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January 31, 2020

By Email (abrockenbrough@deq.virginia.gov) & Hand Delivery

Mr. Allan Brockenbrough
Office of Water Permit Programs
Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond, VA 23219

Re: Exchange Compliance Plan 2020 Annual Update

Dear Mr. Brockenbrough:

The Virginia Nutrient Credit Exchange Association, Inc. (the “Nutrient Exchange”) is pleased to submit to the Virginia Department of Environmental Quality (“DEQ”) for review and approval the required annual update of the Exchange Compliance Plan. This submittal is made pursuant to 9 VAC 25-820-70, Watershed General Permit, Part I.D. (Annual Update of Compliance Plan), on behalf of the Participant owners or operators of the Facilities included in the Exchange Compliance Plan. Each Participant is a party to a Nutrient Credit Services Agreement with the Nutrient Exchange, which authorizes this submittal on the Participant’s behalf.

We thank you and your colleagues at DEQ for your continuing support and collaboration over the past year, which again demonstrated full compliance for all Exchange Participants. We look forward to completing a successful review process for this annual update and to another successful true-up in the months ahead.

Very truly yours,

Frank W. Harksen, Jr.
President

Enclosure:

Exchange Compliance Plan 2020 Annual Update

Copy to (by email w/o encl.):

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Melanie D. Davenport, Esq., DEQ
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Mr. John Kennedy, DEQ
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Exchange Compliance Plan 20**20** Annual Update



Submitted to the
Virginia Department of Environmental Quality
February 1, 20**20**

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Introduction



1.1 Purpose

This Chesapeake Bay Nutrient Credit Exchange Program Compliance Plan 2020 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 2019 Annual Update, which was submitted by The Exchange to the Virginia Department of Environmental Quality (“DEQ”) on February 1, 2019 and approved by DEQ on February 6, 2019. 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 and including 2019 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. Particularly notable expansion legislation was enacted in 2012 (expanding nutrient credit use by regulated entities to include municipal stormwater permittees, construction stormwater permittees, industrial stormwater permittees, and concentrated animal feeding operations) and 2016 (expanding offset authorities and options for new or increased discharges, and expanding credit use by municipal stormwater permittees to include sediment credits). In addition, the State Water Control Board and DEQ have issued implementation regulations and guidance on numerous occasions since 2005. Key statutory and regulatory 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.

As provided for under the EPA Chesapeake Bay TMDL (Appendix X) and Virginia Phase I Watershed Implementation Plan, DEQ recently undertook 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 resulted in revised criteria and the associated assessment method as adopted by the State Water Control Board on June 28, 2019 and approved by the Governor on August 26, 2019. EPA approved the criteria on January 6, 2020. The James River allocations remain 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 2027). 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 2020 through 2024. 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)
Arlington County WWTP and Arlington Co Public Schools MS4 (Nitrogen/Phosphorus)
Fairfax-Noman Cole WWTP and Fairfax Co Department of Vehicle Services (Nitrogen)
Frederick Winchester Service Authority and City of Winchester MS4 (Nitrogen)
HRRSA-North River and City of Harrisonburg MS4 (Nitrogen/Phosphorus)
PWCSA-H.L. Mooney and Prince William County MS4 (Nitrogen/Phosphorus)
Town of Leesburg and Loudoun Milling (Nitrogen/Phosphorus)
Town of Luray WWTP and Town of Luray MS4 (Phosphorus)
UOSA and UOSA Member Jurisdiction MS4s (Nitrogen/Phosphorus)

Rappahannock

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

York

Hanover County and Hanover County MS4 (Nitrogen)
HRSD and Member Jurisdiction MS4s (Nitrogen/Phosphorus)
HRSD and Department of Energy-Jefferson Lab (Nitrogen)

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)
HRSD and Department of Energy-Jefferson Lab (Nitrogen/Phosphorus)
HRSD and Chesapeake Tunnel Joint Venture (Nitrogen/Phosphorus)
City of Lynchburg WWTP and City of Lynchburg MS4 (Nitrogen)
RWSA-Moores Creek and Ryder Enterprises (Nitrogen/Phosphorus)

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

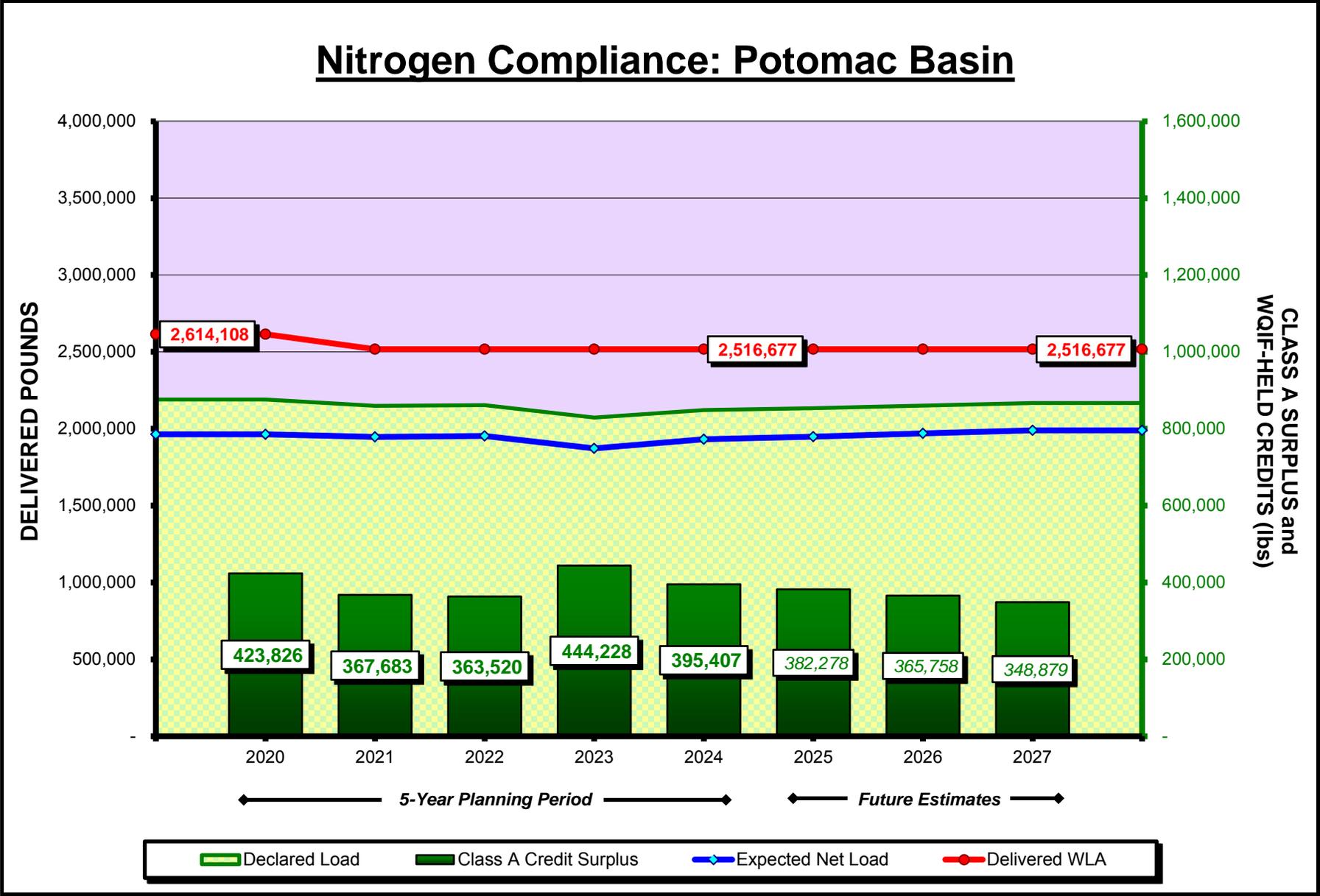
For each basin, facility-specific information is included immediately following the Trading Ledger. This includes Facility Summaries for Nitrogen and for Phosphorus for each facility. For facilities with reduced waste load allocations pursuant to the Chesapeake Bay TMDL, a Compliance Statement is provided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

POTOMAC 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:	\$ 0.09	\$ 3.86	\$ 0.01
The Exchange (group)	2,614,108	1,936,642	677,466	-	(2,983)	(24,365)	650,118		435,531	(11,705)	226,292
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	17,959	13,722	-	(59)	-	13,663		-	-	13,663
FWSA-Parkins Mill	15,837	6,533	9,304	-	-	-	9,304		-	-	9,304
HRRSA-North River	57,250	38,191	19,059	-	-	-	19,059		15,000	-	4,059
KGCSA-Dahlgren S.D.	9,137	5,482	3,655	(427)	-	-	3,228		-	-	3,228
KGCSA-Fairview Beach	1,827	822	1,005	-	-	-	1,005		-	-	1,005
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	6,613	(1,479)	-	-	-	(1,479)		-	(2,056)	577
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	Class B Sales**
								PRICE:	\$ 0.07	\$ 3.87	\$ 0.01
The Exchange (group)	2,516,677	1,924,737	591,940	-	(2,983)	(19,492)	569,465		375,337	(7,654)	201,782
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	15,043	10,546	-	(59)	-	10,487		-	-	10,487
FWSA-Parkins Mill	12,791	5,564	7,227	-	-	-	7,227		-	-	7,227
HRRSA-North River	36,432	24,628	11,804	-	-	-	11,804		4,600	-	7,204
KGCSA-Dahlgren S.D.	9,137	4,568	4,569	(1,508)	-	-	3,061		2,800	-	261
KGCSA-Fairview Beach	1,827	1,462	365	-	-	-	365		300	-	65
KGCSA-Purkins Corner	1,096	2,604	(1,508)	1,508	-	-	-		-	-	-
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	5,281	(1,222)	-	-	-	(1,222)		-	(1,222)	-
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

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:	\$ 0.07	\$ 3.94	\$ 0.01
The Exchange (group)	2,516,677	1,929,853	586,824	-	(3,824)	(19,492)	563,508	371,226	(7,706)	199,988	
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	13,911	11,678	-	(59)	-	11,619	-	-	-	11,619
FWSA-Parkins Mill	12,791	5,852	6,939	-	-	-	6,939	-	-	-	6,939
HRRSA-North River	36,432	24,628	11,804	-	(1,115)	-	10,689	4,600	-	-	6,089
KGCSA-Dahlgren S.D.	9,137	4,568	4,569	(1,508)	-	-	3,061	2,800	-	-	261
KGCSA-Fairview Beach	1,827	1,462	365	-	-	-	365	300	-	-	65
KGCSA-Purkins Corner	1,096	2,604	(1,508)	1,508	-	-	-	-	-	-	-
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	5,333	(1,274)	-	-	-	(1,274)	-	(1,274)	-	-
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: Nitrogen Credit Ledger

Compliance Year: 2023											
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**
								PRICE:	\$ 0.06	\$ 4.04	\$ 0.01
The Exchange (group)	2,516,677	1,847,657	669,020	-	(4,525)	(19,492)	645,003		451,986	(7,758)	200,775
ACSA-Fishersville	2,924	1,177	1,747	(1,747)	-	-	-		-	-	-
ACSA-Greenville	854	351	503	-	-	-	503		503	-	-
ACSA-Harriston	626	104	522	-	-	-	522		522	-	-
ACSA-Middle River	4,970	2,478	2,492	-	-	-	2,492		2,492	-	-
ACSA-Mt. Sidney	513	716	(203)	203	-	-	-		-	-	-
ACSA-Stuarts Draft	1,462	370	1,092	(811)	-	-	281		281	-	-
ACSA-Vesper View	626	434	192	-	-	-	192		192	-	-
ACSA-Weyers Cave	914	3,269	(2,355)	2,355	-	-	-		-	-	-
Alexandria Renew Ent.	493,381	375,061	118,320	-	-	-	118,320		-	-	118,320
Arlington Co.	365,284	242,122	123,162	-	(3,326)	-	119,836		119,836	-	-
Berryville	4,435	2,661	1,774	-	-	-	1,774		1,250	-	524
Broadway Regional	3,538	3,134	404	-	-	-	404		-	-	404
Fairfax Co-Noman Cole	612,158	402,653	209,505	-	(25)	-	209,480		209,480	-	-
FCWSA-Vint Hill	579	292	287	-	-	-	287		-	-	287
Front Royal	24,365	20,832	3,533	-	-	-	3,533		3,200	-	333
FWSA-Opequon	25,589	14,390	11,199	-	(59)	-	11,140		-	-	11,140
FWSA-Parkins Mill	12,791	6,140	6,651	-	-	-	6,651		-	-	6,651
HRRSA-North River	36,432	25,276	11,156	-	(1,115)	-	10,041		4,500	-	5,541
KGCSA-Dahlgren S.D.	9,137	4,568	4,569	(1,797)	-	-	2,772		2,200	-	572
KGCSA-Fairview Beach	1,827	1,462	365	-	-	-	365		-	-	365
KGCSA-Purkins Corner	1,096	2,893	(1,797)	1,797	-	-	-		-	-	-
Leesburg	77,966	32,873	45,093	-	-	(19,492)	25,601		-	-	25,601
Loudoun Water- Broad Run	109,884	60,224	49,660	-	-	-	49,660		49,660	-	-
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	6,837	1,569	-	-	-	1,569		785	-	784
PWCSA-HL Mooney	219,280	183,190	36,090	-	-	-	36,090		24,363	-	11,727
Stafford Co-Aquia	73,093	68,160	4,933	-	-	-	4,933		4,933	-	-
Stoney Creek	2,065	1,865	200	-	-	-	200		200	-	-
Strasburg	4,059	5,385	(1,326)	-	-	-	(1,326)		-	(1,326)	-
UOSA	302,607	300,622	1,985	-	-	-	1,985		-	-	1,985
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.**

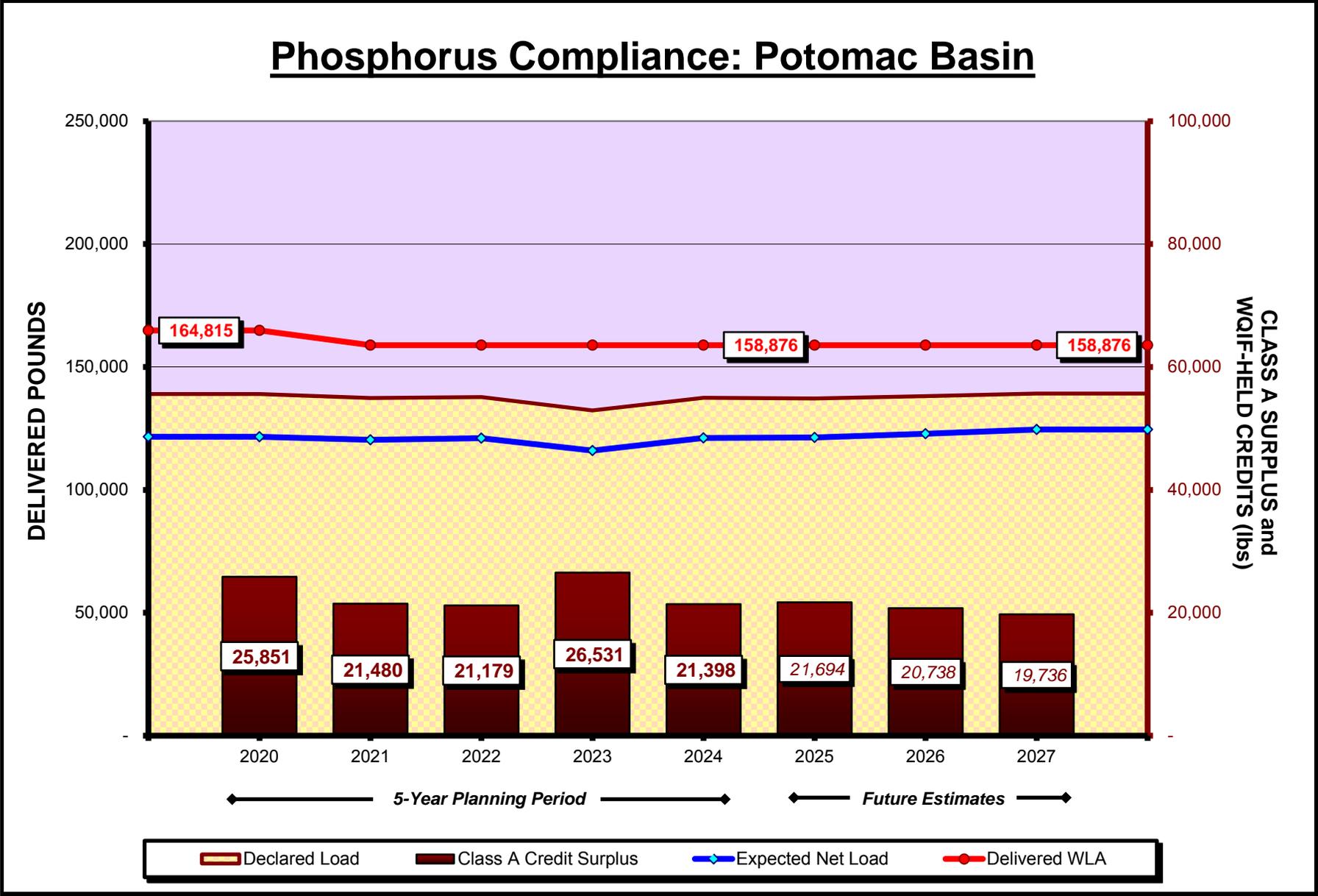
**** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.**

