Potomac WFP Pre-Filter Chlorination & Air Scour Improvements

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W - 000073.22	143803	Change

PDF Date	October 1, 2019
Date Revised	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	1,749	782	720	247	247						
Land											
Construction	21,591	11,918	7,201	2,472	2,472						
Other	1,064		792	272	272						
Total	**24,404**	**12,700**	**8,713**	**2,991**	**2,991**						

C. Funding Schedule (000's)

WSSC Bonds	24,404	12,700	8,713	2,991	2,991						

D. Description & Justification

DESCRIPTION

This project provides for the planning, design, and construction of a pre-filter chlorination system and filter air scour system for the Potomac Water Filtration Plant. It also includes the replacement of all 32 filter underdrains.

JUSTIFICATION

Due to numerous separate incidents of catastrophic filter underdrain failures since October 2006, an investigation was conducted by WSSC and ITT Leopold, suppliers of the failed underdrain systems. The investigation revealed that the ITT Leopold underdrain system with an Integral Media Support (IMS) cap is not compatible with the biologically active filters at the Potomac WFP.
Engineering Standard - I. M. S. Cap Monitoring Operation, and Maintenance Instructions, ITT Water & Wastewater, Leopold, Inc., (April 2009). Memo from John Geibel, P.E., Sr. Product Engineer @ ITT Water & Wastewater, Leopold, Inc. - Potomac Filtration Plant Visit April 2009 - to Joseph Johnson, Potomac Plant Superintendent, (May 2010).

COST CHANGE

Not applicable.

OTHER

The project scope has remained the same. The Potomac Water Filtration Plant experienced fourteen separate incidents of catastrophic filter underdrain failure from October 2006 through FY '17, including three filters that failed twice. The failure rate accelerated with six of the fourteen filter failures taking place during the spring and summer of 2016. The construction for Pre-Filter Chlorination and Underdrain Replacement have been completed. Expenditure and schedule projections shown in Block B above include design level estimates for Air Scour (which may change based on actual bids). The original plan was to design and construct both pre-filter chlorination and air scour systems as one deliverable at the same time. However, due to the more critical need to implement pre-filter chlorination at the Potomac plant, this portion of the project was placed on an accelerated schedule for design and construction, separate from that of the air scour system. WSSC Water Green Bonds issued in December 2019 will be utilized to fund a portion of this project. The elimination of filter underdrain failures will address the following International Capital Market Association (ICMA) Green Bond Principles 2016 category: Sustainable water management.

COORDINATION

Coordinating Agencies: Montgomery County Government; Prince George's County Government
Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	$1,588	22
Total Cost	$1,588	22
Impact on Water and Sewer Rate		

F. Approval and Expenditure Data (000's)

Date First in Program	FY 14
Date First Approved	FY 14
Initial Cost Estimate	5,602
Cost Estimate Last FY	25,275
Present Cost Estimate	24,404
Approved Request Last FY	8,000
Total Expense & Encumbrances	12,700
Approval Request Year 1	2,991

G. Status Information

Land Status	Not Applicable
Project Phase	Design
Percent Complete	100 %
Estimated Completion Date	June 2021

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT APPLICABLE