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Exchange Compliance Plan 2018 Annual Update



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Virginia Department of Environmental Quality
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Introduction



1.1 Purpose

This Chesapeake Bay Nutrient Credit Exchange Program Compliance Plan 2018 Annual Update (“Exchange Compliance Plan”) was prepared by the Virginia Nutrient Credit Exchange Association, Inc. (“The Exchange”) in collaboration with participating owners of regulated facilities (“Participants”). This Exchange Compliance Plan updates and supersedes the Exchange Compliance Plan 2017 Annual Update, which was submitted by The Exchange to the Virginia Department of Environmental Quality (“DEQ”) on January 31, 2017. The original Exchange Compliance Plan was submitted by The Exchange to DEQ on July 31, 2007 and approved by DEQ by letter dated September 7, 2007. Similarly, the Annual Updates for each year from 2008 through 2017 were all submitted to DEQ in a timely manner and were subsequently approved by DEQ. All DEQ approval letters are attached at Appendix A.

This Exchange Compliance Plan continues a “realistically aggressive” program of work to meet the nitrogen and phosphorus waste load allocations of the Participants’ facilities. This Exchange Compliance Plan utilizes voluntary, market-based nutrient credit trading as a means of achieving compliance more cost-effectively and more expeditiously than would otherwise be possible. It is grounded in the 20-plus year history of policy development by the U.S. Environmental Protection Agency (“EPA”) and the Chesapeake Bay Program (“CBP”) regional partnership recognizing pollutant credit trading as a useful tool for advancing water quality protection programs. Supporting national and regional policy is set forth in:

- EPA Effluent Trading In Watersheds Policy (1996)
- Draft Framework for Watershed-Based Trading (1996)
- CBP Nutrient Trading Fundamental Principles and Guidelines (2001)
- EPA Water Quality Trading Policy (2003)
- EPA Permit Writers Toolkit for Trading (2007)
- EPA Chesapeake Bay Total Maximum Daily Load (2010)

Specific authorization and detailed requirements for the Virginia Nutrient Credit Exchange Program were first enacted during the 2005 Session of the General Assembly. The program has been expanded by legislation numerous times since 2005. In addition, the State Water Control Board and DEQ have issued implementation regulations and guidance on numerous occasions since 2005. Key references include:

- Chesapeake Bay Watershed Nutrient Credit Exchange Program, Va. Code § 62.1-44.19:12 et seq. (2005, as amended)
- Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed, 9 VAC 25-40 (2005)
- General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia, 9 VAC 25-820-70 (2006, as amended or reissued from time to time) (“General Permit”)

- DEQ Guidance Memo No. 07-2008, Amendment No. 2: Permitting Considerations for Facilities in the Chesapeake Bay Watershed (2007)
- DEQ Addendum No. 1 to Guidance Memo No. 07-2008, Amendment No. 2: Permitting Considerations for Facilities in the Chesapeake Bay Watershed (2009)
- Virginia Chesapeake Bay TMDL Phase I Watershed Implementation Plan (2010)
- Virginia Chesapeake Bay TMDL Phase II Watershed Implementation Plan (2012)

The initial focus of the Exchange Compliance Plan was on the construction of a large number of nutrient removal technology upgrades at Participants' facilities to achieve compliance with the new Chesapeake Bay nitrogen and phosphorus waste load allocations adopted by the State Water Control Board. Once initial compliance was achieved through this construction program (Compliance Year 2011), the focus shifted to maintaining compliance through an ongoing program of additional facility upgrades over time as is now occurring.

At present, as provided for under the EPA Chesapeake Bay TMDL (Appendix X) and Virginia Phase I Watershed Implementation Plan, DEQ is undertaking a comprehensive study of existing James River Site-specific numeric Chlorophyll-a criteria assessment method and the associated modelling framework. The outcome of this study is expected to be used to determine final nutrient allocation for the James River basin. In the meantime, the James River allocations are stringently regulated pursuant to the 2005 Virginia allocations as modified by the 2010 EPA Chesapeake Bay TMDL Stage 1A and 1B additional reductions.

This document serves two primary purposes. First, certain information contained herein is submitted on behalf of the Participants in satisfaction of each Participant's regulatory obligation under Part I.D. of the General Permit (9 VAC 25-820-70 Part I.D), which states:

Annual update of compliance plan. Every owner of a facility required to submit a registration statement shall either individually or through the Virginia Nutrient Credit Exchange Association submit updated compliance plans to the department no later than February 1 of each year. The compliance plans shall contain sufficient information to document a plan to achieve and maintain compliance with applicable total nitrogen and total phosphorus individual waste load allocations on the registration list and aggregate waste load allocations in Part I C 3. Compliance plans for owners of facilities that were required to submit a registration statement with the department under Part I G 1 a may rely on the acquisition of point source credits in accordance with Part I J of this general permit, but not the acquisition of credits through payments into the Nutrient Offset Fund, to achieve compliance with the individual and combined waste load allocations in each tributary. Compliance plans for expansions or new discharges for owners of facilities that are required to submit a registration statement with the department under Part I G 1 b and c may rely on the acquisition of allocation in accordance with Part II B of this general permit to achieve compliance with the individual and combined waste load allocations in each tributary.

The second purpose of this Exchange Compliance Plan is to serve as a comprehensive document for planning and implementing nutrient credit trading at the basin level through The Exchange. The Exchange is a not-for-profit, voluntary association of owners of regulated

facilities that serves as a facilitator of nutrient trading among its members as provided in Virginia Code section 62.1-44.19:17.

1.2 Definitions

The terms used in this Exchange Compliance Plan shall have the same definitions as set forth in The Exchange's Credit Exchange Policy for the Purchase and Sale of Chesapeake Bay Nutrient Credits, which is set forth in Section 8.

Any terms not defined in the Credit Exchange Policy shall have the same definition as provided in 9 VAC 25-820-10, unless a different meaning is intended by the usage herein.

The term "Declared Load", which appears on the river basin graphs, means the maximum delivered load that a facility can discharge and still meet its commitments to either supply or purchase Class A Credits. For a Class A Seller, Declared Load equals Delivered WLA minus Class A Credits supplied. For a Class A Buyer, Declared Load equals Delivered WLA plus Class A Credits purchased. For a Participant that is neither a Class A Seller nor a Class A Buyer (i.e., a Neutral Participant), Declared Load equals Delivered WLA.

1.3 Regulatory and Non-Regulatory Information

As mentioned above, the Exchange Compliance Plan serves a dual purpose. Certain information set forth herein is required by the General Permit. This regulatory information is provided (1) in the Compliance Statements for facilities subject to reduced waste load allocations in the James River basin and (2) in Section 7 of the Exchange Compliance Plan.

Additional information set forth herein is beyond that required by regulation and is not submitted for review and approval as such. This additional information, i.e., non-regulatory information, is presented for the efficiency of gaining multiple uses of a single, more comprehensive document for effective planning by The Exchange and the Participants. Non-regulatory information includes but is not limited to: design flow; projections of actual flow, concentration, load and Credits; future capital projects; Preliminary Use of Credits; detailed trading ledgers for projections; The Exchange's Credit Exchange Policy (including its Credit Price Schedule) (Section 8); and a summary and projection of needs for and availability of WQIF grant funding, which is an essential funding source for many of the planned facility upgrades discussed herein (Appendix C).

1.4 Exchange Compliance Plan Content Overview

The Exchange Compliance Plan contains a separate section for each tributary, or basin, as follows:

- Section 2 – Potomac-Shenandoah River Basin
- Section 3 – Rappahannock River Basin
- Section 4 – York River Basin
- Section 5 – James River Basin
- Section 6 – Eastern Shore Basin

The Trading Optimization Model, previously described in The Exchange’s written materials and presentations, was used to generate a plan illustrating nutrient removal projects, Credit generation and Credit exchanges in each basin. Schedules and results are based on owner-provided facility-specific data. The organization and description of the Exchange Compliance Plan components is summarized below.

The Exchange Compliance Plan for the James River basin distinguishes between the James “Upper” and James “Lower” basins. This manner of presentation is convenient in that it (1) simplifies the analysis of the James River exchanges and (2) clearly demonstrates that the partial, one-way restriction on James River trading is met (i.e., facilities in the areas previously identified as upper and middle portions of the basin are not proposing to acquire any Credits generated by facilities in the lower basin). Notwithstanding this two-part presentation, facilities in the lower portion may obtain Credits from upstream facilities. In the future, Class A Credit exchanges may be specified in a plan update. Similarly, Credits may be exchanged from the Upper James to the Lower James during any Reconciliation Year as needed. Therefore, despite the distinction between the Upper and Lower portions of the James River basin herein, the basin continues to be viewed and managed as a single unit consistent with applicable regulations.

Plan Summary

The Plan Summary is a visual synopsis of each basin. Separate summaries are presented for nitrogen and phosphorus.

For Class A Credit management purposes, the Plan Summary compares the “Declared Load” to the Delivered WLA for all Participants for an 8-year period (currently, through the year 2025). The Declared Load illustration represents the Class A Credit trading positions of Participant facilities. Because Declared Load is a Class A Credit concept, it excludes—by definition—forecasted Class B Credits and thereby tends to overstate the forecasted actual load, which is addressed by the “Expected Load” discussed below.

For overall compliance purposes and The Exchange’s broader management purposes, the Plan Summary also illustrates Expected Load, which is a forecast of the aggregate load of all Participant facilities. In contrast to the Declared Load line, the Expected Load line intentionally ignores the Class A Credit sales decisions of individual Participants and thereby takes into account all Credits projected to be generated by Participants prior to adjustments for Preliminary Use of Credits. In this respect, the Expected Load line is not representative of Class A Credit commitments that Participants in The Exchange’s voluntary, market-based program have decided to make. However, it does illustrate projected aggregate performance and more comprehensively reflects the favorable nutrient reduction trends of The Exchange as a whole.

Also for The Exchange’s management purposes, green or brown bars at the bottom of the Plan Summary chart are plotted against the secondary Y-axis and represent Class A Credit supplies that exceed Class A Credit requests for a given Compliance Year.

Trading Ledger

Each basin’s nutrient section presents annual trading ledgers for 2018 through 2022. For each Participant, the Expected Load, Expected Credits, Expected Net Credits, Class A Credit sales, and Class A Credit purchases are presented. The ledger also accounts for projected Class B Credits. Where Class A Credit purchases are not projected to be satisfied using only Class A

Credit sales, a portion of each Buyer's demand is anticipated to be satisfied on a pro rata basis using Class B Credits. Aggregate basin information is shown in the blue bar at the top of the ledger.

Based on the number of Credits projected in each market, Class A Credit and Class B Credit sales prices are estimated in accordance with the Credit Exchange Policy. These prices, which include the Class A Buyer price, are displayed at the top of the trading ledger. Since The Exchange "clears the market" by purchasing all Credits generated by Participants as provided in the Credit Exchange Policy, the Class A Seller price reflects the difference between the volume of Credits supplied and the volume of credits purchased in the Class A market.

Where multiple facilities under common ownership or operation have been "bubbled" at the Participant's election pursuant to 9 VAC 25-820-70 Part I.B.2, these facilities are listed in order and highlighted in light blue (and pale yellow, if more than one bubble exists in a consecutive alphabetical listing of Participants/Facilities).

Where a participating facility has provided advance notice of a Private Exchange pursuant to Section 4.9 of the Credit Exchange Policy, an estimate of the amount of Credits to be exchanged is noted as a Preliminary Use of Credits on the applicable Trading Ledger. As of this time, Participants have given notice of the following Private Exchanges factored into this Exchange Compliance Plan:

Potomac

Arlington County WWTP and Arlington County MS4 (Nitrogen/Phosphorus)
Arlington County WWTP and George Mason University (Nitrogen/Phosphorus)
Fairfax-Noman Cole and Fairfax County Department of Vehicle Services (Nitrogen)
HRRSA-North River and Town of Bridgewater MS4 (Nitrogen/Phosphorus)
Town of Leesburg and Loudoun Milling (Nitrogen/Phosphorus)
Town of Luray WWTP and Town of Luray MS4 (Phosphorus)
UOSA and USOA Member Jurisdiction MS4s (Nitrogen/Phosphorus)

Rappahannock

Omega Protein and Children's Bible Ministries of Virginia, Inc. (Nitrogen/Phosphorus)

York

HSD and Member Jurisdiction MS4s (Nitrogen/Phosphorus)

James

AdvanSix-Hopewell and Hopewell RWTF (Nitrogen)
Chesterfield County and South Central Wastewater Authority (Nitrogen/Phosphorus)
Chesterfield County and Dominion-Chesterfield (Nitrogen/Phosphorus)
HRSD and Member Jurisdiction MS4s (Nitrogen/Phosphorus)
City of Lynchburg WWTP and City of Lynchburg MS4 (Nitrogen)

Eastern Shore

Tangier Island and Tyson Foods (Nitrogen/Phosphorus)

In certain instances, a listed Private Exchange may include terms that are not readily capable of representation within The Exchange's uniform basis and facility-level formats used herein;

notwithstanding that formatting limitation, it is the intent of The Exchange to fully accommodate the terms of such Private Exchanges for which Participants have given proper notice.

Facility Summaries and Compliance Statements

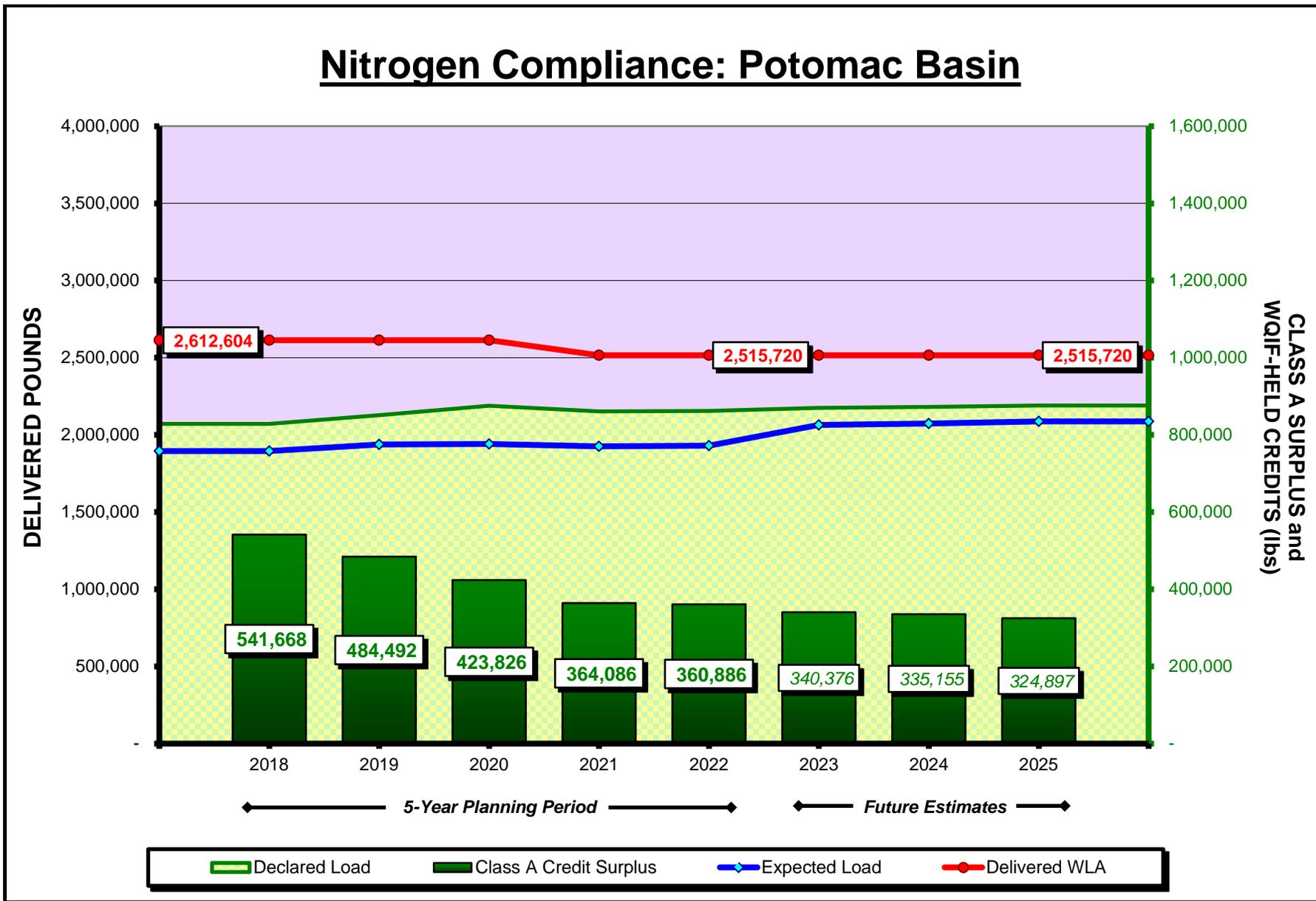
For each basin, facility-specific information is included immediately following the Trading Ledger. This includes Facility Summaries for Nitrogen and for Phosphorus for each facility. For facilities with reduced waste load allocations pursuant to the Chesapeake Bay TMDL, a Compliance Statement is provided with additional information with respect to the timing and manner of achieving compliance.

Development of each Annual Update of the Exchange Compliance Plan requires data collection from Participants on a schedule that provides The Exchange and its advisors adequate time to collect and compile data covering over 100 facilities. The timeline for such data collection is governed by the Nutrient Credit Services Agreement between The Exchange and each Participant. A copy of the agreement is provided as Appendix B hereto. Consequently, the data contained in the Facility Summaries and Compliance Statements was collected approximately five months in advance of submittal of the Annual Update to DEQ and generally would not reflect changed circumstances at the facility level, if any, subsequent to data collection. Data changes subsequent to data collection, if any, would be reflected in the next Annual Update.

SECTION 2

Potomac-Shenandoah River Basin Exchange Compliance Plan





POTOMAC Basin: Nitrogen Credit Ledger

Compliance Year:	2018	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)				
		Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases
									PRICE:	\$ 0.07	\$ 3.78	\$ 0.02
The Exchange (group)	2,612,604	1,895,649	716,955	-	(399)	(24,365)	692,191		553,255	(11,587)	150,523	
ACSA-Fishersville	4,873	1,845	3,028	(3,028)	-	-	-	-	-	-	-	
ACSA-Greenville	1,424	497	927	(675)	-	-	252	118	-	134		
ACSA-Harriston	1,025	203	822	(822)	-	-	-	-	-	-		
ACSA-Middle River	8,284	3,764	4,520	-	-	-	4,520	2,123	-	2,397		
ACSA-Mt. Sidney	854	1,307	(453)	453	-	-	-	-	-	-		
ACSA-Stuarts Draft	2,436	588	1,848	-	-	-	1,848	869	-	979		
ACSA-Vesper View	1,025	546	479	-	-	-	479	225	-	254		
ACSA-Weyers Cave	1,462	5,534	(4,072)	4,072	-	-	-	-	-	-		
Alexandria Renew Ent.	493,381	367,386	125,995	-	-	-	125,995	94,496	-	31,499		
Arlington Co.	365,284	232,985	132,299	-	-	-	132,299	132,299	-	-		
Berryville	5,373	3,070	2,303	-	-	-	2,303	2,000	-	303		
Broadway Regional	5,601	4,924	677	-	-	-	677	-	-	677		
Fairfax Co-Noman Cole	612,158	455,658	156,500	-	(25)	-	156,475	156,420	-	55		
FCWSA-Vint Hill	579	219	360	-	-	-	360	-	-	360		
Front Royal	29,725	25,303	4,422	-	-	-	4,422	1,056	-	3,366		
FWSA-Opequon	31,681	18,402	13,279	-	-	-	13,279	-	-	13,279		
FWSA-Parkins Mill	15,837	11,086	4,751	-	-	-	4,751	-	-	4,751		
HRRSA-North River	55,746	36,536	19,210	-	(100)	-	19,110	19,082	-	28		
KGCSA-Dahlgren S.D.	9,137	6,700	2,437	-	-	-	2,437	-	-	2,437		
KGCSA-Fairview Beach	1,827	731	1,096	(427)	-	-	669	-	-	669		
KGCSA-Purkins Corner	1,096	1,523	(427)	427	-	-	-	-	-	-		
Leesburg	97,458	31,261	66,197	-	(274)	(24,365)	41,558	-	-	41,558		
Loudoun Water- Broad Run	119,264	44,683	74,581	-	-	-	74,581	74,581	-	-		
Luray	8,187	1,688	6,499	-	-	-	6,499	6,499	-	-		
Massanutten PSC	6,030	2,975	3,055	-	-	-	3,055	-	-	3,055		
Merck	4,824	14,473	(9,649)	-	-	-	(9,649)	-	(9,649)	-		
MillerCoors LLC	18,091	18,091	-	-	-	-	-	-	-	-		
Mt. Jackson	2,900	2,237	663	-	-	-	663	-	-	663		
Purcellville	13,157	9,648	3,509	-	-	-	3,509	2,023	-	1,486		
PWCSA-HL Mooney	219,280	175,881	43,399	-	-	-	43,399	30,379	-	13,020		
Stafford Co-Aquia	73,093	64,596	8,497	-	-	-	8,497	7,647	-	850		
Stoney Creek	2,891	2,814	77	-	-	-	77	-	-	77		
Strasburg	5,134	7,072	(1,938)	-	-	-	(1,938)	-	(1,938)	-		
UOSA	302,607	292,754	9,853	-	-	-	9,853	-	-	9,853		
VA Am. Water PW Sec. 1	42,029	22,842	19,187	-	-	-	19,187	11,512	-	7,675		
VA Am. Water PW Sec. 8	42,029	22,842	19,187	-	-	-	19,187	11,512	-	7,675		
Waynesboro	6,822	2,985	3,837	-	-	-	3,837	414	-	3,423		
Purchase by Eastern Shore	-	-	-	-	-	-	-	-	-	-		

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

POTOMAC Basin: Nitrogen Credit Ledger

POTOMAC Basin: Nitrogen Credit Ledger											
Compliance Year:	2019	Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)				
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	\$ 0.08	\$ 3.82	\$ 0.02
The Exchange (group)	2,612,604	1,938,172	674,432	-	(3,024)	(24,365)	647,043		496,157	(11,665)	162,551
ACSA-Fishersville	4,873	1,900	2,973	(2,973)	-	-	-		-	-	-
ACSA-Greenville	1,424	512	912	(479)	-	-	433		433	-	-
ACSA-Harriston	1,025	209	816	(816)	-	-	-		-	-	-
ACSA-Middle River	8,284	3,877	4,407	-	-	-	4,407		4,407	-	-
ACSA-Mt. Sidney	854	1,346	(492)	492	-	-	-		-	-	-
ACSA-Stuarts Draft	2,436	606	1,830	-	-	-	1,830		1,830	-	-
ACSA-Vesper View	1,025	563	462	(462)	-	-	-		-	-	-
ACSA-Weyers Cave	1,462	5,700	(4,238)	4,238	-	-	-		-	-	-
Alexandria Renew Ent.	493,381	371,223	122,158	-	-	-	122,158		91,620	-	30,538
Arlington Co.	365,284	237,554	127,730	-	(2,625)	-	125,105		125,105	-	-
Berryville	5,373	3,377	1,996	-	-	-	1,996		1,900	-	96
Broadway Regional	5,601	4,719	882	-	-	-	882		-	-	882
Fairfax Co-Noman Cole	612,158	470,822	141,336	-	(25)	-	141,311		127,128	-	14,183
FCWSA-Vint Hill	579	244	335	-	-	-	335		-	-	335
Front Royal	29,725	25,359	4,366	-	-	-	4,366		4,000	-	366
FWSA-Opequon	31,681	19,289	12,392	-	-	-	12,392		-	-	12,392
FWSA-Parkins Mill	15,837	9,027	6,810	-	-	-	6,810		-	-	6,810
HRRSA-North River	55,746	38,191	17,555	-	(100)	-	17,455		15,000	-	2,455
KGCSA-Dahlgren S.D.	9,137	5,025	4,112	-	-	-	4,112		-	-	4,112
KGCSA-Fairview Beach	1,827	731	1,096	(427)	-	-	669		-	-	669
KGCSA-Purkins Corner	1,096	1,523	(427)	427	-	-	-		-	-	-
Leesburg	97,458	32,898	64,560	-	(274)	(24,365)	39,921		-	-	39,921
Loudoun Water- Broad Run	119,264	48,953	70,311	-	-	-	70,311		57,884	-	12,427
Luray	8,187	2,533	5,654	-	-	-	5,654		5,654	-	-
Massanutten PSC	6,030	2,975	3,055	-	-	-	3,055		-	-	3,055
Merck	4,824	14,473	(9,649)	-	-	-	(9,649)		-	(9,649)	-
MillerCoors LLC	18,091	18,091	-	-	-	-	-		-	-	-
Mt. Jackson	2,900	2,237	663	-	-	-	663		-	-	663
Purcellville	13,157	7,894	5,263	-	-	-	5,263		2,632	-	2,631
PWCSA-HL Mooney	219,280	178,165	41,115	-	-	-	41,115		28,781	-	12,334
Stafford Co-Aquia	73,093	67,063	6,030	-	-	-	6,030		4,462	-	1,568
Stoney Creek	2,891	2,814	77	-	-	-	77		-	-	77
Strasburg	5,134	7,150	(2,016)	-	-	-	(2,016)		-	(2,016)	-
UOSA	302,607	300,006	2,601	-	-	-	2,601		-	-	2,601
VA Am. Water PW Sec. 1	42,029	23,984	18,045	-	-	-	18,045		10,827	-	7,218
VA Am. Water PW Sec. 8	42,029	23,984	18,045	-	-	-	18,045		10,827	-	7,218
Waynesboro	6,822	3,155	3,667	-	-	-	3,667		3,667	-	-
Purchase by Eastern Shore	-	-	-	-	-	-	-		-	-	-

*** For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.**

*** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.*

POTOMAC Basin: Nitrogen Credit Ledger

Compliance Year:	2020	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange		Private Exchange	WQIF-Held Credits	Class A Sales	Class A* Purchases
								PRICE:	\$ 0.09	\$ 3.86	\$ 0.02
The Exchange (group)	2,612,604	1,940,759	671,845	-	(3,024)	(24,365)	644,456	435,531	(11,705)	220,630	
ACSA-Fishersville	4,873	1,957	2,916	(2,916)	-	-	-	-	-	-	
ACSA-Greenville	1,424	527	897	(771)	-	-	126	126	-	-	
ACSA-Harriston	1,025	216	809	(809)	-	-	-	-	-	-	
ACSA-Middle River	8,284	3,994	4,290	-	-	-	4,290	4,290	-	-	
ACSA-Mt. Sidney	854	1,386	(532)	532	-	-	-	-	-	-	
ACSA-Stuarts Draft	2,436	624	1,812	-	-	-	1,812	1,812	-	-	
ACSA-Vesper View	1,025	580	445	(445)	-	-	-	-	-	-	
ACSA-Weyers Cave	1,462	5,871	(4,409)	4,409	-	-	-	-	-	-	
Alexandria Renew Ent.	493,381	375,061	118,320	-	-	-	118,320	-	-	118,320	
Arlington Co.	365,284	242,122	123,162	-	(2,625)	-	120,537	120,537	-	-	
Berryville	5,373	3,223	2,150	-	-	-	2,150	2,100	-	50	
Broadway Regional	5,601	4,780	821	-	-	-	821	-	-	821	
Fairfax Co-Noman Cole	612,158	456,755	155,403	-	(25)	-	155,378	155,324	-	54	
FCWSA-Vint Hill	579	256	323	-	-	-	323	-	-	323	
Front Royal	29,725	25,415	4,310	-	-	-	4,310	4,000	-	310	
FWSA-Opequon	31,681	19,955	11,726	-	-	-	11,726	-	-	11,726	
FWSA-Parkins Mill	15,837	8,077	7,760	-	-	-	7,760	-	-	7,760	
HRRSA-North River	55,746	38,191	17,555	-	(100)	-	17,455	15,000	-	2,455	
KGCSA-Dahlgren S.D.	9,137	5,482	3,655	-	-	-	3,655	-	-	3,655	
KGCSA-Fairview Beach	1,827	822	1,005	(427)	-	-	578	-	-	578	
KGCSA-Purkins Corner	1,096	1,523	(427)	427	-	-	-	-	-	-	
Leesburg	97,458	34,535	62,923	-	(274)	(24,365)	38,284	-	-	38,284	
Loudoun Water- Broad Run	119,264	52,747	66,517	-	-	-	66,517	66,517	-	-	
Luray	8,187	2,533	5,654	-	-	-	5,654	5,654	-	-	
Massanutten PSC	6,030	3,055	2,975	-	-	-	2,975	-	-	2,975	
Merck	4,824	14,473	(9,649)	-	-	-	(9,649)	-	(9,649)	-	
MillerCoors LLC	18,091	18,091	-	-	-	-	-	-	-	-	
Mt. Jackson	2,900	2,278	622	-	-	-	622	-	-	622	
Purcellville	13,157	8,333	4,824	-	-	-	4,824	2,412	-	2,412	
PWCSA-HL Mooney	219,280	180,449	38,831	-	-	-	38,831	27,182	-	11,649	
Stafford Co-Aquia	73,093	67,063	6,030	-	-	-	6,030	5,427	-	603	
Stoney Creek	2,891	2,814	77	-	-	-	77	-	-	77	
Strasburg	5,134	7,190	(2,056)	-	-	-	(2,056)	-	(2,056)	-	
UOSA	302,607	299,087	3,520	-	-	-	3,520	-	-	3,520	
VA Am. Water PW Sec. 1	42,029	23,984	18,045	-	-	-	18,045	10,827	-	7,218	
VA Am. Water PW Sec. 8	42,029	23,984	18,045	-	-	-	18,045	10,827	-	7,218	
Waynesboro	6,822	3,326	3,496	-	-	-	3,496	3,496	-	-	
Purchase by Eastern Shore	-	-	-	-	-	-	-	-	-	-	

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

POTOMAC Basin: Nitrogen Credit Ledger

Compliance Year:	2021	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)				
		Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases
									PRICE:	\$ 0.07	\$ 3.87	\$ 0.01
The Exchange (group)	2,515,720	1,925,743	589,977	-	(3,024)	(19,492)	567,461		372,237	(8,151)	203,375	
ACSA-Fishersville	2,924	1,209	1,715	(1,715)	-	-	-	-	-	-	-	
ACSA-Greenville	854	303	551	(425)	-	-	126	126	-	-		
ACSA-Harriston	626	136	490	-	-	-	490	490	-	-		
ACSA-Middle River	4,970	2,468	2,502	-	-	-	2,502	2,502	-	-		
ACSA-Mt. Sidney	513	864	(351)	351	-	-	-	-	-	-		
ACSA-Stuarts Draft	1,462	386	1,076	(1,076)	-	-	-	-	-	-		
ACSA-Vesper View	626	338	288	-	-	-	288	288	-	-		
ACSA-Weyers Cave	914	3,779	(2,865)	2,865	-	-	-	-	-	-		
Alexandria Renew Ent.	493,381	375,061	118,320	-	-	-	118,320	-	-	118,320		
Arlington Co.	365,284	246,690	118,594	-	(2,625)	-	115,969	115,969	-	-		
Berryville	4,435	2,661	1,774	-	-	-	1,774	1,650	-	124		
Broadway Regional	3,538	3,057	481	-	-	-	481	-	-	481		
Fairfax Co-Noman Cole	612,158	488,547	123,611	-	(25)	-	123,586	123,528	-	58		
FCWSA-Vint Hill	579	268	311	-	-	-	311	-	-	311		
Front Royal	24,365	20,832	3,533	-	-	-	3,533	3,200	-	333		
FWSA-Opequon	25,589	14,790	10,799	-	-	-	10,799	-	-	10,799		
FWSA-Parkins Mill	12,791	6,524	6,267	-	-	-	6,267	-	-	6,267		
HRRSA-North River	35,475	24,628	10,847	-	(100)	-	10,747	4,600	-	6,147		
KGCSA-Dahlgren S.D.	9,137	5,939	3,198	-	-	-	3,198	-	-	3,198		
KGCSA-Fairview Beach	1,827	822	1,005	(579)	-	-	426	-	-	426		
KGCSA-Purkins Corner	1,096	1,675	(579)	579	-	-	-	-	-	-		
Leesburg	77,966	29,541	48,425	-	(274)	(19,492)	28,659	-	-	28,659		
Loudoun Water- Broad Run	109,884	53,231	56,653	-	-	-	56,653	56,653	-	-		
Luray	6,432	1,990	4,442	-	-	-	4,442	4,442	-	-		
Massanutten PSC	4,020	2,037	1,983	-	-	-	1,983	-	-	1,983		
Merck	3,216	9,648	(6,432)	-	-	-	(6,432)	-	(6,432)	-		
MillerCoors LLC	12,060	12,060	-	-	-	-	-	-	-	-		
Mt. Jackson	2,132	1,675	457	-	-	-	457	-	-	457		
Purcellville	8,406	6,164	2,242	-	-	-	2,242	1,121	-	1,121		
PWCSA-HL Mooney	219,280	181,363	37,917	-	-	-	37,917	28,438	-	9,479		
Stafford Co-Aquia	73,093	67,063	6,030	-	-	-	6,030	5,427	-	603		
Stoney Creek	2,065	1,865	200	-	-	-	200	200	-	-		
Strasburg	4,059	5,778	(1,719)	-	-	-	(1,719)	-	(1,719)	-		
UOSA	302,607	302,434	173	-	-	-	173	-	-	173		
VA Am. Water PW Sec. 1	42,029	23,984	18,045	-	-	-	18,045	10,827	-	7,218		
VA Am. Water PW Sec. 8	42,029	23,984	18,045	-	-	-	18,045	10,827	-	7,218		
Waynesboro	3,898	1,949	1,949	-	-	-	1,949	1,949	-	-		
Purchase by Eastern Shore	-	-	-	-	-	-	-	-	-	-		

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

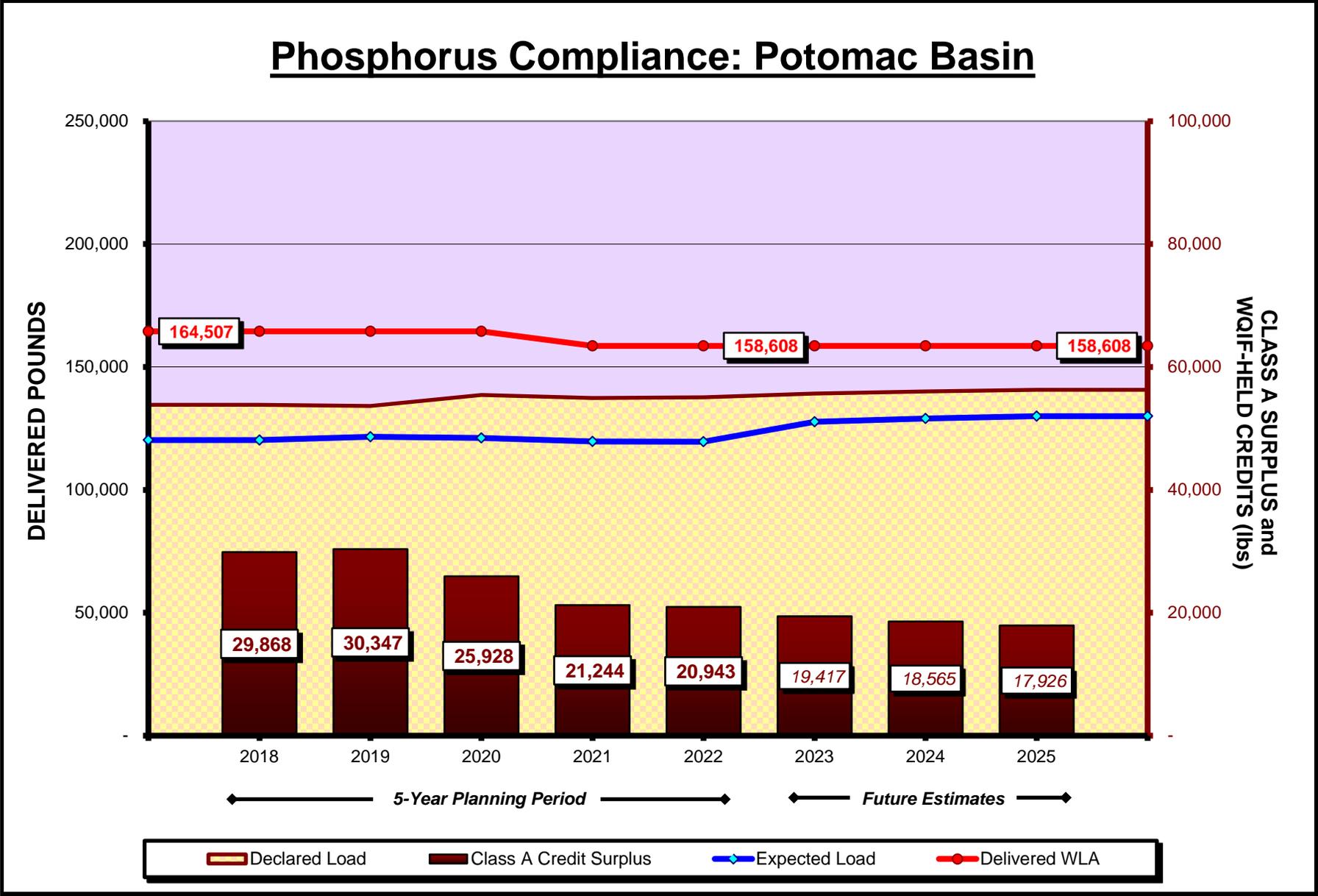
** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

POTOMAC Basin: Nitrogen Credit Ledger

POTOMAC Basin: Nitrogen Credit Ledger											
Compliance Year:	2022	Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)				
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	\$ 0.06	\$ 3.94	\$ 0.01
The Exchange (group)	2,515,720	1,930,655	585,065	-	(2,750)	(19,492)	562,823		368,126	(7,240)	201,937
ACSA-Fishersville	2,924	1,169	1,755	(1,755)	-	-	-		-	-	-
ACSA-Greenville	854	337	517	(517)	-	-	-		-	-	-
ACSA-Harriston	626	151	475	(56)	-	-	419		419	-	-
ACSA-Middle River	4,970	2,577	2,393	-	-	-	2,393		2,393	-	-
ACSA-Mt. Sidney	513	895	(382)	382	-	-	-		-	-	-
ACSA-Stuarts Draft	1,462	389	1,073	(1,073)	-	-	-		-	-	-
ACSA-Vesper View	626	360	266	-	-	-	266		266	-	-
ACSA-Weyers Cave	914	3,933	(3,019)	3,019	-	-	-		-	-	-
Alexandria Renew Ent.	493,381	375,061	118,320	-	-	-	118,320		-	-	118,320
Arlington Co.	365,284	242,122	123,162	-	(2,625)	-	120,537		120,537	-	-
Berryville	4,435	2,597	1,838	-	-	-	1,838		1,300	-	538
Broadway Regional	3,538	3,096	442	-	-	-	442		-	-	442
Fairfax Co-Noman Cole	612,158	491,188	120,970	-	(25)	-	120,945		120,945	-	-
FCWSA-Vint Hill	579	280	299	-	-	-	299		-	-	299
Front Royal	24,365	20,832	3,533	-	-	-	3,533		3,200	-	333
FWSA-Opequon	25,589	14,870	10,719	-	-	-	10,719		-	-	10,719
FWSA-Parkins Mill	12,791	6,907	5,884	-	-	-	5,884		-	-	5,884
HRRSA-North River	35,475	24,628	10,847	-	(100)	-	10,747		4,600	-	6,147
KGCSA-Dahlgren S.D.	9,137	5,482	3,655	-	-	-	3,655		-	-	3,655
KGCSA-Fairview Beach	1,827	731	1,096	(579)	-	-	517		-	-	517
KGCSA-Purkins Corner	1,096	1,675	(579)	579	-	-	-		-	-	-
Leesburg	77,966	30,878	47,088	-	-	(19,492)	27,596		-	-	27,596
Loudoun Water- Broad Run	109,884	57,339	52,545	-	-	-	52,545		52,545	-	-
Luray	6,432	1,990	4,442	-	-	-	4,442		4,442	-	-
Massanutten PSC	4,020	2,037	1,983	-	-	-	1,983		-	-	1,983
Merck	3,216	9,648	(6,432)	-	-	-	(6,432)		-	(6,432)	-
MillerCoors LLC	12,060	12,060	-	-	-	-	-		-	-	-
Mt. Jackson	2,132	1,706	426	-	-	-	426		-	-	426
Purcellville	8,406	6,500	1,906	-	-	-	1,906		953	-	953
PWCSA-HL Mooney	219,280	182,277	37,003	-	-	-	37,003		27,752	-	9,251
Stafford Co-Aquia	73,093	67,063	6,030	-	-	-	6,030		5,427	-	603
Stoney Creek	2,065	1,865	200	-	-	-	200		200	-	-
Strasburg	4,059	4,867	(808)	-	-	-	(808)		-	(808)	-
UOSA	302,607	302,468	139	-	-	-	139		-	-	139
VA Am. Water PW Sec. 1	42,029	24,364	17,665	-	-	-	17,665		10,599	-	7,066
VA Am. Water PW Sec. 8	42,029	24,364	17,665	-	-	-	17,665		10,599	-	7,066
Waynesboro	3,898	1,949	1,949	-	-	-	1,949		1,949	-	-
Purchase by Eastern Shore	-	-	-	-	-	-	-		-	-	-

*** For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.**

*** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.*



POTOMAC Basin: Phosphorus Credit Ledger

Compliance Year: 2018											
Facility Name	Delivered WLA	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits		Class A Sales	Class A* Purchases	Class B Sales**	
The Exchange (group)	164,507	120,230	44,277	-	(32)	(1,234)	43,011	PRICE: \$ 0.68	\$ 5.70	\$ 0.19	
								34,440	(4,572)	13,143	
ACSA-Fishersville	1,974	623	1,351	(1,189)	-	-	162	75	-	87	
ACSA-Greenville	1,028	437	591	(234)	-	-	357	165	-	192	
ACSA-Harriston	411	239	172	-	-	-	172	79	-	93	
ACSA-Middle River	3,355	1,694	1,661	-	-	-	1,661	766	-	895	
ACSA-Mt. Sidney	617	851	(234)	234	-	-	-	-	-	-	
ACSA-Stuarts Draft	1,974	529	1,445	-	-	-	1,445	665	-	780	
ACSA-Vesper View	411	338	73	-	-	-	73	34	-	39	
ACSA-Weyers Cave	242	1,431	(1,189)	1,189	-	-	-	-	-	-	
Alexandria Renew Ent.	29,603	22,043	7,560	-	-	-	7,560	5,670	-	1,890	
Arlington Co.	21,925	13,979	7,946	-	-	-	7,946	7,946	-	-	
Berryville	339	194	145	-	-	-	145	130	-	15	
Broadway Regional	1,172	1,114	58	-	-	-	58	-	-	58	
Fairfax Co-Noman Cole	36,729	27,339	9,390	-	-	-	9,390	9,385	-	5	
FCWSA-Vint Hill	148	56	92	-	-	-	92	-	-	92	
Front Royal	1,974	2,240	(266)	-	-	-	(266)	-	(266)	-	
FWSA-Opequon	6,217	4,095	2,122	-	-	-	2,122	-	-	2,122	
FWSA-Parkins Mill	2,467	1,727	740	-	-	-	740	-	-	740	
HRRSA-North River	10,262	6,608	3,654	-	(4)	-	3,650	3,631	-	19	
KGCSA-Dahlgren S.D.	914	503	411	(40)	-	-	371	-	-	371	
KGCSA-Fairview Beach	179	72	107	-	-	-	107	-	-	107	
KGCSA-Purkins Corner	106	146	(40)	40	-	-	-	-	-	-	
Leesburg	4,934	2,022	2,912	-	(27)	(1,234)	1,651	-	-	1,651	
Loudoun Water- Broad Run	1,809	775	1,034	-	-	-	1,034	1,034	-	-	
Luray	789	318	471	-	(1)	-	470	456	-	14	
Massanutten PSC	727	2,389	(1,662)	-	-	-	(1,662)	-	(1,662)	-	
Merck	592	2,368	(1,776)	-	-	-	(1,776)	-	(1,776)	-	
MillerCoors LLC	2,220	2,220	-	-	-	-	-	-	-	-	
Mt. Jackson	339	174	165	-	-	-	165	-	-	165	
Purcellville	727	533	194	-	-	-	194	140	-	54	
PWCSA-HL Mooney	13,157	10,553	2,604	-	-	-	2,604	2,344	-	260	
Stafford Co-Aquia	4,386	3,876	510	-	-	-	510	459	-	51	
Stoney Creek	354	533	(179)	-	-	-	(179)	-	(180)	1	
Strasburg	474	1,162	(688)	-	-	-	(688)	-	(688)	-	
UOSA	4,934	3,156	1,778	-	-	-	1,778	-	-	1,778	
VA Am. Water PW Sec. 1	2,522	1,371	1,151	-	-	-	1,151	691	-	460	
VA Am. Water PW Sec. 8	2,522	1,371	1,151	-	-	-	1,151	691	-	460	
Waynesboro	1,974	1,151	823	-	-	-	823	79	-	744	
Purchase by Eastern Shore	-	-	-	-	-	-	-	-	-	-	

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

POTOMAC Basin: Phosphorus Credit Ledger

Compliance Year: 2019											
Facility Name	Delivered WLA	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits			Class A Sales	Class A* Purchases	Class B Sales**
The Exchange (group)	164,507	121,625	42,882	-	(644)	(1,234)	41,004	PRICE:	\$ 0.48	\$ 5.76	\$ 0.16
									33,448	(3,101)	10,657
ACSA-Fishersville	1,974	641	1,333	(1,232)	-	-	101		101	-	-
ACSA-Greenville	1,028	450	578	(259)	-	-	319		319	-	-
ACSA-Harriston	411	246	165	-	-	-	165		165	-	-
ACSA-Middle River	3,355	1,745	1,610	-	-	-	1,610		1,610	-	-
ACSA-Mt. Sidney	617	876	(259)	259	-	-	-		-	-	-
ACSA-Stuarts Draft	1,974	545	1,429	-	-	-	1,429		1,429	-	-
ACSA-Vesper View	411	348	63	-	-	-	63		63	-	-
ACSA-Weyers Cave	242	1,474	(1,232)	1,232	-	-	-		-	-	-
Alexandria Renew Ent.	29,603	22,273	7,330	-	-	-	7,330		5,500	-	1,830
Arlington Co.	21,925	14,253	7,672	-	(612)	-	7,060		7,060	-	-
Berryville	339	213	126	-	-	-	126		110	-	16
Broadway Regional	1,172	978	194	-	-	-	194		-	-	194
Fairfax Co-Noman Cole	36,729	28,249	8,480	-	-	-	8,480		8,475	-	5
FCWSA-Vint Hill	148	62	86	-	-	-	86		-	-	86
Front Royal	1,974	2,245	(271)	-	-	-	(271)		-	(271)	-
FWSA-Opequon	6,217	4,292	1,925	-	-	-	1,925		-	-	1,925
FWSA-Parkins Mill	2,467	1,875	592	-	-	-	592		-	-	592
HRRSA-North River	10,262	6,907	3,355	-	(4)	-	3,351		2,800	-	551
KGCSA-Dahlgren S.D.	914	503	411	(40)	-	-	371		-	-	371
KGCSA-Fairview Beach	179	72	107	-	-	-	107		-	-	107
KGCSA-Purkins Corner	106	146	(40)	40	-	-	-		-	-	-
Leesburg	4,934	2,221	2,713	-	(27)	(1,234)	1,452		-	-	1,452
Loudoun Water- Broad Run	1,809	849	960	-	-	-	960		745	-	215
Luray	789	326	463	-	(1)	-	462		449	-	13
Massanutten PSC	727	1,194	(467)	-	-	-	(467)		-	(467)	-
Merck	592	2,368	(1,776)	-	-	-	(1,776)		-	(1,776)	-
MillerCoors LLC	2,220	2,220	-	-	-	-	-		-	-	-
Mt. Jackson	339	174	165	-	-	-	165		-	-	165
Purcellville	727	436	291	-	-	-	291		146	-	145
PWCSA-HL Mooney	13,157	10,690	2,467	-	-	-	2,467		2,220	-	247
Stafford Co-Aquia	4,386	4,024	362	-	-	-	362		199	-	163
Stoney Creek	354	533	(179)	-	-	-	(179)		-	(180)	1
Strasburg	474	881	(407)	-	-	-	(407)		-	(407)	-
UOSA	4,934	3,221	1,713	-	-	-	1,713		-	-	1,713
VA Am. Water PW Sec. 1	2,522	1,439	1,083	-	-	-	1,083		650	-	433
VA Am. Water PW Sec. 8	2,522	1,439	1,083	-	-	-	1,083		650	-	433
Waynesboro	1,974	1,217	757	-	-	-	757		757	-	-
Purchase by Eastern Shore	-	-	-	-	-	-	-		-	-	-

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

POTOMAC Basin: Phosphorus Credit Ledger

Compliance Year:	2020	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange		Private Exchange	WQIF-Held Credits	Class A Sales	Class A* Purchases
								PRICE:	\$ 0.45	\$ 5.81	\$ 0.09
The Exchange (group)	164,507	121,070	43,437	-	(644)	(1,234)	41,559		28,424	(2,496)	15,631
ACSA-Fishersville	1,974	660	1,314	(1,277)	-	-	37		37	-	-
ACSA-Greenville	1,028	464	564	(285)	-	-	279		279	-	-
ACSA-Harriston	411	253	158	-	-	-	158		158	-	-
ACSA-Middle River	3,355	1,797	1,558	-	-	-	1,558		1,558	-	-
ACSA-Mt. Sidney	617	902	(285)	285	-	-	-		-	-	-
ACSA-Stuarts Draft	1,974	562	1,412	-	-	-	1,412		1,412	-	-
ACSA-Vesper View	411	358	53	-	-	-	53		53	-	-
ACSA-Weyers Cave	242	1,519	(1,277)	1,277	-	-	-		-	-	-
Alexandria Renew Ent.	29,603	22,504	7,099	-	-	-	7,099		-	-	7,099
Arlington Co.	21,925	14,527	7,398	-	(612)	-	6,786		6,786	-	-
Berryville	339	203	136	-	-	-	136		130	-	6
Broadway Regional	1,172	990	182	-	-	-	182		-	-	182
Fairfax Co-Noman Cole	36,729	27,405	9,324	-	-	-	9,324		9,319	-	5
FCWSA-Vint Hill	148	65	83	-	-	-	83		-	-	83
Front Royal	1,974	2,250	(276)	-	-	-	(276)		-	(276)	-
FWSA-Opequon	6,217	4,440	1,777	-	-	-	1,777		-	-	1,777
FWSA-Parkins Mill	2,467	1,677	790	-	-	-	790		-	-	790
HRRSA-North River	10,262	6,907	3,355	-	(4)	-	3,351		2,800	-	551
KGCSA-Dahlgren S.D.	914	548	366	(40)	-	-	326		-	-	326
KGCSA-Fairview Beach	179	81	98	-	-	-	98		-	-	98
KGCSA-Purkins Corner	106	146	(40)	40	-	-	-		-	-	-
Leesburg	4,934	2,428	2,506	-	(27)	(1,234)	1,245		-	-	1,245
Loudoun Water- Broad Run	1,809	914	895	-	-	-	895		895	-	-
Luray	789	326	463	-	(1)	-	462		449	-	13
Massanutten PSC	727	368	359	-	-	-	359		-	-	359
Merck	592	2,368	(1,776)	-	-	-	(1,776)		-	(1,776)	-
MillerCoors LLC	2,220	2,220	-	-	-	-	-		-	-	-
Mt. Jackson	339	178	161	-	-	-	161		-	-	161
Purcellville	727	460	267	-	-	-	267		134	-	133
PWCSA-HL Mooney	13,157	10,827	2,330	-	-	-	2,330		2,097	-	233
Stafford Co-Aquia	4,386	4,024	362	-	-	-	362		326	-	36
Stoney Creek	354	533	(179)	-	-	-	(179)		-	(180)	1
Strasburg	474	738	(264)	-	-	-	(264)		-	(264)	-
UOSA	4,934	3,267	1,667	-	-	-	1,667		-	-	1,667
VA Am. Water PW Sec. 1	2,522	1,439	1,083	-	-	-	1,083		650	-	433
VA Am. Water PW Sec. 8	2,522	1,439	1,083	-	-	-	1,083		650	-	433
Waynesboro	1,974	1,283	691	-	-	-	691		691	-	-
Purchase by Eastern Shore	-	-	-	-	-	-	-		-	-	-

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

POTOMAC Basin: Phosphorus Credit Ledger

Compliance Year:											
	2021	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)			
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	\$ 0.47	\$ 5.82	\$ 0.07
The Exchange (group)	158,608	119,713	38,895	-	(644)	(1,074)	37,177		23,363	(2,119)	15,933
ACSA-Fishersville	1,718	592	1,126	(1,126)	-	-	-		-	-	-
ACSA-Greenville	894	387	507	(279)	-	-	228		228	-	-
ACSA-Harriston	358	227	131	-	-	-	131		131	-	-
ACSA-Middle River	2,920	1,611	1,309	-	-	-	1,309		1,309	-	-
ACSA-Mt. Sidney	537	816	(279)	279	-	-	-		-	-	-
ACSA-Stuarts Draft	1,718	503	1,215	(46)	-	-	1,169		1,169	-	-
ACSA-Vesper View	358	297	61	-	-	-	61		61	-	-
ACSA-Weyers Cave	215	1,387	(1,172)	1,172	-	-	-		-	-	-
Alexandria Renew Ent.	29,603	22,504	7,099	-	-	-	7,099		-	-	7,099
Arlington Co.	21,925	14,801	7,124	-	(612)	-	6,512		6,512	-	-
Berryville	301	180	121	-	-	-	121		115	-	6
Broadway Regional	1,039	889	150	-	-	-	150		-	-	150
Fairfax Co-Noman Cole	36,729	29,313	7,416	-	-	-	7,416		7,411	-	5
FCWSA-Vint Hill	148	68	80	-	-	-	80		-	-	80
Front Royal	1,718	1,958	(240)	-	-	-	(240)		-	(240)	-
FWSA-Opequon	5,411	3,972	1,439	-	-	-	1,439		-	-	1,439
FWSA-Parkins Mill	2,147	1,460	687	-	-	-	687		-	-	687
HRRSA-North River	8,932	6,092	2,840	-	(4)	-	2,836		1,000	-	1,836
KGCSA-Dahlgren S.D.	914	594	320	(58)	-	-	262		-	-	262
KGCSA-Fairview Beach	183	82	101	-	-	-	101		-	-	101
KGCSA-Purkins Corner	110	168	(58)	58	-	-	-		-	-	-
Leesburg	4,294	2,302	1,992	-	(27)	(1,074)	891		-	-	891
Loudoun Water- Broad Run	1,575	872	703	-	-	-	703		703	-	-
Luray	687	283	404	-	(1)	-	403		391	-	12
Massanutten PSC	644	326	318	-	-	-	318		-	-	318
Merck	515	2,061	(1,546)	-	-	-	(1,546)		-	(1,546)	-
MillerCoors LLC	1,933	1,932	1	-	-	-	1		-	-	1
Mt. Jackson	301	157	144	-	-	-	144		-	-	144
Purcellville	644	472	172	-	-	-	172		86	-	86
PWCSA-HL Mooney	13,157	10,882	2,275	-	-	-	2,275		2,048	-	227
Stafford Co-Aquia	4,386	4,024	362	-	-	-	362		326	-	36
Stoney Creek	313	401	(88)	-	-	-	(88)		-	(88)	-
Strasburg	421	666	(245)	-	-	-	(245)		-	(245)	-
UOSA	5,098	3,411	1,687	-	-	-	1,687		-	-	1,687
VA Am. Water PW Sec. 1	2,522	1,439	1,083	-	-	-	1,083		650	-	433
VA Am. Water PW Sec. 8	2,522	1,439	1,083	-	-	-	1,083		650	-	433
Waynesboro	1,718	1,145	573	-	-	-	573		573	-	-
Purchase by Eastern Shore	-	-	-	-	-	-	-		-	-	-

*** For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.**

*** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.*

POTOMAC Basin: Phosphorus Credit Ledger

Compliance Year:	2022	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange		Private Exchange	WQIF-Held Credits	Class A Sales	Class A* Purchases
								PRICE:	\$ 0.49	\$ 5.93	\$ 0.07
The Exchange (group)	158,608	119,545	39,063	-	(617)	(1,074)	37,372		23,069	(2,126)	16,429
ACSA-Fishersville	1,718	573	1,145	(1,145)	-	-	-	-	-	-	-
ACSA-Greenville	894	429	465	-	-	-	465	465	-	-	-
ACSA-Harriston	358	252	106	-	-	-	106	106	-	-	-
ACSA-Middle River	2,920	1,682	1,238	-	-	-	1,238	1,238	-	-	-
ACSA-Mt. Sidney	537	846	(309)	309	-	-	-	-	-	-	-
ACSA-Stuarts Draft	1,718	508	1,210	(393)	-	-	817	817	-	-	-
ACSA-Vesper View	358	317	41	-	-	-	41	41	-	-	-
ACSA-Weyers Cave	215	1,444	(1,229)	1,229	-	-	-	-	-	-	-
Alexandria Renew Ent.	29,603	22,504	7,099	-	-	-	7,099	-	-	-	7,099
Arlington Co.	21,925	14,527	7,398	-	(612)	-	6,786	6,786	-	-	-
Berryville	301	176	125	-	-	-	125	90	-	-	35
Broadway Regional	1,039	901	138	-	-	-	138	-	-	-	138
Fairfax Co-Noman Cole	36,729	29,471	7,258	-	-	-	7,258	7,258	-	-	-
FCWSA-Vint Hill	148	71	77	-	-	-	77	-	-	-	77
Front Royal	1,718	1,958	(240)	-	-	-	(240)	-	(240)	-	-
FWSA-Opequon	5,411	3,328	2,083	-	-	-	2,083	-	-	-	2,083
FWSA-Parkins Mill	2,147	1,546	601	-	-	-	601	-	-	-	601
HRRSA-North River	8,932	6,092	2,840	-	(4)	-	2,836	1,000	-	-	1,836
KGCSA-Dahlgren S.D.	914	548	366	(58)	-	-	308	-	-	-	308
KGCSA-Fairview Beach	183	73	110	-	-	-	110	-	-	-	110
KGCSA-Purkins Corner	110	168	(58)	58	-	-	-	-	-	-	-
Leesburg	4,294	2,499	1,795	-	-	(1,074)	721	-	-	-	721
Loudoun Water- Broad Run	1,575	939	636	-	-	-	636	636	-	-	-
Luray	687	296	391	-	(1)	-	390	390	-	-	-
Massanutten PSC	644	326	318	-	-	-	318	-	-	-	318
Merck	515	2,061	(1,546)	-	-	-	(1,546)	-	(1,546)	-	-
MillerCoors LLC	1,933	1,932	1	-	-	-	1	-	-	-	1
Mt. Jackson	301	240	61	-	-	-	61	-	-	-	61
Purcellville	644	498	146	-	-	-	146	73	-	-	73
PWCSA-HL Mooney	13,157	10,937	2,220	-	-	-	2,220	1,998	-	-	222
Stafford Co-Aquia	4,386	4,024	362	-	-	-	362	326	-	-	36
Stoney Creek	313	401	(88)	-	-	-	(88)	-	(88)	-	-
Strasburg	421	673	(252)	-	-	-	(252)	-	(252)	-	-
UOSA	5,098	3,236	1,862	-	-	-	1,862	-	-	-	1,862
VA Am. Water PW Sec. 1	2,522	1,462	1,060	-	-	-	1,060	636	-	-	424
VA Am. Water PW Sec. 8	2,522	1,462	1,060	-	-	-	1,060	636	-	-	424
Waynesboro	1,718	1,145	573	-	-	-	573	573	-	-	-
Purchase by Eastern Shore	-	-	-	-	-	-	-	-	-	-	-

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

Potomac-Shenandoah River Basin

Supplemental Information for Individual Facilities



Owner Bubble: Augusta County Service Authority

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

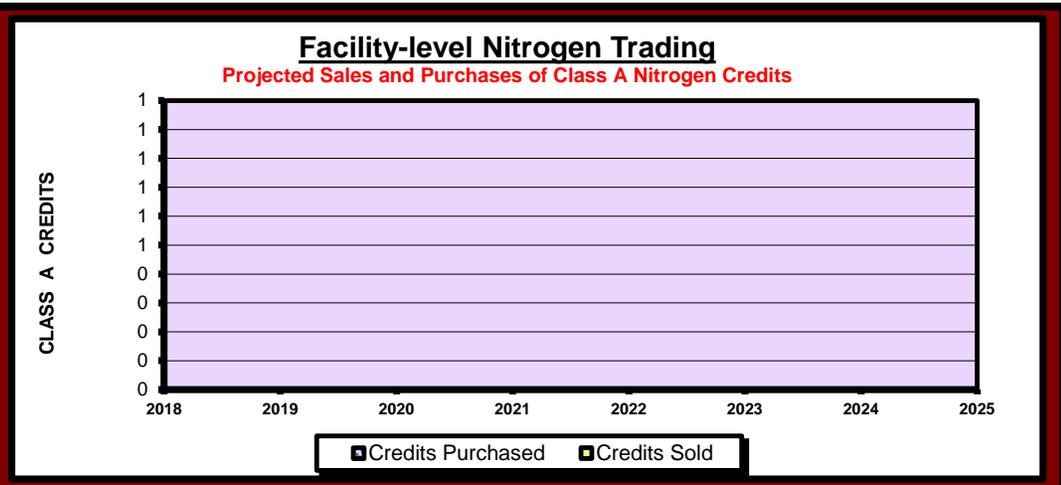
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Fishersville	(3,028)	(2,973)	(2,916)	(1,715)	(1,755)	(1,733)	(1,711)	(1,681)
Greenville	(675)	(479)	(771)	(425)	(517)	(517)	(517)	(517)
Harriston	(822)	(816)	(809)	-	(56)	(185)	(317)	(422)
Middle River	-	-	-	-	-	-	-	-
Mt. Sidney	453	492	532	351	382	382	382	446
Stuarts Draft	-	-	-	(1,076)	(1,073)	(1,062)	(1,048)	(1,037)
Vesper View	-	(462)	(445)	-	-	-	-	-
Weyers Cave	4,072	4,238	4,409	2,865	3,019	3,115	3,211	3,211
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Fishersville	-	-	-	-	-	-	-	-
Greenville	252	433	126	126	-	-	-	-
Harriston	-	-	-	490	419	290	158	53
Middle River	4,520	4,407	4,290	2,502	2,393	2,306	2,218	2,130
Mt. Sidney	-	-	-	-	-	-	-	-
Stuarts Draft	1,848	1,830	1,812	-	-	-	-	-
Vesper View	479	-	-	288	266	266	266	266
Weyers Cave	-	-	-	-	-	-	-	-
Expected Net Credits	7,099	6,670	6,228	3,406	3,078	2,862	2,642	2,449
Class A Sales (Purchases)	3,335	6,670	6,228	3,406	3,078	2,862	2,642	2,449
<i>Expected Class B Credits</i>	3,764	0	0	0	0	0	0	0
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Fishersville	(1,189)	(1,232)	(1,277)	(1,126)	(1,145)	(1,135)	(1,124)	(1,110)
Greenville	(234)	(259)	(285)	(279)	-	-	-	-
Harriston	-	-	-	-	-	-	-	-
Middle River	-	-	-	-	-	-	-	-
Mt. Sidney	234	259	285	279	309	309	309	369
Stuarts Draft	-	-	-	(46)	(393)	(438)	(484)	(558)
Vesper View	-	-	-	-	-	-	-	-
Weyers Cave	1,189	1,232	1,277	1,172	1,229	1,264	1,299	1,299
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Fishersville	162	101	37	-	-	-	-	-
Greenville	357	319	279	228	465	465	465	465
Harriston	172	165	158	131	106	106	106	106
Middle River	1,661	1,610	1,558	1,309	1,238	1,181	1,124	1,066
Mt. Sidney	-	-	-	-	-	-	-	-
Stuarts Draft	1,445	1,429	1,412	1,169	817	758	694	605
Vesper View	73	63	53	61	41	41	41	41
Weyers Cave	-	-	-	-	-	-	-	-
Expected Net Credits	3,870	3,687	3,497	2,898	2,667	2,551	2,430	2,283
Class A Sales (Purchases)	1,784	3,687	3,497	2,898	2,667	2,551	2,430	2,283
<i>Expected Class B Credits</i>	2,086	0	0	0	0	0	0	0
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Fishersville

POTOMAC Trading Basin



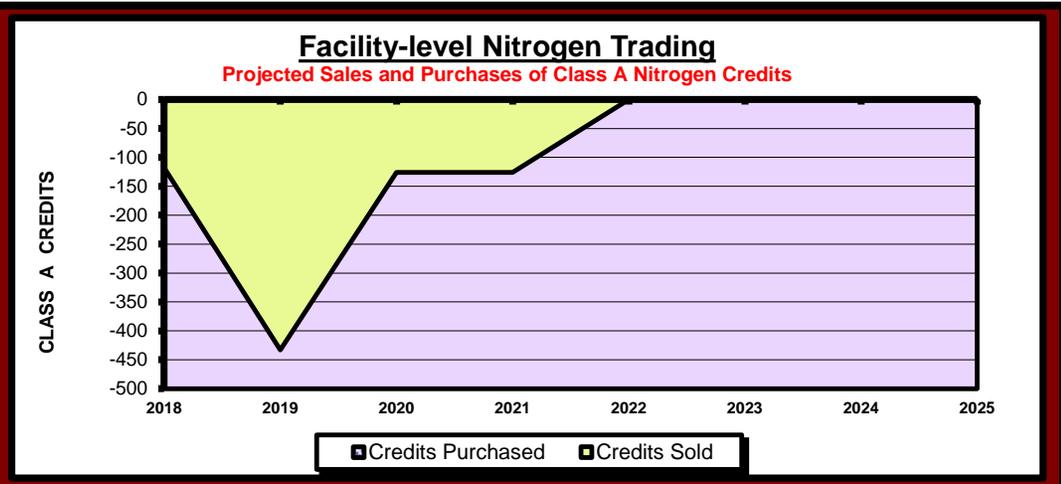
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	1.51
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	18,445
Delivery Factor	0.10
Expected Load	1,845
Delivered WLA	4,873
Expected Credits (delivered)	3,028
Transfers In (Out) within Owner Bubble	(3,028)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1.51	1.56	1.61	1.65	1.60	1.63	1.66	1.70
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
18,445	18,998	19,568	20,155	19,492	19,857	20,223	20,710
0.10	0.10	0.10	0.06	0.06	0.06	0.06	0.06
1,845	1,900	1,957	1,209	1,169	1,191	1,213	1,243
4,873	4,873	4,873	2,924	2,924	2,924	2,924	2,924
3,028	2,973	2,916	1,715	1,755	1,733	1,711	1,681
(3,028)	(2,973)	(2,916)	(1,715)	(1,755)	(1,733)	(1,711)	(1,681)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Greenville
 POTOMAC Trading Basin



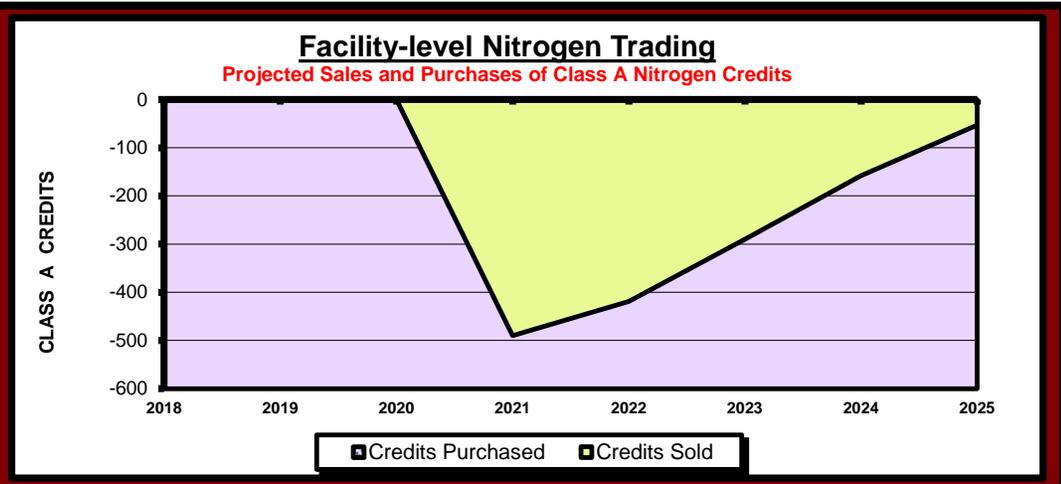
Loading & Credit Summary

Design Flow (mgd)	0.25
Projected Flow (mgd)	0.04
Projected Avg. Annual Concentration (mg/L)	36.83
Discharged Load (end of pipe)	4,968
Delivery Factor	0.10
Expected Load	497
Delivered WLA	1,424
Expected Credits (delivered)	927
Transfers In (Out) within Owner Bubble	(675)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	252
Class A Credit Sales (Purchases)	118
Expected Class B Credits	134

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05
36.83	36.83	36.83	36.83	36.83	36.83	36.83	36.83
4,968	5,117	5,270	5,050	5,608	5,608	5,608	5,608
0.10	0.10	0.10	0.06	0.06	0.06	0.06	0.06
497	512	527	303	337	337	337	337
1,424	1,424	1,424	854	854	854	854	854
927	912	897	551	517	517	517	517
(675)	(479)	(771)	(425)	(517)	(517)	(517)	(517)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
252	433	126	126	0	0	0	0
118	433	126	126	0	0	0	0
134	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Harriston
POTOMAC Trading Basin



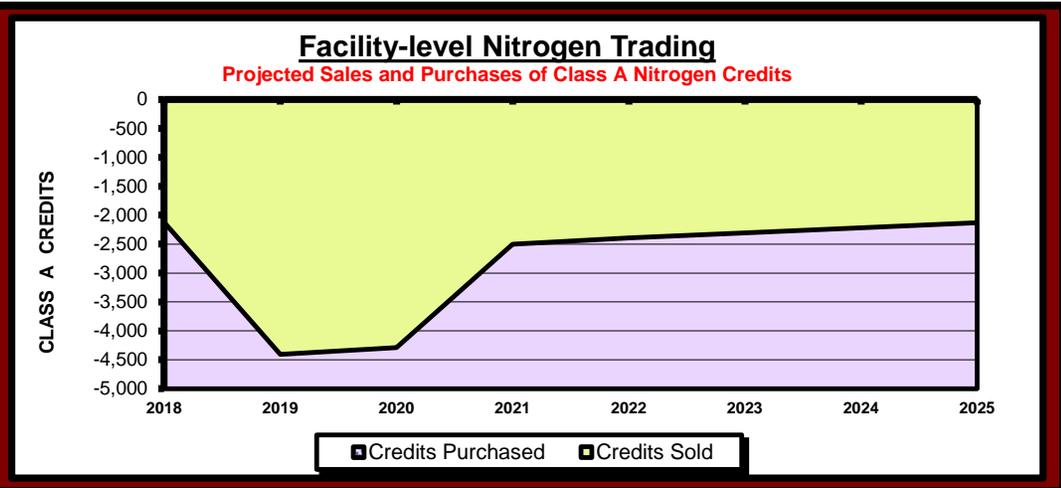
Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.04
Projected Avg. Annual Concentration (mg/L)	9.00
Discharged Load (end of pipe)	1,129
Delivery Factor	0.18
Expected Load	203
Delivered WLA	1,025
Expected Credits (delivered)	822
Transfers In (Out) within Owner Bubble	(822)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
1,129	1,163	1,198	1,234	1,371	1,371	1,371	1,371
0.18	0.18	0.18	0.11	0.11	0.11	0.11	0.11
203	209	216	136	151	151	151	151
1,025	1,025	1,025	626	626	626	626	626
822	816	809	490	475	475	475	475
(822)	(816)	(809)	0	(56)	(185)	(317)	(422)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	490	419	290	158	53
0	0	0	490	419	290	158	53
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Middle River
<i>POTOMAC Trading Basin</i>

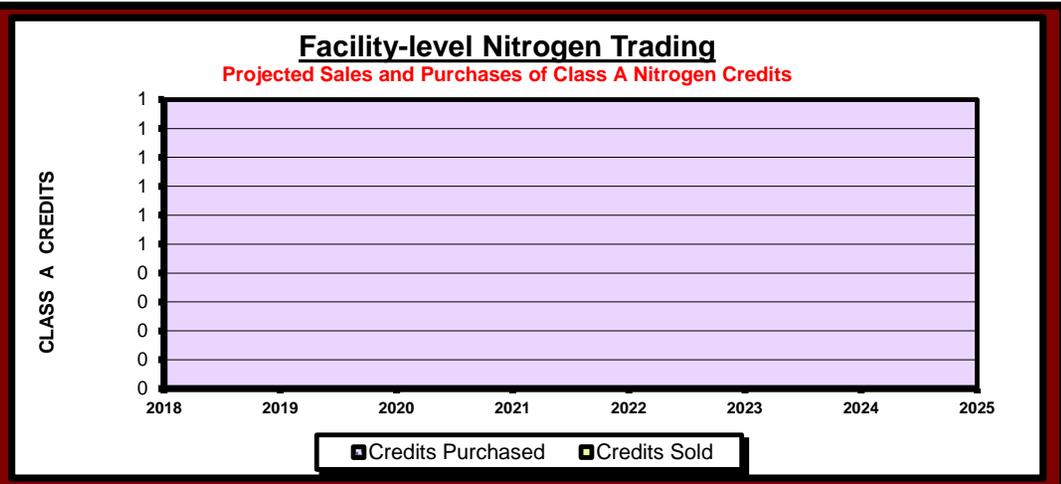


Loading & Credit Summary	
Design Flow (mgd)	6.80
Projected Flow (mgd)	4.12
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	37,643
Delivery Factor	0.10
Expected Load	3,764
Delivered WLA	8,284
Expected Credits (delivered)	4,520
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	4,520
Class A Credit Sales (Purchases)	2,123
Expected Class B Credits	2,397

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80
4.12	4.24	4.37	4.50	4.70	4.86	5.02	5.18
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
37,643	38,772	39,936	41,134	42,942	44,404	45,866	47,328
0.10	0.10	0.10	0.06	0.06	0.06	0.06	0.06
3,764	3,877	3,994	2,468	2,577	2,664	2,752	2,840
8,284	8,284	8,284	4,970	4,970	4,970	4,970	4,970
4,520	4,407	4,290	2,502	2,393	2,306	2,218	2,130
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4,520	4,407	4,290	2,502	2,393	2,306	2,218	2,130
2,123	4,407	4,290	2,502	2,393	2,306	2,218	2,130
2,397	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Mt. Sidney
POTOMAC Trading Basin



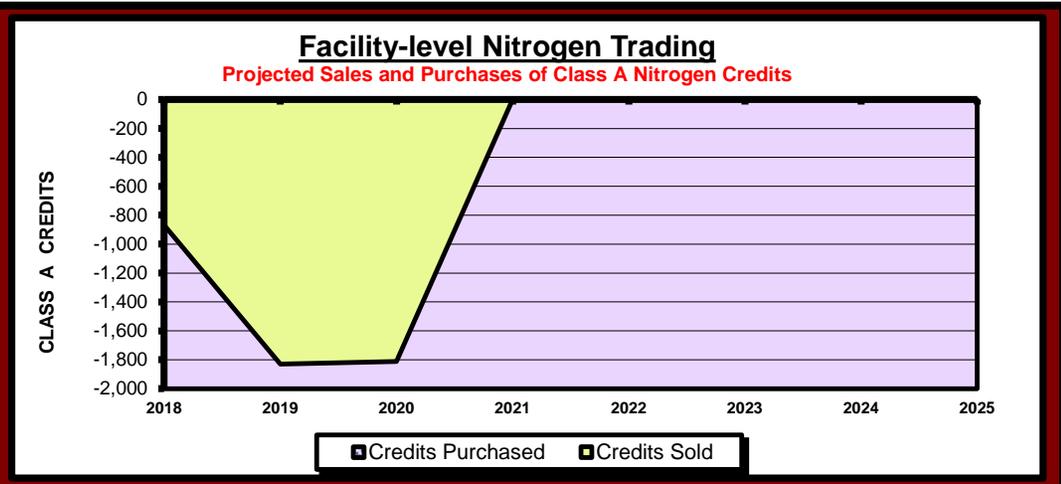
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
0.12	0.13	0.13	0.14	0.14	0.14	0.14	0.15
35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
13,065	13,457	13,861	14,397	14,923	14,923	14,923	15,989
0.10	0.10	0.10	0.06	0.06	0.06	0.06	0.06
1,307	1,346	1,386	864	895	895	895	959
854	854	854	513	513	513	513	513
(453)	(492)	(532)	(351)	(382)	(382)	(382)	(446)
453	492	532	351	382	382	382	446
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Stuarts Draft
POTOMAC Trading Basin



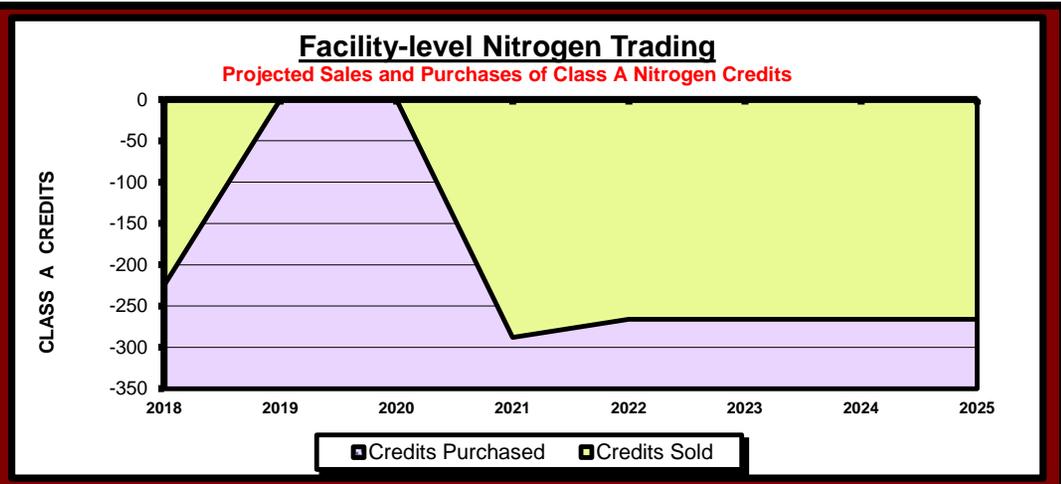
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	1.29
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	11,763
Delivery Factor	0.05
Expected Load	588
Delivered WLA	2,436
Expected Credits (delivered)	1,848
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,848
Class A Credit Sales (Purchases)	869
Expected Class B Credits	979

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1.29	1.33	1.37	1.41	1.42	1.46	1.51	1.55
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
11,763	12,116	12,480	12,854	12,974	13,340	13,796	14,162
0.05	0.05	0.05	0.03	0.03	0.03	0.03	0.03
588	606	624	386	389	400	414	425
2,436	2,436	2,436	1,462	1,462	1,462	1,462	1,462
1,848	1,830	1,812	1,076	1,073	1,062	1,048	1,037
0	0	0	(1,076)	(1,073)	(1,062)	(1,048)	(1,037)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,848	1,830	1,812	0	0	0	0	0
869	1,830	1,812	0	0	0	0	0
979	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Vesper View
POTOMAC Trading Basin



Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.06
Projected Avg. Annual Concentration (mg/L)	17.92
Discharged Load (end of pipe)	3,036
Delivery Factor	0.18
Expected Load	546
Delivered WLA	1,025
Expected Credits (delivered)	479
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	479
Class A Credit Sales (Purchases)	225
Expected Class B Credits	254

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
17.92	17.92	17.92	17.92	17.92	17.92	17.92	17.92
3,036	3,127	3,220	3,071	3,275	3,275	3,275	3,275
0.18	0.18	0.18	0.11	0.11	0.11	0.11	0.11
546	563	580	338	360	360	360	360
1,025	1,025	1,025	626	626	626	626	626
479	462	445	288	266	266	266	266
0	(462)	(445)	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
479	0	0	288	266	266	266	266
225	0	0	288	266	266	266	266
254	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Weyers Cave
POTOMAC Trading Basin



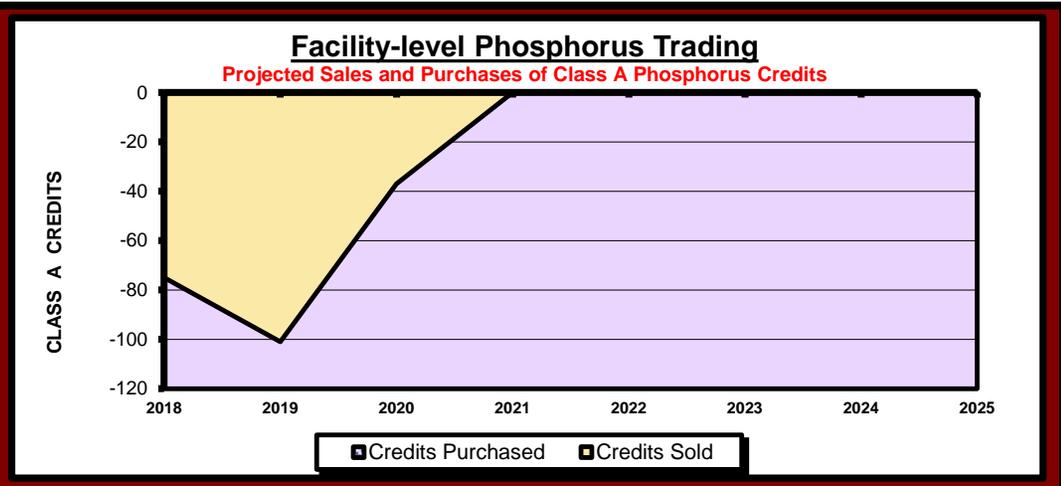
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.36	0.37	0.38	0.39	0.41	0.42	0.43	0.43
21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
23,056	23,748	24,461	25,194	26,222	26,862	27,501	27,501
0.24	0.24	0.24	0.15	0.15	0.15	0.15	0.15
5,534	5,700	5,871	3,779	3,933	4,029	4,125	4,125
1,462	1,462	1,462	914	914	914	914	914
(4,072)	(4,238)	(4,409)	(2,865)	(3,019)	(3,115)	(3,211)	(3,211)
4,072	4,238	4,409	2,865	3,019	3,115	3,211	3,211
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Fishersville
POTOMAC Trading Basin



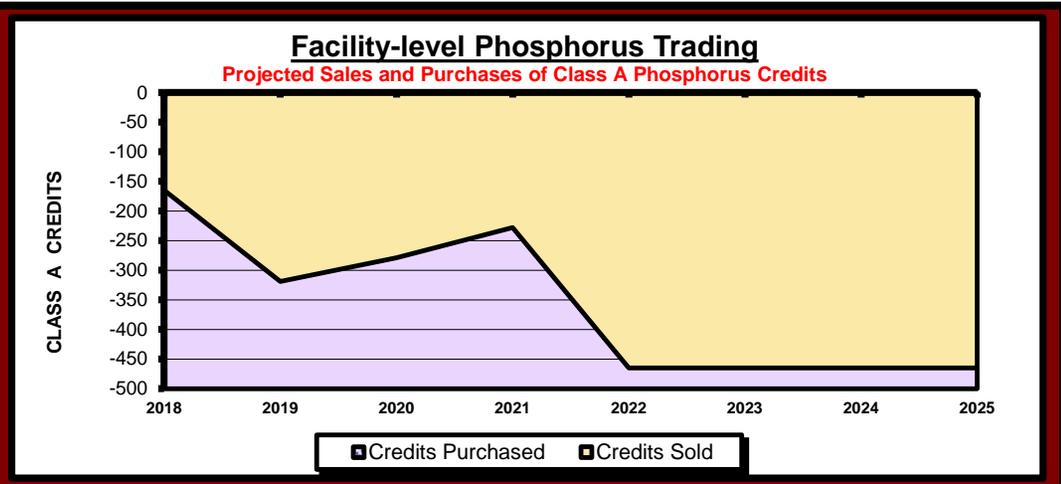
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	1.51
Projected Avg. Annual Concentration (mg/L)	0.25
Discharged Load (end of pipe)	1,153
Delivery Factor	0.54
Expected Load	623
Delivered WLA	1,974
Expected Credits (delivered)	1,351
Transfers In (Out) within Owner Bubble	(1,189)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	162
Class A Credit Sales (Purchases)	75
Expected Class B Credits	87

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1.51	1.56	1.61	1.65	1.60	1.63	1.66	1.70
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
1,153	1,187	1,223	1,260	1,218	1,241	1,264	1,294
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
623	641	660	592	573	583	594	608
1,974	1,974	1,974	1,718	1,718	1,718	1,718	1,718
1,351	1,333	1,314	1,126	1,145	1,135	1,124	1,110
(1,189)	(1,232)	(1,277)	(1,126)	(1,145)	(1,135)	(1,124)	(1,110)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
162	101	37	0	0	0	0	0
75	101	37	0	0	0	0	0
87	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Greenville
<i>POTOMAC Trading Basin</i>



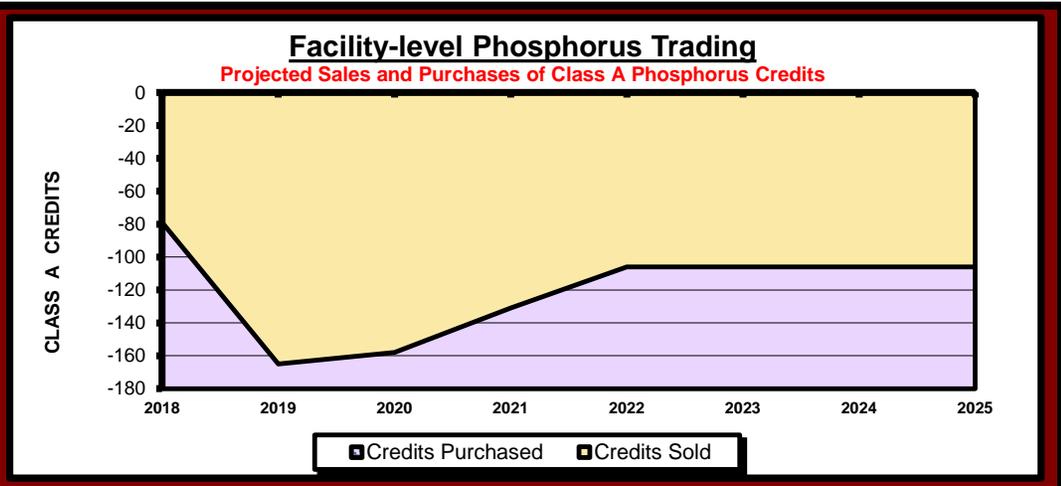
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
809	834	859	823	914	914	914	914
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
437	450	464	387	429	429	429	429
1,028	1,028	1,028	894	894	894	894	894
591	578	564	507	465	465	465	465
(234)	(259)	(285)	(279)	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
357	319	279	228	465	465	465	465
165	319	279	228	465	465	465	465
192	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Harriston
POTOMAC Trading Basin



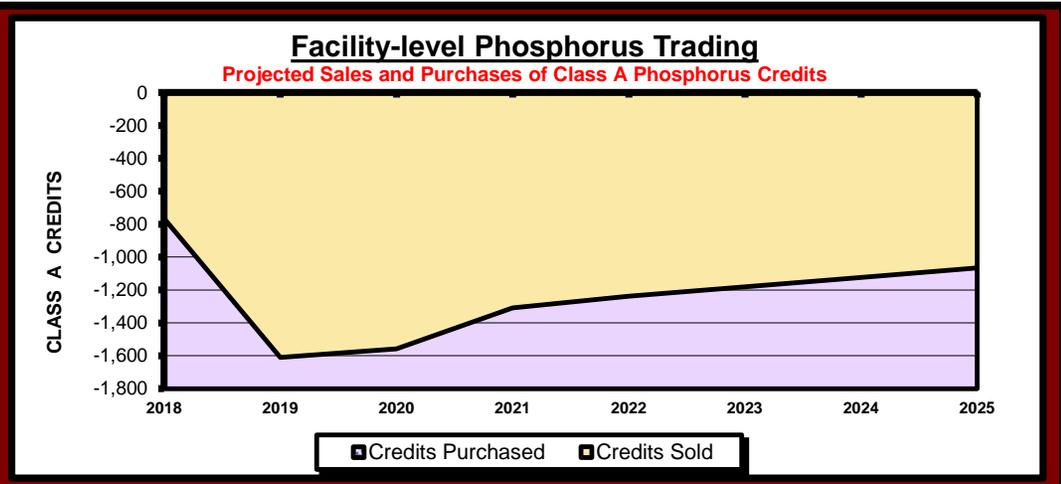
Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.04
Projected Avg. Annual Concentration (mg/L)	3.52
Discharged Load (end of pipe)	442
Delivery Factor	0.54
Expected Load	239
Delivered WLA	411
Expected Credits (delivered)	172
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	172
Class A Credit Sales (Purchases)	79
Expected Class B Credits	93

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05
3.52	3.52	3.52	3.52	3.52	3.52	3.52	3.52
442	455	469	483	536	536	536	536
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
239	246	253	227	252	252	252	252
411	411	411	358	358	358	358	358
172	165	158	131	106	106	106	106
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
172	165	158	131	106	106	106	106
79	165	158	131	106	106	106	106
93	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Middle River
<i>POTOMAC Trading Basin</i>

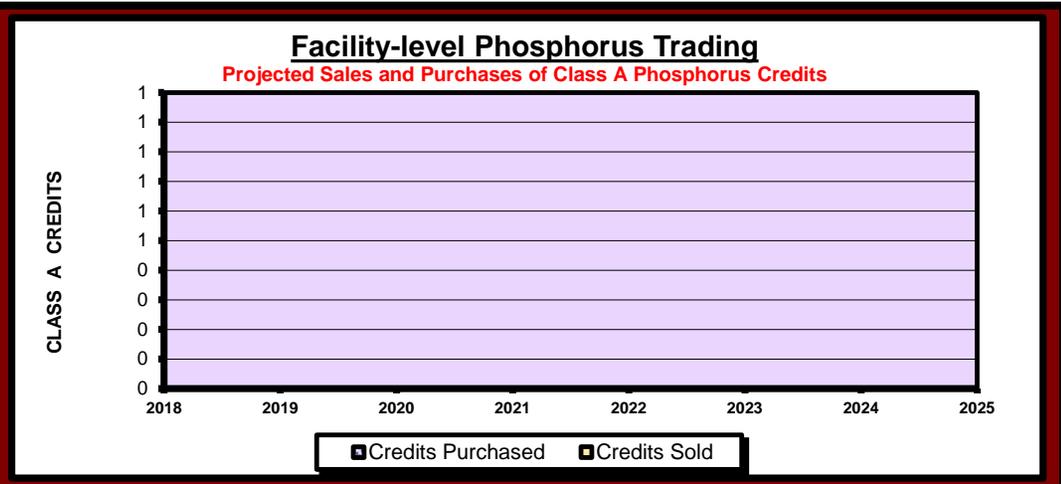


Loading & Credit Summary	
Design Flow (mgd)	
Design Flow (mgd)	6.80
Projected Flow (mgd)	4.12
Projected Avg. Annual Concentration (mg/L)	0.25
Discharged Load (end of pipe)	
Discharged Load (end of pipe)	3,137
Delivery Factor	0.54
Expected Load	1,694
Delivered WLA	3,355
Expected Credits (delivered)	
Expected Credits (delivered)	1,661
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	
Expected Net Credits	1,661
Class A Credit Sales (Purchases)	
Class A Credit Sales (Purchases)	766
Expected Class B Credits	
Expected Class B Credits	895

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80
4.12	4.24	4.37	4.50	4.70	4.86	5.02	5.18
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
3,137	3,231	3,328	3,428	3,579	3,700	3,822	3,944
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
1,694	1,745	1,797	1,611	1,682	1,739	1,796	1,854
3,355	3,355	3,355	2,920	2,920	2,920	2,920	2,920
1,661	1,610	1,558	1,309	1,238	1,181	1,124	1,066
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,661	1,610	1,558	1,309	1,238	1,181	1,124	1,066
766	1,610	1,558	1,309	1,238	1,181	1,124	1,066
895	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Mt. Sidney
POTOMAC Trading Basin



Loading & Credit Summary

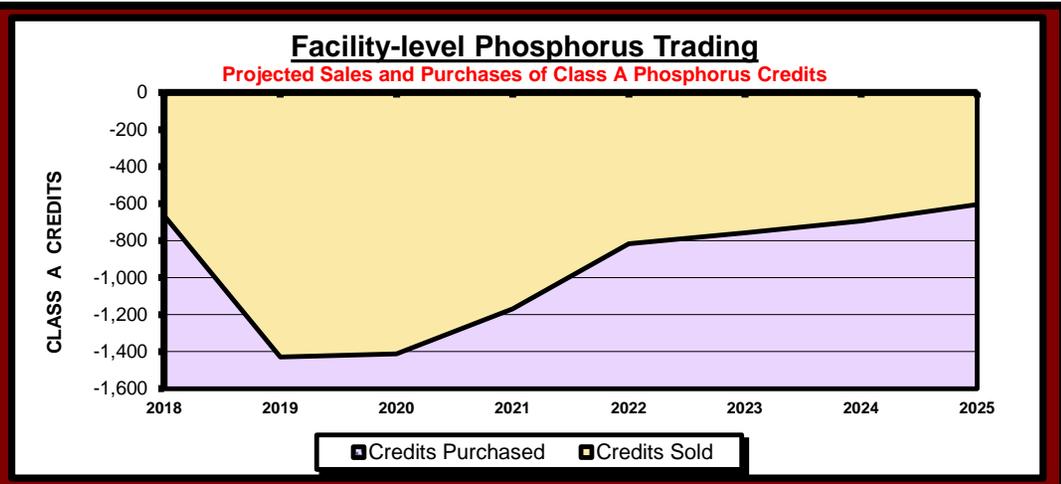
Design Flow (mgd)	Projected Flow (mgd)	Projected Avg. Annual Concentration (mg/L)	Discharged Load (end of pipe)	Delivery Factor	Expected Load	Delivered WLA	Expected Credits (delivered)	Transfers In (Out) within Owner Bubble	Transfers In (Out) from Private Exchange	WQIF-Held Credits	Expected Net Credits	Class A Credit Sales (Purchases)	Expected Class B Credits
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2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
0.12	0.13	0.13	0.14	0.14	0.14	0.14	0.15
4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22
1,575	1,623	1,671	1,736	1,799	1,799	1,799	1,928
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
851	876	902	816	846	846	846	906
617	617	617	537	537	537	537	537
(234)	(259)	(285)	(279)	(309)	(309)	(309)	(369)
234	259	285	279	309	309	309	369
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Stuarts Draft

POTOMAC Trading Basin



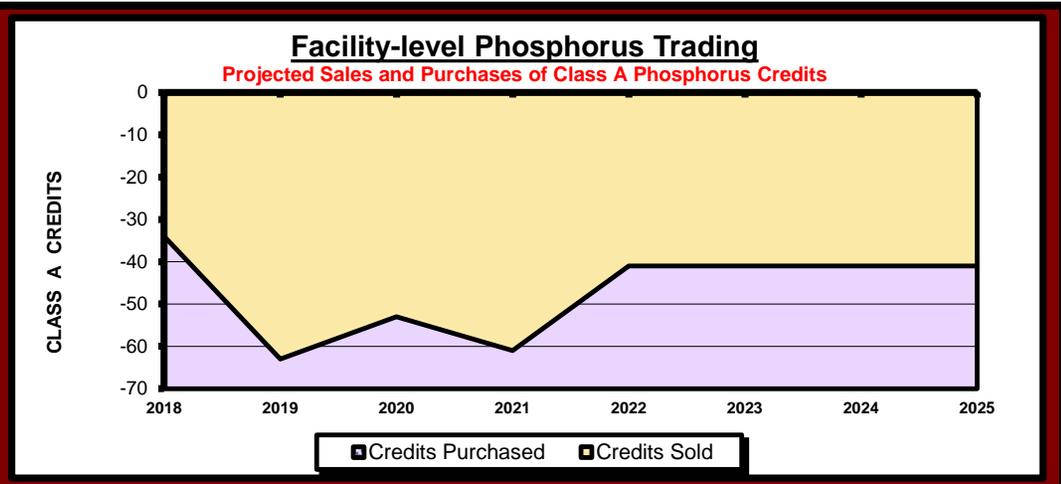
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	1.29
Projected Avg. Annual Concentration (mg/L)	0.25
Discharged Load (end of pipe)	980
Delivery Factor	0.54
Expected Load	529
Delivered WLA	1,974
Expected Credits (delivered)	1,445
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,445
Class A Credit Sales (Purchases)	665
Expected Class B Credits	780

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1.29	1.33	1.37	1.41	1.42	1.46	1.51	1.55
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
980	1,010	1,040	1,071	1,081	1,112	1,150	1,180
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
529	545	562	503	508	522	540	555
1,974	1,974	1,974	1,718	1,718	1,718	1,718	1,718
1,445	1,429	1,412	1,215	1,210	1,196	1,178	1,163
0	0	0	(46)	(393)	(438)	(484)	(558)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,445	1,429	1,412	1,169	817	758	694	605
665	1,429	1,412	1,169	817	758	694	605
780	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Vesper View
POTOMAC Trading Basin



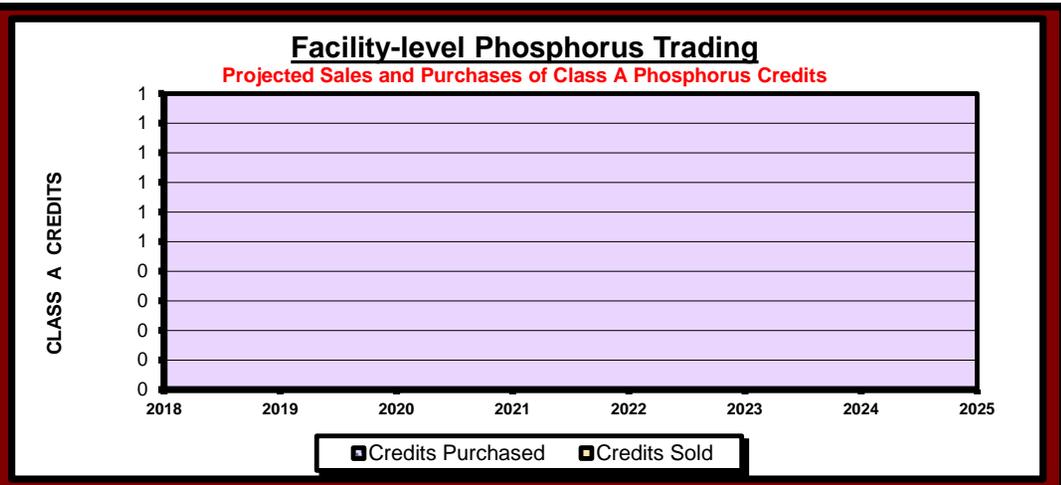
Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.06
Projected Avg. Annual Concentration (mg/L)	3.69
Discharged Load (end of pipe)	625
Delivery Factor	0.54
Expected Load	338
Delivered WLA	411
Expected Credits (delivered)	73
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	73
Class A Credit Sales (Purchases)	34
Expected Class B Credits	39

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
3.69	3.69	3.69	3.69	3.69	3.69	3.69	3.69
625	644	663	632	674	674	674	674
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
338	348	358	297	317	317	317	317
411	411	411	358	358	358	358	358
73	63	53	61	41	41	41	41
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
73	63	53	61	41	41	41	41
34	63	53	61	41	41	41	41
39	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Weyers Cave
POTOMAC Trading Basin



Loading & Credit Summary

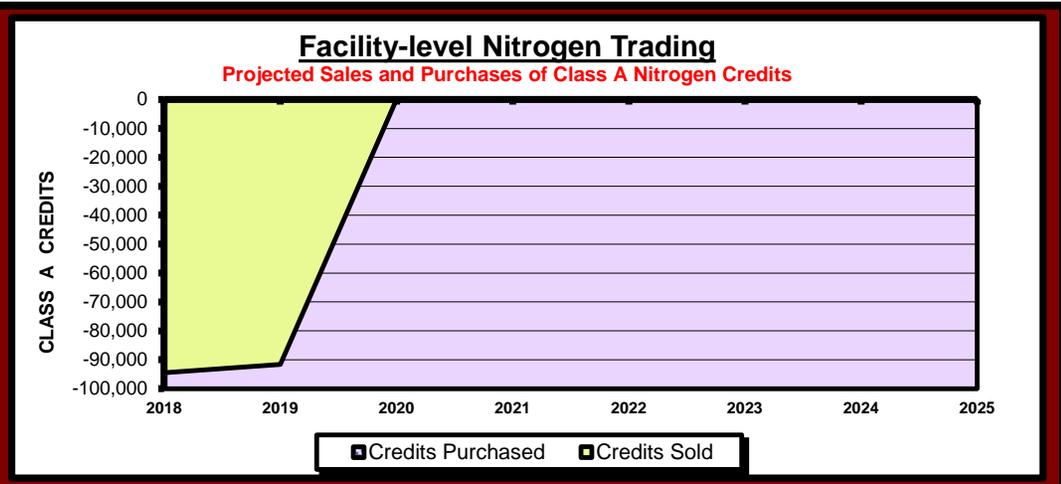
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.36	0.37	0.38	0.39	0.41	0.42	0.43	0.43
2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46
2,701	2,782	2,865	2,951	3,072	3,147	3,222	3,222
0.53	0.53	0.53	0.47	0.47	0.47	0.47	0.47
1,431	1,474	1,519	1,387	1,444	1,479	1,514	1,514
242	242	242	215	215	215	215	215
(1,189)	(1,232)	(1,277)	(1,172)	(1,229)	(1,264)	(1,299)	(1,299)
1,189	1,232	1,277	1,172	1,229	1,264	1,299	1,299
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Alexandria Renew Ent.

