$ 258,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 730,000
RiverRenew Tunnel System	\$ 8,700,000	\$ 41,700,000	\$ 75,500,000	\$ 104,700,000	\$ 51,800,000	\$ 44,500,000	\$ -	\$ -	\$ -	\$ -	\$ 326,900,000
RiverRenew Wet Weather Treatment	\$ -	\$ -	\$ -	\$ 100,000	\$ 1,700,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,800,000
<b>RiverRenew Sub-Total</b>	<b>\$ 23,232,000</b>	<b>\$ 47,528,000</b>	<b>\$ 75,500,000</b>	<b>\$ 104,800,000</b>	<b>\$ 53,500,000</b>	<b>\$ 44,500,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 349,060,000</b>
<b>ALEXRENEW 10-YEAR CIP TOTAL</b>	<b>\$ 48,592,000</b>	<b>\$ 64,286,500</b>	<b>\$ 89,088,500</b>	<b>\$ 118,399,500</b>	<b>\$ 67,390,500</b>	<b>\$ 60,470,500</b>	<b>\$ 20,137,500</b>	<b>\$ 18,404,500</b>	<b>\$ 13,447,500</b>	<b>\$ 10,078,500</b>	<b>\$ 510,295,500</b>

# Alexandria-Only CIP Project Details

The table below details the FY20 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 2020 Capital Improvement Program – Alexandria Only						
Projects	Watershed Stewardship	Operational Excellence	Adaptive Culture	Public Engagement & Trust	Effective Financial Stewardship	
Arlington County Capital Contributions	●					
Bush Hill Service Chamber		●				
Capital Finance Fees					●	
Commonwealth Interceptor Rehabilitation					●	
IRR: Collection System Projects (Alex-only)					●	
Mark Center Pump Station Study		●				
Mobile Vehicle with Popup/Out Elements				●		
Potomac Interceptor Rehabilitation					●	



## Arlington County Capital Contributions

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Finance		Various				Arlington County Capital Contributions <input checked="" type="checkbox"/> Alexandria Only <input type="checkbox"/> Joint Use			20 Years			Ongoing
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$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	\$17,657,000
Financing												
AlexRenew	\$0	\$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	\$17,657,000
Fairfax												
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>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), and 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).</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>This project ensures the Arlington plant remains in good condition to accommodate AlexRenew's capacity rights</li> </ul>						<ul style="list-style-type: none"> <li>Watershed Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>While these milestones are the County's to manage, work is expected to begin on the odor control and solids master plan projects in FY20</li> </ul>						<ul style="list-style-type: none"> <li>Results in other operational efficiencies for the Arlington plant</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Modest adjustments to timing of projects</li> </ul>						

## Bush Hill Service Chamber

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
TBD		Bush Hill				Service Chambers & PS Upgrades <input checked="" type="checkbox"/> Alexandria Only <input type="checkbox"/> Joint Use			20 Years			\$1,200,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$150,000	\$300,000	\$750,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,200,000
Financing												
AlexRenew	\$0	\$150,000	\$300,000	\$750,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,200,000
Fairfax												
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>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.</li> <li>This project will also consider the retrofitting of the inflow orifice with a bar screen if the wet weather load is considered significant.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>This project maintains the service chamber that eliminates the back-ups.</li> </ul>						<ul style="list-style-type: none"> <li>Operational Excellence</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Start of evaluation</li> </ul>						<ul style="list-style-type: none"> <li>Decreases/increases future O&amp;M costs</li> <li>Results in other operational efficiencies</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>Bar screen portion: August 2017 Greeley &amp; Hansen Condition Assessment Summary and Recommendations</li> </ul>						<ul style="list-style-type: none"> <li>None.</li> </ul>						

## Capital Finance Fees

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Finance		Various				Service Chambers & PS Upgrades <input checked="" type="checkbox"/> Alexandria Only <input type="checkbox"/> Joint Use			20 Years			Ongoing
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$400,000	\$600,000	\$750,000	\$750,000	\$750,000	\$600,000	\$400,000	\$400,000	\$400,000	\$400,000	\$5,450,000
Financing												
AlexRenew	\$0	\$400,000	\$600,000	\$750,000	\$750,000	\$750,000	\$600,000	\$400,000	\$400,000	\$400,000	\$400,000	\$5,450,000
Fairfax												
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>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.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Investing in capital finance fees helps ensure that capital financing is executed in the most efficient manner</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>None</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>None</li> </ul>						

## 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. <input checked="" type="checkbox"/> Alexandria Only <input type="checkbox"/> Joint Use			20-30 years			\$263,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$0	\$18,000	\$0	\$0	\$0	\$0	\$245,000	\$0	\$263,000
<b>Financing</b>												
AlexRenew	\$0	\$0	\$0	\$0	\$18,000	\$0	\$0	\$0	\$0	\$245,000	\$0	\$263,000
Fairfax												
VRLF												
Grant												
Line of Credit												
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: <ul style="list-style-type: none"> <li>• Monitor the excess grout detected downstream of MH6974, at the intersection of Wyatt and Commonwealth, for retention of debris.</li> <li>• Monitor the detached sliplining downstream of MH 9669, at the intersection of Myrtle and Commonwealth, for increased rates of infiltration or degradation.</li> <li>• Monitor failed slipliner repair downstream of MH 9593, as soon as practical, to determine if immediate action is required.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>• Appropriate minor repairs and maintenance activities maximize asset life.</li> </ul>						<ul style="list-style-type: none"> <li>• Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>• N/A</li> </ul>						<ul style="list-style-type: none"> <li>• 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.</li> <li>• Citizens are to be notified if contractor equipment will be in their neighborhood.</li> </ul>						

### IRR: Collection System Projects (Alex-Only)

Managing Department and Champion			Project Location			Program and Project Category			Estimated Useful Life			Lifetime Budget
Maintenance Steve Hill			Four Mile Run PS Mark Center PS Slater's Lane PS			Improve., Rehab., Replacement <input checked="" type="checkbox"/> Alexandria Only <input type="checkbox"/> Joint Use			3 years for pumps and grinders			\$443,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$52,000	\$66,000	\$0	\$37,000	\$66,000	\$16,000	\$37,000	\$50,000	\$16,000	\$53,000	\$50,000	\$391,000
Financing												
AlexRenew	\$52,000	\$66,000	\$0	\$37,000	\$66,000	\$16,000	\$37,000	\$50,000	\$16,000	\$53,000	\$50,000	\$391,000
Fairfax												
VRLF												
Grant												
Line of Credit												

#### 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

- Full redundancy and reliability of Four Mile Run Pump Station, Mark Center Pump Station and Slater's Lane Pump Station

#### Strategic Outcome Area

- Effective Financial Stewardship

### IRR: Solids Infrastructure Continued

Key Milestones for FY 20	Impact on Operations or Community
<ul style="list-style-type: none"> <li>• Complete pumps and grinders replacement at Four Mile Run PS</li> <li>• Complete rebuilt or replacement of MCPS Pumps</li> <li>• Complete 1 pump replacement at Slater's Lane PS</li> </ul>	<ul style="list-style-type: none"> <li>• Elimination of possible basement backups</li> <li>• Increase equipment availability for high flow events</li> <li>• Increase equipment availability to process</li> </ul>
External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• Addition of FY 29 funding</li> </ul>

## 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. <input checked="" type="checkbox"/> Alexandria Only <input type="checkbox"/> Joint Use			N/A			\$350,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$350,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$350,000
Financing												
AlexRenew	\$0	\$350,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$350,000
Fairfax												
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>The Mark Center Pump Station (MCPS) needs to be evaluated for potential upgrades.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Full redundancy and reliability of the MCPS</li> </ul>						<ul style="list-style-type: none"> <li>Operational Excellence</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Completion of study</li> </ul>						<ul style="list-style-type: none"> <li>Increase equipment availability to process</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Addition of money in FY 2020 to perform a condition assessment.</li> </ul>						