POTOMAC Basin: Nitrogen Credit Ledger

Compliance Year:	2024	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:	\$ 0.07	\$ 4.13	\$ 0.01
The Exchange (group)	2,516,677	1,902,085	614,592	-	(9,525)	(19,492)	585,575	403,216	(7,809)	190,168	
ACSA-Fishersville	2,924	1,243	1,681	(1,681)	-	-	-	-	-	-	
ACSA-Greenville	854	383	471	-	-	-	471	471	-	-	
ACSA-Harriston	626	156	470	-	-	-	470	470	-	-	
ACSA-Middle River	4,970	2,615	2,355	-	-	-	2,355	2,355	-	-	
ACSA-Mt. Sidney	513	677	(164)	164	-	-	-	-	-	-	
ACSA-Stuarts Draft	1,462	378	1,084	(384)	-	-	700	700	-	-	
ACSA-Vesper View	626	469	157	-	-	-	157	157	-	-	
ACSA-Weyers Cave	914	2,815	(1,901)	1,901	-	-	-	-	-	-	
Alexandria Renew Ent.	493,381	392,877	100,504	-	-	-	100,504	-	-	100,504	
Arlington Co.	365,284	244,406	120,878	-	(8,326)	-	112,552	112,552	-	-	
Berryville	4,435	2,661	1,774	-	-	-	1,774	1,200	-	574	
Broadway Regional	3,538	3,172	366	-	-	-	366	-	-	366	
Fairfax Co-Noman Cole	612,158	438,561	173,597	-	(25)	-	173,572	173,572	-	-	
FCWSA-Vint Hill	579	305	274	-	-	-	274	-	-	274	
Front Royal	24,365	20,877	3,488	-	-	-	3,488	3,200	-	288	
FWSA-Opequon	25,589	14,790	10,799	-	(59)	-	10,740	-	-	10,740	
FWSA-Parkins Mill	12,791	6,428	6,363	-	-	-	6,363	-	-	6,363	
HRRSA-North River	36,432	25,873	10,559	-	(1,115)	-	9,444	-	-	9,444	
KGCSA-Dahlgren S.D.	9,137	2,741	6,396	(439)	-	-	5,957	5,000	-	957	
KGCSA-Fairview Beach	1,827	914	913	-	-	-	913	913	-	-	
KGCSA-Purkins Corner	1,096	1,535	(439)	439	-	-	-	-	-	-	
Leesburg	77,966	29,676	48,290	-	-	(19,492)	28,798	-	-	28,798	
Loudoun Water- Broad Run	109,884	54,168	55,716	-	-	-	55,716	55,716	-	-	
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	7,173	1,233	-	-	-	1,233	617	-	616	
PWCSA-HL Mooney	219,280	184,104	35,176	-	-	-	35,176	23,743	-	11,433	
Stafford Co-Aquia	73,093	60,302	12,791	-	-	-	12,791	3,837	-	8,954	
Stoney Creek	2,065	1,865	200	-	-	-	200	200	-	-	
Strasburg	4,059	5,436	(1,377)	-	-	-	(1,377)	-	(1,377)	-	
UOSA	302,607	302,565	42	-	-	-	42	-	-	42	
VA Am. Water PW Sec. 1	42,029	31,065	10,964	-	-	-	10,964	6,578	-	4,386	
VA Am. Water PW Sec. 8	42,029	31,978	10,051	-	-	-	10,051	6,031	-	4,020	
Waynesboro	3,898	2,436	1,462	-	-	-	1,462	1,462	-	-	
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			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	\$ 5.81	\$ 0.08
The Exchange (group)	164,815	119,717	45,098	-	(640)	(1,234)	43,224		28,424	(2,573)	17,373
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	3,330	2,887	-	-	-	2,887		-	-	2,887
FWSA-Parkins Mill	2,467	1,357	1,110	-	-	-	1,110		-	-	1,110
HRRSA-North River	10,570	6,907	3,663	-	-	-	3,663		2,800	-	863
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	815	(341)	-	-	-	(341)		-	(341)	-
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			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:	\$ 0.48	\$ 5.82	\$ 0.07
The Exchange (group)	158,876	118,639	40,237	-	(640)	(1,074)	38,523		23,663	(2,183)	17,043
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	3,006	2,405	-	-	-	2,405	-	-	-	2,405
FWSA-Parkins Mill	2,147	1,245	902	-	-	-	902	-	-	-	902
HRRSA-North River	9,200	6,092	3,108	-	-	-	3,108	1,000	-	-	2,108
KGCSA-Dahlgren S.D.	914	457	457	(137)	-	-	320	300	-	-	20
KGCSA-Fairview Beach	183	183	-	-	-	-	-	-	-	-	-
KGCSA-Purkins Corner	110	247	(137)	137	-	-	-	-	-	-	-
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	730	(309)	-	-	-	(309)	-	(309)	-	-
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											
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)	158,876	119,256	39,620	-	(686)	(1,074)	37,860	PRICE:	\$ 0.50	\$ 5.93	\$ 0.07
									23,369	(2,190)	16,681
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	3,113	2,298	-	-	-	2,298	-	-	-	2,298
FWSA-Parkins Mill	2,147	1,310	837	-	-	-	837	-	-	-	837
HRRSA-North River	9,200	6,092	3,108	-	(73)	-	3,035	1,000	-	-	2,035
KGCSA-Dahlgren S.D.	914	457	457	(137)	-	-	320	300	-	-	20
KGCSA-Fairview Beach	183	183	-	-	-	-	-	-	-	-	-
KGCSA-Purkins Corner	110	247	(137)	137	-	-	-	-	-	-	-
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	737	(316)	-	-	-	(316)	-	(316)	-	-
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 Basin: Phosphorus Credit Ledger

Compliance Year:	2023	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:	\$ 0.41	\$ 6.08	\$ 0.08
The Exchange (group)	158,876	114,608	44,268	-	(316)	(1,074)	42,878		28,728	(2,197)	16,347	
ACSA-Fishersville	1,718	576	1,142	(1,142)	-	-	-	-	-	-	-	
ACSA-Greenville	894	412	482	-	-	-	482	482	-	-		
ACSA-Harriston	358	254	104	-	-	-	104	104	-	-		
ACSA-Middle River	2,920	1,617	1,303	-	-	-	1,303	1,303	-	-		
ACSA-Mt. Sidney	537	617	(80)	80	-	-	-	-	-	-		
ACSA-Stuarts Draft	1,718	483	1,235	(153)	-	-	1,082	1,082	-	-		
ACSA-Vesper View	358	358	-	-	-	-	-	-	-	-		
ACSA-Weyers Cave	215	1,430	(1,215)	1,215	-	-	-	-	-	-		
Alexandria Renew Ent.	29,603	22,504	7,099	-	-	-	7,099	-	-	7,099		
Arlington Co.	21,925	14,527	7,398	-	(242)	-	7,156	7,156	-	-		
Berryville	301	180	121	-	-	-	121	90	-	31		
Broadway Regional	1,039	912	127	-	-	-	127	-	-	127		
Fairfax Co-Noman Cole	36,729	24,159	12,570	-	-	-	12,570	12,570	-	-		
FCWSA-Vint Hill	148	75	73	-	-	-	73	-	-	73		
Front Royal	1,718	1,958	(240)	-	-	-	(240)	-	(240)	-		
FWSA-Opequon	5,411	3,221	2,190	-	-	-	2,190	-	-	2,190		
FWSA-Parkins Mill	2,147	1,374	773	-	-	-	773	-	-	773		
HRRSA-North River	9,200	6,252	2,948	-	(73)	-	2,875	1,000	-	1,875		
KGCSA-Dahlgren S.D.	914	457	457	(200)	-	-	257	200	-	57		
KGCSA-Fairview Beach	183	219	(36)	36	-	-	-	-	-	-		
KGCSA-Purkins Corner	110	274	(164)	164	-	-	-	-	-	-		
Leesburg	4,294	2,655	1,639	-	-	(1,074)	565	-	-	565		
Loudoun Water- Broad Run	1,575	986	589	-	-	-	589	589	-	-		
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	524	120	-	-	-	120	60	-	60		
PWCSA-HL Mooney	13,157	10,991	2,166	-	-	-	2,166	1,561	-	605		
Stafford Co-Aquia	4,386	4,090	296	-	-	-	296	296	-	-		
Stoney Creek	313	401	(88)	-	-	-	(88)	-	(88)	-		
Strasburg	421	744	(323)	-	-	-	(323)	-	(323)	-		
UOSA	5,098	3,434	1,664	-	-	-	1,664	-	-	1,664		
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 Basin: Phosphorus Credit Ledger

Compliance Year:	2024	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:	\$ 0.52	\$ 6.22	\$ 0.08
The Exchange (group)	158,876	119,014	39,862	-	(1,016)	(1,074)	37,772		23,606	(2,208)	16,374	
ACSA-Fishersville	1,718	608	1,110	(1,110)	-	-	-	-	-	-	-	
ACSA-Greenville	894	461	433	-	-	-	433	433	-	-	-	
ACSA-Harriston	358	425	(67)	67	-	-	-	-	-	-	-	
ACSA-Middle River	2,920	1,707	1,213	-	-	-	1,213	1,213	-	-	-	
ACSA-Mt. Sidney	537	603	(66)	66	-	-	-	-	-	-	-	
ACSA-Stuarts Draft	1,718	494	1,224	(184)	-	-	1,040	1,040	-	-	-	
ACSA-Vesper View	358	374	(16)	16	-	-	-	-	-	-	-	
ACSA-Weyers Cave	215	1,360	(1,145)	1,145	-	-	-	-	-	-	-	
Alexandria Renew Ent.	29,603	23,573	6,030	-	-	-	6,030	-	-	-	6,030	
Arlington Co.	21,925	14,664	7,261	-	(942)	-	6,319	6,319	-	-	-	
Berryville	301	180	121	-	-	-	121	90	-	-	31	
Broadway Regional	1,039	923	116	-	-	-	116	-	-	-	116	
Fairfax Co-Noman Cole	36,729	26,314	10,415	-	-	-	10,415	10,415	-	-	-	
FCWSA-Vint Hill	148	78	70	-	-	-	70	-	-	-	70	
Front Royal	1,718	1,962	(244)	-	-	-	(244)	-	(244)	-	-	
FWSA-Opequon	5,411	3,310	2,101	-	-	-	2,101	-	-	-	2,101	
FWSA-Parkins Mill	2,147	1,439	708	-	-	-	708	-	-	-	708	
HRRSA-North River	9,200	6,573	2,627	-	(73)	-	2,554	-	-	-	2,554	
KGCSA-Dahlgren S.D.	914	274	640	-	-	-	640	500	-	-	140	
KGCSA-Fairview Beach	183	183	-	-	-	-	-	-	-	-	-	
KGCSA-Purkins Corner	110	96	14	-	-	-	14	14	-	-	-	
Leesburg	4,294	2,397	1,897	-	-	(1,074)	823	-	-	-	823	
Loudoun Water- Broad Run	1,575	1,035	540	-	-	-	540	540	-	-	-	
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	550	94	-	-	-	94	47	-	-	47	
PWSCA-HL Mooney	13,157	11,046	2,111	-	-	-	2,111	1,520	-	-	591	
Stafford Co-Aquia	4,386	3,618	768	-	-	-	768	77	-	-	691	
Stoney Creek	313	401	(88)	-	-	-	(88)	-	(88)	-	-	
Strasburg	421	751	(330)	-	-	-	(330)	-	(330)	-	-	
UOSA	5,098	3,546	1,552	-	-	-	1,552	-	-	-	1,552	
VA Am. Water PW Sec. 1	2,522	1,864	658	-	-	-	658	395	-	-	263	
VA Am. Water PW Sec. 8	2,522	1,919	603	-	-	-	603	362	-	-	241	
Waynesboro	1,718	1,431	287	-	-	-	287	251	-	-	36	
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.

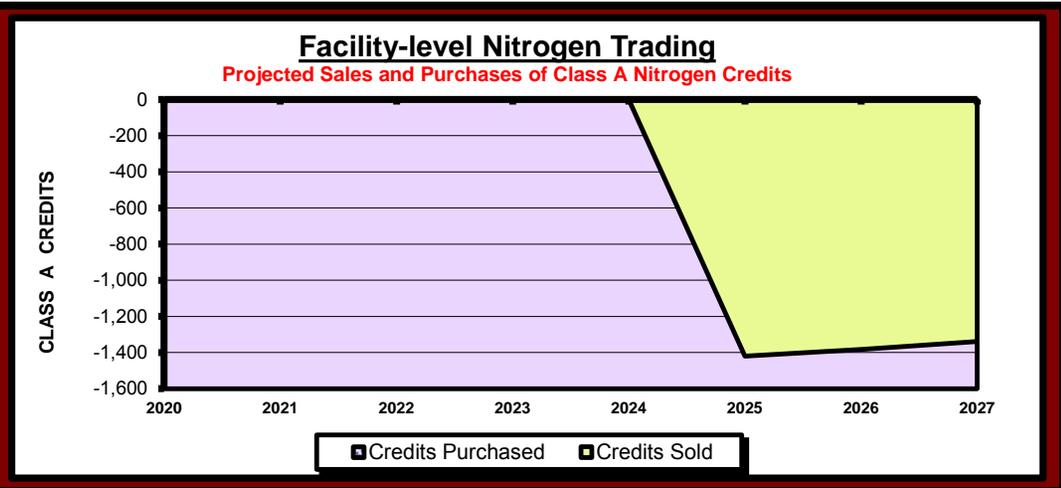
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply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

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Fishersville	(2,916)	(1,715)	(1,755)	(1,747)	(1,681)	(225)	(225)	(225)
Greenville	(771)	(425)	(517)	-	-	-	-	-
Harriston	(809)	-	(56)	-	-	-	-	-
Middle River	-	-	-	-	-	-	-	-
Mt. Sidney	532	351	382	203	164	225	225	225
Stuarts Draft	-	(1,076)	(1,073)	(811)	(384)	-	-	-
Vesper View	(445)	-	-	-	-	-	-	-
Weyers Cave	4,409	2,865	3,019	2,355	1,901	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Fishersville	-	-	-	-	-	1,420	1,383	1,339
Greenville	126	126	-	503	471	471	471	471
Harriston	-	490	419	522	470	470	457	457
Middle River	4,290	2,502	2,393	2,492	2,355	2,278	2,196	2,114
Mt. Sidney	-	-	-	-	-	-	-	-
Stuarts Draft	1,812	-	-	281	700	1,073	1,062	1,048
Vesper View	-	288	266	192	157	157	157	157
Weyers Cave	-	-	-	-	-	462	448	448
Expected Net Credits	6,228	3,406	3,078	3,990	4,153	6,331	6,174	6,034
Class A Sales (Purchases)	6,228	3,406	3,078	3,990	4,153	6,331	6,174	6,034
<i>Expected Class B Credits</i>	0	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		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Fishersville	(1,277)	(1,126)	(1,145)	(1,142)	(1,110)	(204)	(240)	(240)
Greenville	(285)	(279)	-	-	-	-	-	-
Harriston	-	-	-	-	67	67	103	103
Middle River	-	-	-	-	-	-	-	-
Mt. Sidney	285	279	309	80	66	121	121	121
Stuarts Draft	-	(46)	(393)	(153)	(184)	-	-	-
Vesper View	-	-	-	-	16	16	16	16
Weyers Cave	1,277	1,172	1,229	1,215	1,145	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Fishersville	37	-	-	-	-	888	834	812
Greenville	279	228	465	482	433	433	433	433
Harriston	158	131	106	104	-	-	-	-
Middle River	1,558	1,309	1,238	1,303	1,213	1,163	1,109	1,056
Mt. Sidney	-	-	-	-	-	-	-	-
Stuarts Draft	1,412	1,169	817	1,082	1,040	1,210	1,196	1,178
Vesper View	53	61	41	-	-	-	-	-
Weyers Cave	-	-	-	-	-	97	93	93
Expected Net Credits	3,497	2,898	2,667	2,971	2,686	3,791	3,665	3,572
Class A Sales (Purchases)	3,497	2,898	2,667	2,971	2,686	3,791	3,665	3,572
<i>Expected Class B Credits</i>	0	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



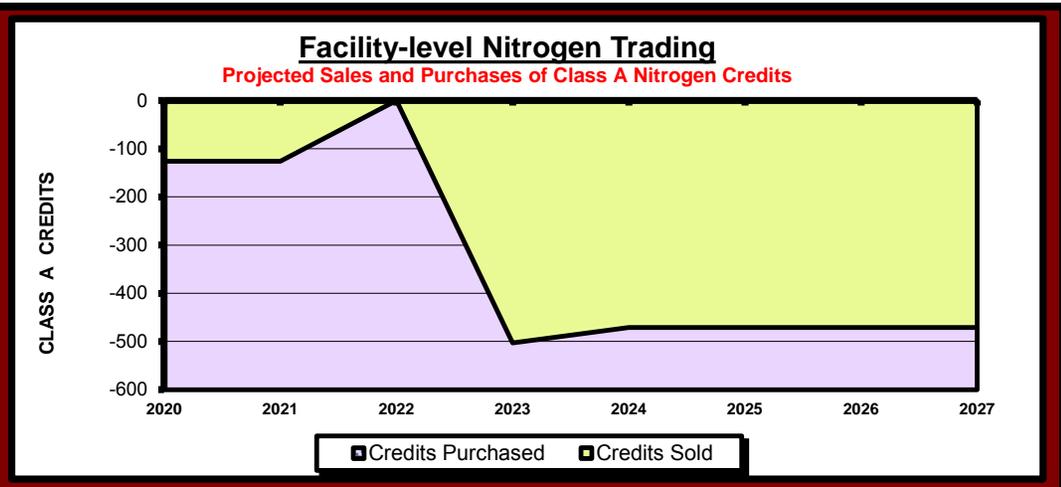
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	1.61
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	19,568
Delivery Factor	0.10
Expected Load	1,957
Delivered WLA	4,873
Expected Credits (delivered)	2,916
Transfers In (Out) within Owner Bubble	(2,916)
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