POTOMAC Trading Basin



Loading & Credit Summary

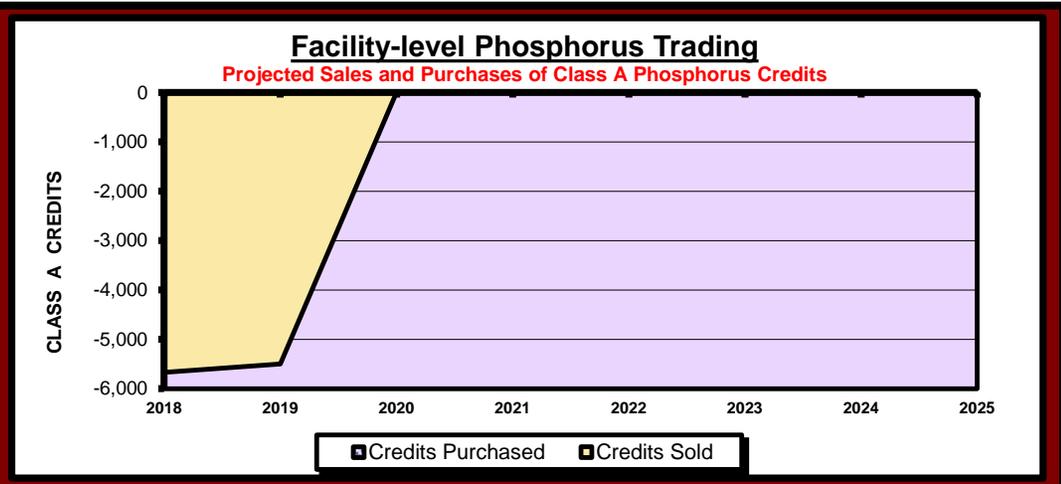
Design Flow (mgd)	40.21
Projected Flow (mgd)	40.63
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	
Delivery Factor	1.00
Expected Load	367,386
Delivered WLA	493,381
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
40.21	40.63	41.05	41.05	41.05	54.00	54.00	54.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
367,386	371,223	375,061	375,061	375,061	493,381	493,381	493,381
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
367,386	371,223	375,061	375,061	375,061	493,381	493,381	493,381
493,381	493,381	493,381	493,381	493,381	493,381	493,381	493,381
125,995	122,158	118,320	118,320	118,320	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
125,995	122,158	118,320	118,320	118,320	0	0	0
94,496	91,620	0	0	0	0	0	0
31,499	30,538	118,320	118,320	118,320	0	0	0

PHOSPHORUS FACILITY SUMMARY

Alexandria Renew Ent.

POTOMAC Trading Basin



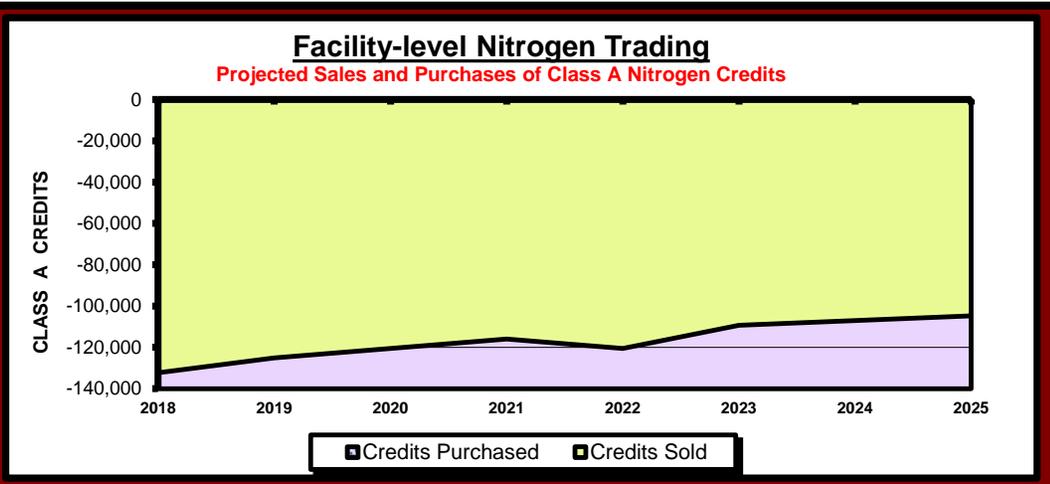
Loading & Credit Summary

Design Flow (mgd)	40.21
Projected Flow (mgd)	0.18
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	1.00
Expected Load	22,043
Delivered WLA	29,603
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
40.21	40.63	41.05	41.05	41.05	54.00	54.00	54.00
0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
22,043	22,273	22,504	22,504	22,504	29,603	29,603	29,603
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22,043	22,273	22,504	22,504	22,504	29,603	29,603	29,603
29,603	29,603	29,603	29,603	29,603	29,603	29,603	29,603
7,560	7,330	7,099	7,099	7,099	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
7,560	7,330	7,099	7,099	7,099	0	0	0
5,670	5,500	0	0	0	0	0	0
1,890	1,830	7,099	7,099	7,099	0	0	0

NITROGEN FACILITY SUMMARY

Arlington Co.
 POTOMAC Trading Basin



Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA*
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange**
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

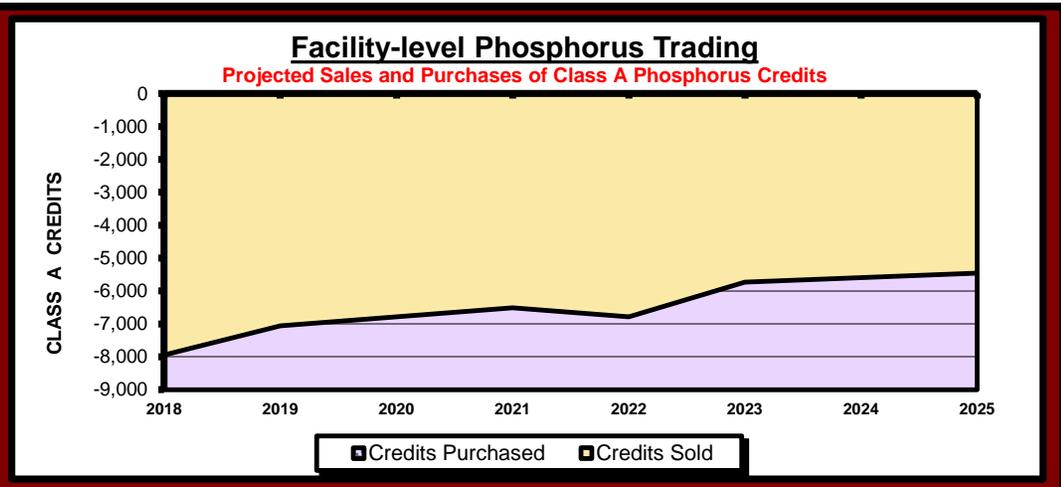
	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Projected Flow (mgd)	25.50	26.00	26.50	27.00	26.50	26.75	27.00	27.25
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	232,985	237,554	242,122	246,690	242,122	244,406	246,690	248,975
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	232,985	237,554	242,122	246,690	242,122	244,406	246,690	248,975
Delivered WLA*	365,284	365,284	365,284	365,284	365,284	365,284	365,284	365,284
Expected Credits (delivered)	132,299	127,730	123,162	118,594	123,162	120,878	118,594	116,309
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange**	0	(2,625)	(2,625)	(2,625)	(2,625)	(11,565)	(11,565)	(11,565)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	132,299	125,105	120,537	115,969	120,537	109,313	107,029	104,744
Class A Credit Sales (Purchases)	132,299	125,105	120,537	115,969	120,537	109,313	107,029	104,744
Expected Class B Credits	0	0	0	0	0	0	0	0

* Reflects allocation transfer to George Mason University of 183 delivered pounds of TN (contract renewal beyond 2021 is pending)

** Reflects use of Credits for Arlington's stormwater program

PHOSPHORUS FACILITY SUMMARY

Arlington Co.
 POTOMAC Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	40.00
Projected Flow (mgd)	25.50
Projected Avg. Annual Concentration (mg/L)	0.18
Discharged Load (end of pipe)	13,979
Delivery Factor	1.00
Expected Load	13,979
Delivered WLA*	21,925
Expected Credits (delivered)	7,946
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange**	0
WQIF-Held Credits	0
Expected Net Credits	7,946
Class A Credit Sales (Purchases)	7,946
Expected Class B Credits	0

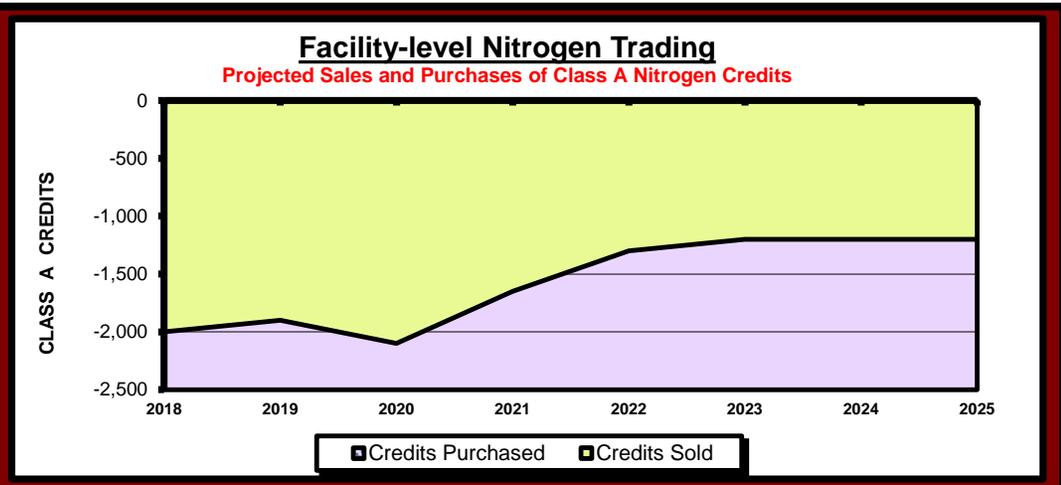
2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
25.50	26.00	26.50	27.00	26.50	26.75	27.00	27.25
0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
13,979	14,253	14,527	14,801	14,527	14,664	14,801	14,938
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13,979	14,253	14,527	14,801	14,527	14,664	14,801	14,938
21,925	21,925	21,925	21,925	21,925	21,925	21,925	21,925
7,946	7,672	7,398	7,124	7,398	7,261	7,124	6,987
0	0	0	0	0	0	0	0
0	(612)	(612)	(612)	(612)	(1,529)	(1,529)	(1,529)
0	0	0	0	0	0	0	0
7,946	7,060	6,786	6,512	6,786	5,732	5,595	5,458
7,946	7,060	6,786	6,512	6,786	5,732	5,595	5,458
0	0	0	0	0	0	0	0

* Reflects allocation transfer to George Mason University of 3 delivered pounds of TP (contract renewal beyond 2021 is pending)

** Reflects use of Credits for Arlington's stormwater program

NITROGEN FACILITY SUMMARY

Berryville
POTOMAC Trading Basin

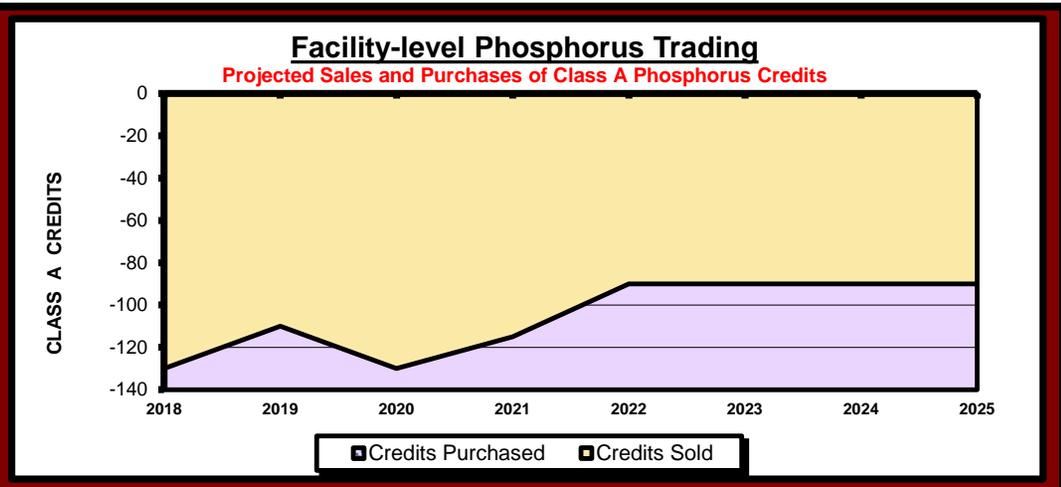


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
0.40	0.44	0.42	0.42	0.41	0.42	0.42	0.43
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
4,873	5,360	5,117	5,117	4,995	5,117	5,117	5,238
0.63	0.63	0.63	0.52	0.52	0.52	0.52	0.52
3,070	3,377	3,223	2,661	2,597	2,661	2,661	2,724
5,373	5,373	5,373	4,435	4,435	4,435	4,435	4,435
2,303	1,996	2,150	1,774	1,838	1,774	1,774	1,711
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,303	1,996	2,150	1,774	1,838	1,774	1,774	1,711
2,000	1,900	2,100	1,650	1,300	1,200	1,200	1,200
303	96	50	124	538	574	574	511

PHOSPHORUS FACILITY SUMMARY

Berryville
<i>POTOMAC Trading Basin</i>

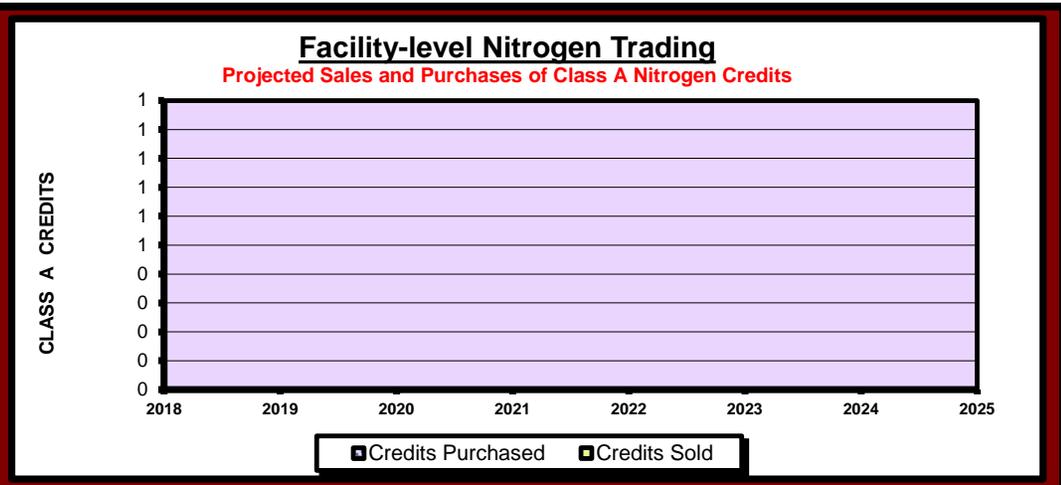


Loading & Credit Summary
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
0.40	0.44	0.42	0.42	0.41	0.42	0.42	0.43
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
365	402	384	384	375	384	384	393
0.53	0.53	0.53	0.47	0.47	0.47	0.47	0.47
194	213	203	180	176	180	180	185
339	339	339	301	301	301	301	301
145	126	136	121	125	121	121	116
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
145	126	136	121	125	121	121	116
130	110	130	115	90	90	90	90
15	16	6	6	35	31	31	26

NITROGEN FACILITY SUMMARY

Broadway Regional
POTOMAC Trading Basin

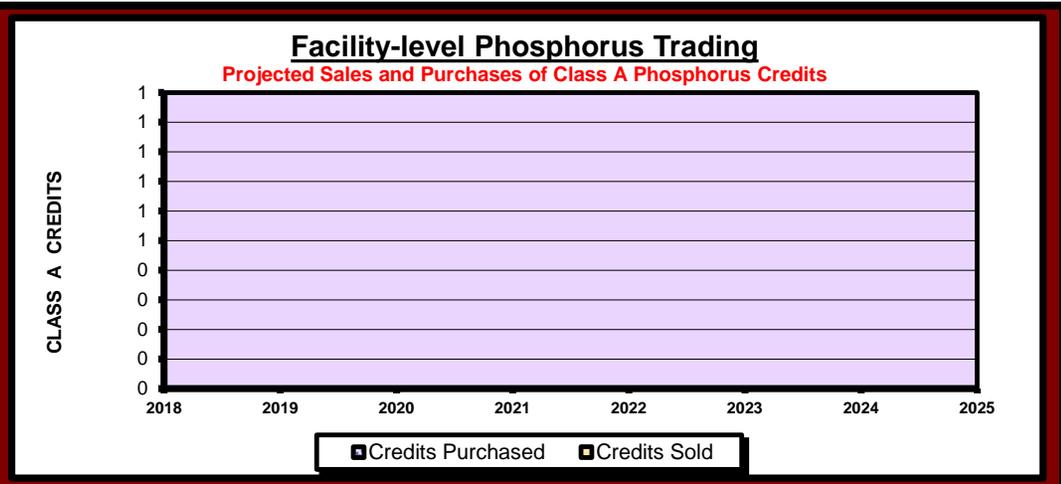


	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92
Projected Flow (mgd)	2.30	2.33	2.36	2.39	2.42	2.45	2.48	2.51
Projected Avg. Annual Concentration (mg/L)	3.70	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Discharged Load (end of pipe)	25,918	24,837	25,156	25,476	25,796	26,116	26,435	26,755
Delivery Factor	0.19	0.19	0.19	0.12	0.12	0.12	0.12	0.12
Expected Load	4,924	4,719	4,780	3,057	3,096	3,134	3,172	3,211
Delivered WLA*	5,601	5,601	5,601	3,538	3,538	3,538	3,538	3,538
Expected Credits (delivered)	677	882	821	481	442	404	366	327
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	677	882	821	481	442	404	366	327
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	677	882	821	481	442	404	366	327

* Reflects allocation transfer from the Town of New Market of 6,091 discharged pounds of TN according to agreement dated August 5, 2008

PHOSPHORUS FACILITY SUMMARY

Broadway Regional
POTOMAC Trading Basin



Loading & Credit Summary

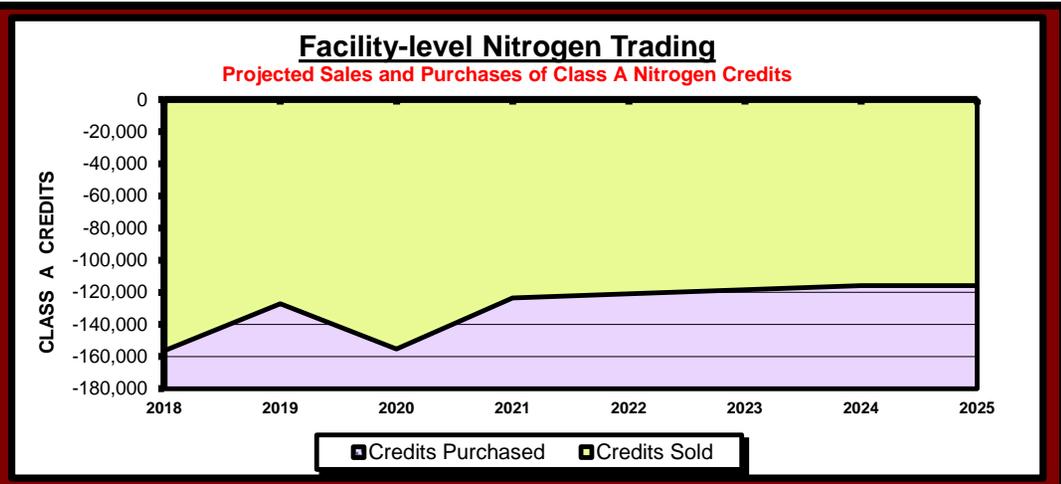
Design Flow (mgd)	2.92
Projected Flow (mgd)	2.30
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	2,101
Delivery Factor	0.53
Expected Load	1,114
Delivered WLA*	1,172
Expected Credits (delivered)	58
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	58
Class A Credit Sales (Purchases)	0
Expected Class B Credits	58

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92
2.30	2.33	2.36	2.39	2.42	2.45	2.48	2.51
0.30	0.26	0.26	0.26	0.26	0.26	0.26	0.26
2,101	1,845	1,869	1,893	1,916	1,940	1,964	1,988
0.53	0.53	0.53	0.47	0.47	0.47	0.47	0.47
1,114	978	990	889	901	912	923	934
1,172	1,172	1,172	1,039	1,039	1,039	1,039	1,039
58	194	182	150	138	127	116	105
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
58	194	182	150	138	127	116	105
0	0	0	0	0	0	0	0
58	194	182	150	138	127	116	105

* Reflects allocation transfer from the Town of New Market of 457 discharged pounds of TP according to agreement dated August 5, 2008

NITROGEN FACILITY SUMMARY

Fairfax Co-Noman Cole
POTOMAC Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	67.00
Projected Flow (mgd)	49.87
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	455,658
Delivery Factor	1.00
Expected Load	455,658
Delivered WLA	612,158
Expected Credits (delivered)	156,500
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(25)
WQIF-Held Credits	0
Expected Net Credits	156,475
Class A Credit Sales (Purchases)	156,420
Expected Class B Credits	55

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
67.00	67.00	67.00	67.00	67.00	67.00	67.00	67.00
49.87	51.53	49.99	53.47	53.76	54.04	54.32	54.32
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
455,658	470,822	456,755	488,547	491,188	493,746	496,304	496,304
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
455,658	470,822	456,755	488,547	491,188	493,746	496,304	496,304
612,158	612,158	612,158	612,158	612,158	612,158	612,158	612,158
156,500	141,336	155,403	123,611	120,970	118,412	115,854	115,854
0	0	0	0	0	0	0	0
(25)	(25)	(25)	(25)	(25)	0	0	0
0	0	0	0	0	0	0	0
156,475	141,311	155,378	123,586	120,945	118,412	115,854	115,854
156,420	127,128	155,324	123,528	120,945	118,412	115,854	115,854
55	14,183	54	58	0	0	0	0

* Represents private trade with Fairfax County Department of Vehicle Services

NITROGEN FACILITY SUMMARY

FCWSA-Vint Hill
POTOMAC Trading Basin



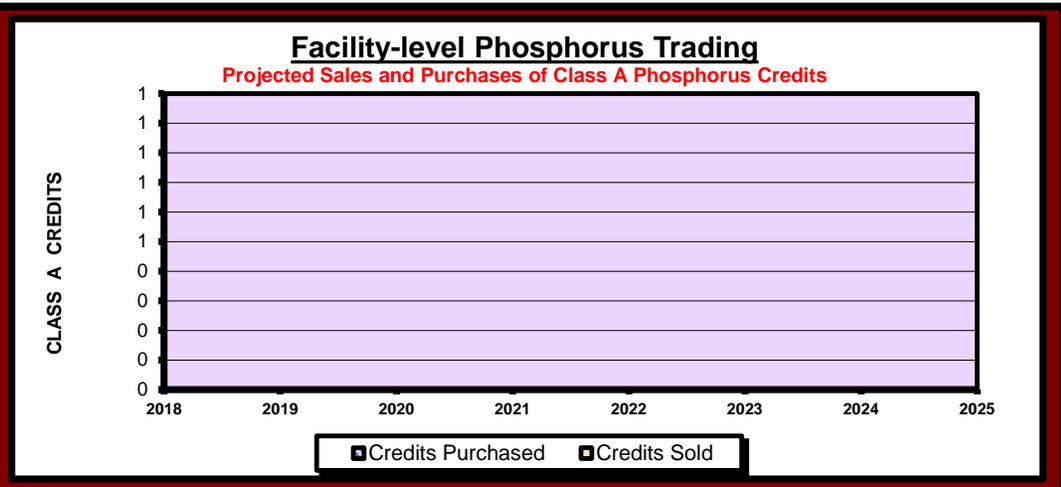
Loading & Credit Summary	
Design Flow (mgd)	0.95
Projected Flow (mgd)	0.36
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	4,386
Delivery Factor	0.05
Expected Load	219
Delivered WLA	579
Expected Credits (delivered)	360
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	360
Class A Credit Sales (Purchases)	0
Expected Class B Credits	360

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
0.36	0.40	0.42	0.44	0.46	0.48	0.50	0.52
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
4,386	4,873	5,117	5,360	5,604	5,847	6,091	6,335
0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
219	244	256	268	280	292	305	317
579	579	579	579	579	579	579	579
360	335	323	311	299	287	274	262
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
360	335	323	311	299	287	274	262
0	0	0	0	0	0	0	0
360	335	323	311	299	287	274	262

PHOSPHORUS FACILITY SUMMARY

FCWSA-Vint Hill

POTOMAC Trading Basin

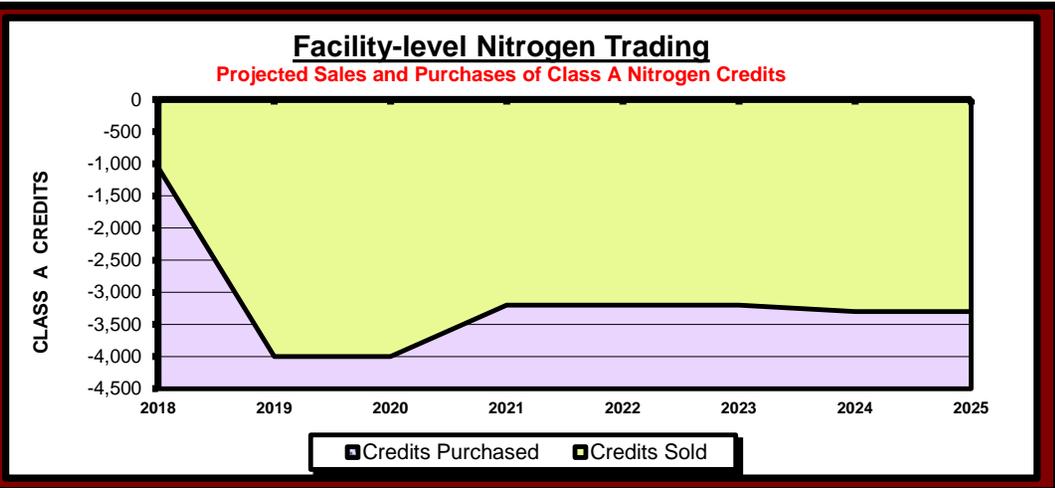


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
0.36	0.40	0.42	0.44	0.46	0.48	0.50	0.52
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
329	365	384	402	420	439	457	475
0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
56	62	65	68	71	75	78	81
148	148	148	148	148	148	148	148
92	86	83	80	77	73	70	67
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
92	86	83	80	77	73	70	67
0	0	0	0	0	0	0	0
92	86	83	80	77	73	70	67

NITROGEN FACILITY SUMMARY

Front Royal
POTOMAC Trading Basin



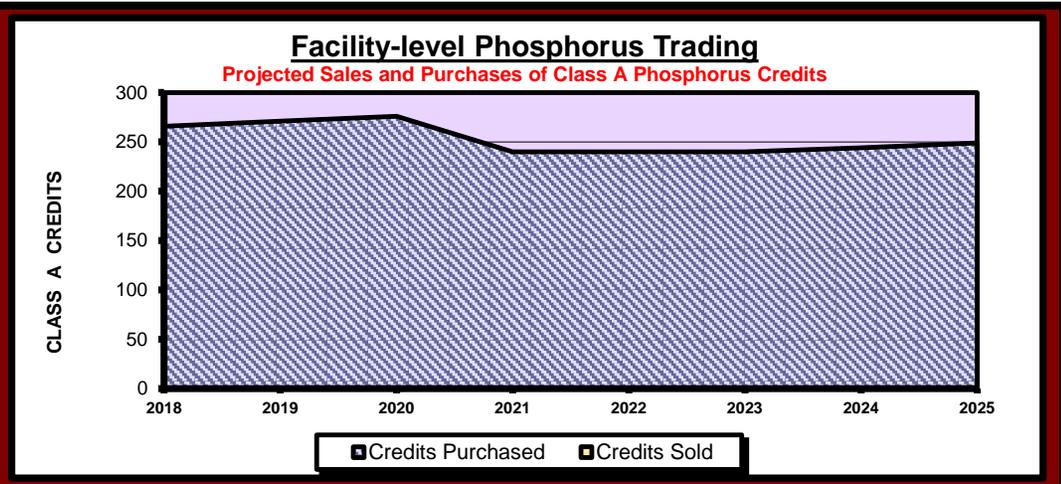
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	4.54
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	41,481
Delivery Factor	0.61
Expected Load	25,303
Delivered WLA	29,725
Expected Credits (delivered)	4,422
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	4,422
Class A Credit Sales (Purchases)	1,056
Expected Class B Credits	3,366

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
4.54	4.55	4.56	4.56	4.56	4.56	4.57	4.58
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
41,481	41,572	41,663	41,663	41,663	41,663	41,755	41,846
0.61	0.61	0.61	0.50	0.50	0.50	0.50	0.50
25,303	25,359	25,415	20,832	20,832	20,832	20,877	20,923
29,725	29,725	29,725	24,365	24,365	24,365	24,365	24,365
4,422	4,366	4,310	3,533	3,533	3,533	3,488	3,442
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4,422	4,366	4,310	3,533	3,533	3,533	3,488	3,442
1,056	4,000	4,000	3,200	3,200	3,200	3,300	3,300
3,366	366	310	333	333	333	188	142

PHOSPHORUS FACILITY SUMMARY

Front Royal
POTOMAC Trading Basin



Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	4.54
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	4,148
Delivery Factor	0.54
Expected Load	2,240
Delivered WLA	1,974
Expected Credits (delivered)	(266)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(266)
Class A Credit Sales (Purchases)	(266)
Expected Class B Credits	0

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Projected Flow (mgd)	4.54	4.55	4.56	4.56	4.56	4.56	4.57	4.58
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	4,148	4,157	4,166	4,166	4,166	4,166	4,175	4,185
Delivery Factor	0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
Expected Load	2,240	2,245	2,250	1,958	1,958	1,958	1,962	1,967
Delivered WLA	1,974	1,974	1,974	1,718	1,718	1,718	1,718	1,718
Expected Credits (delivered)	(266)	(271)	(276)	(240)	(240)	(240)	(244)	(249)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(266)	(271)	(276)	(240)	(240)	(240)	(244)	(249)
Class A Credit Sales (Purchases)	(266)	(271)	(276)	(240)	(240)	(240)	(244)	(249)
Expected Class B Credits	0	0	0	0	0	0	0	0

Owner Bubble: Frederick-Winchester Service Authority

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

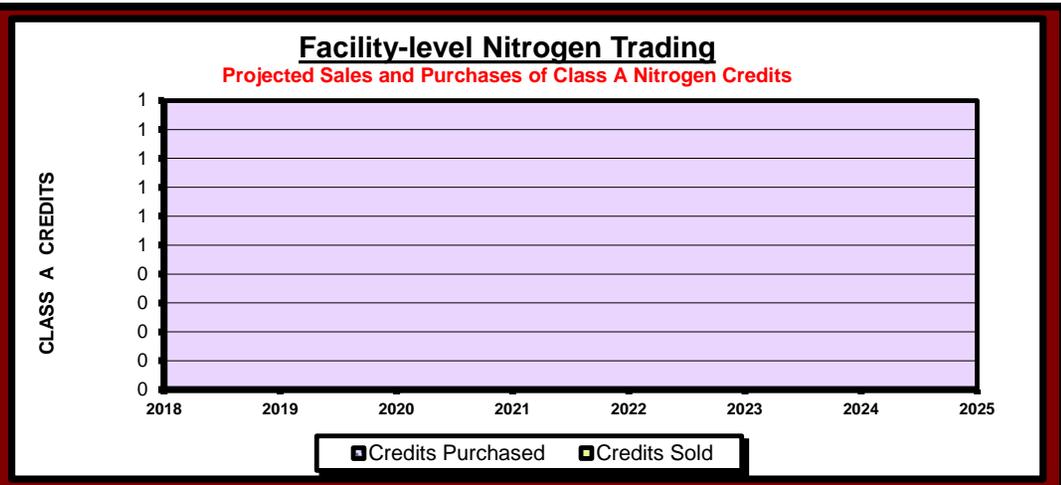
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Opequon	-	-	-	-	-	-	-	-
Parkins Mill	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Opequon	13,279	12,392	11,726	10,799	10,719	10,239	9,760	9,520
Parkins Mill	4,751	6,810	7,760	6,267	5,884	5,596	5,212	5,020
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	18,030	19,202	19,486	17,066	16,603	15,835	14,972	14,540
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>18,030</i>	<i>19,202</i>	<i>19,486</i>	<i>17,066</i>	<i>16,603</i>	<i>15,835</i>	<i>14,972</i>	<i>14,540</i>
<i>WQIF-Held Credits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Opequon	-	-	-	-	-	-	-	-
Parkins Mill	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Opequon	2,122	1,925	1,777	1,439	2,083	1,976	1,868	1,815
Parkins Mill	740	592	790	687	601	537	451	408
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	2,862	2,517	2,567	2,126	2,684	2,513	2,319	2,223
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>2,862</i>	<i>2,517</i>	<i>2,567</i>	<i>2,126</i>	<i>2,684</i>	<i>2,513</i>	<i>2,319</i>	<i>2,223</i>
<i>WQIF-Held Credits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

NITROGEN FACILITY SUMMARY

FWSA-Opequon
POTOMAC Trading Basin



Loading & Credit Summary

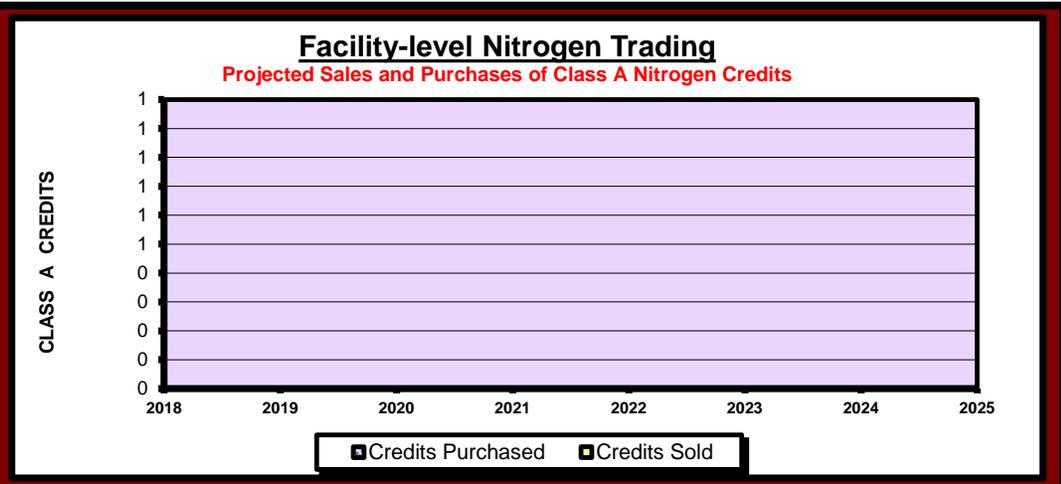
Design Flow (mgd)	12.60
Projected Flow (mgd)	8.30
Projected Avg. Annual Concentration (mg/L)	2.80
Discharged Load (end of pipe)	70,779
Delivery Factor	0.26
Expected Load	18,402
Delivered WLA	31,681
Expected Credits (delivered)	13,279
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	13,279
Class A Credit Sales (Purchases)	0
Expected Class B Credits	13,279

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	12.60	12.60	12.60	12.60	12.60	12.60	12.60	12.60
Projected Flow (mgd)	8.30	8.70	9.00	9.25	9.30	9.60	9.90	10.05
Projected Avg. Annual Concentration (mg/L)	2.80	2.80	2.80	2.50	2.50	2.50	2.50	2.50
Discharged Load (end of pipe)	70,779	74,190	76,748	70,429	70,809	73,093	75,378	76,520
Delivery Factor	0.26	0.26	0.26	0.21	0.21	0.21	0.21	0.21
Expected Load	18,402	19,289	19,955	14,790	14,870	15,350	15,829	16,069
Delivered WLA	31,681	31,681	31,681	25,589	25,589	25,589	25,589	25,589
Expected Credits (delivered)	13,279	12,392	11,726	10,799	10,719	10,239	9,760	9,520
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	13,279	12,392	11,726	10,799	10,719	10,239	9,760	9,520
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	13,279	12,392	11,726	10,799	10,719	10,239	9,760	9,520

NITROGEN FACILITY SUMMARY

FWSA-Parkins Mill

POTOMAC Trading Basin



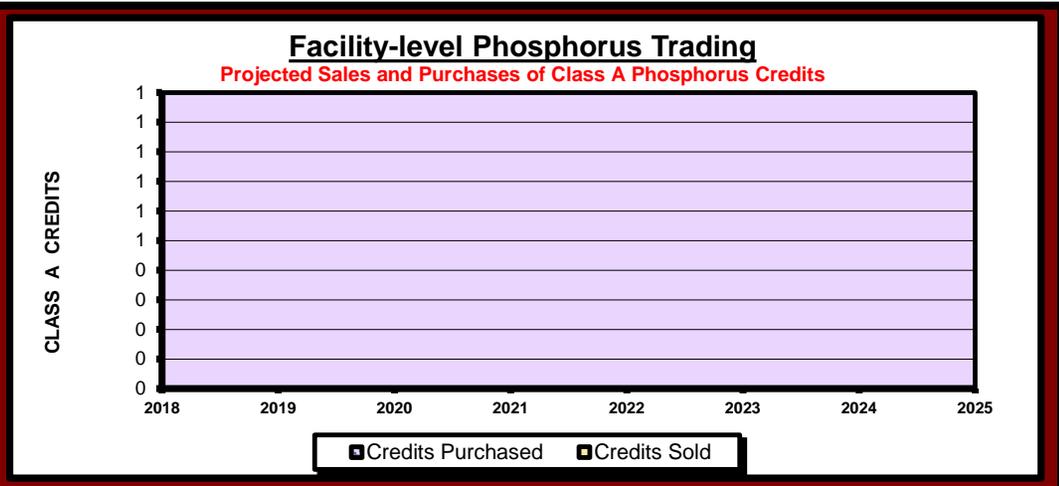
Loading & Credit Summary

Design Flow (mgd)	5.00
Projected Flow (mgd)	3.50
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	42,638
Delivery Factor	0.26
Expected Load	11,086
Delivered WLA	15,837
Expected Credits (delivered)	4,751
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	4,751
Class A Credit Sales (Purchases)	0
Expected Class B Credits	4,751

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Projected Flow (mgd)	3.50	3.80	3.40	3.40	3.60	3.75	3.95	4.05
Projected Avg. Annual Concentration (mg/L)	4.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	42,638	34,719	31,065	31,065	32,892	34,263	36,090	37,004
Delivery Factor	0.26	0.26	0.26	0.21	0.21	0.21	0.21	0.21
Expected Load	11,086	9,027	8,077	6,524	6,907	7,195	7,579	7,771
Delivered WLA	15,837	15,837	15,837	12,791	12,791	12,791	12,791	12,791
Expected Credits (delivered)	4,751	6,810	7,760	6,267	5,884	5,596	5,212	5,020
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	4,751	6,810	7,760	6,267	5,884	5,596	5,212	5,020
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	4,751	6,810	7,760	6,267	5,884	5,596	5,212	5,020

PHOSPHORUS FACILITY SUMMARY

FWSA-Opequon
POTOMAC Trading Basin



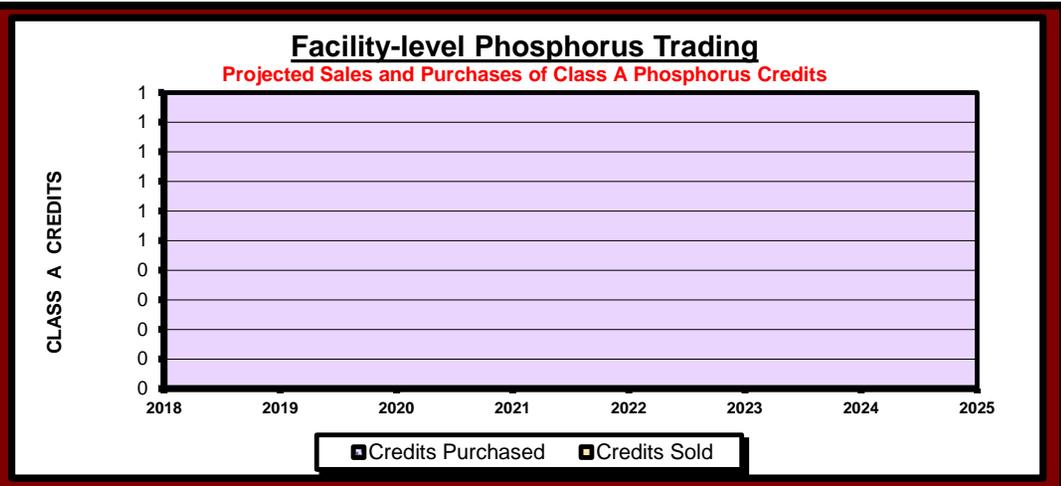
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
12.60	12.60	12.60	12.60	12.60	12.60	12.60	12.60
8.30	8.70	9.00	9.25	9.30	9.60	9.90	10.05
0.30	0.30	0.30	0.30	0.25	0.25	0.25	0.25
7,583	7,949	8,223	8,451	7,081	7,309	7,538	7,652
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
4,095	4,292	4,440	3,972	3,328	3,435	3,543	3,596
6,217	6,217	6,217	5,411	5,411	5,411	5,411	5,411
2,122	1,925	1,777	1,439	2,083	1,976	1,868	1,815
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,122	1,925	1,777	1,439	2,083	1,976	1,868	1,815
0	0	0	0	0	0	0	0
2,122	1,925	1,777	1,439	2,083	1,976	1,868	1,815

PHOSPHORUS FACILITY SUMMARY

FWSA-Parkins Mill

POTOMAC Trading Basin



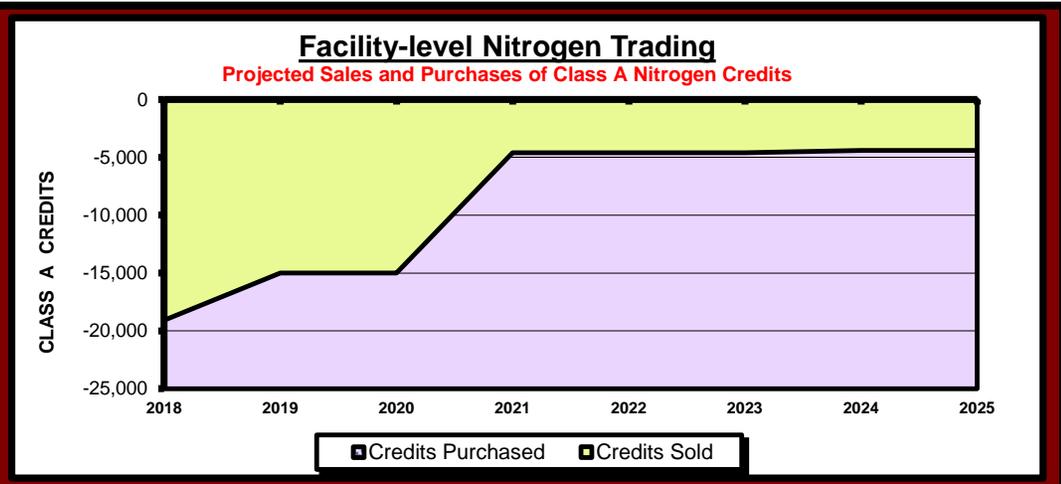
Loading & Credit Summary

Design Flow (mgd)	5.00
Projected Flow (mgd)	3.50
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	3,198
Delivery Factor	0.54
Expected Load	1,727
Delivered WLA	2,467
Expected Credits (delivered)	740
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	740
Class A Credit Sales (Purchases)	0
Expected Class B Credits	740

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
3.50	3.80	3.40	3.40	3.60	3.75	3.95	4.05
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
3,198	3,472	3,106	3,106	3,289	3,426	3,609	3,700
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
1,727	1,875	1,677	1,460	1,546	1,610	1,696	1,739
2,467	2,467	2,467	2,147	2,147	2,147	2,147	2,147
740	592	790	687	601	537	451	408
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
740	592	790	687	601	537	451	408
0	0	0	0	0	0	0	0
740	592	790	687	601	537	451	408

NITROGEN FACILITY SUMMARY

HRRSA-North River
<i>POTOMAC Trading Basin</i>



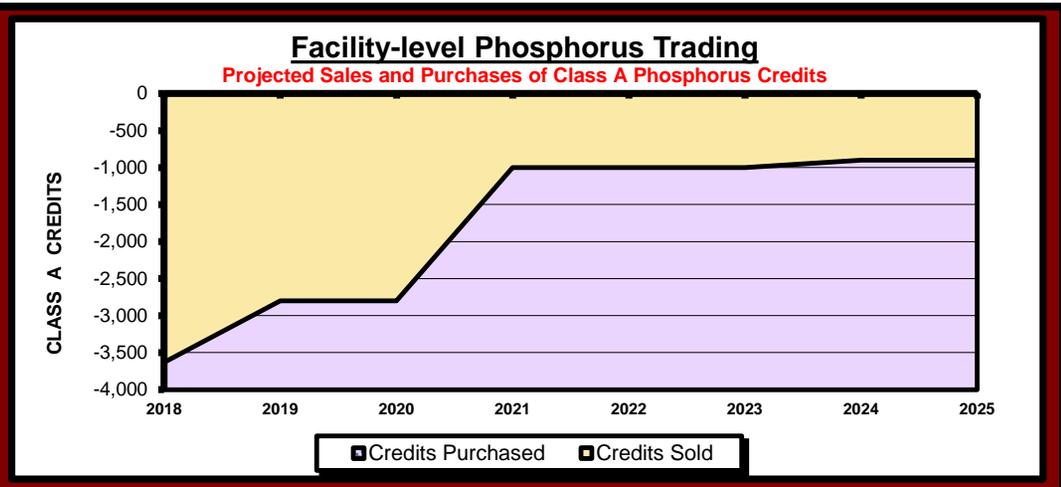
Loading & Credit Summary	
Design Flow (mgd)	22.00
Projected Flow (mgd)	14.35
Projected Avg. Annual Concentration (mg/L)	3.80
Discharged Load (end of pipe)	166,074
Delivery Factor	0.22
Expected Load	36,536
Delivered WLA	55,746
Expected Credits (delivered)	19,210
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(100)
WQIF-Held Credits	0
Expected Net Credits	19,110
Class A Credit Sales (Purchases)	19,082
Expected Class B Credits	28

2018	2019	2020	2021	2022	2023	2024	2025		
Planning Period					Future Estimates (non-binding)				
22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00		
14.35	15.00	15.00	15.20	15.20	15.20	15.40	15.40		
3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80		
166,074	173,597	173,597	175,912	175,912	175,912	178,226	178,226		
0.22	0.22	0.22	0.14	0.14	0.14	0.14	0.14		
36,536	38,191	38,191	24,628	24,628	24,628	24,952	24,952		
55,746	55,746	55,746	35,475	35,475	35,475	35,475	35,475		
19,210	17,555	17,555	10,847	10,847	10,847	10,523	10,523		
0	0	0	0	0	0	0	0		
(100)	(100)	(100)	(100)	(100)	0	0	0		
0	0	0	0	0	0	0	0		
19,110	17,455	17,455	10,747	10,747	10,847	10,523	10,523		
Class A Credit Sales (Purchases)		19,082		15,000		15,000		4,600	
Expected Class B Credits		28		2,455		2,455		6,147	

* Represents private trade with the Town of Bridgewater (to meet stormwater requirements)

PHOSPHORUS FACILITY SUMMARY

HRRSA-North River
POTOMAC Trading Basin



Loading & Credit Summary

Design Flow (mgd)	22.00
Projected Flow (mgd)	14.35
Projected Avg. Annual Concentration (mg/L)	0.28
Discharged Load (end of pipe)	12,237
Delivery Factor	0.54
Expected Load	6,608
Delivered WLA	10,262
Expected Credits (delivered)	3,654
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(4)
WQIF-Held Credits	0
Expected Net Credits	3,650
Class A Credit Sales (Purchases)	3,631
Expected Class B Credits	19

2018	2019	2020	2021	2022	2023	2024	2025	
Planning Period					Future Estimates (non-binding)			
22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	
14.35	15.00	15.00	15.20	15.20	15.20	15.40	15.40	
0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	
12,237	12,791	12,791	12,962	12,962	12,962	13,132	13,132	
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47	
6,608	6,907	6,907	6,092	6,092	6,092	6,172	6,172	
10,262	10,262	10,262	8,932	8,932	8,932	8,932	8,932	
3,654	3,355	3,355	2,840	2,840	2,840	2,760	2,760	
0	0	0	0	0	0	0	0	
(4)	(4)	(4)	(4)	(4)	0	0	0	
0	0	0	0	0	0	0	0	
3,650	3,351	3,351	2,836	2,836	2,840	2,760	2,760	
3,631	2,800	2,800	1,000	1,000	1,000	900	900	
19	551	551	1,836	1,836	1,840	1,860	1,860	

* Represents private trade with the Town of Bridgewater (to meet stormwater requirements)

Owner Bubble: King George County Service Authority (Potomac)

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Dahlgren	-	-	-	-	-	-	-	-
Fairview Beach	(427)	(427)	(427)	(579)	(579)	(579)	(579)	(579)
Purkins Corner	427	427	427	579	579	579	579	579
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Dahlgren	2,437	4,112	3,655	3,198	3,655	3,198	2,741	2,284
Fairview Beach	669	669	578	426	517	426	426	426
Purkins Corner	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	3,106	4,781	4,233	3,624	4,172	3,624	3,167	2,710
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>3,106</i>	<i>4,781</i>	<i>4,233</i>	<i>3,624</i>	<i>4,172</i>	<i>3,624</i>	<i>3,167</i>	<i>2,710</i>
<i>WQIF-Held Credits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Dahlgren	(40)	(40)	(40)	(58)	(58)	(58)	(58)	(58)
Fairview Beach	-	-	-	-	-	-	-	-
Purkins Corner	40	40	40	58	58	58	58	58
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Dahlgren	371	371	326	262	308	262	216	171
Fairview Beach	107	107	98	101	110	101	101	101
Purkins Corner	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	478	478	424	363	418	363	317	272
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>478</i>	<i>478</i>	<i>424</i>	<i>363</i>	<i>418</i>	<i>363</i>	<i>317</i>	<i>272</i>
<i>WQIF-Held Credits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

NITROGEN FACILITY SUMMARY

KGCSA-Dahlgren S.D.
POTOMAC Trading Basin



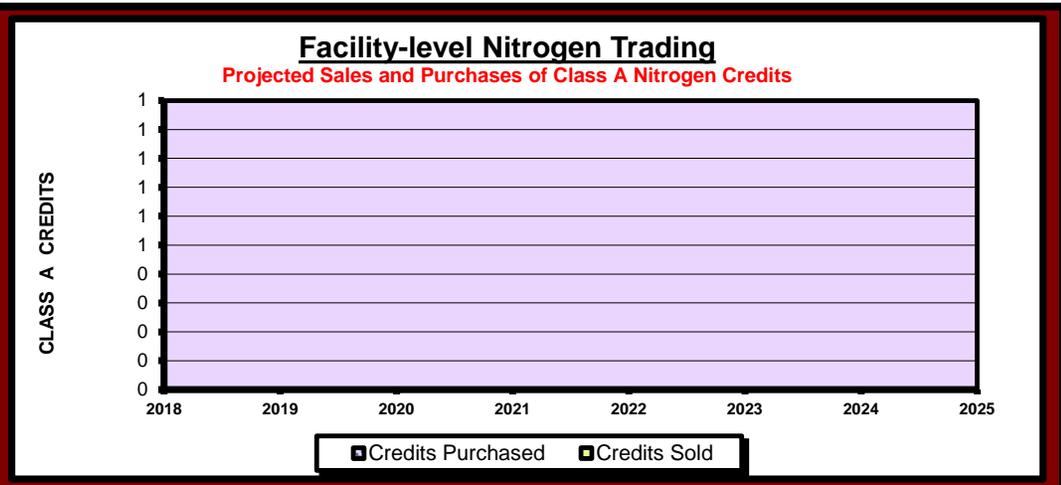
Loading & Credit Summary

Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.55	0.55	0.60	0.65	0.60	0.65	0.70	0.75
Projected Avg. Annual Concentration (mg/L)	4.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	6,700	5,025	5,482	5,939	5,482	5,939	6,396	6,853
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	6,700	5,025	5,482	5,939	5,482	5,939	6,396	6,853
Delivered WLA	9,137	9,137	9,137	9,137	9,137	9,137	9,137	9,137
Expected Credits (delivered)	2,437	4,112	3,655	3,198	3,655	3,198	2,741	2,284
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	2,437	4,112	3,655	3,198	3,655	3,198	2,741	2,284
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	2,437	4,112	3,655	3,198	3,655	3,198	2,741	2,284

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.55	0.55	0.60	0.65	0.60	0.65	0.70	0.75
4.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
6,700	5,025	5,482	5,939	5,482	5,939	6,396	6,853
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6,700	5,025	5,482	5,939	5,482	5,939	6,396	6,853
9,137	9,137	9,137	9,137	9,137	9,137	9,137	9,137
2,437	4,112	3,655	3,198	3,655	3,198	2,741	2,284
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,437	4,112	3,655	3,198	3,655	3,198	2,741	2,284
0	0	0	0	0	0	0	0
2,437	4,112	3,655	3,198	3,655	3,198	2,741	2,284

NITROGEN FACILITY SUMMARY

KGCSA-Fairview Beach
POTOMAC Trading Basin



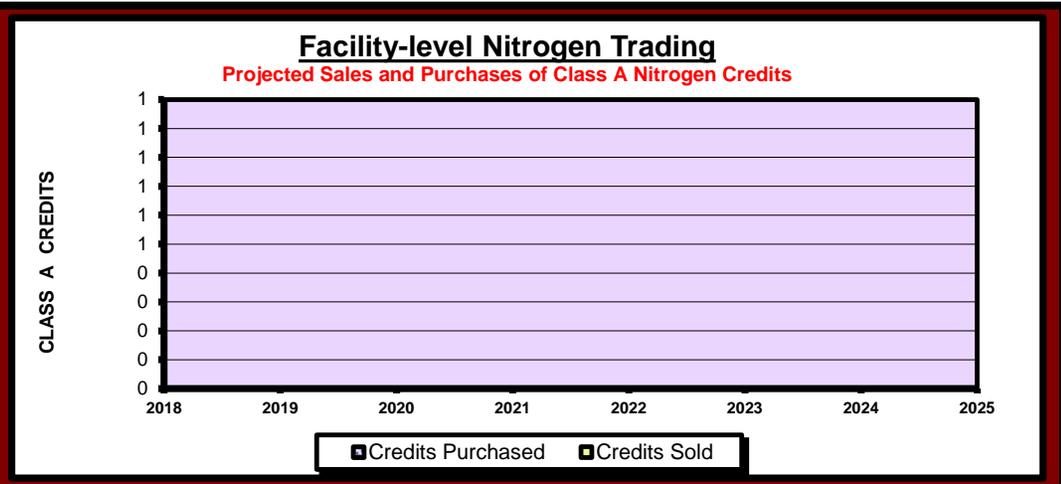
Loading & Credit Summary

Design Flow (mgd)	0.20
Projected Flow (mgd)	0.08
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	731
Delivery Factor	1.00
Expected Load	731
Delivered WLA	1,827
Expected Credits (delivered)	1,096
Transfers In (Out) within Owner Bubble	(427)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	669
Class A Credit Sales (Purchases)	0
Expected Class B Credits	669

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.08	0.08	0.09	0.09	0.08	0.09	0.09	0.09
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
731	731	822	822	731	822	822	822
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
731	731	822	822	731	822	822	822
1,827	1,827	1,827	1,827	1,827	1,827	1,827	1,827
1,096	1,096	1,005	1,005	1,096	1,005	1,005	1,005
(427)	(427)	(427)	(579)	(579)	(579)	(579)	(579)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
669	669	578	426	517	426	426	426
0	0	0	0	0	0	0	0
669	669	578	426	517	426	426	426

NITROGEN FACILITY SUMMARY

KGCSA-Purkins Corner
POTOMAC Trading Basin



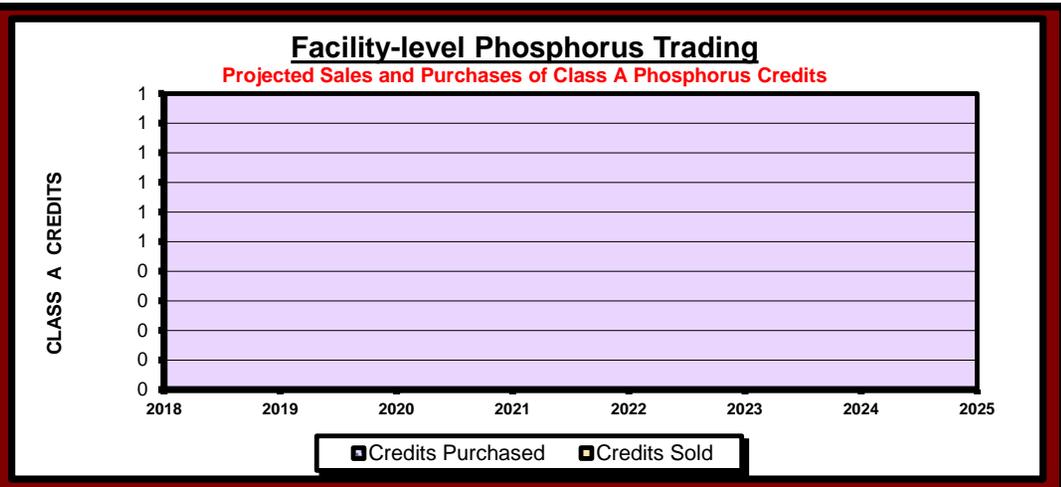
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
1,523	1,523	1,523	1,675	1,675	1,675	1,675	1,675
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,523	1,523	1,523	1,675	1,675	1,675	1,675	1,675
1,096	1,096	1,096	1,096	1,096	1,096	1,096	1,096
(427)	(427)	(427)	(579)	(579)	(579)	(579)	(579)
427	427	427	579	579	579	579	579
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

KGCSA-Dahlgren S.D.
POTOMAC Trading Basin



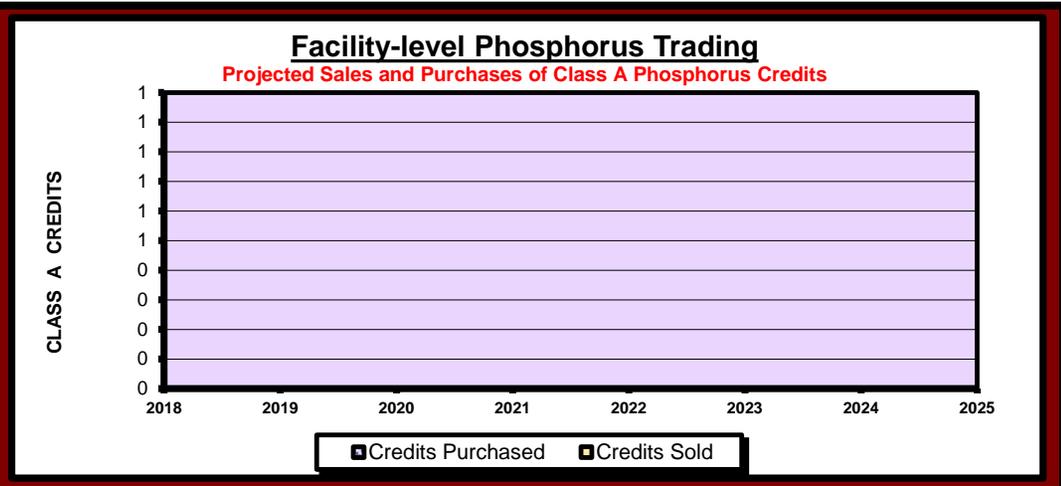
Loading & Credit Summary

Design Flow (mgd)	1.00
Projected Flow (mgd)	0.55
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	503
Delivery Factor	1.00
Expected Load	503
Delivered WLA	914
Expected Credits (delivered)	411
Transfers In (Out) within Owner Bubble	(40)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	371
Class A Credit Sales (Purchases)	0
Expected Class B Credits	371

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.55	0.55	0.60	0.65	0.60	0.65	0.70	0.75
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	503	503	548	594	548	594	640	685
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	503	503	548	594	548	594	640	685
Delivered WLA	914	914	914	914	914	914	914	914
Expected Credits (delivered)	411	411	366	320	366	320	274	229
Transfers In (Out) within Owner Bubble	(40)	(40)	(40)	(58)	(58)	(58)	(58)	(58)
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	371	371	326	262	308	262	216	171
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	371	371	326	262	308	262	216	171

PHOSPHORUS FACILITY SUMMARY

KGCSA-Fairview Beach
POTOMAC Trading Basin



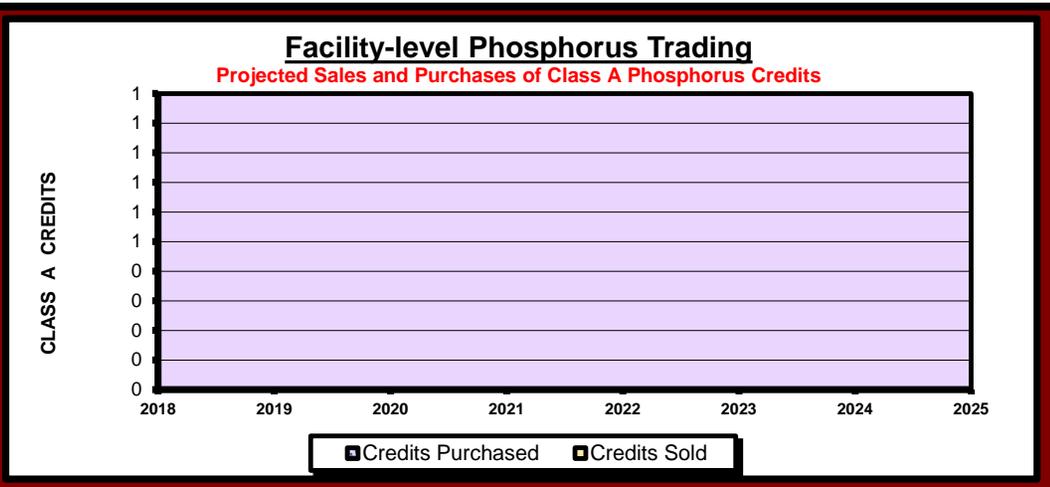
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.08	0.08	0.09	0.09	0.08	0.09	0.09	0.09
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
73	73	82	82	73	82	82	82
0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00
72	72	81	82	73	82	82	82
179	179	179	183	183	183	183	183
107	107	98	101	110	101	101	101
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
107	107	98	101	110	101	101	101
0	0	0	0	0	0	0	0
107	107	98	101	110	101	101	101

PHOSPHORUS FACILITY SUMMARY

KGCSA-Purkins Corner
POTOMAC Trading Basin



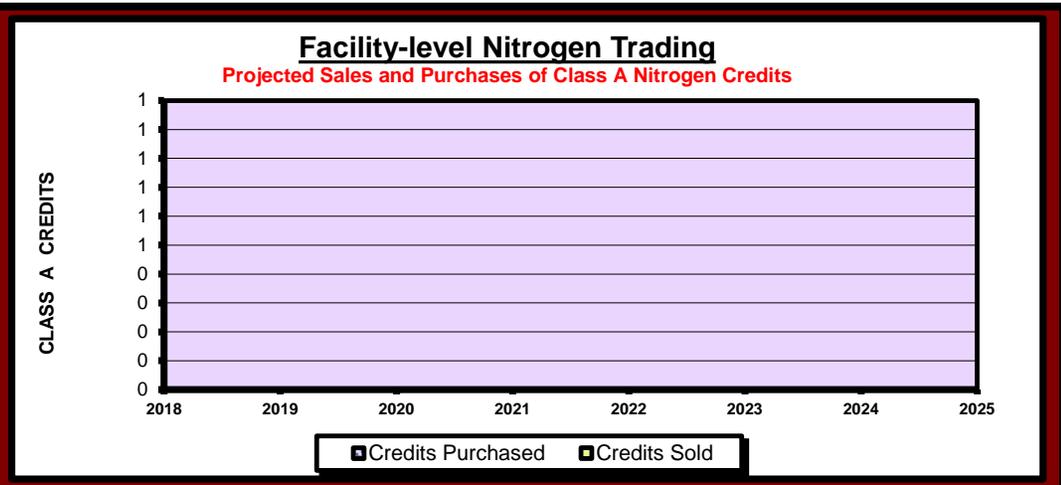
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
152	152	152	168	168	168	168	168
0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00
146	146	146	168	168	168	168	168
106	106	106	110	110	110	110	110
(40)	(40)	(40)	(58)	(58)	(58)	(58)	(58)
40	40	40	58	58	58	58	58
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Leesburg
 POTOMAC Trading Basin



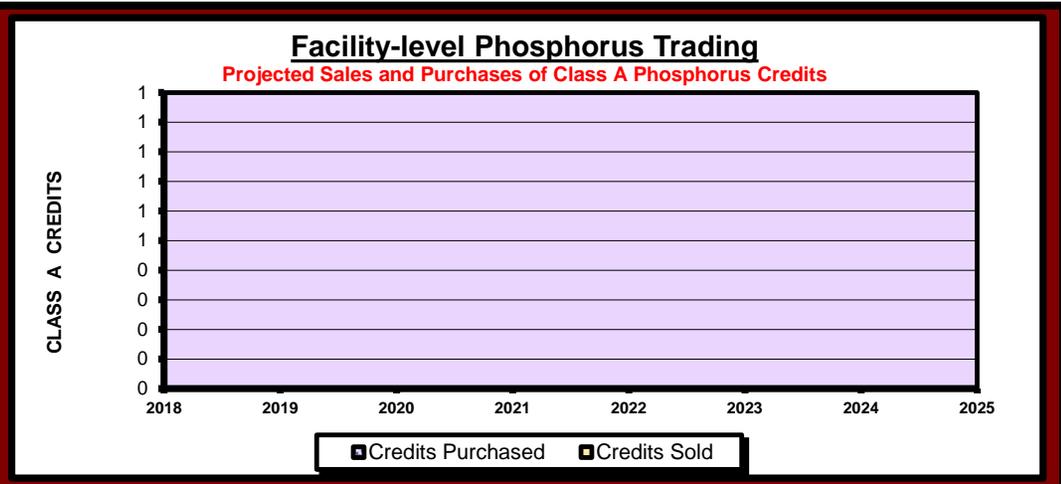
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange*	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
2.67	2.81	2.95	3.09	3.23	3.37	3.51	3.65
4.80	4.80	4.80	4.90	4.90	5.00	5.00	5.00
39,076	41,122	43,169	46,158	48,247	51,363	53,495	55,627
0.80	0.80	0.80	0.64	0.64	0.64	0.64	0.64
31,261	32,898	34,535	29,541	30,878	32,873	34,237	35,601
97,458	97,458	97,458	77,966	77,966	77,966	77,966	77,966
66,197	64,560	62,923	48,425	47,088	45,093	43,729	42,365
0	0	0	0	0	0	0	0
(274)	(274)	(274)	(274)	0	0	0	0
(24,365)	(24,365)	(24,365)	(19,492)	(19,492)	(19,492)	(19,492)	(19,492)
41,558	39,921	38,284	28,659	27,596	25,601	24,237	22,873
0	0	0	0	0	0	0	0
41,558	39,921	38,284	28,659	27,596	25,601	24,237	22,873

* Represents private trade with Loudoun Milling

PHOSPHORUS FACILITY SUMMARY

Leesburg
 POTOMAC Trading Basin



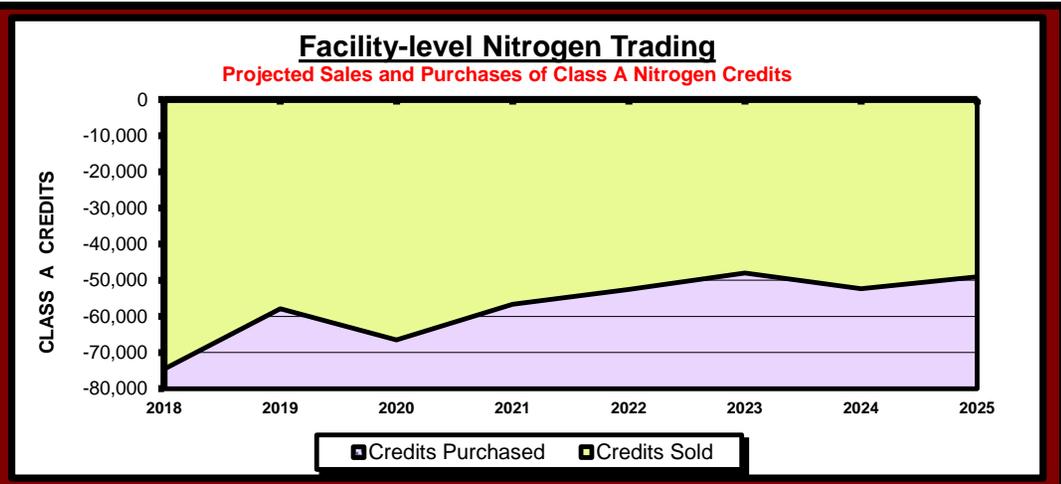
Loading & Credit Summary	
Design Flow (mgd)	7.50
Projected Flow (mgd)	2.67
Projected Avg. Annual Concentration (mg/L)	0.46
Discharged Load (end of pipe)	3,745
Delivery Factor	0.54
Expected Load	2,022
Delivered WLA	4,934
Expected Credits (delivered)	2,912
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(27)
WQIF-Held Credits	(1,234)
Expected Net Credits	1,651
Class A Credit Sales (Purchases)	0
Expected Class B Credits	1,651

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
2.67	2.81	2.95	3.09	3.23	3.37	3.51	3.65
0.46	0.48	0.50	0.52	0.54	0.55	0.55	0.55
3,745	4,112	4,497	4,898	5,317	5,650	5,884	6,119
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
2,022	2,221	2,428	2,302	2,499	2,655	2,766	2,876
4,934	4,934	4,934	4,294	4,294	4,294	4,294	4,294
2,912	2,713	2,506	1,992	1,795	1,639	1,528	1,418
0	0	0	0	0	0	0	0
(27)	(27)	(27)	(27)	0	0	0	0
(1,234)	(1,234)	(1,234)	(1,074)	(1,074)	(1,074)	(1,074)	(1,074)
1,651	1,452	1,245	891	721	565	454	344
0	0	0	0	0	0	0	0
1,651	1,452	1,245	891	721	565	454	344

* Represents private trade with Loudoun Milling

NITROGEN FACILITY SUMMARY

Loudoun Water- Broad Run
POTOMAC Trading Basin

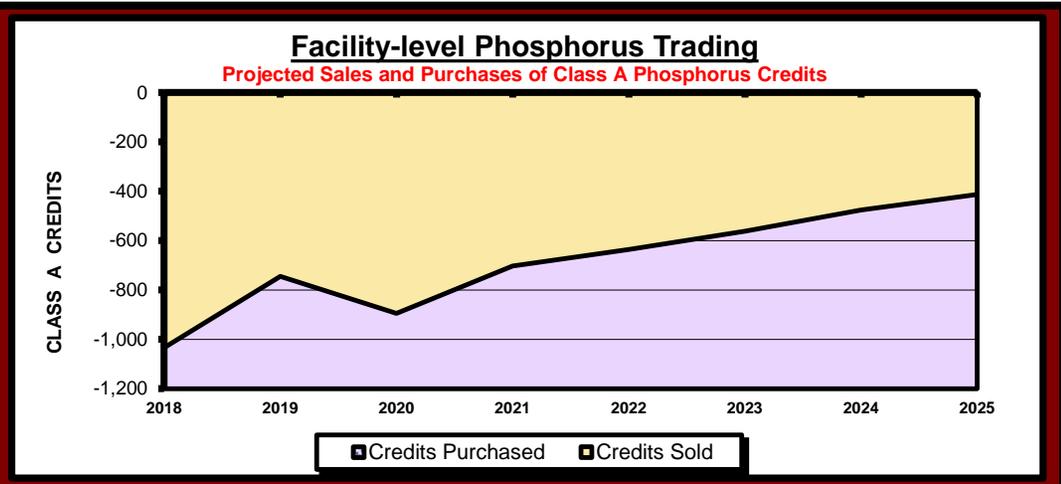


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
4.71	5.16	5.56	6.09	6.56	7.08	7.68	8.12
3.50	3.50	3.50	3.50	3.50	3.50	3.00	3.00
50,206	55,003	59,267	64,916	69,926	75,469	70,170	74,190
0.89	0.89	0.89	0.82	0.82	0.82	0.82	0.82
44,683	48,953	52,747	53,231	57,339	61,885	57,539	60,836
119,264	119,264	119,264	109,884	109,884	109,884	109,884	109,884
74,581	70,311	66,517	56,653	52,545	47,999	52,345	49,048
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
74,581	70,311	66,517	56,653	52,545	47,999	52,345	49,048
74,581	57,884	66,517	56,653	52,545	47,999	52,345	49,048
0	12,427	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Loudoun Water- Broad Run
<i>POTOMAC Trading Basin</i>

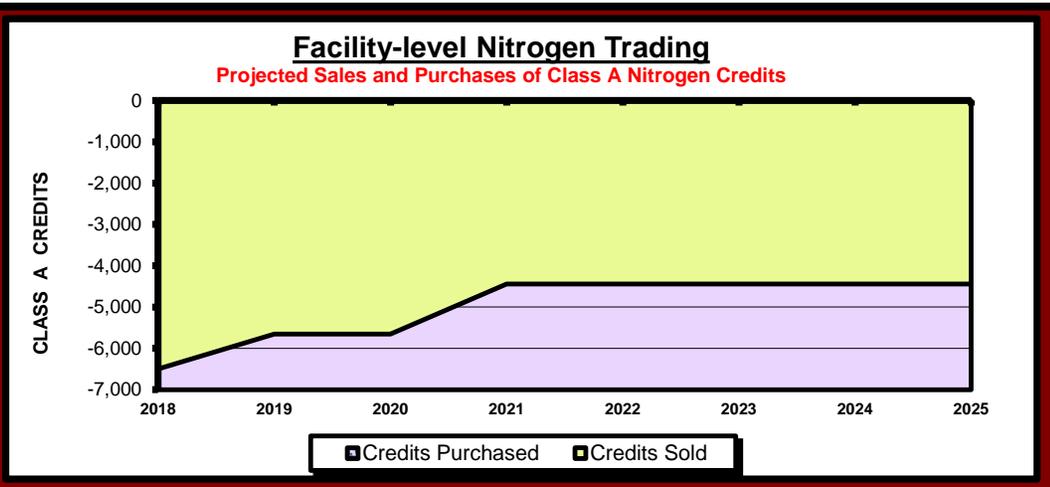


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
4.71	5.16	5.56	6.09	6.56	7.08	7.68	8.12
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
1,434	1,572	1,693	1,855	1,998	2,156	2,339	2,473
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
775	849	914	872	939	1,013	1,099	1,162
1,809	1,809	1,809	1,575	1,575	1,575	1,575	1,575
1,034	960	895	703	636	562	476	413
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,034	960	895	703	636	562	476	413
0	215	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Luray
<i>POTOMAC Trading Basin</i>

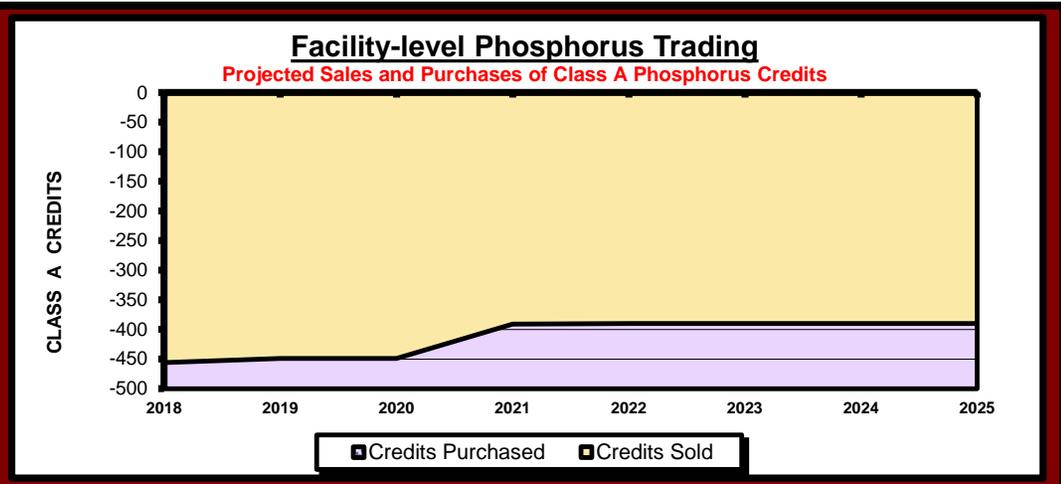


Loading & Credit Summary	
Design Flow (mgd)	1.60
Projected Flow (mgd)	0.88
Projected Avg. Annual Concentration (mg/L)	1.50
Discharged Load (end of pipe)	4,020
Delivery Factor	0.42
Expected Load	1,688
Delivered WLA	8,187
Expected Credits (delivered)	6,499
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	6,499
Class A Credit Sales (Purchases)	6,499
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
0.88	0.90	0.90	0.90	0.90	0.90	0.90	0.90
1.50	2.20	2.20	2.20	2.20	2.20	2.20	2.20
4,020	6,030	6,030	6,030	6,030	6,030	6,030	6,030
0.42	0.42	0.42	0.33	0.33	0.33	0.33	0.33
1,688	2,533	2,533	1,990	1,990	1,990	1,990	1,990
8,187	8,187	8,187	6,432	6,432	6,432	6,432	6,432
6,499	5,654	5,654	4,442	4,442	4,442	4,442	4,442
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
6,499	5,654	5,654	4,442	4,442	4,442	4,442	4,442
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Luray
<i>POTOMAC Trading Basin</i>



Loading & Credit Summary

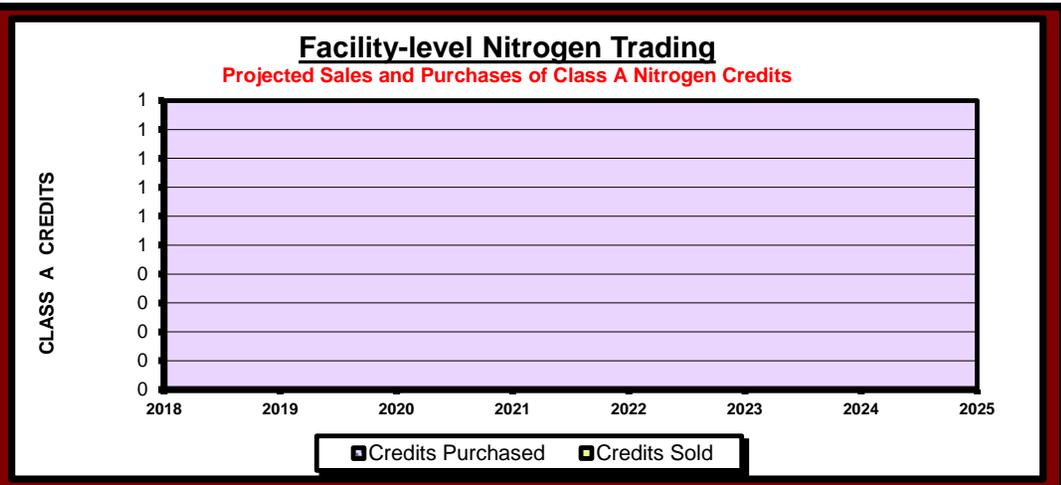
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange*
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
0.88	0.90	0.90	0.90	0.90	0.90	0.90	0.90
0.22	0.22	0.22	0.22	0.23	0.23	0.23	0.23
590	603	603	603	630	630	630	630
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
318	326	326	283	296	296	296	296
789	789	789	687	687	687	687	687
471	463	463	404	391	391	391	391
0	0	0	0	0	0	0	0
(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
0	0	0	0	0	0	0	0
470	462	462	403	390	390	390	390
456	449	449	391	390	390	390	390
14	13	13	12	0	0	0	0

* Credit reduction to satisfy stormwater requirements associated with Town's construction activities at Lake Arrowhead Complex

NITROGEN FACILITY SUMMARY

Massanutten PSC
POTOMAC Trading Basin

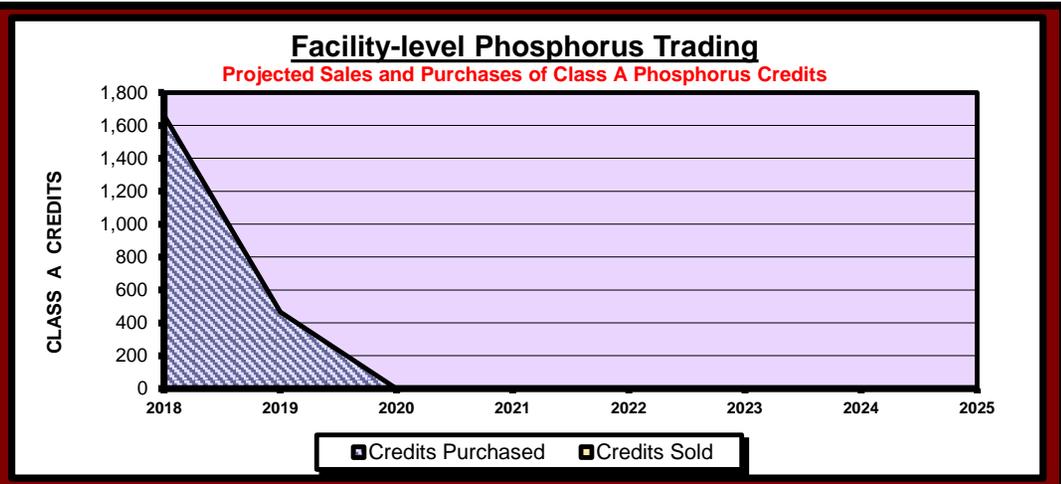


Loading & Credit Summary	
Design Flow (mgd)	1.50
Projected Flow (mgd)	0.74
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	9,015
Delivery Factor	0.33
Expected Load	2,975
Delivered WLA	6,030
Expected Credits (delivered)	3,055
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	3,055
Class A Credit Sales (Purchases)	0
Expected Class B Credits	3,055

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
0.74	0.74	0.76	0.76	0.76	0.76	0.76	0.76
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
9,015	9,015	9,259	9,259	9,259	9,259	9,259	9,259
0.33	0.33	0.33	0.22	0.22	0.22	0.22	0.22
2,975	2,975	3,055	2,037	2,037	2,037	2,037	2,037
6,030	6,030	6,030	4,020	4,020	4,020	4,020	4,020
3,055	3,055	2,975	1,983	1,983	1,983	1,983	1,983
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3,055	3,055	2,975	1,983	1,983	1,983	1,983	1,983
0	0	0	0	0	0	0	0
3,055	3,055	2,975	1,983	1,983	1,983	1,983	1,983

PHOSPHORUS FACILITY SUMMARY

Massanutten PSC
POTOMAC Trading Basin



Loading & Credit Summary

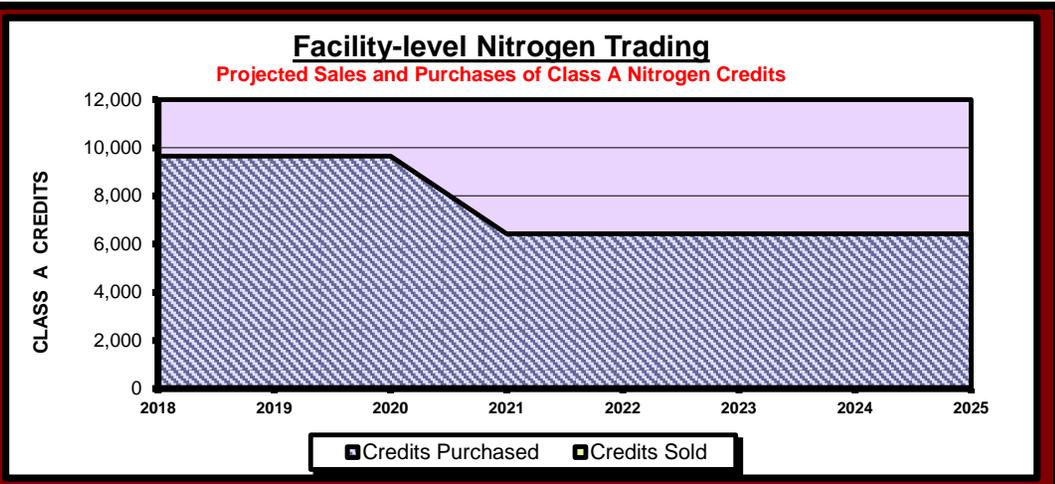
Design Flow (mgd)	1.50
Projected Flow (mgd)	0.74
Projected Avg. Annual Concentration (mg/L)	2.00
Discharged Load (end of pipe)	4,507
Delivery Factor	0.53
Expected Load	2,389
Delivered WLA	727
Expected Credits (delivered)	(1,662)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(1,662)
Class A Credit Sales (Purchases)	(1,662)
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
0.74	0.74	0.76	0.76	0.76	0.76	0.76	0.76
2.00	1.00	0.30	0.30	0.30	0.30	0.30	0.30
4,507	2,254	694	694	694	694	694	694
0.53	0.53	0.53	0.47	0.47	0.47	0.47	0.47
2,389	1,194	368	326	326	326	326	326
727	727	727	644	644	644	644	644
(1,662)	(467)	359	318	318	318	318	318
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(1,662)	(467)	359	318	318	318	318	318
(1,662)	(467)	0	0	0	0	0	0
0	0	359	318	318	318	318	318

NITROGEN FACILITY SUMMARY

Merck

POTOMAC Trading Basin



Loading & Credit Summary

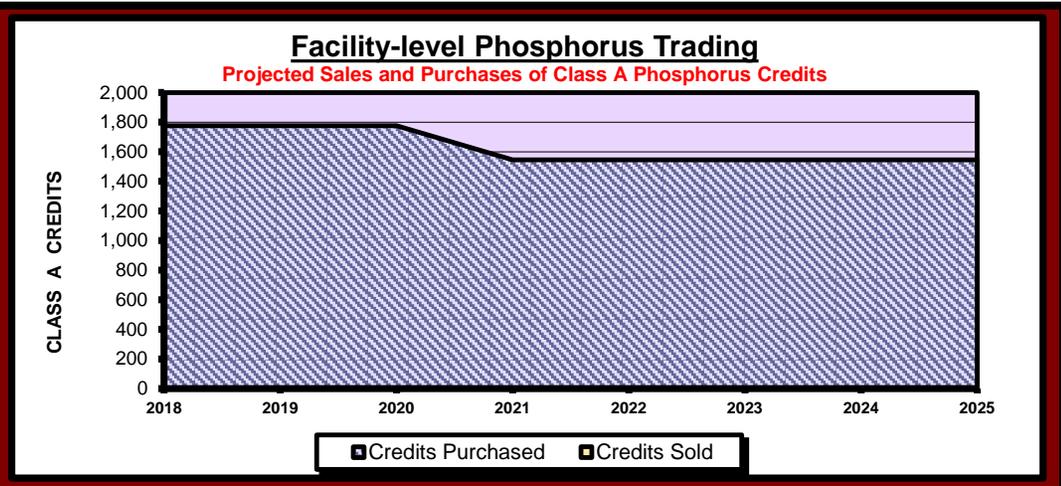
Design Flow (mgd)	1.20
Projected Flow (mgd)	1.20
Projected Avg. Annual Concentration (mg/L)	12.00
Discharged Load (end of pipe)	43,856
Delivery Factor	0.33
Expected Load	14,473
Delivered WLA	4,824
Expected Credits (delivered)	(9,649)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(9,649)
Class A Credit Sales (Purchases)	(9,649)
Expected Class B Credits	0

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Projected Flow (mgd)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Projected Avg. Annual Concentration (mg/L)	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Discharged Load (end of pipe)	43,856	43,856	43,856	43,856	43,856	43,856	43,856	43,856
Delivery Factor	0.33	0.33	0.33	0.22	0.22	0.22	0.22	0.22
Expected Load	14,473	14,473	14,473	9,648	9,648	9,648	9,648	9,648
Delivered WLA	4,824	4,824	4,824	3,216	3,216	3,216	3,216	3,216
Expected Credits (delivered)	(9,649)	(9,649)	(9,649)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(9,649)	(9,649)	(9,649)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)
Class A Credit Sales (Purchases)	(9,649)	(9,649)	(9,649)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)
Expected Class B Credits	0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Merck

POTOMAC Trading Basin



Loading & Credit Summary

Design Flow (mgd)	1.20
Projected Flow (mgd)	1.20
Projected Avg. Annual Concentration (mg/L)	1.20
Discharged Load (end of pipe)	4,386
Delivery Factor	0.54
Expected Load	2,368
Delivered WLA	592
Expected Credits (delivered)	(1,776)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(1,776)
Class A Credit Sales (Purchases)	(1,776)
Expected Class B Credits	0

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Projected Flow (mgd)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Projected Avg. Annual Concentration (mg/L)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Discharged Load (end of pipe)	4,386	4,386	4,386	4,386	4,386	4,386	4,386	4,386
Delivery Factor	0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
Expected Load	2,368	2,368	2,368	2,061	2,061	2,061	2,061	2,061
Delivered WLA	592	592	592	515	515	515	515	515
Expected Credits (delivered)	(1,776)	(1,776)	(1,776)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(1,776)	(1,776)	(1,776)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)
Class A Credit Sales (Purchases)	(1,776)	(1,776)	(1,776)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)
Expected Class B Credits	0	0	0	0	0	0	0	0

Merck – Additional Information

Description of Merck-Stonewall WQMP Regulation Note (10) as it Applies to the Exchange Compliance Plan:

Under the Water Quality Management Planning Regulation (9VAC 25-720-50.C) and Watershed General Permit Registration List for the Potomac/Shenandoah River Basin, the Merck-Stonewall facility's WLAs are as follows:

Discharged TN WLA: 43,835 lbs/yr

Discharged TP WLA: 4,384 lbs/yr

The Discharged WLAs stated above are subject to the following conditions in the Water Quality Management Planning Regulation (9VAC 25-720-50.C):

(10) Merck-Stonewall – (a) these waste load allocations will be subject to further consideration, consistent with the Chesapeake Bay TMDL, as it may be amended, and possible reduction upon "full-scale" results showing the optimal treatment capability of the 4-stage Bardenpho technology at this facility consistent with the level of effort by other dischargers in the region. The "full scale" evaluation will be completed by December 31, 2011, and the results submitted to DEQ for review and subsequent board action; (b) in any year when credits are available after all other exchanges within the Shenandoah-Potomac River Basin are completed in accordance with § 62.1-44.19:18 of the Code of Virginia, Merck shall acquire credits for total nitrogen discharged in excess of 14,619 lbs/yr and total phosphorus discharged in excess of 1,096 lbs/yr; and (c) the allocations are not transferable and compliance credits are only generated if discharged loads are less than the loads identified in clause (b).