## Mobile Vehicle with Popup/Out Elements

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Communications Lisa Van Riper		N/A				Non-Process Facilities <input checked="" type="checkbox"/> Alexandria Only <input type="checkbox"/> Joint Use			10 years			\$230,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$80,000	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$230,000
Financing												
AlexRenew	\$0	\$80,000	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$230,000
Fairfax												
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>This project will create a mobile experience that can be easily transported and set up at events and venues such as schools, farmers markets, festivals and city holiday celebrations. This will allow AlexRenew to go where the customers and community are and engage with them.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Allows for more nimble, attractive, and engaging customer/citizen outreach; i.e. saving tent and table setup.</li> <li>Allows AlexRenew to keep pace with other local jurisdictions that have similar vehicles/customer outreach.</li> <li>Increased brand recognition across Alexandria.</li> <li>Allows for an interactive experience with members of the community who will not experience the EC lobby or 4 MR educational fence.</li> </ul>						<ul style="list-style-type: none"> <li>Public Engagement &amp; Trust</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Complete vehicle design</li> </ul>						<ul style="list-style-type: none"> <li>Will require driver training</li> <li>Will require changes to vehicle insurance</li> <li>Will require fleet maintenance</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>AlexRenew Mobile Experience Business Case(12/19/17)</li> </ul>						<ul style="list-style-type: none"> <li>Addition</li> </ul>						

## 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. <input checked="" type="checkbox"/> Alexandria Only <input type="checkbox"/> Joint Use			20-30 years			\$7,414,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$414,000	\$1,000,000	\$1,500,000	\$1,500,000	\$3,000,000	\$7,414,000
Financing												
AlexRenew	\$0	\$0	\$0	\$0	\$0	\$0	\$414,000	\$1,000,000	\$1,500,000	\$1,500,000	\$3,000,000	\$7,414,000
Fairfax												
VRLF												
Grant												
Line of Credit												
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: <ul style="list-style-type: none"> <li>• Replace the 1,450 linear feet of 42-inch pipe within Jones Point Park</li> <li>• Rehabilitate all 26 manholes of Potomac Interceptor</li> <li>• Reinspect the entire length of the Potomac Interceptor</li> <li>• Phased lining of the entire length, which is now exhibiting exposed aggregate, and in some segments, staining from reinforcing steel.</li> </ul> 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						
<ul style="list-style-type: none"> <li>• Maximize asset life.</li> </ul>						<ul style="list-style-type: none"> <li>• Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>• N/A</li> </ul>						<ul style="list-style-type: none"> <li>• Any cleaning and/or inspection on the Potomac Interceptor requires City permitting for traffic control, and parking impacts.</li> <li>• Citizens are to be notified if contractor equipment will be in their neighborhood.</li> <li>• Permits required for work in the National Park Service jurisdiction.</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>• 2017 Greeley and Hansen Report, "Potomac Interceptor Condition Assessment Summary and Recommendations"</li> </ul>						<ul style="list-style-type: none"> <li>• Change in timing.</li> </ul>						

# Joint Use Facilities CIP Project Details

The table below and on the following page detail the FY20 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
Building 60: NMF Odor Media Study		●			
Building F: Effluent W3 System Improvements					●
Building L: Odor Scrubber and Piping Study		●			
Building L: Polymer System Study		●			
Campus-wide Electrical Upgrade Sub-Program					●
Centrate Pretreatment Facility		●			
Commonwealth Interceptor Pile Intrusion		●			
Environmental Center - 5th Floor Build Out			●		
Environmental Center - Lobby Upgrade				●	
Fiber Optic Backbone Replacement					●
HMI Upgrade			●		
Intermediate Pump Station Pump Study		●			
IRR: Preliminary/Primary Infrastructure					●
IRR: Secondary Infrastructure					●
IRR: Tertiary Infrastructure					●
IRR: Solids Infrastructure					●
IRR: Campus Wide Projects					●
IRR: Collection System Projects					●
IRR: Information Technology Projects			●		
Long Range Plan		●			
PLC Equipment and Network 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
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	●				
RiverRenew Wet Weather Treatment	●				
Security Services During Construction					●
Solids/Resource Recovery Upgrades					●
South Carlyle Partnership	●				
Stormwater System - Struct./Nonstruct. BMPs	●				
Truck Scale Rehabilitation					●
Upper Holmes Run Trunk Sewer Rehabilitation					●
WRRF Fire Alarm Upgrade			●		
WRRF HVAC Automation System Upgrade					●

## Building 60: NMF Facility Odor Media Study

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering TBD		Building 60				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			N/A			\$350,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$350,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$350,000
Financing												
AlexRenew	\$0	\$0	\$140,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000
Fairfax	\$0	\$0	\$210,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$210,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
This project will study the replacement cycle and types of odor media at the Nutrient Management Facility.												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>This project will optimize the effectiveness of the odor control system at the Nutrient Management Facility.</li> </ul>						<ul style="list-style-type: none"> <li>Operational Excellence</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>None</li> </ul>						<ul style="list-style-type: none"> <li>N/A</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>SOP-X-NMF Odor Control System Carbon Replacement (by CH2M 12/30/15)</li> </ul>						<ul style="list-style-type: none"> <li>N/A</li> </ul>						

## Building F: Effluent W3 System Improvements

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Process Hari Santha		Building F				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			15 years for strainers			\$622,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$106,000	\$136,000	\$350,000	\$0	\$10,000	\$0	\$0	\$10,000	\$0	\$0	\$10,000	\$516,000
<b>Financing</b>												
AlexRenew	\$42,400	\$54,400	\$140,000	\$0	\$4,000	\$0	\$0	\$4,000	\$0	\$0	\$4,000	\$206,400
Fairfax	\$63,600	\$81,600	\$210,000	\$0	\$6,000	\$0	\$0	\$6,000	\$0	\$0	\$6,000	\$309,600
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>The W3 Pumps are scheduled to be replaced based on O&amp;M recommended runtime hours. All the five pumps will be replaced in FY2020 and then 2 pumps will be replaced every 3 years.</li> <li>The W3 Strainers are scheduled to be replaced based on O&amp;M recommended runtime hours. One of the two strainers was replaced in FY2019. The other will be replaced in FY2020.</li> <li>A review of the entire system via BOA is anticipated in FY 2021.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Full redundancy and reliability of the W3 Water System that feed water throughout AlexRenew's Wastewater processing</li> <li>Maintain AlexRenew W3 output pressure</li> <li>Maintain the cleanliness of the W3 Water output</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Complete replacement of the five (5) W3 pumps</li> <li>Complete replacement one (1) W3 Strainer</li> </ul>						<ul style="list-style-type: none"> <li>Increase equipment availability for high flow events</li> <li>Increase equipment reliability for future RiverRenew Project</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>W3 strainers and W3 pumps we added to this program.</li> <li>Design costs were decreased to only account for future study.</li> </ul>						



## Building L: Odor Scrubber and Piping Study

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering TBD		Building L				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			N/A			\$150,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$150,000
Financing												
AlexRenew	\$0	\$0	\$60,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$60,000
Fairfax	\$0	\$0	\$90,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$90,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>This is a study of the odor scrubber and piping to determine if improvements can be made.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Full redundancy and reliability of the Odor Scrubber System</li> <li>Maintain AlexRenew's odor quality control</li> </ul>						<ul style="list-style-type: none"> <li>Operational Excellence</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Environmental Air Quality Control</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Re-purposing of funding to evaluate current system.</li> </ul>						

## Building L: Polymer System Study

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering TBD		Building L				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			N/A			\$40,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$40,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,000
Financing												
AlexRenew	\$0	\$16,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,000
Fairfax	\$0	\$24,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>In FY20, an engineering analysis of the current system is planned.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Full Redundancy and reliability of the Polymer feed pumping</li> </ul>						<ul style="list-style-type: none"> <li>Operational Excellence</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Completion of the engineering analysis.</li> </ul>						<ul style="list-style-type: none"> <li>Increase equipment reliability for future RiverRenew Project</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>New project</li> </ul>						

## 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 <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			20 -30 years			\$14,992,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$0	\$0	\$781,000	\$3,334,000	\$3,278,000	\$4,301,000	\$2,652,000	\$646,000	\$14,992,000
Financing												
AlexRenew	\$0	\$0	\$0	\$0	\$0	\$312,400	\$1,333,600	\$1,311,200	\$1,720,400	\$1,060,800	\$258,400	\$5,996,800
Fairfax	\$0	\$0	\$0	\$0	\$0	\$468,600	\$2,000,400	\$1,966,800	\$2,580,600	\$1,591,200	\$387,600	\$8,995,200
VRLF												
Grant												
Line of Credit												