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	1.61	1.65	1.60	1.61	1.70	1.75	1.80	1.86
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)	19,568	20,155	19,492	19,613	20,710	21,319	21,928	22,659
Delivery Factor	0.10	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Expected Load	1,957	1,209	1,169	1,177	1,243	1,279	1,316	1,360
Delivered WLA	4,873	2,924	2,924	2,924	2,924	2,924	2,924	2,924
Expected Credits (delivered)	2,916	1,715	1,755	1,747	1,681	1,645	1,608	1,564
Transfers In (Out) within Owner Bubble	(2,916)	(1,715)	(1,755)	(1,747)	(1,681)	(225)	(225)	(225)
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	0	0	0	0	1,420	1,383	1,339
Class A Credit Sales (Purchases)	0	0	0	0	0	1,420	1,383	1,339
Expected Class B Credits	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

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

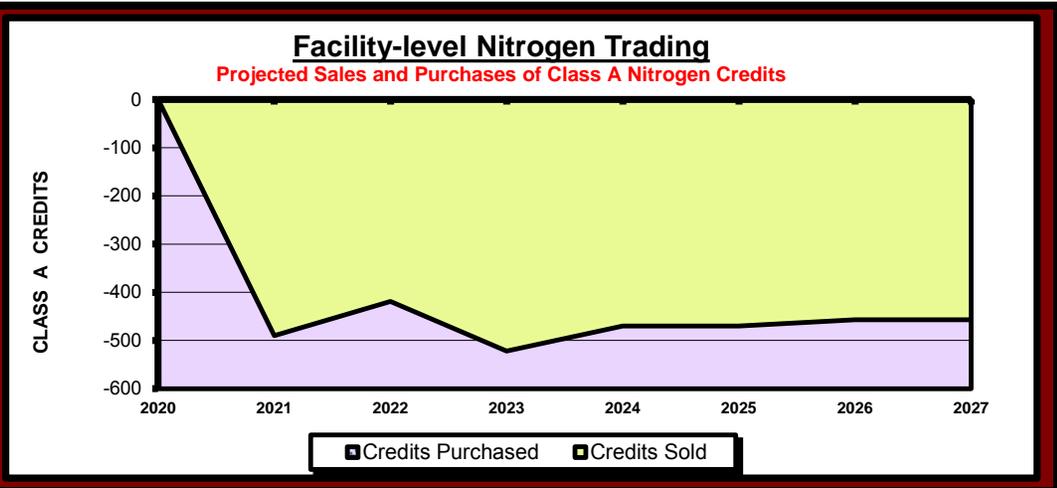


Loading & Credit Summary	
Design Flow (mgd)	0.25
Projected Flow (mgd)	0.05
Projected Avg. Annual Concentration (mg/L)	36.83
Discharged Load (end of pipe)	5,270
Delivery Factor	0.10
Expected Load	527
Delivered WLA	1,424
Expected Credits (delivered)	897
Transfers In (Out) within Owner Bubble	(771)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	126
Class A Credit Sales (Purchases)	126
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06
36.83	36.83	36.83	38.41	38.06	38.06	38.06	38.06
5,270	5,050	5,608	5,849	6,375	6,375	6,375	6,375
0.10	0.06	0.06	0.06	0.06	0.06	0.06	0.06
527	303	337	351	383	383	383	383
1,424	854	854	854	854	854	854	854
897	551	517	503	471	471	471	471
(771)	(425)	(517)	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
126	126	0	503	471	471	471	471
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Harriston
POTOMAC Trading Basin



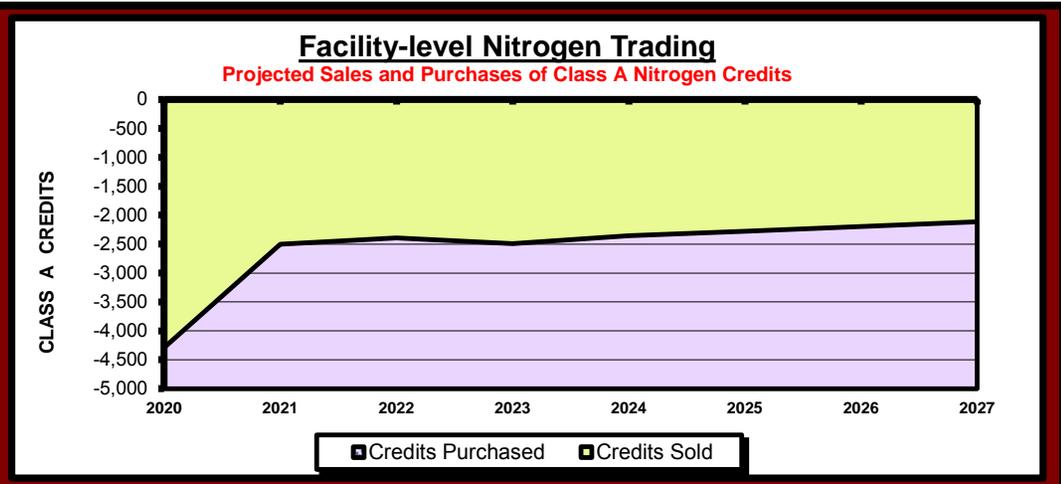
Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.04
Projected Avg. Annual Concentration (mg/L)	9.00
Discharged Load (end of pipe)	1,198
Delivery Factor	0.18
Expected Load	216
Delivered WLA	1,025
Expected Credits (delivered)	809
Transfers In (Out) within Owner Bubble	(809)
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.04	0.05	0.05	0.04	0.06	0.06	0.07	0.07
9.00	9.00	9.00	7.78	7.77	7.77	7.77	7.77
1,198	1,234	1,371	948	1,420	1,420	1,538	1,538
0.18	0.11	0.11	0.11	0.11	0.11	0.11	0.11
216	136	151	104	156	156	169	169
1,025	626	626	626	626	626	626	626
809	490	475	522	470	470	457	457
(809)	0	(56)	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	490	419	522	470	470	457	457
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

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

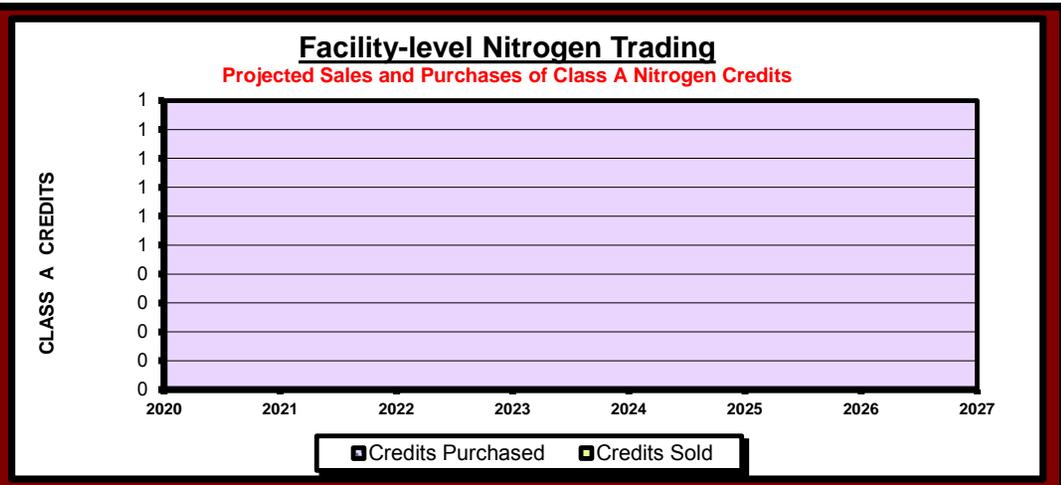


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80
4.37	4.50	4.70	4.52	4.77	4.91	5.06	5.21
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
39,936	41,134	42,942	41,298	43,582	44,861	46,232	47,602
0.10	0.06	0.06	0.06	0.06	0.06	0.06	0.06
3,994	2,468	2,577	2,478	2,615	2,692	2,774	2,856
8,284	4,970	4,970	4,970	4,970	4,970	4,970	4,970
4,290	2,502	2,393	2,492	2,355	2,278	2,196	2,114
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4,290	2,502	2,393	2,492	2,355	2,278	2,196	2,114
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Mt. Sidney
POTOMAC Trading Basin



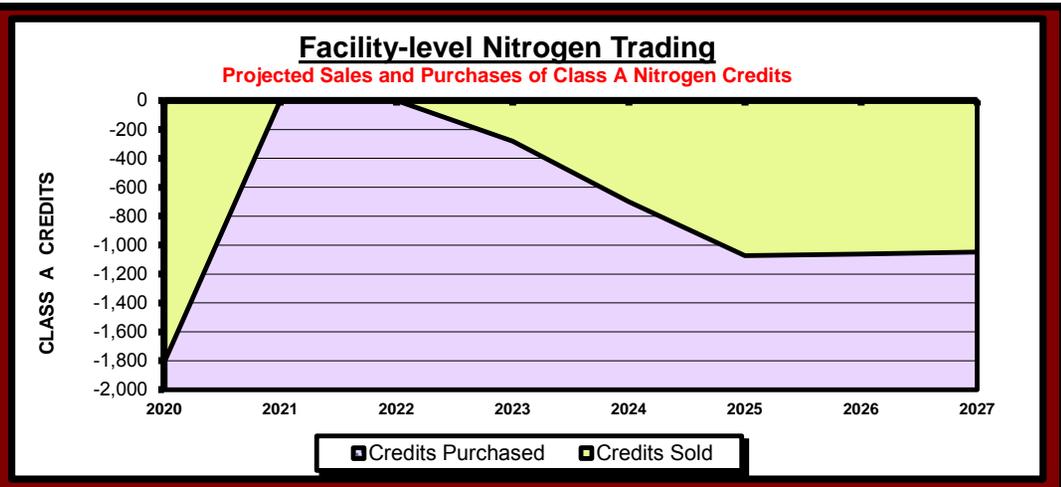
Loading & Credit Summary

Design Flow (mgd)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Projected Flow (mgd)	0.13	0.14	0.14	0.11	0.11	0.12	0.12	0.12
Projected Avg. Annual Concentration (mg/L)	35.00	35.00	35.00	35.63	33.67	33.67	33.67	33.67
Discharged Load (end of pipe)	13,861	14,397	14,923	11,936	11,280	12,305	12,305	12,305
Delivery Factor	0.10	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Expected Load	1,386	864	895	716	677	738	738	738
Delivered WLA	854	513	513	513	513	513	513	513
Expected Credits (delivered)	(532)	(351)	(382)	(203)	(164)	(225)	(225)	(225)
Transfers In (Out) within Owner Bubble	532	351	382	203	164	225	225	225
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							

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
0.13	0.14	0.14	0.11	0.11	0.12	0.12	0.12
35.00	35.00	35.00	35.63	33.67	33.67	33.67	33.67
13,861	14,397	14,923	11,936	11,280	12,305	12,305	12,305
0.10	0.06	0.06	0.06	0.06	0.06	0.06	0.06
1,386	864	895	716	677	738	738	738
854	513	513	513	513	513	513	513
(532)	(351)	(382)	(203)	(164)	(225)	(225)	(225)
532	351	382	203	164	225	225	225
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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



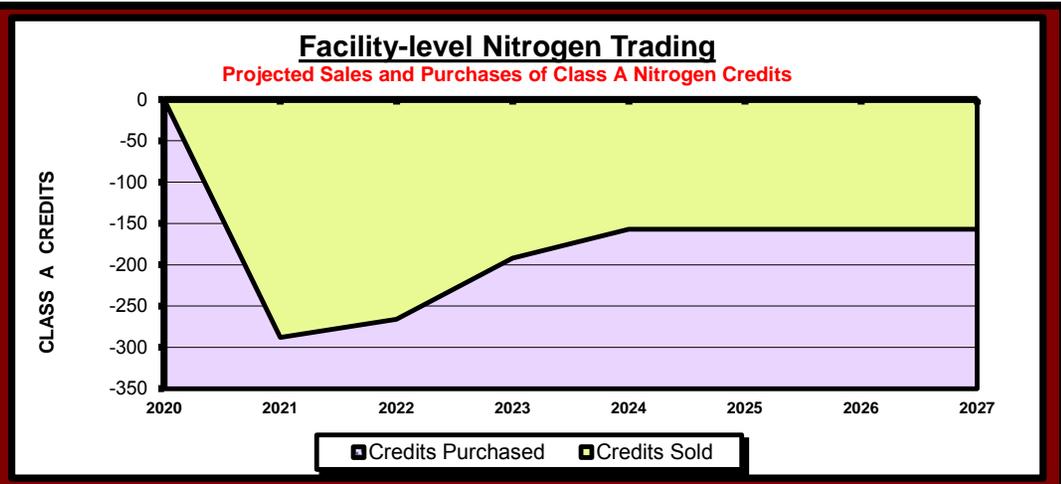
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	1.37
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	12,480
Delivery Factor	0.05
Expected Load	624
Delivered WLA	2,436
Expected Credits (delivered)	1,812
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,812
Class A Credit Sales (Purchases)	1,812
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1.37	1.41	1.42	1.35	1.38	1.42	1.46	1.51
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
12,480	12,854	12,974	12,335	12,609	12,974	13,340	13,796
0.05	0.03	0.03	0.03	0.03	0.03	0.03	0.03
624	386	389	370	378	389	400	414
2,436	1,462	1,462	1,462	1,462	1,462	1,462	1,462
1,812	1,076	1,073	1,092	1,084	1,073	1,062	1,048
0	(1,076)	(1,073)	(811)	(384)	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,812	0	0	281	700	1,073	1,062	1,048
1,812	0	0	281	700	1,073	1,062	1,048
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Vesper View
POTOMAC Trading Basin



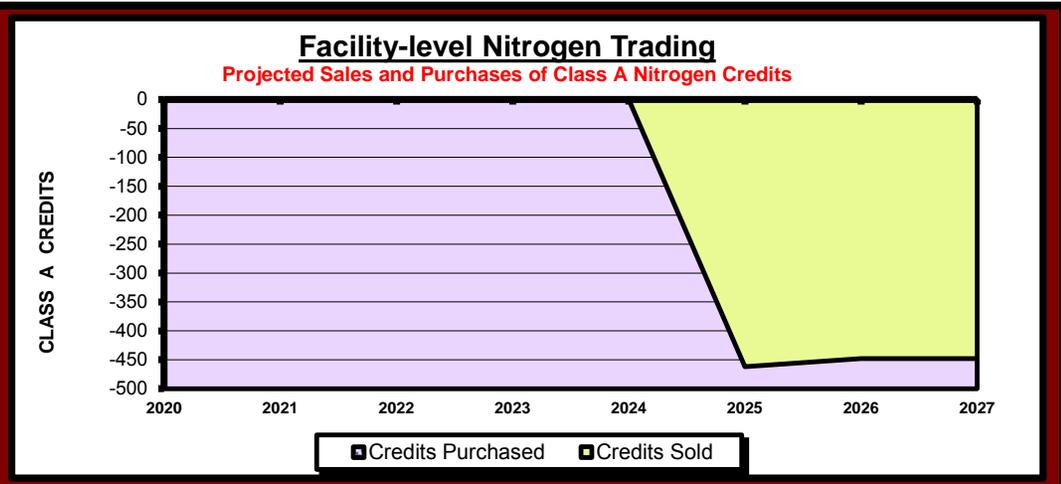
Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.06
Projected Avg. Annual Concentration (mg/L)	17.92
Discharged Load (end of pipe)	3,220
Delivery Factor	0.18
Expected Load	580
Delivered WLA	1,025
Expected Credits (delivered)	445
Transfers In (Out) within Owner Bubble	(445)
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

2020	2021	2022	2023	2024	2025	2026	2027
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	21.57	23.31	23.31	23.31	23.31
3,220	3,071	3,275	3,942	4,260	4,260	4,260	4,260
0.18	0.11	0.11	0.11	0.11	0.11	0.11	0.11
580	338	360	434	469	469	469	469
1,025	626	626	626	626	626	626	626
445	288	266	192	157	157	157	157
(445)	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	288	266	192	157	157	157	157
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

ACSA-Weyers Cave
POTOMAC Trading Basin



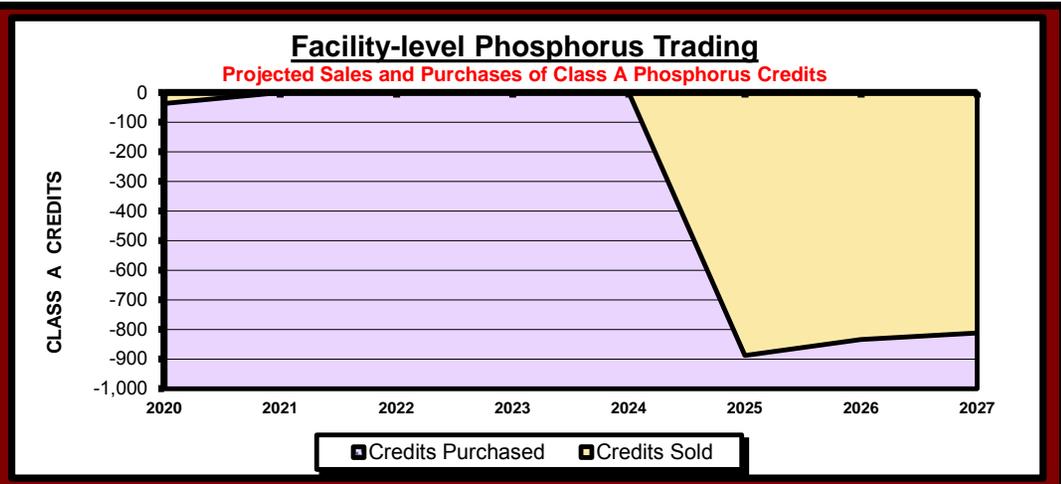
Loading & Credit Summary

Design Flow (mgd)	0.50
Projected Flow (mgd)	0.38
Projected Avg. Annual Concentration (mg/L)	21.00
Discharged Load (end of pipe)	24,461
Delivery Factor	0.24
Expected Load	5,871
Delivered WLA	1,462
Expected Credits (delivered)	(4,409)
Transfers In (Out) within Owner Bubble	4,409
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.38	0.39	0.41	0.37	0.33	0.33	0.34	0.34
21.00	21.00	21.00	19.34	18.67	3.00	3.00	3.00
24,461	25,194	26,222	21,793	18,764	3,015	3,106	3,106
0.24	0.15	0.15	0.15	0.15	0.15	0.15	0.15
5,871	3,779	3,933	3,269	2,815	452	466	466
1,462	914	914	914	914	914	914	914
(4,409)	(2,865)	(3,019)	(2,355)	(1,901)	462	448	448
4,409	2,865	3,019	2,355	1,901	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	462	448	448
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Fishersville
POTOMAC Trading Basin