Note that the WLAs stated in Note (10) are expressed as Discharged WLAs. Consistent with Note (10) clauses (b) and (c), the Watershed General Permit and manner in which the Exchange Trading Model is designed, this Exchange Compliance Plan is prepared and presented based on the following Delivered WLAs derived using the applicable Delivery Factors ("DF"):

Delivered TN WLA: 4,824 lbs/yr (0.33 DF for Compliance Years 2016 to 2020)

Delivered TN WLA: 3,216 lbs/yr (0.22 DF for Compliance Year 2021 and beyond)

Delivered TP WLA: 592 lbs/yr (0.54 DF for Compliance Years 2016 to 2020)

Delivered TP WLA: 515 lbs/yr (0.47 DF for Compliance Year 2021 and beyond)

This description neither creates nor implies any limitation on Merck's use of its full WLAs in the manner authorized under Note (10).

NITROGEN FACILITY SUMMARY

MillerCoors LLC

POTOMAC Trading Basin



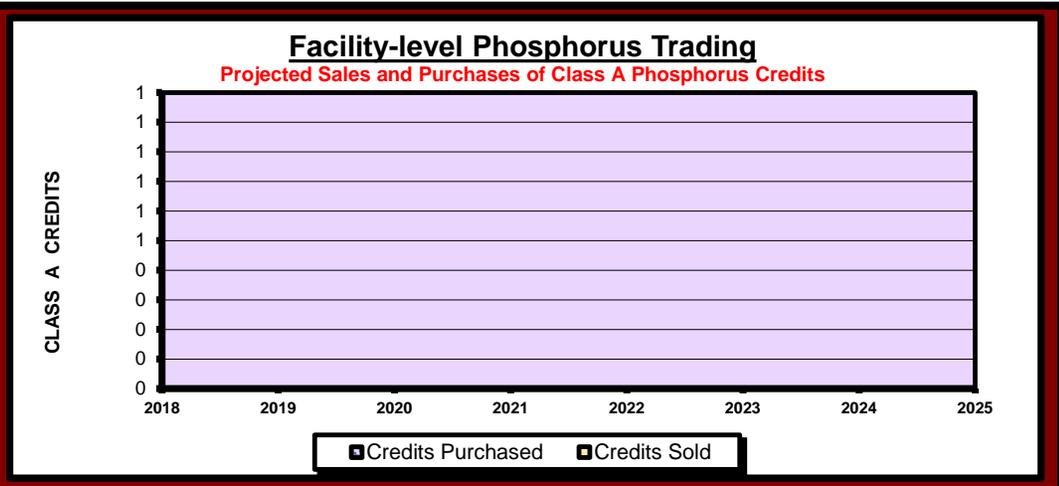
Loading & Credit Summary

Design Flow (mgd)	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Projected Flow (mgd)	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	54,820							
Delivery Factor	0.33	0.33	0.33	0.22	0.22	0.22	0.22	0.22
Expected Load	18,091	18,091	18,091	12,060	12,060	12,060	12,060	12,060
Delivered WLA	18,091	18,091	18,091	12,060	12,060	12,060	12,060	12,060
Expected Credits (delivered)	0							
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	0							
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	0							

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
54,820	54,820	54,820	54,820	54,820	54,820	54,820	54,820
0.33	0.33	0.33	0.22	0.22	0.22	0.22	0.22
18,091	18,091	18,091	12,060	12,060	12,060	12,060	12,060
18,091	18,091	18,091	12,060	12,060	12,060	12,060	12,060
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

MillerCoors LLC
POTOMAC Trading Basin

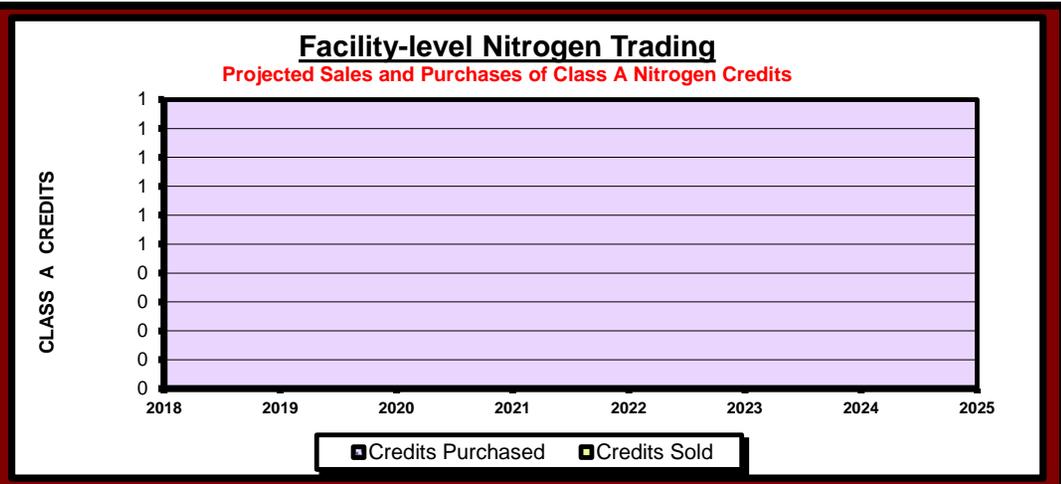


Loading & Credit Summary	
Design Flow (mgd)	4.50
Projected Flow (mgd)	4.50
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	4,112
Delivery Factor	0.54
Expected Load	2,220
Delivered WLA	2,220
Expected Credits (delivered)	0
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
4,112	4,112	4,112	4,112	4,112	4,112	4,112	4,112
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
2,220	2,220	2,220	1,932	1,932	1,932	1,932	1,932
2,220	2,220	2,220	1,933	1,933	1,933	1,933	1,933
0	0	0	1	1	1	1	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	1	1	1	1
0	0	0	0	0	0	0	0
0	0	0	1	1	1	1	1

NITROGEN FACILITY SUMMARY

Mt. Jackson
POTOMAC Trading Basin



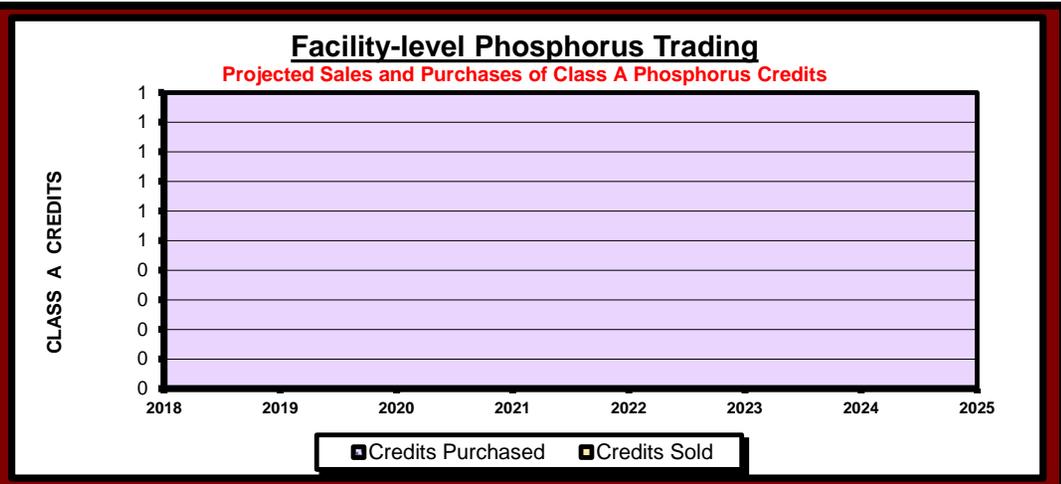
Loading & Credit Summary

Design Flow (mgd)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Projected Flow (mgd)	0.54	0.54	0.55	0.55	0.56	0.57	0.58	0.59
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	6,578	6,578	6,700	6,700	6,822	6,944	7,066	7,188
Delivery Factor	0.34	0.34	0.34	0.25	0.25	0.25	0.25	0.25
Expected Load	2,237	2,237	2,278	1,675	1,706	1,736	1,766	1,797
Delivered WLA	2,900	2,900	2,900	2,132	2,132	2,132	2,132	2,132
Expected Credits (delivered)	663	663	622	457	426	396	366	335
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	663	663	622	457	426	396	366	335
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	663	663	622	457	426	396	366	335

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
0.54	0.54	0.55	0.55	0.56	0.57	0.58	0.59
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
6,578	6,578	6,700	6,700	6,822	6,944	7,066	7,188
0.34	0.34	0.34	0.25	0.25	0.25	0.25	0.25
2,237	2,237	2,278	1,675	1,706	1,736	1,766	1,797
2,900	2,900	2,900	2,132	2,132	2,132	2,132	2,132
663	663	622	457	426	396	366	335
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
663	663	622	457	426	396	366	335
0	0	0	0	0	0	0	0
663	663	622	457	426	396	366	335

PHOSPHORUS FACILITY SUMMARY

Mt. Jackson
POTOMAC Trading Basin



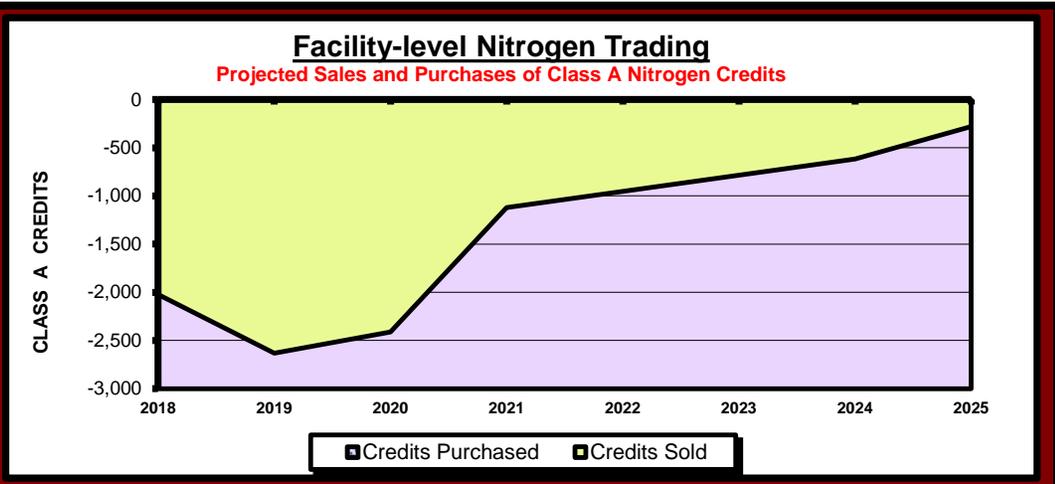
Loading & Credit Summary

Design Flow (mgd)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Projected Flow (mgd)	0.54	0.54	0.55	0.55	0.56	0.57	0.58	0.59
Projected Avg. Annual Concentration (mg/L)	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	329	329	335	335	512	521	530	539
Delivery Factor	0.53	0.53	0.53	0.47	0.47	0.47	0.47	0.47
Expected Load	174	174	178	157	240	245	249	253
Delivered WLA	339	339	339	301	301	301	301	301
Expected Credits (delivered)	165	165	161	144	61	56	52	48
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	165	165	161	144	61	56	52	48
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	165	165	161	144	61	56	52	48

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
0.54	0.54	0.55	0.55	0.56	0.57	0.58	0.59
0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
329	329	335	335	512	521	530	539
0.53	0.53	0.53	0.47	0.47	0.47	0.47	0.47
174	174	178	157	240	245	249	253
339	339	339	301	301	301	301	301
165	165	161	144	61	56	52	48
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
165	165	161	144	61	56	52	48
0	0	0	0	0	0	0	0
165	165	161	144	61	56	52	48

NITROGEN FACILITY SUMMARY

Purcellville
 POTOMAC Trading Basin



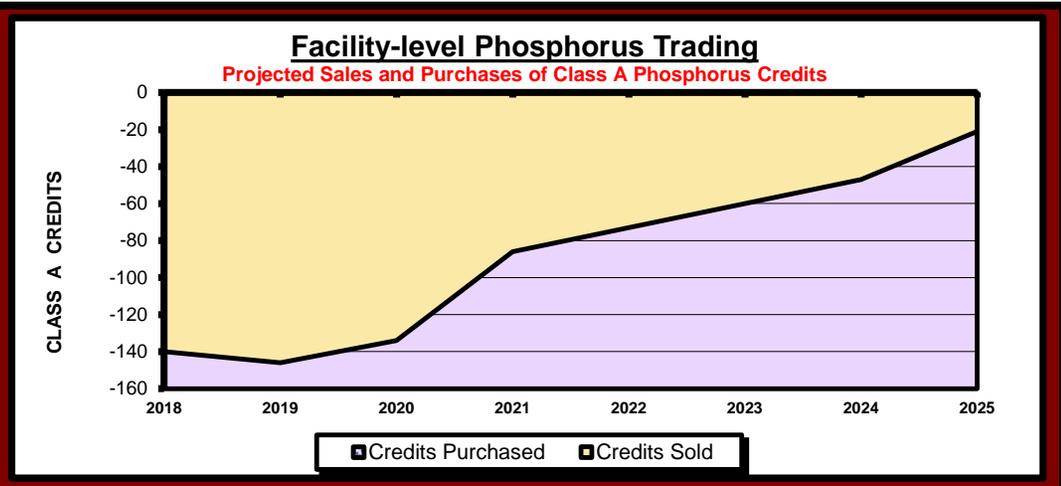
Loading & Credit Summary

Design Flow (mgd)	1.50
Projected Flow (mgd)	1.10
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	13,400
Delivery Factor	0.72
Expected Load	9,648
Delivered WLA	13,157
Expected Credits (delivered)	3,509
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	3,509
Class A Credit Sales (Purchases)	2,023
Expected Class B Credits	1,486

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
1.10	0.90	0.95	1.10	1.16	1.22	1.28	1.40
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
13,400	10,964	11,573	13,400	14,131	14,862	15,593	17,055
0.72	0.72	0.72	0.46	0.46	0.46	0.46	0.46
9,648	7,894	8,333	6,164	6,500	6,837	7,173	7,845
13,157	13,157	13,157	8,406	8,406	8,406	8,406	8,406
3,509	5,263	4,824	2,242	1,906	1,569	1,233	561
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3,509	5,263	4,824	2,242	1,906	1,569	1,233	561
2,023	2,632	2,412	1,121	953	785	617	280
1,486	2,631	2,412	1,121	953	784	616	281

PHOSPHORUS FACILITY SUMMARY

Purcellville
<i>POTOMAC Trading Basin</i>

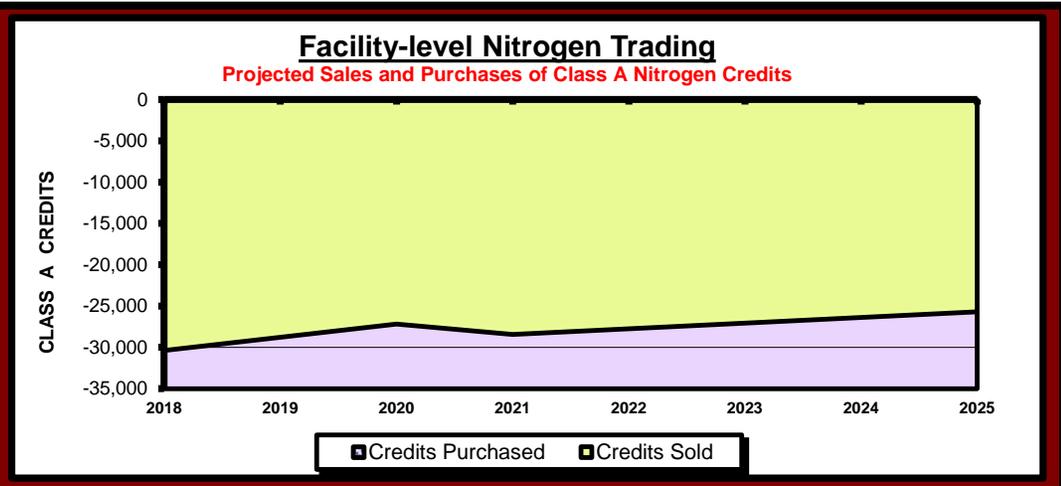


Loading & Credit Summary
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025	
Planning Period					Future Estimates (non-binding)			
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	
1.10	0.90	0.95	1.10	1.16	1.22	1.28	1.40	
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	
1,005	822	868	1,005	1,060	1,115	1,169	1,279	
0.53	0.53	0.53	0.47	0.47	0.47	0.47	0.47	
533	436	460	472	498	524	550	601	
727	727	727	644	644	644	644	644	
194	291	267	172	146	120	94	43	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
194	291	267	172	146	120	94	43	
140	146	134	86	73	60	47	21	
54	145	133	86	73	60	47	22	

NITROGEN FACILITY SUMMARY

PWCSA-HL Mooney
POTOMAC Trading Basin

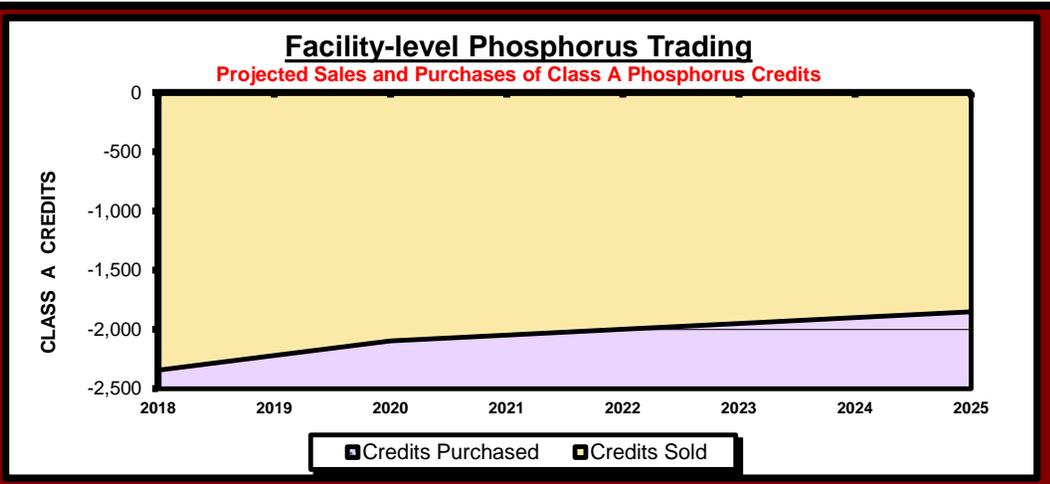


Loading & Credit Summary	
Design Flow (mgd)	24.00
Projected Flow (mgd)	19.25
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	175,881
Delivery Factor	1.00
Expected Load	175,881
Delivered WLA	219,280
Expected Credits (delivered)	43,399
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	43,399
Class A Credit Sales (Purchases)	30,379
Expected Class B Credits	13,020

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
19.25	19.50	19.75	19.85	19.95	20.05	20.15	20.25
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
175,881	178,165	180,449	181,363	182,277	183,190	184,104	185,018
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
175,881	178,165	180,449	181,363	182,277	183,190	184,104	185,018
219,280	219,280	219,280	219,280	219,280	219,280	219,280	219,280
43,399	41,115	38,831	37,917	37,003	36,090	35,176	34,262
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
43,399	41,115	38,831	37,917	37,003	36,090	35,176	34,262
30,379	28,781	27,182	28,438	27,752	27,068	26,382	25,697
13,020	12,334	11,649	9,479	9,251	9,022	8,794	8,565

PHOSPHORUS FACILITY SUMMARY

PWCSA-HL Mooney
POTOMAC Trading Basin



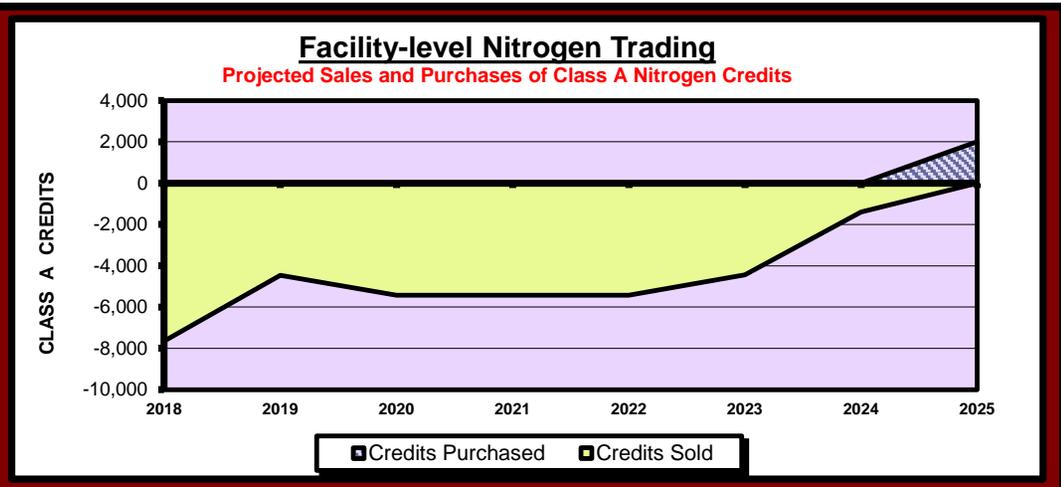
Loading & Credit Summary

Design Flow (mgd)	24.00
Projected Flow (mgd)	19.25
Projected Avg. Annual Concentration (mg/L)	0.18
Discharged Load (end of pipe)	10,553
Delivery Factor	1.00
Expected Load	10,553
Delivered WLA	13,157
Expected Credits (delivered)	2,604
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	2,604
Class A Credit Sales (Purchases)	2,344
Expected Class B Credits	260

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
19.25	19.50	19.75	19.85	19.95	20.05	20.15	20.25
0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
10,553	10,690	10,827	10,882	10,937	10,991	11,046	11,101
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10,553	10,690	10,827	10,882	10,937	10,991	11,046	11,101
13,157	13,157	13,157	13,157	13,157	13,157	13,157	13,157
2,604	2,467	2,330	2,275	2,220	2,166	2,111	2,056
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,604	2,467	2,330	2,275	2,220	2,166	2,111	2,056
2,344	2,220	2,097	2,048	1,998	1,950	1,900	1,851
260	247	233	227	222	216	211	205

NITROGEN FACILITY SUMMARY

Stafford Co-Aquia
POTOMAC Trading Basin

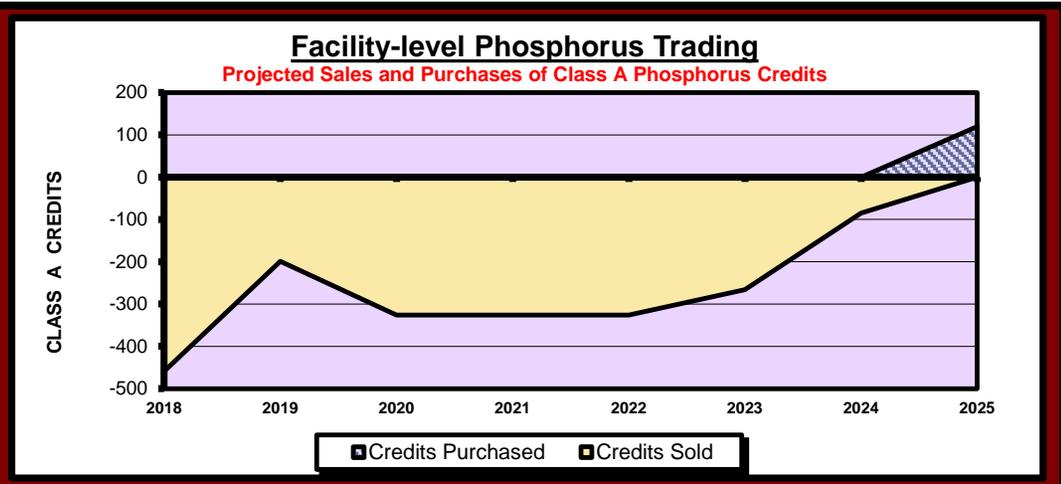


Loading & Credit Summary	
Design Flow (mgd)	8.00
Projected Flow (mgd)	7.07
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	64,596
Delivery Factor	1.00
Expected Load	64,596
Delivered WLA	73,093
Expected Credits (delivered)	8,497
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	8,497
Class A Credit Sales (Purchases)	7,647
Expected Class B Credits	850

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
7.07	7.34	7.34	7.34	7.34	7.46	7.83	8.22
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
64,596	67,063	67,063	67,063	67,063	68,160	71,540	75,104
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
64,596	67,063	67,063	67,063	67,063	68,160	71,540	75,104
73,093	73,093	73,093	73,093	73,093	73,093	73,093	73,093
8,497	6,030	6,030	6,030	6,030	4,933	1,553	(2,011)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
8,497	6,030	6,030	6,030	6,030	4,933	1,553	(2,011)
7,647	4,462	5,427	5,427	5,427	4,440	1,398	(2,011)
850	1,568	603	603	603	493	155	0

PHOSPHORUS FACILITY SUMMARY

Stafford Co-Aquia
POTOMAC Trading Basin



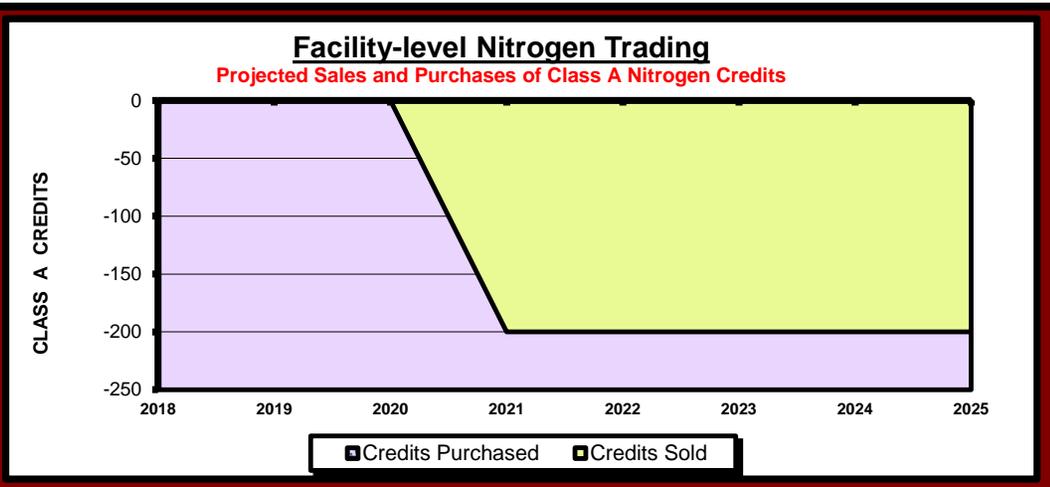
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
7.07	7.34	7.34	7.34	7.34	7.46	7.83	8.22
0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
3,876	4,024	4,024	4,024	4,024	4,090	4,292	4,506
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3,876	4,024	4,024	4,024	4,024	4,090	4,292	4,506
4,386	4,386	4,386	4,386	4,386	4,386	4,386	4,386
510	362	362	362	362	296	94	(120)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
510	362	362	362	362	296	94	(120)
459	199	326	326	326	266	85	(120)
51	163	36	36	36	30	9	0

NITROGEN FACILITY SUMMARY

Stoney Creek
 POTOMAC Trading Basin



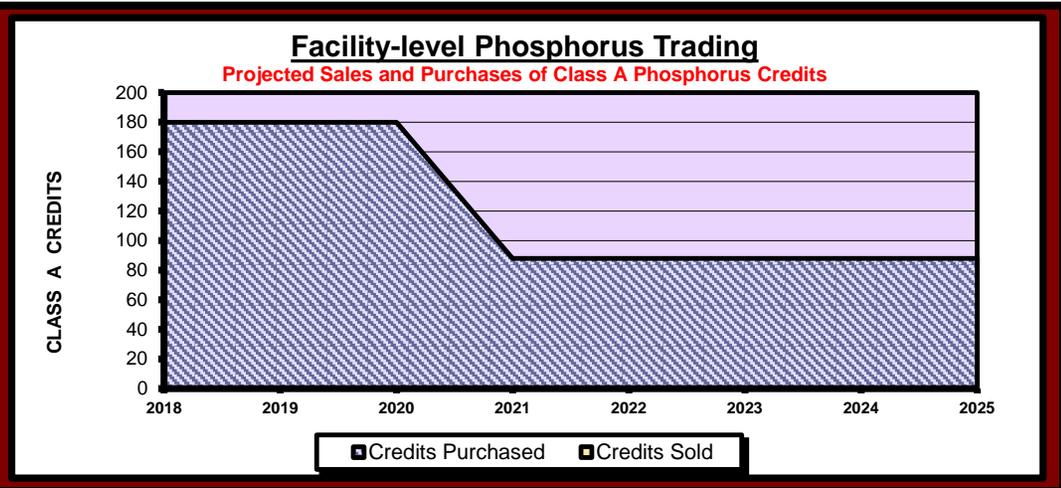
Loading & Credit Summary	
Design Flow (mgd)	0.60
Projected Flow (mgd)	0.33
Projected Avg. Annual Concentration (mg/L)	8.00
Discharged Load (end of pipe)	8,040
Delivery Factor	0.35
Expected Load	2,814
Delivered WLA*	2,891
Expected Credits (delivered)	77
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	77
Class A Credit Sales (Purchases)	0
Expected Class B Credits	77

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
0.33	0.33	0.33	0.35	0.35	0.35	0.35	0.35
8.00	8.00	8.00	7.00	7.00	7.00	7.00	7.00
8,040	8,040	8,040	7,462	7,462	7,462	7,462	7,462
0.35	0.35	0.35	0.25	0.25	0.25	0.25	0.25
2,814	2,814	2,814	1,865	1,865	1,865	1,865	1,865
2,891	2,891	2,891	2,065	2,065	2,065	2,065	2,065
77	77	77	200	200	200	200	200
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
77	77	77	200	200	200	200	200
0	0	0	200	200	200	200	200
77	77	77	0	0	0	0	0

* Reflects consolidation of the Shrine Mont STP wasteload allocation

PHOSPHORUS FACILITY SUMMARY

Stoney Creek
POTOMAC Trading Basin



Loading & Credit Summary

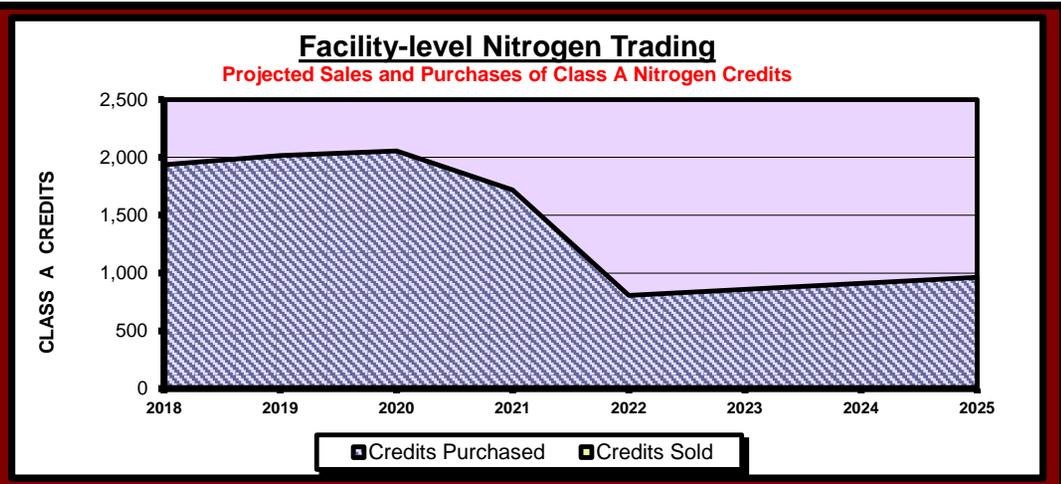
Design Flow (mgd)	0.60
Projected Flow (mgd)	0.33
Projected Avg. Annual Concentration (mg/L)	1.00
Discharged Load (end of pipe)	1,005
Delivery Factor	0.53
Expected Load	533
Delivered WLA*	354
Expected Credits (delivered)	(179)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(179)
Class A Credit Sales (Purchases)	(180)
Expected Class B Credits	1

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.33	0.33	0.33	0.35	0.35	0.35	0.35	0.35
Projected Avg. Annual Concentration (mg/L)	1.00	1.00	1.00	0.80	0.80	0.80	0.80	0.80
Discharged Load (end of pipe)	1,005	1,005	1,005	853	853	853	853	853
Delivery Factor	0.53	0.53	0.53	0.47	0.47	0.47	0.47	0.47
Expected Load	533	533	533	401	401	401	401	401
Delivered WLA*	354	354	354	313	313	313	313	313
Expected Credits (delivered)	(179)	(179)	(179)	(88)	(88)	(88)	(88)	(88)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(179)	(179)	(179)	(88)	(88)	(88)	(88)	(88)
Class A Credit Sales (Purchases)	(180)	(180)	(180)	(88)	(88)	(88)	(88)	(88)
Expected Class B Credits	1	1	1	0	0	0	0	0

* Reflects consolidation of the Shrine Mont STP wasteload allocation

NITROGEN FACILITY SUMMARY

Strasburg
<i>POTOMAC Trading Basin</i>



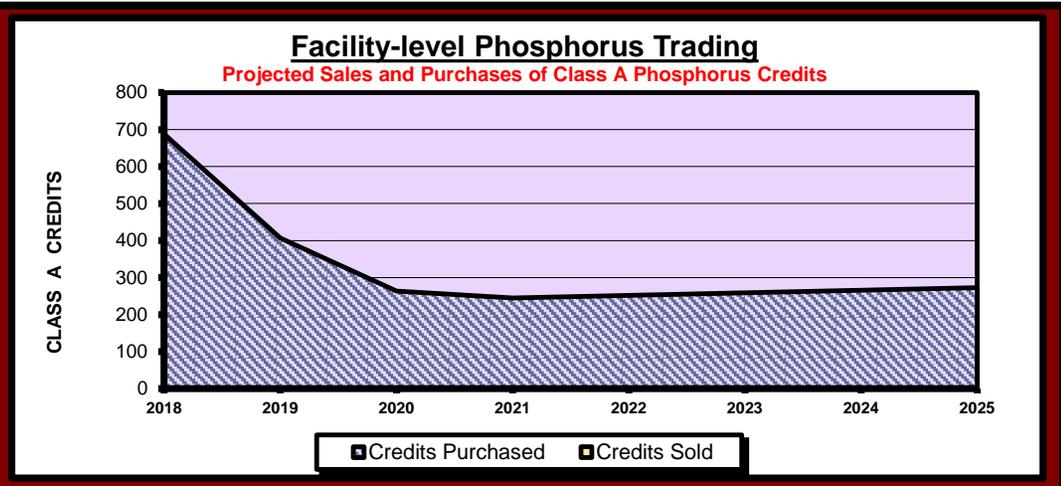
Loading & Credit Summary

Design Flow (mgd)	2.00
Projected Flow (mgd)	0.90
Projected Avg. Annual Concentration (mg/L)	6.00
Discharged Load (end of pipe)	16,446
Delivery Factor	0.43
Expected Load	7,072
Delivered WLA	5,134
Expected Credits (delivered)	(1,938)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(1,938)
Class A Credit Sales (Purchases)	(1,938)
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97
6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
16,446	16,629	16,720	16,994	14,314	14,466	14,619	14,771
0.43	0.43	0.43	0.34	0.34	0.34	0.34	0.34
7,072	7,150	7,190	5,778	4,867	4,919	4,970	5,022
5,134	5,134	5,134	4,059	4,059	4,059	4,059	4,059
(1,938)	(2,016)	(2,056)	(1,719)	(808)	(860)	(911)	(963)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(1,938)	(2,016)	(2,056)	(1,719)	(808)	(860)	(911)	(963)
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Strasburg
<i>POTOMAC Trading Basin</i>



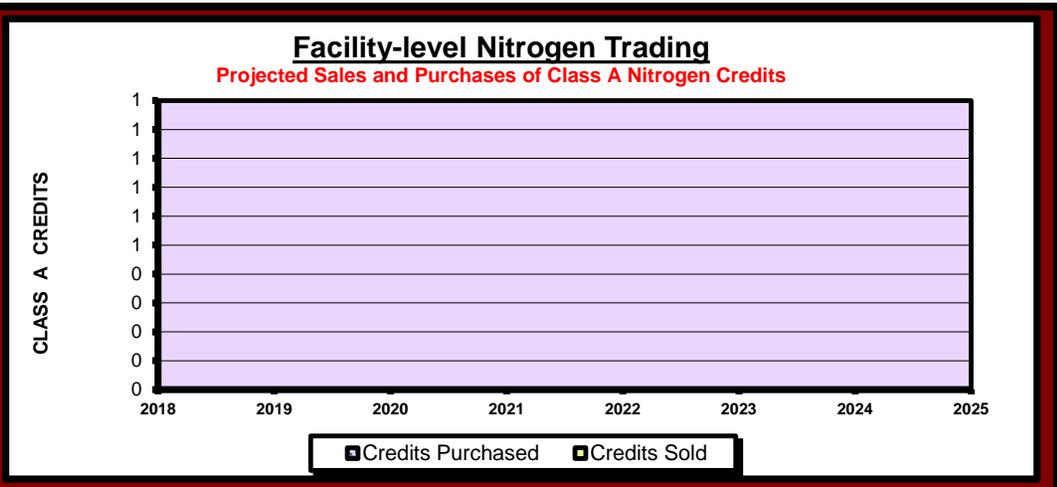
Loading & Credit Summary	
Design Flow (mgd)	
Design Flow (mgd)	2.00
Projected Flow (mgd)	0.90
Projected Avg. Annual Concentration (mg/L)	0.80
Discharged Load (end of pipe)	
Discharged Load (end of pipe)	2,193
Delivery Factor	0.53
Expected Load	1,162
Delivered WLA	474
Expected Credits (delivered)	
Expected Credits (delivered)	(688)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	
Expected Net Credits	(688)
Class A Credit Sales (Purchases)	
Class A Credit Sales (Purchases)	(688)
Expected Class B Credits	
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97
0.80	0.60	0.50	0.50	0.50	0.50	0.50	0.50
2,193	1,663	1,393	1,416	1,431	1,447	1,462	1,477
0.53	0.53	0.53	0.47	0.47	0.47	0.47	0.47
1,162	881	738	666	673	680	687	694
474	474	474	421	421	421	421	421
(688)	(407)	(264)	(245)	(252)	(259)	(266)	(273)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(688)	(407)	(264)	(245)	(252)	(259)	(266)	(273)
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

UOSA

POTOMAC Trading Basin



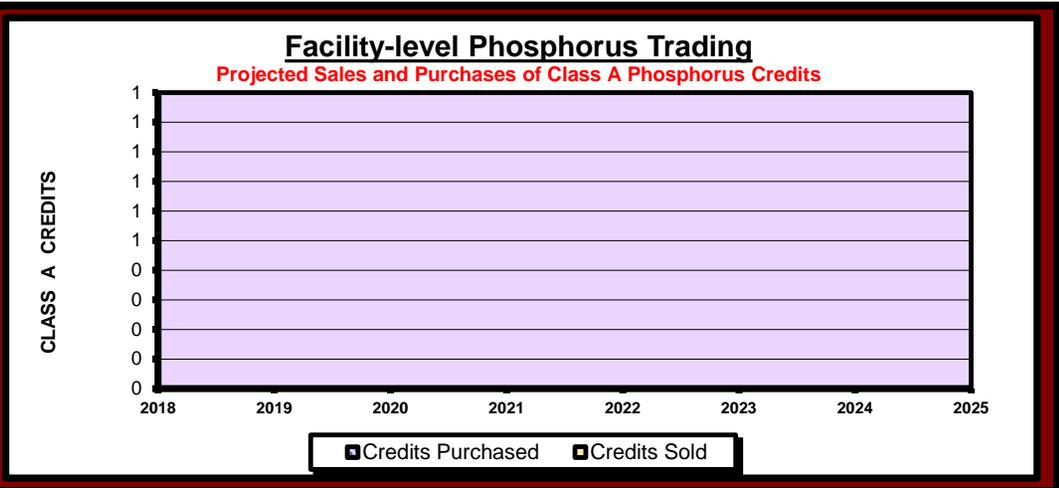
Loading & Credit Summary	
Design Flow (mgd)	54.00
Projected Flow (mgd)	34.54
Projected Avg. Annual Concentration (mg/L)	12.10
Discharged Load (end of pipe)	1,272,843
Delivery Factor	0.23
Expected Load	292,754
Delivered WLA	302,607
Expected Credits (delivered)	9,853
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	9,853
Class A Credit Sales (Purchases)	0
Expected Class B Credits	9,853

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
34.54	35.25	35.76	36.13	34.27	34.55	34.83	35.11
12.10	12.15	11.94	11.95	12.60	12.50	12.40	12.30
1,272,843	1,304,375	1,300,376	1,314,931	1,315,079	1,315,301	1,315,353	1,315,234
0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
292,754	300,006	299,087	302,434	302,468	302,519	302,531	302,504
302,607	302,607	302,607	302,607	302,607	302,607	302,607	302,607
9,853	2,601	3,520	173	139	88	76	103
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
9,853	2,601	3,520	173	139	88	76	103
0	0	0	0	0	0	0	0
9,853	2,601	3,520	173	139	88	76	103

PHOSPHORUS FACILITY SUMMARY

UOSA

POTOMAC Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
34.54	35.25	35.76	36.13	34.27	34.55	34.83	35.11
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
10,519	10,736	10,891	11,004	10,437	10,522	10,608	10,693
0.30	0.30	0.30	0.31	0.31	0.31	0.31	0.31
3,156	3,221	3,267	3,411	3,236	3,262	3,288	3,315
4,934	4,934	4,934	5,098	5,098	5,098	5,098	5,098
1,778	1,713	1,667	1,687	1,862	1,836	1,810	1,783
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,778	1,713	1,667	1,687	1,862	1,836	1,810	1,783
0	0	0	0	0	0	0	0
1,778	1,713	1,667	1,687	1,862	1,836	1,810	1,783

Owner Bubble: Virginia American Water, Prince William District

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

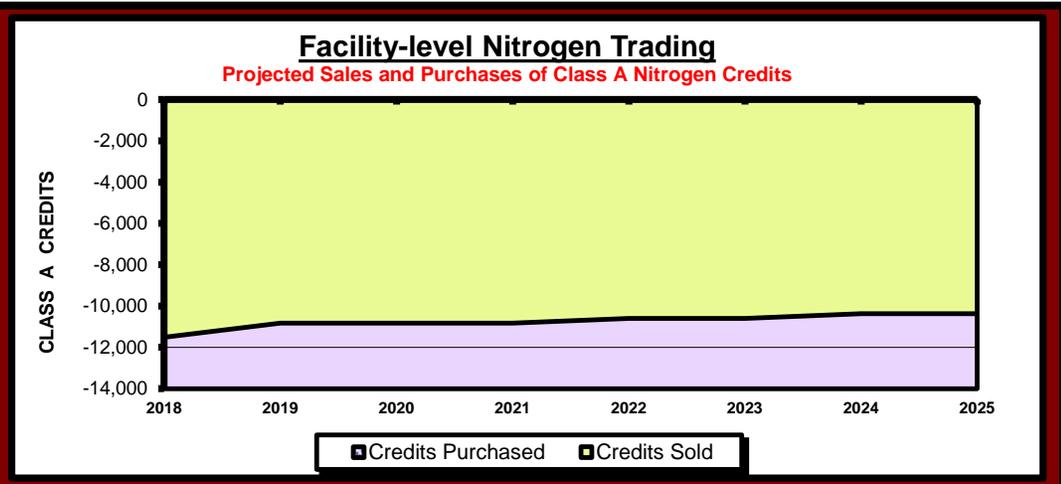
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
VA Am. Water PW Sec. 1	-	-	-	-	-	-	-	-
VA Am. Water PW Sec. 8	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
VA Am. Water PW Sec. 1	19,187	18,045	18,045	18,045	17,665	17,665	17,284	17,284
VA Am. Water PW Sec. 8	19,187	18,045	18,045	18,045	17,665	17,665	17,284	17,284
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	38,374	36,090	36,090	36,090	35,330	35,330	34,568	34,568
Class A Sales (Purchases)	23,024	21,654	21,654	21,654	21,198	21,198	20,740	20,740
<i>Expected Class B Credits</i>	15,350	14,436	14,436	14,436	14,132	14,132	13,828	13,828
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
VA Am. Water PW Sec. 1	-	-	-	-	-	-	-	-
VA Am. Water PW Sec. 8	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
VA Am. Water PW Sec. 1	1,151	1,083	1,083	1,083	1,060	1,060	1,037	1,037
VA Am. Water PW Sec. 8	1,151	1,083	1,083	1,083	1,060	1,060	1,037	1,037
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	2,302	2,166	2,166	2,166	2,120	2,120	2,074	2,074
Class A Sales (Purchases)	1,382	1,300	1,300	1,300	1,272	1,272	1,272	1,272
<i>Expected Class B Credits</i>	920	866	866	866	848	848	802	802
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

VA Am. Water PW Sec. 1
<i>POTOMAC Trading Basin</i>

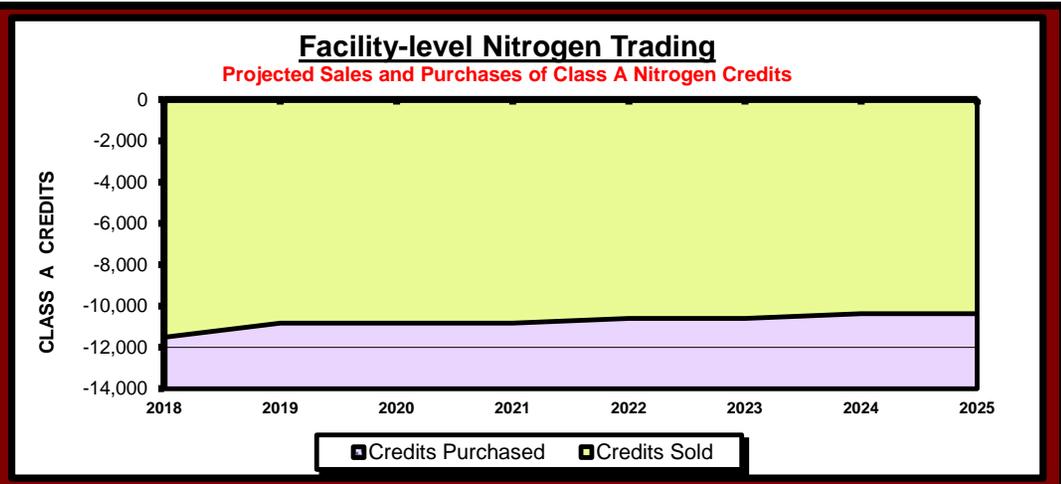


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
3.00	3.15	3.15	3.15	3.20	3.20	3.25	3.25
2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
22,842	23,984	23,984	23,984	24,364	24,364	24,745	24,745
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22,842	23,984	23,984	23,984	24,364	24,364	24,745	24,745
42,029	42,029	42,029	42,029	42,029	42,029	42,029	42,029
19,187	18,045	18,045	18,045	17,665	17,665	17,284	17,284
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
19,187	18,045	18,045	18,045	17,665	17,665	17,284	17,284
11,512	10,827	10,827	10,827	10,599	10,599	10,370	10,370
7,675	7,218	7,218	7,218	7,066	7,066	6,914	6,914

NITROGEN FACILITY SUMMARY

VA Am. Water PW Sec. 8
POTOMAC Trading Basin



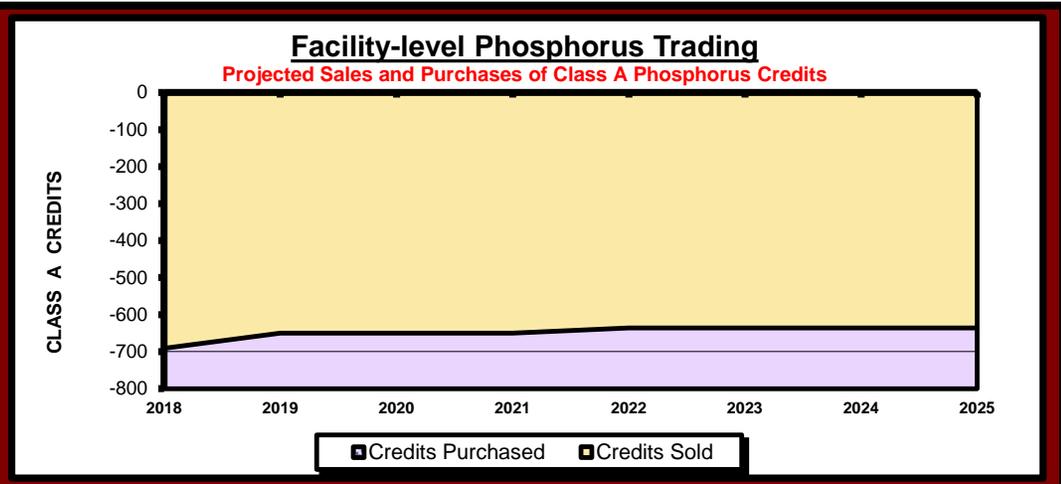
Loading & Credit Summary

Design Flow (mgd)	4.60
Projected Flow (mgd)	3.00
Projected Avg. Annual Concentration (mg/L)	2.50
Discharged Load (end of pipe)	22,842
Delivery Factor	1.00
Expected Load	22,842
Delivered WLA	42,029
Expected Credits (delivered)	19,187
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	19,187
Class A Credit Sales (Purchases)	11,512
Expected Class B Credits	7,675

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
3.00	3.15	3.15	3.15	3.20	3.20	3.25	3.25
2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
22,842	23,984	23,984	23,984	24,364	24,364	24,745	24,745
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22,842	23,984	23,984	23,984	24,364	24,364	24,745	24,745
42,029	42,029	42,029	42,029	42,029	42,029	42,029	42,029
19,187	18,045	18,045	18,045	17,665	17,665	17,284	17,284
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
19,187	18,045	18,045	18,045	17,665	17,665	17,284	17,284
11,512	10,827	10,827	10,827	10,599	10,599	10,370	10,370
7,675	7,218	7,218	7,218	7,066	7,066	6,914	6,914

PHOSPHORUS FACILITY SUMMARY

VA Am. Water PW Sec. 1
<i>POTOMAC Trading Basin</i>



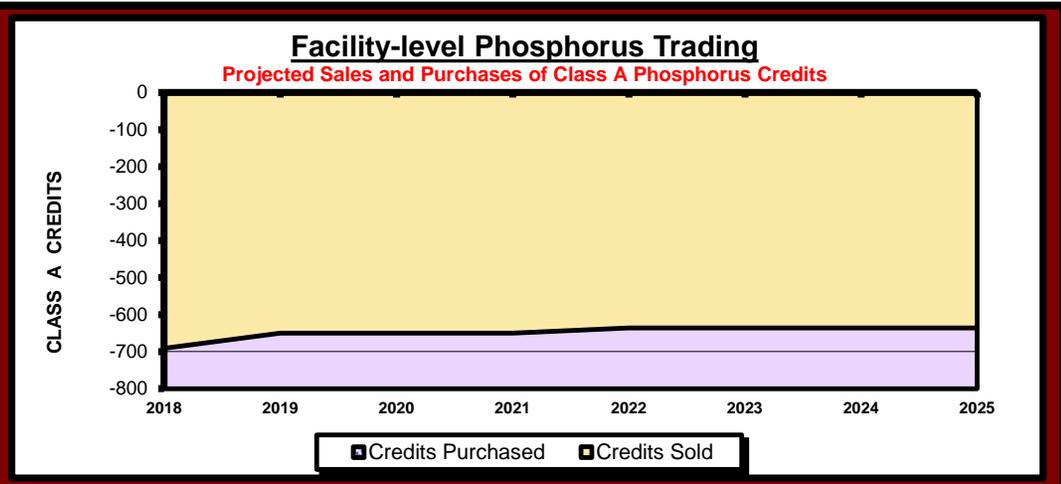
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
3.00	3.15	3.15	3.15	3.20	3.20	3.25	3.25
0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
1,371	1,439	1,439	1,439	1,462	1,462	1,485	1,485
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,371	1,439	1,439	1,439	1,462	1,462	1,485	1,485
2,522	2,522	2,522	2,522	2,522	2,522	2,522	2,522
1,151	1,083	1,083	1,083	1,060	1,060	1,037	1,037
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,151	1,083	1,083	1,083	1,060	1,060	1,037	1,037
691	650	650	650	636	636	636	636
460	433	433	433	424	424	401	401

PHOSPHORUS FACILITY SUMMARY

VA Am. Water PW Sec. 8
POTOMAC Trading Basin



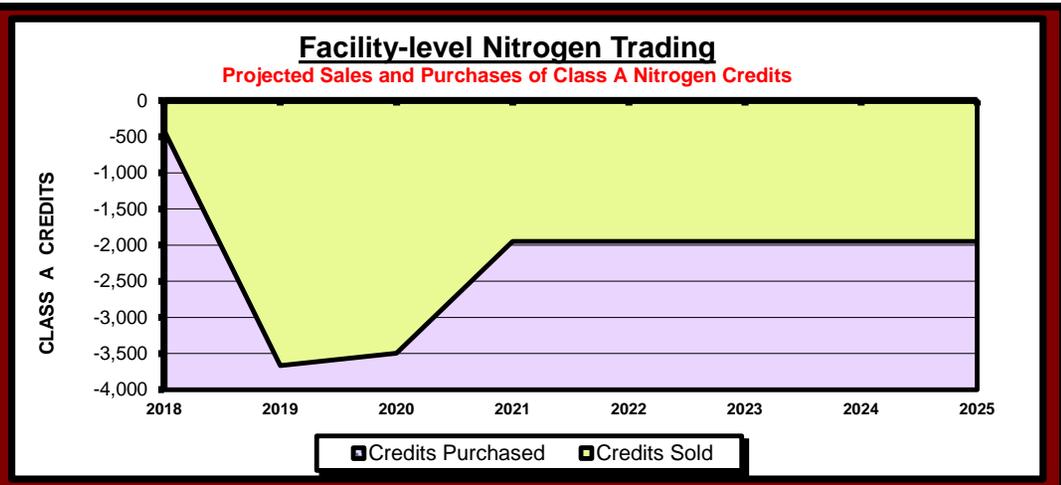
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
3.00	3.15	3.15	3.15	3.20	3.20	3.25	3.25
0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
1,371	1,439	1,439	1,439	1,462	1,462	1,485	1,485
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,371	1,439	1,439	1,439	1,462	1,462	1,485	1,485
2,522	2,522	2,522	2,522	2,522	2,522	2,522	2,522
1,151	1,083	1,083	1,083	1,060	1,060	1,037	1,037
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,151	1,083	1,083	1,083	1,060	1,060	1,037	1,037
691	650	650	650	636	636	636	636
460	433	433	433	424	424	401	401

NITROGEN FACILITY SUMMARY

Waynesboro
 POTOMAC Trading Basin

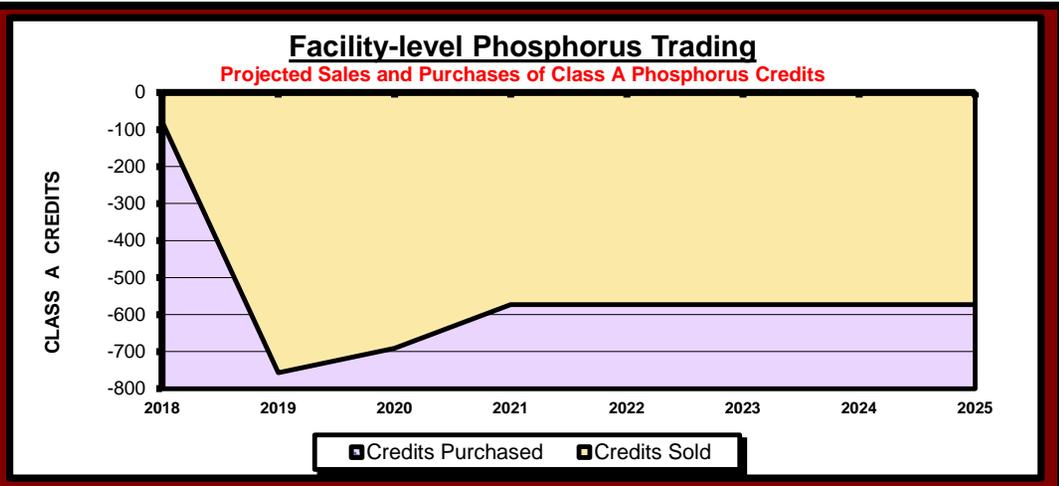


Loading & Credit Summary	
Design Flow (mgd)	6.00
Projected Flow (mgd)	3.50
Projected Avg. Annual Concentration (mg/L)	2.00
Discharged Load (end of pipe)	21,319
Delivery Factor	0.14
Expected Load	2,985
Delivered WLA	6,822
Expected Credits (delivered)	3,837
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	3,837
Class A Credit Sales (Purchases)	414
Expected Class B Credits	3,423

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
3.50	3.70	3.90	4.00	4.00	4.00	4.00	4.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
21,319	22,537	23,755	24,364	24,364	24,364	24,364	24,364
0.14	0.14	0.14	0.08	0.08	0.08	0.08	0.08
2,985	3,155	3,326	1,949	1,949	1,949	1,949	1,949
6,822	6,822	6,822	3,898	3,898	3,898	3,898	3,898
3,837	3,667	3,496	1,949	1,949	1,949	1,949	1,949
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3,837	3,667	3,496	1,949	1,949	1,949	1,949	1,949
414	3,667	3,496	1,949	1,949	1,949	1,949	1,949
3,423	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Waynesboro
POTOMAC Trading Basin



Loading & Credit Summary

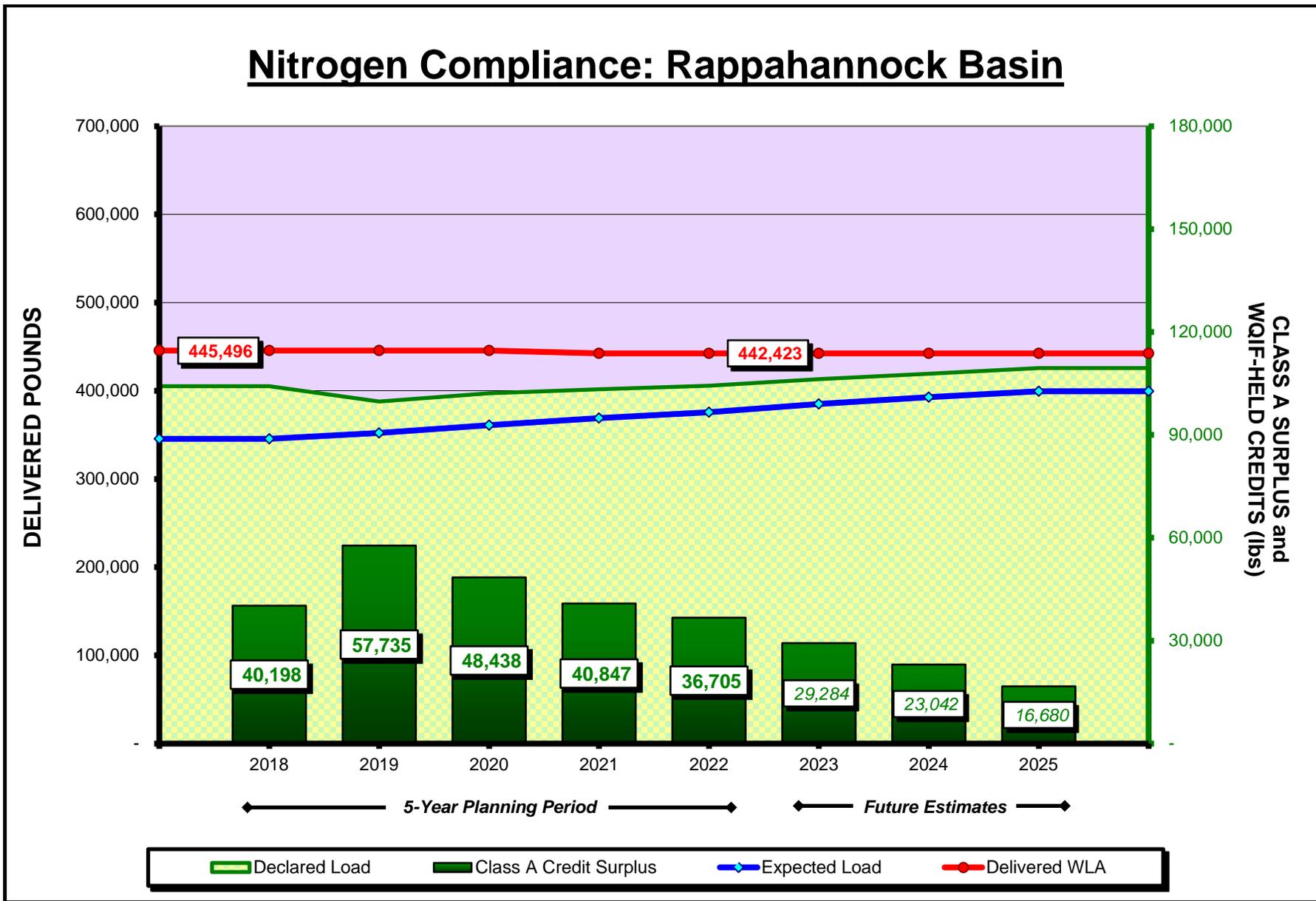
Design Flow (mgd)	6.00
Projected Flow (mgd)	3.50
Projected Avg. Annual Concentration (mg/L)	0.20
Discharged Load (end of pipe)	2,132
Delivery Factor	0.54
Expected Load	1,151
Delivered WLA	1,974
Expected Credits (delivered)	823
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	823
Class A Credit Sales (Purchases)	79
Expected Class B Credits	744

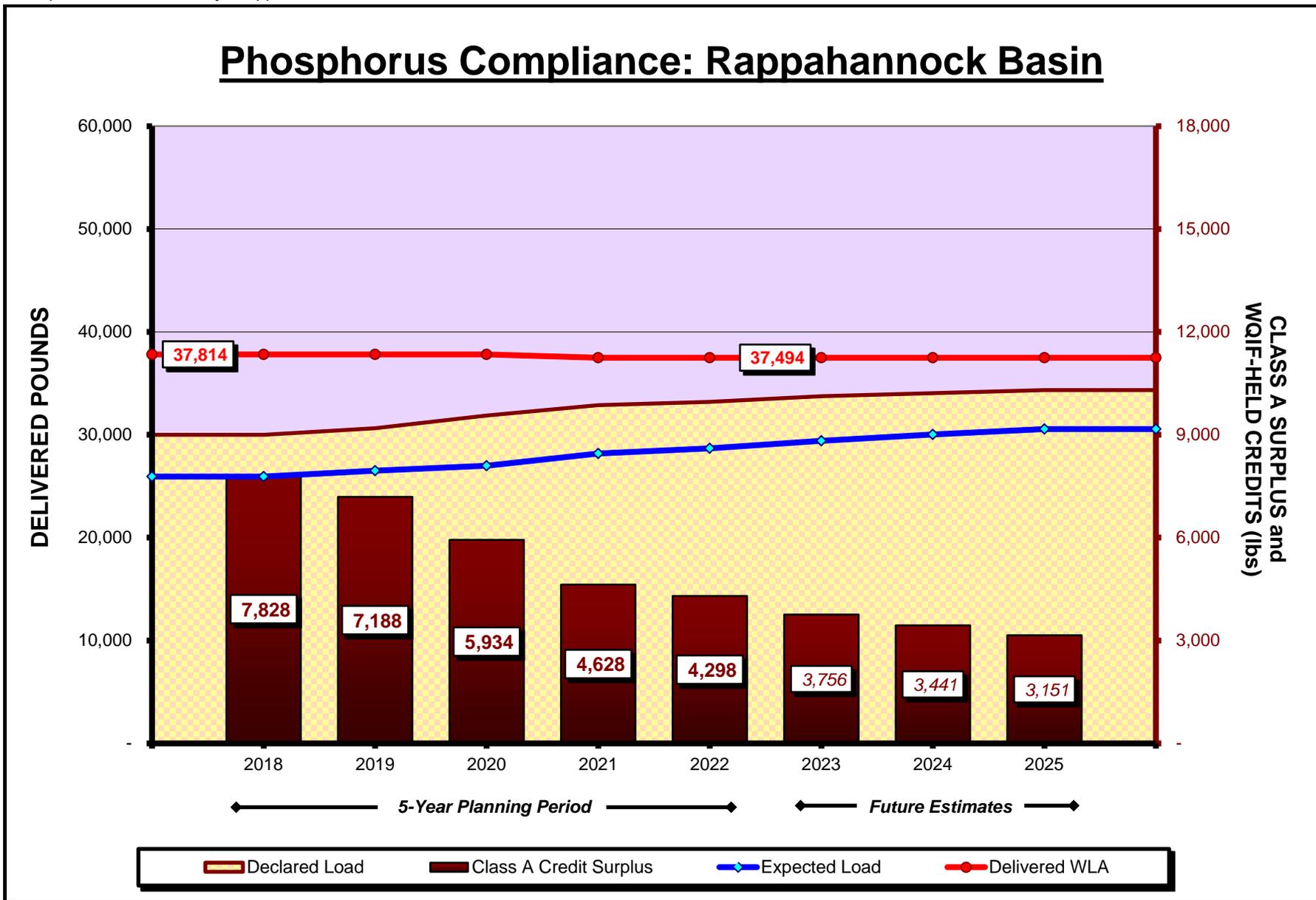
2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
3.50	3.70	3.90	4.00	4.00	4.00	4.00	4.00
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
2,132	2,254	2,376	2,436	2,436	2,436	2,436	2,436
0.54	0.54	0.54	0.47	0.47	0.47	0.47	0.47
1,151	1,217	1,283	1,145	1,145	1,145	1,145	1,145
1,974	1,974	1,974	1,718	1,718	1,718	1,718	1,718
823	757	691	573	573	573	573	573
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
823	757	691	573	573	573	573	573
79	757	691	573	573	573	573	573
744	0	0	0	0	0	0	0

SECTION 3

Rappahannock River Basin Exchange Compliance Plan







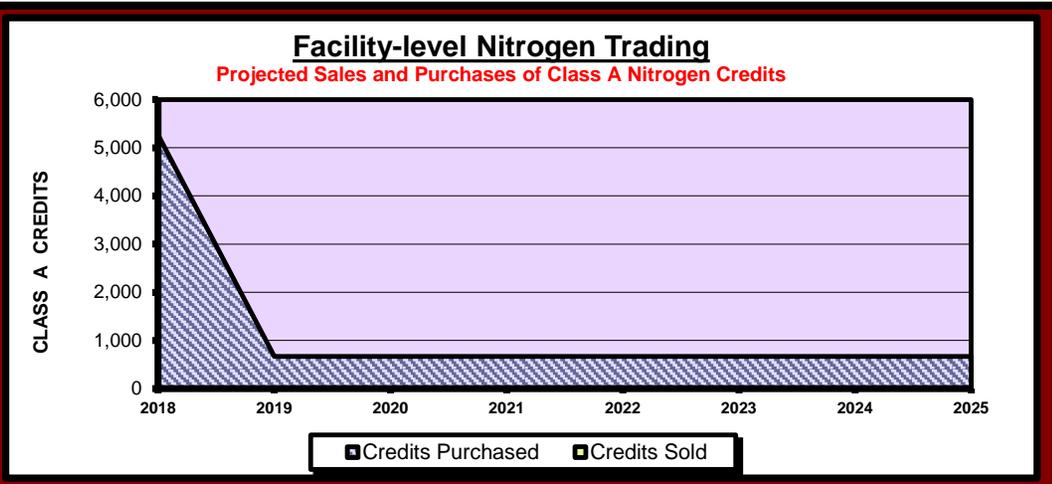
Rappahannock River Basin

Supplemental Information for Individual Facilities



NITROGEN FACILITY SUMMARY

American Water-Fort Hill
RAPPAHANNOCK Trading Basin



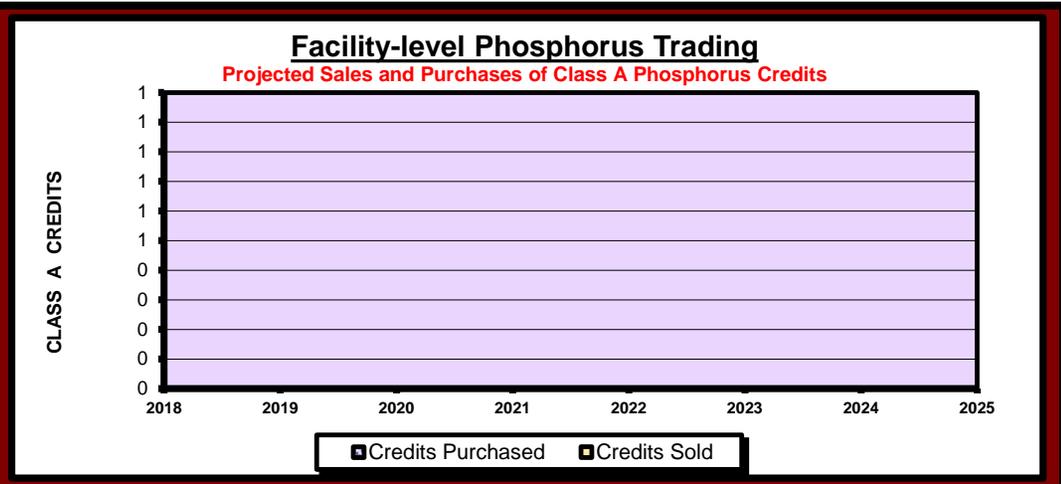
Loading & Credit Summary

Design Flow (mgd)	0.53
Projected Flow (mgd)	0.09
Projected Avg. Annual Concentration (mg/L)	26.00
Discharged Load (end of pipe)	7,127
Delivery Factor	1.00
Expected Load	7,127
Delivered WLA	6,457
Expected Credits (delivered)	(670)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(670)
Class A Credit Sales (Purchases)	(5,268)
Expected Class B Credits	4,598

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00
7,127	7,127	7,127	7,127	7,127	7,127	7,127	7,127
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
7,127	7,127	7,127	7,127	7,127	7,127	7,127	7,127
6,457	6,457	6,457	6,457	6,457	6,457	6,457	6,457
(670)	(670)	(670)	(670)	(670)	(670)	(670)	(670)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(670)	(670)	(670)	(670)	(670)	(670)	(670)	(670)
(5,268)	(670)	(670)	(670)	(670)	(670)	(670)	(670)
4,598	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

American Water-Fort Hill
RAPPAHANNOCK Trading Basin



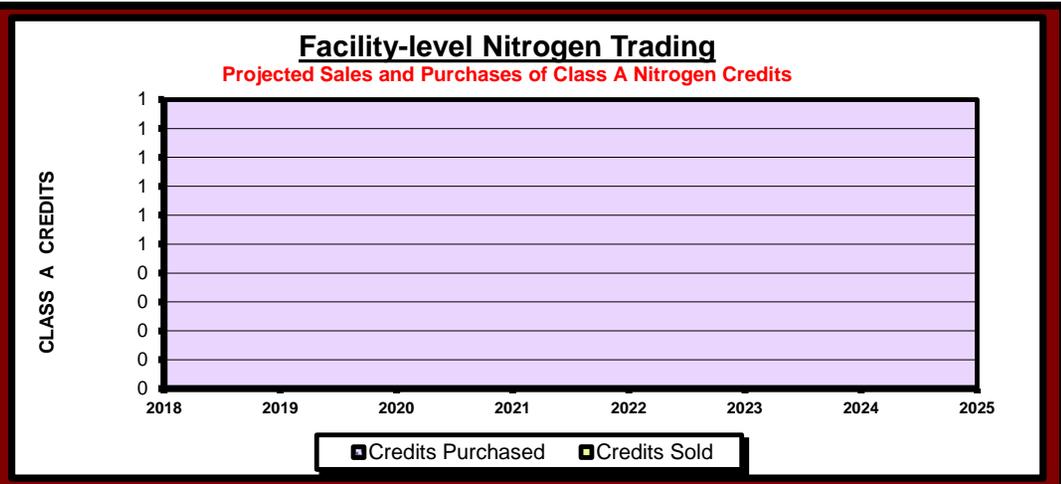
Loading & Credit Summary

Design Flow (mgd)	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Projected Flow (mgd)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Projected Avg. Annual Concentration (mg/L)	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
Discharged Load (end of pipe)	384							
Delivery Factor	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00
Expected Load	380	380	380	384	384	384	384	384
Delivered WLA	479	479	479	484	484	484	484	484
Expected Credits (delivered)	99	99	99	100	100	100	100	100
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	99	99	99	100	100	100	100	100
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	99	99	99	100	100	100	100	100

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
384	384	384	384	384	384	384	384
0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00
380	380	380	384	384	384	384	384
479	479	479	484	484	484	484	484
99	99	99	100	100	100	100	100
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
99	99	99	100	100	100	100	100
0	0	0	0	0	0	0	0
99	99	99	100	100	100	100	100

NITROGEN FACILITY SUMMARY

Aqua Virginia-Pres. Lakes
RAPPAHANNOCK Trading Basin



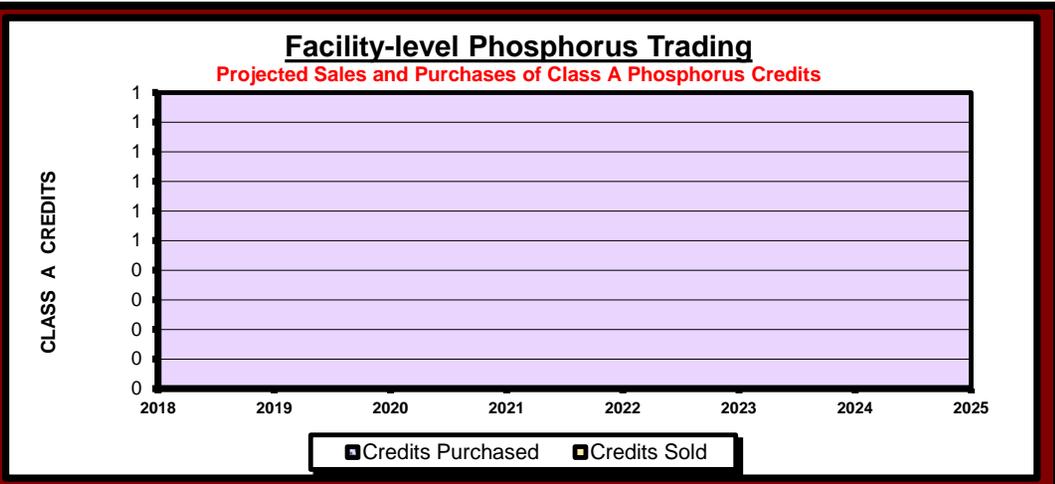
Loading & Credit Summary

Design Flow (mgd)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Projected Flow (mgd)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Projected Avg. Annual Concentration (mg/L)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Discharged Load (end of pipe)	1,267							
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,267	1,267	1,267	1,267	1,267	1,267	1,267	1,267
Delivered WLA	1,994	1,994	1,994	1,994	1,994	1,994	1,994	1,994
Expected Credits (delivered)	727							
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	727							
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	727							

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
1,267	1,267	1,267	1,267	1,267	1,267	1,267	1,267
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,267	1,267	1,267	1,267	1,267	1,267	1,267	1,267
1,994	1,994	1,994	1,994	1,994	1,994	1,994	1,994
727	727	727	727	727	727	727	727
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
727	727	727	727	727	727	727	727
0	0	0	0	0	0	0	0
727	727	727	727	727	727	727	727

PHOSPHORUS FACILITY SUMMARY

Aqua Virginia-Pres. Lakes
RAPPAHANNOCK Trading Basin

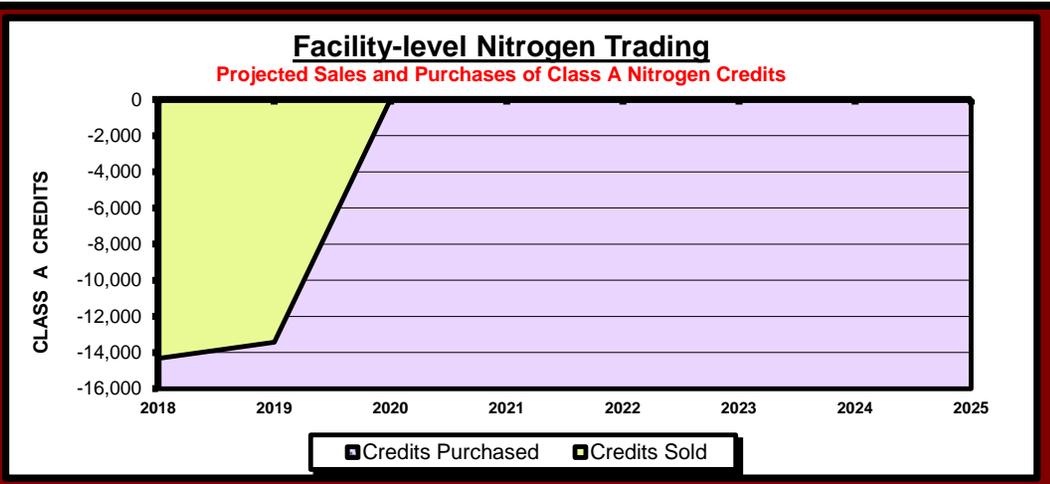


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
158	158	158	158	158	158	158	158
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
158	158	158	158	158	158	158	158
267	267	267	267	267	267	267	267
109	109	109	109	109	109	109	109
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
109	109	109	109	109	109	109	109
0	0	0	0	0	0	0	0
109	109	109	109	109	109	109	109

NITROGEN FACILITY SUMMARY

Culpeper (Town)
RAPPAHANNOCK Trading Basin



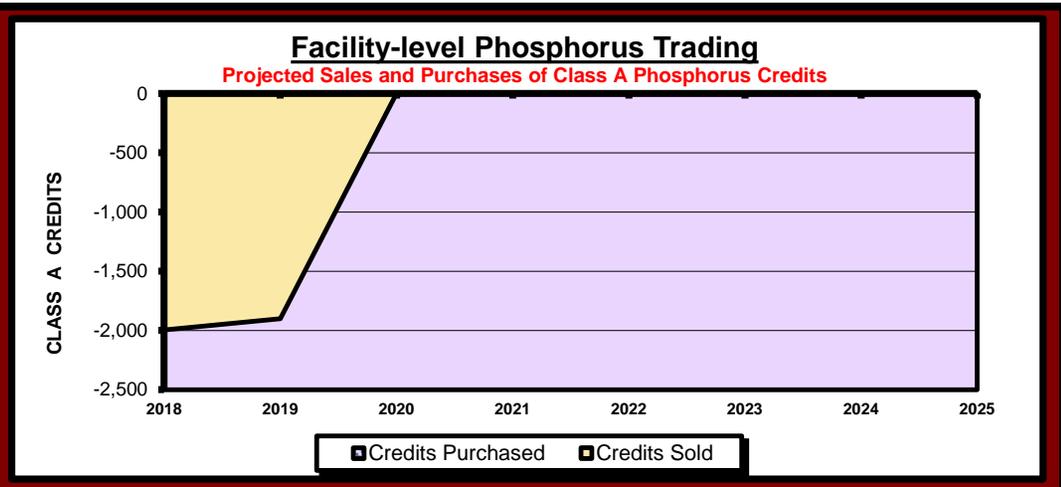
Loading & Credit Summary

Design Flow (mgd)	6.00
Projected Flow (mgd)	4.80
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	
Delivery Factor	0.49
Expected Load	21,489
Delivered WLA	35,816
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	14,327
Class A Credit Sales (Purchases)	14,327
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
43,856	45,683	47,511	49,338	51,165	52,993	54,820	54,820
0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
21,489	22,385	23,280	24,176	25,071	25,966	26,862	26,862
35,816	35,816	35,816	35,816	35,816	35,816	35,816	35,816
14,327	13,431	12,536	11,640	10,745	9,850	8,954	8,954
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
14,327	13,431	12,536	11,640	10,745	9,850	8,954	8,954
14,327	13,431	0	0	0	0	0	0
0	0	12,536	11,640	10,745	9,850	8,954	8,954

PHOSPHORUS FACILITY SUMMARY

Culpeper (Town)
<i>RAPPAHANNOCK Trading Basin</i>



Loading & Credit Summary	
Design Flow (mgd)	6.00
Projected Flow (mgd)	4.80
Projected Avg. Annual Concentration (mg/L)	0.20
Discharged Load (end of pipe)	2,924
Delivery Factor	0.78
Expected Load	2,281
Delivered WLA	4,277
Expected Credits (delivered)	1,996
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,996
Class A Credit Sales (Purchases)	1,996
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.00
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
2,924	3,046	3,167	3,289	3,411	3,533	3,655	3,655
0.78	0.78	0.78	0.75	0.75	0.75	0.75	0.75
2,281	2,376	2,471	2,467	2,558	2,650	2,741	2,741
4,277	4,277	4,277	4,112	4,112	4,112	4,112	4,112
1,996	1,901	1,806	1,645	1,554	1,462	1,371	1,371
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,996	1,901	1,806	1,645	1,554	1,462	1,371	1,371
1,996	1,901	0	0	0	0	0	0
0	0	1,806	1,645	1,554	1,462	1,371	1,371

Owner Bubble: Fauquier County Water and Sanitation Authority

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Marshall	186	278	371	463	556	648	741	834
Remington	(186)	(278)	(371)	(463)	(556)	(648)	(741)	(834)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Marshall	-	-	-	-	-	-	-	-
Remington	4,111	3,661	3,449	3,237	3,025	2,814	2,601	2,389
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	4,111	3,661	3,449	3,237	3,025	2,814	2,601	2,389
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>4,111</i>	<i>3,661</i>	<i>3,449</i>	<i>3,237</i>	<i>3,025</i>	<i>2,814</i>	<i>2,601</i>	<i>2,389</i>
<i>WQIF-Held Credits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Marshall	-	-	-	-	-	-	-	-
Remington	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Marshall	197	183	169	151	137	124	110	96
Remington	513	470	456	424	411	397	383	370
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	710	653	625	575	548	521	493	466
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>710</i>	<i>653</i>	<i>625</i>	<i>575</i>	<i>548</i>	<i>521</i>	<i>493</i>	<i>466</i>
<i>WQIF-Held Credits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

NITROGEN FACILITY SUMMARY

FCWSA-Marshall

RAPPAHANNOCK Trading Basin



Loading & Credit Summary

Design Flow (mgd)	0.64
Projected Flow (mgd)	0.36
Projected Avg. Annual Concentration (mg/L)	8.00
Discharged Load (end of pipe)	8,771
Delivery Factor	0.19
Expected Load	1,667
Delivered WLA	1,481
Expected Credits (delivered)	(186)
Transfers In (Out) within Owner Bubble	186
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
0.36	0.38	0.40	0.42	0.44	0.46	0.48	0.50
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
8,771	9,259	9,746	10,233	10,720	11,208	11,695	12,182
0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
1,667	1,759	1,852	1,944	2,037	2,129	2,222	2,315
1,481	1,481	1,481	1,481	1,481	1,481	1,481	1,481
(186)	(278)	(371)	(463)	(556)	(648)	(741)	(834)
186	278	371	463	556	648	741	834
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