### 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. 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

## Campus-Wide Electrical Upgrade Sub-Program Continued

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 Tanks support facilities. 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 Valves

## Campus-Wide Electrical Upgrade Sub-Program Continued

- MA-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
<ul style="list-style-type: none"> <li>• Ensure aged or intermediate projects have not compromised electrical reliability.</li> </ul>	<ul style="list-style-type: none"> <li>• Effective Financial Stewardship</li> </ul>
Key Milestones for FY 20	Impact on Operations or Community
<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• Remedial efforts may require coordination with operations and/or maintenance teams at AlexRenew.</li> </ul>
External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
<ul style="list-style-type: none"> <li>• 2011 Greeley and Hansen report “Energy Master Plan Study.”</li> </ul>	<ul style="list-style-type: none"> <li>• Timing of work has changed to more evenly spread funding.</li> </ul>

## 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 <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			20 Years for Equipment			\$516,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$73,000	\$185,000	\$258,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$443,000
Financing												
AlexRenew	\$29,200	\$74,000	\$103,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$177,200
Fairfax	\$43,800	\$111,000	\$154,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$265,800
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Increase reliability of the system.</li> <li>Reduce downtime and maintenance needed on the pumps and process upsets caused by poor quality centrate.</li> </ul>						<ul style="list-style-type: none"> <li>Operational Excellence</li> </ul>						

## 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. <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			40 years			\$764,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$177,000	\$587,000	\$0	\$0	\$0	\$764,000
Financing												
AlexRenew	\$0	\$0	\$0	\$0	\$0	\$0	\$70,800	\$234,800	\$0	\$0	\$0	\$305,600
Fairfax	\$0	\$0	\$0	\$0	\$0	\$0	\$106,200	\$352,200	\$0	\$0	\$0	\$458,400
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>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.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>More than 80% of the dry weather flow treated at AlexRenew is conveyed by the CI. The pipe continues to be monitored to ensure adequate flow.</li> </ul>						<ul style="list-style-type: none"> <li>Operational Excellence</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Decreases future O&amp;M costs</li> <li>Reduces risk</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>2014 Report "72 Inch Commonwealth Interceptor Repair Plan"</li> </ul>						<ul style="list-style-type: none"> <li>Budget has been altered to separate this project completely from the Commonwealth Interceptor Rehabilitation.</li> </ul>						



## Environmental Center-5<sup>th</sup> Floor Build-Out

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering TBD		Environmental Center Lobby				Non-Process Facilities <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			40 years			\$1,200,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,200,000	\$0	\$0	\$0	\$1,200,000
<b>Financing</b>												
AlexRenew	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$612,000	\$0	\$0	\$0	\$612,000
Fairfax	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$588,000	\$0	\$0	\$0	\$588,000
VRLF												
Grant												
Line of Credit												
<b>Project Description and Justification</b>												
<ul style="list-style-type: none"> <li>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 when needed for staff or public.</li> </ul>												
<b>Benefits</b>						<b>Strategic Outcome Area</b>						
<ul style="list-style-type: none"> <li>Optimize use of existing infrastructure</li> </ul>						<ul style="list-style-type: none"> <li>Adaptive Culture</li> </ul>						
<b>Key Milestones for FY 20</b>						<b>Impact on Operations or Community</b>						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Results in other operational efficiencies.</li> </ul>						
<b>External or Internal Adopted Plan or Recommendation</b>						<b>Changes from Prior Year CIP</b>						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>None</li> </ul>						

## Environmental Center: Lobby Upgrade

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Communications Lisa Van Riper		Environmental Center Lobby				Non-Process Facilities <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			8 years			\$170,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$150,000	\$20,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$170,000
Financing												
AlexRenew	\$0	\$76,500	\$10,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$86,700
Fairfax	\$0	\$73,500	\$9,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$83,300
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>This project includes three phases to update the lobby and enhance the visitor experience</li> <li>Phase 2: Changing display in Environmental Center front lobby and adding RiverRenew elements (FY20)</li> <li>Phase 3:L Displaying TBM footage in lobby and updating plant flow graphic</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Update display to reflect the RiverRenew elements, enhancing community understanding of the program and AlexRenew’s expanded role.</li> <li>Updated display encourages return visitors.</li> </ul>						<ul style="list-style-type: none"> <li>Public Engagement and Trust</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Change “Renewing Your Connection” display</li> <li>Add TBM signage and model</li> <li>Add tunnel as addition to pipes in PYP area</li> <li>Create two TBM soft sculptures</li> </ul>						<ul style="list-style-type: none"> <li>Will require coordination with RiverRenew on installation, maintenance and output of camera system.</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Addition of phase 2 and 3</li> <li>Previous plan included upgrade of fish room; this takes the place of that.</li> </ul>						

## Fiber Optic Backbone Replacement

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering Jeff Lindsay		Main Campus				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			10 years			\$1,820,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$300,000	\$1,186,000	\$334,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,520,000
Financing												
AlexRenew	\$120,000	\$474,400	\$133,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$608,000
Fairfax	\$180,000	\$711,600	\$200,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$912,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>• This project is for a complete rebuilding of the fiber backbone.</li> <li>• This upgrade/replacement will enhance and upsize the system to meet emerging needs.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>• This will increase the available speed.</li> <li>• Increase scalability of system to account for an increase in the number of smart devices being used.</li> </ul>						<ul style="list-style-type: none"> <li>• Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>• Award contract</li> <li>• Begin design</li> </ul>						<ul style="list-style-type: none"> <li>• Completion of the project will require a series of outages to place all current devices on the new system</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>• 2015-2016 Audit of Fiber Optics</li> </ul>						<ul style="list-style-type: none"> <li>• Decrease in work timeframe so that all work is complete by December 2020</li> </ul>						

## HMI Upgrade

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering Jeff Lindsay		WRRF				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			10 years			\$4,452,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$885,000	\$2,182,000	\$1,385,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,567,000
Financing												
AlexRenew	\$354,000	\$872,800	\$554,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,426,800
Fairfax	\$531,000	\$1,309,200	\$831,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,140,200
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>• 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 were completed in and prior to FY 2019.</li> <li>• Phase 4 will be detailed design/HMI Dev/PLC Programing.</li> <li>• Phase 5 is the final rollout, testing and completion.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>• Reduce the number of screens to provide concise graphical information</li> <li>• Reduce the number of ghost alarms</li> <li>• Eliminate stability issues inherent to WinCC</li> <li>• Develop scalable control system to meet future demands</li> <li>• Improve fault tolerance</li> <li>• Develop HMI and PLC standards</li> </ul>						<ul style="list-style-type: none"> <li>• Adaptive Culture</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>• Begin phase 4</li> </ul>						<ul style="list-style-type: none"> <li>• Increase operational efficiencies through improved user experience</li> <li>•</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>• 2016 SCADA Master Plan</li> </ul>						<ul style="list-style-type: none"> <li>• None</li> </ul>						

## Intermediate Pump Station Pump Study

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Maintenance Steve Hill		Building G				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			N/A			\$250,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$250,000
Financing												
AlexRenew	\$0	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000
Fairfax	\$0	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$150,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>An assessment of the pumps for energy, efficiency, etc. is scheduled for FY20.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Full redundancy and reliability of the Intermediate Pumping System</li> </ul>						<ul style="list-style-type: none"> <li>Operational Excellence</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Completion of assessment of pumps</li> </ul>						<ul style="list-style-type: none"> <li>Increase equipment availability to process</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Addition of condition assessment in FY 20.</li> </ul>						