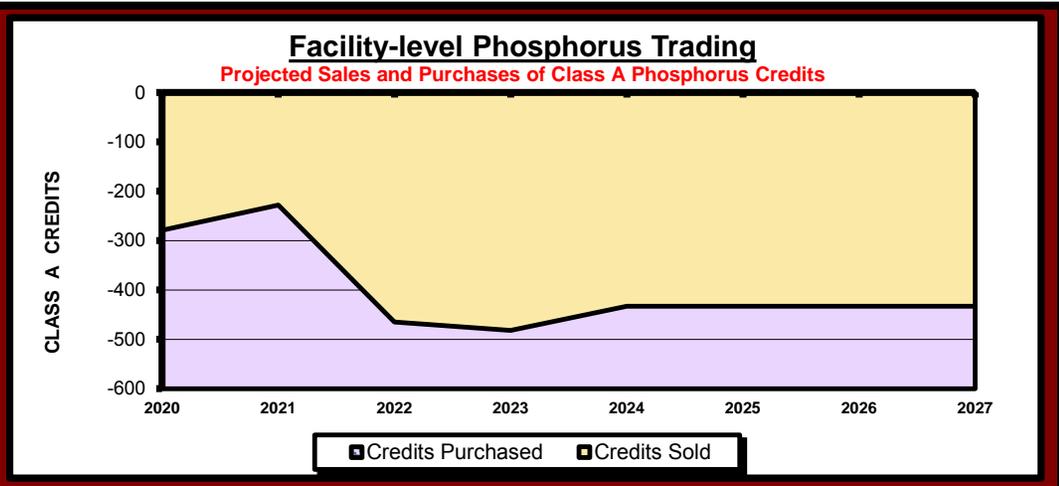
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	1.61
Projected Avg. Annual Concentration (mg/L)	0.25
Discharged Load (end of pipe)	1,223
Delivery Factor	0.54
Expected Load	660
Delivered WLA	1,974
Expected Credits (delivered)	1,314
Transfers In (Out) within Owner Bubble	(1,277)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	37
Class A Credit Sales (Purchases)	37
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1.61	1.65	1.60	1.61	1.70	1.75	1.80	1.86
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
1,223	1,260	1,218	1,226	1,294	1,332	1,371	1,416
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
660	592	573	576	608	626	644	666
1,974	1,718	1,718	1,718	1,718	1,718	1,718	1,718
1,314	1,126	1,145	1,142	1,110	1,092	1,074	1,052
(1,277)	(1,126)	(1,145)	(1,142)	(1,110)	(204)	(240)	(240)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
37	0	0	0	0	888	834	812
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

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

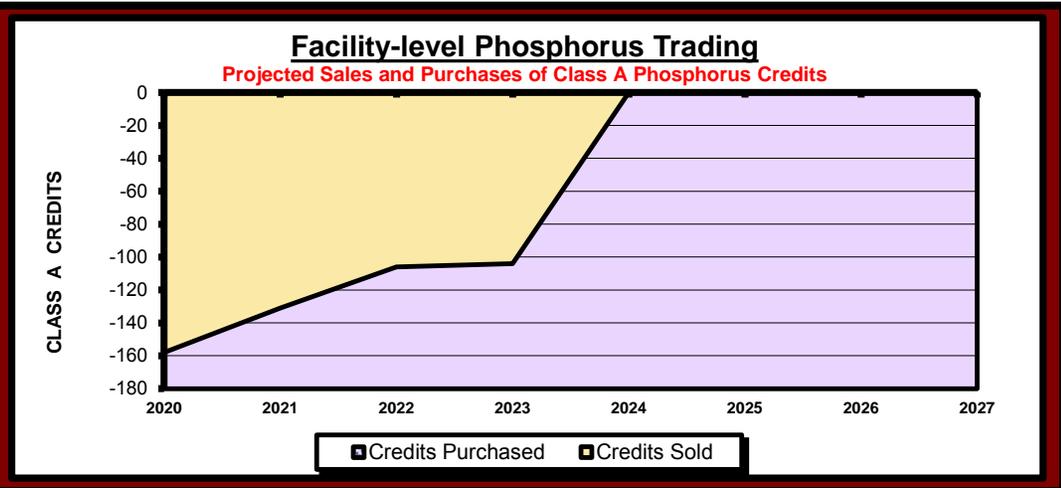


Loading & Credit Summary
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06
6.00	6.00	6.00	5.75	5.85	5.85	5.85	5.85
859	823	914	876	980	980	980	980
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
464	387	429	412	461	461	461	461
1,028	894	894	894	894	894	894	894
564	507	465	482	433	433	433	433
(285)	(279)	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
279	228	465	482	433	433	433	433
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

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



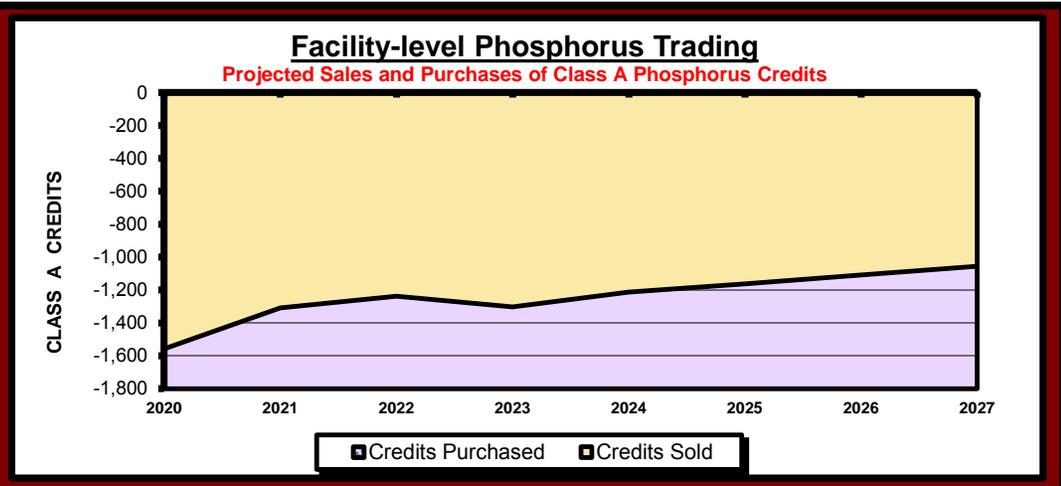
Loading & Credit Summary

Planning Period	
Design Flow (mgd)	0.10
Projected Flow (mgd)	0.04
Projected Avg. Annual Concentration (mg/L)	3.52
Discharged Load (end of pipe)	469
Delivery Factor	0.54
Expected Load	253
Delivered WLA	411
Expected Credits (delivered)	158
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	158
Class A Credit Sales (Purchases)	
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.04	0.05	0.05	0.04	0.06	0.06	0.07	0.07
3.52	3.52	3.52	4.43	4.95	4.95	4.95	4.95
469	483	536	540	905	905	980	980
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
253	227	252	254	425	425	461	461
411	358	358	358	358	358	358	358
158	131	106	104	(67)	(67)	(103)	(103)
0	0	0	0	67	67	103	103
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
158	131	106	104	0	0	0	0
158	131	106	104	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

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

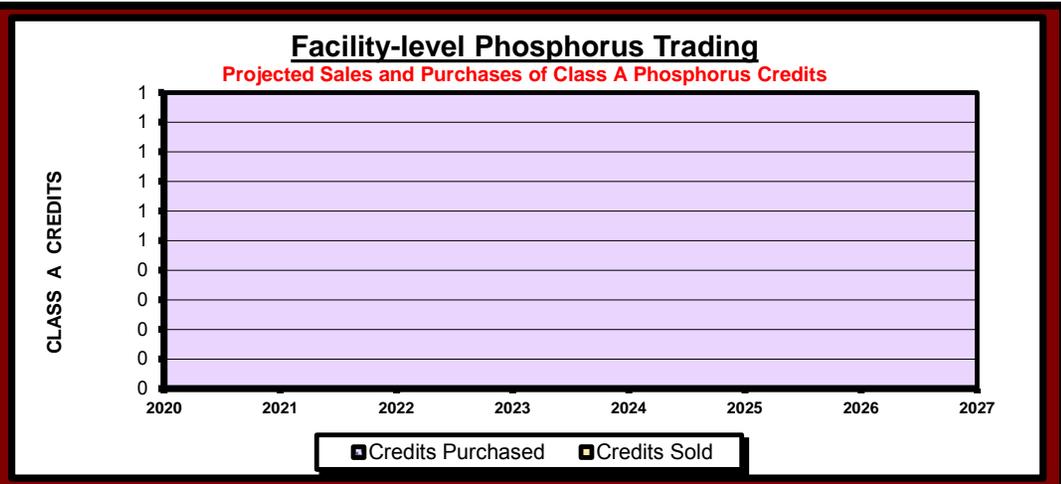


Loading & Credit Summary
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80
4.37	4.50	4.70	4.52	4.77	4.91	5.06	5.21
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
3,328	3,428	3,579	3,441	3,632	3,738	3,853	3,967
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
1,797	1,611	1,682	1,617	1,707	1,757	1,811	1,864
3,355	2,920	2,920	2,920	2,920	2,920	2,920	2,920
1,558	1,309	1,238	1,303	1,213	1,163	1,109	1,056
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,558	1,309	1,238	1,303	1,213	1,163	1,109	1,056
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Mt. Sidney
POTOMAC Trading Basin



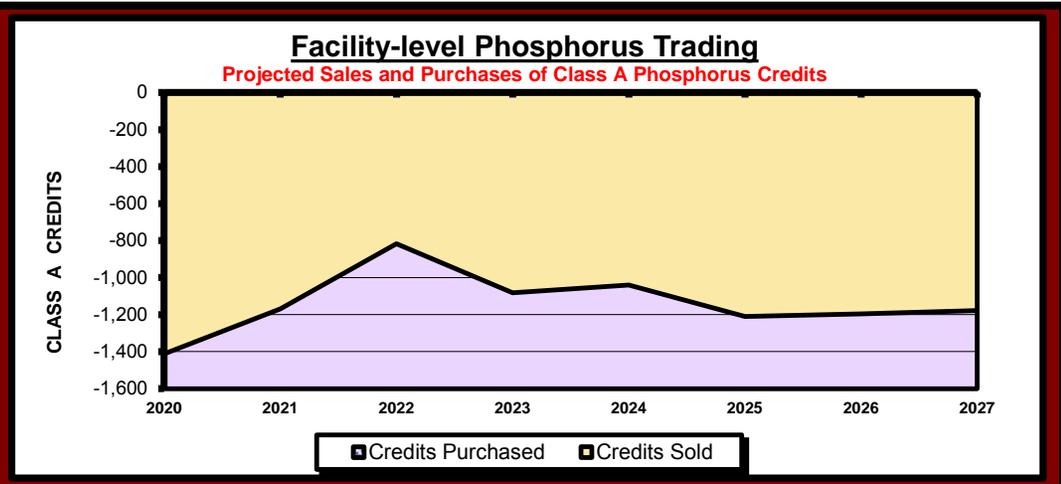
Loading & Credit Summary

Design Flow (mgd)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Projected Flow (mgd)	0.13	0.14	0.14	0.11	0.11	0.12	0.12	0.12
Projected Avg. Annual Concentration (mg/L)	4.22	4.22	4.22	3.92	3.83	3.83	3.83	3.83
Discharged Load (end of pipe)	1,671	1,736	1,799	1,313	1,283	1,400	1,400	1,400
Delivery Factor	0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	902	816	846	617	603	658	658	658
Delivered WLA	617	537	537	537	537	537	537	537
Expected Credits (delivered)	(285)	(279)	(309)	(80)	(66)	(121)	(121)	(121)
Transfers In (Out) within Owner Bubble	285	279	309	80	66	121	121	121
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							

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
0.13	0.14	0.14	0.11	0.11	0.12	0.12	0.12
4.22	4.22	4.22	3.92	3.83	3.83	3.83	3.83
1,671	1,736	1,799	1,313	1,283	1,400	1,400	1,400
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
902	816	846	617	603	658	658	658
617	537	537	537	537	537	537	537
(285)	(279)	(309)	(80)	(66)	(121)	(121)	(121)
285	279	309	80	66	121	121	121
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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



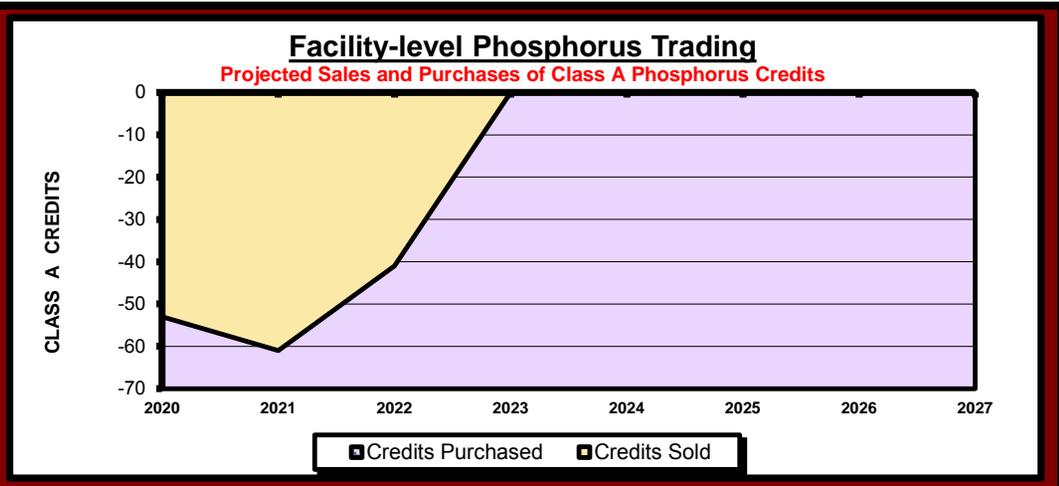
Loading & Credit Summary

Design Flow (mgd)
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1.37	1.41	1.42	1.35	1.38	1.42	1.46	1.51
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
1,040	1,071	1,081	1,028	1,051	1,081	1,112	1,150
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
562	503	508	483	494	508	522	540
1,974	1,718	1,718	1,718	1,718	1,718	1,718	1,718
1,412	1,215	1,210	1,235	1,224	1,210	1,196	1,178
0	(46)	(393)	(153)	(184)	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,412	1,169	817	1,082	1,040	1,210	1,196	1,178
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Vesper View
POTOMAC Trading Basin

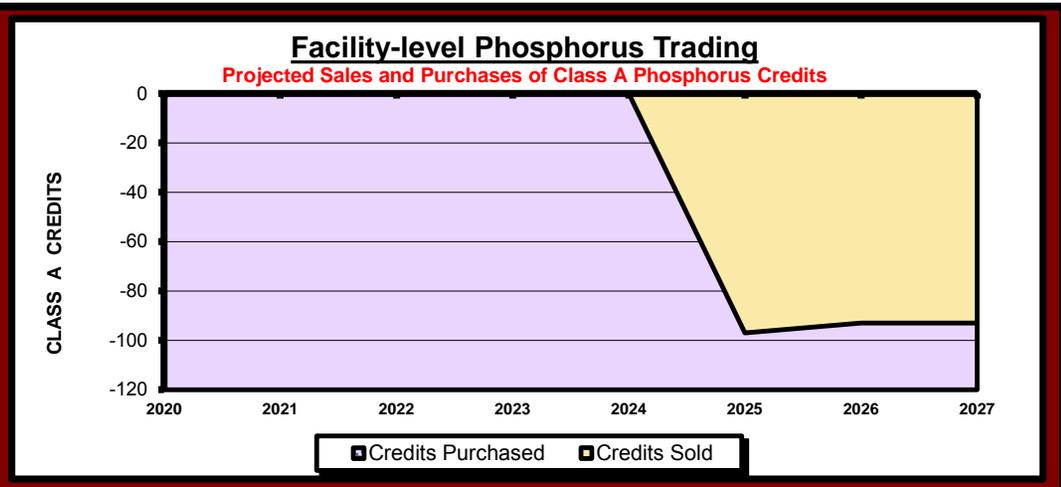


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

2020	2021	2022	2023	2024	2025	2026	2027
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
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	4.17	4.35	4.35	4.35	4.35
663	632	674	762	795	795	795	795
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
358	297	317	358	374	374	374	374
411	358	358	358	358	358	358	358
53	61	41	0	(16)	(16)	(16)	(16)
0	0	0	0	16	16	16	16
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
53	61	41	0	0	0	0	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

ACSA-Weyers Cave
POTOMAC Trading Basin



Loading & Credit Summary

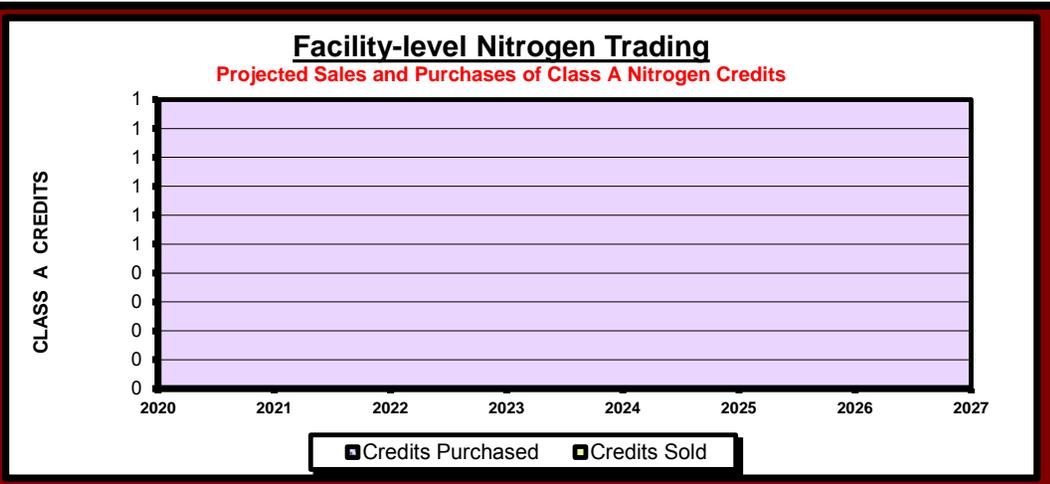
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits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

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	0.38	0.39	0.41	0.37	0.33	0.33	0.34	0.34
Projected Avg. Annual Concentration (mg/L)	2.46	2.46	2.46	2.70	2.88	0.25	0.25	0.25
Discharged Load (end of pipe)	2,865	2,951	3,072	3,043	2,895	251	259	259
Delivery Factor	0.53	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	1,519	1,387	1,444	1,430	1,360	118	122	122
Delivered WLA	242	215	215	215	215	215	215	215
Expected Credits (delivered)	(1,277)	(1,172)	(1,229)	(1,215)	(1,145)	97	93	93
Transfers In (Out) within Owner Bubble	1,277	1,172	1,229	1,215	1,145	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	0	0	0	0	97	93	93
Class A Credit Sales (Purchases)	0	0	0	0	0	97	93	93
Expected Class B Credits	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Alexandria Renew Ent.