FCWSA-Remington
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

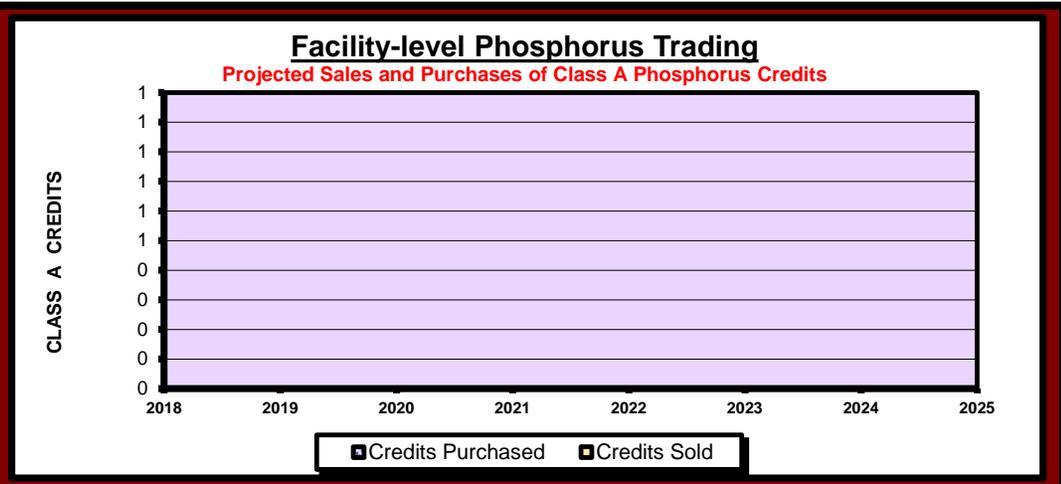
Design Flow (mgd)	Projected Flow (mgd)	Projected Avg. Annual Concentration (mg/L)	Discharged Load (end of pipe)	Delivery Factor	Expected Load	Delivered WLA	Expected Credits (delivered)	Transfers In (Out) within Owner Bubble	Transfers In (Out) from Private Exchange	WQIF-Held Credits	Expected Net Credits	Class A Credit Sales (Purchases)	Expected Class B Credits
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2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1.28	1.34	1.36	1.38	1.40	1.42	1.44	1.46
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
15,593	16,324	16,568	16,811	17,055	17,299	17,542	17,786
0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
7,641	7,999	8,118	8,238	8,357	8,476	8,596	8,715
11,938	11,938	11,938	11,938	11,938	11,938	11,938	11,938
4,297	3,939	3,820	3,700	3,581	3,462	3,342	3,223
(186)	(278)	(371)	(463)	(556)	(648)	(741)	(834)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4,111	3,661	3,449	3,237	3,025	2,814	2,601	2,389
0	0	0	0	0	0	0	0
4,111	3,661	3,449	3,237	3,025	2,814	2,601	2,389

PHOSPHORUS FACILITY SUMMARY

FCWSA-Marshall

RAPPAHANNOCK Trading Basin



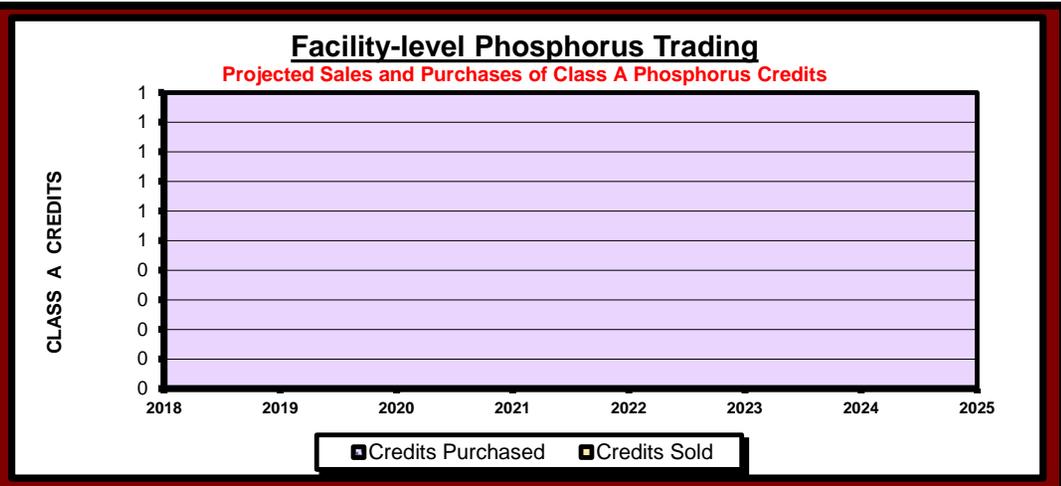
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
0.36	0.38	0.40	0.42	0.44	0.46	0.48	0.50
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
329	347	365	384	402	420	439	457
0.77	0.77	0.77	0.75	0.75	0.75	0.75	0.75
253	267	281	288	302	315	329	343
450	450	450	439	439	439	439	439
197	183	169	151	137	124	110	96
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
197	183	169	151	137	124	110	96
0	0	0	0	0	0	0	0
197	183	169	151	137	124	110	96

PHOSPHORUS FACILITY SUMMARY

FCWSA-Remington
RAPPAHANNOCK Trading Basin



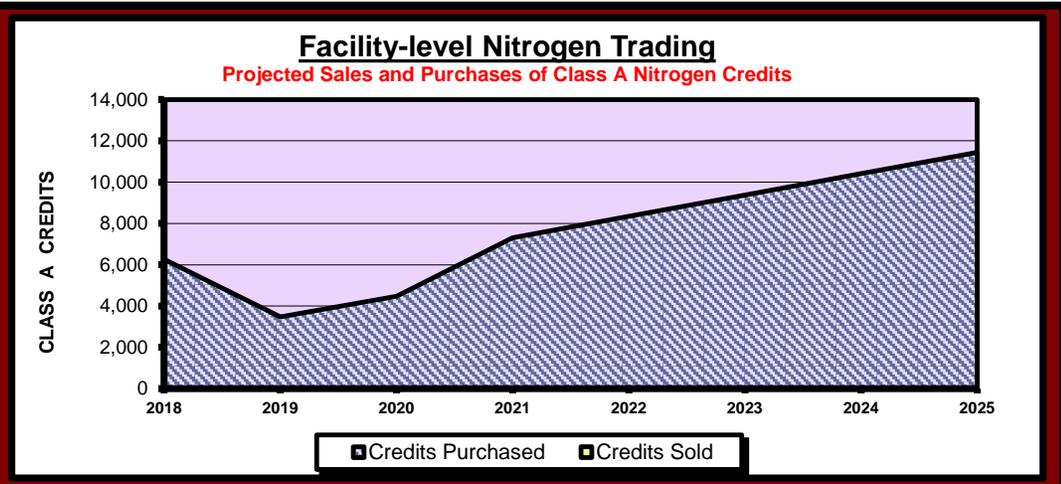
Loading & Credit Summary

Design Flow (mgd)	2.00
Projected Flow (mgd)	1.28
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	
Delivery Factor	0.78
Expected Load	912
Delivered WLA	1,425
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1.28	1.34	1.36	1.38	1.40	1.42	1.44	1.46
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
1,169	1,224	1,243	1,261	1,279	1,297	1,316	1,334
0.78	0.78	0.78	0.75	0.75	0.75	0.75	0.75
912	955	969	946	959	973	987	1,000
1,425	1,425	1,425	1,370	1,370	1,370	1,370	1,370
513	470	456	424	411	397	383	370
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
513	470	456	424	411	397	383	370
0	0	0	0	0	0	0	0
513	470	456	424	411	397	383	370

NITROGEN FACILITY SUMMARY

Fredericksburg
RAPPAHANNOCK Trading Basin



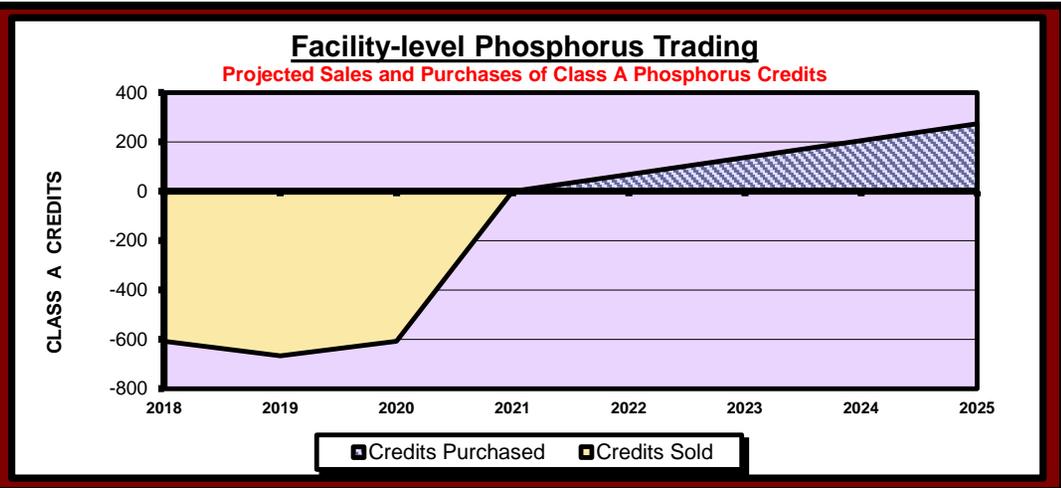
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
2.95	2.90	2.95	3.00	3.05	3.10	3.15	3.20
6.80	6.60	6.60	6.80	6.80	6.80	6.80	6.80
61,094	58,292	59,297	62,129	63,165	64,200	65,236	66,271
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
61,094	58,292	59,297	62,129	63,165	64,200	65,236	66,271
54,820	54,820	54,820	54,820	54,820	54,820	54,820	54,820
(6,274)	(3,472)	(4,477)	(7,309)	(8,345)	(9,380)	(10,416)	(11,451)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(6,274)	(3,472)	(4,477)	(7,309)	(8,345)	(9,380)	(10,416)	(11,451)
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Fredericksburg
<i>RAPPAHANNOCK Trading Basin</i>

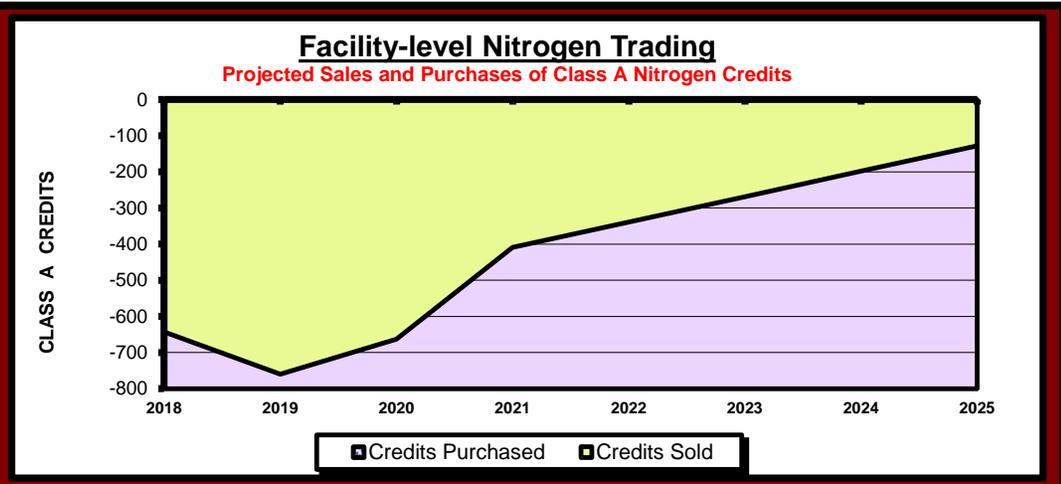


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
2.95	2.90	2.95	3.00	3.05	3.10	3.15	3.20
0.39	0.39	0.39	0.45	0.45	0.45	0.45	0.45
3,504	3,445	3,504	4,112	4,180	4,249	4,317	4,386
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3,504	3,445	3,504	4,112	4,180	4,249	4,317	4,386
4,112	4,112	4,112	4,112	4,112	4,112	4,112	4,112
608	667	608	0	(68)	(137)	(205)	(274)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
608	667	608	0	(68)	(137)	(205)	(274)
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Greene Co-Rapidan
RAPPAHANNOCK Trading Basin



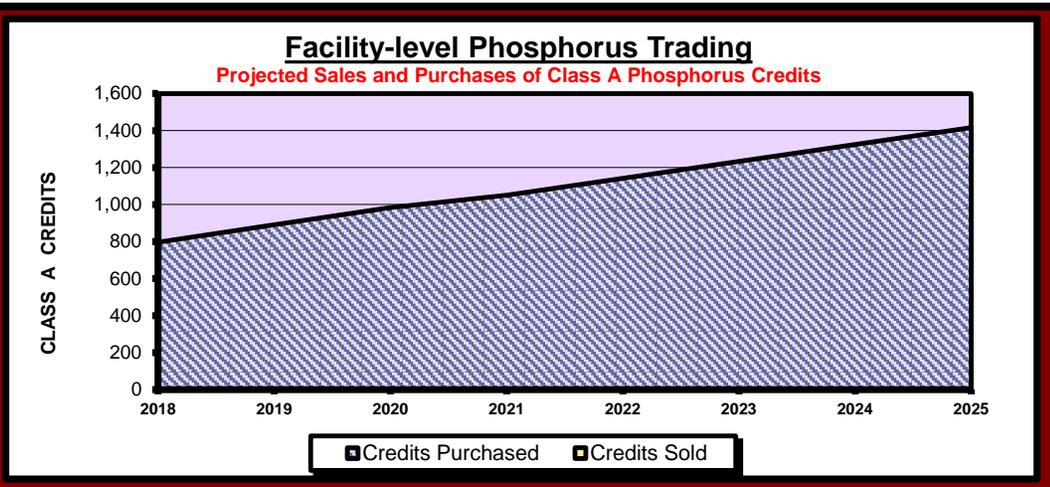
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20
Projected Avg. Annual Concentration (mg/L)	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Discharged Load (end of pipe)	4,355	4,690	5,025	5,360	5,695	6,030	6,365	6,700
Delivery Factor	0.29	0.29	0.29	0.21	0.21	0.21	0.21	0.21
Expected Load	1,263	1,360	1,457	1,126	1,196	1,266	1,337	1,407
Delivered WLA	2,120	2,120	2,120	1,535	1,535	1,535	1,535	1,535
Expected Credits (delivered)	857	760	663	409	339	269	198	128
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	857	760	663	409	339	269	198	128
Class A Credit Sales (Purchases)	643	760	663	409	339	269	198	128
Expected Class B Credits	214	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Greene Co-Rapidan
RAPPAHANNOCK Trading Basin



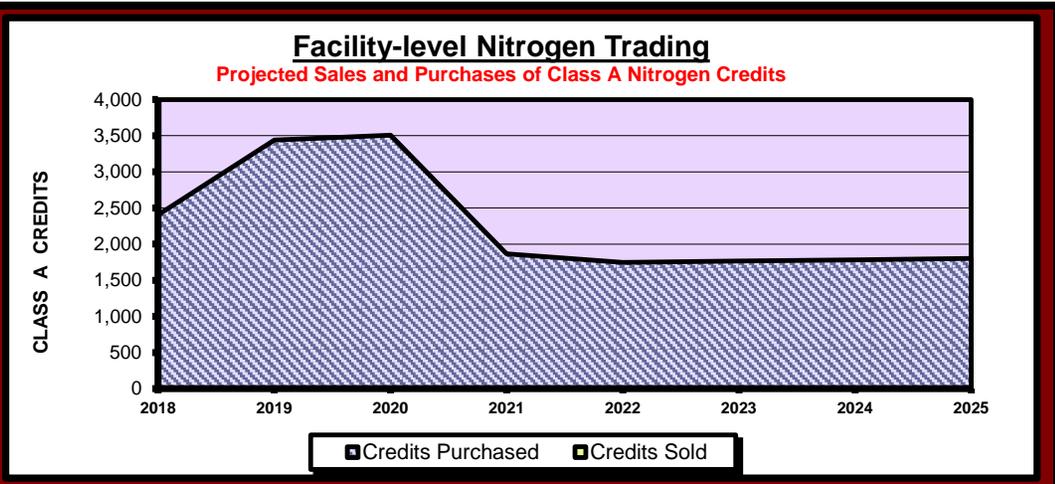
Loading & Credit Summary

Design Flow (mgd)	0.60
Projected Flow (mgd)	0.13
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	1,584
Delivery Factor	0.77
Expected Load	1,219
Delivered WLA	422
Expected Credits (delivered)	(797)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(797)
Class A Credit Sales (Purchases)	(797)
Expected Class B Credits	0

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	1,584	1,706	1,827	1,949	2,071	2,193	2,315	2,436
Delivery Factor	0.77	0.77	0.77	0.75	0.75	0.75	0.75	0.75
Expected Load	1,219	1,313	1,407	1,462	1,553	1,645	1,736	1,827
Delivered WLA	422	422	422	411	411	411	411	411
Expected Credits (delivered)	(797)	(891)	(985)	(1,051)	(1,142)	(1,234)	(1,325)	(1,416)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(797)	(891)	(985)	(1,051)	(1,142)	(1,234)	(1,325)	(1,416)
Class A Credit Sales (Purchases)	(797)	(891)	(985)	(1,051)	(1,142)	(1,234)	(1,325)	(1,416)
Expected Class B Credits	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

HRSD-Urbanna
RAPPAHANNOCK Trading Basin



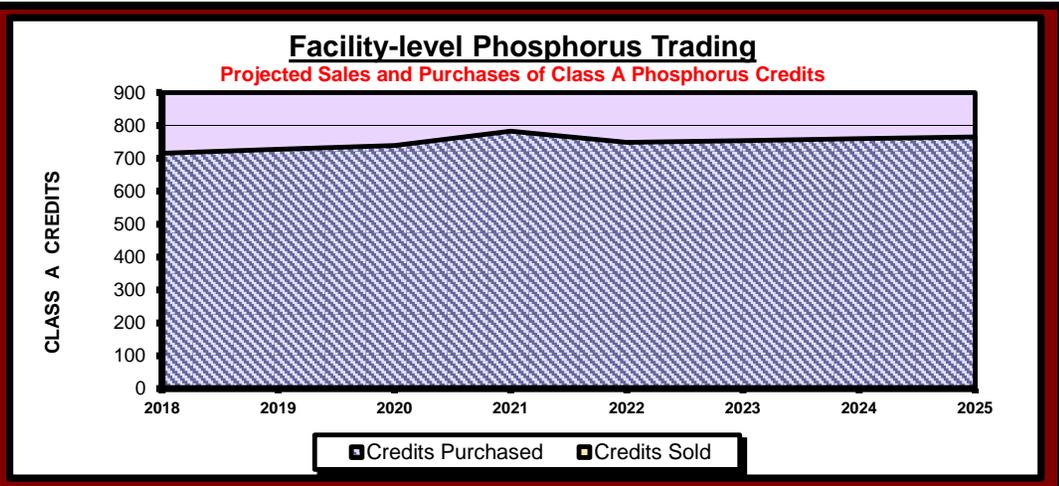
Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.05
Projected Avg. Annual Concentration (mg/L)	22.10
Discharged Load (end of pipe)	3,625
Delivery Factor	1.00
Expected Load	3,625
Delivered WLA	1,218
Expected Credits (delivered)	(2,407)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(2,407)
Class A Credit Sales (Purchases)	(2,407)
Expected Class B Credits	0

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.05	0.05	0.06	0.06	0.05	0.05	0.05	0.06
Projected Avg. Annual Concentration (mg/L)	22.10	28.00	28.00	18.00	18.00	18.00	18.00	18.00
Discharged Load (end of pipe)	3,625	4,659	4,724	3,083	2,965	2,984	3,002	3,021
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	3,625	4,659	4,724	3,083	2,965	2,984	3,002	3,021
Delivered WLA	1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218
Expected Credits (delivered)	(2,407)	(3,441)	(3,506)	(1,865)	(1,747)	(1,766)	(1,784)	(1,803)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(2,407)	(3,441)	(3,506)	(1,865)	(1,747)	(1,766)	(1,784)	(1,803)
Class A Credit Sales (Purchases)	(2,407)	(3,441)	(3,506)	(1,865)	(1,747)	(1,766)	(1,784)	(1,803)
Expected Class B Credits	0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

HRSD-Urbanna
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.05
Projected Avg. Annual Concentration (mg/L)	5.10
Discharged Load (end of pipe)	837
Delivery Factor	0.96
Expected Load	803
Delivered WLA	87
Expected Credits (delivered)	(716)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(716)
Class A Credit Sales (Purchases)	(716)
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.05	0.05	0.06	0.06	0.05	0.05	0.05	0.06
5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10
837	849	861	874	840	845	851	856
0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00
803	815	826	874	840	845	851	856
87	87	87	91	91	91	91	91
(716)	(728)	(739)	(783)	(749)	(754)	(760)	(765)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(716)	(728)	(739)	(783)	(749)	(754)	(760)	(765)
0	0	0	0	0	0	0	0

Owner Bubble: King George County SA (Rappahannock)

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

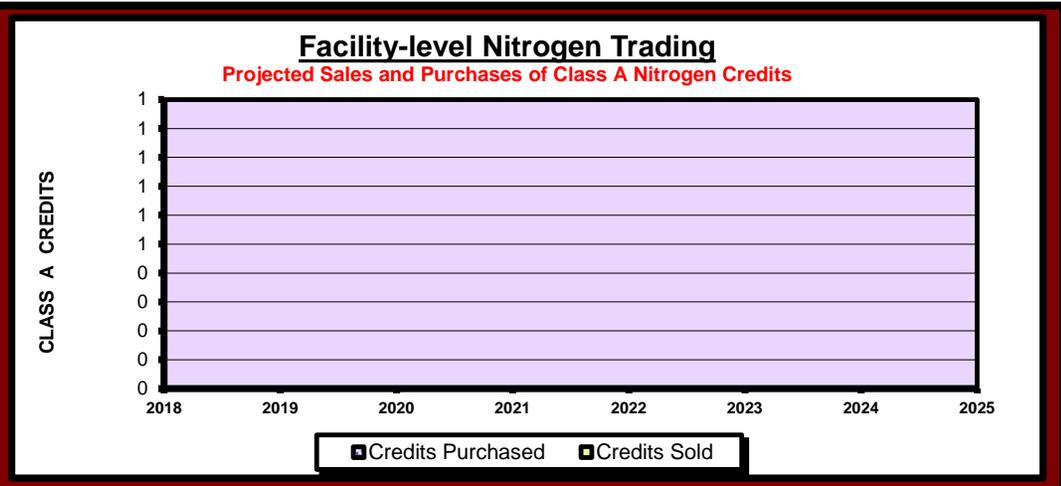
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Hopyard Farms	-	-	-	-	-	-	-	-
Oakland Park	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Hopyard Farms	3,015	3,015	2,741	2,741	2,923	2,741	2,558	2,375
Oakland Park	335	335	183	183	335	183	31	31
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	3,350	3,350	2,924	2,924	3,258	2,924	2,589	2,406
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>3,350</i>	<i>3,350</i>	<i>2,924</i>	<i>2,924</i>	<i>3,258</i>	<i>2,924</i>	<i>2,589</i>	<i>2,406</i>
<i>WQIF-Held Credits</i>	<i>1,523</i>	<i>1,523</i>	<i>1,523</i>	<i>1,523</i>	<i>1,523</i>	<i>1,523</i>	<i>1,523</i>	<i>1,523</i>

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Hopyard Farms	(9)	(9)	(24)	(24)	(9)	(24)	(40)	(40)
Oakland Park	9	9	24	24	9	24	40	40
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Hopyard Farms	202	202	164	167	197	167	135	120
Oakland Park	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	202	202	164	167	197	167	135	120
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>202</i>	<i>202</i>	<i>164</i>	<i>167</i>	<i>197</i>	<i>167</i>	<i>135</i>	<i>120</i>
<i>WQIF-Held Credits</i>	<i>113</i>	<i>113</i>	<i>113</i>	<i>114</i>	<i>114</i>	<i>114</i>	<i>114</i>	<i>114</i>

NITROGEN FACILITY SUMMARY

KGCSA-Hopyard Farms
RAPPAHANNOCK Trading Basin

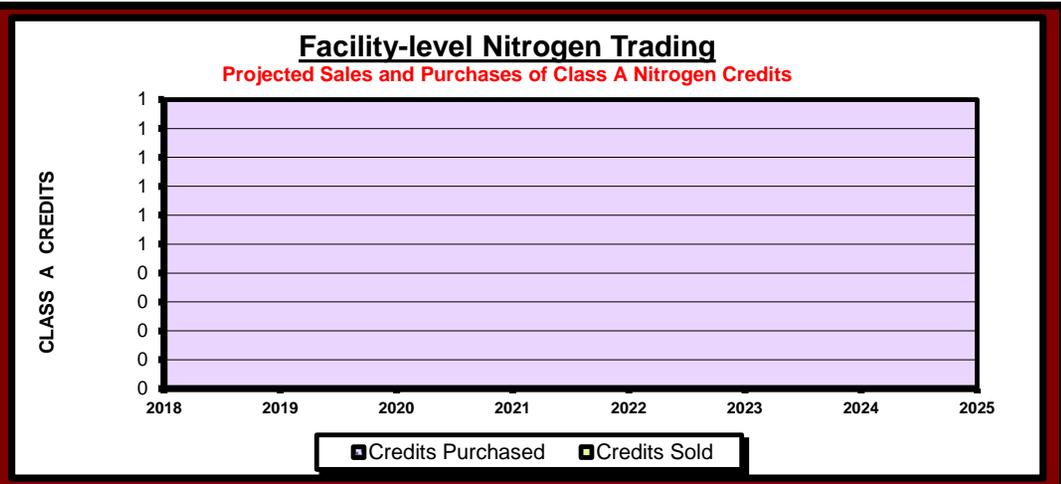


Loading & Credit Summary	
Design Flow (mgd)	0.38
Projected Flow (mgd)	0.09
Projected Avg. Annual Concentration (mg/L)	6.00
Discharged Load (end of pipe)	1,553
Delivery Factor	1.00
Expected Load	1,553
Delivered WLA	6,091
Expected Credits (delivered)	4,538
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	(1,523)
Expected Net Credits	3,015
Class A Credit Sales (Purchases)	0
Expected Class B Credits	3,015

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
0.09	0.09	0.10	0.10	0.09	0.10	0.11	0.12
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
1,553	1,553	1,827	1,827	1,645	1,827	2,010	2,193
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,553	1,553	1,827	1,827	1,645	1,827	2,010	2,193
6,091	6,091	6,091	6,091	6,091	6,091	6,091	6,091
4,538	4,538	4,264	4,264	4,446	4,264	4,081	3,898
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(1,523)	(1,523)	(1,523)	(1,523)	(1,523)	(1,523)	(1,523)	(1,523)
3,015	3,015	2,741	2,741	2,923	2,741	2,558	2,375
0	0	0	0	0	0	0	0
3,015	3,015	2,741	2,741	2,923	2,741	2,558	2,375

NITROGEN FACILITY SUMMARY

KGCSA-Oakland Park
RAPPAHANNOCK Trading Basin



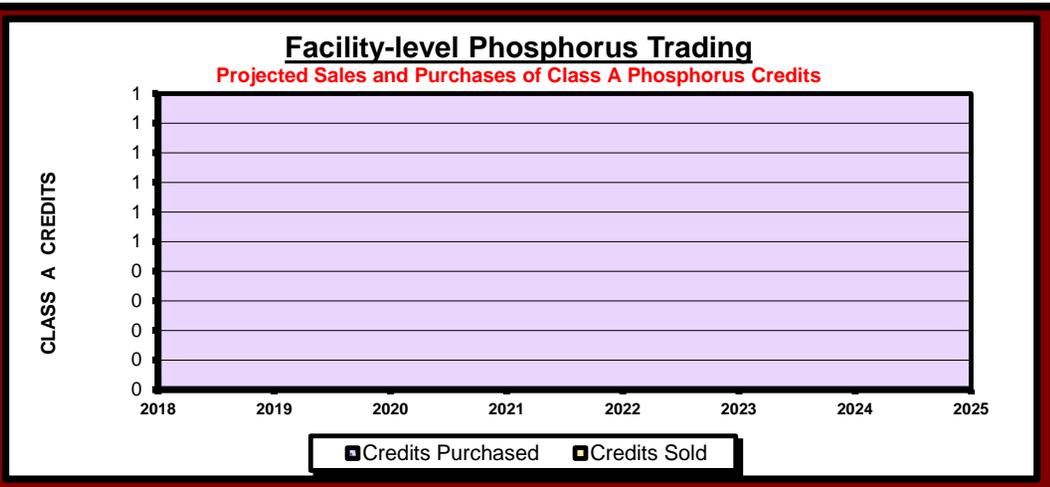
Loading & Credit Summary

Design Flow (mgd)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Projected Flow (mgd)	0.09	0.09	0.10	0.10	0.09	0.10	0.11	0.11
Projected Avg. Annual Concentration (mg/L)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Discharged Load (end of pipe)	1,371	1,371	1,523	1,523	1,371	1,523	1,675	1,675
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,371	1,371	1,523	1,523	1,371	1,523	1,675	1,675
Delivered WLA	1,706	1,706	1,706	1,706	1,706	1,706	1,706	1,706
Expected Credits (delivered)	335	335	183	183	335	183	31	31
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	335	335	183	183	335	183	31	31
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	335	335	183	183	335	183	31	31

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
0.09	0.09	0.10	0.10	0.09	0.10	0.11	0.11
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
1,371	1,371	1,523	1,523	1,371	1,523	1,675	1,675
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,371	1,371	1,523	1,523	1,371	1,523	1,675	1,675
1,706	1,706	1,706	1,706	1,706	1,706	1,706	1,706
335	335	183	183	335	183	31	31
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
335	335	183	183	335	183	31	31
0	0	0	0	0	0	0	0
335	335	183	183	335	183	31	31

PHOSPHORUS FACILITY SUMMARY

KGCSA-Hopyard Farms
RAPPAHANNOCK Trading Basin



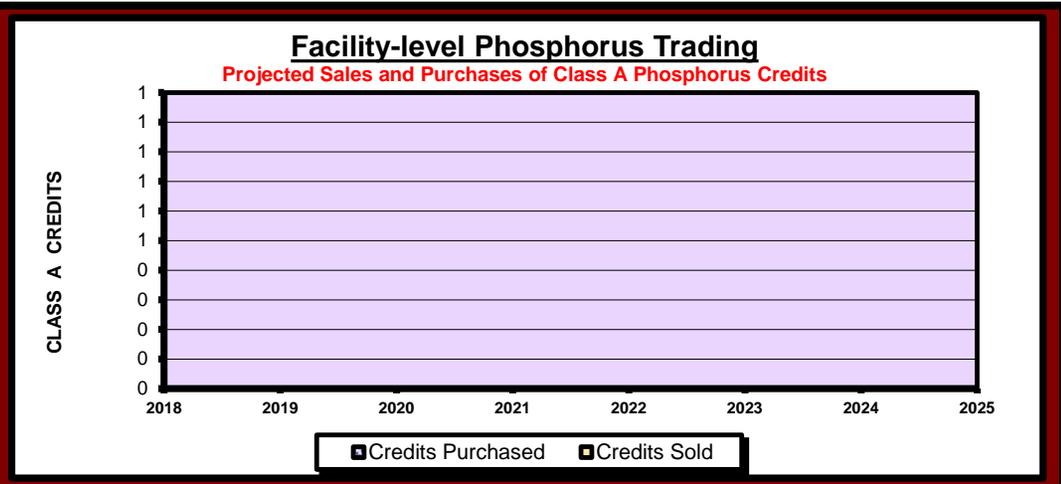
Loading & Credit Summary

Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Projected Flow (mgd)	0.09	0.09	0.10	0.10	0.09	0.10	0.11	0.12
Projected Avg. Annual Concentration (mg/L)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Discharged Load (end of pipe)	129	129	152	152	137	152	168	183
Delivery Factor	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00
Expected Load	128	128	151	152	137	152	168	183
Delivered WLA	452	452	452	457	457	457	457	457
Expected Credits (delivered)	324	324	301	305	320	305	289	274
Transfers In (Out) within Owner Bubble	(9)	(9)	(24)	(24)	(9)	(24)	(40)	(40)
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	(113)	(113)	(113)	(114)	(114)	(114)	(114)	(114)
Expected Net Credits	202	202	164	167	197	167	135	120
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	202	202	164	167	197	167	135	120

PHOSPHORUS FACILITY SUMMARY

KGCSA-Oakland Park
RAPPAHANNOCK Trading Basin



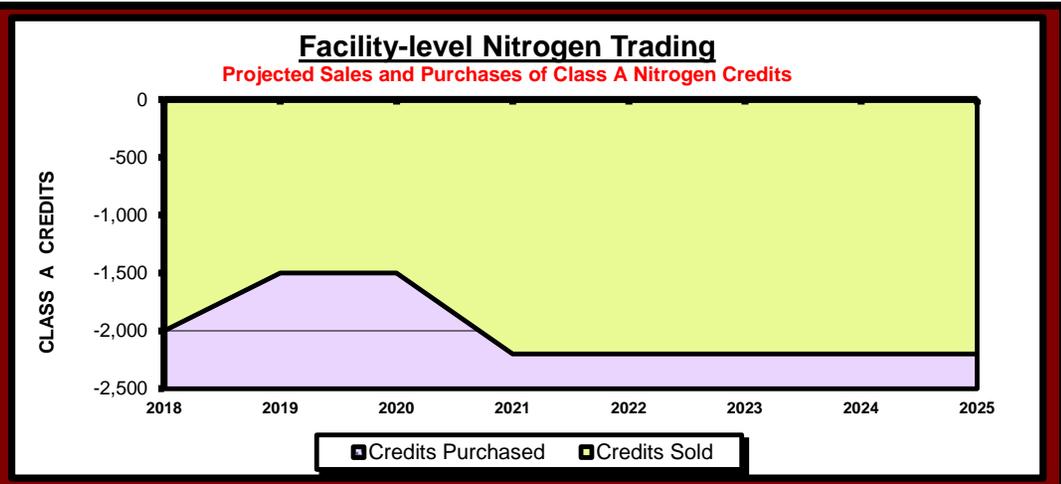
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
0.09	0.09	0.10	0.10	0.09	0.10	0.11	0.11
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
137	137	152	152	137	152	168	168
0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00
133	133	148	152	137	152	168	168
124	124	124	128	128	128	128	128
(9)	(9)	(24)	(24)	(9)	(24)	(40)	(40)
9	9	24	24	9	24	40	40
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Kilmarnock
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

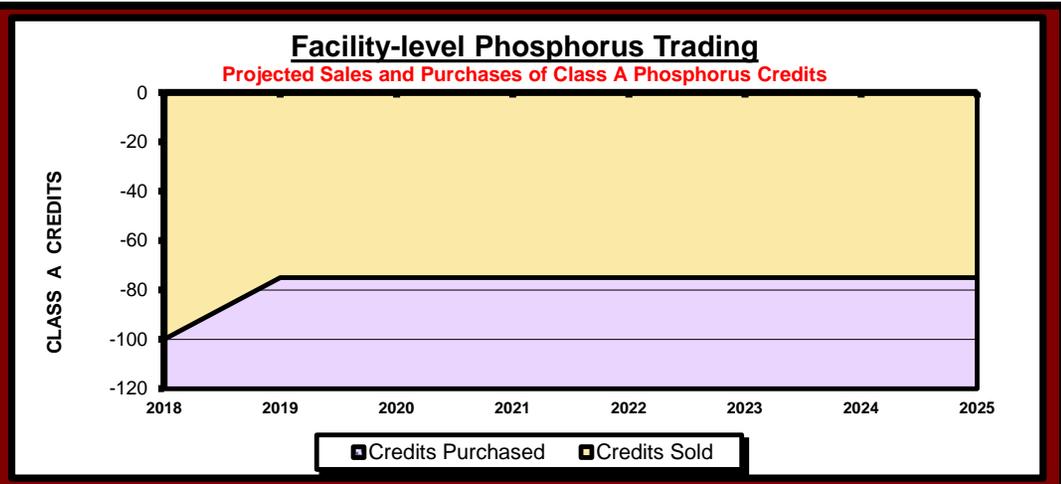
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
3,198	3,198	3,198	3,198	3,198	3,198	3,198	3,198
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3,198	3,198	3,198	3,198	3,198	3,198	3,198	3,198
6,091	6,091	6,091	6,091	6,091	6,091	6,091	6,091
2,893	2,893	2,893	2,893	2,893	2,893	2,893	2,893
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,893	2,893	2,893	2,893	2,893	2,893	2,893	2,893
2,000	1,500	1,500	2,200	2,200	2,200	2,200	2,200
893	1,393	1,393	693	693	693	693	693

PHOSPHORUS FACILITY SUMMARY

Kilmarnock

RAPPAHANNOCK Trading Basin



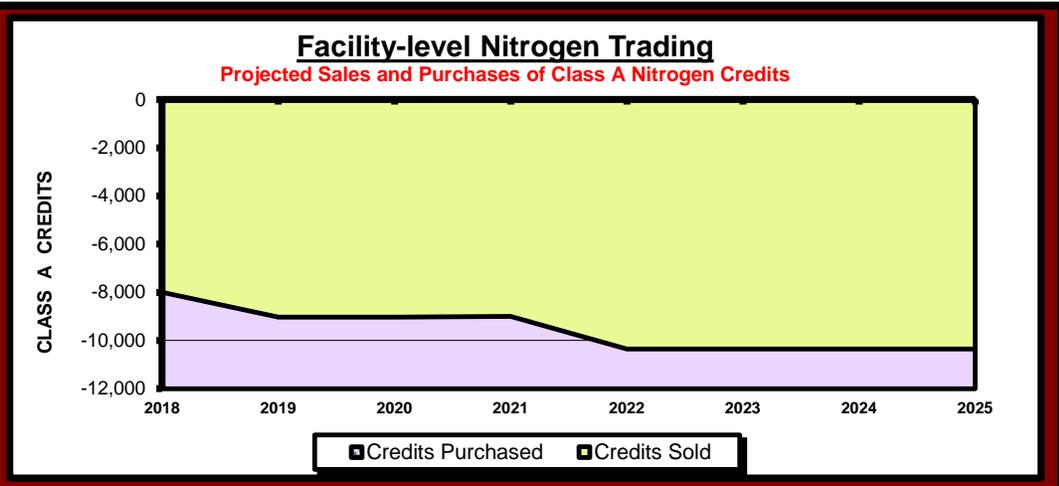
Loading & Credit Summary

Design Flow (mgd)	0.50
Projected Flow (mgd)	0.35
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	320
Delivery Factor	0.99
Expected Load	317
Delivered WLA	452
Expected Credits (delivered)	135
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	135
Class A Credit Sales (Purchases)	100
Expected Class B Credits	35

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
320	320	320	320	320	320	320	320
0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00
317	317	317	320	320	320	320	320
452	452	452	457	457	457	457	457
135	135	135	137	137	137	137	137
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
135	135	135	137	137	137	137	137
100	75	75	75	75	75	75	75
35	60	60	62	62	62	62	62

NITROGEN FACILITY SUMMARY

Omega Protein
RAPPAHANNOCK Trading Basin



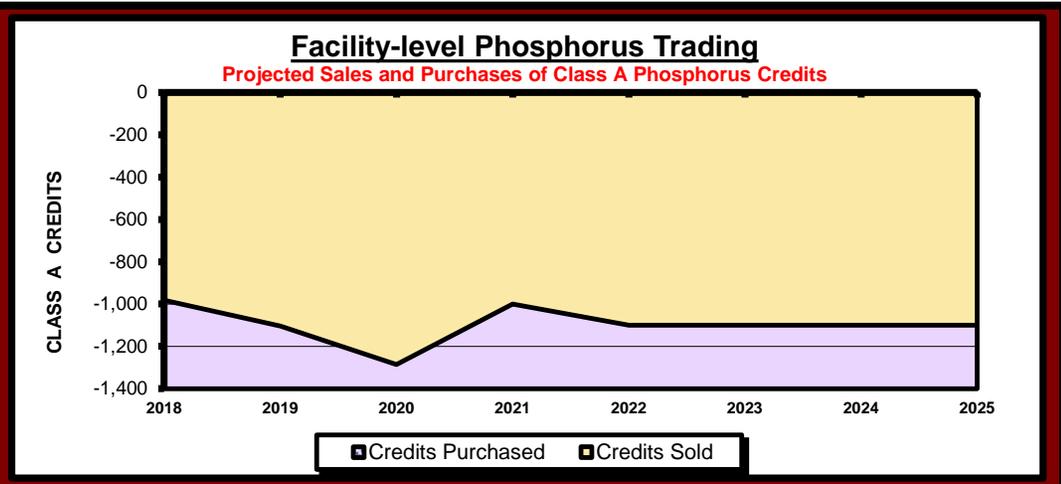
Loading & Credit Summary	
Design Flow (mgd)	3.21
Projected Flow (mgd)	0.18
Projected Avg. Annual Concentration (mg/L)	20.00
Discharged Load (end of pipe)	10,659
Delivery Factor	1.00
Expected Load	10,659
Delivered WLA	21,213
Expected Credits (delivered)	10,554
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(100)
WQIF-Held Credits	0
Expected Net Credits	10,454
Class A Credit Sales (Purchases)	8,000
Expected Class B Credits	2,454

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21
0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
10,659	10,659	10,659	10,659	10,659	10,659	10,659	10,659
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10,659	10,659	10,659	10,659	10,659	10,659	10,659	10,659
21,213	21,213	21,213	21,213	21,213	21,213	21,213	21,213
10,554	10,554	10,554	10,554	10,554	10,554	10,554	10,554
0	0	0	0	0	0	0	0
(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)
0	0	0	0	0	0	0	0
10,454	10,454	10,454	10,454	10,454	10,454	10,454	10,454
8,000	9,031	9,031	9,000	10,354	10,354	10,354	10,354
2,454	1,423	1,423	1,454	100	100	100	100

* Reflects private exchange with Children's Bible Ministries of Virginia, Inc.

PHOSPHORUS FACILITY SUMMARY

Omega Protein
RAPPAHANNOCK Trading Basin



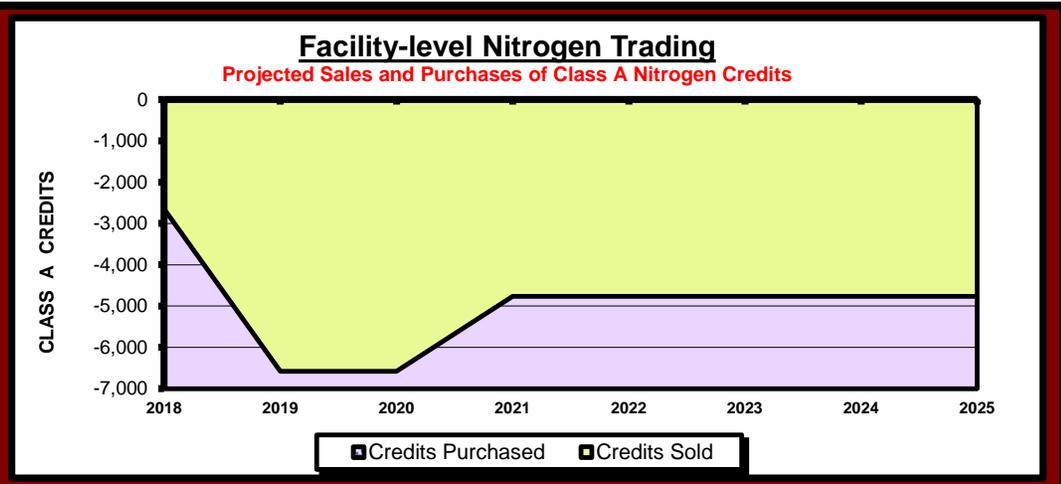
Loading & Credit Summary	
Design Flow (mgd)	3.21
Projected Flow (mgd)	0.18
Projected Avg. Annual Concentration (mg/L)	1.00
Discharged Load (end of pipe)	533
Delivery Factor	1.00
Expected Load	533
Delivered WLA	1,591
Expected Credits (delivered)	1,058
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(20)
WQIF-Held Credits	0
Expected Net Credits	1,038
Class A Credit Sales (Purchases)	982
Expected Class B Credits	56

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21
0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
1.00	0.80	0.50	0.80	0.80	0.80	0.80	0.80
533	426	266	426	426	426	426	426
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
533	426	266	426	426	426	426	426
1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591
1,058	1,165	1,325	1,165	1,165	1,165	1,165	1,165
0	0	0	0	0	0	0	0
(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)
0	0	0	0	0	0	0	0
1,038	1,145	1,305	1,145	1,145	1,145	1,145	1,145
982	1,104	1,286	1,000	1,100	1,100	1,100	1,100
56	41	19	145	45	45	45	45

* Reflects private exchange with Children's Bible Ministries of Virginia, Inc.

NITROGEN FACILITY SUMMARY

Orange (Town)
<i>RAPPAHANNOCK Trading Basin</i>

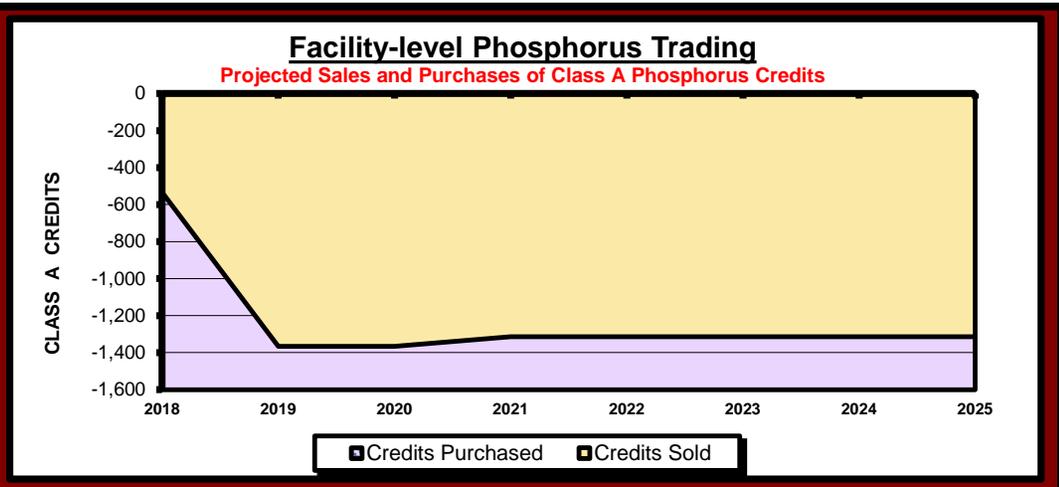


Loading & Credit Summary	
Design Flow (mgd)	3.00
Projected Flow (mgd)	1.30
Projected Avg. Annual Concentration (mg/L)	3.50
Discharged Load (end of pipe)	13,857
Delivery Factor	0.29
Expected Load	4,019
Delivered WLA	10,599
Expected Credits (delivered)	6,580
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	6,580
Class A Credit Sales (Purchases)	2,650
Expected Class B Credits	3,930

2018	2019	2020	2021	2022	2023	2024	2025
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
13,857	13,857	13,857	13,857	13,857	13,857	13,857	13,857
0.29	0.29	0.29	0.21	0.21	0.21	0.21	0.21
4,019	4,019	4,019	2,910	2,910	2,910	2,910	2,910
10,599	10,599	10,599	7,675	7,675	7,675	7,675	7,675
6,580	6,580	6,580	4,765	4,765	4,765	4,765	4,765
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
6,580	6,580	6,580	4,765	4,765	4,765	4,765	4,765
2,650	6,580	6,580	4,765	4,765	4,765	4,765	4,765
3,930	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Orange (Town)
RAPPAHANNOCK Trading Basin



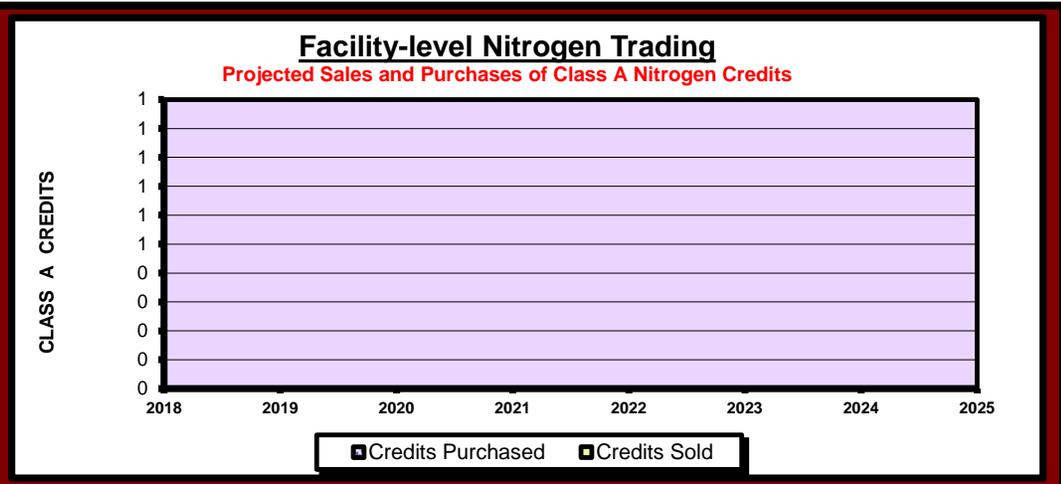
Loading & Credit Summary

Design Flow (mgd)	3.00
Projected Flow (mgd)	1.30
Projected Avg. Annual Concentration (mg/L)	0.25
Discharged Load (end of pipe)	990
Delivery Factor	0.78
Expected Load	772
Delivered WLA	2,138
Expected Credits (delivered)	1,366
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,366
Class A Credit Sales (Purchases)	534
Expected Class B Credits	832

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
990	990	990	990	990	990	990	990
0.78	0.78	0.78	0.75	0.75	0.75	0.75	0.75
772	772	772	742	742	742	742	742
2,138	2,138	2,138	2,056	2,056	2,056	2,056	2,056
1,366	1,366	1,366	1,314	1,314	1,314	1,314	1,314
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,366	1,366	1,366	1,314	1,314	1,314	1,314	1,314
534	1,366	1,366	1,314	1,314	1,314	1,314	1,314
832	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Reedville S.D.
RAPPAHANNOCK Trading Basin



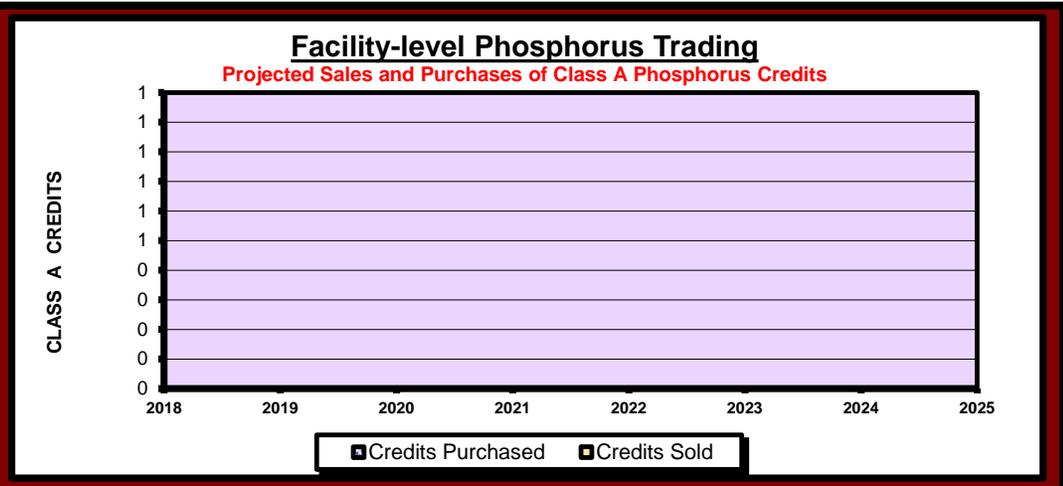
Loading & Credit Summary

Design Flow (mgd)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Projected Flow (mgd)	0.07	0.07	0.13	0.13	0.13	0.13	0.13	0.13
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	6.10	6.10	6.10	6.10	6.10	6.10
Discharged Load (end of pipe)	853	853	2,415	2,415	2,415	2,415	2,415	2,415
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	853	853	2,415	2,415	2,415	2,415	2,415	2,415
Delivered WLA	2,436	2,436	2,436	2,436	2,436	2,436	2,436	2,436
Expected Credits (delivered)	1,583	1,583	21	21	21	21	21	21
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	1,583	1,583	21	21	21	21	21	21
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	1,583	1,583	21	21	21	21	21	21

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.07	0.07	0.13	0.13	0.13	0.13	0.13	0.13
4.00	4.00	6.10	6.10	6.10	6.10	6.10	6.10
853	853	2,415	2,415	2,415	2,415	2,415	2,415
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
853	853	2,415	2,415	2,415	2,415	2,415	2,415
2,436	2,436	2,436	2,436	2,436	2,436	2,436	2,436
1,583	1,583	21	21	21	21	21	21
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,583	1,583	21	21	21	21	21	21
0	0	0	0	0	0	0	0
1,583	1,583	21	21	21	21	21	21

PHOSPHORUS FACILITY SUMMARY

Reedville S.D.
RAPPAHANNOCK Trading Basin

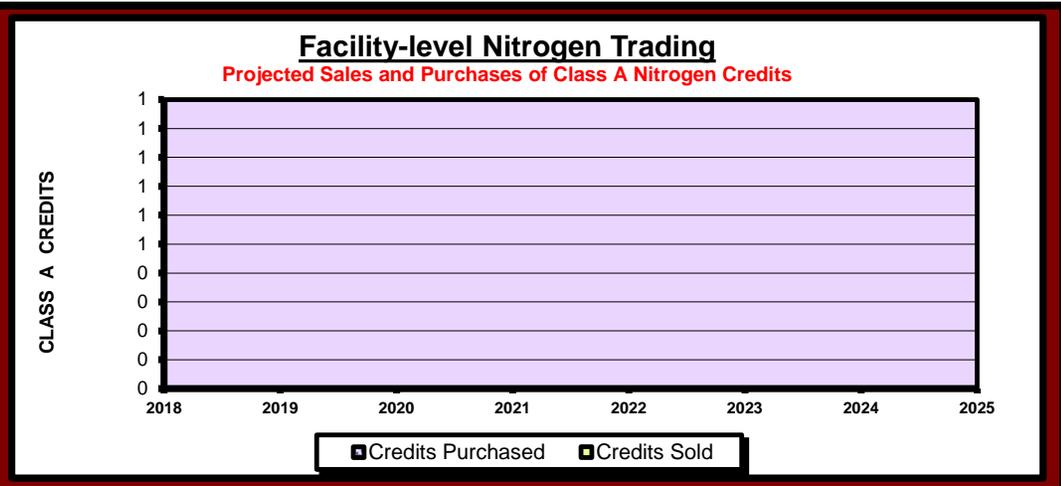


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.07	0.07	0.13	0.13	0.13	0.13	0.13	0.13
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
64	64	119	119	119	119	119	119
0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00
63	63	116	119	119	119	119	119
179	179	179	183	183	183	183	183
116	116	63	64	64	64	64	64
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
116	116	63	64	64	64	64	64
0	0	0	0	0	0	0	0
116	116	63	64	64	64	64	64

NITROGEN FACILITY SUMMARY

RSA-Wilderness Shores
RAPPAHANNOCK Trading Basin



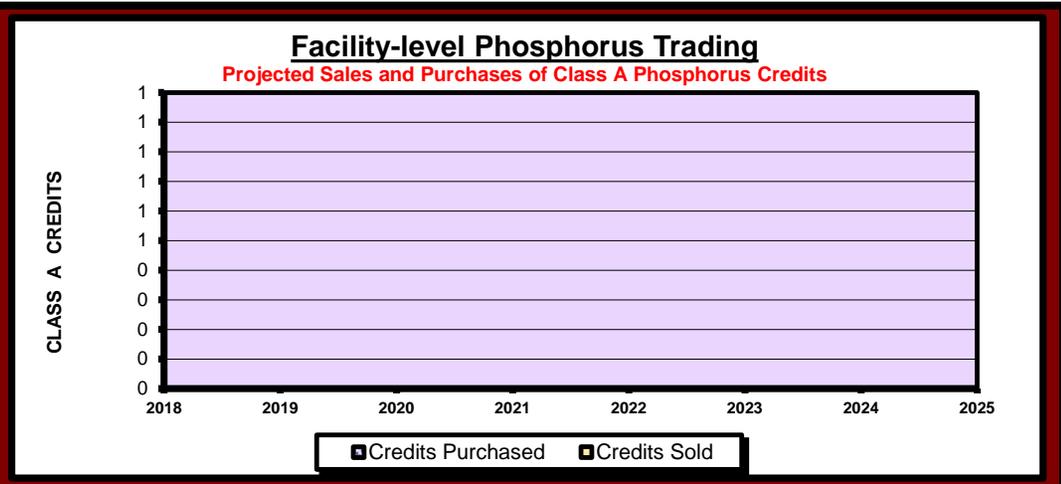
Loading & Credit Summary

Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	0.92	0.92	0.92	0.94	0.94	0.94	0.96	0.96
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	8,406	8,406	8,406	8,588	8,588	8,588	8,771	8,771
Delivery Factor	0.41	0.41	0.41	0.45	0.45	0.45	0.45	0.45
Expected Load	3,446	3,446	3,446	3,865	3,865	3,865	3,947	3,947
Delivered WLA	6,243	6,243	6,243	6,853	6,853	6,853	6,853	6,853
Expected Credits (delivered)	2,797	2,797	2,797	2,988	2,988	2,988	2,906	2,906
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	2,797	2,797	2,797	2,988	2,988	2,988	2,906	2,906
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	2,797	2,797	2,797	2,988	2,988	2,988	2,906	2,906

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0.92	0.92	0.92	0.94	0.94	0.94	0.96	0.96
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
8,406	8,406	8,406	8,588	8,588	8,588	8,771	8,771
0.41	0.41	0.41	0.45	0.45	0.45	0.45	0.45
3,446	3,446	3,446	3,865	3,865	3,865	3,947	3,947
6,243	6,243	6,243	6,853	6,853	6,853	6,853	6,853
2,797	2,797	2,797	2,988	2,988	2,988	2,906	2,906
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,797	2,797	2,797	2,988	2,988	2,988	2,906	2,906
0	0	0	0	0	0	0	0
2,797	2,797	2,797	2,988	2,988	2,988	2,906	2,906

PHOSPHORUS FACILITY SUMMARY

RSA-Wilderness Shores
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

Design Flow (mgd)	Projected Flow (mgd)	Projected Avg. Annual Concentration (mg/L)	Discharged Load (end of pipe)	Delivery Factor	Expected Load	Delivered WLA	Expected Credits (delivered)	Transfers In (Out) within Owner Bubble	Transfers In (Out) from Private Exchange	WQIF-Held Credits	Expected Net Credits
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2018	2019	2020	2021	2022	2023	2024	2025	
Planning Period					Future Estimates (non-binding)			
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
0.92	0.92	0.92	0.94	0.94	0.94	0.96	0.96	
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	
841	841	841	859	859	859	877	877	
0.77	0.77	0.77	0.75	0.75	0.75	0.75	0.75	
647	647	647	644	644	644	658	658	
879	879	879	857	857	857	857	857	
232	232	232	213	213	213	199	199	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
232	232	232	213	213	213	199	199	
0	0	0	0	0	0	0	0	
232	232	232	213	213	213	199	199	

Owner Bubble: Spotsylvania County

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

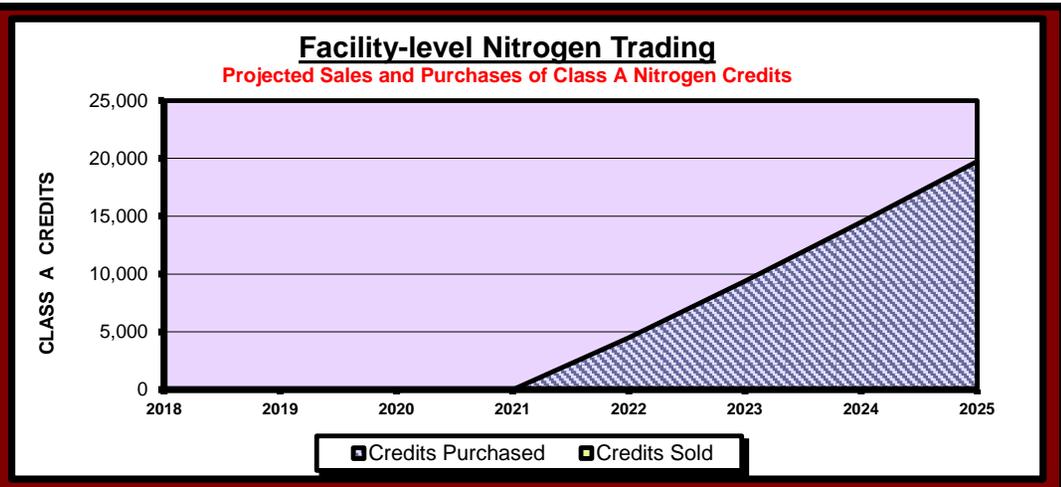
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
FMC	13,636	15,585	17,534	21,433	19,118	16,438	13,514	10,469
Massaponax	(13,636)	(15,585)	(17,534)	(21,433)	(19,118)	(16,438)	(13,514)	(10,469)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
FMC	-	-	-	-	(4,508)	(9,380)	(14,497)	(19,735)
Massaponax	16,081	11,695	7,066	487	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	16,081	11,695	7,066	487	(4,508)	(9,380)	(14,497)	(19,735)
Class A Sales (Purchases)	0	5,800	5,000	0	(4,508)	(9,380)	(14,497)	(19,735)
<i>Expected Class B Credits</i>	<i>16,081</i>	<i>5,895</i>	<i>2,066</i>	<i>487</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>WQIF-Held Credits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
FMC	-	-	-	-	-	-	-	-
Massaponax	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
FMC	1,316	1,243	1,170	1,024	941	859	777	695
Massaponax	2,046	1,863	1,662	1,461	1,251	1,050	831	602
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	3,362	3,106	2,832	2,485	2,192	1,909	1,608	1,297
Class A Sales (Purchases)	2,061	1,550	1,750	1,500	1,225	925	775	650
<i>Expected Class B Credits</i>	<i>1,301</i>	<i>1,556</i>	<i>1,082</i>	<i>985</i>	<i>967</i>	<i>984</i>	<i>833</i>	<i>647</i>
<i>WQIF-Held Credits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

NITROGEN FACILITY SUMMARY

Spotsy Co-FMC
RAPPAHANNOCK Trading Basin



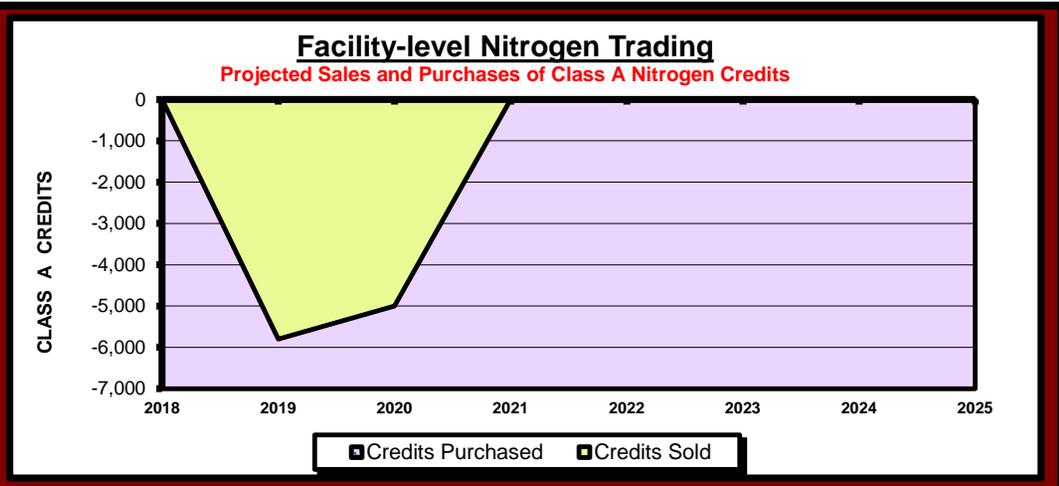
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	2.56
Projected Avg. Annual Concentration (mg/L)	8.00
Discharged Load (end of pipe)	62,373
Delivery Factor	1.00
Expected Load	62,373
Delivered WLA	48,737
Expected Credits (delivered)	(13,636)
Transfers In (Out) within Owner Bubble	13,636
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2.56	2.64	2.72	2.88	2.97	3.06	3.15	3.24
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
62,373	64,322	66,271	70,170	72,363	74,555	76,748	78,941
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
62,373	64,322	66,271	70,170	72,363	74,555	76,748	78,941
48,737	48,737	48,737	48,737	48,737	48,737	48,737	48,737
(13,636)	(15,585)	(17,534)	(21,433)	(23,626)	(25,818)	(28,011)	(30,204)
13,636	15,585	17,534	21,433	19,118	16,438	13,514	10,469
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	(4,508)	(9,380)	(14,497)	(19,735)
0	0	0	0	(4,508)	(9,380)	(14,497)	(19,735)
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Spotsy Co-Massaponax
RAPPAHANNOCK Trading Basin



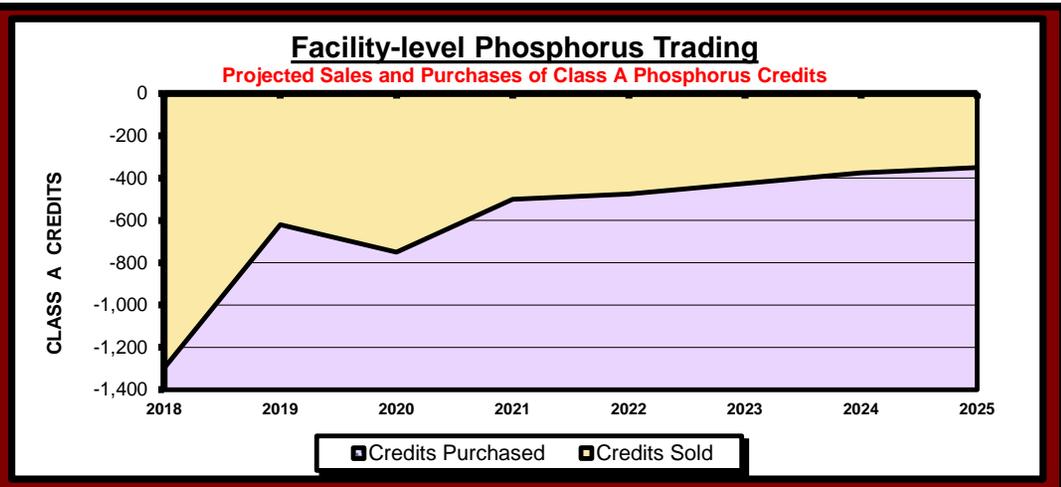
Loading & Credit Summary

Design Flow (mgd)	8.00
Projected Flow (mgd)	6.96
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	84,788
Delivery Factor	1.00
Expected Load	84,788
Delivered WLA	114,505
Expected Credits (delivered)	29,717
Transfers In (Out) within Owner Bubble	(13,636)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	16,081
Class A Credit Sales (Purchases)	0
Expected Class B Credits	16,081

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
6.96	7.16	7.38	7.60	7.83	8.05	8.29	8.54
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
84,788	87,225	89,905	92,585	95,387	98,067	100,991	104,036
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
84,788	87,225	89,905	92,585	95,387	98,067	100,991	104,036
114,505	114,505	114,505	114,505	114,505	114,505	114,505	114,505
29,717	27,280	24,600	21,920	19,118	16,438	13,514	10,469
(13,636)	(15,585)	(17,534)	(21,433)	(19,118)	(16,438)	(13,514)	(10,469)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
16,081	11,695	7,066	487	0	0	0	0
0	5,800	5,000	0	0	0	0	0
16,081	5,895	2,066	487	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Spotsy Co-FMC
RAPPAHANNOCK Trading Basin

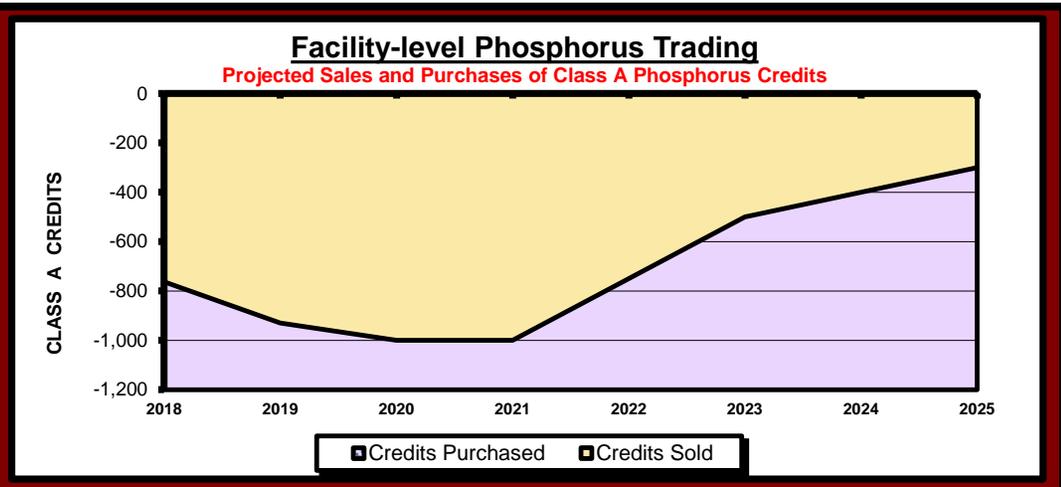


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2.56	2.64	2.72	2.88	2.97	3.06	3.15	3.24
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
2,339	2,412	2,485	2,631	2,714	2,796	2,878	2,960
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2,339	2,412	2,485	2,631	2,714	2,796	2,878	2,960
3,655	3,655	3,655	3,655	3,655	3,655	3,655	3,655
1,316	1,243	1,170	1,024	941	859	777	695
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,316	1,243	1,170	1,024	941	859	777	695
1,298	620	750	500	475	425	375	350
18	623	420	524	466	434	402	345

PHOSPHORUS FACILITY SUMMARY

Spotsy Co-Massaponax
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

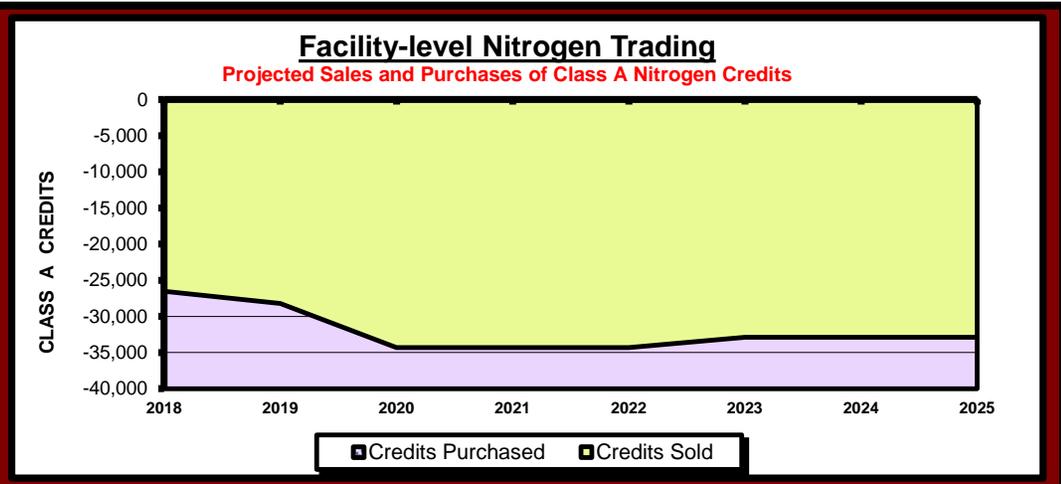
Design Flow (mgd)	8.00
Projected Flow (mgd)	6.96
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	6,359
Delivery Factor	1.00
Expected Load	6,359
Delivered WLA*	8,405
Expected Credits (delivered)	2,046
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	2,046
Class A Credit Sales (Purchases)	763
Expected Class B Credits	1,283

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
6.96	7.16	7.38	7.60	7.83	8.05	8.29	8.54
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
6,359	6,542	6,743	6,944	7,154	7,355	7,574	7,803
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6,359	6,542	6,743	6,944	7,154	7,355	7,574	7,803
8,405	8,405	8,405	8,405	8,405	8,405	8,405	8,405
2,046	1,863	1,662	1,461	1,251	1,050	831	602
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,046	1,863	1,662	1,461	1,251	1,050	831	602
763	930	1,000	1,000	750	500	400	300
1,283	933	662	461	501	550	431	302

* Reflects allocation transfer to Rush River WWTP of 183 discharged pounds of TP

NITROGEN FACILITY SUMMARY

Stafford Co-L. Falls Run
RAPPAHANNOCK Trading Basin



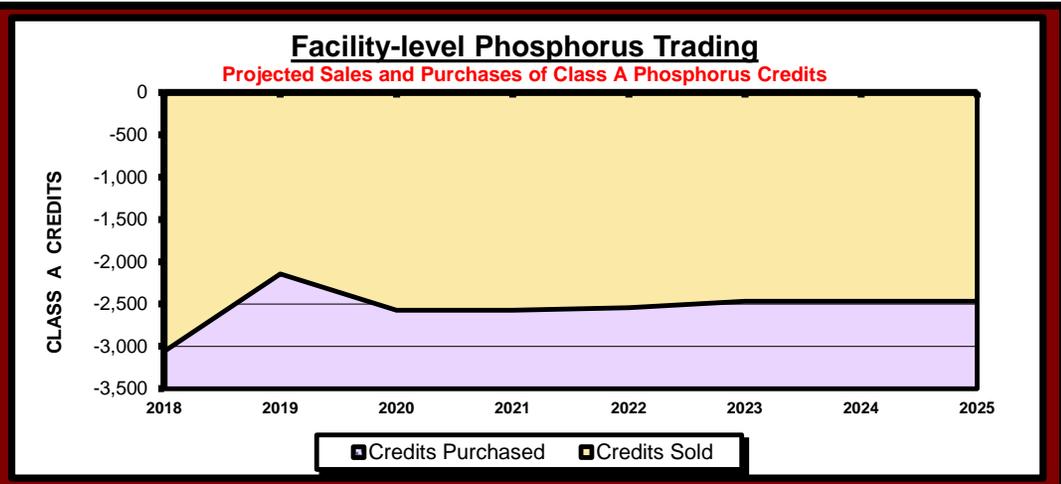
Loading & Credit Summary

Design Flow (mgd)	8.00
Projected Flow (mgd)	4.65
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	56,647
Delivery Factor	1.00
Expected Load	56,647
Delivered WLA	97,458
Expected Credits (delivered)	40,811
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	40,811
Class A Credit Sales (Purchases)	26,527
Expected Class B Credits	14,284

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
4.65	4.87	4.87	4.87	4.87	5.00	5.00	5.00
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
56,647	59,328	59,328	59,328	59,328	60,911	60,911	60,911
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
56,647	59,328	59,328	59,328	59,328	60,911	60,911	60,911
97,458	97,458	97,458	97,458	97,458	97,458	97,458	97,458
40,811	38,130	38,130	38,130	38,130	36,547	36,547	36,547
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
40,811	38,130	38,130	38,130	38,130	36,547	36,547	36,547
26,527	28,216	34,317	34,317	34,317	32,892	32,892	32,892
14,284	9,914	3,813	3,813	3,813	3,655	3,655	3,655

PHOSPHORUS FACILITY SUMMARY

Stafford Co-L. Falls Run
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

Design Flow (mgd)	8.00
Projected Flow (mgd)	4.65
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	4,249
Delivery Factor	1.00
Expected Load	4,249
Delivered WLA	7,309
Expected Credits (delivered)	3,060
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	3,060
Class A Credit Sales (Purchases)	3,060
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
4.65	4.87	4.87	4.87	4.87	5.00	5.00	5.00
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
4,249	4,450	4,450	4,450	4,450	4,568	4,568	4,568
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4,249	4,450	4,450	4,450	4,450	4,568	4,568	4,568
7,309	7,309	7,309	7,309	7,309	7,309	7,309	7,309
3,060	2,859	2,859	2,859	2,859	2,741	2,741	2,741
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3,060	2,859	2,859	2,859	2,859	2,741	2,741	2,741
3,060	2,144	2,573	2,573	2,543	2,467	2,467	2,467
0	715	286	286	316	274	274	274

NITROGEN FACILITY SUMMARY

Tappahannock
RAPPAHANNOCK Trading Basin



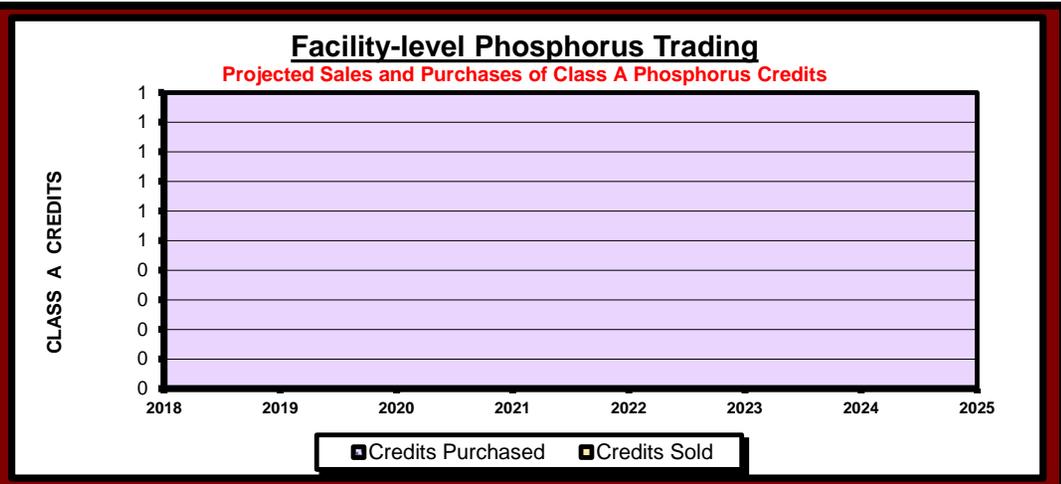
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
0.64	0.65	0.64	0.64	0.65	0.66	0.66	0.66
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
7,797	7,918	7,797	7,797	7,918	8,040	8,040	8,040
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
7,797	7,918	7,797	7,797	7,918	8,040	8,040	8,040
9,746	9,746	9,746	9,746	9,746	9,746	9,746	9,746
1,949	1,828	1,949	1,949	1,828	1,706	1,706	1,706
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,949	1,828	1,949	1,949	1,828	1,706	1,706	1,706
0	0	0	0	0	0	0	0
1,949	1,828	1,949	1,949	1,828	1,706	1,706	1,706

PHOSPHORUS FACILITY SUMMARY

Tappahannock
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

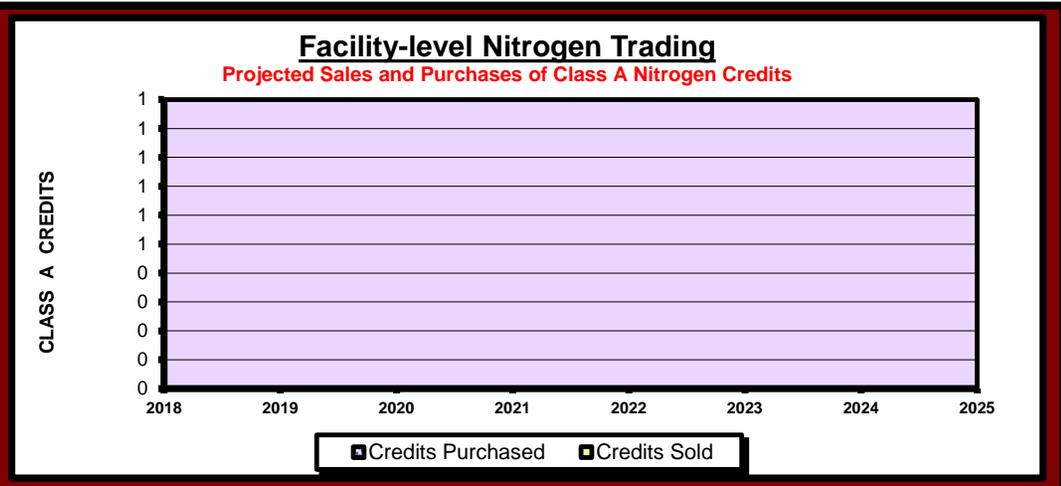
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
0.64	0.65	0.64	0.64	0.65	0.66	0.66	0.66
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
585	594	585	585	594	603	603	603
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
585	594	585	585	594	603	603	603
731	731	731	731	731	731	731	731
146	137	146	146	137	128	128	128
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
146	137	146	146	137	128	128	128
0	0	0	0	0	0	0	0
146	137	146	146	137	128	128	128

NITROGEN FACILITY SUMMARY

Warsaw

RAPPAHANNOCK Trading Basin



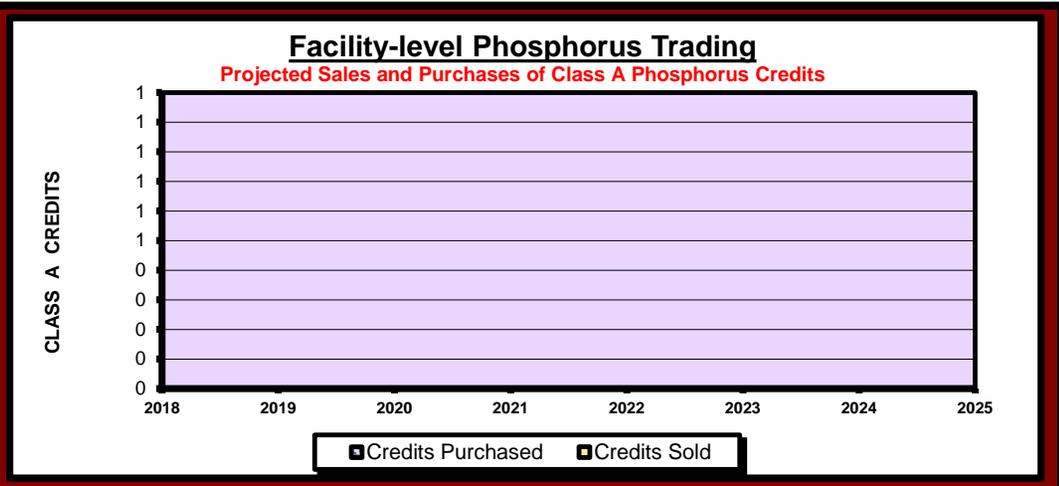
Loading & Credit Summary	
Design Flow (mgd)	0.30
Projected Flow (mgd)	0.25
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	3,046
Delivery Factor	1.00
Expected Load	3,046
Delivered WLA	3,655
Expected Credits (delivered)	609
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	609
Class A Credit Sales (Purchases)	0
Expected Class B Credits	609

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
3,046	3,046	3,046	3,046	3,046	3,046	3,046	3,046
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3,046	3,046	3,046	3,046	3,046	3,046	3,046	3,046
3,655	3,655	3,655	3,655	3,655	3,655	3,655	3,655
609	609	609	609	609	609	609	609
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
609	609	609	609	609	609	609	609
0	0	0	0	0	0	0	0
609	609	609	609	609	609	609	609

PHOSPHORUS FACILITY SUMMARY

Warsaw

RAPPAHANNOCK Trading Basin



Loading & Credit Summary

Design Flow (mgd)	0.30
Projected Flow (mgd)	0.25
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	228
Delivery Factor	0.99
Expected Load	226
Delivered WLA	271
Expected Credits (delivered)	45
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	45
Class A Credit Sales (Purchases)	0
Expected Class B Credits	45

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
228	228	228	228	228	228	228	228
0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00
226	226	226	228	228	228	228	228
271	271	271	274	274	274	274	274
45	45	45	46	46	46	46	46
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
45	45	45	46	46	46	46	46
0	0	0	0	0	0	0	0
45	45	45	46	46	46	46	46

NITROGEN FACILITY SUMMARY

Westmoreland Co-Montross
RAPPAHANNOCK Trading Basin



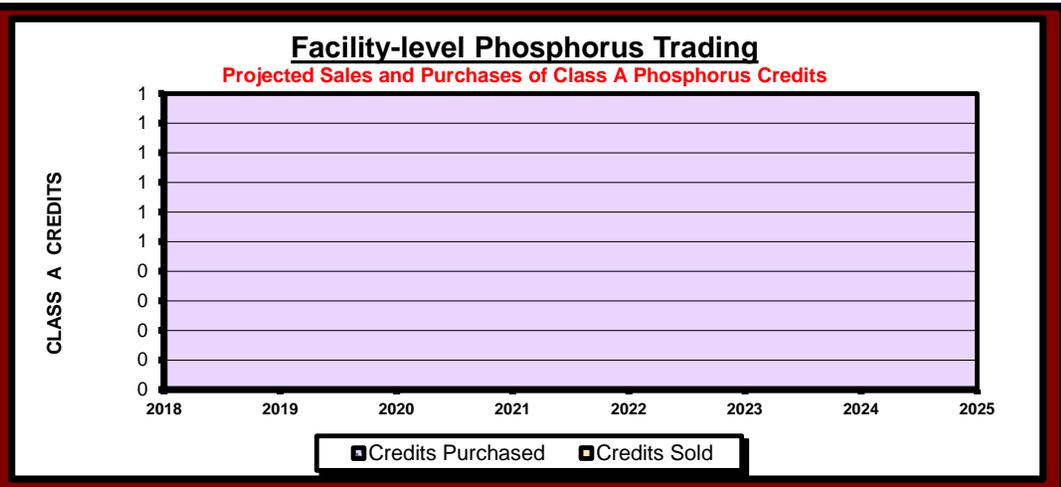
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
731	731	731	731	731	731	731	731
0.74	0.74	0.74	0.63	0.63	0.63	0.63	0.63
541	541	541	460	460	460	460	460
1,172	1,172	1,172	998	998	998	998	998
631	631	631	538	538	538	538	538
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
631	631	631	538	538	538	538	538
0	0	0	0	0	0	0	0
631	631	631	538	538	538	538	538

PHOSPHORUS FACILITY SUMMARY

Westmoreland Co-Montross
RAPPAHANNOCK Trading Basin



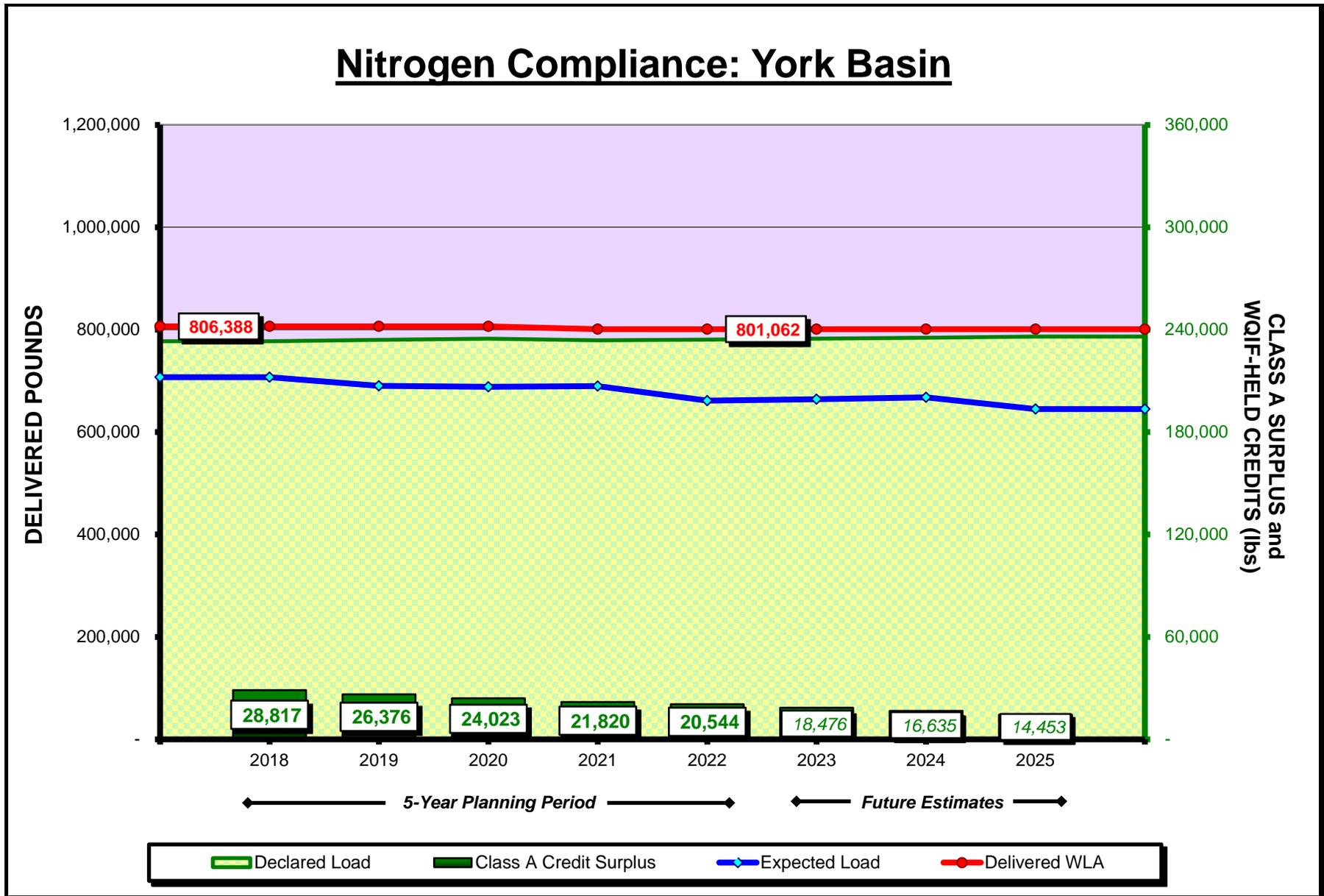
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
91	91	91	91	91	91	91	91
0.92	0.92	0.92	0.88	0.88	0.88	0.88	0.88
84	84	84	80	80	80	80	80
109	109	109	105	105	105	105	105
25	25	25	25	25	25	25	25
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
25	25	25	25	25	25	25	25
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25	25	25	25	25	25	25	25