## IRR: Preliminary/Primary Infrastructure

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Maintenance Steve Hill		WRRF				Improve., Rehab., Replacement <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			6 Years for raw sewage pump Yearly for probes and instruments 10 years for >100 Hp Motors 10 years for VFDs			\$1,210,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$346,667	\$346,667	\$296,667	\$33,333	\$33,333	\$33,333	\$33,333	\$33,333	\$33,333	\$83,333	\$83,333	\$876,667
Project Description and Justification												
<ul style="list-style-type: none"> <li>This subprogram covers all improvement, renewal and replacement projects associated with liquid unit processes in preliminary and primary facilities. This includes, but is not limited to VFD probes, motors, pumps and instrumentation repair and replacement.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Reliability of the preliminary/primary infrastructure</li> <li>Improve accuracy on flow, level, pressure, etc.</li> <li>Improved and advanced automation campus wide</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Upgrade VFDs</li> <li>Complete replacement or repair of process instruments</li> <li>Complete rebuilt or replacement of a Raw Sewage Pump</li> <li>Replacement of motors with &gt;100 Hp</li> </ul>						<ul style="list-style-type: none"> <li>Decreases future O&amp;M costs</li> <li>Reduces risk</li> <li>Increase equipment availability to process</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>This project complements Building A: Raw Sewage Pump Replacement</li> </ul>						<ul style="list-style-type: none"> <li>Changes to accommodate the pump replacement schedule.</li> <li>Costs updated to reflect newest quotes</li> </ul>						

## IRR: Secondary Infrastructure

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Process/Maintenance Hari Santha/Steve Hill		WRRF				Improve., Rehab., Replacement <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			10 years for BRB actuators 5 years for large BRB mixers 5 years for small BRB mixers 10 years for VFDs 10 years for NMF actuators			\$4,406,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$922,333	\$613,333	\$796,333	\$533,000	\$273,000	\$70,000	\$70,000	\$313,000	\$433,000	\$312,000	\$70,000	\$3,483,667
Financing												
AlexRenew	\$368,933	\$245,333	\$318,533	\$213,200	\$109,200	\$28,000	\$28,000	\$125,200	\$173,200	\$124,800	\$28,000	\$1,393,467
Fairfax	\$553,400	\$368,000	\$477,800	\$319,800	\$163,800	\$42,000	\$42,000	\$187,800	\$259,800	\$187,200	\$42,000	\$2,090,200
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>This subprogram covers all improvement, renewal 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.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Reliability and efficiency of the secondary infrastructure</li> <li>Improve accuracy on flow, level, pressure, etc.</li> <li>Reliable diversion and transfer of flow using NMF</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Complete replacement or repair of process instruments</li> <li>Complete RAS pump rebuild</li> <li>Complete replacement of all actuators for one (1) BRB Tank</li> <li>Robicon VFDs replaced</li> </ul>						<ul style="list-style-type: none"> <li>Increase equipment availability to process</li> <li>Increase equipment availability for high flow events</li> <li>Increase equipment reliability for future RiverRenew Project</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Addition of FY 29 funding</li> <li>Redetermination of schedule of BRB actuators and mixers</li> </ul>						

## IRR: Tertiary Infrastructure

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Maintenance Steve Hill		WRRF				Improve., Rehab., Replacement <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			6 years for UV system parts Yearly for probes 10 years for >100 Hp motors 10 years for Inter. PS pumps			\$2,621,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$468,333	\$761,333	\$391,333	\$85,000	\$276,000	\$65,000	\$108,000	\$105,000	\$128,000	\$85,000	\$148,000	\$2,152,667
Financing												
AlexRenew	\$187,333	\$304,533	\$156,533	\$34,000	\$110,400	\$26,000	\$43,200	\$42,000	\$51,200	\$34,000	\$59,200	\$861,067
Fairfax	\$281,000	\$456,800	\$234,800	\$51,000	\$165,600	\$39,000	\$64,800	\$63,000	\$76,800	\$51,000	\$88,800	\$1,291,600
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>This subprogram covers all improvement, renewal 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.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Redundancy and reliability of the UV system, intermediate pumping system, VFD and motors</li> <li>Improve accuracy on flow, level, pressure, etc.</li> <li>Improved and advanced automation</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Complete rebuilt or replacement one (1) Wash Water Pump</li> <li>Installation, and testing of Robicon VFD replacements</li> <li>Replace of motors with &gt;100 Hp</li> <li>Replacement or repair of process instruments</li> <li>UV System Parts installed, tested and online</li> </ul>						<ul style="list-style-type: none"> <li>Increase equipment availability to process</li> <li>Increase equipment reliability for future RiverRenew Project</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Addition of FY 29 funding</li> <li>Costs updated to reflect newest quotes</li> </ul>						



## IRR: Solids Infrastructure

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Process/Maintenance Hari Santha/Steve Hill		WRRF				Improve., Rehab., Replacement <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			Yearly for probes 1 year for seepex pump hot side 2 years for screen presses 3 years for seepex pump cold side 3 years for centrate recycle pumps 3 years for polymer pumps 4 years for pumps and compressors 5 years for motors 7 years for centrifuge feed pumps 7 years for centrifuge actuators 10 years for centrifuge VFDs 10 years for heat exchanger actuators 10 years for >100 hp motors			\$11,500,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$783,000	\$1,750,500	\$851,500	\$1,195,500	\$1,374,500	\$729,500	\$377,500	\$624,500	\$1,201,500	\$1,490,500	\$1,121,500	\$10,717,000
Financing												
AlexRenew	\$313,200	\$700,200	\$340,600	\$478,200	\$549,800	\$291,800	\$151,000	\$249,800	\$480,600	\$596,200	\$448,600	\$4,286,800
Fairfax	\$469,800	\$1,050,300	\$510,900	\$717,300	\$824,700	\$437,700	\$226,500	\$374,700	\$720,900	\$894,300	\$672,900	\$6,430,200
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>This subprogram covers all improvement, renewal 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.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Full redundancy and reliability of dewatering and thickening systems</li> <li>Maintain AlexRenew Bio-solids Class A output</li> <li>Maintain consistent solids percentage</li> <li>Reduced spare parts by standardizing actuators</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						

## IRR: Solids Infrastructure Continued

Key Milestones for FY 20	Impact on Operations or Community
<ul style="list-style-type: none"> <li>• 2 Polymer Feed Pumps installed, tested and online</li> <li>• 8-10 VFDs installed, tested and online</li> <li>• Complete 1 screen press replacement</li> <li>• Complete rebuild of heat exchangers motors</li> <li>• Complete rebuild of one (1) TCEN</li> <li>• Complete rebuild/replace of two (2) DCEN Feed Pumps</li> <li>• Complete rebuild/replace of two (2) TCEN Feed Pumps</li> <li>• Complete rehab of all digesters</li> <li>• Complete repair or replacement of one DCEN or TCEN VFD</li> <li>• Complete replacement of all actuators for one (1) Pre-Past Heat Exchanger</li> <li>• Complete replacement or repair of process instruments</li> </ul>	<ul style="list-style-type: none"> <li>• Increase equipment availability for high flow events</li> <li>• Increase equipment availability for solids process</li> <li>• Increase equipment reliability for future RiverRenew Project</li> </ul>
External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• Addition of FY 29 funding</li> <li>• Costs updated to reflect newest quotes</li> <li>• Change of replacement/rebuild schedule</li> </ul>

## IRR: Campus Wide Projects

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Facilities/Maintenance/Safety William Rodriguez /Steve Hill/Sarah Clark		WRRF				Improve., Rehab., Replacement <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			4 years for odor media 6 years for cranes 10 years for vehicles 15 year for odor scrubber and piping			\$4,832,500
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$864,000	\$384,500	\$ 267,000	\$142,000	\$367,000	\$437,000	\$820,000	\$162,000	\$377,000	\$167,000	\$845,000	\$3,968,500
Financing												
AlexRenew	\$345,600	\$153,800	\$106,800	\$56,800	\$146,800	\$174,800	\$328,000	\$64,800	\$150,800	\$66,800	\$338,000	\$1,587,400
Fairfax	\$518,400	\$230,700	\$160,200	\$85,200	\$220,200	\$262,200	\$492,000	\$97,200	\$226,200	\$100,200	\$507,000	\$2,381,100
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>This subprogram covers all improvement, renewal and replacement projects associated with non-process facilities work at the WRRF. This includes, but is not limited to roof, concrete, HVAC, vehicles, and odor control repairs/replacement. This subprogram also includes the AlexRenew website.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Full optimization of the Methane Gas supply generation using the Absorption Chillers</li> <li>Maintain reliability and effectiveness of the steam, chiller , odor control, plant air, and HVAC systems</li> <li>Maintain AlexRenew’s odor quality control</li> <li>Maintain the availability and integrity of the cranes and buildings</li> <li>More efficient and reliable vehicles for employee transportation</li> <li>Reduce carbon emissions</li> <li>Improve website functionality for community members</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						