POTOMAC Trading Basin



Loading & Credit Summary

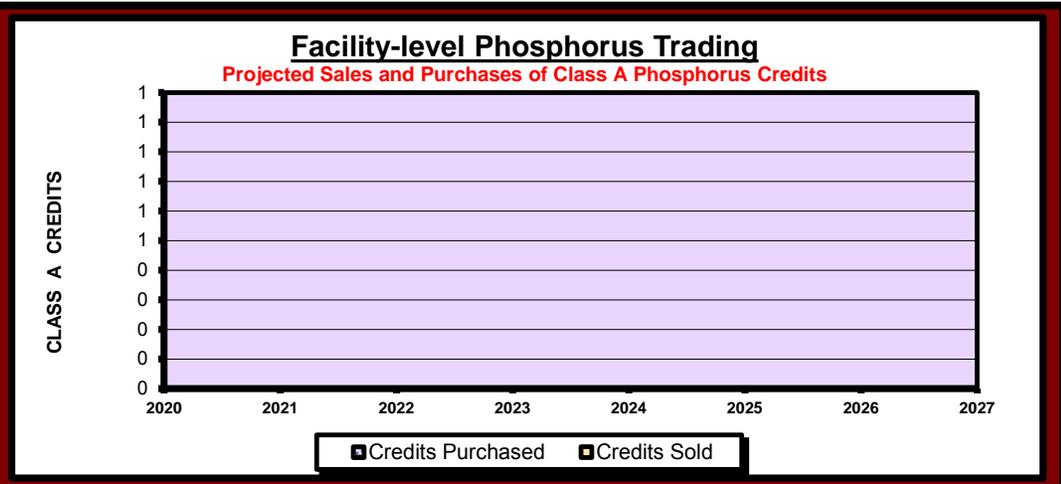
Design Flow (mgd)	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
Projected Flow (mgd)	41.05	41.05	41.05	41.05	43.00	43.00	43.00	43.00
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	375,061	375,061	375,061	375,061	392,877	392,877	392,877	392,877
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	375,061	375,061	375,061	375,061	392,877	392,877	392,877	392,877
Delivered WLA*	493,381	493,381	493,381	493,381	493,381	493,381	493,381	493,381
Expected Credits (delivered)	118,320	118,320	118,320	118,320	100,504	100,504	100,504	100,504
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	118,320	118,320	118,320	118,320	100,504	100,504	100,504	100,504
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	118,320	118,320	118,320	118,320	100,504	100,504	100,504	100,504

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
41.05	41.05	41.05	41.05	43.00	43.00	43.00	43.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
375,061	375,061	375,061	375,061	392,877	392,877	392,877	392,877
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
375,061	375,061	375,061	375,061	392,877	392,877	392,877	392,877
493,381	493,381	493,381	493,381	493,381	493,381	493,381	493,381
118,320	118,320	118,320	118,320	100,504	100,504	100,504	100,504
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
118,320	118,320	118,320	118,320	100,504	100,504	100,504	100,504
0	0	0	0	0	0	0	0
118,320	118,320	118,320	118,320	100,504	100,504	100,504	100,504

* Wasteload allocations for localities served by combined sewers are based on dry weather design flow capacity. Reported discharge loads for the AlexRenew Water Resource Recovery Facility are based on the loads associated with the first 54 MGD of flow on each day.

PHOSPHORUS FACILITY SUMMARY

Alexandria Renew Ent.
POTOMAC Trading Basin



Loading & Credit Summary

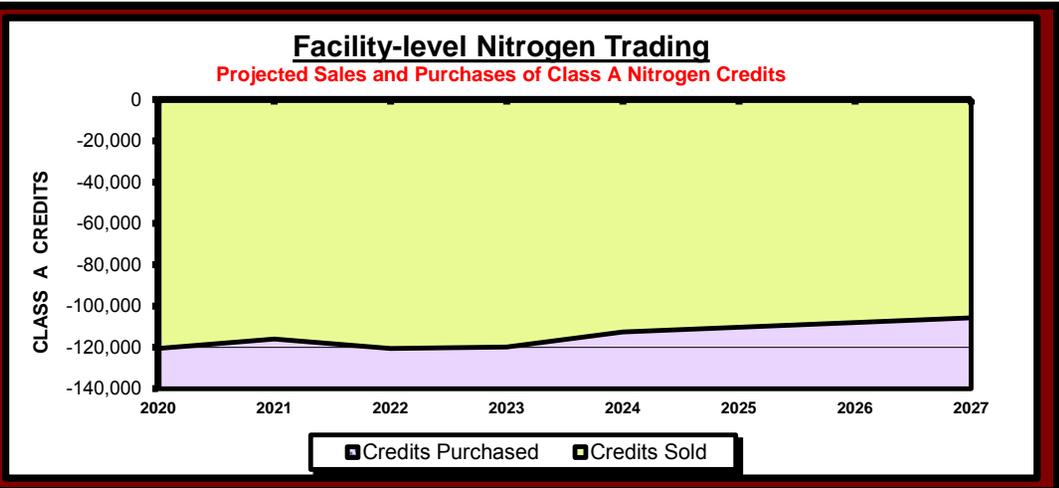
Design Flow (mgd)	Projected Flow (mgd)	Projected Avg. Annual Concentration (mg/L)	Discharged Load (end of pipe)	Delivery Factor	Expected Load	Delivered WLA*	Expected Credits (delivered)	Transfers In (Out) within Owner Bubble	Transfers In (Out) from Private Exchange	WQIF-Held Credits	Expected Net Credits	Class A Credit Sales (Purchases)	Expected Class B Credits
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2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
41.05	41.05	41.05	41.05	43.00	43.00	43.00	43.00
0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
22,504	22,504	22,504	22,504	23,573	23,573	23,573	23,573
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22,504	22,504	22,504	22,504	23,573	23,573	23,573	23,573
29,603	29,603	29,603	29,603	29,603	29,603	29,603	29,603
7,099	7,099	7,099	7,099	6,030	6,030	6,030	6,030
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
7,099	7,099	7,099	7,099	6,030	6,030	6,030	6,030
0	0	0	0	0	0	0	0
7,099	7,099	7,099	7,099	6,030	6,030	6,030	6,030

* Wasteload allocations for localities served by combined sewers are based on dry weather design flow capacity. Reported discharge loads for the AlexRenew Water Resource Recovery Facility are based on the loads associated with the first 54 MGD of flow on each day.

NITROGEN FACILITY SUMMARY

Arlington Co.
 POTOMAC Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	40.00
Projected Flow (mgd)	26.50
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	242,122
Delivery Factor	1.00
Expected Load	242,122
Delivered WLA*	365,284
Expected Credits (delivered)	123,162
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange**	(2,625)
WQIF-Held Credits	0
Expected Net Credits	120,537
Class A Credit Sales (Purchases)	120,537
Expected Class B Credits	0

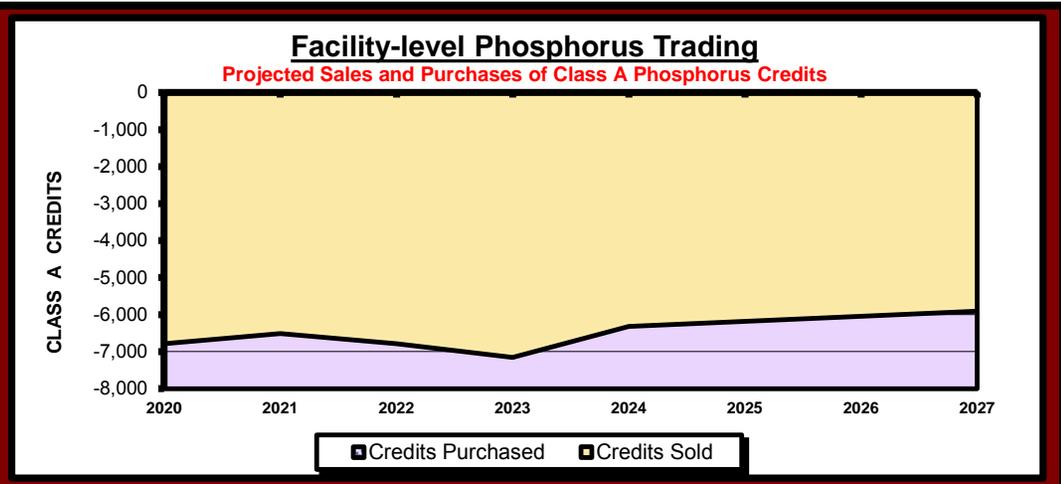
2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
26.50	27.00	26.50	26.50	26.75	27.00	27.25	27.50
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
242,122	246,690	242,122	242,122	244,406	246,690	248,975	251,259
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
242,122	246,690	242,122	242,122	244,406	246,690	248,975	251,259
365,284	365,284	365,284	365,284	365,284	365,284	365,284	365,284
123,162	118,594	123,162	123,162	120,878	118,594	116,309	114,025
0	0	0	0	0	0	0	0
(2,625)	(2,625)	(2,625)	(3,326)	(8,326)	(8,326)	(8,326)	(8,326)
0	0	0	0	0	0	0	0
120,537	115,969	120,537	119,836	112,552	110,268	107,983	105,699
120,537	115,969	120,537	119,836	112,552	110,268	107,983	105,699
0	0	0	0	0	0	0	0

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

** Reflects use of Credits for Arlington County and Arlington County Public Schools stormwater programs

PHOSPHORUS FACILITY SUMMARY

Arlington Co.
POTOMAC Trading Basin



Loading & Credit Summary

Design Flow (mgd)	40.00
Projected Flow (mgd)	26.50
Projected Avg. Annual Concentration (mg/L)	0.18
Discharged Load (end of pipe)	14,527
Delivery Factor	1.00
Expected Load	14,527
Delivered WLA*	21,925
Expected Credits (delivered)	7,398
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange**	(612)
WQIF-Held Credits	0
Expected Net Credits	6,786
Class A Credit Sales (Purchases)	6,786
Expected Class B Credits	0

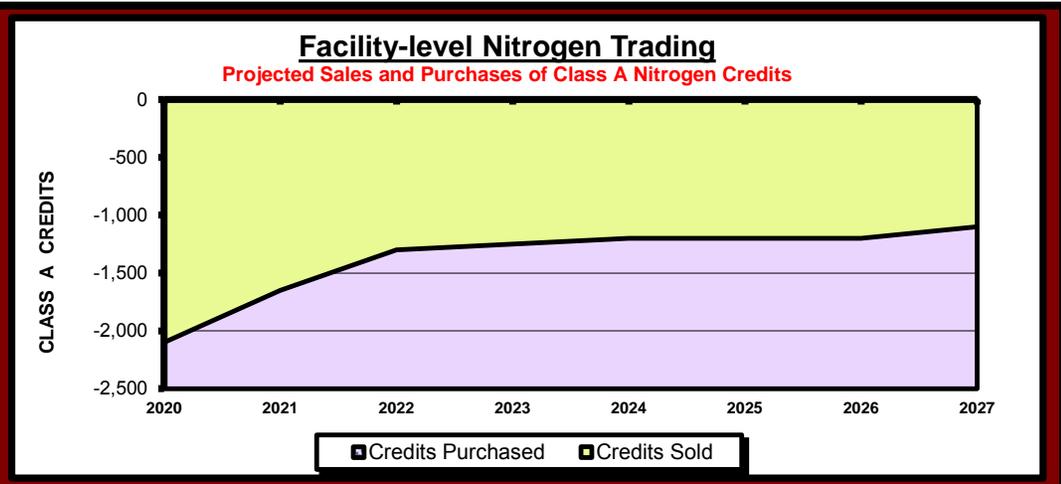
	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Projected Flow (mgd)	26.50	27.00	26.50	26.50	26.75	27.00	27.25	27.50
Projected Avg. Annual Concentration (mg/L)	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Discharged Load (end of pipe)	14,527	14,801	14,527	14,527	14,664	14,801	14,938	15,076
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	14,527	14,801	14,527	14,527	14,664	14,801	14,938	15,076
Delivered WLA*	21,925	21,925	21,925	21,925	21,925	21,925	21,925	21,925
Expected Credits (delivered)	7,398	7,124	7,398	7,398	7,261	7,124	6,987	6,849
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange**	(612)	(612)	(612)	(242)	(942)	(942)	(942)	(942)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	6,786	6,512	6,786	7,156	6,319	6,182	6,045	5,907
Class A Credit Sales (Purchases)	6,786	6,512	6,786	7,156	6,319	6,182	6,045	5,907
Expected Class B Credits	0	0	0	0	0	0	0	0

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

** Reflects use of Credits for Arlington County and Arlington County Public Schools stormwater programs

NITROGEN FACILITY SUMMARY

Berryville
<i>POTOMAC Trading Basin</i>

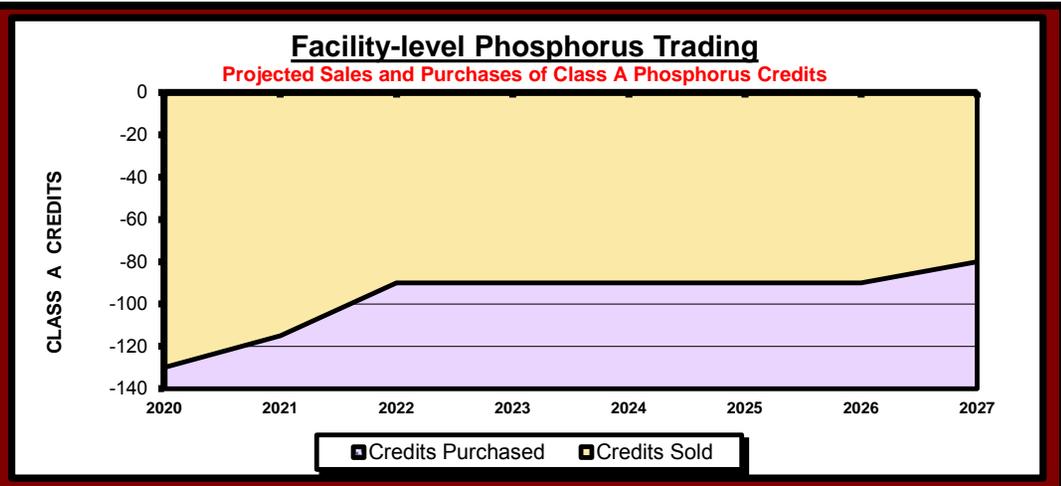


Loading & Credit Summary	
Design Flow (mgd)	0.70
Projected Flow (mgd)	0.42
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	5,117
Delivery Factor	0.63
Expected Load	3,223
Delivered WLA	5,373
Expected Credits (delivered)	2,150
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	2,150
Class A Credit Sales (Purchases)	2,100
Expected Class B Credits	50

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
0.42	0.42	0.41	0.42	0.42	0.43	0.43	0.45
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
5,117	5,117	4,995	5,117	5,117	5,238	5,238	5,482
0.63	0.52	0.52	0.52	0.52	0.52	0.52	0.52
3,223	2,661	2,597	2,661	2,661	2,724	2,724	2,851
5,373	4,435	4,435	4,435	4,435	4,435	4,435	4,435
2,150	1,774	1,838	1,774	1,774	1,711	1,711	1,584
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,150	1,774	1,838	1,774	1,774	1,711	1,711	1,584
2,100	1,650	1,300	1,250	1,200	1,200	1,200	1,100
50	124	538	524	574	511	511	484