SECTION 4

York River Basin Exchange Compliance Plan



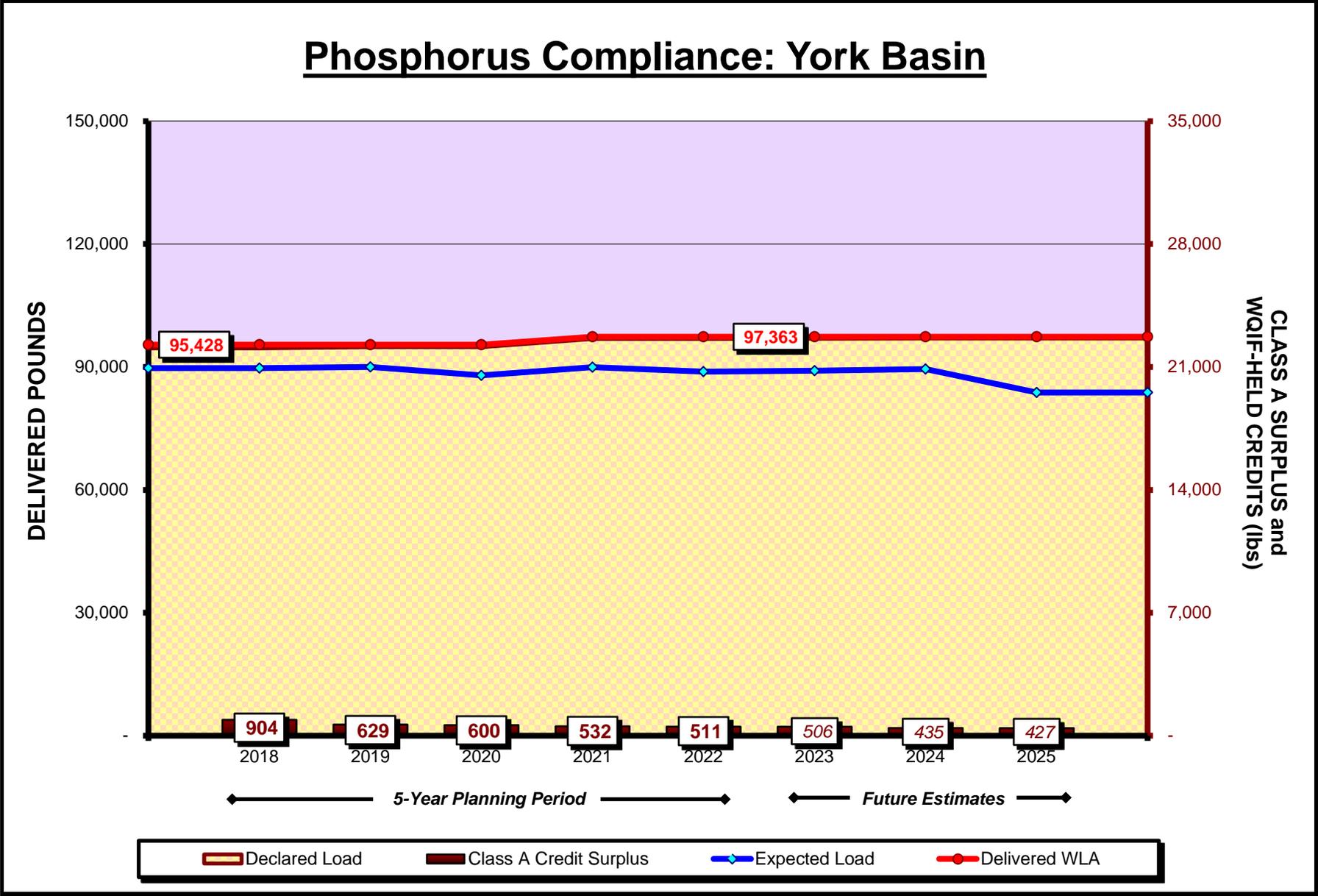


YORK Basin: Nitrogen Credit Ledger

Compliance Year:											
	2020	Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)				
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	No Sale	No Sale	No Sale
The Exchange (group)	806,388	688,395	117,993	-	-	(47,941)	70,052		24,023	-	46,029
Bear Island Paper WB LLC	24,137	16,309	7,828	-	-	-	7,828		-	-	7,828
Caroline Co.	5,299	3,815	1,484	-	-	-	1,484		866	-	618
Hanover Co-Ashland	22,659	39,404	(16,745)	16,745	-	-	-		-	-	-
Hanover Co-Doswell	10,416	16,726	(6,310)	6,310	-	-	-		-	-	-
Hanover Co-Totopotomoy	158,979	77,157	81,822	(23,055)	-	(47,694)	11,073		10,000	-	1,073
HRSD-King William	1,424	626	798	(798)	-	-	-		-	-	-
HRSD-West Point	10,964	23,503	(12,539)	12,539	-	-	-		-	-	-
HRSD-York	275,927	244,975	30,952	(11,741)	-	-	19,211		-	-	19,211
New Kent Co-Parham	36,547	8,771	27,776	-	-	-	27,776		13,157	-	14,619
RSA-Gordonsville	859	429	430	-	-	(247)	183		-	-	183
WestRock-West Point Mill	259,177	256,680	2,497	-	-	-	2,497		-	-	2,497
-	-	-	-	-	-	-	-		-	-	-
-	-	-	-	-	-	-	-		-	-	-
-	-	-	-	-	-	-	-		-	-	-
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YORK Basin: Nitrogen Credit Ledger

Compliance Year:											
	2021	Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)				
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits	PRICE:	Class A Sales	Class A* Purchases	Class B Sales**
The Exchange (group)	801,062	689,880	111,182	-	-	(47,441)	63,741	21,820	-	41,921	
Bear Island Paper WB LLC	23,664	23,664	-	-	-	-	-	-	-	-	-
Caroline Co.	5,939	4,573	1,366	-	-	-	1,366	663	-	-	703
Hanover Co-Ashland	20,101	34,955	(14,854)	14,854	-	-	-	-	-	-	-
Hanover Co-Doswell	9,137	18,730	(9,593)	9,593	-	-	-	-	-	-	-
Hanover Co-Totopotomoy	157,151	76,271	80,880	(24,447)	-	(47,145)	9,288	8,000	-	-	1,288
HRSD-King William	1,424	599	825	(825)	-	-	-	-	-	-	-
HRSD-West Point	10,964	23,655	(12,691)	12,691	-	-	-	-	-	-	-
HRSD-York	275,927	240,459	35,468	(11,866)	-	-	23,602	-	-	-	23,602
New Kent Co-Parham	36,547	8,771	27,776	-	-	-	27,776	13,157	-	-	14,619
RSA-Gordonsville	1,031	515	516	-	-	(296)	220	-	-	-	220
WestRock-West Point Mill	259,177	257,688	1,489	-	-	-	1,489	-	-	-	1,489
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
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York River Basin

Supplemental Information for Individual Facilities



NITROGEN FACILITY SUMMARY

Bear Island Paper WB LLC
 YORK Trading Basin

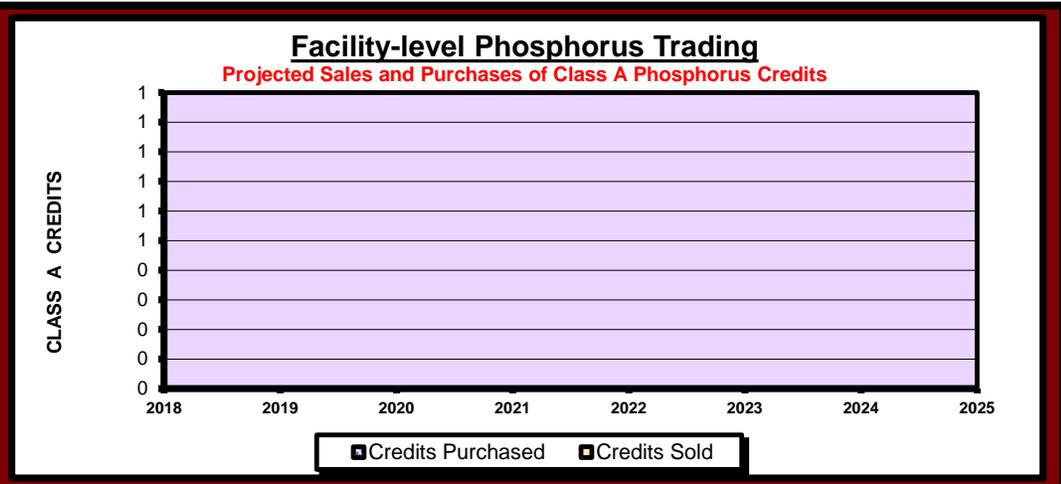


Loading & Credit Summary	
Design Flow (mgd)	4.20
Projected Flow (mgd)	4.20
Projected Avg. Annual Concentration (mg/L)	3.70
Discharged Load (end of pipe)	47,328
Delivery Factor	0.51
Expected Load	24,137
Delivered WLA	24,137
Expected Credits (delivered)	0
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
3.70	3.70	2.50	3.70	3.70	3.70	3.70	3.70
47,328	47,328	31,978	47,328	47,328	47,328	47,328	47,328
0.51	0.51	0.51	0.50	0.50	0.50	0.50	0.50
24,137	24,137	16,309	23,664	23,664	23,664	23,664	23,664
24,137	24,137	24,137	23,664	23,664	23,664	23,664	23,664
0	0	7,828	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	7,828	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	7,828	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Bear Island Paper WB LLC
 YORK Trading Basin



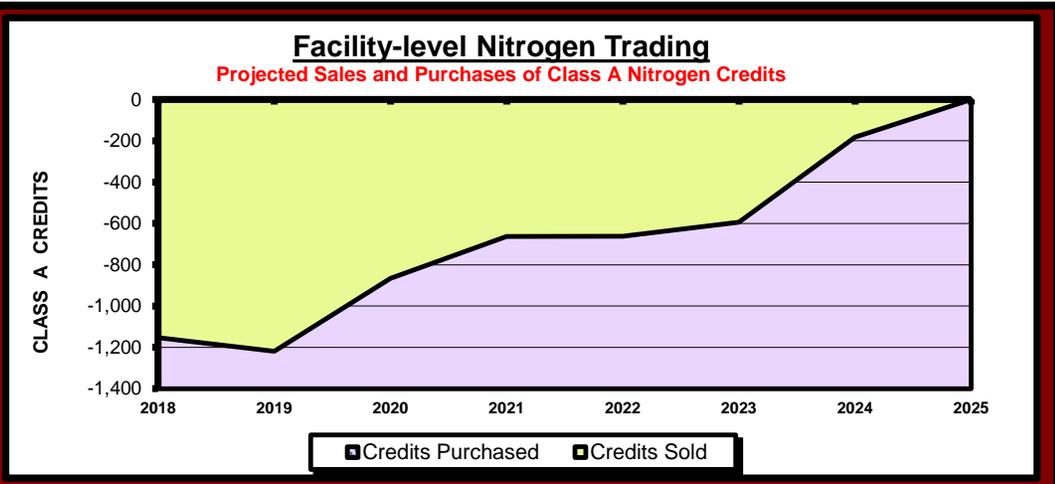
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
0.80	0.80	0.40	0.80	0.80	0.80	0.80	0.80
10,233	10,233	5,117	10,232	10,232	10,232	10,232	10,232
0.55	0.55	0.55	0.65	0.65	0.65	0.65	0.65
5,628	5,628	2,814	6,651	6,651	6,651	6,651	6,651
5,628	5,628	5,628	6,651	6,651	6,651	6,651	6,651
0	0	2,814	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	2,814	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	2,814	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Caroline Co.
 YORK Trading Basin



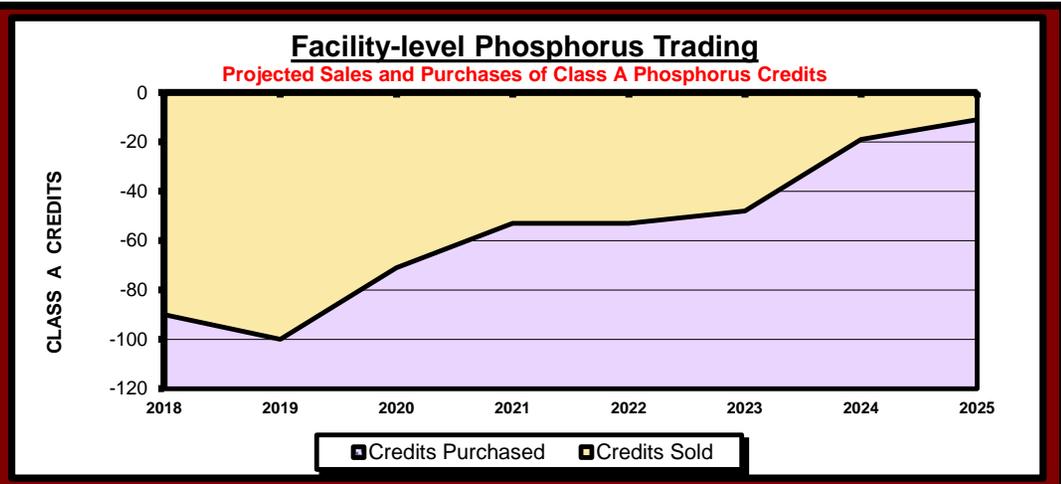
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

	2018	2019	2020	2021	2022	2023	2024	2025
Planning Period						Future Estimates (non-binding)		
Design Flow (mgd)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Projected Flow (mgd)	0.71	0.66	0.72	0.77	0.77	0.78	0.84	0.90
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	6,487	6,030	6,578	7,035	7,035	7,127	7,675	8,223
Delivery Factor	0.58	0.58	0.58	0.65	0.65	0.65	0.65	0.65
Expected Load	3,762	3,498	3,815	4,573	4,573	4,632	4,989	5,345
Delivered WLA	5,299	5,299	5,299	5,939	5,939	5,939	5,939	5,939
Expected Credits (delivered)	1,537	1,801	1,484	1,366	1,366	1,307	950	594
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	1,537	1,801	1,484	1,366	1,366	1,307	950	594
Class A Credit Sales (Purchases)	1,153	1,219	866	663	662	594	182	0
Expected Class B Credits	384	582	618	703	704	713	768	594

PHOSPHORUS FACILITY SUMMARY

Caroline Co.
 YORK Trading Basin



Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025	
Planning Period					Future Estimates (non-binding)			
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	
0.71	0.66	0.72	0.77	0.77	0.78	0.84	0.90	
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.19	
432	402	439	469	469	475	512	521	
0.68	0.68	0.68	0.72	0.72	0.72	0.72	0.72	
294	273	298	338	338	342	368	375	
414	414	414	438	438	438	438	438	
120	141	116	100	100	96	70	63	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
120	141	116	100	100	96	70	63	
90	100	71	53	53	48	19	11	
30	41	45	47	47	48	51	52	

Owner Bubble: Hanover County

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Ashland	15,467	16,745	16,745	14,854	5,902	6,292	6,688	7,089
Doswell	5,598	5,954	6,310	9,593	666	813	963	1,114
Totopotomoy	(21,065)	(22,699)	(23,055)	(24,447)	(6,568)	(7,105)	(7,651)	(8,203)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Ashland	-	-	-	-	-	-	-	-
Doswell	-	-	-	-	-	-	-	-
Totopotomoy	17,302	13,548	11,073	9,288	7,607	5,947	4,261	2,552
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	17,302	13,548	11,073	9,288	7,607	5,947	4,261	2,552
Class A Sales (Purchases)	16,000	12,000	10,000	8,000	7,000	5,000	4,000	2,000
<i>Expected Class B Credits</i>	1,302	1,548	1,073	1,288	607	947	261	552
<i>WQIF-Held Credits</i>	47,694	47,694	47,694	47,145	47,145	47,145	47,145	47,145

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Ashland	3,757	3,928	3,928	3,910	2,503	2,565	2,627	2,690
Doswell	611	640	668	1,227	265	281	297	313
Totopotomoy	(4,368)	(4,568)	(4,596)	(5,137)	(2,768)	(2,846)	(2,924)	(3,003)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Ashland	-	-	-	-	-	-	-	-
Doswell	-	-	-	-	-	-	-	-
Totopotomoy	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	-	-	-	-	-	-	-	-
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	0	0	0	0	0	0	0	0
<i>WQIF-Held Credits</i>	575	246	89	42	1,302	1,160	1,017	873

NITROGEN FACILITY SUMMARY

Hanover Co-Ashland

YORK Trading Basin



Loading & Credit Summary

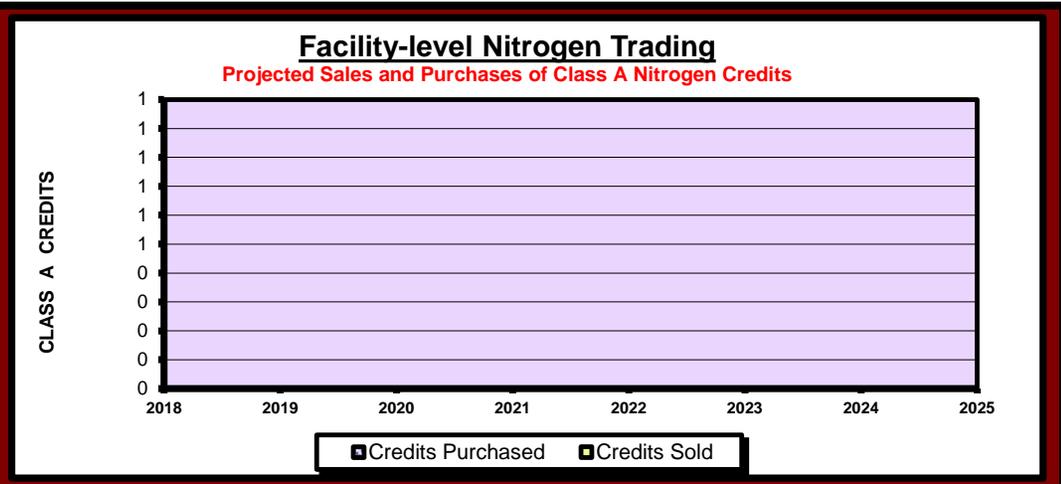
Design Flow (mgd)	2.00
Projected Flow (mgd)	1.79
Projected Avg. Annual Concentration (mg/L)	11.28
Discharged Load (end of pipe)	61,494
Delivery Factor	0.62
Expected Load	38,126
Delivered WLA	22,659
Expected Credits (delivered)	(15,467)
Transfers In (Out) within Owner Bubble	15,467
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1.79	1.85	1.85	1.85	1.38	1.40	1.42	1.44
11.28	11.28	11.28	11.28	11.28	11.28	11.28	11.28
61,494	63,555	63,555	63,555	47,277	47,987	48,706	49,437
0.62	0.62	0.62	0.55	0.55	0.55	0.55	0.55
38,126	39,404	39,404	34,955	26,003	26,393	26,789	27,190
22,659	22,659	22,659	20,101	20,101	20,101	20,101	20,101
(15,467)	(16,745)	(16,745)	(14,854)	(5,902)	(6,292)	(6,688)	(7,089)
15,467	16,745	16,745	14,854	5,902	6,292	6,688	7,089
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Hanover Co-Doswell

YORK Trading Basin



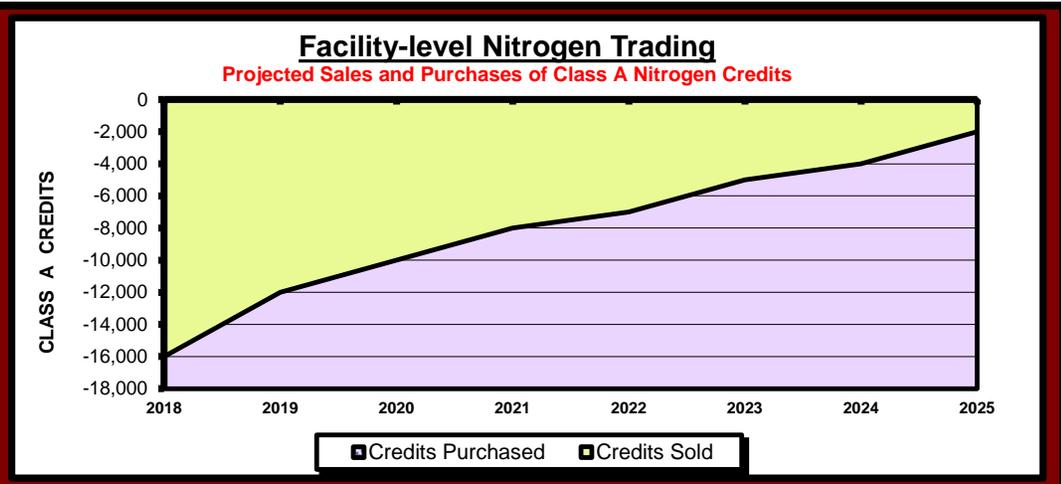
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.45	0.46	0.47	0.60	0.31	0.32	0.32	0.33
20.50	20.50	20.50	20.50	20.50	20.50	20.50	20.50
28,095	28,720	29,344	37,460	19,607	19,901	20,199	20,502
0.57	0.57	0.57	0.50	0.50	0.50	0.50	0.50
16,014	16,370	16,726	18,730	9,803	9,950	10,100	10,251
10,416	10,416	10,416	9,137	9,137	9,137	9,137	9,137
(5,598)	(5,954)	(6,310)	(9,593)	(666)	(813)	(963)	(1,114)
5,598	5,954	6,310	9,593	666	813	963	1,114
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Hanover Co-Totopotomoy
 YORK Trading Basin



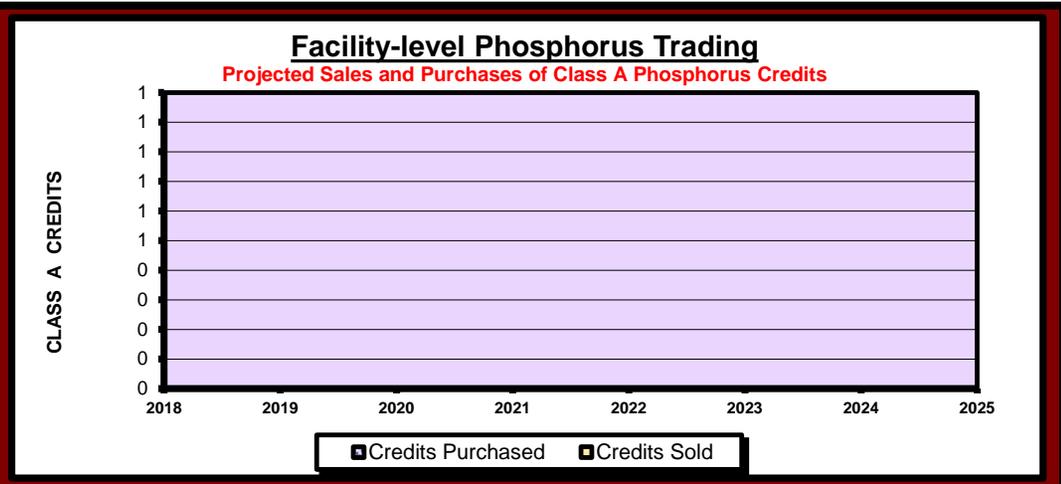
Loading & Credit Summary

Design Flow (mgd)	7.00
Projected Flow (mgd)	3.44
Projected Avg. Annual Concentration (mg/L)	8.00
Discharged Load (end of pipe)	83,814
Delivery Factor	0.87
Expected Load	72,918
Delivered WLA	158,979
Expected Credits (delivered)	86,061
Transfers In (Out) within Owner Bubble	(21,065)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	(47,694)
Expected Net Credits	17,302
Class A Credit Sales (Purchases)	16,000
Expected Class B Credits	1,302

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
3.44	3.54	3.64	3.64	4.57	4.63	4.68	4.74
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
83,814	86,250	88,687	88,687	111,431	112,737	114,063	115,408
0.87	0.87	0.87	0.86	0.86	0.86	0.86	0.86
72,918	75,038	77,157	76,271	95,831	96,954	98,094	99,251
158,979	158,979	158,979	157,151	157,151	157,151	157,151	157,151
86,061	83,941	81,822	80,880	61,320	60,197	59,057	57,900
(21,065)	(22,699)	(23,055)	(24,447)	(6,568)	(7,105)	(7,651)	(8,203)
0	0	0	0	0	0	0	0
(47,694)	(47,694)	(47,694)	(47,145)	(47,145)	(47,145)	(47,145)	(47,145)
17,302	13,548	11,073	9,288	7,607	5,947	4,261	2,552
16,000	12,000	10,000	8,000	7,000	5,000	4,000	2,000
1,302	1,548	1,073	1,288	607	947	261	552

PHOSPHORUS FACILITY SUMMARY

Hanover Co-Ashland
 YORK Trading Basin



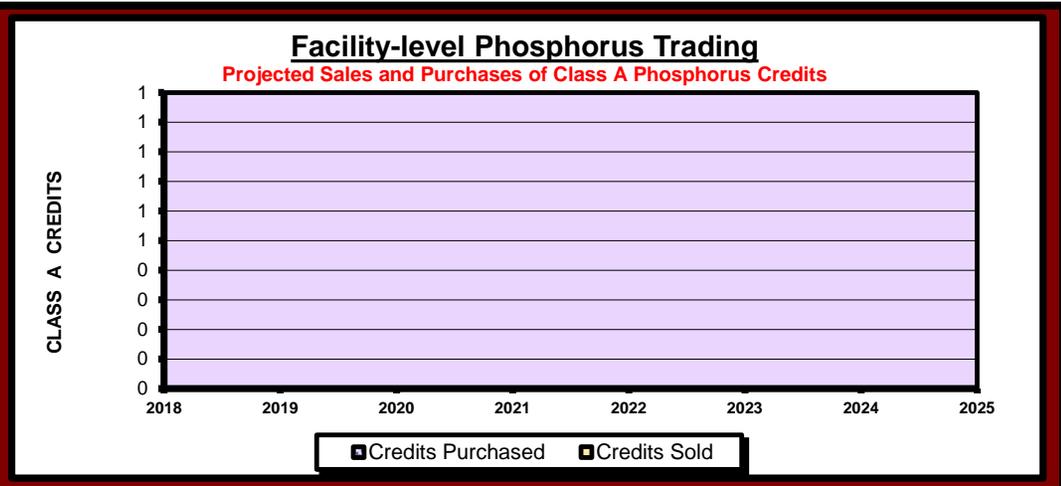
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1.79	1.85	1.85	1.85	1.38	1.40	1.42	1.44
1.70	1.70	1.70	1.50	1.50	1.50	1.50	1.50
9,268	9,578	9,578	8,451	6,287	6,381	6,477	6,574
0.55	0.55	0.55	0.65	0.65	0.65	0.65	0.65
5,097	5,268	5,268	5,493	4,086	4,148	4,210	4,273
1,340	1,340	1,340	1,583	1,583	1,583	1,583	1,583
(3,757)	(3,928)	(3,928)	(3,910)	(2,503)	(2,565)	(2,627)	(2,690)
3,757	3,928	3,928	3,910	2,503	2,565	2,627	2,690
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Hanover Co-Doswell
 YORK Trading Basin



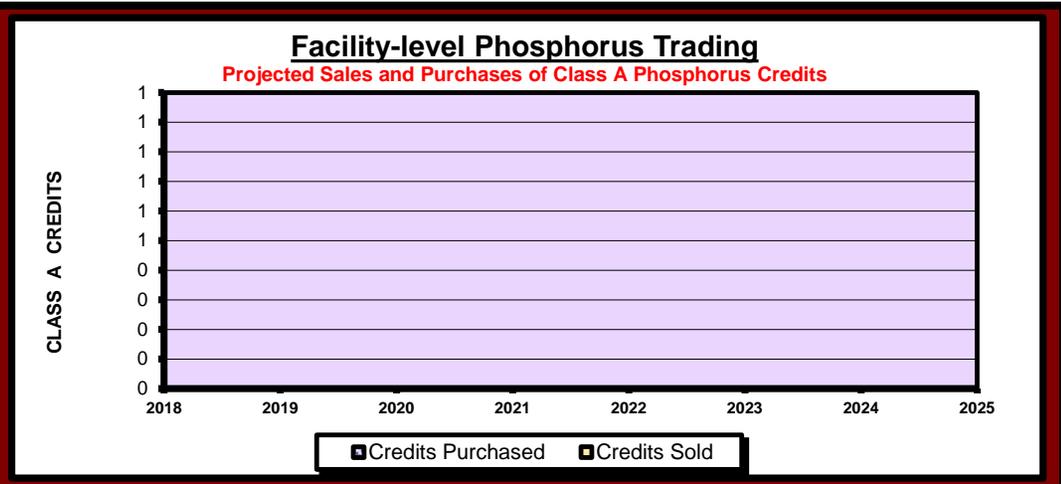
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.45	0.46	0.47	0.60	0.31	0.32	0.32	0.33
1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
2,330	2,382	2,433	3,106	1,626	1,650	1,675	1,700
0.55	0.55	0.55	0.65	0.65	0.65	0.65	0.65
1,281	1,310	1,338	2,019	1,057	1,073	1,089	1,105
670	670	670	792	792	792	792	792
(611)	(640)	(668)	(1,227)	(265)	(281)	(297)	(313)
611	640	668	1,227	265	281	297	313
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Hanover Co-Totopotomoy
 YORK Trading Basin



Loading & Credit Summary

Design Flow (mgd)	Projected Flow (mgd)	Projected Avg. Annual Concentration (mg/L)	Discharged Load (end of pipe)	Delivery Factor	Expected Load	Delivered WLA	Expected Credits (delivered)	Transfers In (Out) within Owner Bubble	Transfers In (Out) from Private Exchange	WQIF-Held Credits	Expected Net Credits
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2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
3.44	3.54	3.64	3.64	4.57	4.63	4.68	4.74
0.55	0.55	0.55	0.50	0.50	0.50	0.50	0.50
5,762	5,930	6,097	5,543	6,964	7,046	7,129	7,213
0.77	0.77	0.77	0.78	0.78	0.78	0.78	0.78
4,437	4,566	4,695	4,323	5,432	5,496	5,561	5,626
9,380	9,380	9,380	9,502	9,502	9,502	9,502	9,502
4,943	4,814	4,685	5,179	4,070	4,006	3,941	3,876
(4,368)	(4,568)	(4,596)	(5,137)	(2,768)	(2,846)	(2,924)	(3,003)
0	0	0	0	0	0	0	0
(575)	(246)	(89)	(42)	(1,302)	(1,160)	(1,017)	(873)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Owner Bubble: Hampton Roads Sanitation District (York)

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
King William	(1,032)	(808)	(798)	(825)	(773)	(744)	(715)	(686)
West Point	11,225	13,822	12,539	12,691	13,368	13,537	13,708	13,880
York	(10,193)	(13,014)	(11,741)	(11,866)	(12,595)	(12,793)	(12,993)	(13,194)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
King William	-	-	-	-	-	-	-	-
West Point	-	-	-	-	-	-	-	-
York	2,752	23,674	19,211	23,602	23,537	22,549	21,558	20,563
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	2,752	23,674	19,211	23,602	23,537	22,549	21,558	20,563
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>2,752</i>	<i>23,674</i>	<i>19,211</i>	<i>23,602</i>	<i>23,537</i>	<i>22,549</i>	<i>21,558</i>	<i>20,563</i>
<i>WQIF-Held Credits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
King William	(161)	(144)	(143)	(145)	(141)	(139)	(137)	(135)
West Point	3,073	3,518	3,298	3,324	3,440	3,469	3,498	3,528
York	(2,912)	(3,374)	(3,155)	(3,179)	(3,299)	(3,330)	(3,361)	(3,393)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
King William	-	-	-	-	-	-	-	-
West Point	-	-	-	-	-	-	-	-
York	455	1,065	950	1,189	1,108	1,031	954	875
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	455	1,065	950	1,189	1,108	1,031	954	875
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>455</i>	<i>1,065</i>	<i>950</i>	<i>1,189</i>	<i>1,108</i>	<i>1,031</i>	<i>954</i>	<i>875</i>
<i>WQIF-Held Credits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

NITROGEN FACILITY SUMMARY

HRSD-King William
 YORK Trading Basin



Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.03
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	392
Delivery Factor	1.00
Expected Load	392
Delivered WLA	1,424
Expected Credits (delivered)	1,032
Transfers In (Out) within Owner Bubble	(1,032)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.03	0.05	0.05	0.05	0.05	0.06	0.06	0.06
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
392	616	626	599	651	680	709	738
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
392	616	626	599	651	680	709	738
1,424	1,424	1,424	1,424	1,424	1,424	1,424	1,424
1,032	808	798	825	773	744	715	686
(1,032)	(808)	(798)	(825)	(773)	(744)	(715)	(686)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

HRSD-West Point

YORK Trading Basin

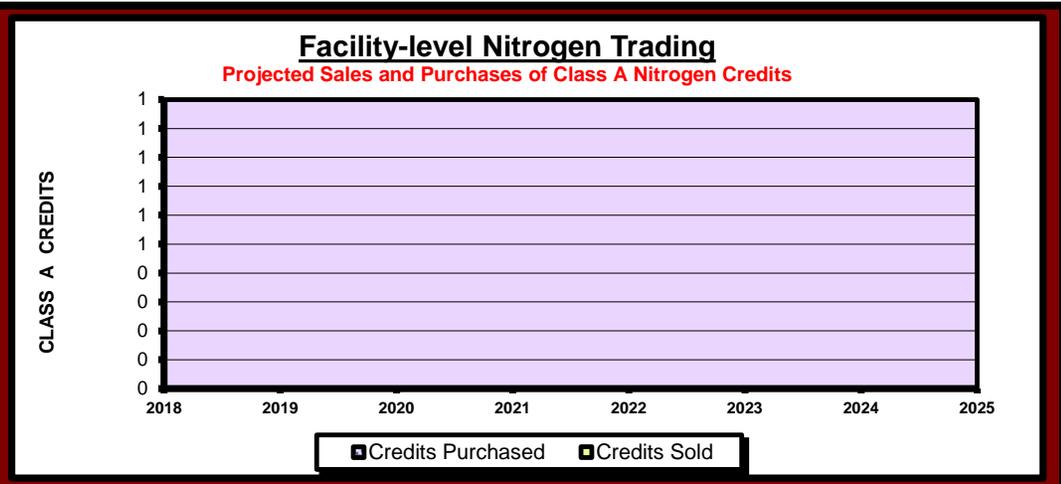


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
0.42	0.47	0.44	0.44	0.46	0.46	0.46	0.47
17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50
22,189	24,786	23,503	23,655	24,332	24,501	24,672	24,844
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22,189	24,786	23,503	23,655	24,332	24,501	24,672	24,844
10,964	10,964	10,964	10,964	10,964	10,964	10,964	10,964
(11,225)	(13,822)	(12,539)	(12,691)	(13,368)	(13,537)	(13,708)	(13,880)
11,225	13,822	12,539	12,691	13,368	13,537	13,708	13,880
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

HRSD-York
 YORK Trading Basin



Loading & Credit Summary

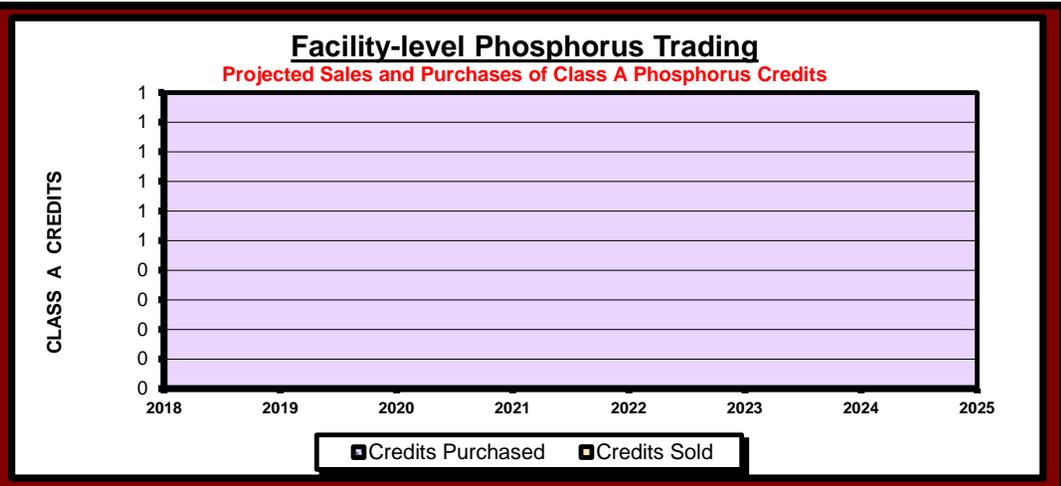
Design Flow (mgd)	15.00
Projected Flow (mgd)	12.34
Projected Avg. Annual Concentration (mg/L)	7.00
Discharged Load (end of pipe)	262,982
Delivery Factor	1.00
Expected Load	262,982
Delivered WLA*	275,927
Expected Credits (delivered)	12,945
Transfers In (Out) within Owner Bubble	(10,193)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	2,752
Class A Credit Sales (Purchases)	0
Expected Class B Credits	2,752

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
12.34	13.09	13.41	13.16	13.12	13.17	13.21	13.25
7.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
262,982	239,239	244,975	240,459	239,795	240,585	241,376	242,170
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
262,982	239,239	244,975	240,459	239,795	240,585	241,376	242,170
275,927	275,927	275,927	275,927	275,927	275,927	275,927	275,927
12,945	36,688	30,952	35,468	36,132	35,342	34,551	33,757
(10,193)	(13,014)	(11,741)	(11,866)	(12,595)	(12,793)	(12,993)	(13,194)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,752	23,674	19,211	23,602	23,537	22,549	21,558	20,563
0	0	0	0	0	0	0	0
2,752	23,674	19,211	23,602	23,537	22,549	21,558	20,563

* Reflects consolidation of the HRSD-Mathews WLA

PHOSPHORUS FACILITY SUMMARY

HRSD-King William
 YORK Trading Basin



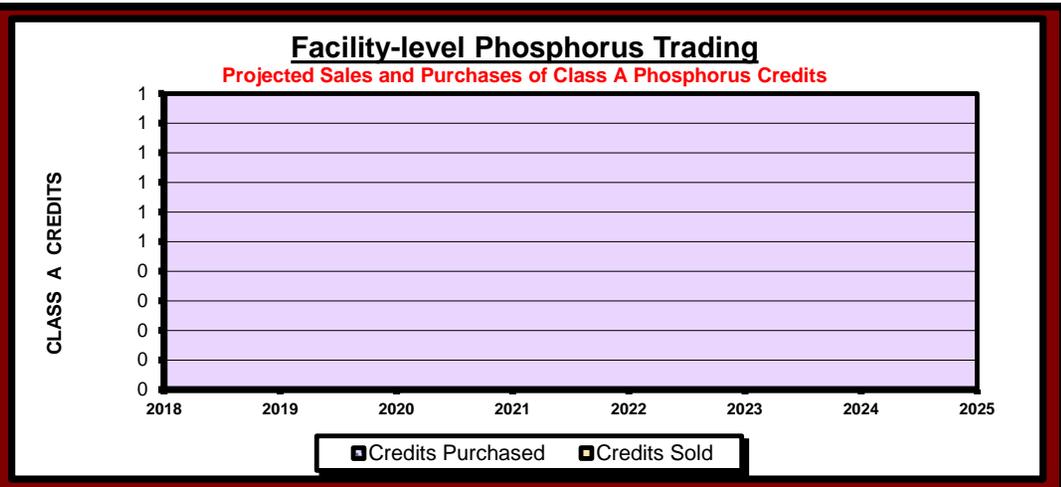
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.03	0.05	0.05	0.05	0.05	0.06	0.06	0.06
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
29	46	47	45	49	51	53	55
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
29	46	47	45	49	51	53	55
190	190	190	190	190	190	190	190
161	144	143	145	141	139	137	135
(161)	(144)	(143)	(145)	(141)	(139)	(137)	(135)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

HRSD-West Point

YORK Trading Basin



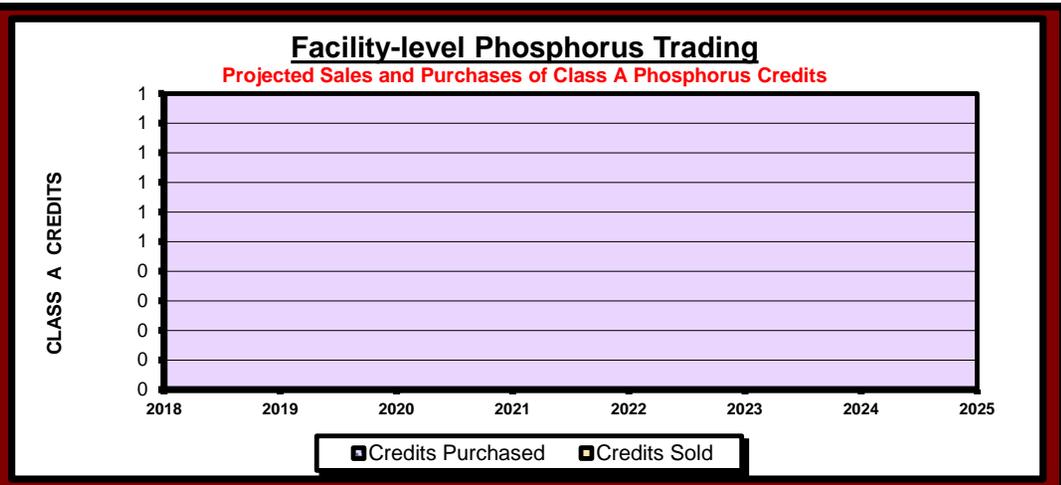
Loading & Credit Summary

Design Flow (mgd)	0.60
Projected Flow (mgd)	0.42
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	3,804
Delivery Factor	1.00
Expected Load	3,804
Delivered WLA	731
Expected Credits (delivered)	(3,073)
Transfers In (Out) within Owner Bubble	3,073
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
0.42	0.47	0.44	0.44	0.46	0.46	0.46	0.47
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
3,804	4,249	4,029	4,055	4,171	4,200	4,229	4,259
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3,804	4,249	4,029	4,055	4,171	4,200	4,229	4,259
731	731	731	731	731	731	731	731
(3,073)	(3,518)	(3,298)	(3,324)	(3,440)	(3,469)	(3,498)	(3,528)
3,073	3,518	3,298	3,324	3,440	3,469	3,498	3,528
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

HRSD-York
 YORK Trading Basin



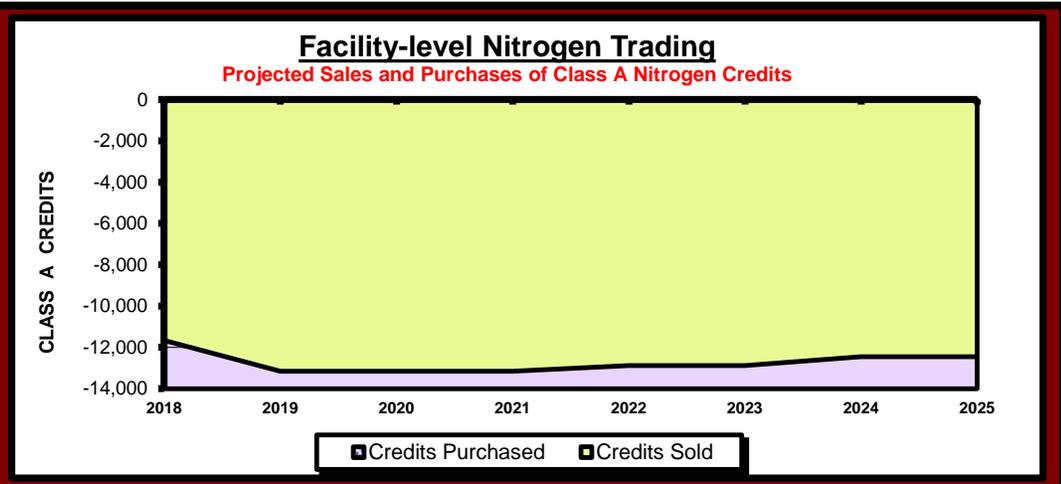
Loading & Credit Summary	
Design Flow (mgd)	15.00
Projected Flow (mgd)	12.34
Projected Avg. Annual Concentration (mg/L)	0.40
Discharged Load (end of pipe)	15,028
Delivery Factor	1.00
Expected Load	15,028
Delivered WLA*	18,395
Expected Credits (delivered)	3,367
Transfers In (Out) within Owner Bubble	(2,912)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	455
Class A Credit Sales (Purchases)	0
Expected Class B Credits	455

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
12.34	13.09	13.41	13.16	13.12	13.17	13.21	13.25
0.40	0.35	0.35	0.35	0.35	0.35	0.35	0.35
15,028	13,956	14,290	14,027	13,988	14,034	14,080	14,127
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
15,028	13,956	14,290	14,027	13,988	14,034	14,080	14,127
18,395	18,395	18,395	18,395	18,395	18,395	18,395	18,395
3,367	4,439	4,105	4,368	4,407	4,361	4,315	4,268
(2,912)	(3,374)	(3,155)	(3,179)	(3,299)	(3,330)	(3,361)	(3,393)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
455	1,065	950	1,189	1,108	1,031	954	875
0	0	0	0	0	0	0	0
455	1,065	950	1,189	1,108	1,031	954	875

* Reflects consolidation of the HRSD-Mathews WLA

NITROGEN FACILITY SUMMARY

New Kent Co-Parham
 YORK Trading Basin



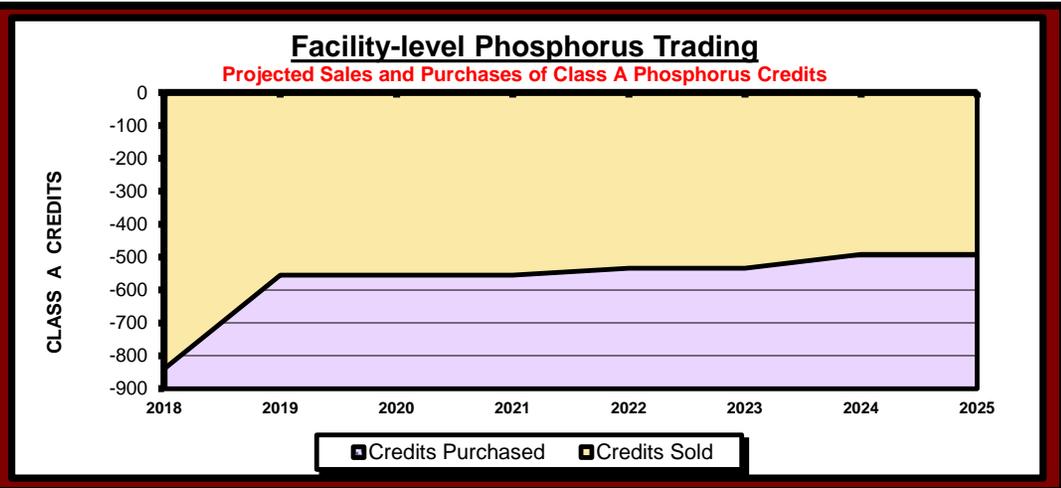
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0.62	0.48	0.48	0.48	0.50	0.50	0.55	0.55
7.00	7.00	6.00	6.00	6.00	6.00	6.00	6.00
13,218	10,233	8,771	8,771	9,137	9,137	10,050	10,050
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13,218	10,233	8,771	8,771	9,137	9,137	10,050	10,050
36,547	36,547	36,547	36,547	36,547	36,547	36,547	36,547
23,329	26,314	27,776	27,776	27,410	27,410	26,497	26,497
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
23,329	26,314	27,776	27,776	27,410	27,410	26,497	26,497
11,664	13,157	13,157	13,157	12,882	12,882	12,453	12,453
11,665	13,157	14,619	14,619	14,528	14,528	14,044	14,044

PHOSPHORUS FACILITY SUMMARY

New Kent Co-Parham
 YORK Trading Basin

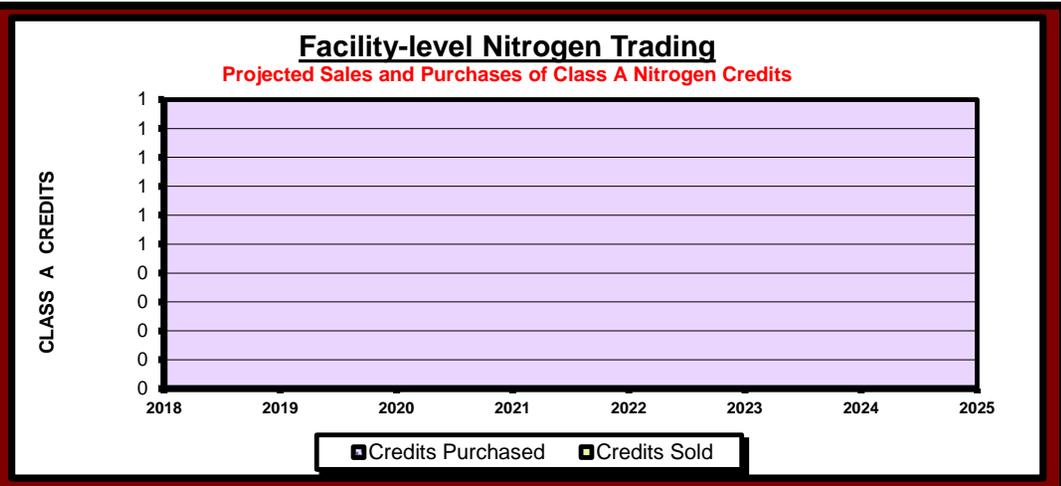


Loading & Credit Summary	
Design Flow (mgd)	2.00
Projected Flow (mgd)	0.62
Projected Avg. Annual Concentration (mg/L)	0.40
Discharged Load (end of pipe)	755
Delivery Factor	1.00
Expected Load	755
Delivered WLA	2,436
Expected Credits (delivered)	1,681
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,681
Class A Credit Sales (Purchases)	840
Expected Class B Credits	841

2018	2019	2020	2021	2022	2023	2024	2025	
Planning Period					Future Estimates (non-binding)			
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
0.62	0.48	0.48	0.48	0.50	0.50	0.55	0.55	
0.40	0.40	0.70	0.70	0.70	0.70	0.70	0.70	
755	585	1,023	1,023	1,066	1,066	1,173	1,173	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
755	585	1,023	1,023	1,066	1,066	1,173	1,173	
2,436	2,436	2,436	2,436	2,436	2,436	2,436	2,436	
1,681	1,851	1,413	1,413	1,370	1,370	1,263	1,263	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
1,681	1,851	1,413	1,413	1,370	1,370	1,263	1,263	
840	555	555	555	534	534	492	492	
841	1,296	858	858	836	836	771	771	

NITROGEN FACILITY SUMMARY

RSA-Gordonville
 YORK Trading Basin



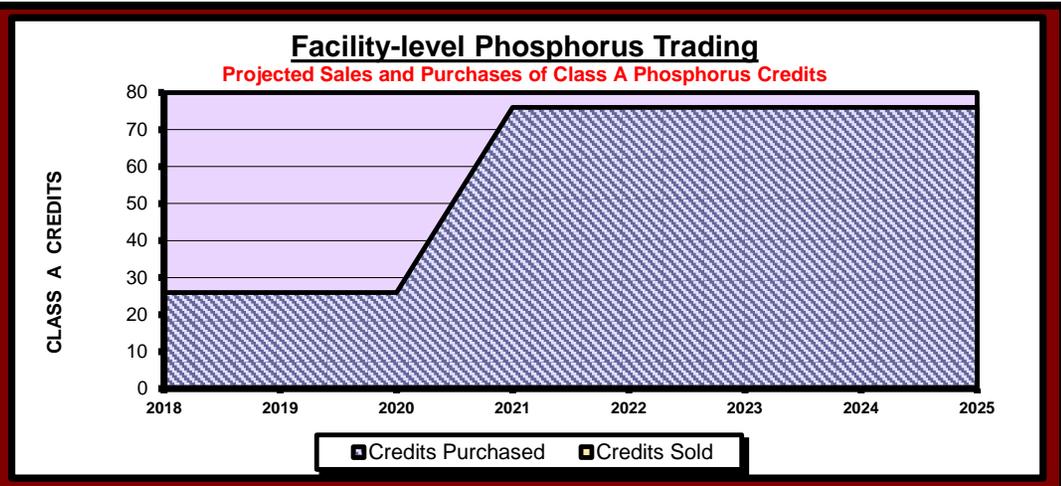
Loading & Credit Summary

Design Flow (mgd)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Projected Flow (mgd)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Projected Avg. Annual Concentration (mg/L)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Discharged Load (end of pipe)	8,588							
Delivery Factor	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06
Expected Load	429	429	429	515	515	515	515	515
Delivered WLA	859	859	859	1,031	1,031	1,031	1,031	1,031
Expected Credits (delivered)	430	430	430	516	516	516	516	516
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	(247)	(247)	(247)	(296)	(296)	(296)	(296)	(296)
Expected Net Credits	183	183	183	220	220	220	220	220
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	183	183	183	220	220	220	220	220

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588
0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06
429	429	429	515	515	515	515	515
859	859	859	1,031	1,031	1,031	1,031	1,031
430	430	430	516	516	516	516	516
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(247)	(247)	(247)	(296)	(296)	(296)	(296)	(296)
183	183	183	220	220	220	220	220
0	0	0	0	0	0	0	0
183	183	183	220	220	220	220	220

PHOSPHORUS FACILITY SUMMARY

RSA-Gordonville
 YORK Trading Basin



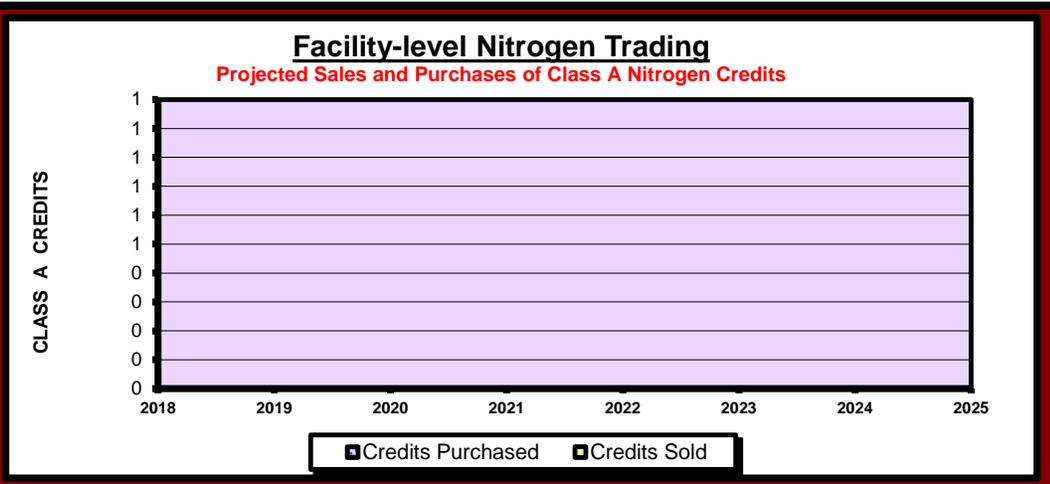
Loading & Credit Summary

Design Flow (mgd)	0.67
Projected Flow (mgd)	0.47
Projected Avg. Annual Concentration (mg/L)	0.90
Discharged Load (end of pipe)	1,288
Delivery Factor	0.18
Expected Load	232
Delivered WLA	206
Expected Credits (delivered)	(26)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(26)
Class A Credit Sales (Purchases)	(26)
Expected Class B Credits	0

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Projected Flow (mgd)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Projected Avg. Annual Concentration (mg/L)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Discharged Load (end of pipe)	1,288	1,288	1,288	1,288	1,288	1,288	1,288	1,288
Delivery Factor	0.18	0.18	0.18	0.53	0.53	0.53	0.53	0.53
Expected Load	232	232	232	683	683	683	683	683
Delivered WLA	206	206	206	607	607	607	607	607
Expected Credits (delivered)	(26)	(26)	(26)	(76)	(76)	(76)	(76)	(76)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(26)	(26)	(26)	(76)	(76)	(76)	(76)	(76)
Class A Credit Sales (Purchases)	(26)	(26)	(26)	(76)	(76)	(76)	(76)	(76)
Expected Class B Credits	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

WestRock-West Point Mill
 YORK Trading Basin



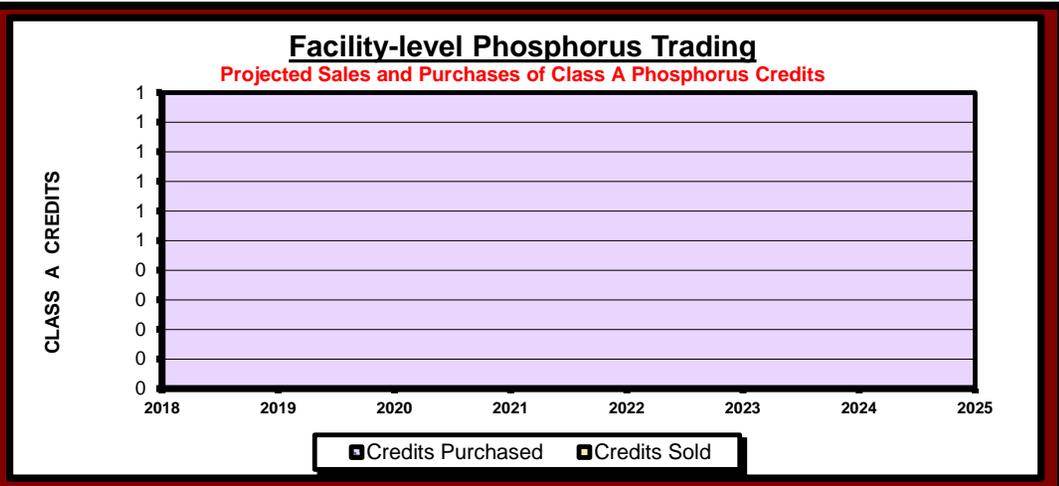
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Projected Flow (mgd)	20.76	21.07	21.07	20.05	17.75	17.75	17.75	15.71
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.22	4.20	4.20	4.20	4.20
Discharged Load (end of pipe)	252,903	256,680	256,680	257,688	227,046	227,046	227,046	200,952
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	252,903	256,680	256,680	257,688	227,046	227,046	227,046	200,952
Delivered WLA	259,177	259,177	259,177	259,177	259,177	259,177	259,177	259,177
Expected Credits (delivered)	6,274	2,497	2,497	1,489	32,131	32,131	32,131	58,225
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	6,274	2,497	2,497	1,489	32,131	32,131	32,131	58,225
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	6,274	2,497	2,497	1,489	32,131	32,131	32,131	58,225

PHOSPHORUS FACILITY SUMMARY

WestRock-West Point Mill
 YORK Trading Basin

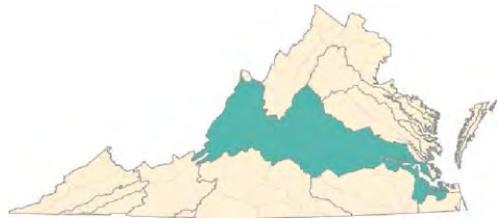


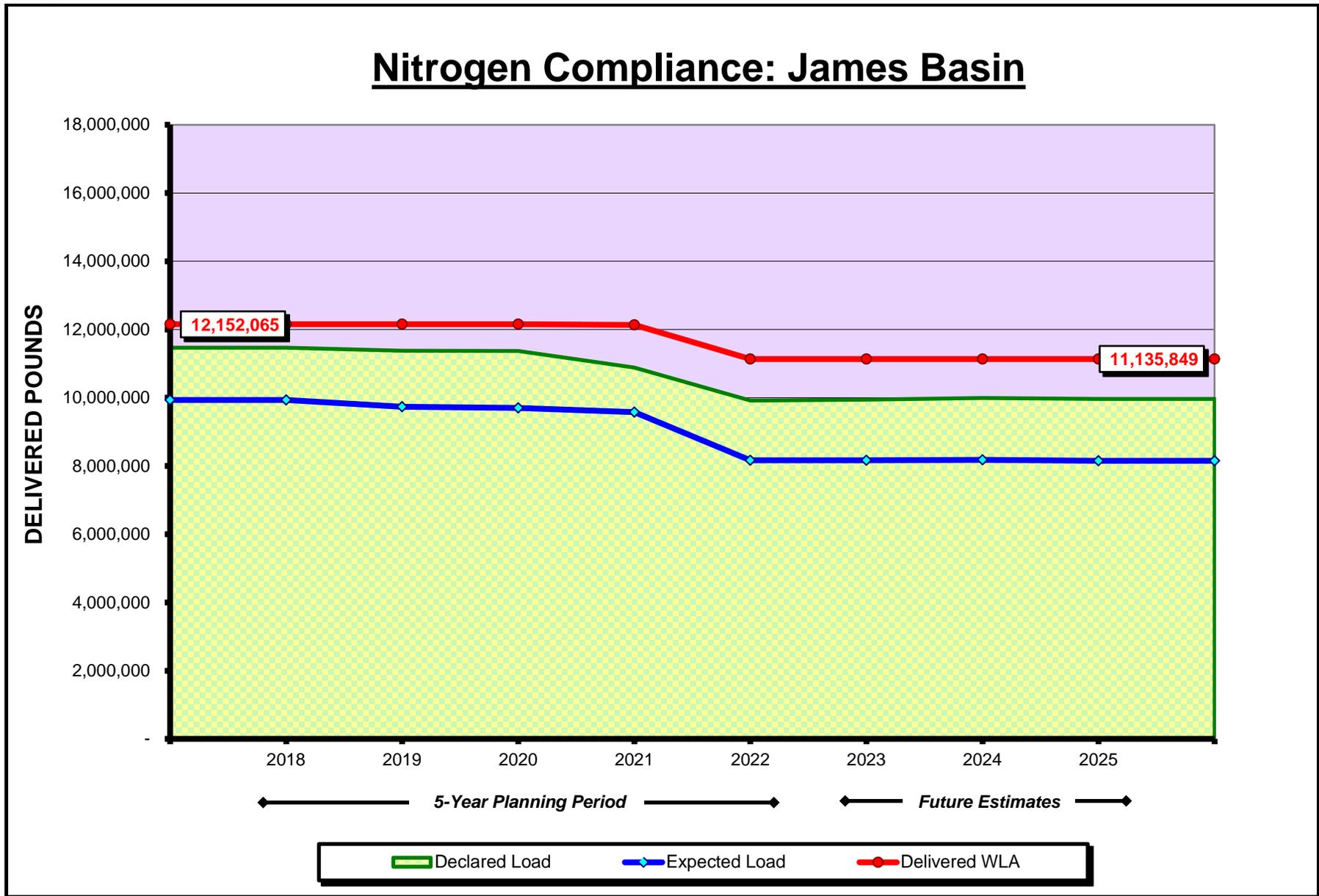
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

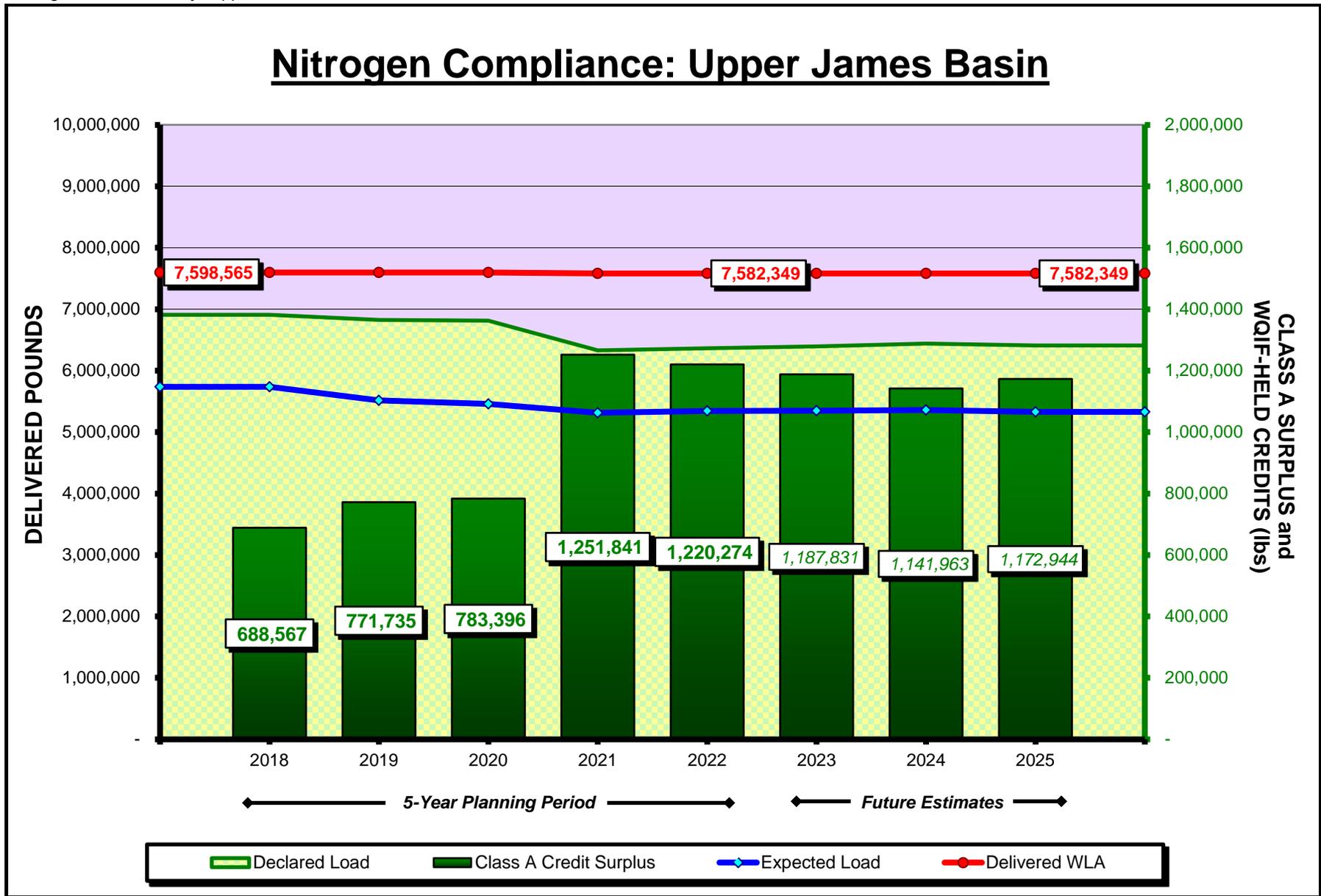
2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
20.76	21.07	21.07	20.05	17.75	17.75	17.75	15.71
0.84	0.84	0.84	0.84	0.95	0.95	0.95	0.95
53,110	53,903	53,903	51,293	51,356	51,356	51,356	45,453
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
53,110	53,903	53,903	51,293	51,356	51,356	51,356	45,453
56,038	56,038	56,038	56,038	56,038	56,038	56,038	56,038
2,928	2,135	2,135	4,745	4,682	4,682	4,682	10,585
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,928	2,135	2,135	4,745	4,682	4,682	4,682	10,585
0	0	0	0	0	0	0	0
2,928	2,135	2,135	4,745	4,682	4,682	4,682	10,585

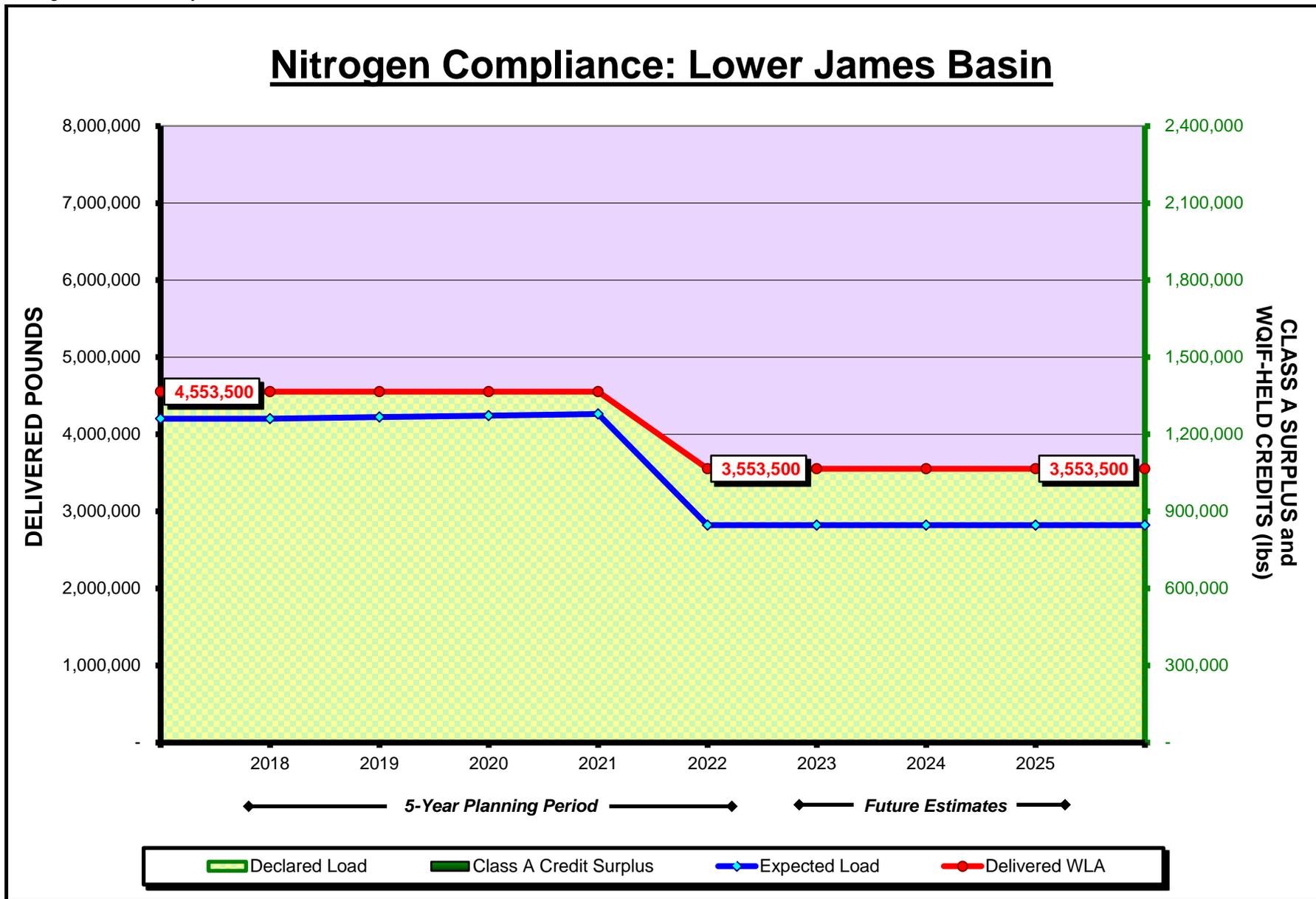
SECTION 5

James River Basin Exchange Compliance Plan









JAMES Basin: Nitrogen Credit Ledger

Compliance Year:	2018	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange		WQIF-Held Credits	Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	\$ 0.45	\$ 3.78	\$ 0.03
UPPER JAMES BASIN	7,598,565	5,735,385	1,863,180	-	-	(4,276)	1,858,904	793,793	(105,226)	1,170,337	
AdvanSix-Hopewell	1,090,798	875,599	215,199	-	(2,522)	-	212,677	-	-	212,677	
Allegheny Co-L. Jackson	16,629	6,271	10,358	-	-	(4,276)	6,082	4,500	-	1,582	
Allegheny Co-Low Moor	2,376	2,178	198	-	-	-	198	-	-	198	
Amherst (Town)	3,728	2,042	1,686	-	-	-	1,686	843	-	843	
Aqua Virginia-L. Monticello	12,182	48,237	(36,055)	-	-	-	(36,055)	-	(36,055)	-	
Buena Vista	23,024	29,045	(6,021)	-	-	-	(6,021)	-	(6,021)	-	
BWX Technologies, Inc	121,550	106,543	15,007	-	-	-	15,007	15,007	-	-	
Chesterfield-Falling Cr.	153,801	154,014	(213)	213	-	-	-	-	-	-	
Chesterfield-Proctors Cr.	411,151	243,024	168,127	(213)	(167,685)	-	229	-	-	229	
Covington	11,512	18,427	(6,915)	-	-	-	(6,915)	-	(6,915)	-	
Crewe	2,650	772	1,878	-	-	-	1,878	1,878	-	-	
Dominion-Chesterfield	272,036	189,070	82,966	-	-	-	82,966	-	-	82,966	
DuPont-Spruance	201,080	257,315	(56,235)	-	-	-	(56,235)	-	(56,235)	-	
Georgia-Pacific	73,493	51,965	21,528	-	-	-	21,528	9,000	-	12,528	
Greif Packaging	47,610	47,610	-	-	-	-	-	-	-	-	
Henrico Co	1,142,085	902,259	239,826	-	-	-	239,826	215,843	-	23,983	
Hopewell RWTF	1,827,336	1,279,988	547,348	-	2,522	-	549,870	271,152	-	278,718	
Lynchburg	348,412	217,845	130,567	-	-	-	130,567	90,000	-	40,567	
MSA-Lexington	17,542	4,873	12,669	-	-	-	12,669	950	-	11,719	
Philip Morris	139,724	54,820	84,904	-	-	-	84,904	57,592	-	27,312	
Richmond	1,093,652	616,726	476,926	-	-	-	476,926	-	-	476,926	
RWSA-Moores Creek	189,443	69,868	119,575	-	-	-	119,575	119,574	-	1	
South Central WWA	350,239	517,836	(167,597)	-	167,685	-	88	-	-	88	
Tyson Foods-Glen Allen	3,128	3,128	-	-	-	-	-	-	-	-	
WestRock of Virginia	43,384	35,930	7,454	-	-	-	7,454	7,454	-	-	
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	4,553,500	4,201,943	351,557	-	-	-	351,557	-	-	351,557	
HRSD (Bubble)	4,553,500	4,201,943	351,557				351,557	-	-	351,557	

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

JAMES Basin: Nitrogen Credit Ledger

Compliance Year:		2019		Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)			
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**	
								PRICE:	\$ 0.42	\$ 3.82	\$ 0.03	
UPPER JAMES BASIN	7,598,565	5,514,516	2,084,049	-	-	(4,276)	2,079,773		880,770	(109,035)	1,308,038	
AdvanSix-Hopewell	1,090,798	852,757	238,041	-	-	-	238,041		-	-	238,041	
Allegheny Co-L. Jackson	16,629	6,271	10,358	-	-	(4,276)	6,082		4,500	-	1,582	
Allegheny Co-Low Moor	2,376	2,178	198	-	-	-	198		-	-	198	
Amherst (Town)	3,728	2,042	1,686	-	-	-	1,686		843	-	843	
Aqua Virginia-L. Monticello	12,182	26,119	(13,937)	-	-	-	(13,937)		-	(36,055)	22,118	
Buena Vista	23,024	29,045	(6,021)	-	-	-	(6,021)		-	(6,021)	-	
BWX Technologies, Inc	121,550	104,524	17,026	-	-	-	17,026		15,000	-	2,026	
Chesterfield-Falling Cr.	153,801	153,770	31	-	-	-	31		-	-	31	
Chesterfield-Proctors Cr.	411,151	241,528	169,623	-	(169,623)	-	-		-	-	-	
Covington	11,512	18,427	(6,915)	-	-	-	(6,915)		-	(6,915)	-	
Crewe	2,650	772	1,878	-	-	-	1,878		1,878	-	-	
Dominion-Chesterfield	272,036	189,070	82,966	-	-	-	82,966		-	-	82,966	
DuPont-Spruance	201,080	261,124	(60,044)	-	-	-	(60,044)		-	(60,044)	-	
Georgia-Pacific	73,493	51,965	21,528	-	-	-	21,528		9,000	-	12,528	
Greif Packaging	47,610	47,610	-	-	-	-	-		-	-	-	
Henrico Co	1,142,085	839,582	302,503	-	-	-	302,503		272,252	-	30,251	
Hopewell RWTF	1,827,336	1,232,477	594,859	-	-	-	594,859		297,430	-	297,429	
Lynchburg	348,412	218,169	130,243	-	-	-	130,243		95,000	-	35,243	
MSA-Lexington	17,542	4,873	12,669	-	-	-	12,669		900	-	11,769	
Philip Morris	139,724	54,820	84,904	-	-	-	84,904		57,592	-	27,312	
Richmond	1,093,652	548,201	545,451	-	-	-	545,451		-	-	545,451	
RWSA-Moores Creek	189,443	70,521	118,922	-	-	-	118,922		118,921	-	1	
South Central WWA	350,239	519,613	(169,374)	-	169,623	-	249		-	-	249	
Tyson Foods-Glen Allen	3,128	3,128	-	-	-	-	-		-	-	-	
WestRock of Virginia	43,384	35,930	7,454	-	-	-	7,454		7,454	-	-	
								PRICE:	No Sale	No Sale	No Sale	
LOWER JAMES BASIN	4,553,500	4,221,955	331,545	-	-	-	331,545		-	-	331,545	
HRSD (Bubble)	4,553,500	4,221,955	331,545				331,545		-	-	331,545	

*** For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.**

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

JAMES Basin: Nitrogen Credit Ledger

Compliance Year:	2020	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange		WQIF-Held Credits	Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	\$ 0.31	\$ 3.86	\$ 0.02
UPPER JAMES BASIN	7,598,565	5,459,158	2,139,407	-	-	(4,276)	2,135,131		860,904	(77,508)	1,351,735
AdvanSix-Hopewell	1,090,798	774,790	316,008	-	-	-	316,008		-	-	316,008
Allegheny Co-L. Jackson	16,629	6,271	10,358	-	-	(4,276)	6,082		4,500	-	1,582
Allegheny Co-Low Moor	2,376	2,178	198	-	-	-	198		-	-	198
Amherst (Town)	3,728	2,593	1,135	-	-	-	1,135		568	-	567
Aqua Virginia-L. Monticello	12,182	15,018	(2,836)	-	-	-	(2,836)		-	(2,836)	-
Buena Vista	23,024	29,045	(6,021)	-	-	-	(6,021)		-	(6,021)	-
BWX Technologies, Inc	121,550	104,524	17,026	-	-	-	17,026		15,000	-	2,026
Chesterfield-Falling Cr.	153,801	151,973	1,828	-	-	-	1,828		-	-	1,828
Chesterfield-Proctors Cr.	411,151	237,249	173,902	-	(171,694)	-	2,208		-	-	2,208
Covington	11,512	18,427	(6,915)	-	-	-	(6,915)		-	(6,915)	-
Crewe	2,650	772	1,878	-	-	-	1,878		1,878	-	-
Dominion-Chesterfield	272,036	189,070	82,966	-	-	-	82,966		-	-	82,966
DuPont-Spruance	201,080	262,816	(61,736)	-	-	-	(61,736)		-	(61,736)	-
Georgia-Pacific	73,493	51,965	21,528	-	-	-	21,528		17,000	-	4,528
Greif Packaging	47,610	47,610	-	-	-	-	-		-	-	-
Henrico Co	1,142,085	864,802	277,283	-	-	-	277,283		249,555	-	27,728
Hopewell RWTF	1,827,336	1,241,675	585,661	-	-	-	585,661		292,831	-	292,830
Lynchburg	348,412	218,494	129,918	-	-	-	129,918		95,000	-	34,918
MSA-Lexington	17,542	4,873	12,669	-	-	-	12,669		850	-	11,819
Philip Morris	139,724	54,820	84,904	-	-	-	84,904		58,000	-	26,904
Richmond	1,093,652	548,201	545,451	-	-	-	545,451		-	-	545,451
RWSA-Moores Creek	189,443	71,174	118,269	-	-	-	118,269		118,268	-	1
South Central WWA	350,239	521,760	(171,521)	-	171,694	-	173		-	-	173
Tyson Foods-Glen Allen	3,128	3,128	-	-	-	-	-		-	-	-
WestRock of Virginia	43,384	35,930	7,454	-	-	-	7,454		7,454	-	-
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	4,553,500	4,242,200	311,300	-	-	-	311,300		-	-	311,300
HRSD (Bubble)	4,553,500	4,242,200	311,300				311,300		-	-	311,300

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

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JAMES Basin: Nitrogen Credit Ledger

Compliance Year:	2021	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange		WQIF-Held Credits	Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	\$ 0.20	\$ 3.87	\$ 0.03
UPPER JAMES BASIN	7,582,349	5,313,819	2,268,530	-	-	(4,440)	2,264,090		1,330,992	(79,151)	1,012,249
AdvanSix-Hopewell	1,090,798	774,790	316,008	-	-	-	316,008		-	-	316,008
Allegheny Co-L. Jackson	17,268	6,513	10,755	-	-	(4,440)	6,315		4,500	-	1,815
Allegheny Co-Low Moor	2,467	2,352	115	-	-	-	115		-	-	115
Amherst (Town)	4,715	3,279	1,436	-	-	-	1,436		718	-	718
Aqua Virginia-L. Monticello	11,636	14,346	(2,710)	-	-	-	(2,710)		-	(2,710)	-
Buena Vista	22,613	28,526	(5,913)	-	-	-	(5,913)		-	(5,913)	-
BWX Technologies, Inc	119,680	102,916	16,764	-	-	-	16,764		15,000	-	1,764
Chesterfield-Falling Cr.	153,801	154,638	(837)	837	-	-	-		-	-	-
Chesterfield-Proctors Cr.	411,151	239,914	171,237	(837)	-	-	170,400		-	-	170,400
Covington	11,512	18,427	(6,915)	-	-	-	(6,915)		-	(6,915)	-
Crewe	2,284	665	1,619	-	-	-	1,619		1,619	-	-
Dominion-Chesterfield	272,036	189,070	82,966	-	-	-	82,966		-	-	82,966
DuPont-Spruance	201,080	264,693	(63,613)	-	-	-	(63,613)		-	(63,613)	-
Georgia-Pacific	73,493	51,965	21,528	-	-	-	21,528		17,000	-	4,528
Greif Packaging	46,877	46,877	-	-	-	-	-		-	-	-
Henrico Co	1,142,085	890,768	251,317	-	-	-	251,317		226,185	-	25,132
Hopewell RWTF	1,827,336	1,242,588	584,748	-	-	-	584,748		292,374	-	292,374
Lynchburg	343,052	215,452	127,600	-	-	-	127,600		95,000	-	32,600
MSA-Lexington	16,994	4,721	12,273	-	-	-	12,273		800	-	11,473
Philip Morris	139,724	54,820	84,904	-	-	-	84,904		58,000	-	26,904
Richmond	1,093,652	548,201	545,451	-	-	-	545,451		500,000	-	45,451
RWSA-Moores Creek	180,953	68,610	112,343	-	-	-	112,343		112,342	-	1
South Central WWA	350,239	350,239	-	-	-	-	-		-	-	-
Tyson Foods-Glen Allen	3,519	3,519	-	-	-	-	-		-	-	-
WestRock of Virginia	43,384	35,930	7,454	-	-	-	7,454		7,454	-	-
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	4,553,500	4,262,688	290,812	-	-	-	290,812		-	-	290,812
HRSD (Bubble)	4,553,500	4,262,688	290,812				290,812		-	-	290,812

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

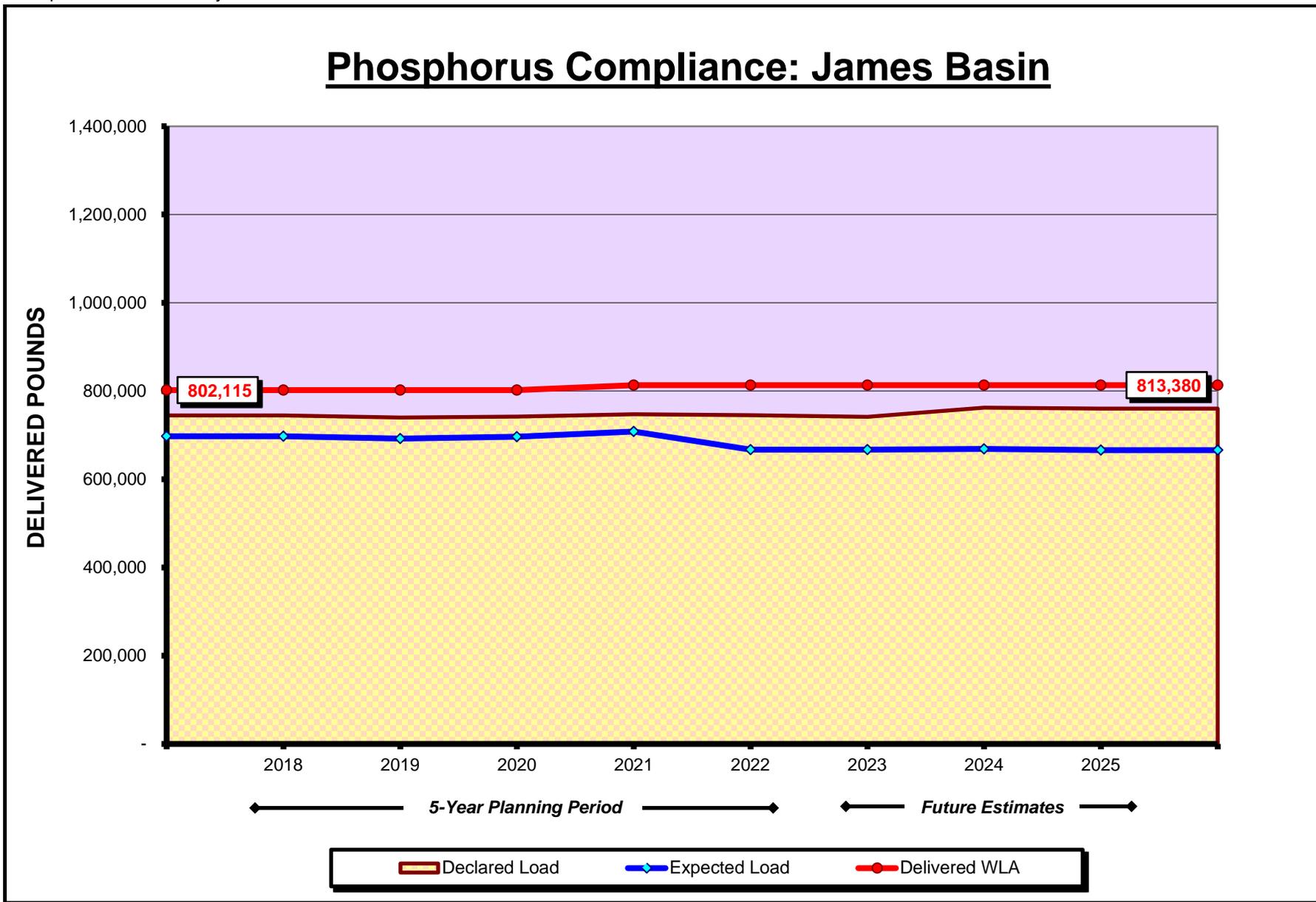
** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

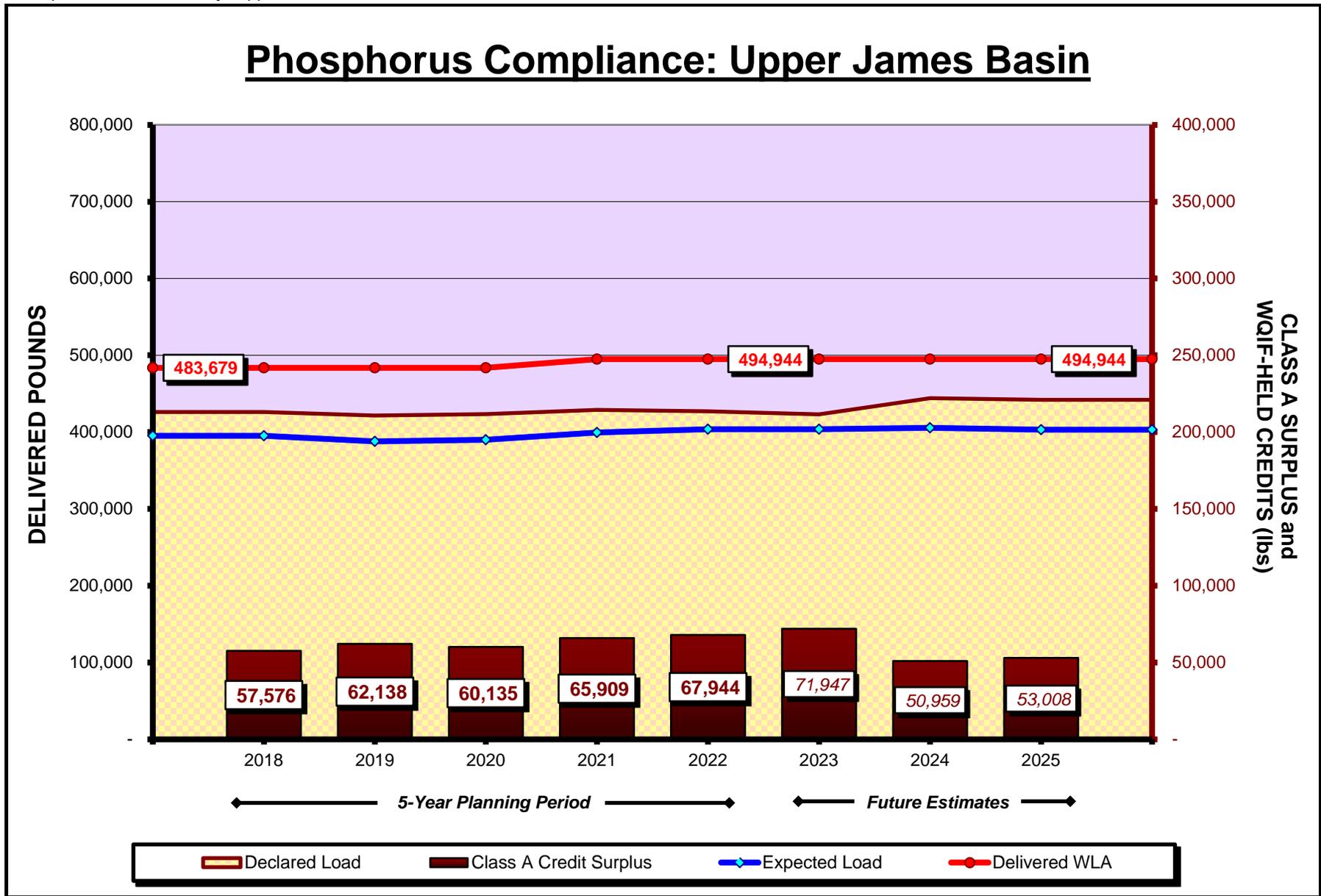
JAMES Basin: Nitrogen Credit Ledger

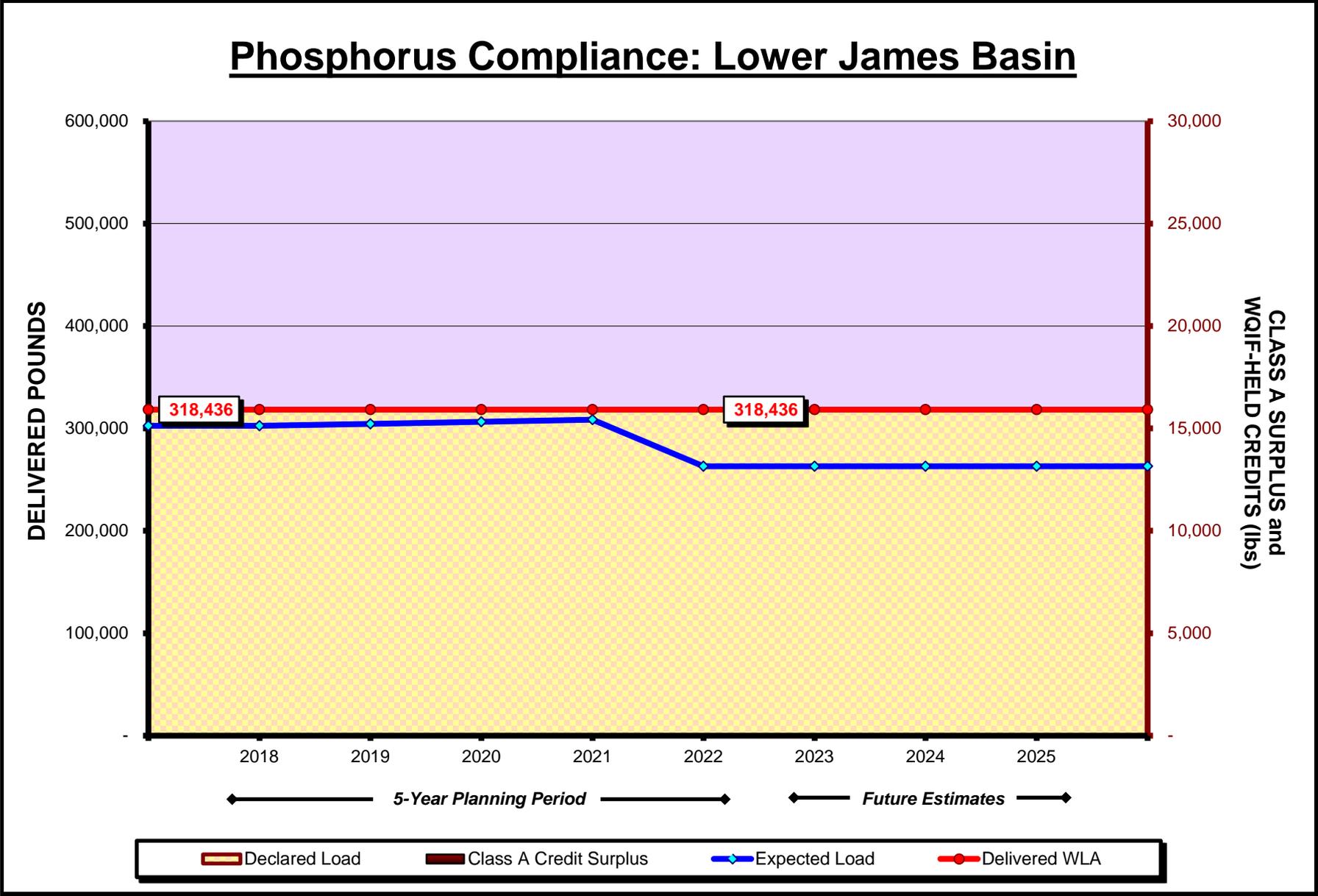
Compliance Year:	2022	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange		WQIF-Held Credits	Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	\$ 0.22	\$ 3.94	\$ 0.03
UPPER JAMES BASIN	7,582,349	5,344,686	2,237,663	-	-	(4,440)	2,233,223		1,301,988	(81,714)	1,012,949
AdvanSix-Hopewell	1,090,798	763,522	327,276	-	-	-	327,276		-	-	327,276
Allegheny Co-L. Jackson	17,268	6,513	10,755	-	-	(4,440)	6,315		4,500	-	1,815
Allegheny Co-Low Moor	2,467	1,809	658	-	-	-	658		-	-	658
Amherst (Town)	4,715	1,572	3,143	-	-	-	3,143		1,572	-	1,571
Aqua Virginia-L. Monticello	11,636	14,346	(2,710)	-	-	-	(2,710)		-	(2,710)	-
Buena Vista	22,613	28,526	(5,913)	-	-	-	(5,913)		-	(5,913)	-
BWX Technologies, Inc	119,680	102,916	16,764	-	-	-	16,764		15,000	-	1,764
Chesterfield-Falling Cr.	153,801	157,303	(3,502)	3,502	-	-	-		-	-	-
Chesterfield-Proctors Cr.	411,151	242,579	168,572	(3,502)	-	-	165,070		-	-	165,070
Covington	11,512	18,427	(6,915)	-	-	-	(6,915)		-	(6,915)	-
Crewe	2,284	665	1,619	-	-	-	1,619		1,619	-	-
Dominion-Chesterfield	272,036	189,070	82,966	-	-	-	82,966		-	-	82,966
DuPont-Spruance	201,080	267,256	(66,176)	-	-	-	(66,176)		-	(66,176)	-
Georgia-Pacific	73,493	51,965	21,528	-	-	-	21,528		17,000	-	4,528
Greif Packaging	46,877	46,877	-	-	-	-	-		-	-	-
Henrico Co	1,142,085	917,481	224,604	-	-	-	224,604		202,144	-	22,460
Hopewell RWTF	1,827,336	1,251,725	575,611	-	-	-	575,611		287,805	-	287,806
Lynchburg	343,052	215,772	127,280	-	-	-	127,280		95,000	-	32,280
MSA-Lexington	16,994	4,721	12,273	-	-	-	12,273		800	-	11,473
Philip Morris	139,724	54,820	84,904	-	-	-	84,904		58,000	-	26,904
Richmond	1,093,652	548,201	545,451	-	-	-	545,451		500,000	-	45,451
RWSA-Moores Creek	180,953	69,858	111,095	-	-	-	111,095		111,094	-	1
South Central WWA	350,239	350,239	-	-	-	-	-		-	-	-
Tyson Foods-Glen Allen	3,519	2,593	926	-	-	-	926		-	-	926
WestRock of Virginia	43,384	35,930	7,454	-	-	-	7,454		7,454	-	-
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	3,553,500	2,819,663	733,837	-	-	-	733,837		-	-	733,837
HRSD (Bubble)	3,553,500	2,819,663	733,837				733,837		-	-	733,837