## IRR: Collection System Projects (Joint Use)

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Maintenance Steve Hill		All Pumping Stations				Improve., Rehab., Replacement <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			4 years for pumps			\$214,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$5,000	\$8,000	\$51,000	\$8,000	\$8,000	\$8,000	\$51,000	\$8,000	\$8,000	\$8,000	\$51,000	\$209,000
Financing												
AlexRenew	\$2,000	\$3,200	\$20,400	\$3,200	\$3,200	\$3,200	\$20,400	\$3,200	\$3,200	\$3,200	\$20,400	\$83,600
Fairfax	\$3,000	\$4,800	\$30,600	\$4,800	\$4,800	\$4,800	\$30,600	\$4,800	\$4,800	\$4,800	\$30,600	\$125,400
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>This subprogram covers all improvement, renewal and replacement projects associated with the pump stations, service chambers, and outfalls that are funded by AlexRenew and Fairfax.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Full redundancy and reliability of Potomac Yards PS</li> <li>Maintain the buildings, integrity</li> <li>Secure equipment from water damage</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Complete rebuild or replacement of PYPS Pumps</li> <li>Complete rebuild or replacement of PYPS Climb Screens</li> <li>Complete roof and drain replacements</li> </ul>						<ul style="list-style-type: none"> <li>Increase equipment availability to process</li> <li>Maintain roof integrity to prevent equipment damage</li> <li>Maintain the aesthetic of the plant to blend in the surrounding community</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Addition of FY 29 funding</li> </ul>						

## 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 <input checked="" type="checkbox"/> Alexandria Only <input type="checkbox"/> Joint Use			10 years for Data Center and Network Improvements			\$3,318,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$300,000	\$468,000	\$350,000	\$750,000	\$650,000	\$300,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$3,018,000
Financing												
AlexRenew	\$120,000	\$187,200	\$140,000	\$300,000	\$260,000	\$120,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$1,207,200
Fairfax	\$180,000	\$280,800	\$210,000	\$450,000	\$390,000	\$180,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$1,810,800
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
This subprogram to the Improvement, renewal 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						
<ul style="list-style-type: none"> <li>• 24/7 near real time security monitoring and incident response.</li> <li>• Ensure and improve compliance with federal, state and local regulatory recordkeeping directives</li> <li>• 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</li> <li>• Prevention of technological obsolescences</li> <li>• Reduce physical storage space and staff resources required to maintain current paper records, and</li> <li>• Support continued and on-going awareness of staff recordkeeping responsibilities through the use of training</li> <li>• Up to date security patching for critical assets</li> <li>• Upgrading the emergency notification systems</li> <li>• Vulnerability management and monitoring of network and hosts</li> </ul>						<ul style="list-style-type: none"> <li>• Adaptive Culture</li> </ul>						

## IRR: Information Technology Projects Continued

Key Milestones for FY 20	Impact on Operations or Community
<ul style="list-style-type: none"> <li>• Development of detailed roadmap and roll out plan</li> <li>• Pilot of VDI solution.</li> <li>• Security Event Monitoring and Incident Response</li> </ul>	<ul style="list-style-type: none"> <li>• Data is more secure</li> <li>• Decreased bandwidth requirements.</li> <li>• Information access is better controlled and managed</li> <li>• Operational, reputational, and legal risks are managed.</li> <li>• Provides secure, available, and accurate systems and data</li> <li>• Reduced hardware costs</li> <li>• Regulatory Compliance</li> <li>• Results in operational efficiencies</li> </ul>
External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
<ul style="list-style-type: none"> <li>• Cybersecurity Assessment completed by AchillesShield, including assessment of vulnerabilities and hacker exploitation; and a physical security assessment.</li> <li>• Electronic Records Management (ERM) As-Is Observation Report Contract: 14-016 Task Order 2015-1</li> </ul>	<ul style="list-style-type: none"> <li>• Additions to program</li> <li>• Change in timing</li> </ul>

## Long Range Plan

Managing Department and Champion		Project Location				Project Category			Estimated Useful Life			Lifetime Budget
Engineering TBD		Campus				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			N/A			\$350,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$350,000	\$0	\$0	\$0	\$350,000
Financing												
AlexRenew	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$0	\$0	\$0	\$140,000
Fairfax	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$210,000	\$0	\$0	\$0	\$210,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<p>The Long Range Plan Report was completed in May 2009. This report addressed immediate needs as well as future drivers and AlexRenew’s organizational goals. The plan was also updated in 2016 anticipated needs and an implementation strategy through 2020. This Solids Handling and Energy Optimization portions of the plan were updated in a January 2017 report. This project is for the update of the entire Long Range Plan including:</p> <ul style="list-style-type: none"> <li>• Dry-Weather Capacity Expansion (4.0 MGD)</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>• Planning helps to determine which projects are priority.</li> </ul>						<ul style="list-style-type: none"> <li>• Operational Excellence</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>• N/A</li> </ul>						<ul style="list-style-type: none"> <li>• Additional projects may result in additional staffing needs.</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>• Solids Handling and Energy Optimization Update to the Long Range Plan (CH2M, January 2017)</li> <li>• Long Range Planning Report (CH2M, May 2009)</li> </ul>						<ul style="list-style-type: none"> <li>• Addition to the program</li> </ul>						

## PLC Network & Equipment Upgrades

Managing Department and Champion		Project Location				Project Category			Estimated Useful Life			Lifetime Budget
Engineering Jeff Lindsay		WRRF				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			15 years			\$2,729,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr Total
Total	\$500,000	\$1,671,000	\$697,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,368,000
Financing												
AlexRenew	\$144,400	\$668,400	\$278,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$947,200
Fairfax	\$216,600	\$1,002,600	\$418,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,420,800
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>Replacement of legacy Allen Bradley PLCs with modern hardware and network is necessary due to the old PLC5 no longer be supported.</li> <li>Installing new PLC hardware will expand processing power while ensuring the control system remains operational and hardware remains supported by the manufacturer.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Installing new PLC hardware will expand processing power while ensuring the control system remains operational and hardware remains supported by the manufacturer.</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Establish new contract for 3<sup>rd</sup> party of labor</li> <li>Establish new contract for parts.</li> </ul>						<ul style="list-style-type: none"> <li>Will require outage for each PLC upgrade</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>SCADA Master Plan</li> </ul>						<ul style="list-style-type: none"> <li>Budgeting has been changed to reflect the amount of PLCs left.</li> </ul>						



## Power Distribution Monitors

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering Jeff Lindsay		WRRF				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			10 years			\$500,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$50,000	\$100,000	\$100,000	\$0	\$250,000	\$500,000
Financing												
AlexRenew	\$0	\$0	\$0	\$0	\$0	\$0	\$20,000	\$40,000	\$40,000	\$0	\$100,000	\$200,000
Fairfax	\$0	\$0	\$0	\$0	\$0	\$0	\$30,000	\$60,000	\$60,000	\$0	\$150,000	\$300,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>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.</li> <li>Power monitor audit will be in FY 2025 and the results will determine the number and location of additional monitors needed.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Enhance the system so that data interpretation can be used to make operational changes.</li> <li>Enhance understanding of resource consumption.</li> </ul>						<ul style="list-style-type: none"> <li>Operational Excellence</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>A series of outages will be necessary to transition every device onto the new system.</li> <li>Identification of cost savings opportunities in terms of power consumption.</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>SCADA Master Plan</li> </ul>						<ul style="list-style-type: none"> <li>Change in timing</li> </ul>						

## Preliminary/Primary System Upgrades

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Maintenance Steve Hill		Building K				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			10 years for Pista Grit Actuators 10 years for truck loading, transfer conveyor & grit pumps 20 years for the grit separators 20 years for Raw Sewage Pump 20 Years for Coarse Screens 15 Years for Sluice Gates			\$25,589,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$240,000	\$890,000	\$1,637,000	\$6,907,000	\$7,097,000	\$6,516,000	\$2,302,000	\$0	\$0	\$0	\$0	\$25,349,000
<b>Financing</b>												
AlexRenew	\$96,000	\$356,000	\$654,800	\$2,762,800	\$2,838,800	\$2,606,400	\$920,800	\$0	\$0	\$0	\$0	\$10,139,600
Fairfax	\$144,000	\$534,000	\$982,200	\$4,144,200	\$4,258,200	\$3,909,600	\$1,381,200	\$0	\$0	\$0	\$0	\$15,209,400
VRLF												
Grant												
Line of Credit												