PHOSPHORUS FACILITY SUMMARY

Berryville
POTOMAC Trading Basin



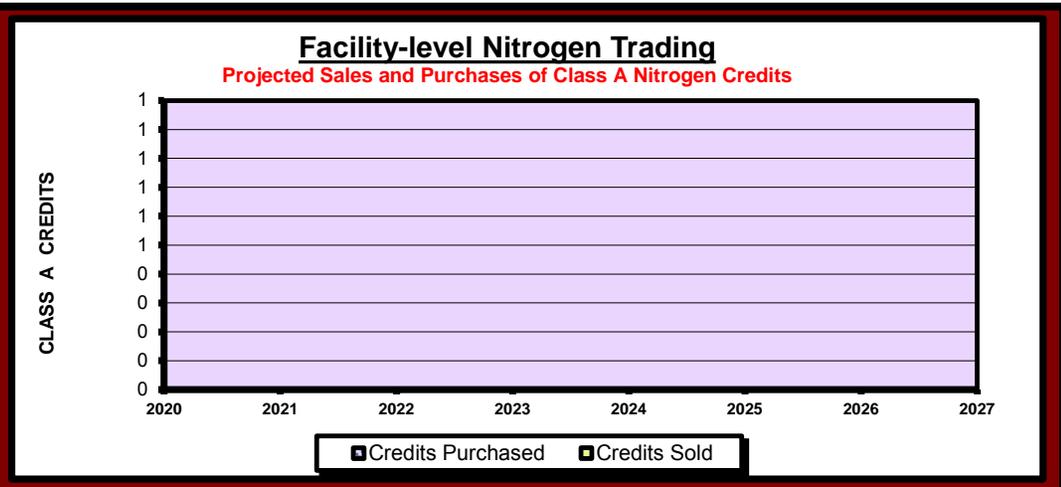
Loading & Credit Summary

Design Flow (mgd)	0.70
Projected Flow (mgd)	0.42
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	384
Delivery Factor	0.53
Expected Load	203
Delivered WLA	339
Expected Credits (delivered)	136
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	136
Class A Credit Sales (Purchases)	130
Expected Class B Credits	6

2020	2021	2022	2023	2024	2025	2026	2027	
Planning Period					Future Estimates (non-binding)			
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	
0.42	0.42	0.41	0.42	0.42	0.43	0.43	0.45	
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	
384	384	375	384	384	393	393	411	
0.53	0.47	0.47	0.47	0.47	0.47	0.47	0.47	
203	180	176	180	180	185	185	193	
339	301	301	301	301	301	301	301	
136	121	125	121	121	116	116	108	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
136	121	125	121	121	116	116	108	
130	115	90	90	90	90	90	80	
6	6	35	31	31	26	26	28	

NITROGEN FACILITY SUMMARY

Broadway Regional
POTOMAC Trading Basin



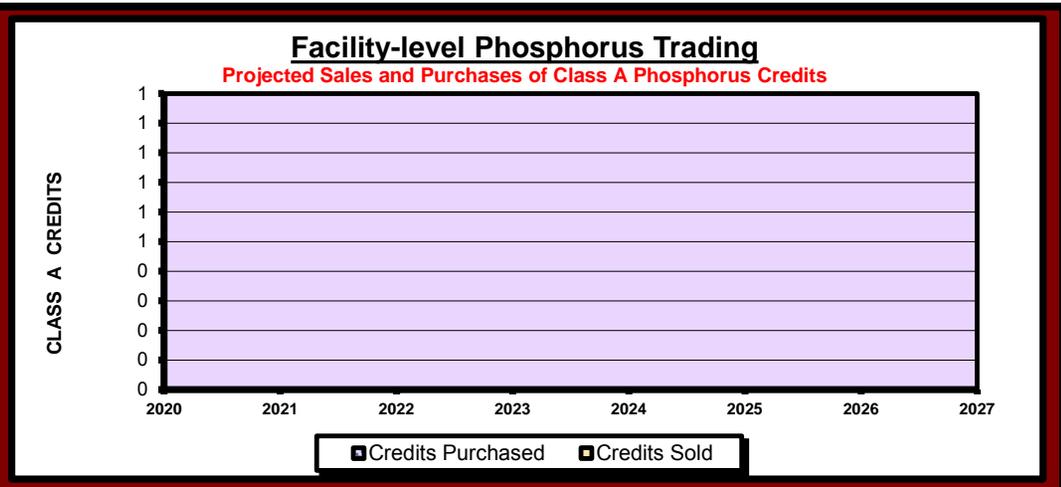
Loading & Credit Summary	
Design Flow (mgd)	2.92
Projected Flow (mgd)	2.36
Projected Avg. Annual Concentration (mg/L)	3.50
Discharged Load (end of pipe)	25,156
Delivery Factor	0.19
Expected Load	4,780
Delivered WLA*	5,601
Expected Credits (delivered)	821
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	821
Class A Credit Sales (Purchases)	0
Expected Class B Credits	821

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92
2.36	2.39	2.42	2.45	2.48	2.51	2.54	2.57
3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
25,156	25,476	25,796	26,116	26,435	26,755	27,075	27,395
0.19	0.12	0.12	0.12	0.12	0.12	0.12	0.12
4,780	3,057	3,096	3,134	3,172	3,211	3,249	3,287
5,601	3,538	3,538	3,538	3,538	3,538	3,538	3,538
821	481	442	404	366	327	289	251
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
821	481	442	404	366	327	289	251
0	0	0	0	0	0	0	0
821	481	442	404	366	327	289	251

* 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



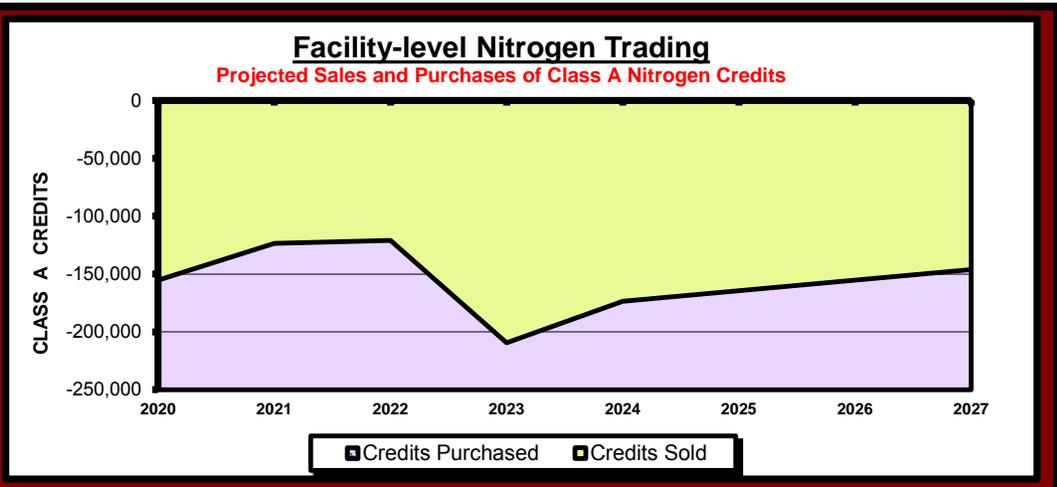
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA*	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92
2.36	2.39	2.42	2.45	2.48	2.51	2.54	2.57
0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
1,869	1,893	1,916	1,940	1,964	1,988	2,011	2,035
0.53	0.47	0.47	0.47	0.47	0.47	0.47	0.47
990	889	901	912	923	934	945	956
1,172	1,039	1,039	1,039	1,039	1,039	1,039	1,039
182	150	138	127	116	105	94	83
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
182	150	138	127	116	105	94	83
0	0	0	0	0	0	0	0
182	150	138	127	116	105	94	83

* 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



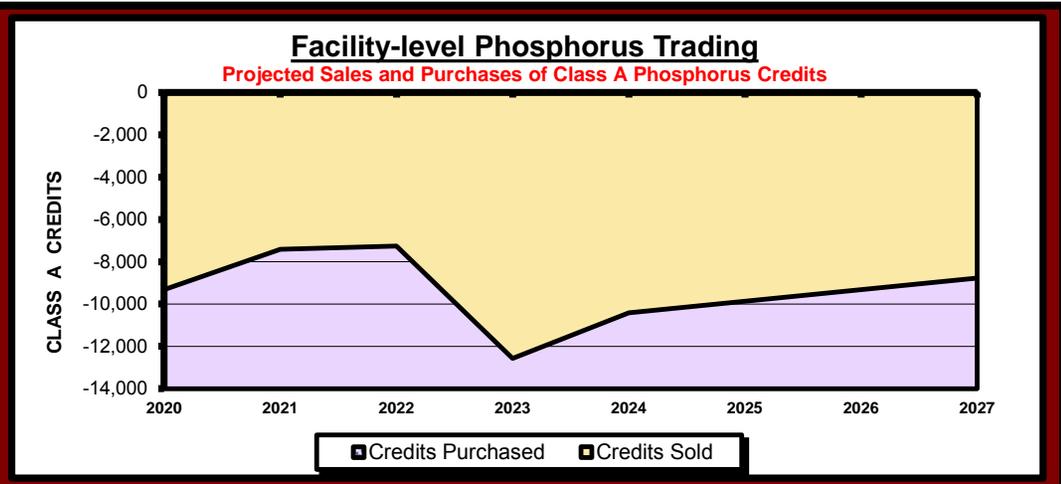
Loading & Credit Summary	
Design Flow (mgd)	67.00
Projected Flow (mgd)	49.99
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	456,755
Delivery Factor	1.00
Expected Load	456,755
Delivered WLA	612,158
Expected Credits (delivered)	155,403
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(25)
WQIF-Held Credits	0
Expected Net Credits	155,378
Class A Credit Sales (Purchases)	155,324
Expected Class B Credits	54

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
67.00	67.00	67.00	67.00	67.00	67.00	67.00	67.00
49.99	53.47	53.76	44.07	48.00	49.00	50.00	51.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
456,755	488,547	491,188	402,653	438,561	447,697	456,834	465,971
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
456,755	488,547	491,188	402,653	438,561	447,697	456,834	465,971
612,158	612,158	612,158	612,158	612,158	612,158	612,158	612,158
155,403	123,611	120,970	209,505	173,597	164,461	155,324	146,187
0	0	0	0	0	0	0	0
(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)
0	0	0	0	0	0	0	0
155,378	123,586	120,945	209,480	173,572	164,436	155,299	146,162
155,324	123,528	120,945	209,480	173,572	164,436	155,299	146,162
54	58	0	0	0	0	0	0

* Represents private trade with Fairfax County Department of Vehicle Services

PHOSPHORUS FACILITY SUMMARY

Fairfax Co-Noman Cole
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
67.00	67.00	67.00	67.00	67.00	67.00	67.00	67.00
49.99	53.47	53.76	44.07	48.00	49.00	50.00	51.00
0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
27,405	29,313	29,471	24,159	26,314	26,862	27,410	27,958
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
27,405	29,313	29,471	24,159	26,314	26,862	27,410	27,958
36,729	36,729	36,729	36,729	36,729	36,729	36,729	36,729
9,324	7,416	7,258	12,570	10,415	9,867	9,319	8,771
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
9,324	7,416	7,258	12,570	10,415	9,867	9,319	8,771
9,319	7,411	7,258	12,570	10,415	9,867	9,319	8,771
5	5	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

FCWSA-Vint Hill
POTOMAC Trading Basin



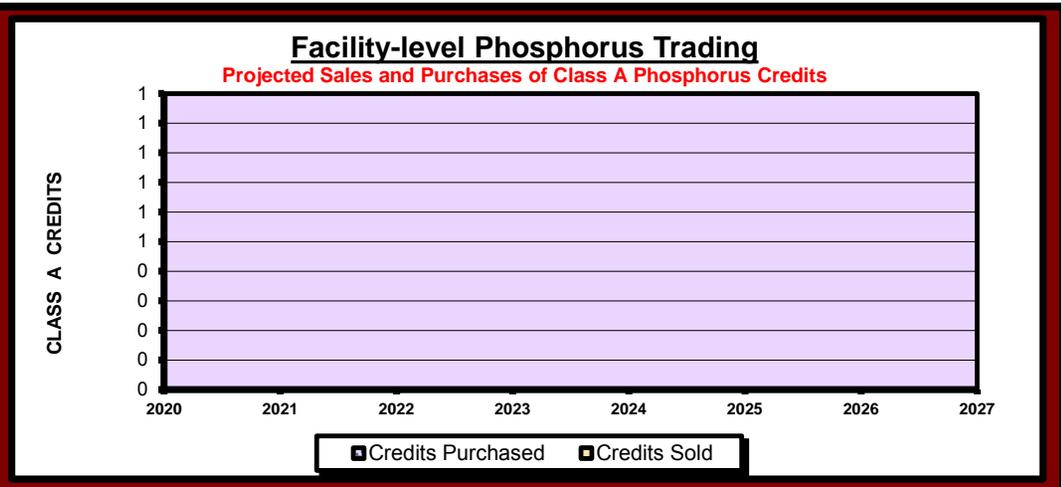
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
5,117	5,360	5,604	5,847	6,091	6,335	6,578	6,822
0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
256	268	280	292	305	317	329	341
579	579	579	579	579	579	579	579
323	311	299	287	274	262	250	238
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
323	311	299	287	274	262	250	238
0	0	0	0	0	0	0	0
323	311	299	287	274	262	250	238

PHOSPHORUS FACILITY SUMMARY

FCWSA-Vint Hill

POTOMAC Trading Basin



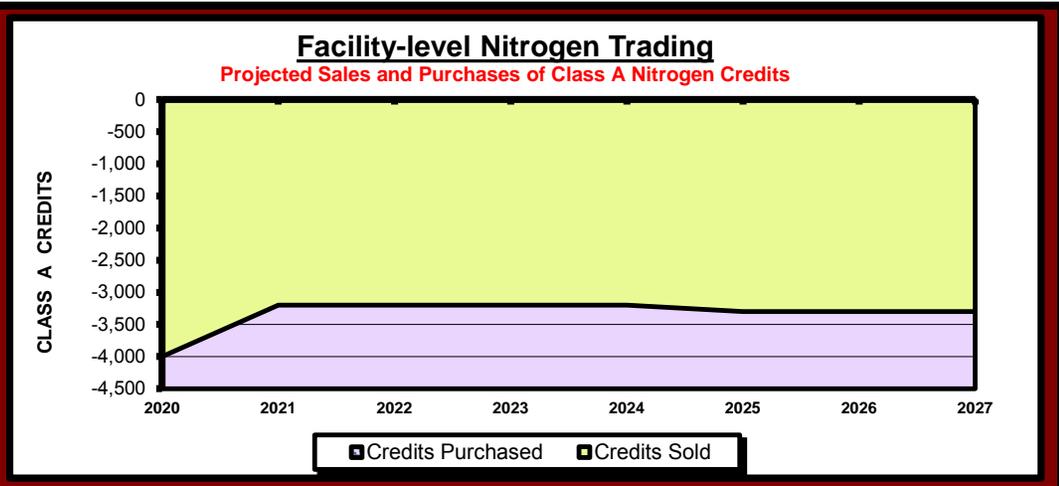
Loading & Credit Summary

Design Flow (mgd)	0.95
Projected Flow (mgd)	0.42
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	384
Delivery Factor	0.17
Expected Load	65
Delivered WLA	148
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
384	402	420	439	457	475	493	512
0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
65	68	71	75	78	81	84	87
148	148	148	148	148	148	148	148
83	80	77	73	70	67	64	61
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
83	80	77	73	70	67	64	61
0	0	0	0	0	0	0	0
83	80	77	73	70	67	64	61

NITROGEN FACILITY SUMMARY

Front Royal
POTOMAC Trading Basin



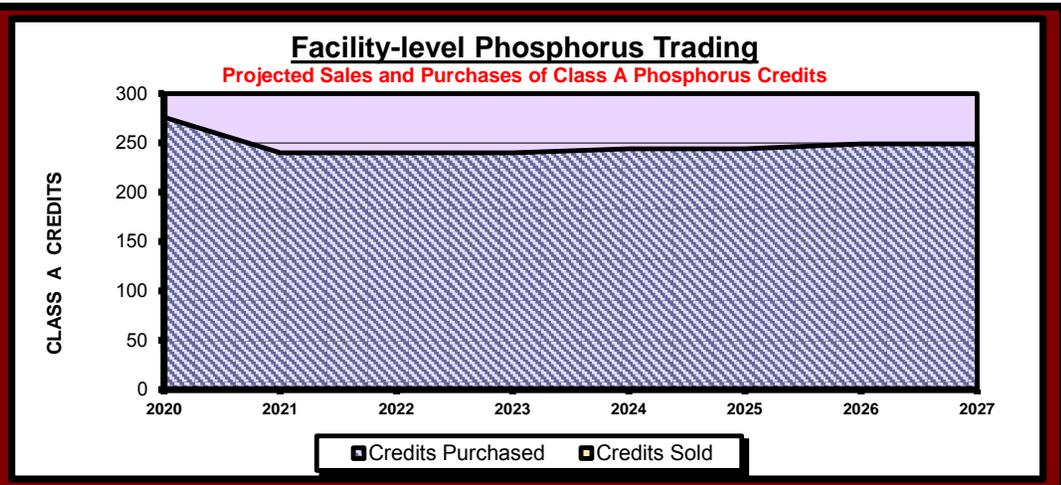
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	4.56
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	41,663
Delivery Factor	0.61
Expected Load	25,415
Delivered WLA	29,725
Expected Credits (delivered)	4,310
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	4,310
Class A Credit Sales (Purchases)	4,000
Expected Class B Credits	310

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
4.56	4.56	4.56	4.56	4.57	4.57	4.58	4.58
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
41,663	41,663	41,663	41,663	41,755	41,755	41,846	41,846
0.61	0.50	0.50	0.50	0.50	0.50	0.50	0.50
25,415	20,832	20,832	20,832	20,877	20,877	20,923	20,923
29,725	24,365	24,365	24,365	24,365	24,365	24,365	24,365
4,310	3,533	3,533	3,533	3,488	3,488	3,442	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
4,310	3,533	3,533	3,533	3,488	3,488	3,442	3,442
4,000	3,200	3,200	3,200	3,200	3,300	3,300	3,300
310	333	333	333	288	188	142	142