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JAMES Basin: Phosphorus Credit Ledger

Compliance Year:		2018		Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)			
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**	
								PRICE:	\$ 1.04	\$ 5.70	\$ 0.27	
UPPER JAMES BASIN	483,679	395,075	88,604	-	-	(734)	87,870		72,319	(14,743)	30,294	
AdvanSix-Hopewell	41,841	38,070	3,771	-	-	-	3,771		-	-	3,771	
Alleghany Co-L. Jackson	2,853	796	2,057	(849)	-	(734)	474		300	-	174	
Alleghany Co-Low Moor	407	1,256	(849)	849	-	-	-		-	-	-	
Amherst (Town)	489	949	(460)	-	-	-	(460)		-	(460)	-	
Aqua Virginia-L. Monticello	811	3,967	(3,156)	-	-	-	(3,156)		-	(3,156)	-	
Buena Vista	1,833	5,925	(4,092)	-	-	-	(4,092)		-	(4,092)	-	
BWX Technologies, Inc	815	397	418	-	-	-	418		100	-	318	
Chesterfield-Falling Cr.	12,473	16,290	(3,817)	3,817	-	-	-		-	-	-	
Chesterfield-Proctors Cr.	33,344	25,754	7,590	(3,817)	(40)	-	3,733		-	-	3,733	
Covington	2,445	1,604	841	-	-	-	841		-	-	841	
Crewe	284	32	252	-	-	-	252		252	-	-	
Dominion-Chesterfield	170	210	(40)	-	40	-	-		-	-	-	
DuPont-Spruance	6,339	12,423	(6,084)	-	-	-	(6,084)		-	(6,084)	-	
Georgia-Pacific	26,580	12,312	14,268	-	-	-	14,268		10,000	-	4,268	
Greif Packaging	15,894	10,452	5,442	-	-	-	5,442		5,000	-	442	
Henrico Co	92,623	64,447	28,176	-	-	-	28,176		25,358	-	2,818	
Hopewell RWTF	61,749	56,708	5,041	-	-	-	5,041		-	-	5,041	
Lynchburg	17,932	18,883	(951)	-	-	-	(951)		-	(951)	-	
MSA-Lexington	2,445	603	1,842	-	-	-	1,842		921	-	921	
Philip Morris	2,149	1,827	322	-	-	-	322		-	-	322	
Richmond	55,574	47,968	7,606	-	-	-	7,606		-	-	7,606	
RWSA-Moores Creek	12,168	6,452	5,716	-	-	-	5,716		5,715	-	1	
South Central WWA	28,404	28,404	-	-	-	-	-		-	-	-	
Tyson Foods-Glen Allen	188	150	38	-	-	-	38		-	-	38	
WestRock of Virginia	63,869	39,196	24,673	-	-	-	24,673		24,673	-	-	
								PRICE:	No Sale	No Sale	No Sale	
LOWER JAMES BASIN	318,436	302,475	15,961	-	-	-	15,961		-	-	15,961	
HRSD (Bubble)	318,436	302,475	15,961				15,961		-	-	15,961	

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JAMES Basin: Phosphorus Credit Ledger

Compliance Year:	2019	Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)						
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits	PRICE:	Class A Sales	Class A* Purchases	Class B Sales**		
UPPER JAMES BASIN	483,679	387,977	95,702	-	-	(734)	94,968	\$ 1.00	\$ 5.76	\$ 0.26	77,118	(14,980)	32,830
AdvanSix-Hopewell	41,841	34,110	7,731	-	-	-	7,731		-	-	7,731		
Alleghany Co-L. Jackson	2,853	796	2,057	(849)	-	(734)	474		300	-	174		
Alleghany Co-Low Moor	407	1,256	(849)	849	-	-	-		-	-	-		
Amherst (Town)	489	949	(460)	-	-	-	(460)		-	(460)	-		
Aqua Virginia-L. Monticello	811	3,988	(3,177)	-	-	-	(3,177)		-	(3,177)	-		
Buena Vista	1,833	5,925	(4,092)	-	-	-	(4,092)		-	(4,092)	-		
BWX Technologies, Inc	815	425	390	-	-	-	390		100	-	290		
Chesterfield-Falling Cr.	12,473	16,583	(4,110)	4,110	-	-	-		-	-	-		
Chesterfield-Proctors Cr.	33,344	26,047	7,297	(4,110)	(40)	-	3,147		-	-	3,147		
Covington	2,445	1,604	841	-	-	-	841		830	-	11		
Crewe	284	32	252	-	-	-	252		252	-	-		
Dominion-Chesterfield	170	210	(40)	-	40	-	-		-	-	-		
DuPont-Spruance	6,339	12,611	(6,272)	-	-	-	(6,272)		-	(6,272)	-		
Georgia-Pacific	26,580	12,312	14,268	-	-	-	14,268		10,000	-	4,268		
Greif Packaging	15,894	10,452	5,442	-	-	-	5,442		5,000	-	442		
Henrico Co	92,623	59,970	32,653	-	-	-	32,653		29,388	-	3,265		
Hopewell RWTF	61,749	57,135	4,614	-	-	-	4,614		-	-	4,614		
Lynchburg	17,932	18,911	(979)	-	-	-	(979)		-	(979)	-		
MSA-Lexington	2,445	603	1,842	-	-	-	1,842		921	-	921		
Philip Morris	2,149	1,827	322	-	-	-	322		-	-	322		
Richmond	55,574	47,968	7,606	-	-	-	7,606		-	-	7,606		
RWSA-Moores Creek	12,168	6,513	5,655	-	-	-	5,655		5,654	-	1		
South Central WWA	28,404	28,404	-	-	-	-	-		-	-	-		
Tyson Foods-Glen Allen	188	150	38	-	-	-	38		-	-	38		
WestRock of Virginia	63,869	39,196	24,673	-	-	-	24,673		24,673	-	-		
LOWER JAMES BASIN	318,436	304,477	13,959	-	-	-	13,959	No Sale	No Sale	No Sale	-	-	13,959
HRSD (Bubble)	318,436	304,477	13,959				13,959		-	-	13,959		

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JAMES Basin: Phosphorus Credit Ledger

Compliance Year:	2020	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange		WQIF-Held Credits	Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	\$ 1.11	\$ 5.81	\$ 0.28
UPPER JAMES BASIN	483,679	389,943	93,736	-	-	(734)	93,002		76,436	(16,301)	32,867
AdvanSix-Hopewell	41,841	32,283	9,558	-	-	-	9,558	-	-	-	9,558
Alleghany Co-L. Jackson	2,853	796	2,057	(849)	-	(734)	474	300	-	-	174
Alleghany Co-Low Moor	407	1,256	(849)	849	-	-	-	-	-	-	-
Amherst (Town)	489	1,110	(621)	-	-	-	(621)	-	(621)	-	-
Aqua Virginia-L. Monticello	811	3,988	(3,177)	-	-	-	(3,177)	-	(3,177)	-	-
Buena Vista	1,833	5,925	(4,092)	-	-	-	(4,092)	-	(4,092)	-	-
BWX Technologies, Inc	815	425	390	-	-	-	390	100	-	-	290
Chesterfield-Falling Cr.	12,473	16,717	(4,244)	4,244	-	-	-	-	-	-	-
Chesterfield-Proctors Cr.	33,344	26,097	7,247	(4,244)	(40)	-	2,963	-	-	-	2,963
Covington	2,445	1,604	841	-	-	-	841	830	-	-	11
Crewe	284	32	252	-	-	-	252	252	-	-	-
Dominion-Chesterfield	170	210	(40)	-	40	-	-	-	-	-	-
DuPont-Spruance	6,339	13,743	(7,404)	-	-	-	(7,404)	-	(7,404)	-	-
Georgia-Pacific	26,580	12,312	14,268	-	-	-	14,268	11,000	-	-	3,268
Greif Packaging	15,894	10,452	5,442	-	-	-	5,442	5,000	-	-	442
Henrico Co	92,623	61,772	30,851	-	-	-	30,851	27,766	-	-	3,085
Hopewell RWTF	61,749	57,561	4,188	-	-	-	4,188	-	-	-	4,188
Lynchburg	17,932	18,939	(1,007)	-	-	-	(1,007)	-	(1,007)	-	-
MSA-Lexington	2,445	603	1,842	-	-	-	1,842	921	-	-	921
Philip Morris	2,149	1,827	322	-	-	-	322	-	-	-	322
Richmond	55,574	47,968	7,606	-	-	-	7,606	-	-	-	7,606
RWSA-Moores Creek	12,168	6,573	5,595	-	-	-	5,595	5,594	-	-	1
South Central WWA	28,404	28,404	-	-	-	-	-	-	-	-	-
Tyson Foods-Glen Allen	188	150	38	-	-	-	38	-	-	-	38
WestRock of Virginia	63,869	39,196	24,673	-	-	-	24,673	24,673	-	-	-
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	318,436	306,509	11,927	-	-	-	11,927		-	-	11,927
HRSD (Bubble)	318,436	306,509	11,927				11,927		-	-	11,927

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

JAMES Basin: Phosphorus Credit Ledger

Compliance Year:	2021	Credit Forecasts		Preliminary Use of Credits			Expected Net Credits	Credit Exchange (Pounds)			
		Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange		WQIF-Held Credits	Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	\$ 1.08	\$ 5.82	\$ 0.34
UPPER JAMES BASIN	494,944	399,461	95,483	-	-	(789)	94,694		83,106	(17,197)	28,785
AdvanSix-Hopewell	41,841	32,283	9,558	-	-	-	9,558	-	-	-	9,558
Alleghany Co-L. Jackson	3,069	856	2,213	(968)	-	(789)	456	300	-	-	156
Alleghany Co-Low Moor	438	1,406	(968)	968	-	-	-	-	-	-	-
Amherst (Town)	526	1,194	(668)	-	-	-	(668)	-	(668)	-	-
Aqua Virginia-L. Monticello	877	4,290	(3,413)	-	-	-	(3,413)	-	(3,413)	-	-
Buena Vista	1,972	6,374	(4,402)	-	-	-	(4,402)	-	(4,402)	-	-
BWX Technologies, Inc	877	519	358	-	-	-	358	100	-	-	258
Chesterfield-Falling Cr.	12,473	15,464	(2,991)	2,991	-	-	-	-	-	-	-
Chesterfield-Proctors Cr.	33,344	26,391	6,953	(2,991)	(40)	-	3,922	-	-	-	3,922
Covington	2,631	1,726	905	-	-	-	905	900	-	-	5
Crewe	327	37	290	-	-	-	290	290	-	-	-
Dominion-Chesterfield	170	210	(40)	-	40	-	-	-	-	-	-
DuPont-Spruance	6,339	13,939	(7,600)	-	-	-	(7,600)	-	(7,600)	-	-
Georgia-Pacific	28,594	13,244	15,350	-	-	-	15,350	12,000	-	-	3,350
Greif Packaging	17,098	11,244	5,854	-	-	-	5,854	5,000	-	-	854
Henrico Co	92,623	63,626	28,997	-	-	-	28,997	26,097	-	-	2,900
Hopewell RWTF	61,749	57,987	3,762	-	-	-	3,762	-	-	-	3,762
Lynchburg	19,290	20,404	(1,114)	-	-	-	(1,114)	-	(1,114)	-	-
MSA-Lexington	2,631	649	1,982	-	-	-	1,982	921	-	-	1,061
Philip Morris	2,149	1,827	322	-	-	-	322	-	-	-	322
Richmond	55,574	47,968	7,606	-	-	-	7,606	5,000	-	-	2,606
RWSA-Moores Creek	13,094	7,136	5,958	-	-	-	5,958	5,957	-	-	1
South Central WWA	28,404	28,404	-	-	-	-	-	-	-	-	-
Tyson Foods-Glen Allen	147	117	30	-	-	-	30	-	-	-	30
WestRock of Virginia	68,707	42,166	26,541	-	-	-	26,541	26,541	-	-	-
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	318,436	308,570	9,866	-	-	-	9,866		-	-	9,866
HRSD (Bubble)	318,436	308,570	9,866				9,866		-	-	9,866

* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

JAMES Basin: Phosphorus Credit Ledger

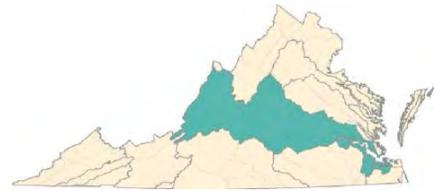
Compliance Year:		2022		Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)		
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	\$ 0.96	\$ 5.93	\$ 0.39
UPPER JAMES BASIN	494,944	403,822	91,122	-	-	(789)	90,333		82,860	(14,916)	22,389
AdvanSix-Hopewell	41,841	36,516	5,325	-	-	-	5,325		-	-	5,325
Alleghany Co-L. Jackson	3,069	856	2,213	(427)	-	(789)	997		300	-	697
Alleghany Co-Low Moor	438	865	(427)	427	-	-	-		-	-	-
Amherst (Town)	526	649	(123)	-	-	-	(123)		-	(123)	-
Aqua Virginia-L. Monticello	877	4,290	(3,413)	-	-	-	(3,413)		-	(3,413)	-
Buena Vista	1,972	6,374	(4,402)	-	-	-	(4,402)		-	(4,402)	-
BWX Technologies, Inc	877	519	358	-	-	-	358		100	-	258
Chesterfield-Falling Cr.	12,473	15,730	(3,257)	3,257	-	-	-		-	-	-
Chesterfield-Proctors Cr.	33,344	26,684	6,660	(3,257)	-	-	3,403		-	-	3,403
Covington	2,631	1,726	905	-	-	-	905		900	-	5
Crewe	327	37	290	-	-	-	290		290	-	-
Dominion-Chesterfield	170	170	-	-	-	-	-		-	-	-
DuPont-Spruance	6,339	12,173	(5,834)	-	-	-	(5,834)		-	(5,834)	-
Georgia-Pacific	28,594	13,244	15,350	-	-	-	15,350		12,000	-	3,350
Greif Packaging	17,098	11,244	5,854	-	-	-	5,854		5,000	-	854
Henrico Co	92,623	65,534	27,089	-	-	-	27,089		24,380	-	2,709
Hopewell RWTF	61,749	58,414	3,335	-	-	-	3,335		-	-	3,335
Lynchburg	19,290	20,434	(1,144)	-	-	-	(1,144)		-	(1,144)	-
MSA-Lexington	2,631	649	1,982	-	-	-	1,982		921	-	1,061
Philip Morris	2,149	1,827	322	-	-	-	322		-	-	322
Richmond	55,574	47,968	7,606	-	-	-	7,606		6,600	-	1,006
RWSA-Moores Creek	13,094	7,265	5,829	-	-	-	5,829		5,828	-	1
South Central WWA	28,404	28,404	-	-	-	-	-		-	-	-
Tyson Foods-Glen Allen	147	84	63	-	-	-	63		-	-	63
WestRock of Virginia	68,707	42,166	26,541	-	-	-	26,541		26,541	-	-
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	318,436	263,087	55,349	-	-	-	55,349		-	-	55,349
HRSD (Bubble)	318,436	263,087	55,349				55,349		-	-	55,349

*** For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.**

** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

James River Basin

Supplemental Information for Individual Facilities



NITROGEN FACILITY SUMMARY

AdvanSix-Hopewell
 UPPER JAMES Trading Basin



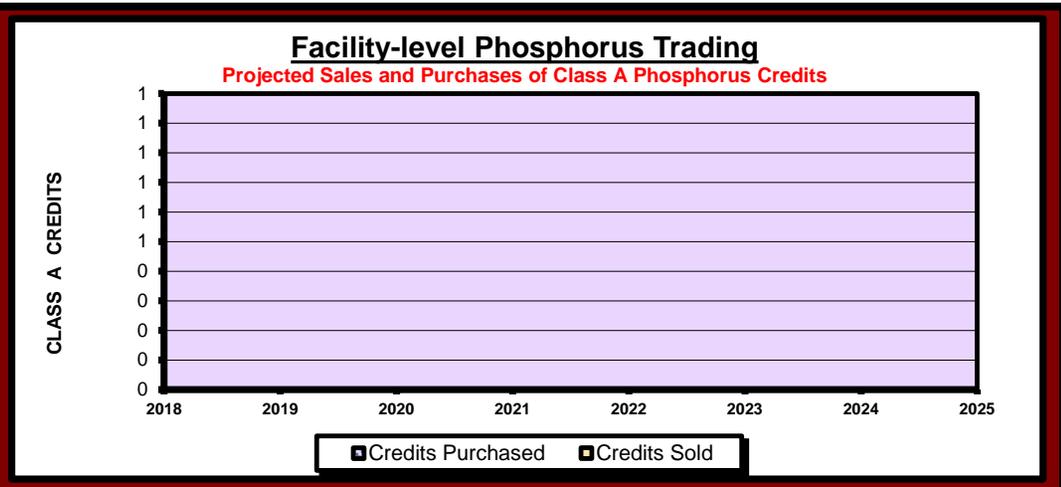
Loading & Credit Summary	
Design Flow (mgd)	121.00
Projected Flow (mgd)	125.00
Projected Avg. Annual Concentration (mg/L)	2.30
Discharged Load (end of pipe)	875,599
Delivery Factor	1.00
Expected Load	875,599
Delivered WLA	1,090,798
Expected Credits (delivered)	215,199
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(2,522)
WQIF-Held Credits	0
Expected Net Credits	212,677
Class A Credit Sales (Purchases)	0
Expected Class B Credits	212,677

2018	2019	2020	2021	2022	2023	2024	2025
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
121.00	121.00	121.00	121.00	121.00	121.00	121.00	121.00
125.00	112.00	106.00	106.00	109.00	108.00	108.00	108.00
2.30	2.50	2.40	2.40	2.30	2.30	2.30	2.30
875,599	852,757	774,790	774,790	763,522	756,517	756,517	756,517
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
875,599	852,757	774,790	774,790	763,522	756,517	756,517	756,517
1,090,798	1,090,798	1,090,798	1,090,798	1,090,798	1,090,798	1,090,798	1,090,798
215,199	238,041	316,008	316,008	327,276	334,281	334,281	334,281
0	0	0	0	0	0	0	0
(2,522)	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
212,677	238,041	316,008	316,008	327,276	334,281	334,281	334,281
0	0	0	0	0	0	0	0
212,677	238,041	316,008	316,008	327,276	334,281	334,281	334,281

* Represents a Private Exchange of Credits with Hopewell RWTF

PHOSPHORUS FACILITY SUMMARY

AdvanSix-Hopewell
 UPPER JAMES Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
121.00	121.00	121.00	121.00	121.00	121.00	121.00	121.00
125.00	112.00	106.00	106.00	109.00	108.00	108.00	108.00
0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11
38,070	34,110	32,283	32,283	36,516	36,181	36,181	36,181
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
38,070	34,110	32,283	32,283	36,516	36,181	36,181	36,181
41,841	41,841	41,841	41,841	41,841	41,841	41,841	41,841
3,771	7,731	9,558	9,558	5,325	5,660	5,660	5,660
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3,771	7,731	9,558	9,558	5,325	5,660	5,660	5,660
0	0	0	0	0	0	0	0
3,771	7,731	9,558	9,558	5,325	5,660	5,660	5,660

Owner Bubble: Alleghany County

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

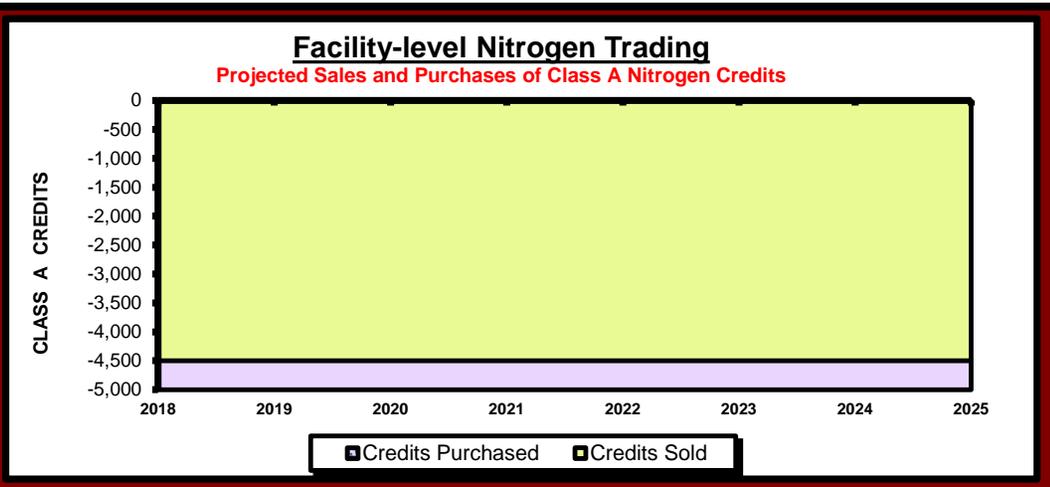
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Lower Jackson	-	-	-	-	-	-	-	-
Low Moor	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Lower Jackson	6,082	6,082	6,082	6,315	6,315	6,315	6,315	6,315
Low Moor	198	198	198	115	658	658	658	658
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	6,280	6,280	6,280	6,430	6,973	6,973	6,973	6,973
Class A Sales (Purchases)	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500
<i>Expected Class B Credits</i>	<i>1,780</i>	<i>1,780</i>	<i>1,780</i>	<i>1,930</i>	<i>2,473</i>	<i>2,473</i>	<i>2,473</i>	<i>2,473</i>
<i>WQIF-Held Credits</i>	<i>4,276</i>	<i>4,276</i>	<i>4,276</i>	<i>4,440</i>	<i>4,440</i>	<i>4,440</i>	<i>4,440</i>	<i>4,440</i>

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Lower Jackson	(849)	(849)	(849)	(968)	(427)	(427)	(427)	(427)
Low Moor	849	849	849	968	427	427	427	427
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Lower Jackson	474	474	474	456	997	997	997	997
Low Moor	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	474	474	474	456	997	997	997	997
Class A Sales (Purchases)	300	300	300	300	300	300	300	300
<i>Expected Class B Credits</i>	<i>174</i>	<i>174</i>	<i>174</i>	<i>156</i>	<i>697</i>	<i>697</i>	<i>697</i>	<i>697</i>
<i>WQIF-Held Credits</i>	<i>734</i>	<i>734</i>	<i>734</i>	<i>789</i>	<i>789</i>	<i>789</i>	<i>789</i>	<i>789</i>

NITROGEN FACILITY SUMMARY

Allegheny Co-L. Jackson
 UPPER JAMES Trading Basin



Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
24,121	24,121	24,121	24,121	24,121	24,121	24,121	24,121
0.26	0.26	0.26	0.27	0.27	0.27	0.27	0.27
6,271	6,271	6,271	6,513	6,513	6,513	6,513	6,513
16,629	16,629	16,629	17,268	17,268	17,268	17,268	17,268
10,358	10,358	10,358	10,755	10,755	10,755	10,755	10,755
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(4,276)	(4,276)	(4,276)	(4,440)	(4,440)	(4,440)	(4,440)	(4,440)
6,082	6,082	6,082	6,315	6,315	6,315	6,315	6,315
4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500
1,582	1,582	1,582	1,815	1,815	1,815	1,815	1,815

NITROGEN FACILITY SUMMARY

Allegheny Co-Low Moor
 UPPER JAMES Trading Basin



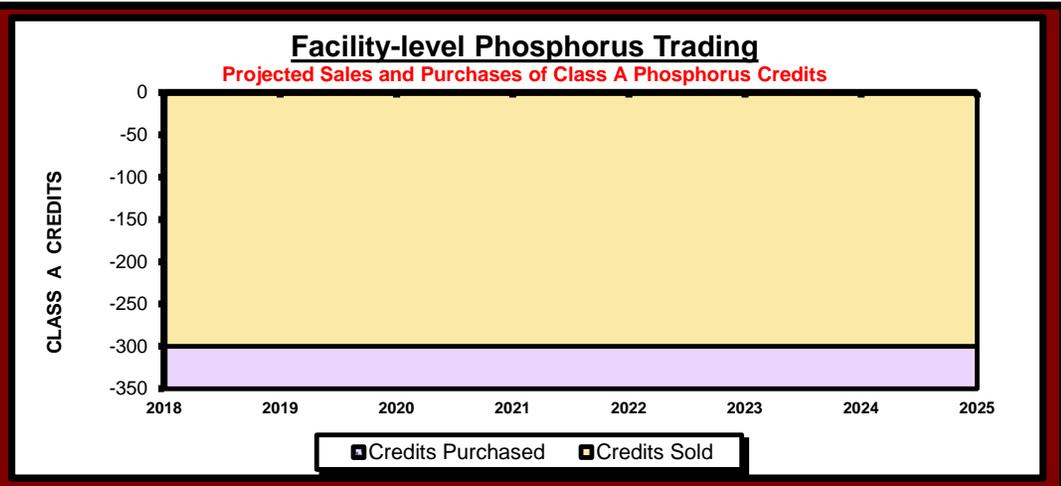
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.25	0.25	0.25	0.26	0.20	0.20	0.20	0.20
11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
8,375	8,375	8,375	8,710	6,700	6,700	6,700	6,700
0.26	0.26	0.26	0.27	0.27	0.27	0.27	0.27
2,178	2,178	2,178	2,352	1,809	1,809	1,809	1,809
2,376	2,376	2,376	2,467	2,467	2,467	2,467	2,467
198	198	198	115	658	658	658	658
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
198	198	198	115	658	658	658	658
0	0	0	0	0	0	0	0
198	198	198	115	658	658	658	658

PHOSPHORUS FACILITY SUMMARY

Allegheny Co-L. Jackson
 UPPER JAMES Trading Basin



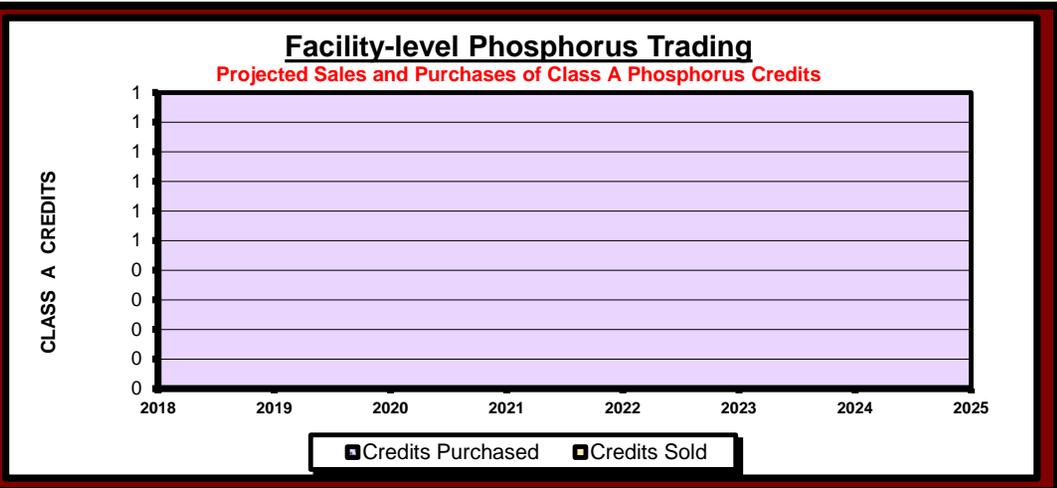
Loading & Credit Summary

Design Flow (mgd)	2.60
Projected Flow (mgd)	1.32
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	1,206
Delivery Factor	0.66
Expected Load	796
Delivered WLA	2,853
Expected Credits (delivered)	2,057
Transfers In (Out) within Owner Bubble	(849)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	(734)
Expected Net Credits	474
Class A Credit Sales (Purchases)	300
Expected Class B Credits	174

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
1,206	1,206	1,206	1,206	1,206	1,206	1,206	1,206
0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
796	796	796	856	856	856	856	856
2,853	2,853	2,853	3,069	3,069	3,069	3,069	3,069
2,057	2,057	2,057	2,213	2,213	2,213	2,213	2,213
(849)	(849)	(849)	(968)	(427)	(427)	(427)	(427)
0	0	0	0	0	0	0	0
(734)	(734)	(734)	(789)	(789)	(789)	(789)	(789)
474	474	474	456	997	997	997	997
300	300	300	300	300	300	300	300
174	174	174	156	697	697	697	697

PHOSPHORUS FACILITY SUMMARY

Allegheny Co-Low Moor
 UPPER JAMES Trading Basin



Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.25	0.25	0.25	0.26	0.20	0.20	0.20	0.20
2.50	2.50	2.50	2.50	2.00	2.00	2.00	2.00
1,903	1,903	1,903	1,980	1,218	1,218	1,218	1,218
0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
1,256	1,256	1,256	1,406	865	865	865	865
407	407	407	438	438	438	438	438
(849)	(849)	(849)	(968)	(427)	(427)	(427)	(427)
849	849	849	968	427	427	427	427
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Allegheny County - Additional Information

Under an Agreement dated September 18, 2007, the Town of Clifton Forge's Plant was converted to a regional pump station and wastewater from that facility is pumped to the new regional Lower Jackson Plant owned and operated by Allegheny County. Flows from the Town of Clifton Forge's Plant ceased on October 8, 2011, the same day that the new regional Lower Jackson Plant began to discharge.

The County applied to DEQ for aggregated mass load limits in accordance with Part I B 3 (Facility Consolidation) of the Watershed General Permit. On February 13, 2012, DEQ notified the County that the request to consolidate load limits was accepted, effective January 1, 2012. This Annual Update and the preceding nitrogen and phosphorus facility summaries for the regional Lower Jackson Plant reflect the following combined wasteload allocations, consistent with the most recent registration list for the James Basin:

- TN: 27,410 (Lower Jackson Plant) + 36,547 (Clifton Forge) = 63,957 discharged pounds
- TP: 1,852 (Lower Jackson Plant) + 2,471 (Clifton Forge) = 4,323 discharged pounds

These consolidated wasteload allocations are based on a combined design flow of 3.5 mgd. The regional Lower Jackson Plant has been constructed and received a CTO for a design flow of 2.6 mgd. Accordingly, the following nitrogen and phosphorus Credits generated from 0.9 mgd of the facility's capacity (or 25.714%) will be designated as WQIF-Held Credits in accordance with the Watershed General Permit.

Compliance Years 2017 through 2020

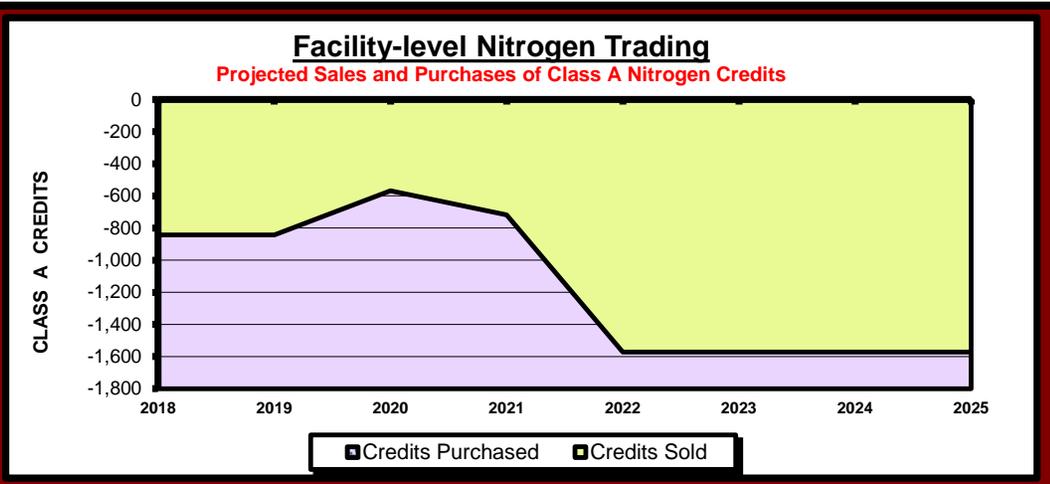
- TN: 0.26 delivery factor * 63,957 discharged pounds * 25.714% = 4,276 delivered pounds
- TP: 0.66 delivery factor * 4,323 discharged pounds * 25.714% = 734 delivered pounds

Compliance Year 2021 and Beyond

- TN: 0.27 delivery factor * 63,957 discharged pounds * 25.714% = 4,440 delivered pounds
- TP: 0.71 delivery factor * 4,323 discharged pounds * 25.714% = 789 delivered pounds

NITROGEN FACILITY SUMMARY

Amherst (Town)
 UPPER JAMES Trading Basin



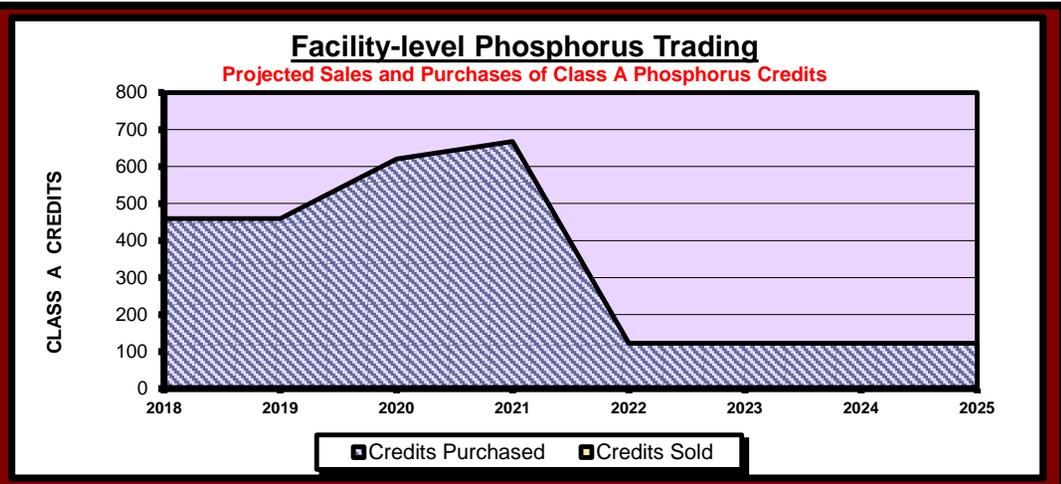
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
0.40	0.40	0.40	0.40	0.30	0.30	0.30	0.30
4.93	4.93	6.26	6.26	4.00	4.00	4.00	4.00
6,006	6,006	7,626	7,626	3,655	3,655	3,655	3,655
0.34	0.34	0.34	0.43	0.43	0.43	0.43	0.43
2,042	2,042	2,593	3,279	1,572	1,572	1,572	1,572
3,728	3,728	3,728	4,715	4,715	4,715	4,715	4,715
1,686	1,686	1,135	1,436	3,143	3,143	3,143	3,143
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,686	1,686	1,135	1,436	3,143	3,143	3,143	3,143
843	843	568	718	1,572	1,572	1,572	1,572
843	843	567	718	1,571	1,571	1,571	1,571

PHOSPHORUS FACILITY SUMMARY

Amherst (Town)
 UPPER JAMES Trading Basin



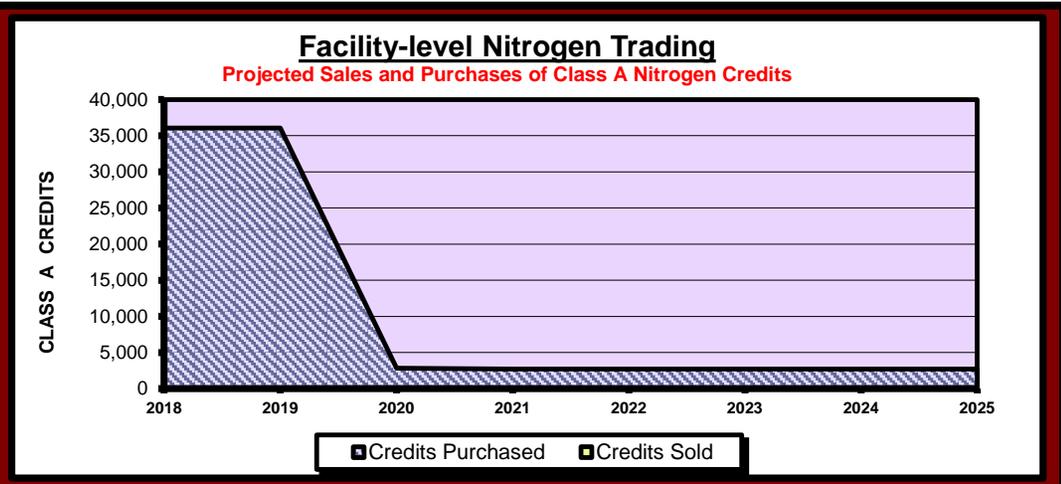
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.40	0.40	0.40	0.40	0.30	0.30	0.30	0.30
Projected Avg. Annual Concentration (mg/L)	1.18	1.18	1.38	1.38	1.00	1.00	1.00	1.00
Discharged Load (end of pipe)	1,438	1,438	1,681	1,681	914	914	914	914
Delivery Factor	0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
Expected Load	949	949	1,110	1,194	649	649	649	649
Delivered WLA	489	489	489	526	526	526	526	526
Expected Credits (delivered)	(460)	(460)	(621)	(668)	(123)	(123)	(123)	(123)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(460)	(460)	(621)	(668)	(123)	(123)	(123)	(123)
Class A Credit Sales (Purchases)	(460)	(460)	(621)	(668)	(123)	(123)	(123)	(123)
Expected Class B Credits	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Aqua Virginia-L. Monticello
 UPPER JAMES Trading Basin



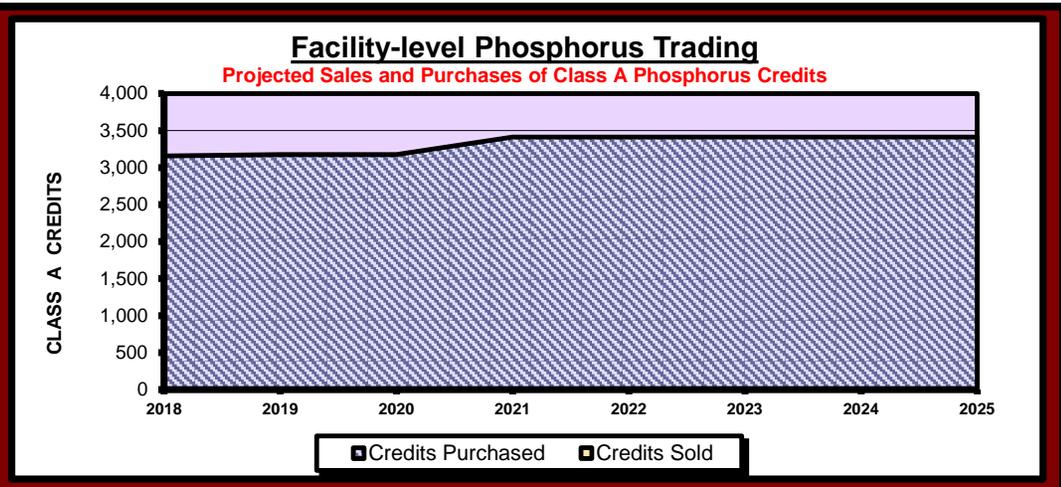
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.69	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Projected Avg. Annual Concentration (mg/L)	34.26	20.00	11.50	11.50	11.50	11.50	11.50	11.50
Discharged Load (end of pipe)	71,995	38,983	22,415	22,415	22,415	22,415	22,415	22,415
Delivery Factor	0.67	0.67	0.67	0.64	0.64	0.64	0.64	0.64
Expected Load	48,237	26,119	15,018	14,346	14,346	14,346	14,346	14,346
Delivered WLA	12,182	12,182	12,182	11,636	11,636	11,636	11,636	11,636
Expected Credits (delivered)	(36,055)	(13,937)	(2,836)	(2,710)	(2,710)	(2,710)	(2,710)	(2,710)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(36,055)	(13,937)	(2,836)	(2,710)	(2,710)	(2,710)	(2,710)	(2,710)
Class A Credit Sales (Purchases)	(36,055)	(36,055)	(2,836)	(2,710)	(2,710)	(2,710)	(2,710)	(2,710)
Expected Class B Credits	0	22,118	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

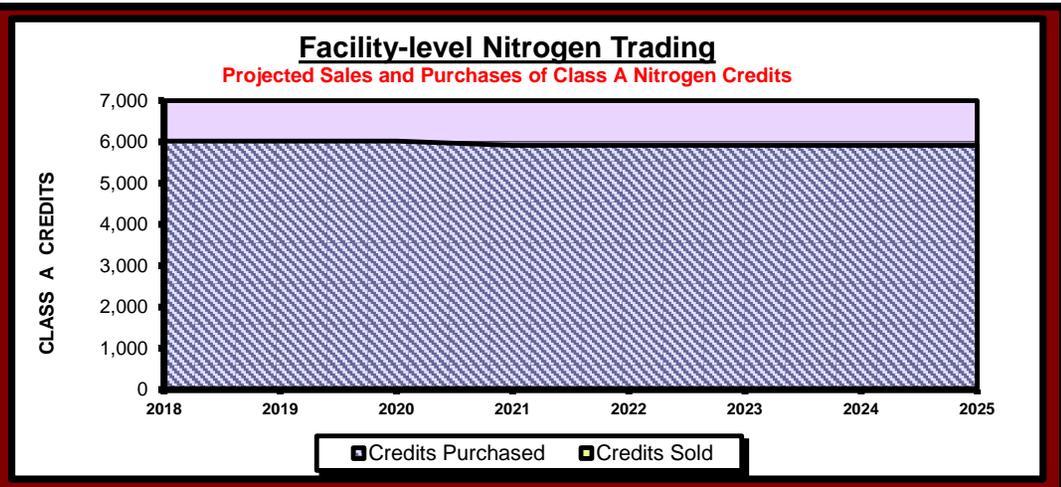
Aqua Virginia-L. Monticello
 UPPER JAMES Trading Basin



	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.69	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Projected Avg. Annual Concentration (mg/L)	2.86	3.10	3.10	3.10	3.10	3.10	3.10	3.10
Discharged Load (end of pipe)	6,010	6,042	6,042	6,042	6,042	6,042	6,042	6,042
Delivery Factor	0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
Expected Load	3,967	3,988	3,988	4,290	4,290	4,290	4,290	4,290
Delivered WLA	811	811	811	877	877	877	877	877
Expected Credits (delivered)	(3,156)	(3,177)	(3,177)	(3,413)	(3,413)	(3,413)	(3,413)	(3,413)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(3,156)	(3,177)	(3,177)	(3,413)	(3,413)	(3,413)	(3,413)	(3,413)
Class A Credit Sales (Purchases)	(3,156)	(3,177)	(3,177)	(3,413)	(3,413)	(3,413)	(3,413)	(3,413)
Expected Class B Credits	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Buena Vista
UPPER JAMES Trading Basin

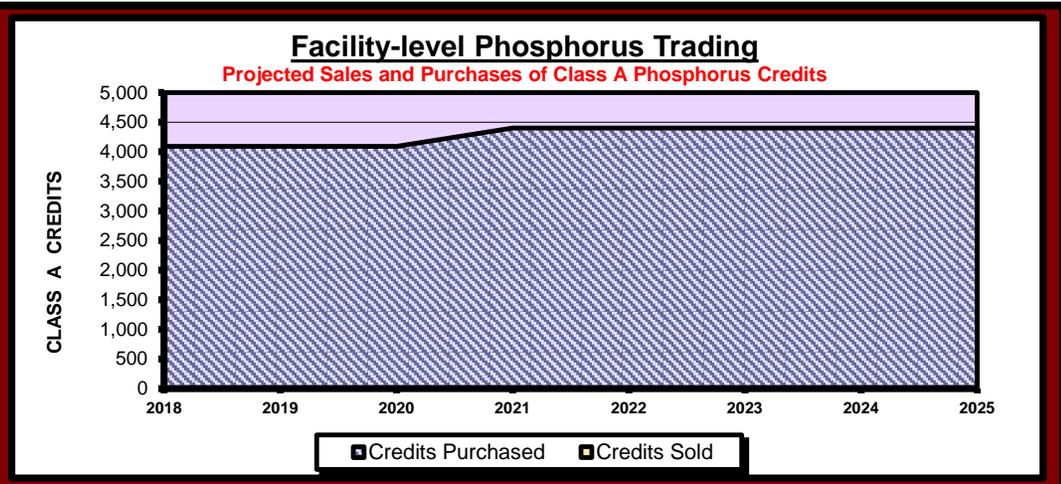


Loading & Credit Summary
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
51,866	51,866	51,866	51,866	51,866	51,866	51,866	51,866
0.56	0.56	0.56	0.55	0.55	0.55	0.55	0.55
29,045	29,045	29,045	28,526	28,526	28,526	28,526	28,526
23,024	23,024	23,024	22,613	22,613	22,613	22,613	22,613
(6,021)	(6,021)	(6,021)	(5,913)	(5,913)	(5,913)	(5,913)	(5,913)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(6,021)	(6,021)	(6,021)	(5,913)	(5,913)	(5,913)	(5,913)	(5,913)
(6,021)	(6,021)	(6,021)	(5,913)	(5,913)	(5,913)	(5,913)	(5,913)
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Buena Vista
<i>UPPER JAMES Trading Basin</i>



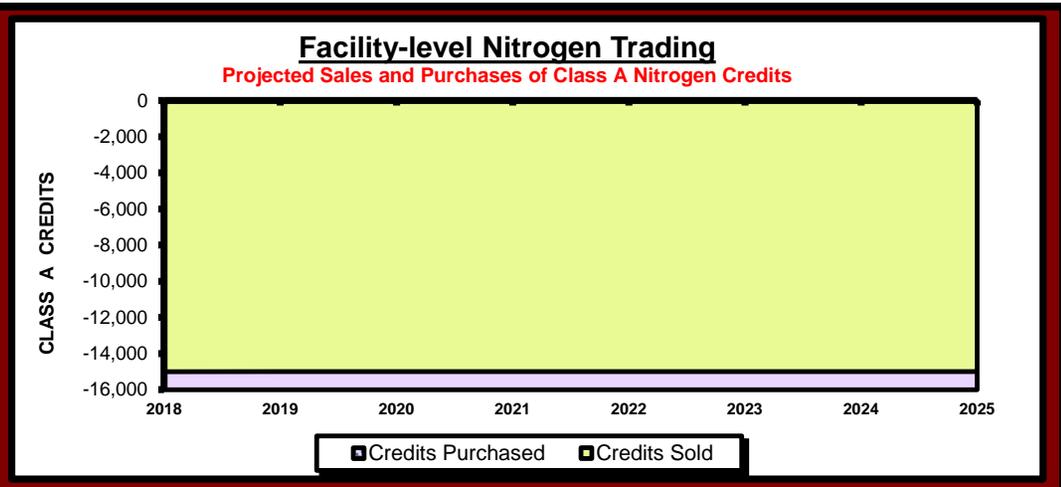
Loading & Credit Summary

Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
8,977	8,977	8,977	8,977	8,977	8,977	8,977	8,977
0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
5,925	5,925	5,925	6,374	6,374	6,374	6,374	6,374
1,833	1,833	1,833	1,972	1,972	1,972	1,972	1,972
(4,092)	(4,092)	(4,092)	(4,402)	(4,402)	(4,402)	(4,402)	(4,402)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(4,092)	(4,092)	(4,092)	(4,402)	(4,402)	(4,402)	(4,402)	(4,402)
(4,092)	(4,092)	(4,092)	(4,402)	(4,402)	(4,402)	(4,402)	(4,402)
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

BWX Technologies, Inc
 UPPER JAMES Trading Basin



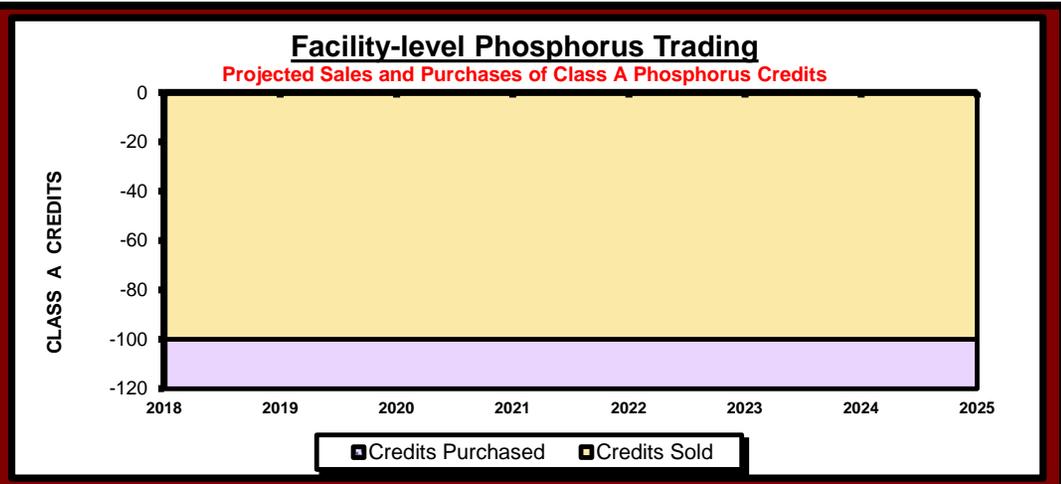
Loading & Credit Summary

Design Flow (mgd)	1.00
Projected Flow (mgd)	0.45
Projected Avg. Annual Concentration (mg/L)	120.00
Discharged Load (end of pipe)	163,912
Delivery Factor	0.65
Expected Load	106,543
Delivered WLA	121,550
Expected Credits (delivered)	15,007
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	15,007
Class A Credit Sales (Purchases)	15,007
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.45	0.48	0.48	0.48	0.48	0.48	0.48	0.48
120.00	110.00	110.00	110.00	110.00	110.00	110.00	110.00
163,912	160,806	160,806	160,806	160,806	160,806	160,806	160,806
0.65	0.65	0.65	0.64	0.64	0.64	0.64	0.64
106,543	104,524	104,524	102,916	102,916	102,916	102,916	102,916
121,550	121,550	121,550	119,680	119,680	119,680	119,680	119,680
15,007	17,026	17,026	16,764	16,764	16,764	16,764	16,764
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
15,007	17,026	17,026	16,764	16,764	16,764	16,764	16,764
15,007	15,000	15,000	15,000	15,000	15,000	15,000	15,000
0	2,026	2,026	1,764	1,764	1,764	1,764	1,764

PHOSPHORUS FACILITY SUMMARY

BWX Technologies, Inc
 UPPER JAMES Trading Basin



Loading & Credit Summary

Design Flow (mgd)	1.00
Projected Flow (mgd)	0.45
Projected Avg. Annual Concentration (mg/L)	0.44
Discharged Load (end of pipe)	601
Delivery Factor	0.66
Expected Load	397
Delivered WLA	815
Expected Credits (delivered)	418
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	418
Class A Credit Sales (Purchases)	100
Expected Class B Credits	318

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.45	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Projected Avg. Annual Concentration (mg/L)	0.44	0.44	0.44	0.50	0.50	0.50	0.50	0.50
Discharged Load (end of pipe)	601	643	643	731	731	731	731	731
Delivery Factor	0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
Expected Load	397	425	425	519	519	519	519	519
Delivered WLA	815	815	815	877	877	877	877	877
Expected Credits (delivered)	418	390	390	358	358	358	358	358
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	418	390	390	358	358	358	358	358
Class A Credit Sales (Purchases)	100	100	100	100	100	100	100	100
Expected Class B Credits	318	290	290	258	258	258	258	258

Owner Bubble: Chesterfield County

The facilities listed below have received an aggregated mass load limit pursuant to 9 VAC 25-820-70, Part 1.B.2., which is also referred to as an “owner bubble”. Accordingly, compliance is determined solely on an aggregate basis rather than by comparison of individual facility loads with respective individual WLAs.

The “Credit Transferred within Bubble” section of each table forecasts the use of Credits within the owner bubble during each Compliance Year, and must necessarily sum to zero. The specific Credit transfers shown in this table are provided for internal planning purposes only and, accordingly, are not binding and may change based on the actual performance of individual facilities within the bubble.

Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Falling Creek	213	-	-	837	3,502	6,243	8,832	11,573
Proctors Creek	(213)	-	-	(837)	(3,502)	(6,243)	(8,832)	(11,573)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Falling Creek	-	31	1,828	-	-	-	-	-
Proctors Creek	167,914	169,623	173,902	170,400	165,070	159,740	154,410	149,081
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	167,914	169,654	175,730	170,400	165,070	159,740	154,410	149,081
Private Exchanges	(167,685)	(169,623)	(171,694)	-	-	-	-	-
Expected Net Credits	229	31	4,036	170,400	165,070	159,740	154,410	149,081
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	229	31	4,036	170,400	165,070	159,740	154,410	149,081
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Credits Transferred within Bubble								
Falling Creek	3,817	4,110	4,244	2,991	3,257	3,531	3,790	4,064
Proctors Creek	(3,817)	(4,110)	(4,244)	(2,991)	(3,257)	(3,531)	(3,790)	(4,064)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Falling Creek	-	-	-	-	-	-	-	-
Proctors Creek	3,773	3,187	3,003	3,962	3,403	2,845	2,284	4,230
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	3,773	3,187	3,003	3,962	3,403	2,845	2,284	4,230
Private Exchanges	(40)	(40)	(40)	(40)	-	-	-	-
Expected Net Credits	3,733	3,147	2,963	3,922	3,403	2,845	2,284	4,230
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	3,733	3,147	2,963	3,922	3,403	2,845	2,284	4,230
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Chesterfield-Falling Cr.
 UPPER JAMES Trading Basin



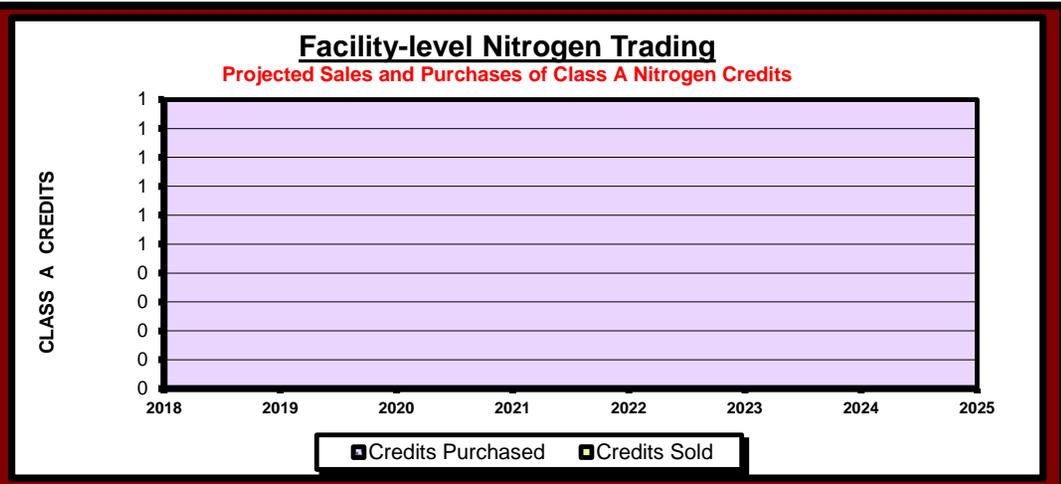
Loading & Credit Summary

Design Flow (mgd)	12.00
Projected Flow (mgd)	9.73
Projected Avg. Annual Concentration (mg/L)	5.20
Discharged Load (end of pipe)	154,014
Delivery Factor	1.00
Expected Load	154,014
Delivered WLA	153,801
Expected Credits (delivered)	(213)
Transfers In (Out) within Owner Bubble	213
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
9.73	9.90	9.98	10.16	10.33	10.51	10.68	10.86
5.20	5.10	5.00	5.00	5.00	5.00	5.00	5.00
154,014	153,770	151,973	154,638	157,303	160,044	162,633	165,374
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
154,014	153,770	151,973	154,638	157,303	160,044	162,633	165,374
153,801	153,801	153,801	153,801	153,801	153,801	153,801	153,801
(213)	31	1,828	(837)	(3,502)	(6,243)	(8,832)	(11,573)
213	0	0	837	3,502	6,243	8,832	11,573
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	31	1,828	0	0	0	0	0
0	0	0	0	0	0	0	0
0	31	1,828	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Chesterfield-Proctors Cr.
 UPPER JAMES Trading Basin



Loading & Credit Summary

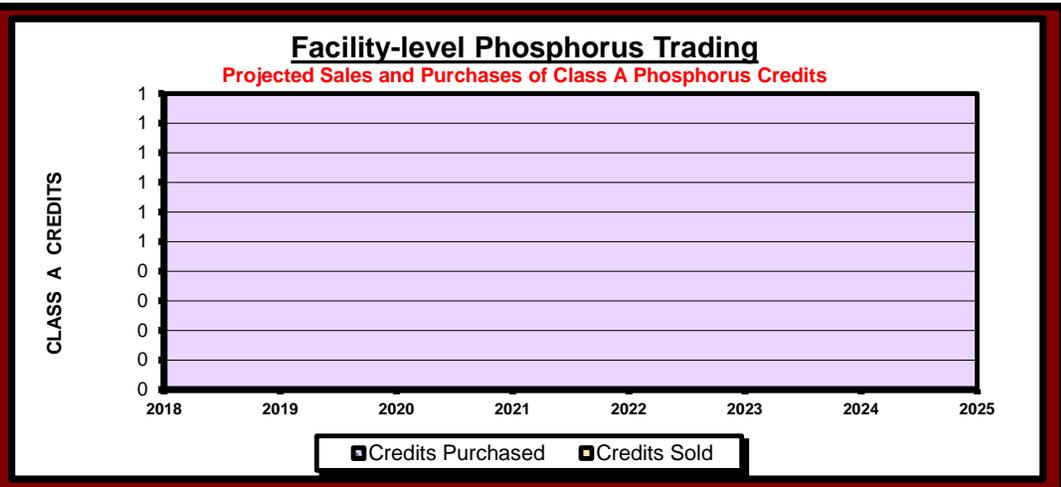
Design Flow (mgd)	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
Projected Flow (mgd)	15.38	15.55	15.58	15.76	15.93	16.10	16.28	16.45
Projected Avg. Annual Concentration (mg/L)	5.19	5.10	5.00	5.00	5.00	5.00	5.00	5.00
Discharged Load (end of pipe)	243,024	241,528	237,249	239,914	242,579	245,168	247,909	250,497
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	243,024	241,528	237,249	239,914	242,579	245,168	247,909	250,497
Delivered WLA	411,151	411,151	411,151	411,151	411,151	411,151	411,151	411,151
Expected Credits (delivered)	168,127	169,623	173,902	171,237	168,572	165,983	163,242	160,654
Transfers In (Out) within Owner Bubble	(213)	0	0	(837)	(3,502)	(6,243)	(8,832)	(11,573)
Transfers In (Out) from Private Exchange*	(167,685)	(169,623)	(171,694)	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	229	0	2,208	170,400	165,070	159,740	154,410	149,081
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	229	0	2,208	170,400	165,070	159,740	154,410	149,081

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
15.38	15.55	15.58	15.76	15.93	16.10	16.28	16.45
5.19	5.10	5.00	5.00	5.00	5.00	5.00	5.00
243,024	241,528	237,249	239,914	242,579	245,168	247,909	250,497
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
243,024	241,528	237,249	239,914	242,579	245,168	247,909	250,497
411,151	411,151	411,151	411,151	411,151	411,151	411,151	411,151
168,127	169,623	173,902	171,237	168,572	165,983	163,242	160,654
(213)	0	0	(837)	(3,502)	(6,243)	(8,832)	(11,573)
(167,685)	(169,623)	(171,694)	0	0	0	0	0
0	0	0	0	0	0	0	0
229	0	2,208	170,400	165,070	159,740	154,410	149,081
0	0	0	0	0	0	0	0
229	0	2,208	170,400	165,070	159,740	154,410	149,081

* Represents a Private Exchange of Credits with South Central Wastewater Authority from 2018 through 2020

PHOSPHORUS FACILITY SUMMARY

Chesterfield-Falling Cr.
 UPPER JAMES Trading Basin



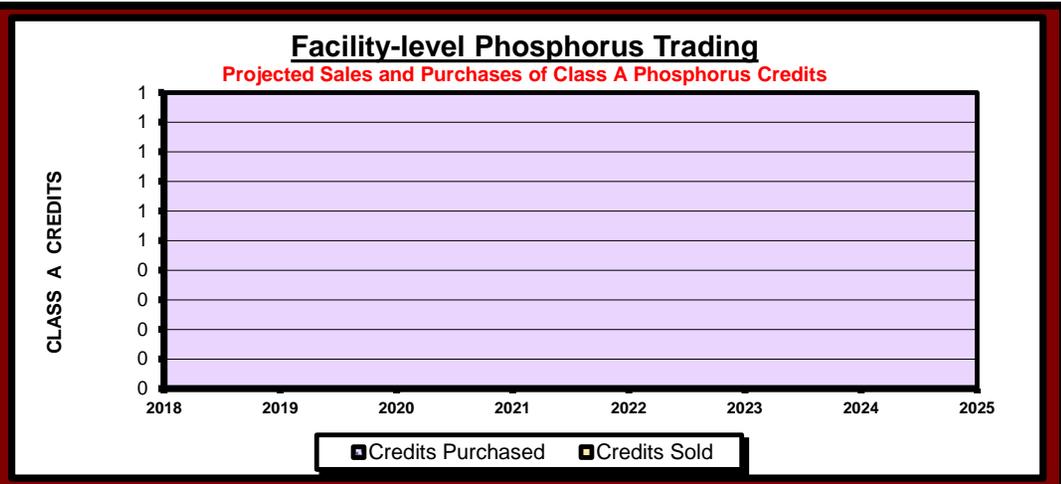
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
9.73	9.90	9.98	10.16	10.33	10.51	10.68	10.86
0.55	0.55	0.55	0.50	0.50	0.50	0.50	0.50
16,290	16,583	16,717	15,464	15,730	16,004	16,263	16,537
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
16,290	16,583	16,717	15,464	15,730	16,004	16,263	16,537
12,473	12,473	12,473	12,473	12,473	12,473	12,473	12,473
(3,817)	(4,110)	(4,244)	(2,991)	(3,257)	(3,531)	(3,790)	(4,064)
3,817	4,110	4,244	2,991	3,257	3,531	3,790	4,064
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Chesterfield-Proctors Cr.
 UPPER JAMES Trading Basin



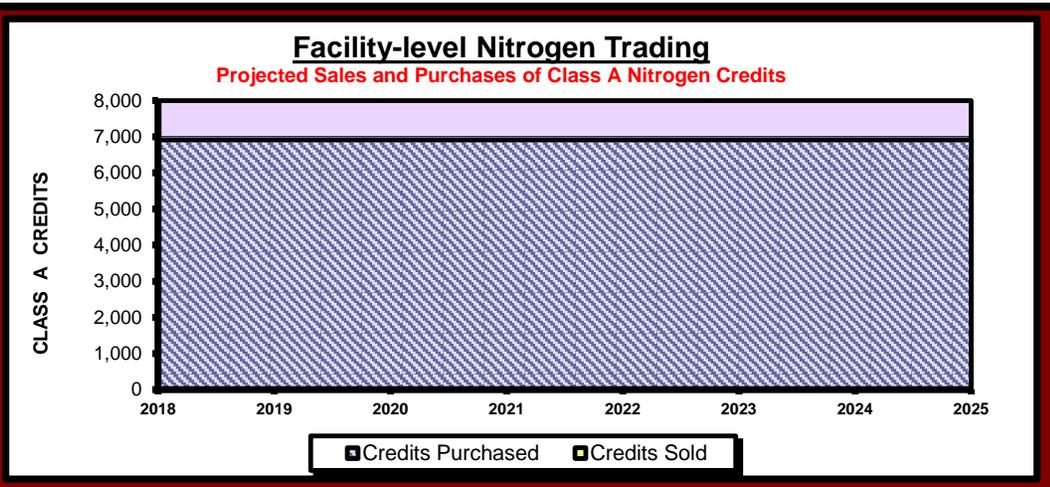
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange*	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
15.38	15.55	15.58	15.76	15.93	16.10	16.28	16.45
0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.50
25,754	26,047	26,097	26,391	26,684	26,968	27,270	25,050
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25,754	26,047	26,097	26,391	26,684	26,968	27,270	25,050
33,344	33,344	33,344	33,344	33,344	33,344	33,344	33,344
7,590	7,297	7,247	6,953	6,660	6,376	6,074	8,294
(3,817)	(4,110)	(4,244)	(2,991)	(3,257)	(3,531)	(3,790)	(4,064)
(40)	(40)	(40)	(40)	0	0	0	0
0	0	0	0	0	0	0	0
3,733	3,147	2,963	3,922	3,403	2,845	2,284	4,230
0	0	0	0	0	0	0	0
3,733	3,147	2,963	3,922	3,403	2,845	2,284	4,230

* Represents a Private Exchange of Credits with Dominion-Chesterfield

NITROGEN FACILITY SUMMARY

Covington
 UPPER JAMES Trading Basin



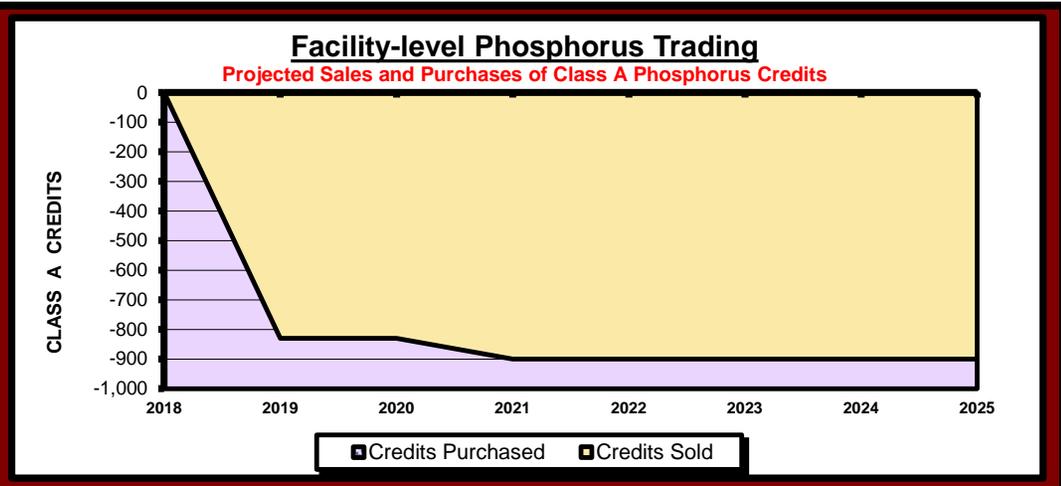
Loading & Credit Summary

Design Flow (mgd)	3.00
Projected Flow (mgd)	2.10
Projected Avg. Annual Concentration (mg/L)	13.72
Discharged Load (end of pipe)	87,749
Delivery Factor	0.21
Expected Load	18,427
Delivered WLA	11,512
Expected Credits (delivered)	(6,915)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(6,915)
Class A Credit Sales (Purchases)	(6,915)
Expected Class B Credits	0

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Projected Flow (mgd)	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
Projected Avg. Annual Concentration (mg/L)	13.72	13.72	13.72	13.72	13.72	13.72	13.72	13.72
Discharged Load (end of pipe)	87,749	87,749	87,749	87,749	87,749	87,749	87,749	87,749
Delivery Factor	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Expected Load	18,427	18,427	18,427	18,427	18,427	18,427	18,427	18,427
Delivered WLA	11,512	11,512	11,512	11,512	11,512	11,512	11,512	11,512
Expected Credits (delivered)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)
Class A Credit Sales (Purchases)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)	(6,915)
Expected Class B Credits	0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Covington
<i>UPPER JAMES Trading Basin</i>

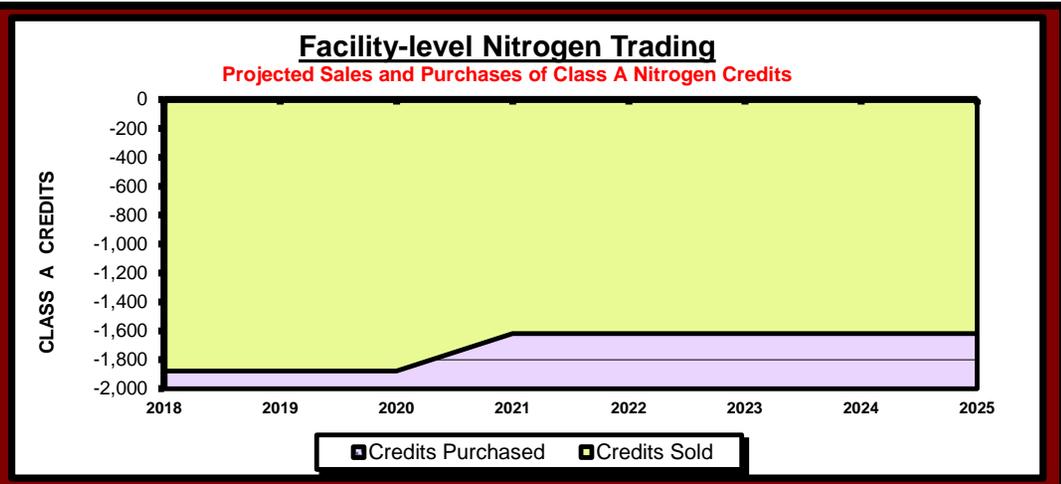


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
2,430	2,430	2,430	2,430	2,430	2,430	2,430	2,430
0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
1,604	1,604	1,604	1,726	1,726	1,726	1,726	1,726
2,445	2,445	2,445	2,631	2,631	2,631	2,631	2,631
841	841	841	905	905	905	905	905
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
841	841	841	905	905	905	905	905
0	830	830	900	900	900	900	900
841	11	11	5	5	5	5	5

NITROGEN FACILITY SUMMARY

Crewe
UPPER JAMES Trading Basin

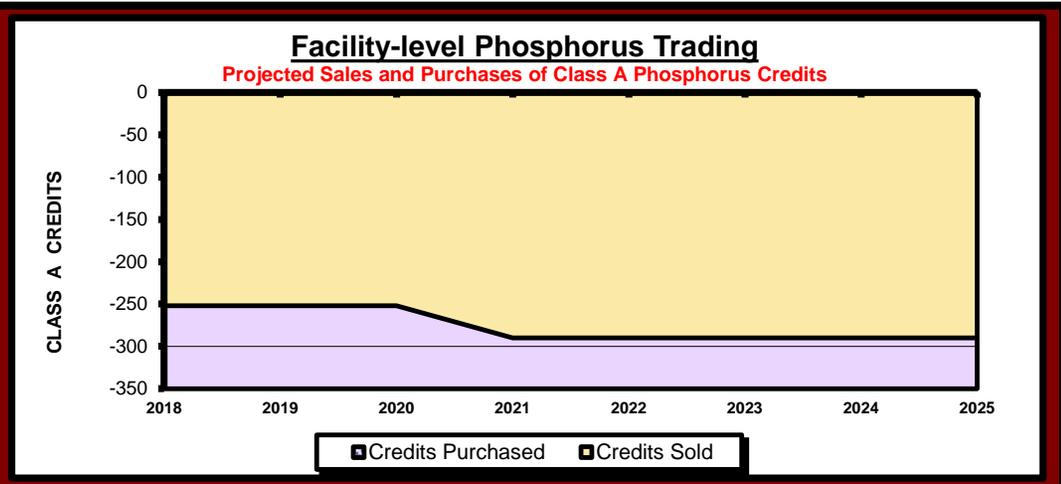


Loading & Credit Summary	
Design Flow (mgd)	0.50
Projected Flow (mgd)	0.23
Projected Avg. Annual Concentration (mg/L)	3.80
Discharged Load (end of pipe)	2,662
Delivery Factor	0.29
Expected Load	772
Delivered WLA	2,650
Expected Credits (delivered)	1,878
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,878
Class A Credit Sales (Purchases)	1,878
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80
2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662
0.29	0.29	0.29	0.25	0.25	0.25	0.25	0.25
772	772	772	665	665	665	665	665
2,650	2,650	2,650	2,284	2,284	2,284	2,284	2,284
1,878	1,878	1,878	1,619	1,619	1,619	1,619	1,619
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,878	1,878	1,878	1,619	1,619	1,619	1,619	1,619
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Crewe
UPPER JAMES Trading Basin



Loading & Credit Summary

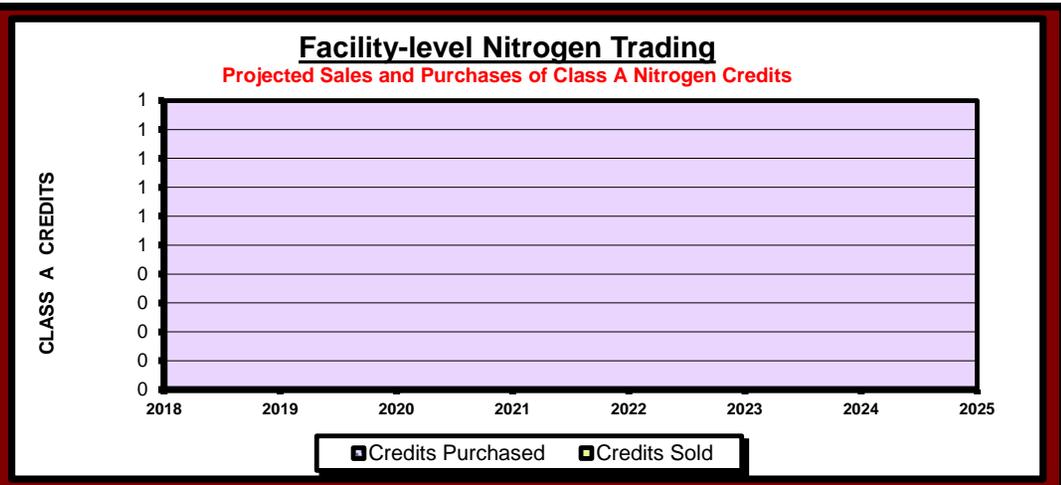
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025	
Planning Period					Future Estimates (non-binding)			
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
70	70	70	70	70	70	70	70	
0.46	0.46	0.46	0.53	0.53	0.53	0.53	0.53	
32	32	32	37	37	37	37	37	
284	284	284	327	327	327	327	327	
252	252	252	290	290	290	290	290	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
252	252	252	290	290	290	290	290	
0	0	0	0	0	0	0	0	

NITROGEN FACILITY SUMMARY

Dominion-Chesterfield

UPPER JAMES Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	13.50
Projected Flow (mgd)	6.00
Projected Avg. Annual Concentration (mg/L)	10.35
Discharged Load (end of pipe)	189,070
Delivery Factor	1.00
Expected Load	189,070
Delivered WLA*	272,036
Expected Credits (delivered)	82,966
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	82,966
Class A Credit Sales (Purchases)	0
Expected Class B Credits	82,966

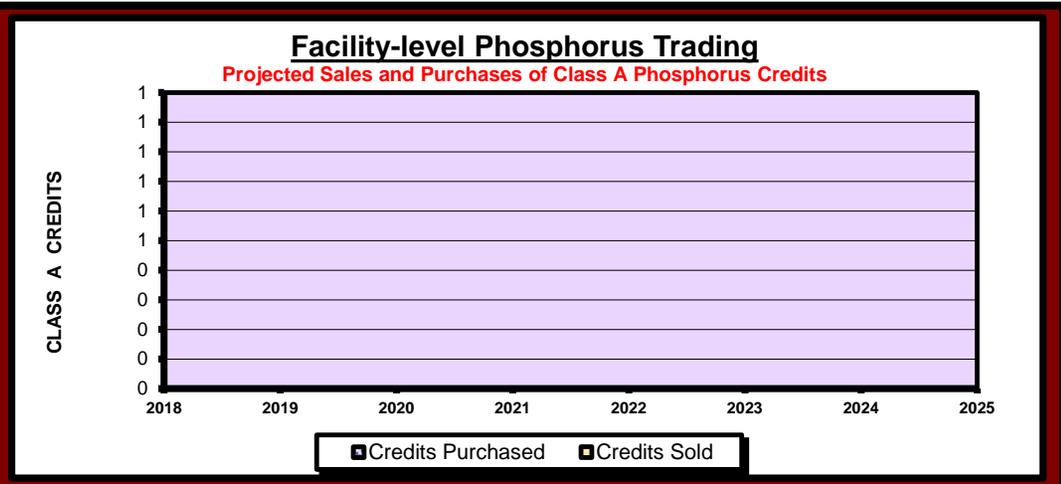
2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35
189,070	189,070	189,070	189,070	189,070	189,070	189,070	189,070
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
189,070	189,070	189,070	189,070	189,070	189,070	189,070	189,070
272,036	272,036	272,036	272,036	272,036	272,036	272,036	272,036
82,966	82,966	82,966	82,966	82,966	82,966	82,966	82,966
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
82,966	82,966	82,966	82,966	82,966	82,966	82,966	82,966
0	0	0	0	0	0	0	0
82,966	82,966	82,966	82,966	82,966	82,966	82,966	82,966

* Reflects a permanent allocation transfer to Tranlin, Inc of 80,000 delivered pounds of nitrogen

PHOSPHORUS FACILITY SUMMARY

Dominion-Chesterfield

UPPER JAMES Trading Basin



Loading & Credit Summary

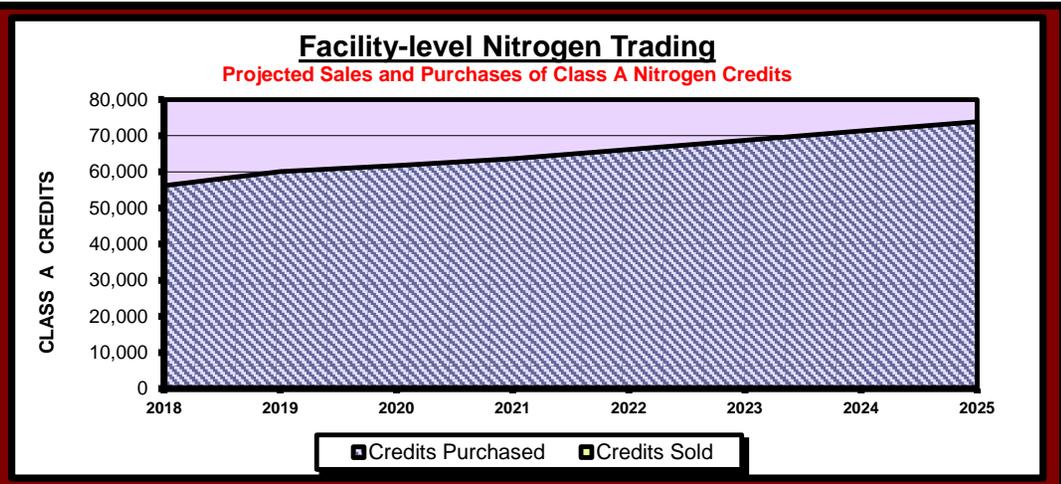
Design Flow (mgd)	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
Projected Flow (mgd)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Projected Avg. Annual Concentration (mg/L)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Discharged Load (end of pipe)	210	210	210	210	170	170	170	170
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	210	210	210	210	170	170	170	170
Delivered WLA	170	170	170	170	170	170	170	170
Expected Credits (delivered)	(40)	(40)	(40)	(40)	0	0	0	0
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	40	40	40	40	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	0	0	0	0	0	0	0	0
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	0	0	0	0	0	0	0	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
210	210	210	210	170	170	170	170
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
210	210	210	210	170	170	170	170
170	170	170	170	170	170	170	170
(40)	(40)	(40)	(40)	0	0	0	0
0	0	0	0	0	0	0	0
40	40	40	40	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

* Represents a Private Exchange of Credits with Chesterfield County

NITROGEN FACILITY SUMMARY

DuPont-Spruance
 UPPER JAMES Trading Basin



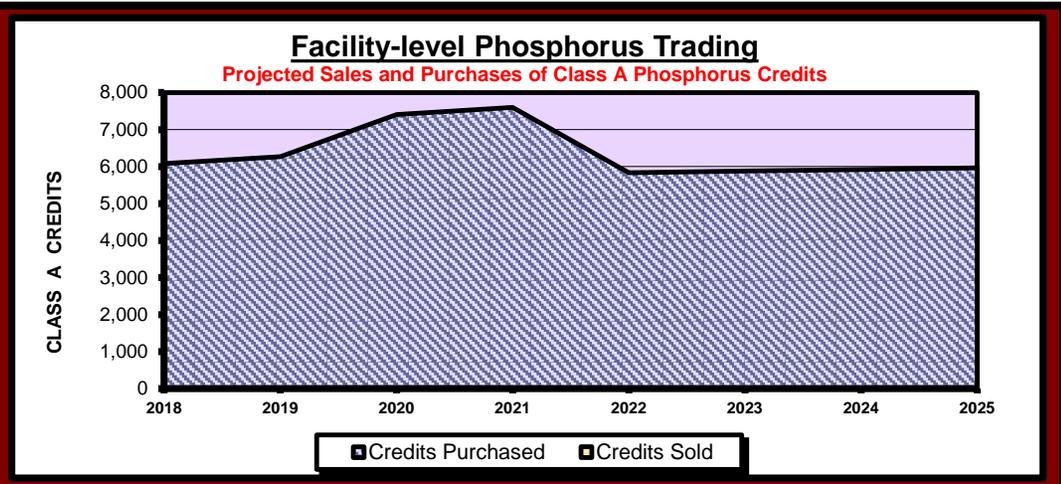
Loading & Credit Summary

Design Flow (mgd)	23.33
Projected Flow (mgd)	31.62
Projected Avg. Annual Concentration (mg/L)	2.67
Discharged Load (end of pipe)	257,315
Delivery Factor	1.00
Expected Load	257,315
Delivered WLA	201,080
Expected Credits (delivered)	(56,235)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(56,235)
Class A Credit Sales (Purchases)	(56,235)
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33
31.62	32.10	32.58	33.07	33.56	34.01	34.47	34.93
2.67	2.67	2.65	2.63	2.61	2.60	2.59	2.58
257,315	261,124	262,816	264,693	267,256	269,794	272,403	274,975
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
257,315	261,124	262,816	264,693	267,256	269,794	272,403	274,975
201,080	201,080	201,080	201,080	201,080	201,080	201,080	201,080
(56,235)	(60,044)	(61,736)	(63,613)	(66,176)	(68,714)	(71,323)	(73,895)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(56,235)	(60,044)	(61,736)	(63,613)	(66,176)	(68,714)	(71,323)	(73,895)
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

DuPont-Spruance
 UPPER JAMES Trading Basin



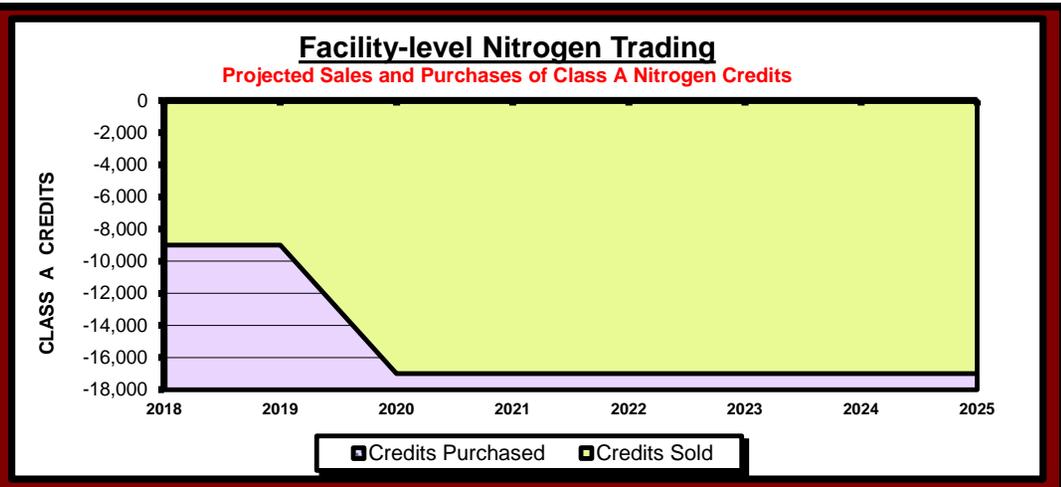
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33
Projected Flow (mgd)	31.62	32.10	32.58	33.07	33.56	34.01	34.47	34.93
Projected Avg. Annual Concentration (mg/L)	0.13	0.13	0.14	0.14	0.12	0.12	0.12	0.12
Discharged Load (end of pipe)	12,423	12,611	13,743	13,939	12,173	12,222	12,262	12,308
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	12,423	12,611	13,743	13,939	12,173	12,222	12,262	12,308
Delivered WLA	6,339	6,339	6,339	6,339	6,339	6,339	6,339	6,339
Expected Credits (delivered)	(6,084)	(6,272)	(7,404)	(7,600)	(5,834)	(5,883)	(5,923)	(5,969)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	(6,084)	(6,272)	(7,404)	(7,600)	(5,834)	(5,883)	(5,923)	(5,969)
Class A Credit Sales (Purchases)	(6,084)	(6,272)	(7,404)	(7,600)	(5,834)	(5,883)	(5,923)	(5,969)
Expected Class B Credits	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Georgia-Pacific
 UPPER JAMES Trading Basin



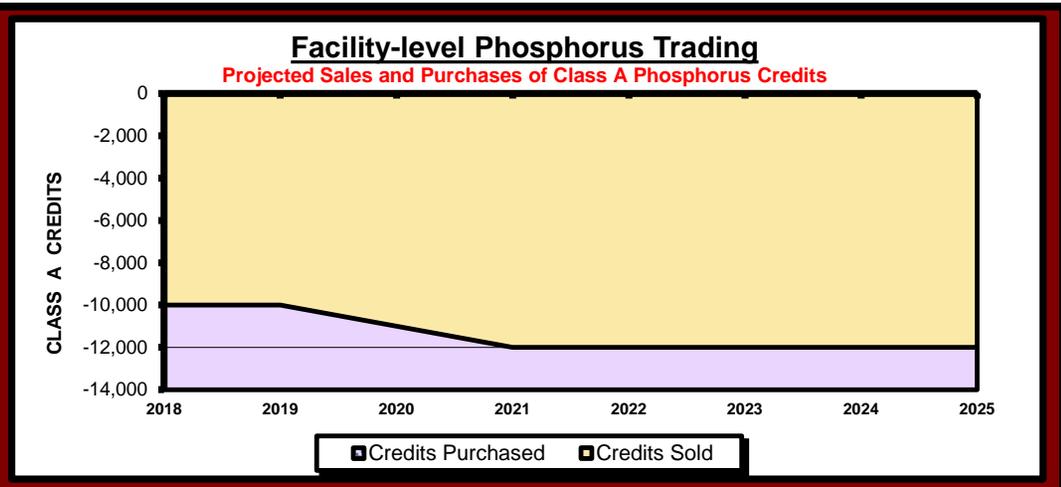
Loading & Credit Summary

Design Flow (mgd)	10.87
Projected Flow (mgd)	8.75
Projected Avg. Annual Concentration (mg/L)	3.25
Discharged Load (end of pipe)	86,608
Delivery Factor	0.60
Expected Load	51,965
Delivered WLA	73,493
Expected Credits (delivered)	21,528
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	21,528
Class A Credit Sales (Purchases)	9,000
Expected Class B Credits	12,528

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
10.87	10.87	10.87	10.87	10.87	10.87	10.87	10.87
8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.75
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
86,608	86,608	86,608	86,608	86,608	86,608	86,608	86,608
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
51,965	51,965	51,965	51,965	51,965	51,965	51,965	51,965
73,493	73,493	73,493	73,493	73,493	73,493	73,493	73,493
21,528	21,528	21,528	21,528	21,528	21,528	21,528	21,528
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
21,528	21,528	21,528	21,528	21,528	21,528	21,528	21,528
9,000	9,000	17,000	17,000	17,000	17,000	17,000	17,000
12,528	12,528	4,528	4,528	4,528	4,528	4,528	4,528

PHOSPHORUS FACILITY SUMMARY

Georgia-Pacific
 UPPER JAMES Trading Basin



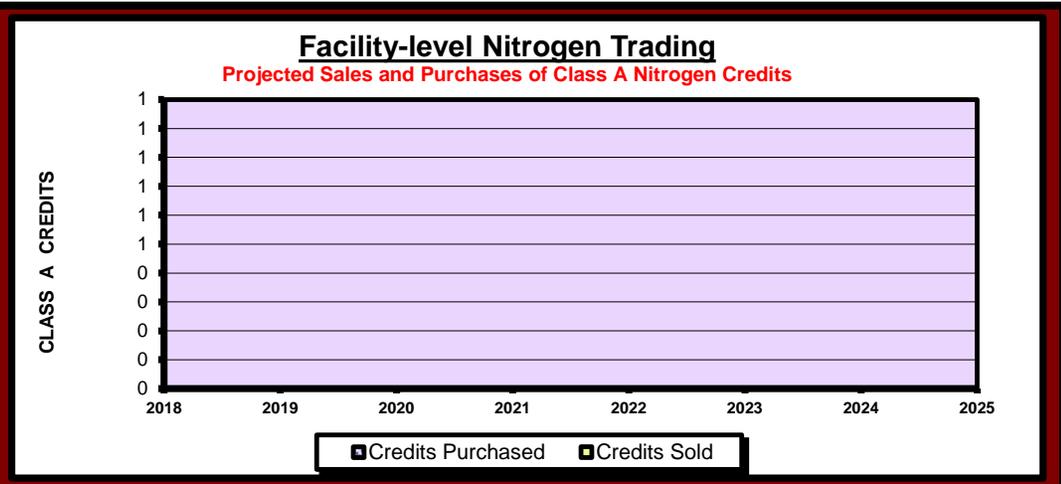
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
10.87	10.87	10.87	10.87	10.87	10.87	10.87	10.87
8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.75
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
18,654	18,654	18,654	18,654	18,654	18,654	18,654	18,654
0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
12,312	12,312	12,312	13,244	13,244	13,244	13,244	13,244
26,580	26,580	26,580	28,594	28,594	28,594	28,594	28,594
14,268	14,268	14,268	15,350	15,350	15,350	15,350	15,350
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
14,268	14,268	14,268	15,350	15,350	15,350	15,350	15,350
10,000	10,000	11,000	12,000	12,000	12,000	12,000	12,000
4,268	4,268	3,268	3,350	3,350	3,350	3,350	3,350