### Project Description and Justification

- The existing Pista Grit Actuators are at the end of its lifecycle. Replacing two (2) Actuators annually will complete replacement of all the eight actuators in 4 years.
- The abandoned Primary Piston Pumps are scheduled to be removed.
- The current Truck Loading and Transfer Conveyor are to be replaced with a more robust design that is easier to maintain.
- The Grit Pumps are scheduled to be repair or replaced based on O&M recommended runtime hours. Currently that is a 10 year rebuild/replacement cycle.
- Grit conveyors need to be replaced.
- Grit Separators have exceeded their useful life. Grit Separator 2 is currently out of service due to rusted out Fluidizer and hardware (flange and bolts). Planning on replacing 4 Grit Separators in FY 2020.
- 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.
- Coarse Screen Replacement: The raw influent wastewater from the interceptors is split between two coarse screening channels, each equipped with a mechanically-cleaned bar screen. This is a new facility that was placed into operation in 2005. Each screen consists of a static bar rack with 3-inch openings and a motorized climber rake that clears the material that accumulates between the bars and lifts it to the ground floor for disposal in dumpsters. 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 both channels in service. There is no coarse screen redundancy therefore reliability is critical. Identified deficiencies of the current system include difficulty servicing the screen motor due

## Preliminary/Primary System Upgrades Continued

to poor access to the upper part of the screen. This equipment will reach the end of its useful life by the year 2025 and should be considered for replacement. Replacement can be in-kind (climber rake type screen) or new technologies can be implemented (such as the multi-rake screen) with more accessible motor. The project is proposed to be procured through a Design-Bid-Build method. Key milestones are TBD.

- 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. The existing variable frequency drives (by Robicon) are now obsolete and new drives are needed. The Preliminary and Primary Treatment Evaluation Study recommended conducting a condition assessment of the pumps' discharge conduits to determine if rehabilitation is necessary. The project is proposed to be procured through a Design-Bid-Build method. Key milestones are TBD

The Wet Well Sluice Gates 1 and 2 are scheduled to be rebuilt based on O&M recommended runtime hours.

Benefits	Strategic Outcome Area
<ul style="list-style-type: none"> <li>• Full redundancy and reliability of the Pista Grit Actuators</li> <li>• Standardizing actuator to one manufacturer will decrease parts inventory</li> <li>• Full redundancy and reliability of the Screening and Grit System</li> <li>• Improvement of Grit Separation and ease of Maintenance and Removal (Design Change)</li> <li>• Replacing aging equipment will provide effective, reliable, cost-efficient performance with long-term durability.</li> <li>• Gain more work area</li> <li>• Remove abandoned equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Effective Financial Stewardship</li> </ul>
Key Milestones for FY 20	Impact on Operations or Community
<ul style="list-style-type: none"> <li>• Complete replacement of two (2) Actuators</li> <li>• Complete install of new Truck Loading and Transfer Conveyors</li> <li>• Grit channels 104 replaced.</li> <li>• Complete Grit Pump rebuilt or replacement</li> <li>• Complete replacement of RSP Sluice Gate for Wet Well 1 &amp; 2</li> </ul>	<ul style="list-style-type: none"> <li>• Increase equipment availability for high flow events</li> <li>• Increase equipment reliability for future RiverRenew Project</li> <li>• Improved operations with newer equipment.</li> </ul>
External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
<ul style="list-style-type: none"> <li>• AlexRenew WRRF Preliminary &amp; Primary Treatment Evaluation Study (BOA WA2-2017-4), January 2018</li> </ul>	<ul style="list-style-type: none"> <li>• Combination of previous projects.</li> <li>• Timing updates</li> </ul>

## 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 <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			20 years for equipment			\$150,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$100,000	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50,000
Financing												
AlexRenew	\$40,000	\$20,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,000
Fairfax	\$60,000	\$30,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>• Phase 1: Implementing the recommendations of previous investigations to improve performance of the pre-pasteurization system at AlexRenew. These improvements include: cleaning all three heat exchangers, re-evaluating heat exchanger performance, replacing pressure gauges on the hot water supply system, modifying the programming to allow all three heat exchangers to be in operation at the same time, and replacing an exhaust fan on the pre-pasteurization holding tank.</li> <li>• Phase 2: If the pre-pasteurization system is still not performing as desired after phase 1, a pre-pasteurization business case evaluation should be performed. A comprehensive evaluation of the pre-pasteurization system and potential modifications/replacement to achieve reliable performance should be conducted.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>• Replacing aging equipment will provide effective, reliable, cost-efficient performance with long-term durability.</li> </ul>						<ul style="list-style-type: none"> <li>• Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>• Complete phase 1</li> </ul>						<ul style="list-style-type: none"> <li>• Improved operations with newer equipment.</li> </ul>						

## Process Air Compressor (PAC) System Upgrades

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering Liliana Maldonado		WRRF				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			20 years			\$19,535,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$2,050,000	\$11,521,000	\$5,964,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,485,000
Financing												
AlexRenew	\$820,000	\$4,608,400	\$2,385,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,994,000
Fairfax	\$1,230,000	\$6,912,600	\$3,578,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,491,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<p>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 will also be replaced in this project. The project will be constructed by November 2020 in order to out of the way for the Wet Weather tunnel contractor to be onsite.</p>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>This project will improve energy efficiency and provide operational flexibility.</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Construction NTP for all phases</li> </ul>						<ul style="list-style-type: none"> <li>Decrease future O&amp;M costs for blowers, electrical gear, and aeration header</li> <li>Improved BRB operational flexibility &amp; efficiencies (better blower turn-down)</li> <li>New building on BRB tanks will be visible to public</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>HDR's November 2018 30% Submittal</li> </ul>						<ul style="list-style-type: none"> <li>Increase in cost due to new building located on the BRB deck.</li> </ul>						

## RiverRenew 108 to 116 mgd Expansion

Managing Department and Champion			Project Location			Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering Dorian Hemming			Building L (PEPS) Building K (Gallery)			RiverRenew <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			25 Years for Equipment			\$4,100,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$910,000	\$2,550,000	\$640,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,852,468
<b>Financing</b>												
AlexRenew	\$364,000	\$1,020,000	\$256,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,276,000
Fairfax	\$546,000	\$1,530,000	\$384,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,914,000
VRLF												
Grant												
Line of Credit												

### 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 through preliminary treatment facilities at the AlexRenew WRRF from 108 to 116 MGD. 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 is proposed to be 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

Key Milestones: This project must be complete by Oct. 31, 2020. In order to meet this schedule, the following critical path milestones must be met:

- 1) Notice-to-Proceed to Contractor by August 9, 2019
- 2) POAs delivered to site by August 12, 2019 for installation
- 3) Sequential installation and testing of six (6) pumps, 12 month total duration, starting on August 2019 and finish August 2020.

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.	<ul style="list-style-type: none"> <li>• Watershed Stewardship</li> </ul>
Key Milestones for FY 20	Impact on Operations or Community
<ul style="list-style-type: none"> <li>• Delivery of POAs by August 12, 2019</li> <li>• NTP to general contractor by August 9, 2019</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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).</li> </ul>
External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
<ul style="list-style-type: none"> <li>• City of Alexandria Wastewater Capacity and Wet Weather Management Evaluation (Task Order 11 Report, CH2M, November 2010)</li> <li>• Primary Effluent Pump Station (PEPS) Evaluation Technical Report (CH2M, February 2016)</li> <li>• Long Term Control Plan Update (June 2018)</li> <li>• Preliminary Engineering Report (Brown and Caldwell, projected Oct. 2018)</li> <li>• 108 to 116 Schematic Design Report (CH2M/Jacobs, Oct. 2018)</li> <li>• 108 to 116 60% Design Submittal (CH2M/Jacobs, January 2019)</li> </ul>	The project cost estimate was updated per the latest estimates available for the project (60% Design).