PHOSPHORUS FACILITY SUMMARY

Front Royal
<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	

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
4.56	4.56	4.56	4.56	4.57	4.57	4.58	4.58
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
4,166	4,166	4,166	4,166	4,175	4,175	4,185	4,185
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
2,250	1,958	1,958	1,958	1,962	1,962	1,967	1,967
1,974	1,718	1,718	1,718	1,718	1,718	1,718	1,718
(276)	(240)	(240)	(240)	(244)	(244)	(249)	(249)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(276)	(240)	(240)	(240)	(244)	(244)	(249)	(249)
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		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Opequon	-	-	-	-	-	-	-	-
Parkins Mill	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Opequon	13,722	10,546	11,678	11,199	10,799	10,431	10,000	9,600
Parkins Mill	9,304	7,227	6,939	6,651	6,363	6,171	5,884	5,596
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	23,026	17,773	18,617	17,850	17,162	16,602	15,884	15,196
Private Exchanges	(59)	(59)	(59)	(59)	(59)	(59)	(59)	(59)
Expected Net Credits	22,967	17,714	18,558	17,791	17,103	16,543	15,825	15,137
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	22,967	17,714	18,558	17,791	17,103	16,543	15,825	15,137
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Opequon	-	-	-	-	-	-	-	-
Parkins Mill	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Opequon	2,887	2,405	2,298	2,190	2,101	2,019	1,922	1,832
Parkins Mill	1,110	902	837	773	708	665	601	537
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	3,997	3,307	3,135	2,963	2,809	2,684	2,523	2,369
Private Exchanges	-	-	-	-	-	-	-	-
Expected Net Credits	3,997	3,307	3,135	2,963	2,809	2,684	2,523	2,369
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	3,997	3,307	3,135	2,963	2,809	2,684	2,523	2,369
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

NITROGEN 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	

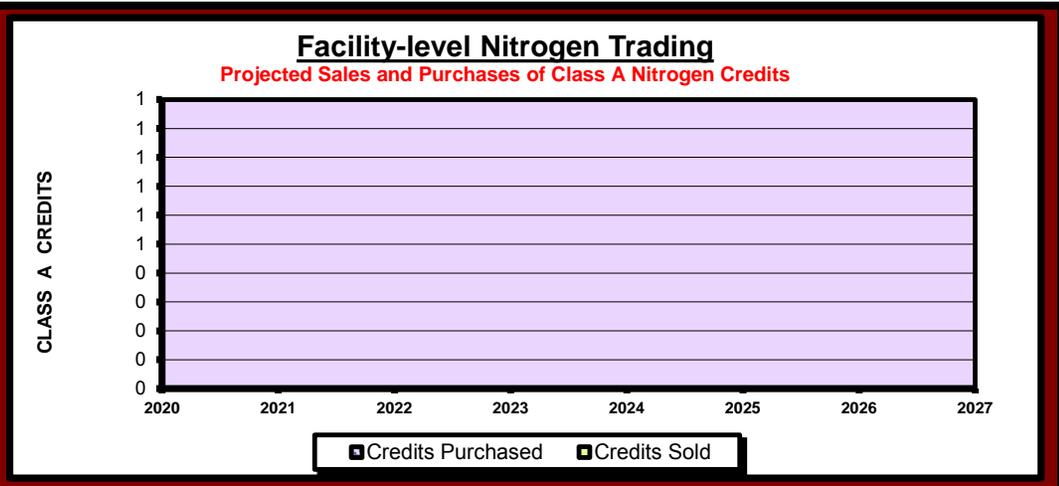
2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
12.60	12.60	12.60	12.60	12.60	12.60	12.60	12.60
8.10	8.40	8.70	9.00	9.25	9.48	9.75	10.00
2.80	2.80	2.50	2.50	2.50	2.50	2.50	2.50
69,073	71,632	66,241	68,525	70,429	72,180	74,236	76,139
0.26	0.21	0.21	0.21	0.21	0.21	0.21	0.21
17,959	15,043	13,911	14,390	14,790	15,158	15,589	15,989
31,681	25,589	25,589	25,589	25,589	25,589	25,589	25,589
13,722	10,546	11,678	11,199	10,799	10,431	10,000	9,600
0	0	0	0	0	0	0	0
(59)	(59)	(59)	(59)	(59)	(59)	(59)	(59)
0	0	0	0	0	0	0	0
13,663	10,487	11,619	11,140	10,740	10,372	9,941	9,541
0	0	0	0	0	0	0	0
13,663	10,487	11,619	11,140	10,740	10,372	9,941	9,541

* Represents private trade with City of Winchester to meet MS4 requirements

NITROGEN FACILITY SUMMARY

FWSA-Parkins Mill

POTOMAC Trading Basin



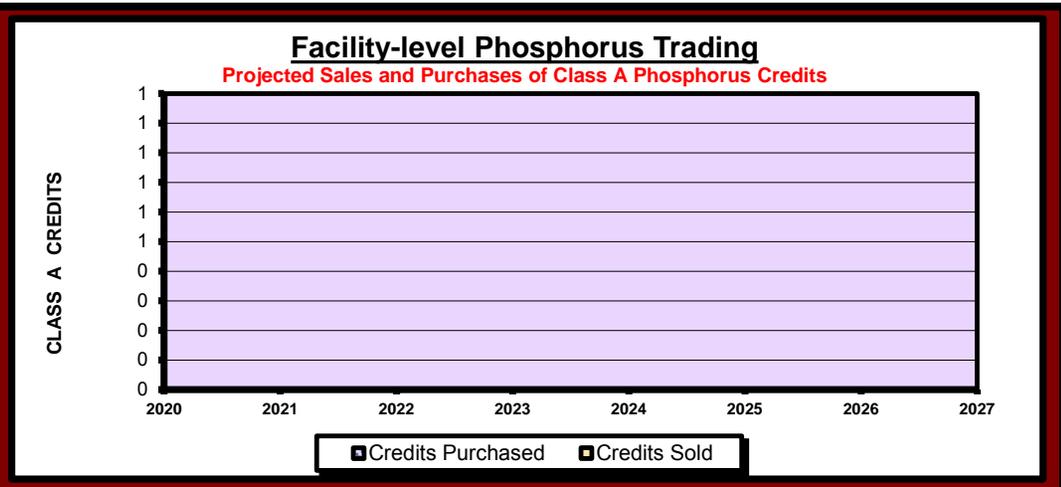
Loading & Credit Summary

Design Flow (mgd)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Projected Flow (mgd)	2.75	2.90	3.05	3.20	3.35	3.45	3.60	3.75
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)	25,126	26,496	27,867	29,237	30,608	31,522	32,892	34,263
Delivery Factor	0.26	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Expected Load	6,533	5,564	5,852	6,140	6,428	6,620	6,907	7,195
Delivered WLA	15,837	12,791	12,791	12,791	12,791	12,791	12,791	12,791
Expected Credits (delivered)	9,304	7,227	6,939	6,651	6,363	6,171	5,884	5,596
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	9,304	7,227	6,939	6,651	6,363	6,171	5,884	5,596
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	9,304	7,227	6,939	6,651	6,363	6,171	5,884	5,596

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
2.75	2.90	3.05	3.20	3.35	3.45	3.60	3.75
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
25,126	26,496	27,867	29,237	30,608	31,522	32,892	34,263
0.26	0.21	0.21	0.21	0.21	0.21	0.21	0.21
6,533	5,564	5,852	6,140	6,428	6,620	6,907	7,195
15,837	12,791	12,791	12,791	12,791	12,791	12,791	12,791
9,304	7,227	6,939	6,651	6,363	6,171	5,884	5,596
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
9,304	7,227	6,939	6,651	6,363	6,171	5,884	5,596
0	0	0	0	0	0	0	0
9,304	7,227	6,939	6,651	6,363	6,171	5,884	5,596

PHOSPHORUS FACILITY SUMMARY

FWSA-Opequon
 POTOMAC Trading Basin



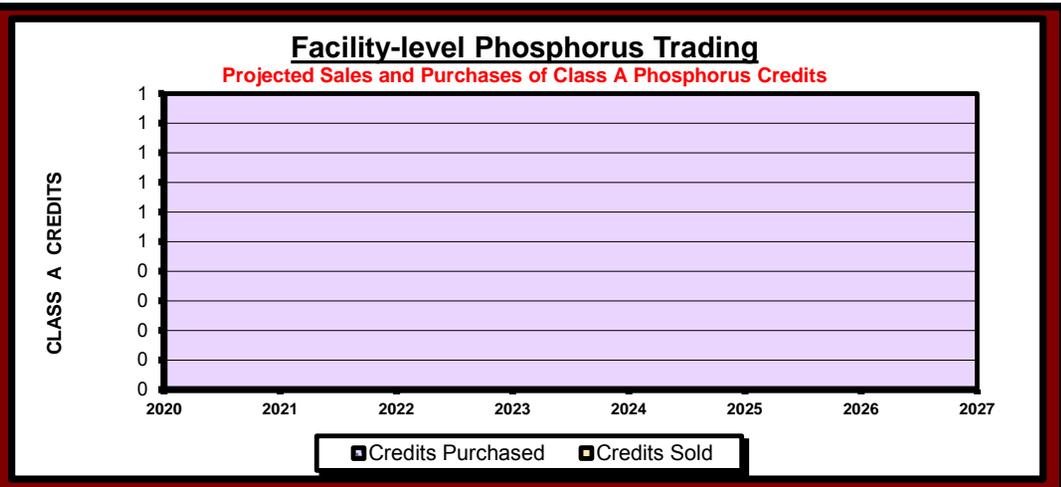
Loading & Credit Summary

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
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2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
12.60	12.60	12.60	12.60	12.60	12.60	12.60	12.60
8.10	8.40	8.70	9.00	9.25	9.48	9.75	10.00
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
6,167	6,396	6,624	6,853	7,043	7,218	7,424	7,614
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
3,330	3,006	3,113	3,221	3,310	3,392	3,489	3,579
6,217	5,411	5,411	5,411	5,411	5,411	5,411	5,411
2,887	2,405	2,298	2,190	2,101	2,019	1,922	1,832
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,887	2,405	2,298	2,190	2,101	2,019	1,922	1,832
0	0	0	0	0	0	0	0
2,887	2,405	2,298	2,190	2,101	2,019	1,922	1,832

PHOSPHORUS FACILITY SUMMARY

FWSA-Parkins Mill
POTOMAC Trading Basin



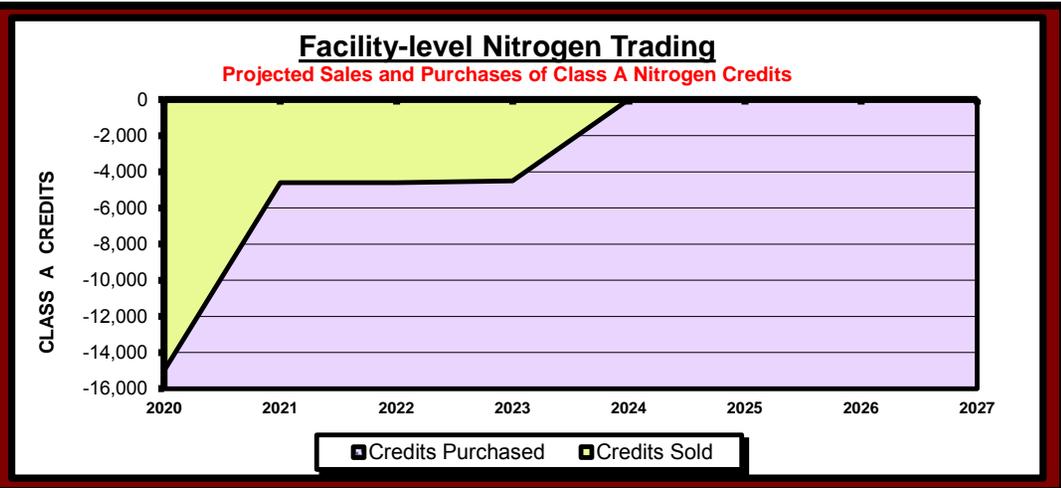
Loading & Credit Summary

Design Flow (mgd)	5.00
Projected Flow (mgd)	2.75
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	2,513
Delivery Factor	0.54
Expected Load	1,357
Delivered WLA	2,467
Expected Credits (delivered)	1,110
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,110
Class A Credit Sales (Purchases)	0
Expected Class B Credits	1,110

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	2.75	2.90	3.05	3.20	3.35	3.45	3.60	3.75
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)	2,513	2,650	2,787	2,924	3,061	3,152	3,289	3,426
Delivery Factor	0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	1,357	1,245	1,310	1,374	1,439	1,482	1,546	1,610
Delivered WLA	2,467	2,147	2,147	2,147	2,147	2,147	2,147	2,147
Expected Credits (delivered)	1,110	902	837	773	708	665	601	537
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	1,110	902	837	773	708	665	601	537
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	1,110	902	837	773	708	665	601	537

NITROGEN FACILITY SUMMARY

HRRSA-North River
POTOMAC Trading Basin



Loading & Credit Summary

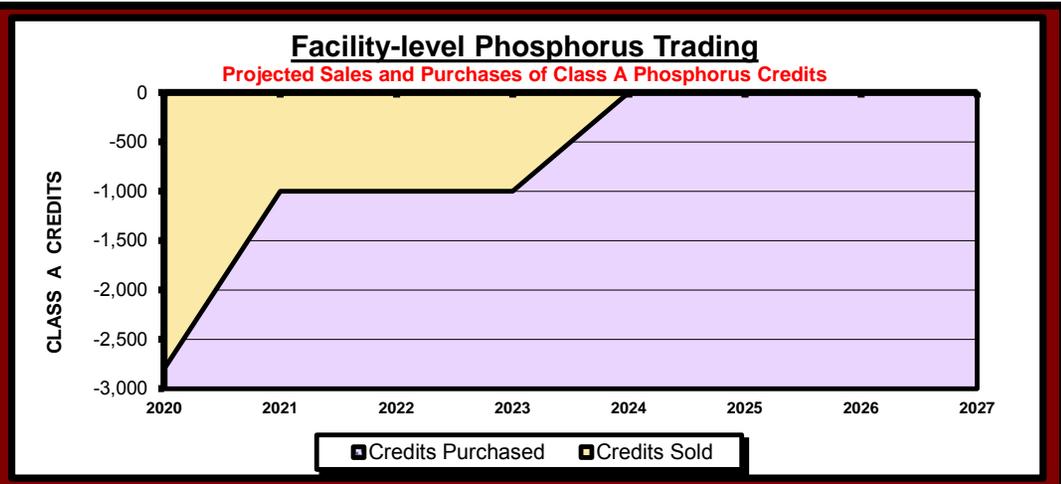
Design Flow (mgd)	22.00
Projected Flow (mgd)	15.00
Projected Avg. Annual Concentration (mg/L)	3.80
Discharged Load (end of pipe)	173,597
Delivery Factor	0.22
Expected Load	38,191
Delivered WLA*	57,250
Expected Credits (delivered)	19,059
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange**	0
WQIF-Held Credits	0
Expected Net Credits	19,059
Class A Credit Sales (Purchases)	15,000
Expected Class B Credits	4,059

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
15.00	15.20	15.20	15.60	16.40	16.60	16.80	17.20
3.80	3.80	3.80	3.80	3.70	3.70	3.70	3.70
173,597	175,912	175,912	180,541	184,805	187,058	189,312	193,819
0.22	0.14	0.14	0.14	0.14	0.14	0.14	0.14
38,191	24,628	24,628	25,276	25,873	26,188	26,504	27,135
57,250	36,432	36,432	36,432	36,432	36,432	36,432	36,432
19,059	11,804	11,804	11,156	10,559	10,244	9,928	9,297
0	0	0	0	0	0	0	0
0	0	(1,115)	(1,115)	(1,115)	(1,000)	(1,000)	(1,000)
0	0	0	0	0	0	0	0
19,059	11,804	10,689	10,041	9,444	9,244	8,928	8,297
15,000	4,600	4,600	4,500	0	0	0	0
4,059	7,204	6,089	5,541	9,444	9,244	8,928	8,297

* Reflects the transfer of the McGaheysville STP wasteload allocation
 ** Represents private trade with City of Harrisonburg to meet MS4 requirements

PHOSPHORUS FACILITY SUMMARY

HRRSA-North River
<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	

2020	2021	2022	2023	2024	2025	2026	2027	
Planning Period					Future Estimates (non-binding)			
22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	
15.00	15.20	15.20	15.60	16.40	16.60	16.80	17.20	
0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	
12,791	12,962	12,962	13,303	13,985	14,156	14,326	14,667	
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47	
6,907	6,092	6,092	6,252	6,573	6,653	6,733	6,894	
10,570	9,200	9,200	9,200	9,200	9,200	9,200	9,200	
3,663	3,108	3,108	2,948	2,627	2,547	2,467	2,306	
0	0	0	0	0	0	0	0	
0	0	(73)	(73)	(73)	(70)	(70)	(70)	
0	0	0	0	0	0	0	0	
3,663	3,108	3,035	2,875	2,554	2,477	2,397	2,236	
2,800	1,000	1,000	1,000	0	0	0	0	
863	2,108	2,035	1,875	2,554	2,477	2,397	2,236	

* Reflects the transfer of the McGaheysville STP wasteload allocation
 ** Represents private trade with City of Harrisonburg to meet MS4 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.