NITROGEN FACILITY SUMMARY

Greif Packaging
 UPPER JAMES Trading Basin



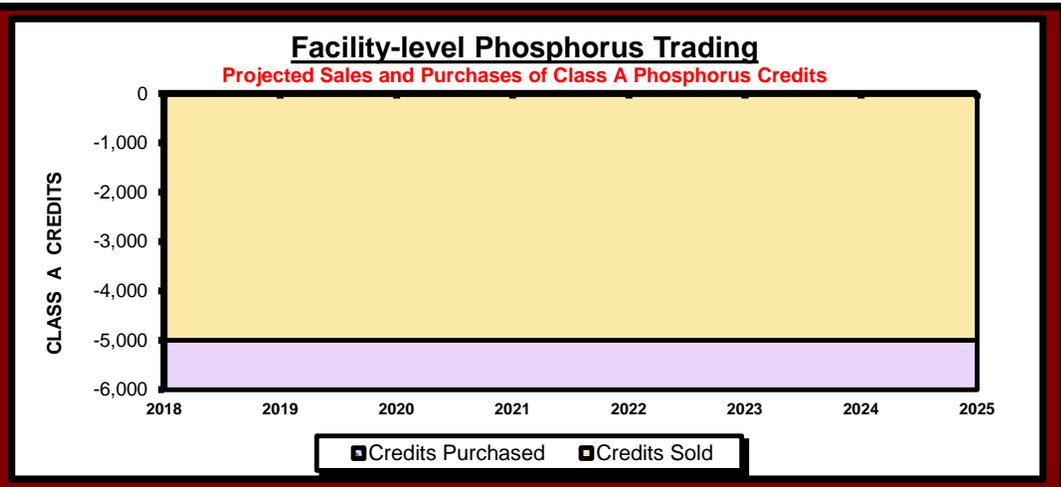
Loading & Credit Summary

Design Flow (mgd)	6.50
Projected Flow (mgd)	6.50
Projected Avg. Annual Concentration (mg/L)	3.70
Discharged Load (end of pipe)	73,246
Delivery Factor	0.65
Expected Load	47,610
Delivered WLA	47,610
Expected Credits (delivered)	0
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70
73,246	73,246	73,246	73,246	73,246	73,246	73,246	73,246
0.65	0.65	0.65	0.64	0.64	0.64	0.64	0.64
47,610	47,610	47,610	46,877	46,877	46,877	46,877	46,877
47,610	47,610	47,610	46,877	46,877	46,877	46,877	46,877
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Greif Packaging
 UPPER JAMES Trading Basin

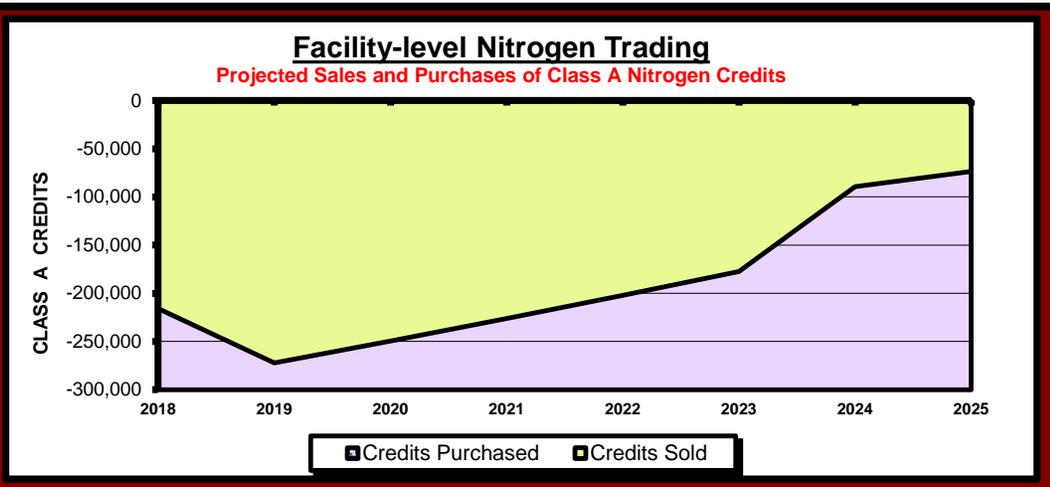


Loading & Credit Summary	
Design Flow (mgd)	6.50
Projected Flow (mgd)	6.50
Projected Avg. Annual Concentration (mg/L)	0.80
Discharged Load (end of pipe)	15,837
Delivery Factor	0.66
Expected Load	10,452
Delivered WLA	15,894
Expected Credits (delivered)	5,442
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	5,442
Class A Credit Sales (Purchases)	5,000
Expected Class B Credits	442

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
15,837	15,837	15,837	15,837	15,837	15,837	15,837	15,837
0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
10,452	10,452	10,452	11,244	11,244	11,244	11,244	11,244
15,894	15,894	15,894	17,098	17,098	17,098	17,098	17,098
5,442	5,442	5,442	5,854	5,854	5,854	5,854	5,854
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
5,442	5,442	5,442	5,854	5,854	5,854	5,854	5,854
5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
442	442	442	854	854	854	854	854

NITROGEN FACILITY SUMMARY

Henrico Co
 UPPER JAMES Trading Basin

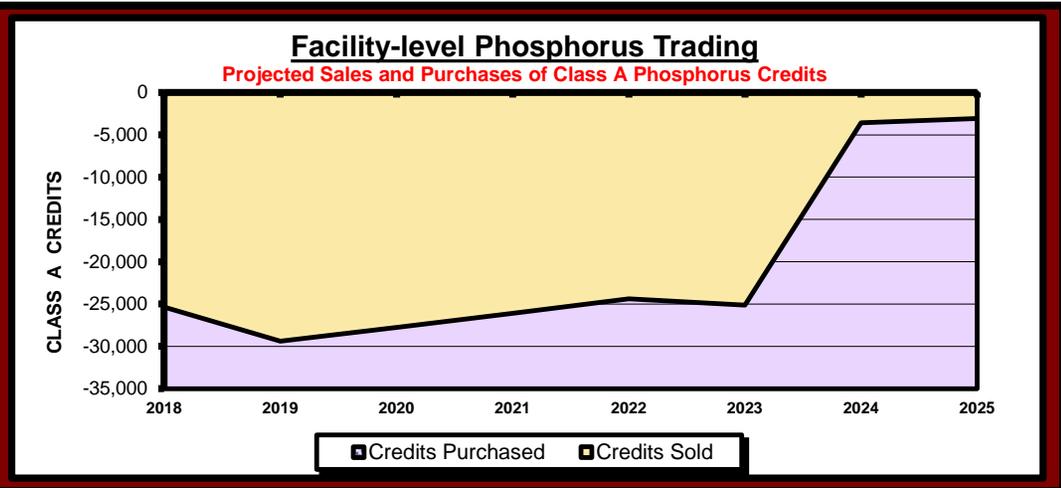


Loading & Credit Summary	
Design Flow (mgd)	75.00
Projected Flow (mgd)	60.46
Projected Avg. Annual Concentration (mg/L)	4.90
Discharged Load (end of pipe)	902,259
Delivery Factor	1.00
Expected Load	902,259
Delivered WLA	1,142,085
Expected Credits (delivered)	239,826
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	239,826
Class A Credit Sales (Purchases)	215,843
Expected Class B Credits	23,983

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
60.46	56.26	57.95	59.69	61.48	63.32	65.22	67.18
4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90
902,259	839,582	864,802	890,768	917,481	944,940	973,294	1,002,544
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
902,259	839,582	864,802	890,768	917,481	944,940	973,294	1,002,544
1,142,085	1,142,085	1,142,085	1,142,085	1,142,085	1,142,085	1,142,085	1,142,085
239,826	302,503	277,283	251,317	224,604	197,145	168,791	139,541
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
239,826	302,503	277,283	251,317	224,604	197,145	168,791	139,541
215,843	272,252	249,555	226,185	202,144	177,431	89,364	73,541
23,983	30,251	27,728	25,132	22,460	19,714	79,427	66,000

PHOSPHORUS FACILITY SUMMARY

Henrico Co
<i>UPPER JAMES Trading Basin</i>

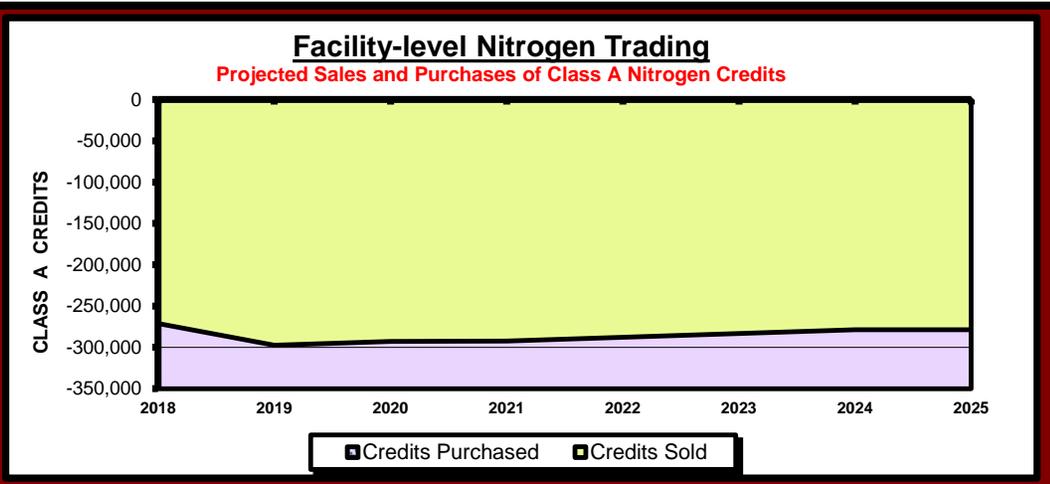


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
60.46	56.26	57.95	59.69	61.48	63.32	65.22	67.18
0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
64,447	59,970	61,772	63,626	65,534	67,496	69,521	71,610
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
64,447	59,970	61,772	63,626	65,534	67,496	69,521	71,610
92,623	92,623	92,623	92,623	92,623	92,623	92,623	92,623
28,176	32,653	30,851	28,997	27,089	25,127	23,102	21,013
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
28,176	32,653	30,851	28,997	27,089	25,127	23,102	21,013
25,358	29,388	27,766	26,097	24,380	25,127	3,575	3,065
2,818	3,265	3,085	2,900	2,709	0	19,527	17,948

NITROGEN FACILITY SUMMARY

Hopewell RWTF
 UPPER JAMES Trading Basin



Loading & Credit Summary

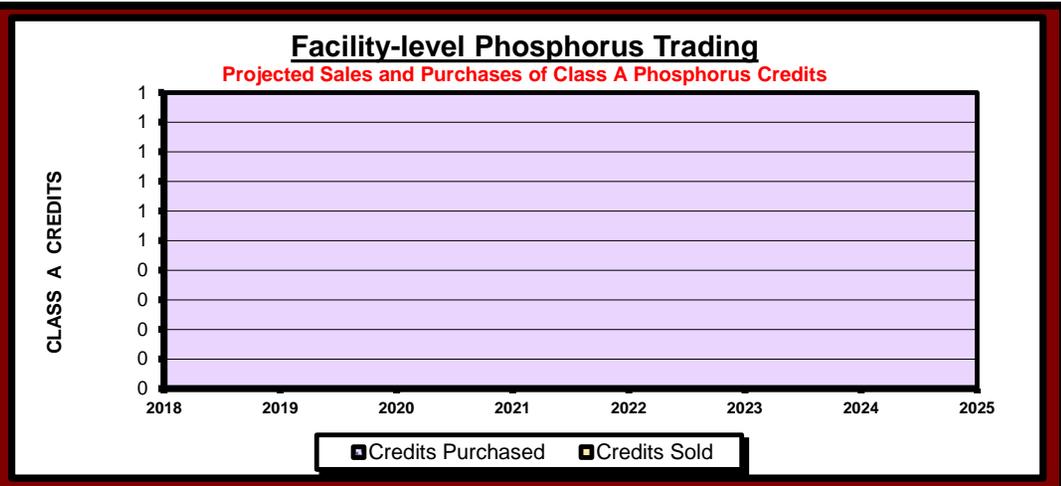
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange*
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
26.60	26.80	27.00	27.20	27.40	27.60	27.80	27.80
15.80	15.10	15.10	15.00	15.00	15.00	15.00	15.00
1,279,988	1,232,477	1,241,675	1,242,588	1,251,725	1,260,862	1,269,999	1,269,999
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,279,988	1,232,477	1,241,675	1,242,588	1,251,725	1,260,862	1,269,999	1,269,999
1,827,336	1,827,336	1,827,336	1,827,336	1,827,336	1,827,336	1,827,336	1,827,336
547,348	594,859	585,661	584,748	575,611	566,474	557,337	557,337
0	0	0	0	0	0	0	0
2,522	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
549,870	594,859	585,661	584,748	575,611	566,474	557,337	557,337
271,152	297,430	292,831	292,374	287,805	283,237	278,668	278,668
278,718	297,429	292,830	292,374	287,806	283,237	278,669	278,669

* Represents a Private Exchange of Credits with AdvanSix-Hopewell

PHOSPHORUS FACILITY SUMMARY

Hopewell RWTF
 UPPER JAMES Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
26.60	26.80	27.00	27.20	27.40	27.60	27.80	27.80
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
56,708	57,135	57,561	57,987	58,414	58,840	59,267	59,267
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
56,708	57,135	57,561	57,987	58,414	58,840	59,267	59,267
61,749	61,749	61,749	61,749	61,749	61,749	61,749	61,749
5,041	4,614	4,188	3,762	3,335	2,909	2,482	2,482
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
5,041	4,614	4,188	3,762	3,335	2,909	2,482	2,482
0	0	0	0	0	0	0	0
5,041	4,614	4,188	3,762	3,335	2,909	2,482	2,482

Hampton Roads Sanitation District: James River Aggregate

The HRSD James River Aggregate is an aggregate regional water quality-based allocation that is neither derived from nor limiting upon individual facilities on a facility-specific basis (or their associated design flows and specific removal efficiencies) for the regional system. The HRSD James River Aggregate TN WLA of 4,553,500 lbs/yr (or 3,553,500 lbs/yr as of 2022) and TP WLA of 318,436 lbs/yr are binding upon HRSD's regional system as a whole. (Note: The aggregate WLAs reflect: (1) the original aggregate allocations established by DEQ in 2005; (2) the EPA Chesapeake Bay TMDL Appendix X Stage 1 reductions (including Phases 1 and 2 as defined in the WGP Fact Sheet); (3) the subsequent allocation transfer to G. Robert House, Jr. WTP (9,011 lbs/yr TP); and (4) acquisition of allocation by consolidation of the J.H. Miles facility (153,500 lbs/yr TN and 17,437 lbs/yr TP).

Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply with the aggregate Delivered WLA of the bubble.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Aggregate WLA								
Delivered WLA (Bubble)	4,553,500	4,553,500	4,553,500	4,553,500	3,553,500			
Projected Delivered Loads	2018	2019	2020	2021	2022	2023	2024	2025
Army Base	142,515	142,652	142,789	142,927	140,033			
Boat Harbor	1,166,998	1,167,137	1,167,275	1,167,414	1,313,407			
Ches/Eliz*	1,441,632	1,448,740	1,455,884	1,463,063	-			
James River	359,014	359,535	360,057	360,580	362,100			
Lawnes Point	-	-	-	-	-			
Nansemond	397,486	405,362	413,393	421,584	294,975			
VIP	421,533	422,420	423,308	424,199	432,080			
Williamsburg	272,765	276,109	279,494	282,921	277,068			
TOTAL Delivered Loads	4,201,943	4,221,955	4,242,200	4,262,688	2,819,663			
Net Credits Available	2018	2019	2020	2021	2022	2023	2024	2025
Expected Net Credits	351,557	331,545	311,300	290,812	733,837			
Class A Sales (Purchases)	0	0	0	0	0			
Expected Class B Credits	351,557	331,545	311,300	290,812	733,837			
WQIF-Held Credits	0	0	0	0	0			

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2018	2019	2020	2021	2022	2023	2024	2025
Aggregate WLA								
Delivered WLA (Bubble)	318,436	318,436	318,436	318,436	318,436			
Projected Delivered Loads	2018	2019	2020	2021	2022	2023	2024	2025
Army Base	25,336	25,360	25,385	25,409	24,895			
Boat Harbor	35,908	35,912	35,916	35,920	36,232			
Ches/Eliz*	48,961	49,202	49,445	49,689	-			
James River	31,912	31,959	32,005	32,052	32,187			
Lawnes Point	-	-	-	-	-			
Nansemond	63,598	64,858	66,143	67,453	70,794			
VIP	74,939	75,097	75,255	75,413	76,814			
Williamsburg	21,821	22,089	22,360	22,634	22,165			
TOTAL Delivered Loads	302,475	304,477	306,509	308,570	263,087			
Net Credits Available	2018	2019	2020	2021	2022	2023	2024	2025
Expected Net Credits	15,961	13,959	11,927	9,866	55,349			
Class A Sales (Purchases)	0	0	0	0	0			
Expected Class B Credits	15,961	13,959	11,927	9,866	55,349			
WQIF-Held Credits	0	0	0	0	0			

* HRSD plans to consolidate the Chesapeake-Elizabeth STP within its regional system within the 2022 calendar year.

FACILITY (OR OWNER BUBBLE) NAME: VAN040090 HRSD James River Aggregate

COMPLIANCE STATEMENT FOR FACILITIES SUBJECT TO REDUCED WASTELOAD ALLOCATIONS IN CHESAPEAKE BAY TMDL

Basin/Nutrient(s): James / Nitrogen

Compliance Information Required by 9 VAC 25-820-40 A 2 (Check Option 1 or Option 2)

Option 1 (9 VAC 25-820-40 A 2 b): Permittee hereby requests WLA to be effective as of January 1, 2012.

Option 2 (9 VAC 25-820-40 A 2 a): Additional capital project(s) is needed to ensure continued compliance with the WLA through the applicable compliance schedule deadline for the tributary. (Note: Checking Option 2 does not preclude use of credit purchase as means of compliance below.)

If Option 2 is checked, briefly describe need for additional projects:

The HRSD James River Aggregate has been subject to staged reductions established in the EPA Chesapeake Bay TMDL and Virginia Phase I Watershed Implementation Plan Stage 1, which consists of two phases. While the recent Army Base STP and Virginia Initiative STP projects enabled HRSD to meet the Phase 1 reduced 2017 aggregate wasteload allocation during Compliance Year 2017, further actions are needed to meet Phase 2 reduced 2022 aggregate wasteload load allocation.

Implementation Schedule

1. Does permittee anticipate using credit purchase to comply?
 NO YES

2. Is permittee implementing a capital project to comply?
 NO YES
(If YES, compliance is required as soon as possible but no later than the applicable tributary compliance schedule deadline.)

3. Capital Project Milestone Schedule (Specify estimated date for each milestone. For bubbles, specify facility name(s) and list multiple facility schedules if applicable.)

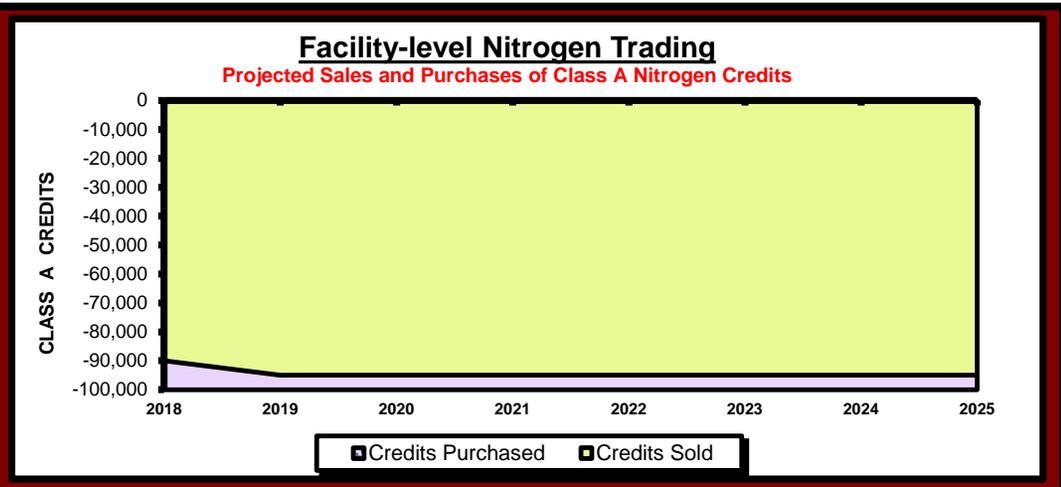
See discussion of progress and schedule below.

HRSD's recent Army Base STP and Virginia Initiative Plant (VIP) upgrades were designed, and have proven sufficient, to meet HRSD's James River TN Aggregate WLA through and including the 2017 reduction (TN Aggregate WLA of 4,553,000 lbs/yr) established by the Watershed General Permit and related James River Registration List (2/2017) in compliance with applicable water quality standards and consistent with Chesapeake Bay TMDL Appendix X (Staged Implementation Approach for Wastewater Treatment Facilities in the Virginia James River Basin) (December 2010).

By 2022, a further reduction is contemplated under the staged implementation approach. Due to lead times associated with completing large complex projects within the HRSD system in order to meet the anticipated 2022 TN Aggregate WLA (3,553,500 lbs/yr TN) HRSD currently intends to leverage the planned consolidation of the Chesapeake-Elizabeth STP within the regional system to support compliance with the 2022 TN Aggregate WLA. This consolidation is expected to require fewer WQIF funds than a facility upgrade alternative.

NITROGEN FACILITY SUMMARY

Lynchburg
UPPER JAMES Trading Basin



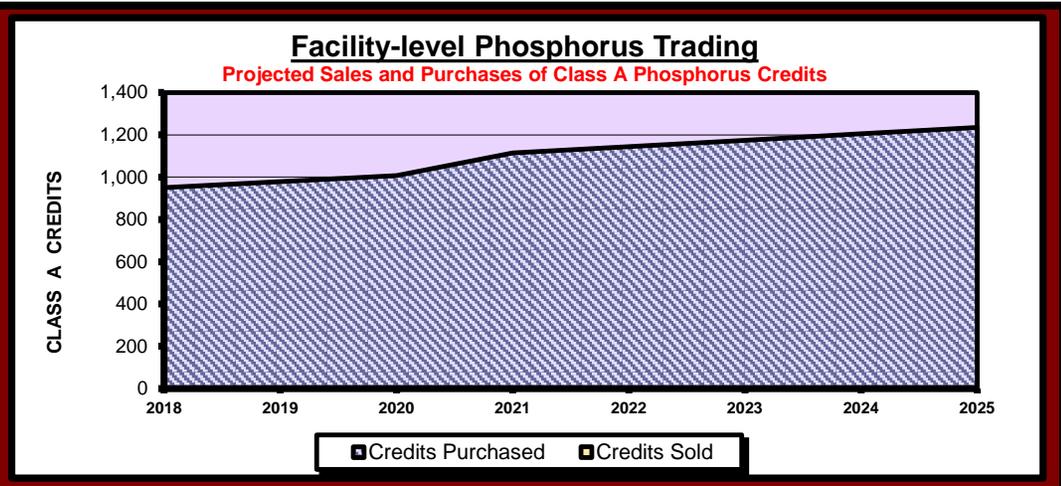
Loading & Credit Summary	
Design Flow (mgd)	22.00
Projected Flow (mgd)	13.42
Projected Avg. Annual Concentration (mg/L)	8.20
Discharged Load (end of pipe)	335,146
Delivery Factor	0.65
Expected Load	217,845
Delivered WLA	348,412
Expected Credits (delivered)	130,567
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	0
WQIF-Held Credits	0
Expected Net Credits	130,567
Class A Credit Sales (Purchases)	90,000
Expected Class B Credits	40,567

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
13.42	13.44	13.46	13.48	13.50	13.52	13.54	13.56
8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20
335,146	335,645	336,145	336,644	337,143	337,643	338,142	338,642
0.65	0.65	0.65	0.64	0.64	0.64	0.64	0.64
217,845	218,169	218,494	215,452	215,772	216,091	216,411	216,731
348,412	348,412	348,412	343,052	343,052	343,052	343,052	343,052
130,567	130,243	129,918	127,600	127,280	126,961	126,641	126,321
0	0	0	0	0	0	0	0
0	0	0	0	0	(5,000)	(5,000)	(5,000)
0	0	0	0	0	0	0	0
130,567	130,243	129,918	127,600	127,280	121,961	121,641	121,321
90,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000
40,567	35,243	34,918	32,600	32,280	26,961	26,641	26,321

* Represents Credits used for the City of Lynchburg's stormwater program

PHOSPHORUS FACILITY SUMMARY

Lynchburg
 UPPER JAMES Trading Basin

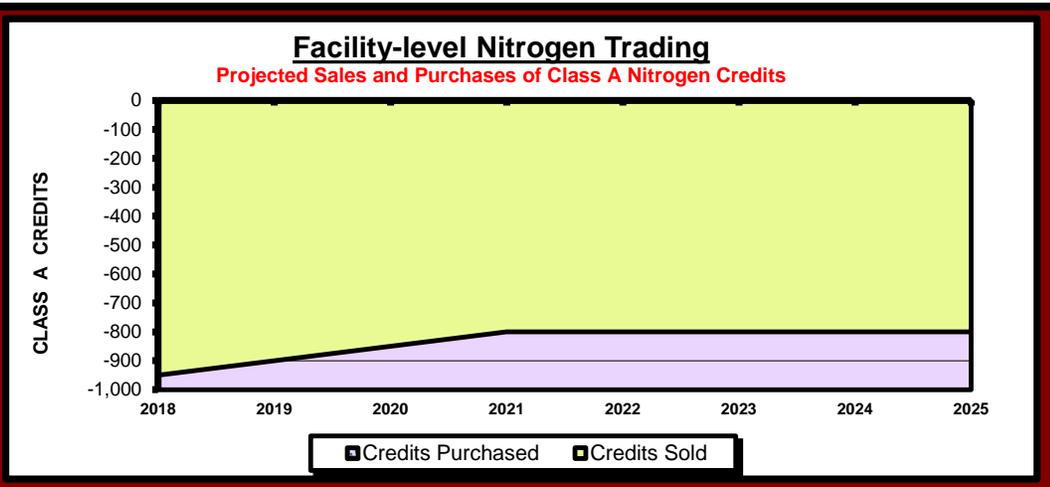


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
13.42	13.44	13.46	13.48	13.50	13.52	13.54	13.56
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
28,610	28,653	28,695	28,738	28,781	28,823	28,866	28,908
0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
18,883	18,911	18,939	20,404	20,434	20,464	20,495	20,525
17,932	17,932	17,932	19,290	19,290	19,290	19,290	19,290
(951)	(979)	(1,007)	(1,114)	(1,144)	(1,174)	(1,205)	(1,235)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(951)	(979)	(1,007)	(1,114)	(1,144)	(1,174)	(1,205)	(1,235)
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

MSA-Lexington
 UPPER JAMES Trading Basin



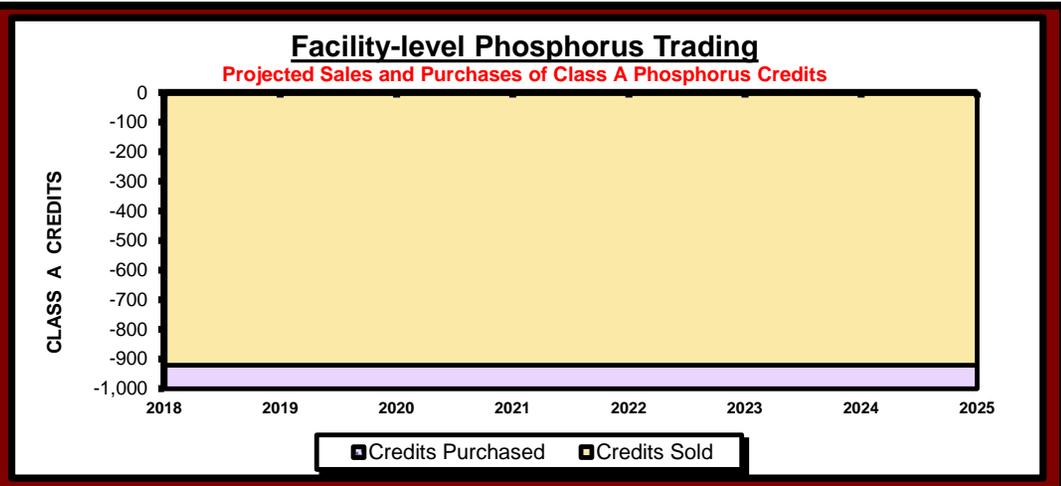
Loading & Credit Summary

Design Flow (mgd)	3.00
Projected Flow (mgd)	1.00
Projected Avg. Annual Concentration (mg/L)	5.00
Discharged Load (end of pipe)	15,228
Delivery Factor	0.32
Expected Load	4,873
Delivered WLA	17,542
Expected Credits (delivered)	12,669
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	12,669
Class A Credit Sales (Purchases)	950
Expected Class B Credits	11,719

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
15,228	15,228	15,228	15,228	15,228	15,228	15,228	15,228
0.32	0.32	0.32	0.31	0.31	0.31	0.31	0.31
4,873	4,873	4,873	4,721	4,721	4,721	4,721	4,721
17,542	17,542	17,542	16,994	16,994	16,994	16,994	16,994
12,669	12,669	12,669	12,273	12,273	12,273	12,273	12,273
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
12,669	12,669	12,669	12,273	12,273	12,273	12,273	12,273
950	900	850	800	800	800	800	800
11,719	11,769	11,819	11,473	11,473	11,473	11,473	11,473

PHOSPHORUS FACILITY SUMMARY

MSA-Lexington
 UPPER JAMES Trading Basin

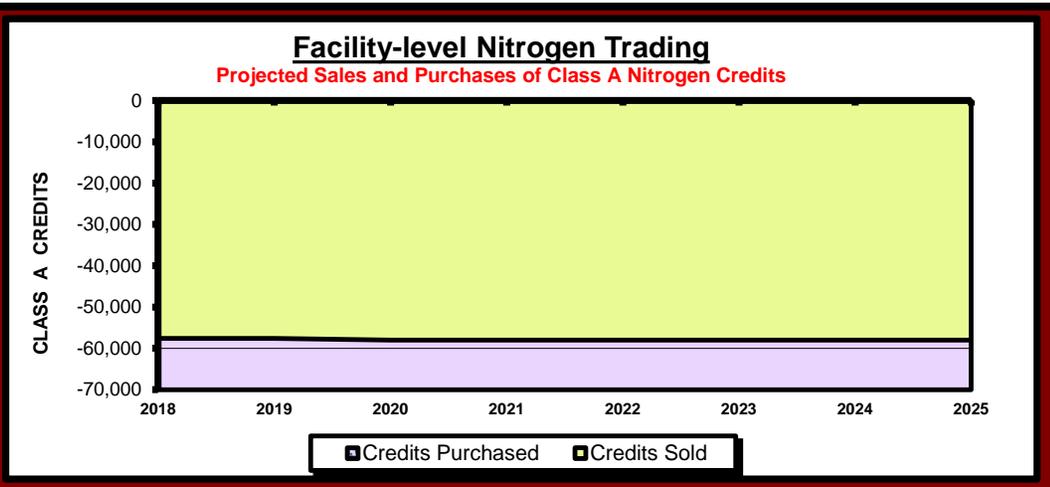


Loading & Credit Summary	
Design Flow (mgd)	3.00
Projected Flow (mgd)	1.00
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	914
Delivery Factor	0.66
Expected Load	603
Delivered WLA	2,445
Expected Credits (delivered)	1,842
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,842
Class A Credit Sales (Purchases)	921
Expected Class B Credits	921

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
914	914	914	914	914	914	914	914
0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
603	603	603	649	649	649	649	649
2,445	2,445	2,445	2,631	2,631	2,631	2,631	2,631
1,842	1,842	1,842	1,982	1,982	1,982	1,982	1,982
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,842	1,842	1,842	1,982	1,982	1,982	1,982	1,982
921	921	921	921	921	921	921	921
921	921	921	1,061	1,061	1,061	1,061	1,061

NITROGEN FACILITY SUMMARY

Philip Morris
 UPPER JAMES Trading Basin

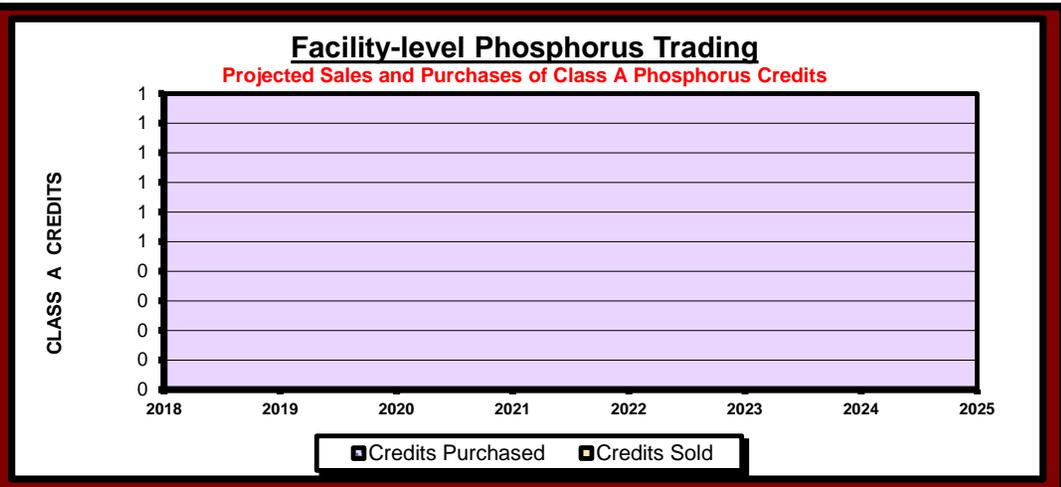


Loading & Credit Summary	
Design Flow (mgd)	2.90
Projected Flow (mgd)	1.20
Projected Avg. Annual Concentration (mg/L)	15.00
Discharged Load (end of pipe)	54,820
Delivery Factor	1.00
Expected Load	54,820
Delivered WLA	139,724
Expected Credits (delivered)	84,904
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	84,904
Class A Credit Sales (Purchases)	57,592
Expected Class B Credits	27,312

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
54,820	54,820	54,820	54,820	54,820	54,820	54,820	54,820
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
54,820	54,820	54,820	54,820	54,820	54,820	54,820	54,820
139,724	139,724	139,724	139,724	139,724	139,724	139,724	139,724
84,904	84,904	84,904	84,904	84,904	84,904	84,904	84,904
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
84,904	84,904	84,904	84,904	84,904	84,904	84,904	84,904
57,592	57,592	58,000	58,000	58,000	58,000	58,000	58,000
27,312	27,312	26,904	26,904	26,904	26,904	26,904	26,904

PHOSPHORUS FACILITY SUMMARY

Philip Morris
 UPPER JAMES Trading Basin



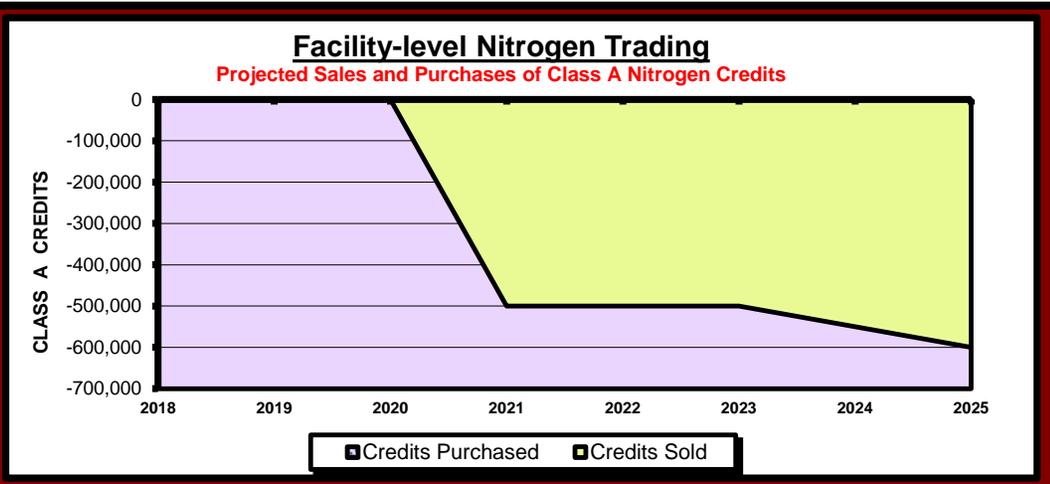
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
1,827	1,827	1,827	1,827	1,827	1,827	1,827	1,827
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,827	1,827	1,827	1,827	1,827	1,827	1,827	1,827
2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149
322	322	322	322	322	322	322	322
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
322	322	322	322	322	322	322	322
0	0	0	0	0	0	0	0
322	322	322	322	322	322	322	322

NITROGEN FACILITY SUMMARY

Richmond

UPPER JAMES Trading Basin



Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA*
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

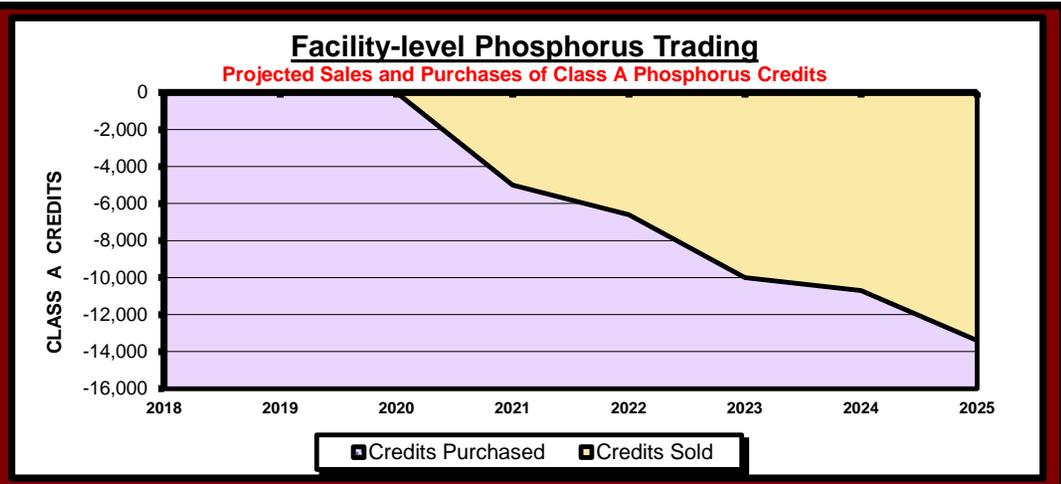
2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
4.50	4.00	4.00	4.00	4.00	3.75	3.50	3.00
616,726	548,201	548,201	548,201	548,201	513,938	479,676	411,151
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
616,726	548,201	548,201	548,201	548,201	513,938	479,676	411,151
1,093,652	1,093,652	1,093,652	1,093,652	1,093,652	1,093,652	1,093,652	1,093,652
476,926	545,451	545,451	545,451	545,451	579,714	613,976	682,501
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
476,926	545,451	545,451	545,451	545,451	579,714	613,976	682,501
0	0	0	500,000	500,000	500,000	550,000	600,000
476,926	545,451	545,451	45,451	45,451	79,714	63,976	82,501

* Reflects allocation transfer to the Oilville WWTP of 2,750 delivered pounds of TN based on agreement with Goochland County

PHOSPHORUS FACILITY SUMMARY

Richmond

UPPER JAMES Trading Basin



Loading & Credit Summary

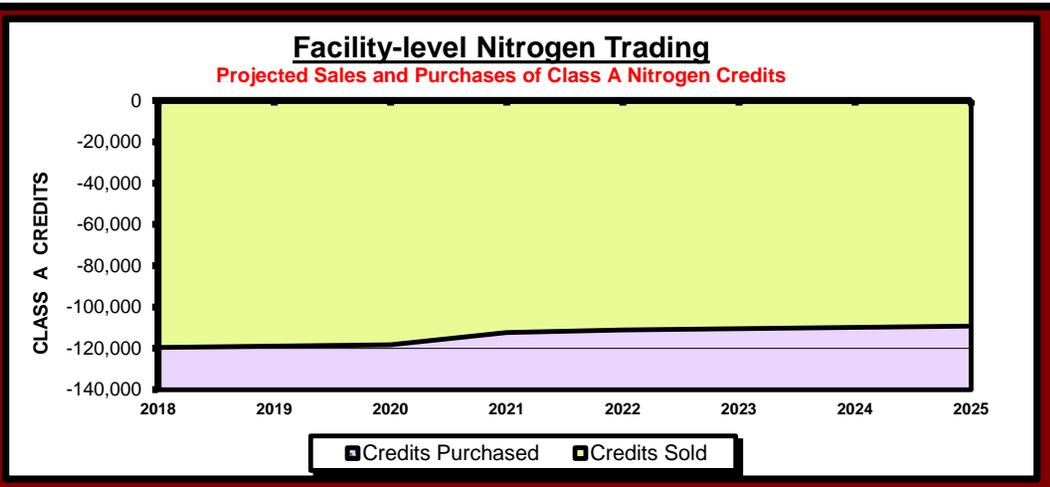
Design Flow (mgd)	45.00
Projected Flow (mgd)	45.00
Projected Avg. Annual Concentration (mg/L)	0.35
Discharged Load (end of pipe)	47,968
Delivery Factor	1.00
Expected Load	47,968
Delivered WLA*	55,574
Expected Credits (delivered)	7,606
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	7,606
Class A Credit Sales (Purchases)	0
Expected Class B Credits	7,606

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
0.35	0.35	0.35	0.35	0.35	0.33	0.32	0.30
47,968	47,968	47,968	47,968	47,968	45,227	43,856	41,115
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
47,968	47,968	47,968	47,968	47,968	45,227	43,856	41,115
55,574	55,574	55,574	55,574	55,574	55,574	55,574	55,574
7,606	7,606	7,606	7,606	7,606	10,347	11,718	14,459
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
7,606	7,606	7,606	7,606	7,606	10,347	11,718	14,459
0	0	0	5,000	6,600	10,000	10,700	13,400
7,606	7,606	7,606	2,606	1,006	347	1,018	1,059

* Reflects allocation transfer to the Oilville WWTP of 275 delivered pounds of TP based on agreement with Goochland County

NITROGEN FACILITY SUMMARY

RWSA-Moores Creek
 UPPER JAMES Trading Basin



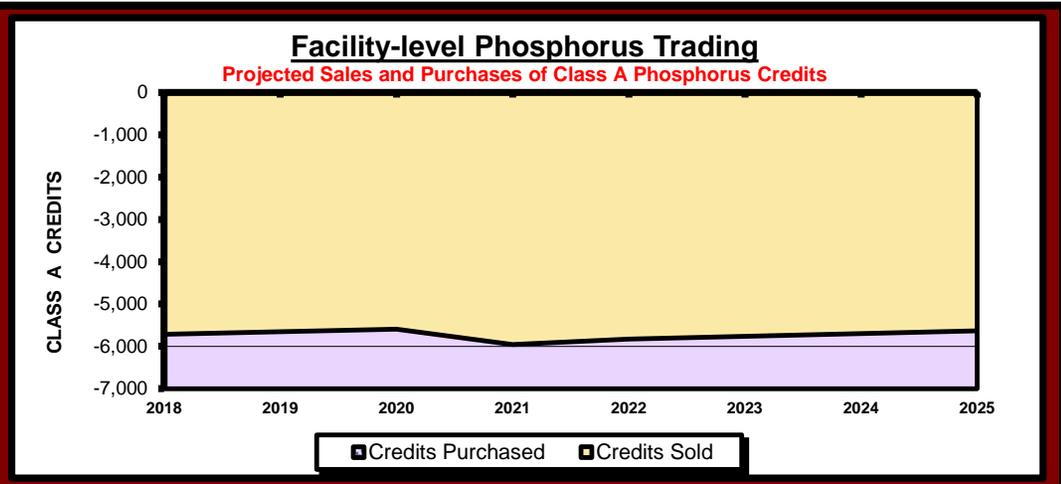
Loading & Credit Summary	
Design Flow (mgd)	15.00
Projected Flow (mgd)	10.70
Projected Avg. Annual Concentration (mg/L)	3.20
Discharged Load (end of pipe)	104,280
Delivery Factor	0.67
Expected Load	69,868
Delivered WLA*	189,443
Expected Credits (delivered)	119,575
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	119,575
Class A Credit Sales (Purchases)	119,574
Expected Class B Credits	1

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
10.70	10.80	10.90	11.00	11.20	11.30	11.40	11.50
3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
104,280	105,255	106,229	107,204	109,153	110,127	111,102	112,077
0.67	0.67	0.67	0.64	0.64	0.64	0.64	0.64
69,868	70,521	71,174	68,610	69,858	70,482	71,105	71,729
189,443	189,443	189,443	180,953	180,953	180,953	180,953	180,953
119,575	118,922	118,269	112,343	111,095	110,471	109,848	109,224
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
119,575	118,922	118,269	112,343	111,095	110,471	109,848	109,224
119,574	118,921	118,268	112,342	111,094	110,470	109,847	109,223
1	1	1	1	1	1	1	1

* Reflects allocation transfer to Ryder Enterprises of 163 delivered pounds of TN beginning in Compliance Year 2015

PHOSPHORUS FACILITY SUMMARY

RWSA-Moores Creek
 UPPER JAMES Trading Basin



Loading & Credit Summary

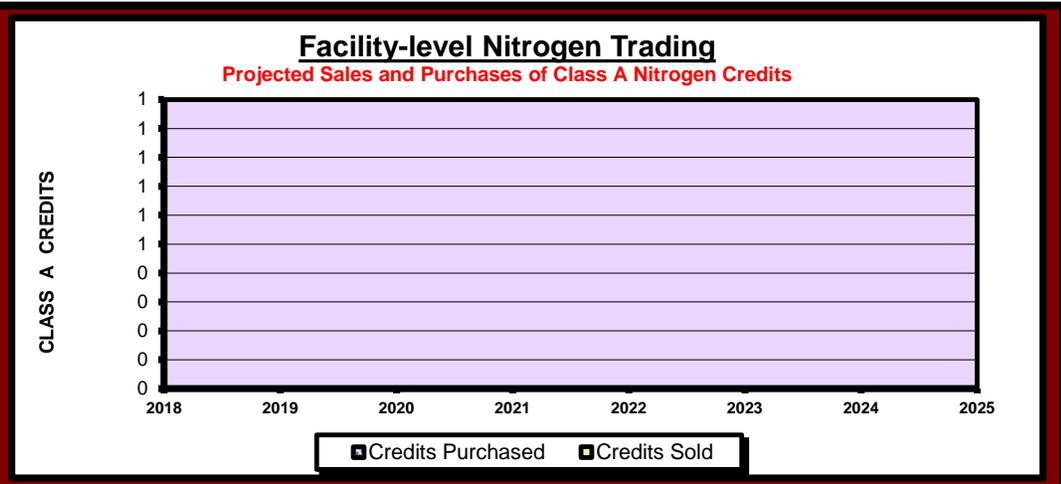
Design Flow (mgd)	15.00
Projected Flow (mgd)	10.70
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	9,776
Delivery Factor	0.66
Expected Load	6,452
Delivered WLA*	12,168
Expected Credits (delivered)	5,716
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	5,716
Class A Credit Sales (Purchases)	5,715
Expected Class B Credits	1

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
10.70	10.80	10.90	11.00	11.20	11.30	11.40	11.50
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
9,776	9,868	9,959	10,050	10,233	10,324	10,416	10,507
0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
6,452	6,513	6,573	7,136	7,265	7,330	7,395	7,460
12,168	12,168	12,168	13,094	13,094	13,094	13,094	13,094
5,716	5,655	5,595	5,958	5,829	5,764	5,699	5,634
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
5,716	5,655	5,595	5,958	5,829	5,764	5,699	5,634
5,715	5,654	5,594	5,957	5,828	5,763	5,698	5,633
1	1	1	1	1	1	1	1

* Reflects allocation transfer to Ryder Enterprises of 59 delivered pounds of TP beginning in Compliance Year 2015

NITROGEN FACILITY SUMMARY

South Central WWA
 UPPER JAMES Trading Basin



Loading & Credit Summary

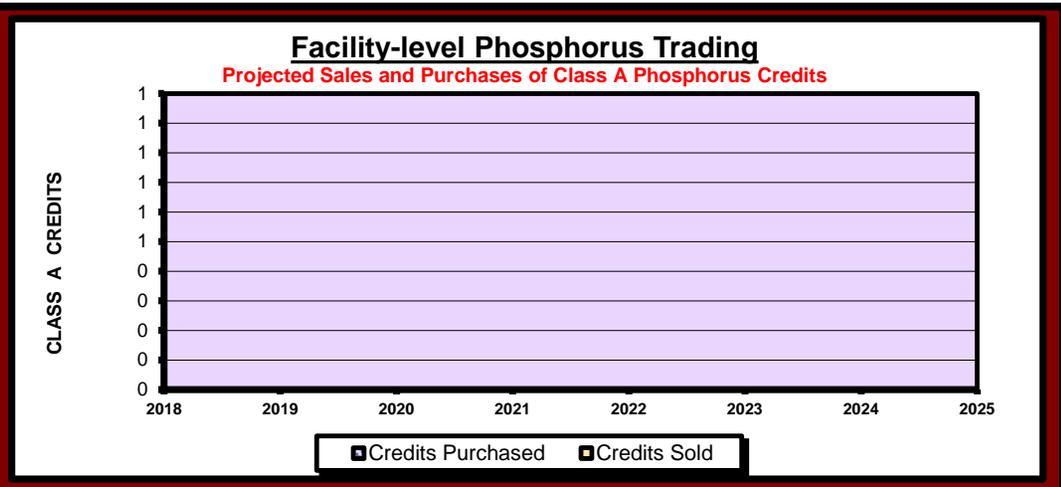
Design Flow (mgd)	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Projected Flow (mgd)	12.42	12.49	12.56	12.61	12.66	12.70	12.75	12.80
Projected Avg. Annual Concentration (mg/L)	13.69	13.66	13.64	9.12	9.09	9.05	9.02	8.98
Discharged Load (end of pipe)	517,836	519,613	521,760	350,239	350,239	350,239	350,239	350,239
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	517,836	519,613	521,760	350,239	350,239	350,239	350,239	350,239
Delivered WLA	350,239	350,239	350,239	350,239	350,239	350,239	350,239	350,239
Expected Credits (delivered)	(167,597)	(169,374)	(171,521)	0	0	0	0	0
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	167,685	169,623	171,694	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	88	249	173	0	0	0	0	0
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	88	249	173	0	0	0	0	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
12.42	12.49	12.56	12.61	12.66	12.70	12.75	12.80
13.69	13.66	13.64	9.12	9.09	9.05	9.02	8.98
517,836	519,613	521,760	350,239	350,239	350,239	350,239	350,239
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
517,836	519,613	521,760	350,239	350,239	350,239	350,239	350,239
350,239	350,239	350,239	350,239	350,239	350,239	350,239	350,239
(167,597)	(169,374)	(171,521)	0	0	0	0	0
0	0	0	0	0	0	0	0
167,685	169,623	171,694	0	0	0	0	0
0	0	0	0	0	0	0	0
88	249	173	0	0	0	0	0
0	0	0	0	0	0	0	0
88	249	173	0	0	0	0	0

* Represents Credits provided by Chesterfield County's Proctors Creek facility via Private Exchange

PHOSPHORUS FACILITY SUMMARY

South Central WWA
 UPPER JAMES Trading Basin

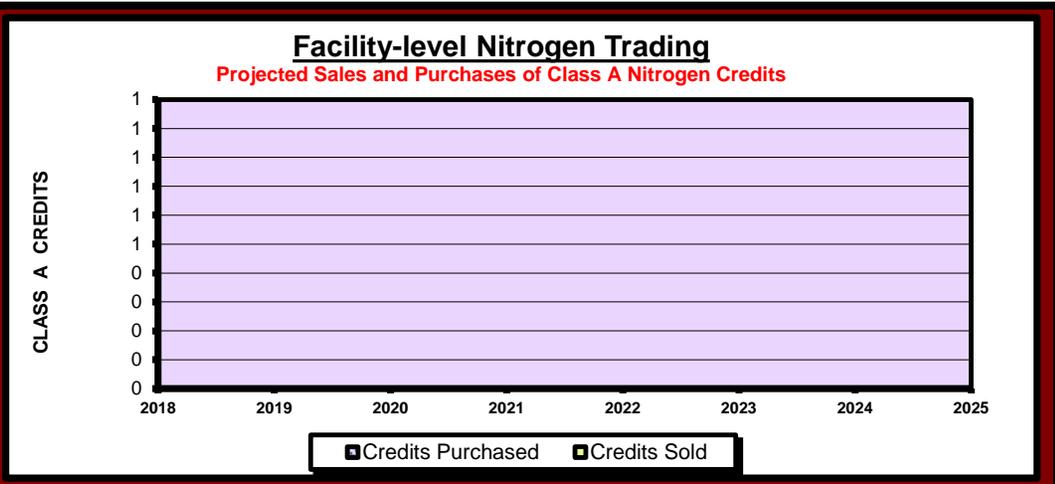


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	
WQIF-Held Credits	
Expected Net Credits	
Class A Credit Sales (Purchases)	
Expected Class B Credits	

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
12.42	12.49	12.56	12.61	12.66	12.70	12.75	12.80
0.75	0.75	0.74	0.74	0.74	0.73	0.73	0.73
28,404	28,404	28,404	28,404	28,404	28,404	28,404	28,404
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
28,404	28,404	28,404	28,404	28,404	28,404	28,404	28,404
28,404	28,404	28,404	28,404	28,404	28,404	28,404	28,404
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0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Tyson Foods-Glen Allen
 UPPER JAMES Trading Basin



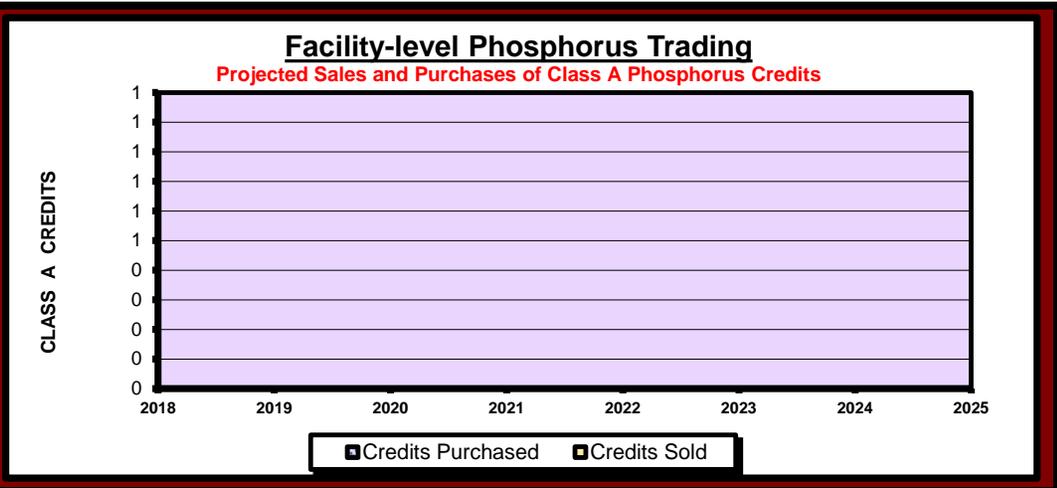
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
1.07	1.07	1.07	1.07	1.10	1.10	1.10	1.10
6.00	6.00	6.00	6.00	4.30	4.30	4.30	4.30
19,552	19,552	19,552	19,552	14,405	14,405	14,405	14,405
0.16	0.16	0.16	0.18	0.18	0.18	0.18	0.18
3,128	3,128	3,128	3,519	2,593	2,593	2,593	2,593
3,128	3,128	3,128	3,519	3,519	3,519	3,519	3,519
0	0	0	0	926	926	926	926
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	926	926	926	926
0	0	0	0	0	0	0	0
0	0	0	0	926	926	926	926

PHOSPHORUS FACILITY SUMMARY

Tyson Foods-Glen Allen
 UPPER JAMES Trading Basin



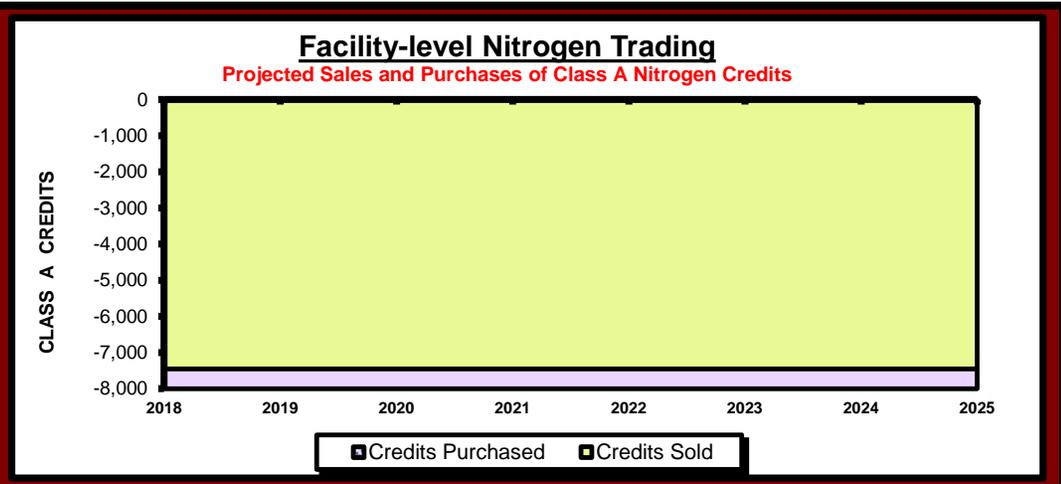
Loading & Credit Summary

Design Flow (mgd)	1.07
Projected Flow (mgd)	1.07
Projected Avg. Annual Concentration (mg/L)	0.10
Discharged Load (end of pipe)	326
Delivery Factor	0.46
Expected Load	150
Delivered WLA	188
Expected Credits (delivered)	38
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	38
Class A Credit Sales (Purchases)	0
Expected Class B Credits	38

2018	2019	2020	2021	2022	2023	2024	2025	
Planning Period					Future Estimates (non-binding)			
1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	
1.07	1.07	1.07	1.07	1.10	1.10	1.10	1.10	
0.10	0.10	0.10	0.10	0.07	0.07	0.07	0.07	
326	326	326	326	235	235	235	235	
0.46	0.46	0.46	0.36	0.36	0.36	0.36	0.36	
150	150	150	117	84	84	84	84	
188	188	188	147	147	147	147	147	
38	38	38	30	63	63	63	63	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
38	38	38	30	63	63	63	63	
0	0	0	0	0	0	0	0	
38	38	38	30	63	63	63	63	

NITROGEN FACILITY SUMMARY

WestRock of Virginia
 UPPER JAMES Trading Basin



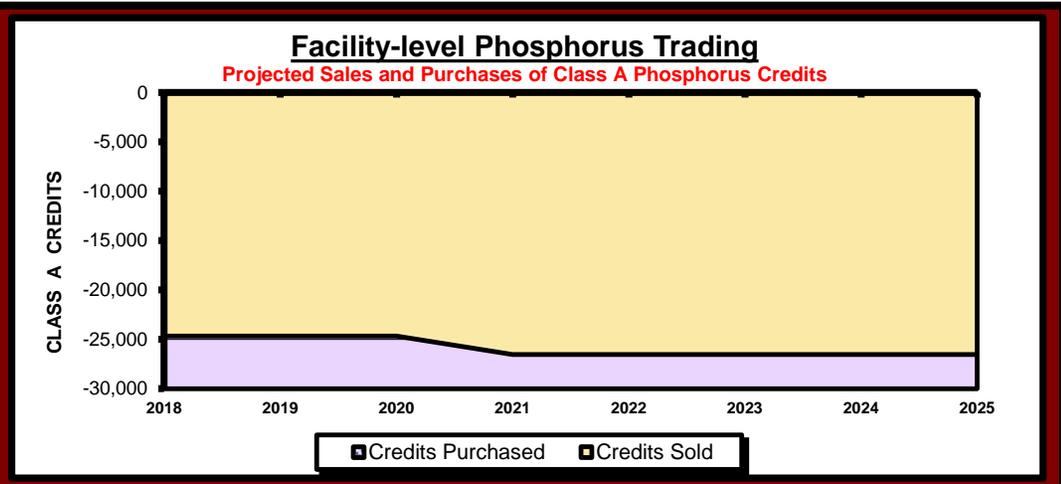
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
32.50	32.50	32.50	32.50	32.50	32.50	32.50	32.50
3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30
326,636	326,636	326,636	326,636	326,636	326,636	326,636	326,636
0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
35,930	35,930	35,930	35,930	35,930	35,930	35,930	35,930
43,384	43,384	43,384	43,384	43,384	43,384	43,384	43,384
7,454	7,454	7,454	7,454	7,454	7,454	7,454	7,454
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
7,454	7,454	7,454	7,454	7,454	7,454	7,454	7,454
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

WestRock of Virginia
 UPPER JAMES Trading Basin



Loading & Credit Summary

Design Flow (mgd)	35.00
Projected Flow (mgd)	32.50
Projected Avg. Annual Concentration (mg/L)	0.60
Discharged Load (end of pipe)	59,388
Delivery Factor	0.66
Expected Load	39,196
Delivered WLA	63,869
Expected Credits (delivered)	24,673
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	24,673
Class A Credit Sales (Purchases)	24,673
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
32.50	32.50	32.50	32.50	32.50	32.50	32.50	32.50
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
59,388	59,388	59,388	59,388	59,388	59,388	59,388	59,388
0.66	0.66	0.66	0.71	0.71	0.71	0.71	0.71
39,196	39,196	39,196	42,166	42,166	42,166	42,166	42,166
63,869	63,869	63,869	68,707	68,707	68,707	68,707	68,707
24,673	24,673	24,673	26,541	26,541	26,541	26,541	26,541
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
24,673	24,673	24,673	26,541	26,541	26,541	26,541	26,541
0	0	0	0	0	0	0	0

SECTION 6

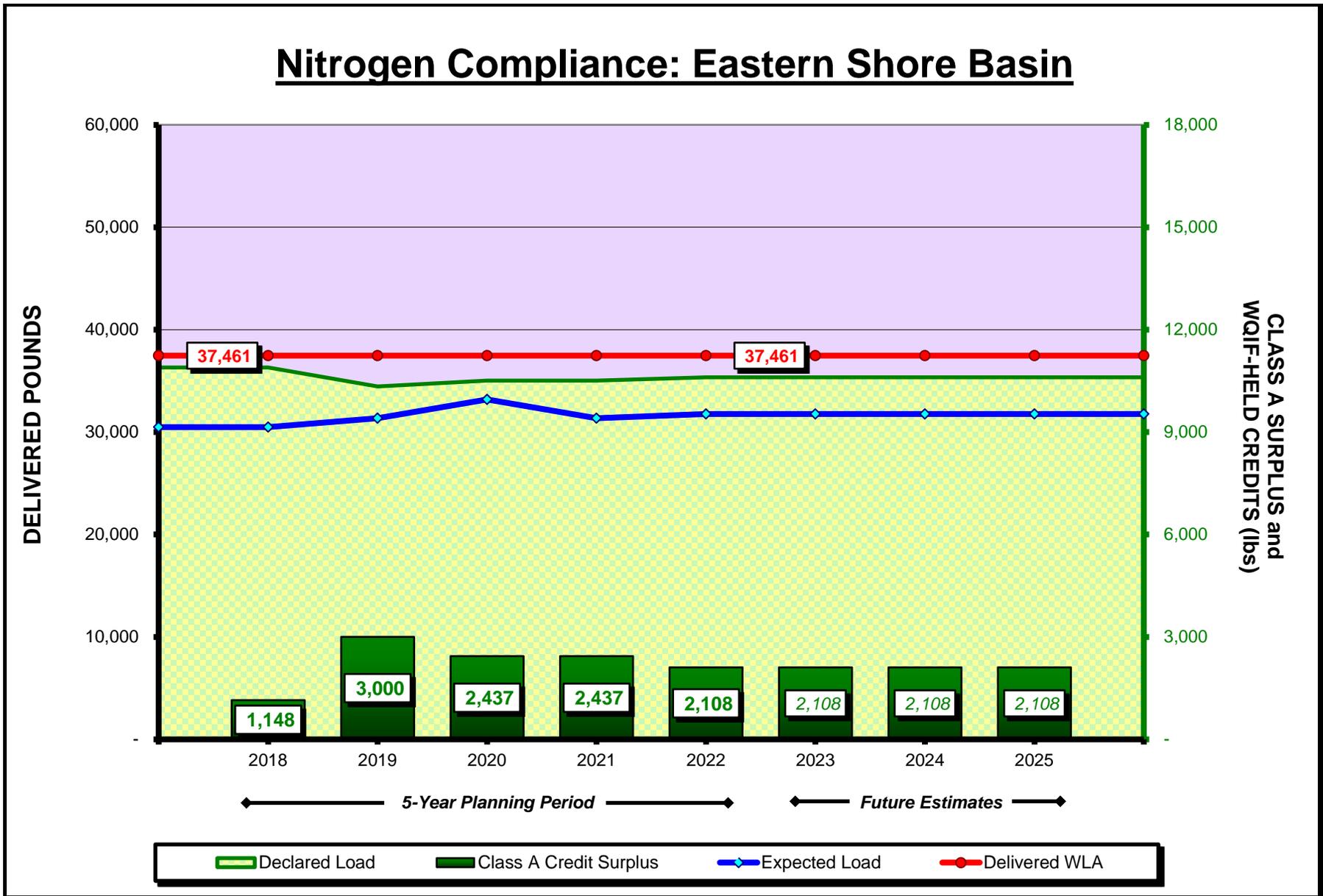
Eastern Shore Basin Exchange Compliance Plan



Consistent with similar disclosures made in conjunction with the original Exchange Compliance Plan dated July 31, 2007, and each annual update thereafter, Credit forecasts for the Eastern Shore basin may indicate a potential lack of Credit availability from facilities located within the Eastern Shore basin at various times during the 5-year Planning Period. This situation derives in part from the relatively small number of facilities and total allocations of the Eastern Shore basin.

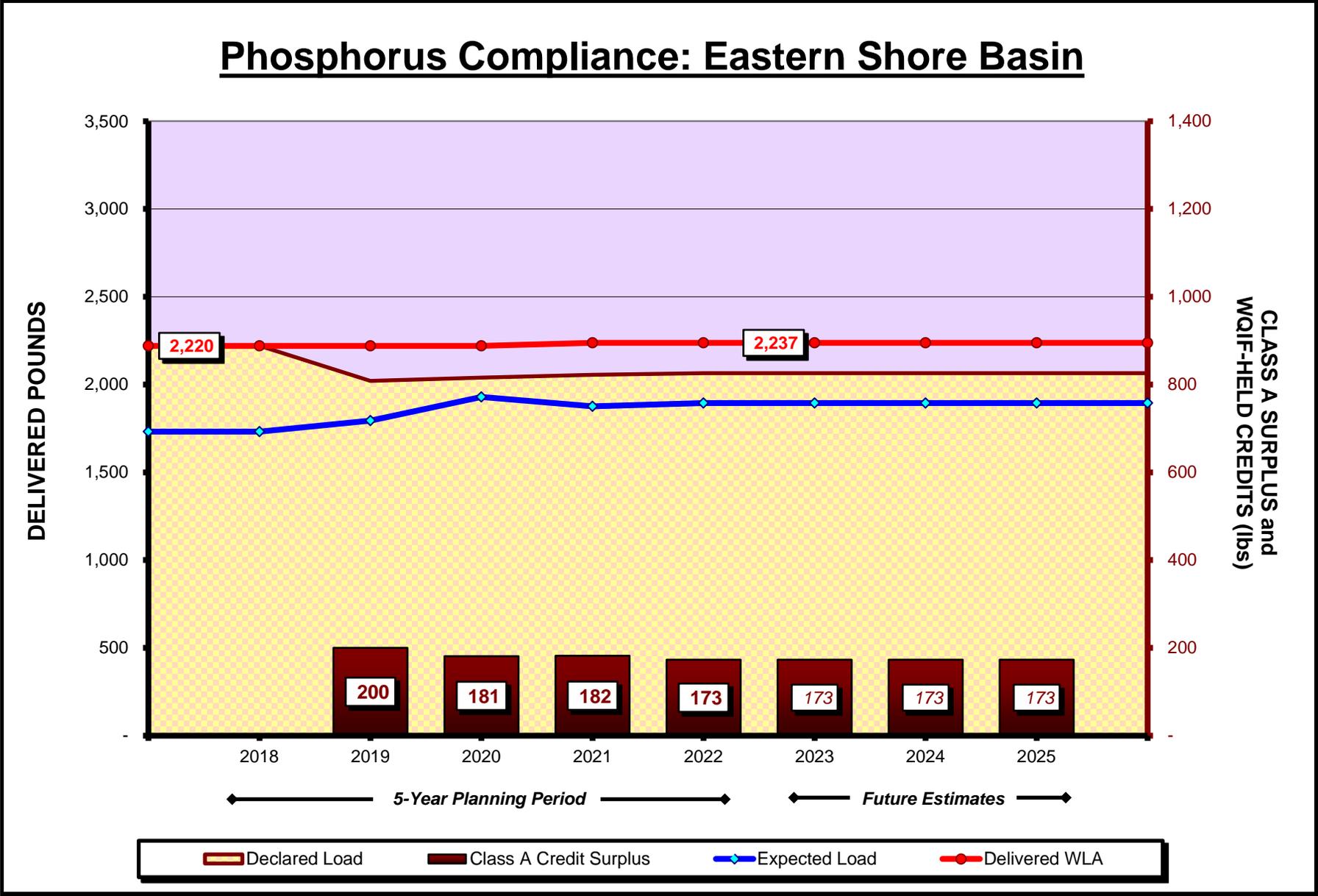
In 2010, Virginia law governing nutrient allocation compliance and reporting was amended by House Bill 1290 (2010 Acts of Assembly Chapter 11) to amend the general limitation of trading to the tributary level by allowing that “permitted facilities in the Eastern Shore basin may also acquire credits from permitted facilities in the Potomac and Rappahannock tributaries.” Va. Code § 62.1-44.19:18.A.1.

Accordingly, this Annual Update incorporates use of Class A Credits from the Potomac basin – **when necessary** – to meet Eastern Shore Class A Credit purchase requests that cannot be satisfied from Class A Credit sales commitments by facilities in the Eastern Shore basin. This limited cross-basin trading is noted, as applicable, on the Credit ledgers in both this section and the Potomac section. The Nitrogen and Phosphorus compliance charts of the Eastern Shore basin illustrate the impact of Class A Credits provided by the Potomac basin (Declared Load forecast), while the Expected Load line represents the net Expected Credits of Eastern Shore facilities only.



EASTERN SHORE Basin: Nitrogen Credit Ledger

Compliance Year:											
	2020	Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)				
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	No Sale	No Sale	No Sale
The Exchange (group)	37,461	33,175	4,286	-	-	-	4,286		2,437	-	1,849
Cape Charles	3,046	3,046	-	-	-	-	-		-	-	-
Onancock	9,137	6,700	2,437	-	-	-	2,437		2,437	-	-
Shore Health Services	1,218	1,135	83	-	-	-	83		-	-	83
Tangier Island	1,218	2,193	(975)	-	975	-	-		-	-	-
Tyson Foods-Temperanceville	22,842	20,101	2,741	-	(975)	-	1,766		-	-	1,766
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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EASTERN SHORE Basin: Phosphorus Credit Ledger

Compliance Year:											
	2018	Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)				
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
The Exchange (group)	2,220	1,731	489	-	-	-	489	PRICE:	\$ 5.13	\$ 5.70	\$ 0.23
Cape Charles	226	208	18	-	-	-	18		-	-	18
Onancock	678	317	361	-	-	-	361		200	-	161
Shore Health Services	87	52	35	-	-	-	35		-	-	35
Tangier Island	87	316	(229)	-	29	-	(200)		-	(200)	-
Tyson Foods-Temperanceville	1,142	838	304	-	(29)	-	275		-	-	275
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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EASTERN SHORE Basin: Phosphorus Credit Ledger

Compliance Year:											
	2021	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)			
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	No Sale	No Sale	No Sale
The Exchange (group)	2,237	1,876	361	-	-	-	361		182	-	179
Cape Charles	228	228	-	-	-	-	-		-	-	-
Onancock	685	503	182	-	-	-	182		182	-	-
Shore Health Services	91	55	36	-	-	-	36		-	-	36
Tangier Island	91	329	(238)	-	238	-	-		-	-	-
Tyson Foods-Temperanceville	1,142	761	381	-	(238)	-	143		-	-	143
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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EASTERN SHORE Basin: Phosphorus Credit Ledger

Compliance Year:											
	2022	Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)				
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	No Sale	No Sale	No Sale
The Exchange (group)	2,237	1,895	342	-	-	-	342		173	-	169
Cape Charles	228	228	-	-	-	-	-		-	-	-
Onancock	685	512	173	-	-	-	173		173	-	-
Shore Health Services	91	65	26	-	-	-	26		-	-	26
Tangier Island	91	329	(238)	-	238	-	-		-	-	-
Tyson Foods-Temperanceville	1,142	761	381	-	(238)	-	143		-	-	143
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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	-	-	-	-	-	-	-		-	-	-
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	-	-	-	-	-	-	-		-	-	-
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	-	-	-	-	-	-	-		-	-	-
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Eastern Shore Basin

Supplemental Information for Individual Facilities



NITROGEN FACILITY SUMMARY

Cape Charles
EASTERN SHORE Trading Basin

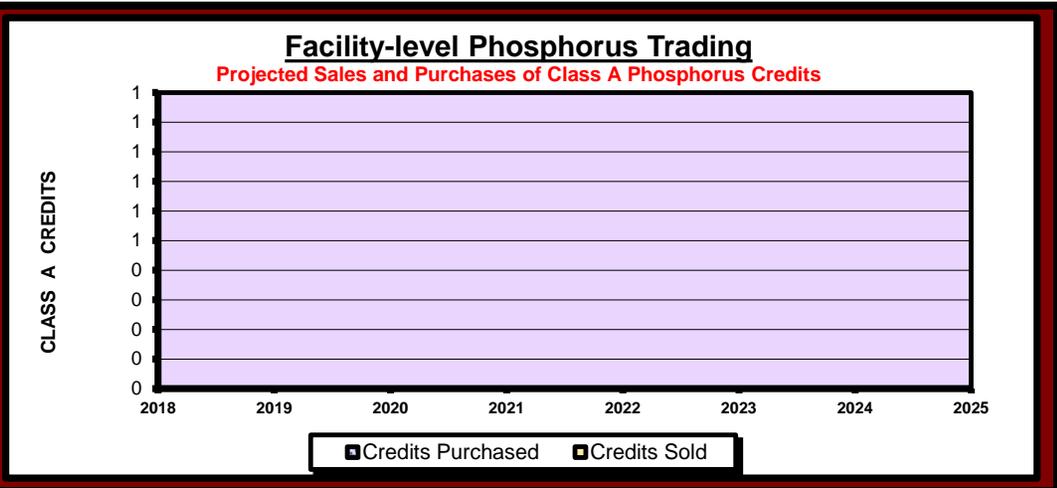


Loading & Credit Summary	
Design Flow (mgd)	0.50
Projected Flow (mgd)	0.23
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	2,802
Delivery Factor	1.00
Expected Load	2,802
Delivered WLA	3,046
Expected Credits (delivered)	244
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	244
Class A Credit Sales (Purchases)	0
Expected Class B Credits	244

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.23	0.25	0.25	0.25	0.25	0.25	0.25	0.25
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2,802	3,046	3,046	3,046	3,046	3,046	3,046	3,046
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2,802	3,046	3,046	3,046	3,046	3,046	3,046	3,046
3,046	3,046	3,046	3,046	3,046	3,046	3,046	3,046
244	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
244	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
244	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Cape Charles
EASTERN SHORE Trading Basin



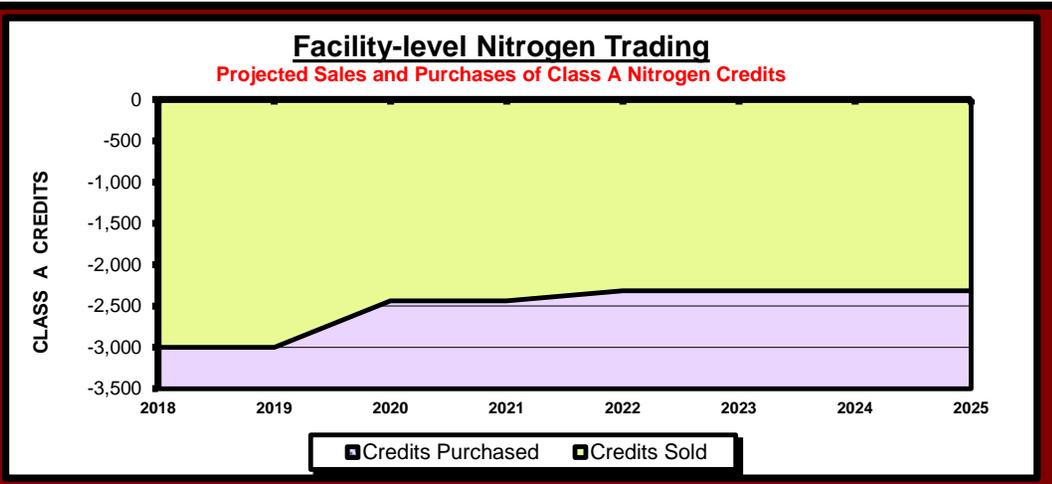
Loading & Credit Summary

Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits
Class A Credit Sales (Purchases)
Expected Class B Credits

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Projected Flow (mgd)	0.23	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	210	228	228	228	228	228	228	228
Delivery Factor	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00
Expected Load	208	226	226	228	228	228	228	228
Delivered WLA	226	226	226	228	228	228	228	228
Expected Credits (delivered)	18	0	0	0	0	0	0	0
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	18	0	0	0	0	0	0	0
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	18	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Onancock
 EASTERN SHORE Trading Basin



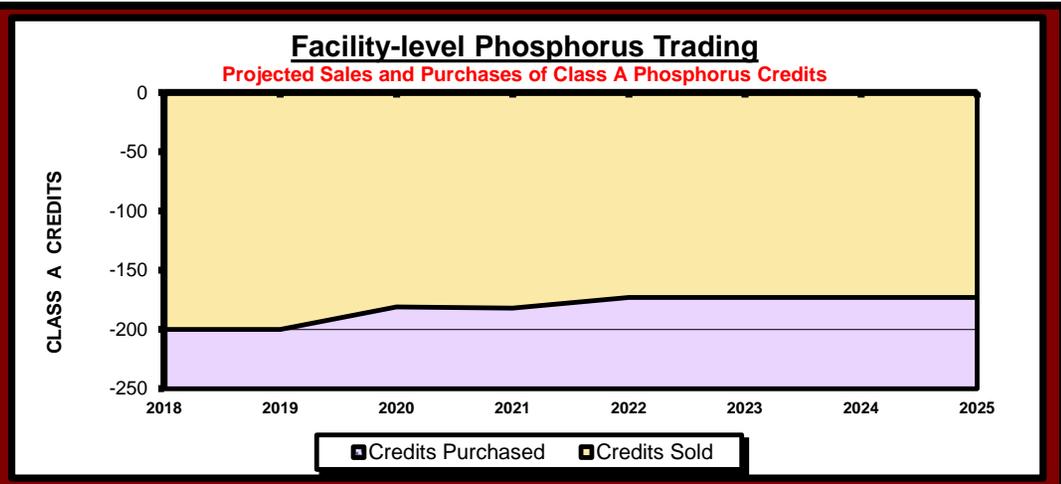
Loading & Credit Summary

Design Flow (mgd)	0.75
Projected Flow (mgd)	0.35
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	4,264
Delivery Factor	1.00
Expected Load	4,264
Delivered WLA	9,137
Expected Credits (delivered)	4,873
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	4,873
Class A Credit Sales (Purchases)	3,000
Expected Class B Credits	1,873

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
0.35	0.40	0.55	0.55	0.56	0.56	0.56	0.56
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
4,264	4,873	6,700	6,700	6,822	6,822	6,822	6,822
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4,264	4,873	6,700	6,700	6,822	6,822	6,822	6,822
9,137	9,137	9,137	9,137	9,137	9,137	9,137	9,137
4,873	4,264	2,437	2,437	2,315	2,315	2,315	2,315
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4,873	4,264	2,437	2,437	2,315	2,315	2,315	2,315
3,000	3,000	2,437	2,437	2,315	2,315	2,315	2,315
1,873	1,264	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Onancock
 EASTERN SHORE Trading Basin



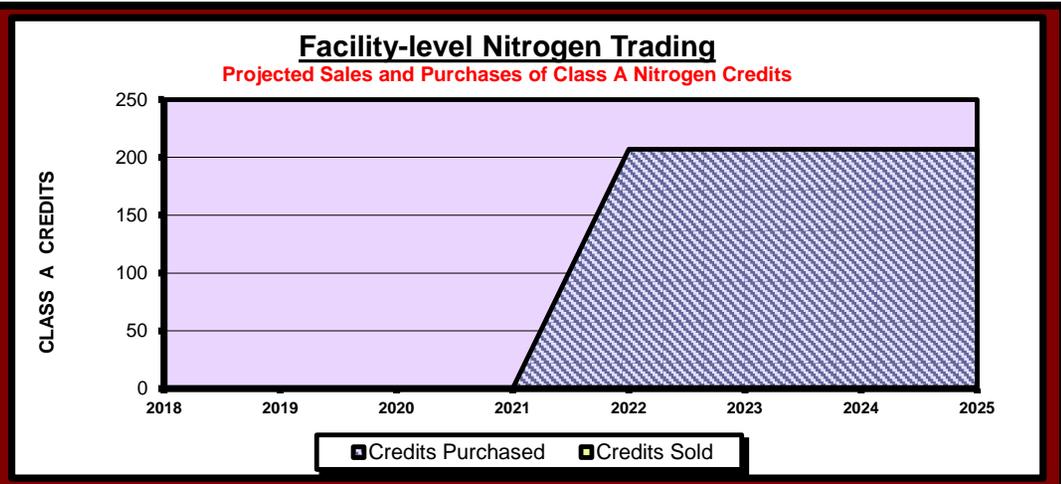
Loading & Credit Summary

Design Flow (mgd)	0.75
Projected Flow (mgd)	0.35
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	320
Delivery Factor	0.99
Expected Load	317
Delivered WLA	678
Expected Credits (delivered)	361
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	361
Class A Credit Sales (Purchases)	200
Expected Class B Credits	161

2018	2019	2020	2021	2022	2023	2024	2025	
Planning Period					Future Estimates (non-binding)			
0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
0.35	0.40	0.55	0.55	0.56	0.56	0.56	0.56	
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	
320	365	503	503	512	512	512	512	
0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	
317	362	497	503	512	512	512	512	
678	678	678	685	685	685	685	685	
361	316	181	182	173	173	173	173	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
361	316	181	182	173	173	173	173	
200	200	181	182	173	173	173	173	
161	116	0	0	0	0	0	0	

NITROGEN FACILITY SUMMARY

Shore Health Services
EASTERN SHORE Trading Basin



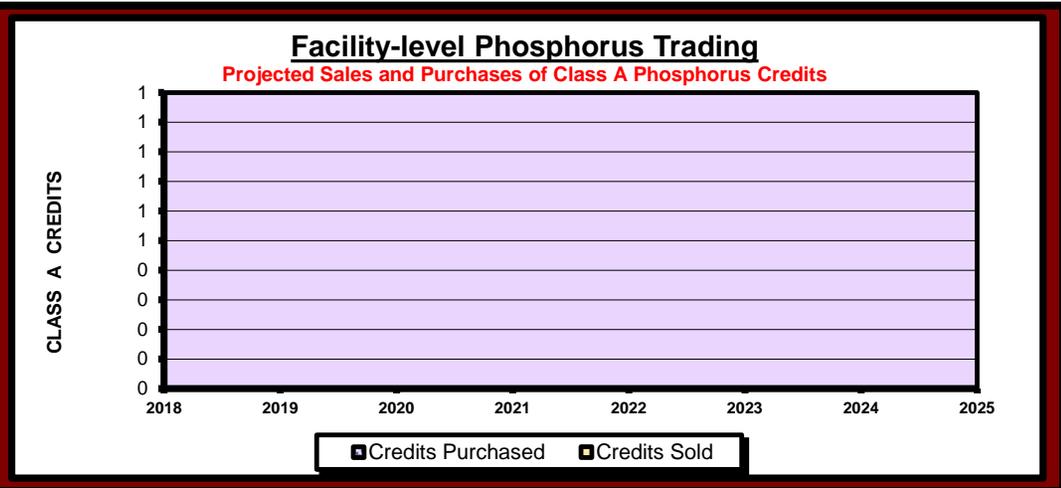
Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.02
Projected Avg. Annual Concentration (mg/L)	16.20
Discharged Load (end of pipe)	1,135
Delivery Factor	1.00
Expected Load	1,135
Delivered WLA	1,218
Expected Credits (delivered)	83
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	83
Class A Credit Sales (Purchases)	0
Expected Class B Credits	83

	2018	2019	2020	2021	2022	2023	2024	2025
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Projected Avg. Annual Concentration (mg/L)	16.20	16.20	16.20	16.20	19.50	19.50	19.50	19.50
Discharged Load (end of pipe)	1,135	1,135	1,135	1,135	1,425	1,425	1,425	1,425
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,135	1,135	1,135	1,135	1,425	1,425	1,425	1,425
Delivered WLA	1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218
Expected Credits (delivered)	83	83	83	83	(207)	(207)	(207)	(207)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	83	83	83	83	(207)	(207)	(207)	(207)
Class A Credit Sales (Purchases)	0	0	0	0	(207)	(207)	(207)	(207)
Expected Class B Credits	83	83	83	83	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Shore Health Services
EASTERN SHORE Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	0.10
Projected Flow (mgd)	0.02
Projected Avg. Annual Concentration (mg/L)	0.78
Discharged Load (end of pipe)	55
Delivery Factor	0.96
Expected Load	52
Delivered WLA	87
Expected Credits (delivered)	35
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	35
Class A Credit Sales (Purchases)	0
Expected Class B Credits	35

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
0.78	0.78	0.78	0.78	0.89	0.89	0.89	0.89
55	55	55	55	65	65	65	65
0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00
52	52	52	55	65	65	65	65
87	87	87	91	91	91	91	91
35	35	35	36	26	26	26	26
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
35	35	35	36	26	26	26	26
0	0	0	0	0	0	0	0
35	35	35	36	26	26	26	26

NITROGEN FACILITY SUMMARY

Tangier Island
 EASTERN SHORE Trading Basin



Loading & Credit Summary

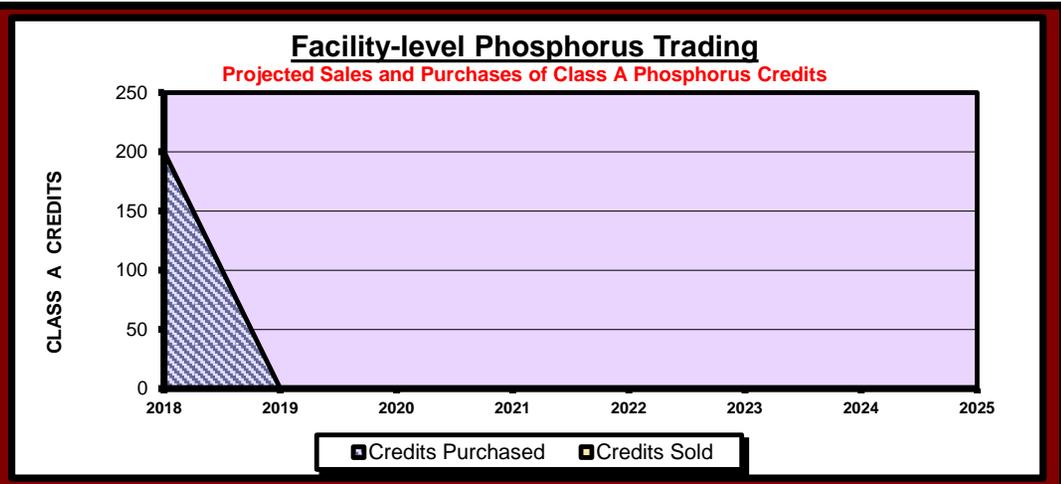
Design Flow (mgd)	0.10
Projected Flow (mgd)	0.06
Projected Avg. Annual Concentration (mg/L)	12.00
Discharged Load (end of pipe)	2,193
Delivery Factor	1.00
Expected Load	2,193
Delivered WLA	1,218
Expected Credits (delivered)	(975)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	0
WQIF-Held Credits	0
Expected Net Credits	(975)
Class A Credit Sales (Purchases)	(1,852)
Expected Class B Credits	877

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
2,193	2,193	2,193	2,193	2,193	2,193	2,193	2,193
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2,193	2,193	2,193	2,193	2,193	2,193	2,193	2,193
1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218
(975)	(975)	(975)	(975)	(975)	(975)	(975)	(975)
0	0	0	0	0	0	0	0
0	975	975	975	975	975	975	975
0	0	0	0	0	0	0	0
(975)	0	0	0	0	0	0	0
(1,852)	0	0	0	0	0	0	0
877	0	0	0	0	0	0	0

* Represents private trade with Tyson Foods (Temperanceville)

PHOSPHORUS FACILITY SUMMARY

Tangier Island
 EASTERN SHORE Trading Basin



Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.06
Projected Avg. Annual Concentration (mg/L)	1.80
Discharged Load (end of pipe)	329
Delivery Factor	0.96
Expected Load	316
Delivered WLA	87
Expected Credits (delivered)	(229)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	29
WQIF-Held Credits	0
Expected Net Credits	(200)
Class A Credit Sales (Purchases)	(200)
Expected Class B Credits	0

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
329	329	329	329	329	329	329	329
0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00
316	316	316	329	329	329	329	329
87	87	87	91	91	91	91	91
(229)	(229)	(229)	(238)	(238)	(238)	(238)	(238)
0	0	0	0	0	0	0	0
29	229	229	238	238	238	238	238
0	0	0	0	0	0	0	0
(200)	0	0	0	0	0	0	0
(200)	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

* Represents private trade with Tyson Foods (Temperanceville)

NITROGEN FACILITY SUMMARY

Tyson Foods-Temperanceville
 EASTERN SHORE Trading Basin



Loading & Credit Summary

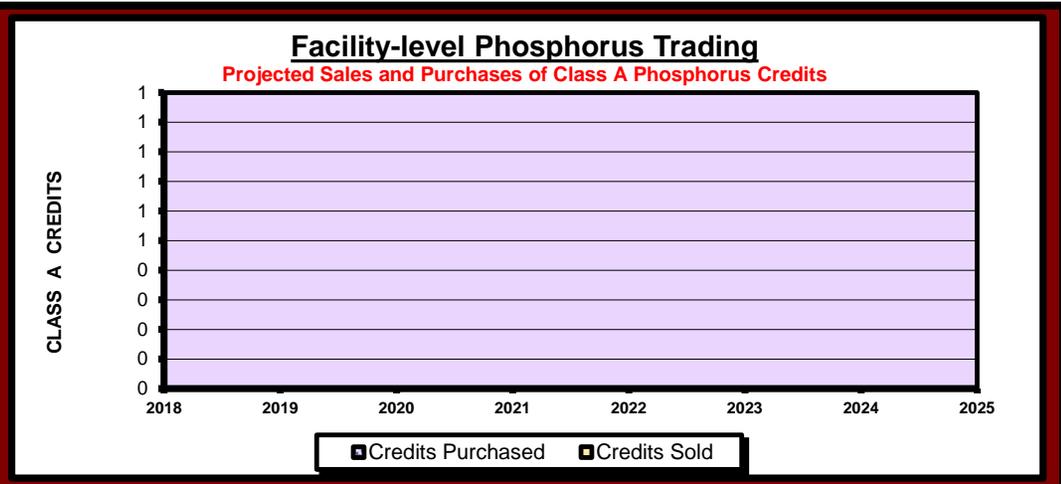
Design Flow (mgd)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Projected Flow (mgd)	1.10	1.10	1.10	1.00	1.00	1.00	1.00	1.00
Projected Avg. Annual Concentration (mg/L)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Discharged Load (end of pipe)	20,101	20,101	20,101	18,273	18,273	18,273	18,273	18,273
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	20,101	20,101	20,101	18,273	18,273	18,273	18,273	18,273
Delivered WLA	22,842	22,842	22,842	22,842	22,842	22,842	22,842	22,842
Expected Credits (delivered)	2,741	2,741	2,741	4,569	4,569	4,569	4,569	4,569
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	0	(975)	(975)	(975)	(975)	(975)	(975)	(975)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	2,741	1,766	1,766	3,594	3,594	3,594	3,594	3,594
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	2,741	1,766	1,766	3,594	3,594	3,594	3,594	3,594

2018	2019	2020	2021	2022	2023	2024	2025
Planning Period					Future Estimates (non-binding)		
1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
1.10	1.10	1.10	1.00	1.00	1.00	1.00	1.00
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
20,101	20,101	20,101	18,273	18,273	18,273	18,273	18,273
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20,101	20,101	20,101	18,273	18,273	18,273	18,273	18,273
22,842	22,842	22,842	22,842	22,842	22,842	22,842	22,842
2,741	2,741	2,741	4,569	4,569	4,569	4,569	4,569
0	0	0	0	0	0	0	0
0	(975)	(975)	(975)	(975)	(975)	(975)	(975)
0	0	0	0	0	0	0	0
2,741	1,766	1,766	3,594	3,594	3,594	3,594	3,594
0	0	0	0	0	0	0	0
2,741	1,766	1,766	3,594	3,594	3,594	3,594	3,594

* Represents private trade with Tangier Island

PHOSPHORUS FACILITY SUMMARY

Tyson Foods-Temperanceville
 EASTERN SHORE Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	1.25
Projected Flow (mgd)	1.10
Projected Avg. Annual Concentration (mg/L)	0.25
Discharged Load (end of pipe)	838
Delivery Factor	1.00
Expected Load	838
Delivered WLA	1,142
Expected Credits (delivered)	304
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(29)
WQIF-Held Credits	0
Expected Net Credits	275
Class A Credit Sales (Purchases)	0
Expected Class B Credits	275

2018	2019	2020	2021	2022	2023	2024	2025	
Planning Period					Future Estimates (non-binding)			
1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
1.10	1.10	1.10	1.00	1.00	1.00	1.00	1.00	
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
838	838	838	761	761	761	761	761	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
838	838	838	761	761	761	761	761	
1,142	1,142	1,142	1,142	1,142	1,142	1,142	1,142	
304	304	304	381	381	381	381	381	
0	0	0	0	0	0	0	0	
(29)	(229)	(229)	(238)	(238)	(238)	(238)	(238)	
0	0	0	0	0	0	0	0	
275	75	75	143	143	143	143	143	
0	0	0	0	0	0	0	0	
275	75	75	143	143	143	143	143	

* Represents private trade with Tangier Island

SECTION 7

Credit Exchange Special Conditions



For the Nutrient Credit Exchange Program to be successful in delivering compliance and cost savings, both for Virginia as a whole and for local ratepayers, Virginia business owners, and state taxpayers (WQIF) funding the Chesapeake Bay cleanup, the Exchange Program must attract Participants and give those Participants comfort sufficient for them to engage in a robust level of trading. During the Exchange Compliance Plan development process, a common theme from potential Participants has been the need for specific assurances that good faith participation in the Exchange Program will not result in VPDES non-compliance or contractual liability to third parties, whether due to regulatory deadlines that Participants cannot meet due to construction challenges (as in the case of potential Class A Sellers) or due to acts of third parties (as in the case of potential Class A Buyers relying on timely Credit availability). This section specifies Credit Exchange Special Conditions designed to help provide the necessary conditions for success. This section is unchanged substantively from the Exchange Compliance Plan 2017 Annual Update.