## RiverRenew Building J Facilities Relocation and Decommissioning

Managing Department and Champion			Project Location			Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering Dorian Hemming			Building J Building G Field Labs (in K, N, and 69)			RiverRenew <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			20 Years for Laboratory 25 Years for Equipment			\$20,950,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$4,510,000	\$11,510,000	\$4,930,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,440,000
Financing												
AlexRenew	\$3,337,400	\$8,517,400	\$3,648,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,165,600
Fairfax	\$1,172,600	\$2,992,600	\$1,281,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,274,400
VRLF												
Grant												
Line of Credit												

### 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, 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 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 construction on schedule.



## RiverRenew Building J Facilities Relocation and Decommissioning Continued

The project is proposed to be 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.

Key Milestones: Building J demolition must be complete by Oct. 31, 2020. In order to meet this schedule, the following milestones must be met:

- 1) NTP to contractor complete by July 1, 2019
- 2) Four early construction packages – MCCs, AHUs, Chillers and laboratory casework – are needed to ensure that the October 31, 2020 deadline is met
- 3) Chiller plant construction is critical path (includes delivery of chillers and MCC)– expected construction completion by June 30, 2020 (12-month duration)

Building J demolition begin July 1, 2020 – 4 month duration complete by Nov 1 2020.

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).	<ul style="list-style-type: none"> <li>• Watershed Stewardship</li> </ul>
Key Milestones for FY 20	Impact on Operations or Community
<ul style="list-style-type: none"> <li>• Construction of chiller plant, relocation of ductbank, relocation of fire alarm panel, relocation of PBX room, server room upgrade, control room, long-term laboratory, locker room, new walkway between G/1 and G/2, temporary locker rooms</li> <li>• Relocation of business servers and records storage</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Capacity of staff to perform analysis for research and process-optimization purposes may be limited during the interim lab operation.</li> <li>• 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.</li> </ul>
External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
<ul style="list-style-type: none"> <li>• Long Term Control Plan Update (June 2018)</li> <li>• Preliminary Engineering Report (Brown and Caldwell, projected for October 2018)</li> <li>• Buildings J and G Facility Needs Assessment (CH2M/Jacobs, May 2018)</li> <li>• Buildings J and G Conceptual Workplan Report (CH2M/Jacobs, July 2018)</li> <li>• Decommissioning of Building J Alternatives Evaluation Report (CH2M/Jacobs, projected for October 2018)</li> </ul>	<p>The scope of this project was expanded to include:</p> <ul style="list-style-type: none"> <li>• The replacement of the roof of Building G/2</li> <li>• A walkway from the new laboratory in Building G/2 to the new people spaces in Building G/1</li> <li>• A new control room in Building G/1</li> <li>• Expansion of the break/training space in Building G/1</li> <li>• Temporary locker room facilities</li> </ul>

## 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 <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			25 years			\$1,043,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$313,000	\$472,000	\$258,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$730,000
Financing												
AlexRenew	\$283,265	\$427,160	\$233,490	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$660,650
Fairfax	\$29,735	\$44,840	\$24,510	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$69,350
VRLF												
Grant												
Line of Credit												

### 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.
- Project procurement is expected to be design-bid-build.
- Project schedule:
  - Complete Design – May 2019
  - Award Contract – August 2019
  - Complete Construction – April 2021 (various phases)

#### Benefits

- 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.

#### Strategic Outcome Area

- Watershed Stewardship

## RiverRenew Site Security and Access Continued

Key Milestones for FY 20	Impact on Operations or Community
<ul style="list-style-type: none"> <li>• Design and procurement will be completed</li> <li>• Construction will be completed for Phase 1 and Phase 2</li> </ul>	<ul style="list-style-type: none"> <li>• Improved access to the WRRF with three new automated gates</li> <li>• Improved security for the WRRF with three new security booths</li> <li>• Repair of two poorly functioning gates will improve site access for WRRF</li> <li>• 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.</li> <li>• New gate on S. Payne Street will reduce public access to south end of road</li> </ul>
External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
<ul style="list-style-type: none"> <li>• Project includes a Technical Memorandum documenting the need and recommendations for the project</li> </ul>	<ul style="list-style-type: none"> <li>• Not included in previous CIP</li> </ul>

## RiverRenew Tunnel System

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
RiverRenew: CSO 001/2 Tunnel, CSO 003/4 Tunnel, and Pumping Stations Liliana Maldonado		Building J Parking Lot Multiple Locations in the City of Alexandria				RiverRenew <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			100 years for tunnel and structures 25 years for equipment			\$339,600,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$12,700,000	\$8,700,000	\$41,700,000	\$75,500,000	\$104,700,000	\$51,800,000	\$44,500,000	\$0	\$0	\$0	\$0	\$326,900,000
<b>Financing</b>												
AlexRenew	\$11,493,500	\$7,873,500	\$37,738,500	\$68,327,500	\$94,753,500	\$46,879,000	\$40,272,500	\$0	\$0	\$0	\$0	\$295,844,500
Fairfax	\$1,206,500	\$826,500	\$3,961,500	\$7,172,500	\$9,946,500	\$4,921,000	\$4,227,500	\$0	\$0	\$0	\$0	\$31,055,500
VRLF												
Grant												
Line of Credit												

### 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 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.

This project associated with RiverRenew includes: installation of a 2-mile long, 12 foot inside diameter tunnel; installation of a 0.5-mile long, 6 foot inside diameter diversion sewer; four shafts with inside diameters from 30 to 50 feet; five diversion chambers; 40 MGD tunnel dewatering pumping station; 130 MGD wet weather pumping station; and odor control facilities and other appurtenances.

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

## RiverRenew Wet-Weather Treatment Facility

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
RiverRenew: Wet-Weather Facility Treatment Liliana Maldonado		Building J Parking Lot and Primary Settling Tanks				RiverRenew <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			25 years			\$1,900,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$100,000	\$0	\$0	\$0	\$100,000	\$1,700,000	\$0	\$0	\$0	\$0	\$0	\$1,800,000
Financing												
AlexRenew	\$40,000	\$0	\$0	\$0	\$40,000	\$680,000	\$0	\$0	\$0	\$0	\$0	\$720,000
Fairfax	\$60,000	\$0	\$0	\$0	\$60,000	\$1,020,000	\$0	\$0	\$0	\$0	\$0	\$1,080,000
VRLF												
Grant												
Line of Credit												

### 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 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.

This project associated with RiverRenew includes the design and construction of a dual-use wet-weather treatment facility at AlexRenew’s WRRF. Major components of the work include: modifications to the existing WRRF primary settling tanks and installation of a chlorination / dechlorination system to treat up to 40 mgd of wet-weather flow delivered by the new RiverRenew tunnel system.

The project is proposed to be procured through a traditional design-bid-build process.

## Security During Construction

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Engineering TBD		WRRF				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			N/A			\$4,370,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$370,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	<b>\$4,000,000</b>
Financing												
AlexRenew	\$148,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$1,600,000
Fairfax	\$222,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$2,400,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>Security services for capital projects.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>This effort provides essential support when construction activities disrupt normal physical and procedural safeguards.</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Creates operational efficiencies so staff can focus on the construction activity rather than temporary security deficiencies.</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Addition of FY29 funding</li> </ul>						

## 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 <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			20 Years for Equipment			\$20,384,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$542,000	\$213,000	\$0	\$ 2,865,900	\$5,305,000	\$5,305,000	\$5,305,000	\$849,000	\$20,384,000
Financing												
AlexRenew	\$0	\$0	\$0	\$216,800	\$85,200	\$0	\$1,146,000	\$2,122,000	\$2,122,000	\$2,122,000	\$339,600	\$8,153,600
Fairfax	\$0	\$0	\$0	\$325,200	\$127,800	\$0	\$1,719,000	\$3,183,000	\$3,183,000	\$3,183,000	\$509,400	\$12,230,400
VRLF												
Grant												
Line of Credit												

### 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. The Long Range Plan will be update to analyze needed solids handling improvements due to the implementation of the RiverRenew program.

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
	<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>

## 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 <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			40 years			\$300,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$300,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$300,000
Financing												
AlexRenew	\$0	\$204,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$204,000
Fairfax	\$0	\$96,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$96,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>• Engineering services and inspection affiliated with CP2 construction on adjacent property.</li> <li>• This ensures proper coordination and physical connections to AlexRenew infrastructure.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>• Proper coordination between CP2 and AlexRenew.</li> </ul>						<ul style="list-style-type: none"> <li>• Watershed Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>• Completion of work</li> </ul>						<ul style="list-style-type: none"> <li>• Decreases future O&amp;M costs</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>• None</li> </ul>						<ul style="list-style-type: none"> <li>• Combined with West Campus Deck Connector.</li> </ul>						



## 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 <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			40 years				\$2,732,000
Expenditure	Prior Year						FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total	
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$1,134,000	\$1,236,000	\$349,000	\$13,000	\$2,732,000	
Financing												
AlexRenew	\$0	\$0	\$0	\$0	\$0	\$0	\$453,600	\$494,400	\$139,600	\$5,200	\$1,092,800	
Fairfax	\$0	\$0	\$0	\$0	\$0	\$0	\$680,400	\$741,600	\$209,400	\$7,800	\$1,639,200	
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<p>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.</p>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Alternative treatment facilities to support AlexRenew's sustainability initiatives and commitment to environmental stewardship.</li> </ul>						<ul style="list-style-type: none"> <li>Watershed Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Potential to increase O&amp;M costs to an annual cost of approximately 5% of construction costs</li> <li>Results in reduction of pollutant loading of permitted stormwater conveyed.</li> </ul>						

## Stormwater System - Structural and Nonstructural BMPs Continued

External or Internal Adopted Plan or Recommendation	Changes from Prior Year CIP
<ul style="list-style-type: none"><li>April 2016 URS Report "Stormwater Improvement Analysis Report"</li></ul>	<ul style="list-style-type: none"><li>Deletion of ponding issue from project.</li><li>Escalation added.</li><li>Deletion of BMP-8 until after FY 2025.</li></ul>

## Truck Scale Rehabilitation

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Maintenance Steve Hill		WRRF				WRRF Improvements <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			10 years			\$86,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$86,000	\$0	\$0	\$0	\$86,000
<b>Financing</b>												
AlexRenew	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$34,400	\$0	\$0	\$0	\$34,400
Fairfax	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$51,600	\$0	\$0	\$0	\$51,600
VRLF												
Grant												
Line of Credit												
<b>Project Description and Justification</b>												
<ul style="list-style-type: none"> <li>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.</li> <li>The Mettler Toledo 7560SD scale was replaced, and software upgraded, in August 2016.</li> <li>This project is for periodic rehabilitation of the Truck Scale.</li> </ul>												
<b>Benefits</b>						<b>Strategic Outcome Area</b>						
<ul style="list-style-type: none"> <li>Periodic rehabilitation of the truck scale provides reliable recordation of outgoing biosolid weights for regulatory reporting.</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
<b>Key Milestones for FY 20</b>						<b>Impact on Operations or Community</b>						
<ul style="list-style-type: none"> <li>None</li> </ul>						<ul style="list-style-type: none"> <li>May require use of alternate methods to weigh the outgoing truckloads.</li> </ul>						
<b>External or Internal Adopted Plan or Recommendation</b>						<b>Changes from Prior Year CIP</b>						
<ul style="list-style-type: none"> <li>None</li> </ul>						<ul style="list-style-type: none"> <li>Escalation added</li> <li>Assumption of replacement at the end of useful life.</li> </ul>						

## 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. <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			20-30 years			\$5,039,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$0	\$0	\$833,000	\$351,000	\$1,850,000	\$1,850,000	\$100,000	\$55,000	\$5,039,000
<b>Financing</b>												
AlexRenew	\$0	\$0	\$0	\$0	\$0	\$333,200	\$140,400	\$740,000	\$740,000	\$40,000	\$22,000	\$2,015,600
Fairfax	\$0	\$0	\$0	\$0	\$0	\$499,800	\$210,600	\$1,110,000	\$1,110,000	\$60,000	\$33,000	\$3,023,400
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Phase 2: Surface aggregate visible defects are present throughout many pipe segments in Reaches 4 &amp; 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".</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>• Minor Repairs and maintenance activities to maximize asset life</li> </ul>						<ul style="list-style-type: none"> <li>• Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>• N/A</li> </ul>						<ul style="list-style-type: none"> <li>• Any cleaning and/or inspection on HRTS require City permitting for traffic control, and parking impacts.</li> <li>• Citizens are to be notified if contractor equipment will be in their neighborhood.</li> </ul>						

## WRRF Fire Alarm Upgrade

Managing Department and Champion		Project Location				Program and Project Category			Estimated Useful Life			Lifetime Budget
Safety Sarah Clark		WRRF				Non-Process Facilities <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			15 Years			\$1,750,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$1,500,000	\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$250,000
Financing												
AlexRenew	\$600,000	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000
Fairfax	\$900,000	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$150,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>The WRRF Fire Alarm System is scheduled to be upgraded. The panel is obsolete, and parts availability is hard to source out for replacement and repairs.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Full redundancy and reliability of the Campus Fire Alarm System</li> </ul>						<ul style="list-style-type: none"> <li>Adaptive Culture</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>Complete upgrade of the Campus Fire Alarm System</li> </ul>						<ul style="list-style-type: none"> <li>Increase employee safety within the campus buildings and grounds</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>Johnson Controls' Memo on existing panels being obsolete.</li> </ul>						<ul style="list-style-type: none"> <li>None</li> </ul>						

## 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 <input type="checkbox"/> Alexandria Only <input checked="" type="checkbox"/> Joint Use			N/A			\$1,000,000
Expenditure	Prior Year	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10 Yr. Total
Total	\$0	\$0	\$0	\$0	\$500,000	\$500,000	\$0	\$0	\$0	\$0	\$0	\$1,000,000
Financing												
AlexRenew	\$0	\$0	\$0	\$0	\$200,000	\$200,000	\$0	\$0	\$0	\$0	\$0	\$400,000
Fairfax	\$0	\$0	\$0	\$0	\$300,000	\$300,000	\$0	\$0	\$0	\$0	\$0	\$600,000
VRLF												
Grant												
Line of Credit												
Project Description and Justification												
<ul style="list-style-type: none"> <li>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.</li> </ul>												
Benefits						Strategic Outcome Area						
<ul style="list-style-type: none"> <li>Full redundancy and reliability of the HVAC System</li> </ul>						<ul style="list-style-type: none"> <li>Effective Financial Stewardship</li> </ul>						
Key Milestones for FY 20						Impact on Operations or Community						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Increase equipment availability to process</li> </ul>						
External or Internal Adopted Plan or Recommendation						Changes from Prior Year CIP						
<ul style="list-style-type: none"> <li>N/A</li> </ul>						<ul style="list-style-type: none"> <li>Project moved to FY2023.</li> </ul>						

# Indenture and Financial Policy Compliance

The schedule below demonstrates AlexRenew’s financial profile as it relates to two (2) conditions established by our Indenture and Board-approved financial policies. As indicated below, AlexRenew’s FY2020 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 FY2019	Proposed FY2020
<b>Reserve Requirement</b>		
<b>Operating Fund</b>		
60 Days Current Year Budgeted Expenses	\$ 4,640,520	4,742,230
Projected Ending Balance	4,640,520	4,742,230
Excess (Deficiency)	-	-
<b>General Reserve sub-Fund</b>		
60 Days Current Year Budgeted Expenses	\$ 4,640,520	4,742,230
Projected Ending Balance	4,640,520	4,742,230
Excess (Deficiency)	-	-
<b>Total Reserve Requirement - 120 Days</b>	<b>9,281,040</b>	<b>9,484,460</b>
<b>Debt Service Coverage (DSC) Requirement</b>		
Wastewater Treatment Charges	\$ 39,195,503	\$ 43,848,000
Fairfax County Operating Expense Charge	11,329,663	11,653,647
Interest Income	90,000	90,000
Gross Revenue Available for Debt Service:	\$ 50,615,166	\$ 55,591,647
Operating Expenses	\$ (27,843,111)	\$ (28,453,556)
Net Revenues Available for Debt Service	\$ 22,772,055	\$ 27,138,091
Total Annual Debt Service	\$ 15,245,561	\$ 14,220,146
<b>All-in Debt Service Coverage</b>	<b>1.50x</b>	<b>1.91x</b>
Financial Policy Target	<b>1.50x</b>	<b>1.50x</b>
Indenture Target	<b>1.10x</b>	<b>1.10x</b>

## 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 its 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 not 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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