7.1 Schedule of Compliance

This Section 7.1 is based on DEQ's approval letter dated September 7, 2007 from E. Gilinsky, Ph.D., Director, Division of Water Quality, DEQ, to M. Haley, President of The Exchange (the "2007 DEQ Approval Letter") (attached as Appendix A). While the following procedure was originally developed for purposes of meeting the initial January 1, 2011 compliance schedule, it is retained here for its potential relevance going forward. From time to time, the Watershed General Permit includes compliance schedules, so the same procedure will apply in the event of other future compliance schedules as well.

July 31, 2007 Recommendation and Procedure (Information Only)

The July 31, 2007 plan recommended and was premised upon an aggressive tributary-parameter schedule (January 1, 2011 effective date of final effluent limits for Nitrogen and Phosphorus in all tributaries, except the Potomac-Shenandoah where the date would be January 1, 2013) and an implementation approach compliant with the general "as soon as possible" standard to be administered by DEQ, as follows: "Effective date for any tributary-parameter shall be extended by the DEQ Director up to but no later than December 31, 2013 based on justification provided in accordance with scheduling factors established by Virginia Code section 62.1-44.19:14 C 2 or other good cause shown."

This implementation approach was recommended in lieu of the alternative of an *across-the-board* period (12 to 24 months) previously recommended under the statutory scheduling factors. The overall benefit of this approach was that it was intended to provide for both the shortest feasible schedule for facility construction and successful startup of the Nutrient Credit Exchange Program. The specific individual benefits of this approach included: (1) this schedule adjustment may only be exercised for good cause shown, (2) the finding of good cause as well as the specific length of any adjustment are both decisions made by the DEQ Director (not by

The Exchange or any of its Participants or other permittees), and (3) it establishes a mechanism by which DEQ has the ability to make timely schedule adjustments where good cause exists.

Compliance Schedule Procedure under 2007 DEQ Approval Letter

In the 2007 DEQ Approval Letter, DEQ explained its finding that the 2011 compliance deadline should be retained at that time for both parameters in all five basins and, thus, DEQ disapproved the detailed implementation approach summarized above in this Section 7.1. In reaching this conclusion, however, DEQ acknowledged The Exchange's main concern when DEQ stated: "We share your concern with the completion of so many projects on such a tight timeline. However, at this early date it is not possible to determine how quickly individual construction projects will proceed and what the actual capabilities of the upgraded facilities will be."

Similarly, a September 12, 2007 letter from D. Paylor, Director, DEQ, to M. Haley, President of The Exchange (attached as Appendix D), also indicates that "it will be a challenge to complete so many projects on such a tight timeline, and we remain committed to working with you to shepherd these projects to completion."

The 2007 DEQ Approval Letter sets forth the following two-step implementation approach in lieu of that previously recommended by The Exchange:

1. **Monitor & Evaluate** - Future annual compliance plan updates and DEQ's semi-annual WQIF progress reports will be used along with the scheduling factors in the Virginia Code and the "as soon as possible" criterion to evaluate the need for basin schedule extensions.
2. **Adjust as Needed** - Should it prove necessary, DEQ will initiate amendment to the permit under the Administrative Process Act to make appropriate revisions to the schedule.

This procedure is also generally set forth in the Chesapeake Bay and Virginia Waters Clean-Up Plan Progress Report submitted by the Secretary of Natural Resources of the Commonwealth of Virginia to House Committee on Agriculture, Chesapeake and Natural Resources, House Appropriations Committee, Senate Committee on Agriculture, Conservation and Natural Resources, and the Senate Finance Committee (October 2007) at page 3.

Accordingly, the above two-step implementation approach shall be the operative procedure for evaluating and adjusting the compliance schedule.

7.2 Initial Upgrade Delays Despite Participant's Best Efforts

The focus of the Exchange Compliance Plan was on achieving initial compliance. A large number of concurrent nutrient removal upgrades were required, and similar activities were underway throughout the Chesapeake Bay region in other states. Construction projects were occurring at a period where the general construction market (not only wastewater treatment) was in a period of very high demand for professional engineers, skilled and unskilled labor, and critical materials. Prices were increasing sharply. State government was also experiencing this in key sectors such as highway and school construction.

During Exchange Compliance Plan development, owners of larger facilities such as those that either must upgrade for the basin to achieve compliance (because the facility is a large source) or which are expected to have lower unit cost upgrades (dollars per pound removed), voiced reluctance to commit to sell Class A Credits because compliance with the initial compliance schedule deadlines was partially or significantly beyond their reasonable control, especially as compared to the January 1, 2011 initial compliance deadlines in the General Permit. Accordingly, to promote and secure the participation of these facilities, The Exchange did not intend to impose its otherwise generally applicable credit shortfall policy under these circumstances. This meant that in a shortfall situation in the startup years, there was a risk that Buyers waiting on Credit availability may not have Credits available through The Exchange, if one or more linchpin projects were delayed in completing construction. A condition of this Exchange Compliance Plan is that neither the delayed Seller nor the waiting Buyer will be deemed to be in non-compliance or subject to enforcement action.

7.3 Timely Regulatory Approvals

One factor that impacts basin-level compliance is timely review and approval of permits, WQIF grant agreements, and engineering documents by DEQ. This Exchange Compliance Plan is premised on timely action by DEQ, including the standard turnaround times for engineering documents as specified in 9 VAC 25-790-80 C (generally 30 day turnaround deadline for technical evaluations of engineering documents).

7.4 Requested Changes Resulting From Regulatory Review

The Participants have elected to participate in this multi-party Exchange Compliance Plan on the assumption that the Exchange Compliance Plan would be accepted and approved by DEQ (and any other relevant state and federal authority) in the form presented or in a substantially similar form with no material adverse changes. In the event of any material adverse change, The Exchange reserves the right to revise this Exchange Compliance Plan and each Participant reserves the right to modify its position in it, or withdraw from it, upon notice to DEQ and The Exchange within 60 days of notice of any material adverse change in the content of the approved Exchange Compliance Plan.

7.5 WQIF Grant Denial

Numerous facility upgrades covered in Sections 2 through 6 are premised upon execution of a WQIF Grant Agreement between DEQ and the Participant for the partial funding of nutrient removal technology to be installed. Since 2005, the WQIF statute has provided at Virginia Code section 10.1-2131 B that DEQ “shall enter into grant agreements with all facilities designated as significant dischargers or eligible nonsignificant dischargers that apply for grants.” This Section 7.5 is necessary to address the amendment at Virginia Code section 10.1-1186.01 G to establish a limited exception, as follows:

Notwithstanding the provisions of subsection B of § [10.1-2131](#), the Director of the Department of Environmental Quality shall not be required to enter into a grant agreement with a facility designated as a significant discharger or eligible nonsignificant discharger if the Director determines that the use of nutrient credits in accordance with the Chesapeake Bay Watershed Nutrient Credit

Exchange Program (§ [62.1-44.19:12](#) et seq.) would be significantly more cost-effective than the installation of nutrient controls for the facility in question.

This Exchange Compliance Plan is conditioned on the execution of WQIF Grant Agreement for each WQIF eligible project set forth herein. The Exchange and the Participants reserve the right to amend this plan in the event that, pursuant to section 10.1-1186.01, DEQ declines to enter into a WQIF Grant Agreement for such a project.

7.6 WQIF Credit Availability

Access to WQIF Credits in the event of a Credit shortfall situation is an essential element for providing the certainty and comfort level required for trading-based compliance plans. Accordingly, The Exchange Compliance Plan is conditioned on the SWCB and DEQ ensuring the continued availability of Credits through the WQIF at or below the prices currently specified in the General Permit.

7.7 Annual Updates

The Exchange and the Participants reserve the right to update and amend this Exchange Compliance Plan on an annual basis consistent with applicable laws and regulations.

7.8 Effluent Nutrient Concentrations

Concentrations contained herein are estimates for information purposes only and are not to be used as a basis for any regulatory decisions.

SECTION 8

Credit Exchange Policy



CREDIT EXCHANGE POLICY FOR THE PURCHASE AND SALE OF CHESAPEAKE BAY NUTRIENT CREDITS

ARTICLE I PURPOSE

This Credit Exchange Policy (this “Policy”) of the Virginia Nutrient Credit Exchange Association, Inc. (the “Nutrient Exchange”) is adopted pursuant to Article VII of the Bylaws for the purpose of coordinating and facilitating the participation of its Members in Virginia’s Chesapeake Bay Nutrient Credit Exchange Program established by Virginia Code section 62.1-44.19:12 *et seq.* Accordingly, this Policy is intended to provide a framework for the Exchange of Credits by and among the Members and, in addition to other benefits, to satisfy the standard requirement of Virginia Water Quality Improvement Fund Grant Agreements made pursuant to Virginia Code section 10.1-2117 *et seq.* that the grantee make available for Exchange any Credits remaining after complying with its Watershed General Permit limits.

ARTICLE II DEFINITIONS

Unless otherwise defined below or a different meaning is intended by the usage herein, all terms shall have the same definition as provided in section 9 VAC 25-820-10 of the Watershed General Permit.

Actual Class B Credits – In the Reconciliation Year, the quantity of Credits remaining for the Permitted Facility after adjusting Actual Net Credits for Class A Credit purchases and sales for the immediately preceding Compliance Year. This quantity equals Actual Net Credits plus any Class A Credit purchases and minus any Class A Credit sales for the Compliance Year.

Actual Credits – Credits actually generated during the Compliance Year prior to adjusting for Preliminary Uses of Credits. Actual Credits equal Delivered WLA minus Actual Load.

Actual Load – The Delivered Load actually discharged during the Compliance Year for one or more Permitted Facilities.

Actual Net Credits – Actual Credits minus the quantity of Credits not available due to Preliminary Uses of Credits.

Board of Governors (or Board) – The board of directors of the Nutrient Exchange.

Buyer – A Participant that purchases Credits for a given Compliance Year.

Class A Buyer – A Participant that requests the availability of, and agrees in advance to purchase, a specific quantity of Credits in accordance with this Policy. Except as otherwise

provided herein, a Class A Buyer is committed to purchasing its requested and agreed amount of Class A Credits, even if the Class A Buyer actually needs a lesser amount based on actual performance of its Permit Facility in a Compliance Year.

Class A Credits – Credits for which an agreement for sale and purchase in a specific quantity is made in advance in accordance with this Policy.

Class A Pledge – The quantity of Class A Credits that the Seller specifies and agrees to sell to the Nutrient Exchange as Class A Credits in accordance with this Policy.

Class A Seller – A Participant that agrees in advance to sell Class A Credits to the Nutrient Exchange in accordance with this Policy. Except as otherwise provided herein, a Class A Seller is responsible for making up any shortfall in its agreed amount of Class A Credits for a given Compliance Year and completing such sale.

Class B Credits – Credits for which no agreement for sale and purchase in a specific quantity is made in advance but which are pledged to the Nutrient Exchange in accordance with this Policy.

Clearing Account – An account of the Nutrient Exchange used for segregating funds from Credit Exchanges from other funds of the Nutrient Exchange.

Compliance Year – Any specific calendar year for which Exchanges are planned or executed.

Credit – Each pound of TN or TP by which the Expected Load (projections) or Delivered Load (actual) is less than the Delivered WLA for a Permitted Facility (or Permitted Facility Bubble). Note that while Credits can exist only in positive quantities, for planning and implementation purposes certain Credit-related values may be stated as negative quantities. For example, when a Permitted Facility's Expected Load is projected to exceed its Delivered WLA, the Plan will show a negative quantity of Expected Credits. Additional examples may include Expected Net Credits, Actual Credits, Actual Net Credits, and Actual Class B Credits.

Delivered WLA – The TN or TP WLA assigned to a Permitted Facility, either under the Water Quality Management Planning ("WQMP") Regulation (9 VAC 25-720) or otherwise, and adjusted by the applicable delivery factor under the Watershed General Permit and expressed as pounds per year.

Delivered Load – The TN or TP load discharged by a Permitted Facility during a Compliance Year, adjusted by the applicable delivery factor under the Watershed General Permit and expressed as pounds per year.

DEQ – The Virginia Department of Environmental Quality or, where appropriate, the State Water Control Board to which the Department serves as staff.

Designated Representative – A person who is a fulltime employee of, and is designated in writing by, the Participant to act on its behalf.

Exchange – The purchase and sale of a Credit of any class.

Exchange Compliance Plan (or Plan) – The plan submitted by the Nutrient Exchange to DEQ pursuant to 9 VAC 25-820-40 A as updated periodically pursuant to 9 VAC 25-820-40 B and 9 VAC 25-820-70 Part I D of the Watershed General Permit.

Exchange Compliance Plan Update (or Plan Update) – The update of the Exchange Compliance Plan required pursuant to 9 VAC 25-820-40 B and 9 VAC 25-820-70 Part I D of the Watershed General Permit.

Expected Class B Credits – The quantity of Credits projected to be remaining for a Permitted Facility after adjusting Expected Net Credits for Class A Credit sales for the current or any future Compliance Year. This quantity equals Expected Net Credits minus any Class A Credits committed by a Class A Seller for a Compliance Year.

Expected Load – The projected Delivered Load for a given Compliance Year for one or more Permitted Facilities.

Expected Credits – The amount of Credits projected for a given Compliance Year as determined by subtracting the Expected Load from the Delivered WLA.

Expected Net Credits – Expected Credits minus the quantity of Credits projected to not be available due to Preliminary Uses of Credits.

In-Bubble Exchange – A Preliminary Use of Credits consisting of Credit use by and among the Permitted Facilities within a Permitted Facility Bubble included in the Exchange Compliance Plan. In accordance with 9 VAC 25-820-70 Part I B 2 e of the Watershed General Permit, In-Bubble Exchanges are not Exchanges or credit acquisitions as described in 9 VAC 25-820-70 Part I J 2 of the Watershed General Permit.

Neutral Participant – A Participant which projects a positive quantity of Expected Net Credits for its Permitted Facility in a given Compliance Year, but which has not elected to be a Class A Seller for that Compliance Year.

Non-Participant – An owner or operator of a Permitted Facility that is not a Participant.

Participant – A Member owner or operator of a Permitted Facility included in the Exchange Compliance Plan which has executed the Nutrient Credit Services Agreement.

Permitted Facility – A facility authorized to discharge under the Watershed General Permit. The singular refers to the plural (Permitted Facilities) where appropriate. This term also refers to a Permitted Facility Bubble where appropriate.

Permitted Facility Bubble – Multiple Permitted Facilities under common ownership or operation that are subject to aggregated WLAs pursuant to 9 VAC 25-820-70 Part I B 2 of the Watershed General Permit.

Planning Period – The rolling five-year period covered by the Exchange Compliance Plan (or Plan Update) beginning with the year in which the Plan is due to be submitted to DEQ. For example, for the Exchange Compliance Plan 2008 Annual Update due and submitted to DEQ on February 1, 2008, the Planning Period is January 1, 2008 through and including December 31, 2012.

Preliminary Use of Credits – Any of the following three planned or actual uses of Credits: In-Bubble Exchange, Private Exchange, or WQIF-Held.

Private Exchange – A Preliminary Use of Credits consisting of an Exchange planned or executed directly between or among Participants or Non-Participants rather than through the Nutrient Exchange.

Reconciliation – The process for executing Exchanges for a Compliance Year.

Reconciliation Year – For each Compliance Year, the year immediately following during which time Exchanges for the Compliance Year are executed. For example, for Compliance Year 2011, the associated Reconciliation Year is 2012.

Seller – A Participant that supplies Credits for a given Compliance Year.

TN – Total nitrogen, a pollutant the discharge of which is authorized and limited under the Watershed General Permit.

TP – Total phosphorus, a pollutant the discharge of which is authorized and limited under the Watershed General Permit.

Watershed General Permit – The General Virginia Pollutant Discharge Elimination System Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9 VAC 25-820) issued by the State Water Control Board effective for a five-year permit term beginning January 1, 2007 or as hereafter modified or reissued from time to time. Among other requirements, the Watershed General Permit imposes limitations on the discharge of TN and TP from Permitted Facilities (9 VAC 25-820-70 Part I B), and requires each permittee to submit to DEQ by August 1, 2007 and annually thereafter (currently by each February 1) a compliance plan (9 VAC 25-820-40), either individually or through the Nutrient Exchange, indicating how its facility(ies) will comply with such limitations.

WLA – A Wasteload Allocation for TN or TP as established under the Water Quality Management Planning Regulation, 9 VAC 25-720, and implemented through the Watershed General Permit. A WLA may be expressed in pounds per year as either a discharged WLA (*i.e.* end-of-pipe gross pounds) or as a Delivered WLA (*i.e.*, the discharged WLA multiplied by the

delivery factor applicable to the Permitted Facility as specified in the Watershed General Permit).

WQIF-Held – Pursuant to 9 VAC 25-820-70 Part I J 2 e of the Watershed General Permit, a Preliminary Use of Credits which consists of setting aside and not using within the Plan certain Credits associated with Permitted Facilities (or a portion thereof) not yet constructed and in operation. Such Credits are held in the Water Quality Improvement Fund administered by DEQ.

ARTICLE III GUIDING PRINCIPLES & GENERAL APPROACH

3.1 Guiding Principles. This Policy has been developed and is to be implemented in accordance with the following guiding principles adopted by the Nutrient Exchange:

(a) Guiding Principle No. 1: Environment First. The Nutrient Exchange, including its Exchange Compliance Plan and this Policy, is designed to ensure environmental protection first and foremost. Environmental protection is fostered by means of full compliance with the Watershed General Permit issued by DEQ.

(b) Guiding Principle No. 2: Voluntary Participation. Under governing laws and regulations, there is generally no requirement for a Permitted Facility to trade, *i.e.*, Exchange, Credits with any other person. Accordingly, the Nutrient Exchange, including its Exchange Compliance Plan and this Policy, is premised on the voluntary participation of Participants and their Permitted Facilities subject to applicable laws and regulations and the policies and procedures established by the Nutrient Exchange.

(c) Guiding Principle No. 3: Benefits for All. Consistent with the concept of voluntary participation, the Nutrient Exchange, including its Exchange Compliance Plan and this Policy, is designed with the intent of benefitting all Participants whether as a Buyer, Seller or Neutral.

(d) Guiding Principle No. 4: Remember the “Base Case.” This principle is a reminder that the Nutrient Exchange is a first-of-its-kind undertaking with the potential to provide significant benefits including water quality improvement, regulatory flexibility, and economic efficiency compared to the traditional regulatory approach lacking a trading option, and that the Nutrient Exchange intends to operate with this potential for broad benefit in mind.

3.2 General Approach. This Policy is designed to meet the following goals and objectives for the establishment of a successful Exchange Program: (a) a highly-structured, well-planned program, (b) a convenient and reliable Credit Exchange mechanism, (c) a practical legal structure that promotes participation by maintaining a high degree of flexibility for Participants, and (d) a fair and effective pricing methodology.

ARTICLE IV COMPLIANCE AND CREDIT EXCHANGE PLANNING

4.1 Participant-Driven Exchange Compliance Plan. The Nutrient Exchange has developed the Exchange Compliance Plan on behalf of the Participants for each of Virginia's five major river basins in accordance with the Watershed General Permit and intends to update the Plan annually by submittal of Plan Updates to DEQ. The Nutrient Exchange Compliance Plan is now and will continue to be based on the individual data provided by, and individual decisions made by, Participants with respect to their own Permitted Facilities, including revisions to relevant facility-specific information related to Class A Credit and Class B Credit Exchanges or other information, in accordance with the schedule at Attachment A and subject to acceptance by the Nutrient Exchange in accordance with this Policy and further subject to approval by DEQ.

4.2 Five-Year Planning Period. The Plan including any Plan Updates shall cover a rolling five-year Planning Period. For each Planning Period each of the following Plan elements shall be on a firm basis and may not be modified by a Participant except as provided in Section 4.8 (Modifications Within Planning Period): (a) Class A Credit sales and purchases once elected by a Participant, (b) the Class A Credit purchase price paid by a Class A Buyer (Attachment B), and (c) the Participant's commitment pursuant to Section 4.7 (Class B Credit Pledge) to provide to the Nutrient Exchange its Actual Class B Credits. With each Plan Update, Year 1 of the preceding Planning Period shall be dropped (except for purposes of Reconciliation), Year 2 through Year 5 of the preceding Planning Period (Year 1 through Year 4 of the Plan Update) shall remain unchanged with respect to the Plan elements stated in this Section as firm, and a new Year 5 shall be added based on data and information determined by each Participant with respect to its Permitted Facility. For example, in 2012, the Nutrient Exchange, in coordination with the Participants, will conduct the Reconciliation process for Compliance Year 2011 and update the five-year Plan to cover a Planning Period of 2012 through and including 2016, with the new fifth year (2016) based on data and information determined and submitted by each Participant with respect to its Permitted Facility. Without limiting the foregoing, it is nevertheless the intent of the Nutrient Exchange to accommodate through each Plan Update certain modifications related to firm elements of the Plan for the remaining four years of the Planning Period, whenever some or all of such modifications are determined by the Board in its discretion to be feasible and in the best interests of the Nutrient Exchange, as provided below in Section 4.8. Notwithstanding the foregoing provisions of this Section, if DEQ were to extend the schedule of compliance in Part I C 1 of the Watershed General Permit for any tributary (river basin) and parameter combination, the obligation of Participants to execute Exchanges of Credits for Permitted Facilities in such tributary (river basin) and for such parameter (TN or TP) as provided in the Exchange Compliance Plan shall be waived for each year prior to the first year for which compliance is required.

4.3 Annual Participant Data Update. The Nutrient Exchange may request and each Participant shall provide in a timely manner information necessary or useful for updating or otherwise administering the Plan. For purposes of Plan Updates, the Nutrient Exchange anticipates continuing to utilize a Facility Data Checklist. The most recent form of the Facility Data Checklist is attached as Attachment C and may be revised by the Nutrient Exchange from time to time. The Nutrient Exchange anticipates continuing to utilize a Compliance Deadline

Statement prior to the expiration of the schedule of compliance in Part I C 1 of the Watershed General Permit. The most recent form of the Compliance Deadline Statement is attached as Attachment D and may be revised by the Nutrient Exchange from time to time. With respect to the new fifth year of the Planning Period covered by each Plan Update, the Plan shall be based on data and information determined by the Participant during the Plan Update process. To meet applicable regulatory deadlines, Participants shall submit the requested data pursuant to the schedule at Attachment A, which may be revised by the Nutrient Exchange from time to time. Failure to meet submittal deadlines may result in omission of a Participant and its Permitted Facilities from the Plan at the discretion of the Nutrient Exchange.

4.4 Expected Net Credits. For each of its Permitted Facilities included in the Plan, the Participant will be responsible for specifying the Delivered WLA (established by regulation), Expected Load (derived from projected flow and concentration data provided by the Participant), Expected Credits, Preliminary Uses of Credits, and Expected Net Credits. Expected Net Credits is a planning figure only, and no Participant is obligated solely by its specification thereof to generate Credits in a quantity equal to or greater than the Expected Net Credits for the Planning Period.

4.5 Class A Credit Sale Obligations. Participants with Permitted Facilities projecting to generate a positive quantity of Expected Net Credits shall have the option to sell Class A Credits for a Compliance Year in the Planning Period at the premium Class A Credit price. Each such Participant shall specify its Class A Pledge as a quantity of Credits ranging from zero (0) up to the quantity of its Expected Net Credits for each year of the Planning Period, such quantity to be determined in the discretion of the Participant. Such specification shall be made for the full initial Planning Period and thereafter annually for the new fifth year of the five-year Planning Period. The Participant shall be obligated to provide to the Nutrient Exchange such quantity of Class A Credits. The specified quantity of Class A Credits shall be set forth in the Plan. Unless waived pursuant to section 5.10 (Waiver of Class A Credit Sales Obligation), the Participant agrees to sell such quantity of Credits to the Nutrient Exchange regardless of its Actual Net Credits (*i.e.*, a Class A Seller is responsible for making up any shortfall in its agreed amount of Class A Credits for a given Compliance Year and completing such sale). A Participant projecting to generate a positive quantity of Expected Net Credits but electing to make no firm Class A Credit sales obligation (*i.e.*, a Neutral Participant) shall specify a Class A Pledge of zero.

4.6 Class A Credit Purchase Obligations. For Permitted Facilities projecting Expected Net Credits in a negative quantity, to demonstrate a plan for compliance the Participant shall be obligated to purchase Credits in such quantity at the Class A Credit purchase price shown on Attachment B. For example, a Permitted Facility projecting in the 2008 Plan Update to have Expected Net Credits of TN of negative 500 for Compliance Year 2011 shall be obligated to purchase 500 TN Credits at the Class A Credit price in effect for 2011 (\$2.00 per Credit). This transaction shall be executed during the Reconciliation Year at which time the Credits shall be transferred and the price shall be paid. The Exchange Compliance Plan shall plan to meet this projected demand addressed in this Section through Class A Credit sales obligations under Section 4.5 to the extent available; however, to the extent that sufficient Class A Credits are not available, the Plan may address this demand by means of Class B Credits pledged by Participants. The Credit prices paid by a Buyer as shown on Attachment B are firm

for the Planning Period and shall be updated annually to include such price for the new fifth year of the Plan Update.

4.7 Class B Credit Pledge. By participating in the Exchange Compliance Plan, each Participant pledges one hundred percent of its Expected Class B Credits and agrees to transfer one hundred percent of its Actual Class B Credits from its Permitted Facilities to the Nutrient Exchange. The quantity of Expected Class B Credits is a projection only and it accommodates Preliminary Uses of Credits, including Private Exchanges planned and disclosed by the Participant in accordance with Section 4.9. Without limiting this pledge requirement, it is acknowledged and understood that Actual Class B Credits are anticipated to vary from the projection of Expected Class B Credits and that the Participant has no obligation to provide Actual Class B Credits in the same quantity as Expected Class B Credits, so long as the Participant transfers all of its Actual Class B Credits to the Nutrient Exchange. Among other purposes, it is the intent of this Section to enable Participants, which have entered into or will enter into a Virginia Water Quality Improvement Fund Grant Agreement with DEQ (*i.e.*, the owners of eligible municipal wastewater treatment plants) to satisfy the following standard provision of the typical grant agreement: “To aid in implementing the Nutrient Credit Exchange Program, the Grantee shall make all Point Source Nitrogen and Phosphorus Credits generated in a calendar year available for nutrient allocation compliance.” It is also the intent of this Section to include as Actual Class B Credits those Credits not identified as Expected Class B Credits due to any Preliminary Use of Credits but which are in fact available for Exchange through the Nutrient Exchange during the Reconciliation.

4.8 Modifications Within Planning Period. Notwithstanding the firm commitments for Class A Credits and Class B Credits provided in this Article IV, it is the intent of the Nutrient Exchange to accommodate through each Plan Update requests for modifications affecting the firm elements of the previous Planning Period, provided that the Board determines, in its discretion, that such modification is not reasonably expected to have a material adverse effect on the Nutrient Exchange or its Participants. Consistent with the guiding principles described above, the fact that a modification would result in a decrease in funds from Credit sales shall not preclude the Board from determining that a modification would not have a material adverse effect. In the event of multiple competing modification requests, (i) requests of existing Participants shall have priority over requests of potential new Participants, and (ii) to the extent that it is not feasible to honor all modification requests of existing Participants, the Nutrient Exchange generally intends to address the requests of existing Participants on a pro rata basis with respect to Credits. In order to manage requests for modifications within the Planning Period efficiently and fairly, the Nutrient Exchange shall establish annually a date by which Participants shall submit such requests. The modifications requested by any Participant, if accommodated in the Plan Update in whole or in part, shall be binding on such Participant.

(a) Class A Credit Sale Obligations. Notwithstanding the firm basis of Class A Credit sale obligations, a Class A Seller may decrease its Class A Credit sale obligations through the Plan Update to the extent the Board determines that a sufficient supply of Class A Credits is projected to remain to meet the existing Class A Credit demand of the existing Class A Buyers, and the Board, in its discretion, may accommodate further decreases taking into consideration Expected Class B Credit projections. Any Participant may increase its Class A

Credit sale obligation so long as the resulting Class A Credit supply does not exceed Class A Credit demand.

(b) Class A Credit Purchase Obligations. Notwithstanding the firm basis of Class A Credit purchase obligations, a Class A Buyer may decrease its Class A Credit purchase obligations to the extent the Board determines that Class A Credit demand exceeds Class A Credit supply. Any Participant may increase its Class A Credit purchase obligation to the extent of Class A Credit supply, and the Board, in its discretion, may accommodate further increases taking into consideration Expected Class B Credit projections.

(c) Class B Credits. As provided above in Section 4.7, Expected Class B Credits is a projection only and the Participant's obligation with respect to Class B Credits is limited to providing its Actual Class B Credits to the Nutrient Exchange. Accordingly, through each Plan Update, the Participant at its discretion may modify its projection of Expected Class B Credits for each and every year of the five-year Planning Period covered by the Plan Update.

(d) New Participants. The Nutrient Exchange intends to consider the admission of new Participants depending on whether the Nutrient Exchange anticipates a surplus of Credits or projects a need for or desires additional Credits during the Planning Period. Admission of new Participants shall be at the discretion of the Board and generally subject to the following conditions. When the Plan indicates a surplus of Class A Credits, a new Participant may be included subject to the condition that it may not sell Class B Credits until Year 3 and Class A Credits until Year 5 of the Plan Update that first includes the new Participant. When the Plan indicates a need for additional Class A Credits, a new Participant may be included subject to the condition that it may not purchase Credits until Year 5 of the Plan Update that first includes the new participant. These conditions may be waived or modified in whole or in part by the Board in its discretion.

4.9. Private Exchanges. Sections 4.4 (Expected Net Credits) and 4.7 (Class B Credit Pledge) notwithstanding, to facilitate adequate planning each Participant shall provide reasonable advance notice to the Nutrient Exchange of all Private Exchanges to which it is or will be a party. Such notice shall be made by the deadline in Attachment A for submitting the Facility Data Checklist during the Plan Update process and shall be effective for any Private Exchange for the Compliance Year beginning the next January 1 following such notice (or for any subsequent Compliance Year). The notice shall be on a form to be provided by the Nutrient Exchange and shall identify all parties and the quantity of Credits subject to the Private Exchange. For example, if a Participant desires to enter into a new Private Exchange for Compliance Year 2011, under the current schedule at Attachment A notice would be required by November 1, 2010 and such Private Exchange would be included in the Plan Update covering the Planning Period of Compliance Years 2011 through 2015. Nothing in this Section 4.9 shall affect the firm commitment as to Class A Credit purchases and sales once made by a Participant.

4.10 DEQ Approval. The Nutrient Exchange's goal is to maintain the Exchange Compliance Plan in a manner and form that best serves its Participants and complies with the terms and conditions of the Watershed General Permit. In the event that DEQ were to disapprove a Plan Update in whole or in part, the Nutrient Exchange shall be responsible only for

continuing to endeavor, in consultation with the Participants, to obtain DEQ approval pursuant to 9 VAC 25-820-40 B.

ARTICLE V CREDIT EXCHANGE RECONCILIATION

5.1 Administration of and Participation in Reconciliation. Beginning in 2012 for Compliance Year 2011, the Nutrient Exchange will administer and the Participants will participate in an annual Reconciliation pursuant to the Plan and this Policy for the preceding Compliance Year.

5.2 Annual Permitted Facility Reports. In accordance with the schedule at Attachment A, each Participant shall annually submit to the Nutrient Exchange a copy of the Participant's Annual Report to DEQ required by Part I F of the Watershed General Permit and such other information as may be reasonably requested by the Nutrient Exchange in administering the Reconciliation.

5.3 Initial Reconciliation Report. In accordance with the schedule at Attachment A, the Nutrient Exchange will prepare and distribute to the Participants the Initial Reconciliation Report for the immediately preceding Compliance Year. On a Permitted Facility and river basin-level basis for all Participants, the report shall present in ledger format an accounting of the generation and transfer of Credits within the Nutrient Exchange and among its Participants. The report shall specify for each Permitted Facility its Delivered WLA, Actual Load, Actual Credits, Preliminary Uses of Credits, Actual Net Credits, Class A Credit sales and purchases, and Actual Class B Credits, Credit prices, charges to Buyers, and revenues to Sellers. As applicable, the report will reflect application of the policies and procedures in Sections 5.9 (Initial Upgrades), 5.10 (Waiver of Class A Credit Sales Obligation), 5.11 (Option to Purchase Additional Credits During Reconciliation), and 5.12 (Credit Shortfall Management Procedures).

5.4 Credit Exchanges and Confirmations. The transfer of Credits from Sellers to the Nutrient Exchange, and from the Nutrient Exchange to Buyers, shall be implemented as follows.

(a) Credit Transfers from Sellers. Each year beginning 2012 (or one year later for each year by which DEQ extends the schedule of compliance for any tributary (river basin) and parameter (TN or TP) combination beyond January 1, 2011), Participants shall transfer to the Nutrient Exchange in accordance with the Initial Reconciliation Report and the schedule at Attachment A (i) the quantity of Class A Credits to which they have committed as Sellers and (ii) the quantity of their Actual Class B Credits, if any. Such transfer shall be effective without further action by the Participant and shall be confirmed by the Participant through execution by its Designated Representative of, and submittal to the Nutrient Exchange of, the Seller's Credit Exchange Confirmation Form (Attachment E).

(b) Credit Transfers to Buyers. Each year beginning 2012 (or one year later for each year by which DEQ extends the schedule of compliance for any tributary (river basin) and parameter (TN or TP) combination beyond January 1, 2011), the Nutrient Exchange shall

transfer to Buyers in accordance with the Initial Reconciliation Report and the schedule at Attachment A the quantity of Credits committed to and requested by such Buyers subject to the terms and limitations of this Policy. Such transfer shall be accomplished and confirmed by the Nutrient Exchange through execution and submittal to Buyers of the Buyer's Credit Exchange Confirmation Form (Attachment F). In addition, the Nutrient Exchange shall invoice each Buyer for Credit purchases in accordance with the schedule at Attachment A, and each Buyer shall pay such invoice within forty-five (45) days of the invoice date. Failure to pay such invoice within such time shall require payment by the Participant of an administrative charge of one hundred dollars (\$100.00) plus ten percent (10%) of the amount of the invoice.

5.5 Sales of Surplus Credits to Non-Participants. For any Compliance Year and associated Reconciliation Year, for any river basin and parameter (TN or TP) combination, if the Nutrient Exchange has satisfied all of the needs for Credits for Participants as specified in the Exchange Compliance Plan or as otherwise requested by Participants for Watershed General Permit compliance purposes, and has remaining Credits, the Nutrient Exchange may sell such remaining Credits, in the discretion of the Board, to any Non-Participants requesting and committing to the purchase of such Credits subject to terms established by the Board in accordance with this Policy. The revenue from any Credit sales to Non-Participants or others shall be distributed to the Participants in the manner provided in Section 5.8.

5.6 Final Reconciliation Report. In accordance with the schedule at Attachment A, the Nutrient Exchange will prepare and distribute to the Participants the Final Reconciliation Report for the immediately preceding Compliance Year to reflect any adjustments subsequent to the Initial Reconciliation Report for sales of surplus Credits to Non-Participants or as otherwise may be appropriate.

5.7 Sources of Funds. The sources of funds for the Nutrient Exchange's purchase of Credits from Sellers shall be the funds paid by Buyers, the funds paid by any Non-Participants or others purchasing Credits through the Nutrient Exchange, and any other revenues accruing to the Nutrient Exchange that the Board designates for this purpose.

(a) Clearing Account. All such funds shall be segregated for accounting purposes from any other funds of the Nutrient Exchange in a Clearing Account for the purposes of holding prior to distribution and of distributing such funds to Sellers in the manner provided in this Policy.

(b) Prices Paid by Buyers and Non-Participants. The prices for Credits shall be (i) for Buyers of Credits in the quantities scheduled in the Plan as Class A Credit purchases the Class A Credit price on Attachment B, (ii) for Participants making additional Credit purchases beyond those scheduled in the Plan as Class A Credit purchases, the Class A Credit Price from Attachment A multiplied by a premium of 1.5, and (iii) for any Non-Participant or others for purchases as provided in Section 5.5, the Class A Credit Price from Attachment A multiplied by a premium which shall be established by the Board but which shall not be less than 2.0, unless the Board in its discretion determines that a lesser premium is in the best interests of the Nutrient Exchange and its Participants.

5.8 Disbursement of Funds to Sellers. The Nutrient Exchange shall disburse funds to Sellers from the Clearing Account as follows.

(a) Timing. Funds shall be disbursed to Sellers each Reconciliation Year in accordance with the schedule at Attachment A, or as soon thereafter as may be practical.

(b) Amounts Paid to Sellers. Ninety (90) percent of the amount in the Clearing Account and due to the Nutrient Exchange from Buyers for each Compliance Year in the Reconciliation Year shall be paid to the Class A Sellers, pro rata in proportion to the quantity of such Class A Credits transferred by each. The remaining ten (10) percent shall be paid to those Participants transferring Class B Credits to the Nutrient Exchange, pro rata as to the quantity of such Class B Credits transferred by each. However, if under the preceding calculation the amount paid by the Nutrient Exchange for each Class B Credit would exceed the amount paid by the Nutrient Exchange for each Class A Credit, the amount paid for Class A and Class B Credits shall be equal and shall be paid to Sellers pro rata in proportion to the quantity of Credits transferred by each.

(c) Clearing Account Shortfalls Due to Non-Payment of Buyers. To the extent that any Buyer or other purchaser of Credits from the Nutrient Exchange fails to remit to the Nutrient Exchange any amounts for Credits when due, and such shortfall interferes with the distribution of funds as provided herein, in addition to the administrative charge provided in Paragraph 5.4(b) the Board may in its discretion (i) invalidate the Credit transfer to the non-paying person(s) and redistribute such Credits as provided in this Policy, (ii) extend additional time for payment on such terms as the Board may determine, or (iii) take other actions in the best interests of the Nutrient Exchange and the Participants. In any such event, the Board may further in its discretion either delay payments otherwise provided for in this Section 5.8, or make partial payments, pro rata as provided herein, pending resolution of such matters.

5.9 Initial Upgrades. The Nutrient Exchange and the Participants acknowledge that for the initial Permitted Facility wastewater treatment upgrades necessary to implement the Exchange Compliance Plan for any river basin beginning January 1, 2011 (or such later initial year for compliance as DEQ may approve), the availability of engineering design services, the availability of construction services, availability of Water Quality Improvement Fund grant funds, extreme weather and other factors may make a Participant's provision and transfer to the Nutrient Exchange of Class A Credits impracticable and beyond the reasonable control of such Participant. In any case in which such transfer to the Nutrient Exchange of Class A Credits is determined by the Board in its discretion to be impracticable and beyond the reasonable control of such Participant, such not-at-fault Participant shall be relieved of its obligations for the transfer to the Nutrient Exchange of Class A Credits, but only the extent that such Credits are actually not available to such Participant and only for the period of time of the initial unavailability. Any resulting Credit shortfalls impacting the ability to supply Credits to Class A Buyers shall be managed in accordance with Section 5.12 (Credit Shortfall Management Procedures). In addition, the Nutrient Exchange shall request DEQ's concurrence that neither the not-at-fault Class A Seller(s) as defined in this Section 5.9 nor the not-at-fault waiting Buyer(s) will be deemed to be in noncompliance or subject to enforcement solely because of such circumstances and related Credit supply impacts.

5.10 Waiver of Class A Credit Sales Obligation. If during the Reconciliation Year sufficient Credits exist to meet the demands of all Participants for the Compliance Year, a Class A Seller's Class A Credit sales obligation shall be waived to the extent of its Class A Credit shortfall.

5.11 Option to Purchase Additional Credits During Reconciliation. If during the Reconciliation Year sufficient Credits exist to meet the demands of all Participants for the Compliance Year, after waivers of Class A Credit sale obligations pursuant to Section 5.10 any Participant desiring to purchase additional Credits for unanticipated needs (*i.e.*, Credits required beyond the Participant's Class A Credit purchases scheduled in the Exchange Compliance Plan) may purchase such Credits from the Nutrient Exchange at the premium price applicable to Participants as specified in Paragraph 5.7(b)(ii) to meet its Watershed General Permit compliance obligations.

5.12 Credit Shortfall Management Procedures.

(a) If insufficient Credits exist to meet the demands of all Participants, Class A Buyers shall have priority access to available Credits to the extent provided in this Paragraph 5.12(a). To the extent of the available Credits, Credits shall first be transferred to Class A Buyers in a quantity sufficient to satisfy either the amount of Credits scheduled as a Class A Credit purchase in the Exchange Compliance Plan for each Class A Buyer or the amount of Credits actually needed by the Class A Buyer to comply with its Delivered WLA, whichever is less for each Class A Buyer (its "Class A Shortfall Distribution Quantity"). Such distribution to Class A Buyers and any subsequent distribution to Participants shall be implemented in accordance with either Paragraph 5.12(b) or Paragraph 5.12(c), as appropriate.

(b) If the distribution of available Credits pursuant to Subparagraph 5.12(a) is insufficient to satisfy all Class A Buyers in the manner and to the extent provided in Subparagraph 5.12(a), the following procedure shall apply: (i) all available Credits will be distributed among the Class A Buyers pro rata in proportion to the Class A Shortfall Distribution Quantity of each, and (ii) all Class A Sellers that failed to generate and transfer all of the Class A Credits that such Sellers had agreed to provide pursuant to Section 4.5 of this Policy and scheduled in the Plan shall make up their allocable share of any remaining shortfall of Class A Credits to the extent required to meet the total Class A Shortfall Distribution Quantity of all Class A Buyers, pro rata in proportion to each such Class A Seller's Class A Credit sales shortfall, by acquiring Credits from outside of the Nutrient Exchange, from the Water Quality Improvement Fund administered by DEQ, or as otherwise allowed under applicable law.

(c) If the distribution of available Credits pursuant to Subparagraph 5.12(a) is sufficient to satisfy all Class A Buyers in the manner and to the extent provided in Subparagraph 5.12(a), any remaining Credits shall be transferred in equal shares to all Participants who desire such Credits; provided, however, that no Participant may purchase more Credits than required for compliance of its Permitted Facility under the Watershed General Permit. Each Participant with a remaining need for Credits thereafter shall be solely responsible for acquiring sufficient

additional Credits from outside of the Nutrient Exchange, from the Water Quality Improvement Fund administered by DEQ, or as otherwise allowed under applicable law.

(d) In the discretion of the Board, the Nutrient Exchange may assist the Participants in acquiring sufficient additional Credits from outside of the Nutrient Exchange, from the Water Quality Improvement Fund administered by DEQ, or as otherwise allowed under applicable law; however, the Nutrient Exchange shall have no liability whatsoever for or related to a Credit shortfall regardless of the cause thereof.

ARTICLE VI MISCELLANEOUS PROVISIONS

6.1 Amendments. This Policy may be amended from time to time in accordance with Article VII of the Bylaws.

6.2 Administrative Obligations. As a condition of continuing participation and without limiting any other provision of this Policy, each Participant shall (a) execute and comply with terms of the Nutrient Credit Services Agreement; (b) pay any applicable fees in a timely manner, and (c) pay its Credit purchase costs as provided herein in a timely manner.

6.3 Compliance with Watershed General Permit; Exchange Not Liable. Each Participant shall remain responsible for ensuring its own compliance with the Watershed General Permit. Neither the Nutrient Exchange, nor its officers, governors (directors), technical consultants or other advisors shall be responsible for assuring an adequate supply of Credits or for any other costs or damages of any kind related in any way to the operation of the Nutrient Exchange, including consequential damages.

6.4 No Waiver. No failure to exercise, and no delay in exercising, any right, power or privilege under this Policy by the Nutrient Exchange shall operate as a waiver, nor shall any single or partial exercise of any right, power or privilege hereunder preclude the exercise of any other right, power or privilege. No waiver by the Nutrient Exchange of any breach of any provision shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision, nor shall any waiver be implied from any course of dealing.

ATTACHMENTS

- A Annual Schedule for Plan Update and Reconciliation Processes
- B Credit Price Schedule
- C Facility Data Checklist
- D Compliance Deadline Statement
- E Seller's Credit Exchange Confirmation Form
- F Buyer's Credit Exchange Confirmation Form

ATTACHMENT A

ANNUAL SCHEDULE

<u>Action</u>	<u>Deadline</u>	<u>Party Responsible</u>	<u>Policy Section(s)</u>
Submit Class A Credit Sale/Purchase Obligation Change Requests (OPTIONAL) (only for changes proposed to current Planning Period, not for new Year 5)	Sept. 1	Participant	4.8
Submit Facility Data Checklist (Attachment C) for Plan Update Development	Sept. 1	Participant	4.3
Submit Annual Report to Nutrient Exchange (and DEQ per 9 VAC 25-820-70 Part I F)	Feb. 1	Participant	5.2
Submit Exchange Compliance Plan Update to DEQ	Feb. 1	Exchange	4.1, 4.10
Prepare Initial Reconciliation Report	Mar. 7	Exchange	5.3
Distribute Credit Exchange Confirmation Forms to Sellers	Mar. 15	Exchange	5.4(a)
Distribute Invoices to Buyers	Mar. 15	Exchange	5.4(b)
Submit Credit Exchange Confirmation Forms to Nutrient Exchange	April 15	Sellers	5.4(a)
Invoice Payments Due from Buyers	May 1	Buyers	5.4(b), 5.7
Distribute Signed Credit Exchange Confirmation Forms to Buyers	May 20	Exchange	5.5(b)
Certify Credit Purchases to DEQ (9 VAC 25-820-70 Part J 2 f)	June 1	Buyers	N/A
Prepare Final Reconciliation Report	June 15	Exchange	5.4
Disbursement of Funds to Participants for Credit Sales	Aug. 1	Exchange	5.8

ATTACHMENT B

CREDIT PRICE SCHEDULE

Compliance Year	Reconciliation Year	Class A Credit Purchase Price (\$/Credit)		Price Status (Firm or Estimate)
		<i>Nitrogen</i>	<i>Phosphorus</i>	
2011	2012	\$2.00	\$4.00	Firm
2012	2013	\$2.00	\$4.00	Firm
2013	2014	\$2.15	\$4.30	Firm
2014	2015	\$2.65	\$4.60	Firm
2015	2016	\$3.05	\$4.93	Firm
2016	2017	\$3.50	\$5.27	Firm
2017	2018	\$3.75	\$5.65	Firm
2018	2019	\$3.78	\$5.70	Firm
2019	2020	\$3.82	\$5.76	Firm
2020	2021	\$3.86	\$5.81	Firm
2021	2022	\$3.87	\$5.82	Firm
2022	2023	\$3.94	\$5.93	Firm

ATTACHMENT C

FACILITY DATA CHECKLIST FOR 2018 PLAN UPDATE

Participant (Owner) Name: _____

Facility Name: _____

Designated Representative (or Alternate) Name: _____

Contact Phone: _____

Contact Email: _____

(please enter information only in cells with blue text)

NITROGEN Data Checklist	New 5th Year	Estimates Beyond 5-year Planning Period		
	2022	2023	2024	2025
Projected Flow (mgd)	0.00	0.00	0.00	0.00
Projected mg/L (avg. annual)	0.00	0.00	0.00	0.00
End-of-Pipe Pounds	0	0	0	0
Delivery Factor¹	0.00	0.00	0.00	0.00
Delivered Pounds	0	0	0	0
Delivered WLA¹	0	0	0	0
Expected Credits	0	0	0	0
Adjustments In (Out) ²	0	0	0	0
Net Expected Credits	0	0	0	0
Class A Sales (Purchases)³	0	0	0	0
Expected Class B Credits	0	0	0	0
Class A Purchase Price (\$/lb)	\$ 3.94			
Facility Class A Purchase Cost⁵	\$ -			

PHOSPHORUS Data Checklist	New 5th Year	Estimates Beyond 5-year Planning Period		
	2022	2023	2024	2025
Projected Flow (mgd) ⁴	0.00	0.00	0.00	0.00
Projected mg/L (avg. annual)	0.00	0.00	0.00	0.00
End-of-Pipe Pounds	0	0	0	0
Delivery Factor¹	0.00	0.00	0.00	0.00
Delivered Pounds	0	0	0	0
Delivered WLA¹	0	0	0	0
Expected Credits	0	0	0	0
Adjustments In (Out)	0	0	0	0
Net Expected Credits	0	0	0	0
Class A Sales (Purchases)	0	0	0	0
Expected Class B Credits	0	0	0	0
Class A Purchase Price (\$/lb)	\$ 5.93			
Facility Class A Purchase Cost⁵	\$ -			

1 - Remember to use updated information! Facility-specific Delivery Factors and Delivered WLAs as shown on DEQ's Registration List for 2021 and beyond.

2 - Adjustments include Private Exchanges, Bubble Exchanges, or WQIF-held Credits; enter a positive number for receipt of Credits, enter a negative number for Credits given to other facilities (or WQIF-held credits)

3 - If showing positive value for Net Expected Credits, enter the number of Class A Credits committed for sale (enter 0 if no Class A Credits are committed for sale).

3 - If showing negative value for Net Expected Credits, enter the same value in this row to indicate Class A Credit purchase commitment (consistent with Credit Exchange Policy)

4 - Projected flows for the Phosphorus Credit forecast are set equal to those used to generate the Nitrogen Credit forecast

5 - Represents the total purchase cost to the facility (regardless of actual Credit need) based on the Credit purchase forecast and corresponding Class A purchase price

ATTACHMENT D

**COMPLIANCE STATEMENT FOR FACILITIES SUBJECT TO REDUCED
WASTELOAD ALLOCATIONS IN CHESAPEAKE BAY TMDL**

Facility (Or Owner Bubble) Name: _____

Basin/Nutrient(s): _____

Compliance Information Required by 9 VAC 25-820-40 A 2 (Check Option 1 or Option 2)

_____ Option 1 (9 VAC 25-820-40 A 2 b): Permittee hereby requests WLA to be effective as of January 1, 2012.

_____ Option 2 (9 VAC 25-820-40 A 2 a): Additional capital project(s) is needed to ensure continued compliance with the WLA through the applicable compliance schedule deadline for the tributary. (Note: Checking Option 2 does not preclude use of credit purchase as means of compliance below.)

If Option 2 is checked, briefly describe need for additional projects:

Implementation Schedule

1. Does permittee anticipate using credit purchase to comply?

_____ NO _____ YES

2. Is permittee implementing a capital project to comply?

_____ NO _____ YES

(If YES, compliance is required as soon as possible but no later than the applicable tributary compliance schedule deadline.)

3. Capital Project Milestone Schedule (Specify estimated date for each milestone. For bubbles, specify facility name(s) and list multiple facility schedules if applicable.)

Engineer selection	_____
PER/CER to DEQ	_____
Plans & Specifications to DEQ	_____
Commence construction	_____
Complete construction	_____
CTO Request to DEQ (POTWs only)	_____

ATTACHMENT E

**SELLER'S CREDIT EXCHANGE CONFIRMATION FORM
COMPLIANCE YEAR 20__**

The execution of this Credit Exchange Confirmation Form confirms a Credit Transfer from the Participant to the Nutrient Exchange pursuant to the Section 5.4(a) of the Credit Exchange Policy of the Nutrient Exchange. Capitalized terms have the meanings provided in the Credit Exchange Policy.

In accordance with the provisions of and subject to the terms and limitations of the Credit Exchange Policy and the Nutrient Credit Services Agreement, the undersigned Participant hereby:

1. Acknowledges receipt of the Initial Reconciliation Report dated _____.
2. Confirms and represents that the Initial Reconciliation Report correctly states for its Permitted Facility(ies) in the Exchange Compliance Plan the amounts of Class A Credits of TN and TP and Class B Credits of TN and TP transferred to the Nutrient Exchange.
3. Acknowledges and confirms the transfer of such Credits in such amounts to the Nutrient Exchange.

To be completed by Participant:

Participant Name (Organization): _____

Designated Representative (Print): _____

Designated Representative Signature: _____

Date: _____

No later than April 15 submit the signed original form to:

Virginia Nutrient Credit Exchange Association, Inc.

ATTN: Secretary

P.O. Box 51

Richmond, VA 23218-0051

ATTACHMENT F

BUYER'S CREDIT EXCHANGE CONFIRMATION FORM

The execution of this Credit Exchange Confirmation Form confirms a Credit Transfer to the Participant from the Nutrient Exchange pursuant to the Section 5.4(b) of the Credit Exchange Policy of the Nutrient Exchange. Capitalized terms have the meanings provided in the Credit Exchange Policy.

In accordance with the provisions of and subject to the terms and limitations of the Credit Exchange Policy and the Nutrient Credit Services Agreement, the Nutrient Exchange hereby transfers to the Participant identified herein the following amounts of Credits of TN and TP:

Participant Name (Organization): _____

River Basin (One Per Form): _____

Compliance Year: _____

TN Credits (Pounds): _____

TP Credits (Pounds): _____

VIRGINIA NUTRIENT CREDIT EXCHANGE ASSOCIATION, INC.

By: _____

Title: _____

Date: _____

For convenience, the next page of this form made be used, subject to DEQ's approval, by the Participant to make its required certification of credit acquisition to DEQ.

**BUYER'S CREDIT EXCHANGE NOTIFICATION TO DEQ
PURSUANT TO PART I J 2 f OF THE GENERAL PERMIT
FOR TOTAL NITROGEN AND TOTAL PHOSPHORUS DISCHARGES AND
NUTRIENT TRADING IN THE CHESAPEAKE BAY WATERSHED IN VIRGINIA
9 VAC 25-820-70**

General Permit Registration No.: _____

Permittee Name: _____

Pursuant to Part I J 2 f of the Watershed General Permit, the above-named Permittee, a Participant in the Virginia Nutrient Credit Exchange Association, Inc., hereby certifies that it has acquired sufficient Credits to satisfy its compliance obligations. The Credit Exchange Confirmation Form on the reverse side of this notification form documents the quantity of Credits of TN and TP transferred from the Nutrient Exchange to the Participant for the Compliance Year.

I certify under penalty of law that this notification and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Principal Executive Officer
or Authorized Agent: _____

Typed or Printed Name: _____

Signature: _____

Area Code/Phone Number: _____

Date: _____

APPENDIX A

DEQ Approval Letters





COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

Fax (804) 698-4500 TDD (804) 698-4021

www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

September 7, 2007

Mr. Mark Haley
President, Board of Governors
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

RE: Exchange Compliance Plan, July 31, 2007

Dear Mr. Haley:

We have reviewed the Exchange's July 31, 2007 Compliance Plan and your letter of July 30, 2007 and are very pleased by the progress being made by the Exchange members. Especially encouraging are the projections that expected TN and TP loads will be below the aggregate wasteload allocations in all five basins by 2011.

After a careful review of all of the individual compliance plans and the Exchange's compliance plan, DEQ staff recommends that the existing 2011 compliance deadline be retained at this time for both parameters in all five basins. The Class A/Class B trading system adopted by the Exchange has served as an excellent tool for managing trades among its members. However, using only Class A pledges as the basis for determining a river basin compliance date appears inconsistent with the permit condition of achieving compliance "as soon as possible". In establishing "as soon as possible" compliance dates, DEQ must rely on the completion of projects that allow limits to be met and not delay the regulatory deadline due to a reluctance to sign Class A pledges.

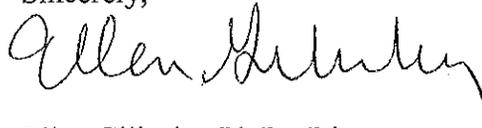
We share your concern with the completion of so many projects on such a tight timeline. However, at this early date it is not possible to determine how quickly individual construction projects will proceed and what the actual capabilities of the upgraded facilities will be. For instance, after a year of progress, the performance of Exchange members was significantly better than what was projected for these facilities in the April 2006 draft report. Future annual compliance plan updates and DEQ's semi-annual WQIF progress reports will add further clarity to these projections and will be used along with the scheduling factors in the Virginia Code and the "as soon as possible" criteria to evaluate the need for basin schedule extensions. Accordingly, we believe that The Exchange's proposed footnote for the watershed general permit compliance table is neither necessary nor does it provide the public or EPA with an

opportunity to participate in regulatory changes to the permit schedules. Should it prove necessary, DEQ will initiate amendment to the permit under the Administrative Process Act to make appropriate revisions to the schedule.

We also share your desire for DEQ to provide a safe regulatory environment for participating owners to commit to buy or sell credits. The very existence of the trading program represents a significant reduction in risk for the permittees. This risk is further reduced by the ability to purchase compliance credits from the WQIF. DEQ has proposed to incorporate into the WQIF cost-control guidelines a provision that credits generated via WQIF-funded upgrades would be made available to other permittees by the facility generating the credits. As suggested in your July 30th letter, we are also pursuing a means of sustaining a pool of WQIF-funded BMP projects that will serve as a source of WQIF credits in each basin.

We greatly appreciate the Exchange's efforts in encouraging and facilitating the cooperation of over 100 facilities to reduce nutrient loads to the Chesapeake Bay, and look forward to our continued working relationship with your organization.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ellen Gilinsky".

Ellen Gilinsky, Ph.D., Director
Division of Water Quality



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Mailing address: P.O. Box 1105, Richmond, Virginia 23218
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www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

April 25, 2008

Mr. Mark A. Haley, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

Re: Exchange Compliance Plan 2008 Annual Update

Dear Mr. Haley: *Mark*

We have reviewed the Exchange's February 1, 2008 Compliance Plan Update and DEQ gives its approval for implementation of the plan under the watershed general permit. We are very pleased by the progress being made by the organization and its members. The growth in membership has been impressive and we expect that participation will continue to grow as the January 1, 2011 deadline approaches and more facilities recognize the benefits of membership.

Equally impressive is the reduction in load made in some basins as more and more facilities optimize their operations. The Exchange members managed to operate below their combined TN wasteload allocations in the Potomac and Rappahannock Basins and below their combined TP wasteload allocations in the York and (Lower) James Basins; however we must recognize 2007 was a dry year.

We will continue to monitor and evaluate progress in each basin as noted in my September 7, 2007 letter and Section 7.1 of the annual update. Between the annual compliance plan updates, the WQIF annual reports and the annual load reports we are confident that we will stay on top of this issue and be able to make any schedule adjustments necessary. Also as noted in my September 7, 2007 letter, the conditions in Section 7.2 on the compliance plan do not dictate the terms of DEQ's enforcement policy. However, please rest assured that DEQ too has much invested in the watershed general permit and intends to work cooperatively with all stakeholders to ensure a fair and successful program.

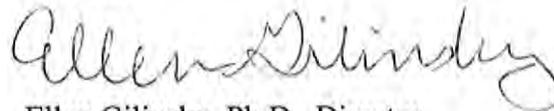
With respect to the Eastern Shore Basin, we share your concern that the basin is not large enough to provide ample trading partners. As you know a legislative change would be required to open up the Eastern Shore market to include purchases from the Potomac and Rappahannock Basins.

Mr. Mark A. Haley
April 25, 2007
Page 2 of 2

We have noted in recent weeks that as WQIF agreements and VPDES permits are negotiated, a few facilities have backed off of the upgrade plans provided to the Exchange. So far none of these changes appear to affect the basin compliance goals. We intend to track these discrepancies to ensure that they do not have an adverse impact on basin compliance as a whole and will continue to instruct such facilities to keep the Exchange informed of any changes in their plans.

In closing, we continue to be encouraged by the progress in the trading program and by the cooperation and efforts of the Exchange and its members in particular. We look forward to another year of this partnership and progress towards a restored Chesapeake Bay.

Sincerely,

A handwritten signature in cursive script that reads "Ellen Gilinsky".

Ellen Gilinsky, Ph.D., Director
Division of Water Quality

Cc: Mr. Chris Pomeroy, Esq. - AquaLaw



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L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

September 24, 2009

Mr. Mark A. Haley, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

Re: Exchange Compliance Plan 2009 Annual Update

Dear Mr. Haley:

We have reviewed the Exchange's February 1, 2009 Compliance Plan Update and DEQ gives its approval for implementation of the plan under the watershed general permit. We remain very pleased by the progress being made by the organization and its members. Point source Total Nitrogen and Total Phosphorus delivered loads decreased in each of the five permitted watersheds in 2008.

We share your concern with the lack of trading partners on the Eastern Shore and look forward to working with the Exchange in the next year to address this issue. Finally, our staff has had some discussions with you concerning a few survey responses that appear to be out of date by the time they are compiled and submitted. A few such situations may be inevitable as many facilities have struggled with upgrade decisions in the middle of the economic downturn. We are currently reviewing WQIF records to provide you with a list of apparent discrepancies for use in reviewing the next round of survey responses.

We look forward to another year of partnering with the Exchange and its members in pursuit of a restored Chesapeake Bay.

Sincerely,

A handwritten signature in cursive script, reading "Frederick K. Cunningham".

Frederick K. Cunningham
Water Permit Manager

Office of Water Permits and Compliance Assistance

Cc: Mr. Chris Pomeroy, Esq. - AquaLaw



COMMONWEALTH of VIRGINIA

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Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

November 2, 2010

Mr. Mark A. Haley, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

Re: Exchange Compliance Plan 2010 Annual Update

Dear Mr. Haley:

We have reviewed the Exchange's February 1, 2010 Compliance Plan Update and DEQ gives its approval for implementation of the plan under the watershed general permit. With numerous upgrades now close to completion, we look forward to compliance with the Total Nitrogen and Total Phosphorus wasteload allocations in 2011. DEQ will be distributing final Discharge Monitoring Reports to all registered facilities early next year. The Exchange and its members are to be congratulated for all the hard work that has made meeting this aggressive deadline possible.

We look forward to another year of partnering with the Exchange and its members in pursuit of a restored Chesapeake Bay.

Sincerely,

A handwritten signature in cursive script, reading 'Frederick K. Cunningham'.

Frederick K. Cunningham
Water Permit Manager
Office of Water Permits and Compliance Assistance

cc: Mr. Chris Pomeroy, Esq. - AquaLaw



COMMONWEALTH of VIRGINIA

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Secretary of Natural Resources

David K. Paylor
Director

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1-800-592-5482

January 26, 2012

Mr. Mark A. Haley, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

Re: Exchange Compliance Plan 2011 Annual Update

Dear Mr. Haley:

We have reviewed the Exchange's February 1, 2011 Compliance Plan Update. The Plan is approved with the condition that the items included on the attached summary be addressed as appropriate in either the 2012 Compliance Plan Update due on February 2, 2012 or the Reconciliation for Compliance Year 2011 report due by June 1, 2012.

A preliminary review of the 2011 DMR data indicates that there are excess credits in all basins except the Eastern Shore and that the Eastern Shore shortfall can be covered by surplus credits in the Potomac and Rappahannock basins. The Exchange and its members are to be congratulated for all the hard work that has made meeting the January 1, 2011 compliance deadline possible.

We look forward to another year of partnering with the Exchange and its members in pursuit of a restored Chesapeake Bay.

Sincerely,

A handwritten signature in cursive script, appearing to read "Frederick K. Cunningham".

Frederick K. Cunningham

Water Permit Manager

Office of Water Permits and Compliance Assistance

cc: Mr. Chris Pomeroy, Esq. – AquaLaw

**EXCHANGE COMPLIANCE PLAN 2011 ANNUAL UPDATE:
ITEMS TO BE ADDRESSED PER DEQ CONDITIONAL APPROVAL**

1. Town of Onancock WWTP

For 2011, the Plan indicates that the Town of Onancock WWTP is using its 0.75 MGD WLAs; however, a CTO has not yet been issued for this design flow. Accordingly, the Plan should apply the 0.25 MGD allocation for 2011. This item should be addressed during Reconciliation for Compliance Year 2011. For later years, the 0.75 MGD WLAs may be applied beginning with the first full Compliance Year following issuance of the CTO.

2. Hanover County Bubble

The Plan indicates that a portion of the Totopotomoy WWTP's 10 MGD WLAs is used for trading outside the Hanover County bubble. DEQ expects any credits generated at other County facilities within the bubble (i.e. Doswell) to be used within the bubble before credits associated with Totopotomoy's pending 3 MGD expansion from 7 MGD to 10 MGD are used (i.e.. until the CTO for 10 MGD issued). This equates to 54,820 lbs/yr of TN and 6,396 lbs/yr of TP. This means that the first 54,820 lbs/yr of TN credits and 6,396 lbs/yr of TP credits that are not used within the Hanover bubble are treated as "WQIF-held." Based on the actual 2011 loads, the Reconciliation for Compliance Year 2011 should include:

	Total Aggregate Delivered WLA	2011 Actual Delivered Load	Gross 2011 Credits	Credits Associated with 3 MGD	WQIF Held Credits	Net Hanover Credits
Total N	210,692	67,251	143,441	54,820	54,820	88,621
Total P	25,156	5,508	19,648	6,396	6,396	13,252

3. Alleghany County

The Lower Jackson WWTP is shown as having a delivered TN WLA of 19,187 lbs/yr when the actual allocation is 8,223 lbs/yr. Likewise the TP delivered WLA is shown as 5,330 lbs/yr rather than 2,284 lbs/yr. Presumably the difference reflects the transfer of the entire Clifton Forge WLA to Lower Jackson WWTP. However the transfer of the Clifton Forge WLA will not occur until completion of the public notice period in February 2012. Therefore, it would be more appropriate to address this item as a Private Exchange in the Reconciliation for Compliance Year 2011.

Additionally, while the WLAs for Lower Jackson WWTP and Clifton Forge WWTP are based on a total capacity of 3.5 MGD, at this time only 2.6 MGD has been constructed. This equates to WQIF held credits of 4,934 delivered lbs/yr TN and 1,371 delivered lbs/yr TP. The WQIF held credits are properly indicated on the TN ledger however they are not included on the TP ledger. WQIF held credits should be accounted for in the Reconciliation for Compliance Year 2011 in a similar manner as with the Hanover County Bubble discussed above.

4. **Town of Culpeper WWTP**

The Plan should be updated to reflect consolidation of the Culpeper County Mountain Run 1.5 MGD WLAs with the WLAs of the expanded 6.0 MGD Town of Culpeper WWTP.

5. **Spotsylvania County Bubble**

While the bubble WLAs are correct, individual WLAs should be updated to reflect the transfer of 1.4 MGD of WLAs from FMC WWTP to Massaponax WWTP.



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Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

January 22, 2013

Mr. Frank W. Harksen, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

Re: Exchange Compliance Plan 2012 Annual Update

Dear Mr. Harksen:

We have reviewed the Exchange's February 1, 2012 Compliance Plan Update and DEQ gives its approval for implementation of the plan under the watershed general permit. Again in 2012, we expect there to be excess credits available in all basins except the Eastern Shore and that the Eastern Shore shortfall can be covered by surplus credits in the Potomac and Rappahannock basins. The Exchange and its members are to be congratulated for all the hard work that has made meeting and maintaining the Chesapeake Bay TMDL point source nutrient load caps possible.

We look forward to another year of partnering with the Exchange and its members in pursuit of a restored Chesapeake Bay.

Sincerely,

A handwritten signature in black ink that reads 'Frederick K. Cunningham'.

Frederick K. Cunningham
Water Permit Manager
Office of VPDES Permits

cc: Mr. Chris Pomeroy, Esq. – AquaLaw



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
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www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

December 18, 2013

Mr. Frank W. Harksen, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

Re: Exchange Compliance Plan 2013 Annual Update

Dear Mr. Harksen:

We have reviewed the Exchange's February 1, 2013 Compliance Plan Update and the document is approved for implementation under the watershed general permit. We note that members of The Exchange continue to follow and participate in DEQ's reevaluation of the James River Chlorophyll-a criteria. Upon completion of the study DEQ will be establishing final individual wasteload allocations (WLAs) for the significant James River dischargers. As part of that process we will be performing an engineering costs analysis to help establish cost effective and equitable WLAs. We look forward to collaborating with the James River dischargers on the analysis as the final nutrient reduction goals for the James River Basin are developed.

The Exchange and its members are to be congratulated for all the hard work that has made meeting and maintaining the Chesapeake Bay TMDL point source nutrient load caps possible. We look forward to another year of partnering with the Exchange and its members in pursuit of a restored Chesapeake Bay.

Sincerely,

A handwritten signature in black ink, appearing to read "Frederick K. Cunningham".

Frederick K. Cunningham, Manager
Office of Water Permitting

cc: Mr. Chris Pomeroy, Esq. – AquaLaw



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

December 17, 2014

Mr. Frank W. Harksen, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

Re: Exchange Compliance Plan 2014 Annual Update

Dear Mr. Harksen:

We have reviewed the Exchange's January 30, 2014 Compliance Plan Update and the document is approved for implementation under the watershed general permit. The Exchange and its members are to be congratulated for all the hard work that has made meeting and maintaining the Chesapeake Bay TMDL point source nutrient load caps possible. Please note that we will be publishing a Notice of Intended Regulatory Action for the reissuance of the Watershed General Permit in the coming month and will be soliciting participants in that process. We look forward to another year of partnering with the Exchange and its members in pursuit of a restored Chesapeake Bay.

Sincerely,


Frederick K. Cunningham, Manager
Office of Water Permitting

cc: Mr. Chris Pomeroy, Esq. – AquaLaw



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

January 26, 2016

Mr. Frank W. Harksen, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

Re: Exchange Compliance Plan 2015 Annual Update

Dear Mr. Harksen:

We have reviewed the Exchange's February 1, 2015 Compliance Plan Update and the document is approved for implementation under the watershed general permit. The Exchange and its members are to be congratulated for all the hard work that has made meeting and maintaining the Chesapeake Bay TMDL point source nutrient load caps possible.

We look forward to another year of partnering with the Exchange and its members in pursuit of a restored Chesapeake Bay.

Sincerely,

A handwritten signature in black ink, appearing to read 'Allan Brockenbrough, II'.

Allan Brockenbrough, II, Manager
Office of Water Permitting

cc: Mr. Chris Pomeroy, Esq. – AquaLaw



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

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1-800-592-5482

January 6, 2017

Mr. Frank W. Harksen, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

Re: Exchange Compliance Plan 2016 Annual Update

Dear Mr. Harksen:

We have reviewed the Exchange's 2016 Compliance Plan Update and the document is approved for implementation under the watershed general permit. The Exchange and its members are to be congratulated for all the hard work that has made meeting and maintaining the Chesapeake Bay TMDL point source nutrient load caps possible.

We look forward to another year of partnering with the Exchange and its members in pursuit of a restored Chesapeake Bay.

Sincerely,

A handwritten signature in black ink, appearing to read "Allan Brockenbrough, II".

Allan Brockenbrough, II, Manager
Office of Water Permitting

cc: Mr. Chris Pomeroy, Esq. – AquaLaw



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

June 8, 2017

Mr. Frank W. Harksen, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

RE: Exchange Compliance Plan 2017 Annual Update

Dear Mr. Harksen:

We have reviewed the Virginia Nutrient Credit Exchange Association's *Exchange Compliance Plan 2017 Annual Update* and the document is approved for implementation under the Watershed General Permit.

The Exchange and its membership are to be congratulated for the continued dedication to meeting and maintaining the Chesapeake Bay TMDL point source nutrient load caps. We look forward to another year of partnering with the Exchange and its membership in pursuit of a restored Chesapeake Bay.

Sincerely,

A handwritten signature in blue ink, reading "Allan Brockenbrough, II".

Allan Brockenbrough, II, P.E.
Manager- Office of VPDES Permits

CC: Mr. Chris Pomeroy, Esq. - AquaLaw

APPENDIX B

Form of Nutrient Credit Services Agreement



NUTRIENT CREDIT SERVICES AGREEMENT

THIS NUTRIENT CREDIT SERVICES AGREEMENT (this “Agreement”) made by and between the Virginia Nutrient Credit Exchange Association, Inc., (the “Nutrient Exchange”) and the undersigned owner or operator of a Permitted Facility included in the Exchange Compliance Plan (the “Participant”).

BACKGROUND

A. The Participant owns or operates a certain facility or facilities regulated under the General Virginia Pollutant Discharge Elimination System Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia, 9 VAC 25-820, issued by the State Water Control Board and Department of Environmental Quality (collectively “DEQ”) for a five-year permit term beginning January 1, 2007 or as hereafter modified or reissued from time to time (the “Watershed General Permit”).

B. The Nutrient Exchange is a Virginia non-stock corporation comprised of permittees subject to the Watershed General Permit and is authorized by section 62.1-44.19:17 of the Code of Virginia to assist permittees with Watershed General Permit compliance and to facilitate voluntary nutrient credit trading.

C. Among other requirements, the Watershed General Permit (9 VAC 25-820-70, Part I B) imposes limitations on the discharge of two nutrients, total nitrogen and total phosphorus, from the Participant’s Permitted Facility(ies), and requires the Participant to submit to DEQ by August 1, 2007 and each February 1 thereafter, either individually or through the Nutrient Exchange, a compliance plan (9 VAC 25-820-40 and -70 Part I D) identifying how its Permitted Facility(ies) will comply with such limitations.

D. On behalf of the Participants and based on the data provided and decisions made by the individual Participants, the Nutrient Exchange has developed, and intends to maintain by means of the Watershed General Permit-required annual Plan Updates, a compliance plan for each of Virginia’s five major river basins (collectively the “Exchange Compliance Plan”) to assist the Participants in complying with the Watershed General Permit compliance plan requirement.

E. In addition, Participants in the Exchange Compliance Plan have the option of exchanging nutrient Credits. The Exchange Compliance Plan identifies firm commitments for the purchase and sale of Class A Credits at the request of numerous individual Participants who have elected to participate as Class A Buyers or Class A Sellers, and further establishes a market for and provides all Participants with the option of later purchasing available Class B Credits on more flexible terms to assist in maintaining compliance during unanticipated circumstances.

F. The Nutrient Exchange serves as the central trading exchange to facilitate the execution and reporting of these voluntary nutrient Credit Exchanges by and among its Participants in accordance with its Credit Exchange Policy, the Watershed General Permit and,

when applicable, Water Quality Improvement Fund Grant Agreements entered into by and between a Participant and DEQ.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants and conditions herein, the parties hereto agree as follows:

1. Annual Compliance Plan Updates. The Nutrient Exchange agrees to update the Exchange Compliance Plan annually and submit such Plan Update to DEQ for approval on or before the deadline (currently February 1 of each year) specified in Part I D of the Watershed General Permit. The Plan Update shall include updated information as provided by the Participant in accordance with the Credit Exchange Policy for its Permitted Facility(ies), including revisions to relevant facility-specific information. The Participant shall assist the Nutrient Exchange in the development of the Plan Update by providing information reasonably requested by the Nutrient Exchange in accordance with an annual Plan Update schedule to be established by the Nutrient Exchange.

2. Annual Reports. The Participant agrees to submit to the Nutrient Exchange a copy of the Participant's annual report to DEQ required by Part I F of the Watershed General Permit (9 VAC 25-820-70), and such other information as may be reasonably requested by the Nutrient Exchange to assist in the annual Reconciliation of Credit Exchanges for each Compliance Year.

3. Annual Credit Exchange Reconciliation. The Nutrient Exchange agrees to conduct an annual Reconciliation process for the timely execution of the Credit Exchanges elected by the Participants as specified in the Exchange Compliance Plan. The Participant agrees to implement any previously elected Class A Credit or Class B Credit Exchanges in accordance with the Credit Exchange Policy.

4. Incorporation of Credit Exchange Policy. The provisions of the Credit Exchange Policy are hereby incorporated as if such provisions were fully set out herein. For convenient reference, a copy of the current version of the Policy is attached hereto.

GENERAL PROVISIONS

5. Definitions. Terms not specifically defined herein shall have the definitions provided in the Credit Exchange Policy.

6. Term. The Agreement shall be in effect once signed by both parties and shall have an initial term through and including June 30, 2013. This term is coincident with the five year Planning Period covered by the current Exchange Compliance Plan (January 1, 2008 through December 31, 2012) plus a six month period (January 1, 2013 through June 30, 2013) for the Reconciliation process for the fifth Compliance Year (2012). Such term shall automatically extend by one year, without notice, upon submittal to DEQ of each annual update of the Exchange Compliance Plan beginning with the 2009 Annual Update due February 1, 2009,

unless (a) the Participant withdraws as provided herein or (b) the Nutrient Exchange provides notice to the Participant prior to completion of the Plan Update that it will not extend the term of this Agreement.

7. Amendments to Credit Exchange Policy and Exchange Compliance Plan. The Nutrient Exchange and the Participant acknowledge that the Credit Exchange Policy and the Exchange Compliance Plan may be amended from time to time as a result of changes desired by the Participants, the Exchange Board of Governors or DEQ, possible changes to law, and other factors. It is agreed that changes thereto shall become effective upon notice to the Participants or upon a later effective date as may be specified in such notice.

8. Withdrawal. The Participant shall have the following rights to withdraw from the Nutrient Exchange and the Exchange Compliance Plan.

(a) Withdrawal Upon End of Current Term. This Agreement shall not automatically extend for an additional year upon the Plan Update as provided in Paragraph 6 if the Participant elects to withdraw by providing notice of such election to the Nutrient Exchange at least four years and nine months (57 months) prior to the expiration of the term of this Agreement or before any later date as the Nutrient Exchange may specify during the Plan Update process. In the event of such withdrawal, the Nutrient Exchange shall omit the Participant and its Permitted Facilities from the additional Compliance Year (the new Year 5) added to the Plan during the Plan Update process for that year. For example, if a Participant in the Exchange Compliance Plan for the five year Planning Period covering January 1, 2008 through December 31, 2012 desires to withdraw and not extend this Agreement for an additional year (*i.e.*, through December 31, 2013), the Participant shall provide its withdrawal notice on or before October 1, 2008.

(b) Withdrawal During Term in Response to Policy or Plan Amendment. Notwithstanding any other provision of this Agreement, if any change to the Credit Exchange Policy or the Exchange Compliance Plan pursuant to Paragraph 7 would result in a material adverse effect on the Participant within the five year Planning Period covered by the Exchange Compliance Plan then in effect, the Participant may withdraw from the Agreement by written notice delivered to the Nutrient Exchange within sixty (60) days of such Participant's notice of the change, unless the Nutrient Exchange in its discretion further amends the Credit Exchange Policy or Exchange Compliance Plan within ninety (90) days of receiving such notice in a manner that eliminates the material adverse effect. Such withdrawal shall be effective January 1 of the Compliance Year for which the material adverse effect would first otherwise occur. The Participant shall participate in the Reconciliation and execute all Credit Exchanges planned for each Compliance Year prior to the effective date of withdrawal and pay all Credit costs or receive Credit revenue through and including such Compliance Year. In addition, the Participant shall continue to pay all applicable fees or dues in the ordinary course through the effective date of such withdrawal.

(c) Withdrawal During Term for Other Reasons. In addition to the right to withdraw during the term of this Agreement as provided in Subparagraph 8(b), the Participant shall have the right to withdraw during the term of this Agreement through the Plan Update

process if the following conditions are satisfied: (i) the Board determines that the Participant's withdrawal, alone or in combination with other modification requests, would not have a material adverse effect during the Planning Period on the Nutrient Exchange or any non-withdrawing Participants, (ii) the Participant is and agrees to remain current on all fees and Credit purchase costs as are due or may come due through and including the time of completion of the Reconciliation process for the last Compliance Year for which its Permitted Facilities are covered by the Plan, and (iii) the Participant agrees to cooperate fully in the Reconciliation for the last Compliance Year for which its Permitted Facilities are covered by the Plan. Such withdrawal shall be effective subject to the foregoing conditions upon submittal of the Plan Update by the Nutrient Exchange to DEQ as provided in Paragraph 1 above.

9. Annual Fee. The Nutrient Exchange's obligations under this Agreement shall be contingent on the continued adequate funding of the Nutrient Exchange through fees applicable to and paid by the Participants. Following execution of this Agreement by both parties and by approximately November 2008, the Nutrient Exchange shall issue an invoice to the Participant in the amount shown on Attachment A under the column labeled "Nov. 2008." Such invoice shall also include the amount, if any, invoiced by the Nutrient Exchange to the Participant in approximately March 2008 (as shown under the column labeled "Mar. 2008") but not yet paid by the Participant. The Participant agrees to pay such invoice within forty-five (45) days of the invoice date. Beginning with the 2009 Plan Update, following submittal of each annual Plan Update to DEQ the Nutrient Exchange shall issue an invoice to the Participant for the annual fee. The Participant shall pay such invoice within forty-five (45) days of the invoice date or by July 31 of the calendar year in which the invoice is issued, whichever is later. The Nutrient Exchange agrees to periodically update such schedule to add the fee amount for future years and in so doing intends to keep the annual fees specified therein to the lowest level sufficient for proper operation in the discretion of the Board. The Board anticipates establishing annual fees associated with and payable after the 2009, 2010, 2011 and 2012 Plan Updates, respectively, at less than a maximum of twice the annual fee currently scheduled on Attachment A for Nov. 2008. If an annual fee associated with any Plan Update through and including the 2012 Plan Update were to exceed this maximum anticipated fee, in that event the Participant may withdraw in accordance with the same procedures provided in Paragraph 8(b) of this Agreement. For the 2009 Plan Update, the Board's current estimate is that the annual fee will be the same amount as the Nov. 2008 fee shown on Attachment A. Upon receipt of a written request from the Participant, the Nutrient Exchange agrees to provide the Participant with an accounting of its receipts and disbursements for the two fiscal years immediately preceding the fiscal year in which the written request is received. The Participant agrees to pay applicable fees when due. Failure to pay any annual fee invoice within forty-five (45) days shall result in an administrative charge of one hundred dollars (\$100). In the event the Participant fails to pay any annual fee invoice within ninety (90) days of the invoice date, without limiting any other remedies, the Board in its discretion may terminate this Agreement and eliminate the Participant's Permitted Facilities from the Plan. Such termination shall not relieve the Participant of its obligation to pay any amounts due prior to the date of termination.

10. Waiver of Liability of the Nutrient Exchange. In recognition of the benefits derived by Participants and the nature of the Nutrient Exchange, to the extent permitted by law the Participant waives any causes of action and rights of recovery for liability of the Nutrient

Exchange and its Board of Governors, officers, employees, consultants and other advisors, for any losses or damage to the Participant, other than due to the gross negligence or intentional misconduct thereof.

11. Authorization of Signature. The Participant and the Nutrient Exchange each represent and warrant that its execution of this Agreement by the undersigned is fully authorized and validly performed.

12. No Partnership. Nothing contained in this Agreement shall create any partnership, trust, or joint venture with regard to the Nutrient Exchange and any or all Participants.

13. Third Party Beneficiaries. This Agreement is solely for the benefit of the Nutrient Exchange and its Participants and their permitted successors and assignees and shall not confer any rights or benefits on any other person.

14. Notices. Notices pursuant to Paragraphs 6 and 8 shall be delivered at the following address by U.S. Mail, certified with return receipt, and shall be deemed given when received (or delivery is refused) by the party to whom such notice or communication is directed. A party may change its address for such notice in writing as provided herein.

If to the Nutrient Exchange: Virginia Nutrient Credit Exchange Association, Inc.
ATTN: Secretary
P.O. Box 51
Richmond, Virginia 23218-0051

If to the Participant: _____

with a copy to the Participant's Designated Representative.

Any other notices and communications pursuant to this Agreement shall be made by or to the Participant's Designated Representative, or alternate when appropriate, each as designated the Participant from time to time in accordance with the Bylaws of the Nutrient Exchange.

15. Netting of Payments. The Nutrient Exchange may, but shall not be obligated to, net any payments to the Participant for such Participant's sales of Credits or otherwise with any fees past due, other authorized charges past due, or charges for Credits purchased past due to the Nutrient Exchange.

16. Integration. This Agreement (including the Credit Exchange Policy incorporated herein by reference) contains the entire agreement between the Nutrient Exchange and the Participant as to the subject matter hereof and supercedes all previous written and oral negotiations, commitments, proposals and writings, including those of counsel. Except as

otherwise provided herein or in the Credit Exchange Policy, no amendments may be made except by a writing signed by the parties.

17. Change in Law. Other than as specifically provided in the Credit Exchange Policy, in the event of any material change in applicable laws or regulations the parties shall work together to amend the Agreement to conform to such change in law, while maintaining as closely as practical the provisions and intent of this Agreement.

18. Governing Law; Severability. This Agreement shall be construed in accordance with and governed for all purposes by the laws of the Commonwealth of Virginia. If any term or provision of this Agreement, the deletion of which would not adversely affect the receipt of a material benefit by either party hereunder, shall be held by a court of competent jurisdiction to be invalid or unenforceable, the remainder of this Agreement shall not be affected thereby and each other term and provision of this Agreement shall remain valid and enforceable to the fullest extent permitted by law. It is the intent of the parties to this Agreement, and the parties agree, that in lieu of any term or provision of this Agreement that is illegal, invalid or unenforceable, the parties in good faith shall supply as part of this Agreement a legal, valid and enforceable term or provision as similar to such illegal, invalid or unenforceable term or provision as may be possible.

IN WITNESS WHEREOF, the parties have caused the execution of this Agreement as of the date first written above.

VIRGINIA NUTRIENT CREDIT EXCHANGE ASSOCIATION, INC.

By: _____

Name: _____

Title: _____

Date: _____

PARTICIPANT NAME

By: _____

Name: _____

Title: _____

Date: _____

ATTACHMENT A

ANNUAL FEE SCHEDULE

<u>Class</u>	<u>Participant's Total TN WLA (lbs/yr)</u>	<u>Mar. 2008</u>	<u>Nov. 2008</u>
Very Large	>400,000	\$1,750	\$3,500
Large	400,000- 75,001	\$1,250	\$2,500
Standard	75,000- 15,001	\$750	\$1,500
Small	≤15,000	\$250	\$500

**ANNUAL FEE SCHEDULE UPDATE
(ISSUED: MAY 26, 2010)**

<u>Class</u>	<u>Participant's Total TN WLA (discharge lbs/yr)</u>	<u>Annual Fee</u>
Very Large	>400,000	\$4,250
Large	400,000-75,001	\$3,125
Standard	75,000-15,001	\$1,875
Small	≤15,000	\$625

APPENDIX C

Water Quality Improvement Fund



This appendix provides an update on funding from the Water Quality Improvement Fund (“WQIF”) for eligible point source nutrient removal technology upgrades. The 2016-2018 Budget appropriates \$59 million in Point Source WQIF funding to fully meet WQIF funding needs through June 30, 2018, as estimated by DEQ. For current or future projects beyond June 30, 2018, additional WQIF funding will be needed. The WQIF needs forecast should be updated during 2018 and any necessary additional appropriations planned for FY 2020.

APPENDIX D

DEQ Director Letter





COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

Fax (804) 698-4500 TDD (804) 698-4021

www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

September 12, 2007

Mr. Mark Haley
President, Board of Governors
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

RE: Exchange Compliance Plan

Dear Mr. Haley:

I understand that the Exchange's July 31, 2007, Compliance Plan projects that expected Total Nitrogen and Total Phosphorus loads will be below the aggregate wasteload allocations in all five basins by 2011. You and the entire association are to be congratulated for your diligence in evaluating the best opportunities for upgrades and trading in each of the Chesapeake Bay basins so that we can retain the existing January 1, 2011, compliance date in the watershed general permit for both nitrogen and phosphorus. This is a significant step for the Exchange, the watershed general permit and trading program, and for the Commonwealth in our continued efforts to clean up the Bay and illustrates your commitment to being a strong partner in the solution.

We know it will be a challenge to complete so many projects on such a tight timeline, and we remain committed to working with you to shepherd these projects to completion. In the meantime, we appreciate the Exchange's efforts to encourage and facilitate the cooperation of over 100 facilities to reduce nutrient loads to the Chesapeake Bay.

Thank you for your commitment to maintaining healthy waters within Virginia.

Sincerely,

A handwritten signature in black ink, appearing to read "David K. Paylor", written over a horizontal line.

David K. Paylor

DKP:d1m