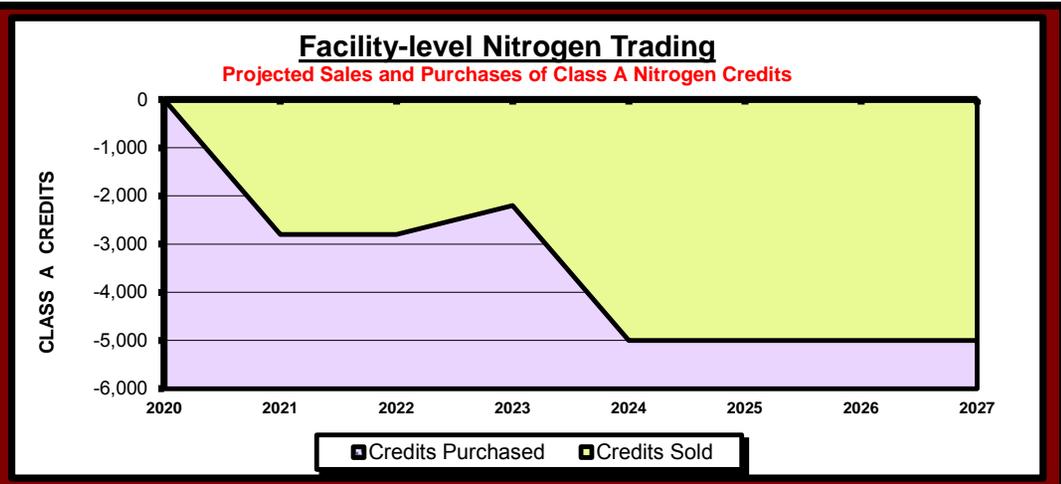
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply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

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Dahlgren	(427)	(1,508)	(1,508)	(1,797)	(439)	(488)	-	-
Fairview Beach	-	-	-	-	-	-	-	-
Purkins Corner	427	1,508	1,508	1,797	439	488	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Dahlgren	3,228	3,061	3,061	2,772	5,957	5,451	5,756	5,574
Fairview Beach	1,005	365	365	365	913	913	761	609
Purkins Corner	-	-	-	-	-	-	182	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	4,233	3,426	3,426	3,137	6,870	6,364	6,699	6,183
Class A Sales (Purchases)	0	3,100	3,100	2,200	5,913	5,913	5,943	5,609
<i>Expected Class B Credits</i>	4,233	326	326	937	957	451	756	574
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Dahlgren	(40)	(137)	(137)	(200)	-	-	-	-
Fairview Beach	-	-	-	36	-	-	-	-
Purkins Corner	40	137	137	164	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Dahlgren	326	320	320	257	640	594	576	558
Fairview Beach	98	-	-	-	-	-	23	-
Purkins Corner	-	-	-	-	14	11	19	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	424	320	320	257	654	605	618	558
Class A Sales (Purchases)	0	300	300	200	514	511	542	500
<i>Expected Class B Credits</i>	424	20	20	57	140	94	76	58
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

KGCSA-Dahlgren S.D.
POTOMAC Trading Basin



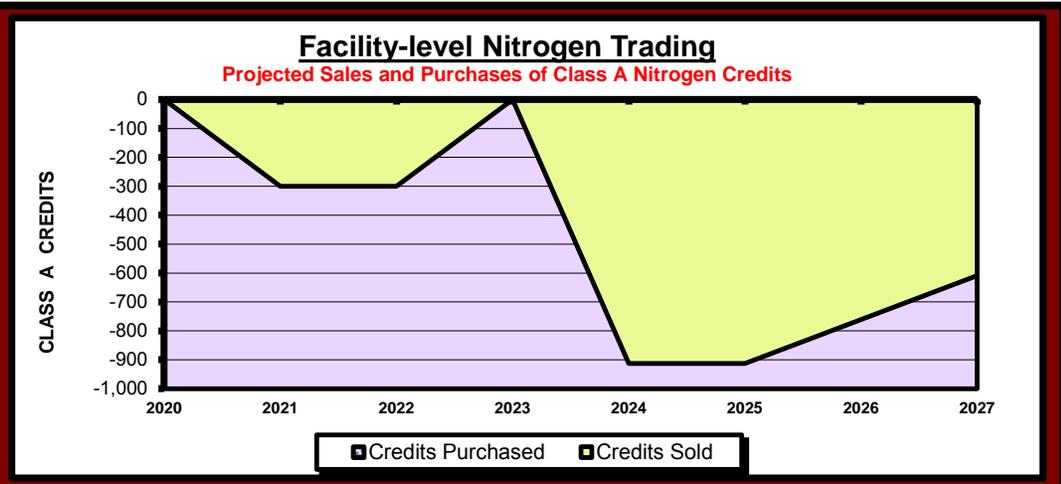
Loading & Credit Summary

Design Flow (mgd)	1.00
Projected Flow (mgd)	0.60
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	5,482
Delivery Factor	1.00
Expected Load	5,482
Delivered WLA	9,137
Expected Credits (delivered)	3,655
Transfers In (Out) within Owner Bubble	(427)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	3,228
Class A Credit Sales (Purchases)	0
Expected Class B Credits	3,228

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	0.60	0.50	0.50	0.50	0.30	0.35	0.37	0.39
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)	5,482	4,568	4,568	4,568	2,741	3,198	3,381	3,563
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	5,482	4,568	4,568	4,568	2,741	3,198	3,381	3,563
Delivered WLA	9,137	9,137	9,137	9,137	9,137	9,137	9,137	9,137
Expected Credits (delivered)	3,655	4,569	4,569	4,569	6,396	5,939	5,756	5,574
Transfers In (Out) within Owner Bubble	(427)	(1,508)	(1,508)	(1,797)	(439)	(488)	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	3,228	3,061	3,061	2,772	5,957	5,451	5,756	5,574
Class A Credit Sales (Purchases)	0	2,800	2,800	2,200	5,000	5,000	5,000	5,000
Expected Class B Credits	3,228	261	261	572	957	451	756	574

NITROGEN FACILITY SUMMARY

KGCSA-Fairview Beach
POTOMAC Trading Basin



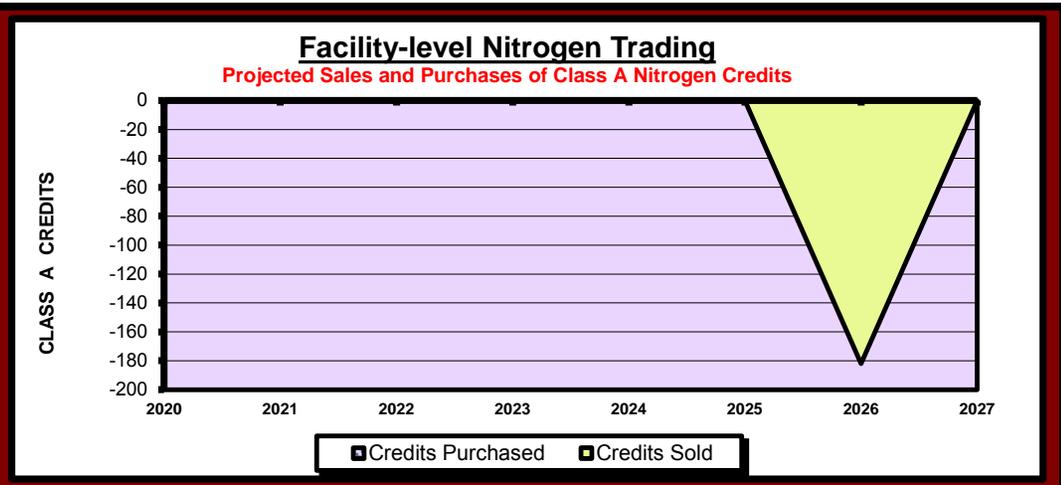
Loading & Credit Summary

Design Flow (mgd)	0.20
Projected Flow (mgd)	0.09
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	822
Delivery Factor	1.00
Expected Load	822
Delivered WLA	1,827
Expected Credits (delivered)	1,005
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,005
Class A Credit Sales (Purchases)	0
Expected Class B Credits	1,005

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.09	0.08	0.08	0.08	0.06	0.06	0.07	0.08
3.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
822	1,462	1,462	1,462	914	914	1,066	1,218
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
822	1,462	1,462	1,462	914	914	1,066	1,218
1,827	1,827	1,827	1,827	1,827	1,827	1,827	1,827
1,005	365	365	365	913	913	761	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
1,005	365	365	365	913	913	761	609
0	300	300	0	913	913	761	609
1,005	65	65	365	0	0	0	0

NITROGEN FACILITY SUMMARY

KGCSA-Purkins Corner
POTOMAC Trading Basin



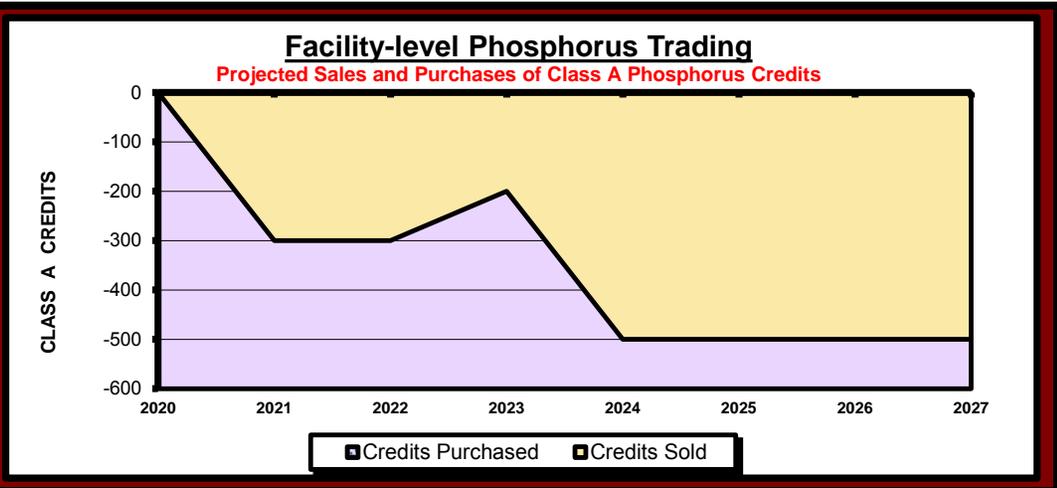
Loading & Credit Summary

Design Flow (mgd)	0.12
Projected Flow (mgd)	0.10
Projected Avg. Annual Concentration (mg/L)	5.00
Discharged Load (end of pipe)	1,523
Delivery Factor	1.00
Expected Load	1,523
Delivered WLA	1,096
Expected Credits (delivered)	(427)
Transfers In (Out) within Owner Bubble	427
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
0.10	0.09	0.09	0.10	0.06	0.07	0.10	0.12
5.00	9.50	9.50	9.50	8.00	8.00	3.00	3.00
1,523	2,604	2,604	2,893	1,535	1,584	914	1,096
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,523	2,604	2,604	2,893	1,535	1,584	914	1,096
1,096	1,096	1,096	1,096	1,096	1,096	1,096	1,096
(427)	(1,508)	(1,508)	(1,797)	(439)	(488)	182	0
427	1,508	1,508	1,797	439	488	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	182	0
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

KGCSA-Dahlgren S.D.
POTOMAC Trading Basin



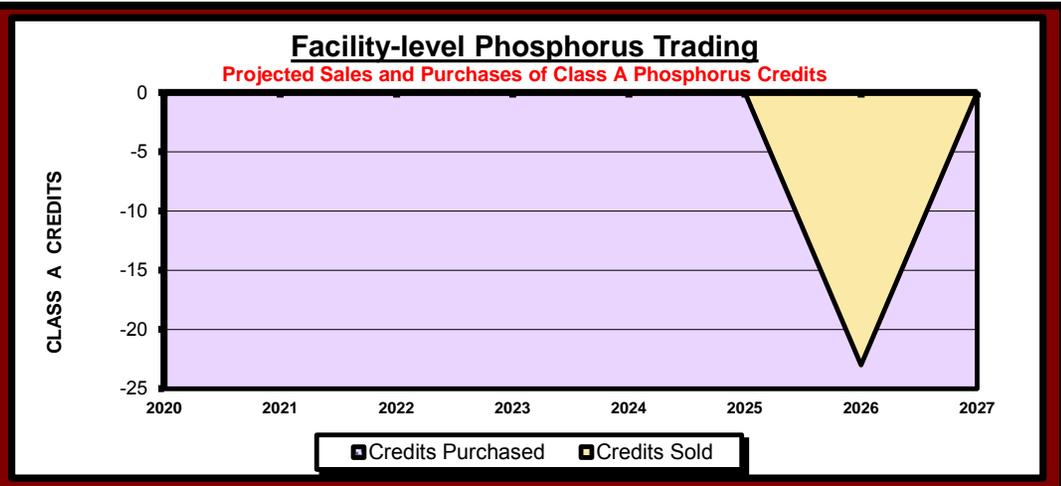
Loading & Credit Summary

Design Flow (mgd)	1.00
Projected Flow (mgd)	0.60
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	548
Delivery Factor	1.00
Expected Load	548
Delivered WLA	914
Expected Credits (delivered)	366
Transfers In (Out) within Owner Bubble	(40)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	326
Class A Credit Sales (Purchases)	0
Expected Class B Credits	326

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.60	0.50	0.50	0.50	0.30	0.35	0.37	0.39
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
548	457	457	457	274	320	338	356
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
548	457	457	457	274	320	338	356
914	914	914	914	914	914	914	914
366	457	457	457	640	594	576	558
(40)	(137)	(137)	(200)	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
326	320	320	257	640	594	576	558
0	300	300	200	500	500	500	500
326	20	20	57	140	94	76	58

PHOSPHORUS FACILITY SUMMARY

KGCSA-Fairview Beach
POTOMAC Trading Basin



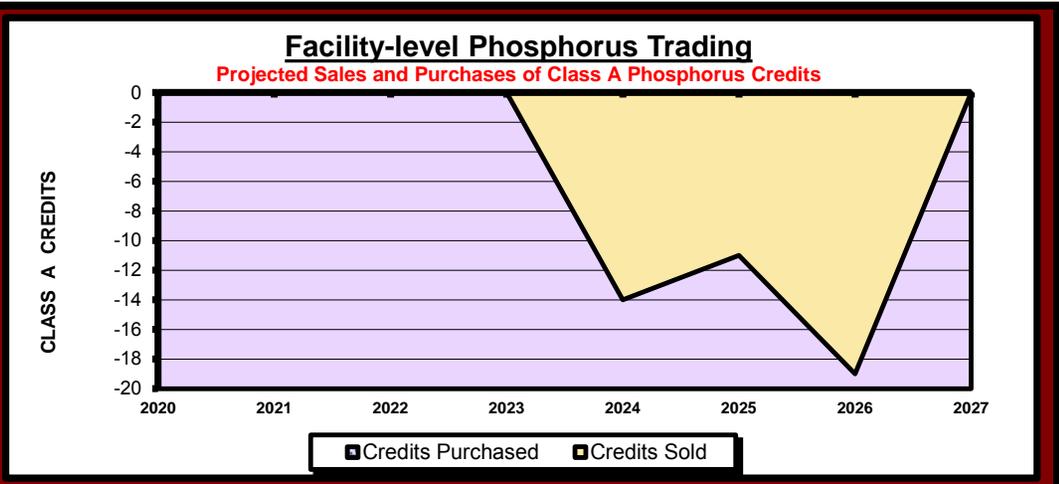
Loading & Credit Summary

Design Flow (mgd)	0.20
Projected Flow (mgd)	0.09
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	82
Delivery Factor	0.98
Expected Load	81
Delivered WLA	179
Expected Credits (delivered)	98
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	98
Class A Credit Sales (Purchases)	0
Expected Class B Credits	98

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.09	0.08	0.08	0.08	0.06	0.06	0.07	0.08
0.30	0.75	0.75	0.90	1.00	1.00	0.75	0.75
82	183	183	219	183	183	160	183
0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
81	183	183	219	183	183	160	183
179	183	183	183	183	183	183	183
98	0	0	(36)	0	0	23	0
0	0	0	36	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
98	0	0	0	0	0	23	0
0	0	0	0	0	0	23	0
98	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

KGCSA-Purkins Corner
POTOMAC Trading Basin



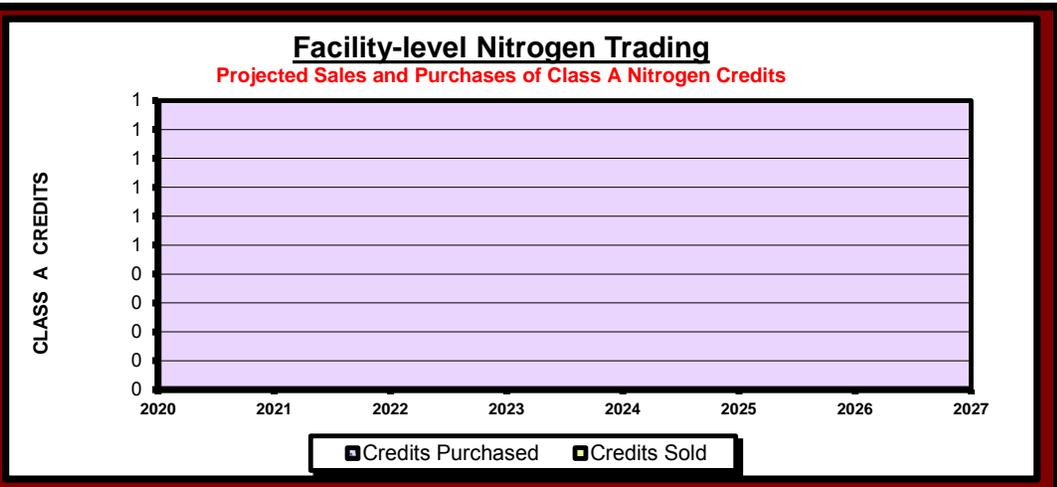
Loading & Credit Summary

Design Flow (mgd)	0.12
Projected Flow (mgd)	0.10
Projected Avg. Annual Concentration (mg/L)	0.50
Discharged Load (end of pipe)	152
Delivery Factor	0.96
Expected Load	146
Delivered WLA	106
Expected Credits (delivered)	(40)
Transfers In (Out) within Owner Bubble	40
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
0.10	0.09	0.09	0.10	0.06	0.07	0.10	0.12
0.50	0.90	0.90	0.90	0.50	0.50	0.30	0.30
152	247	247	274	96	99	91	110
0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
146	247	247	274	96	99	91	110
106	110	110	110	110	110	110	110
(40)	(137)	(137)	(164)	14	11	19	0
40	137	137	164	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	11	19	0
0	0	0	0	14	11	19	0
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Leesburg
 POTOMAC Trading Basin



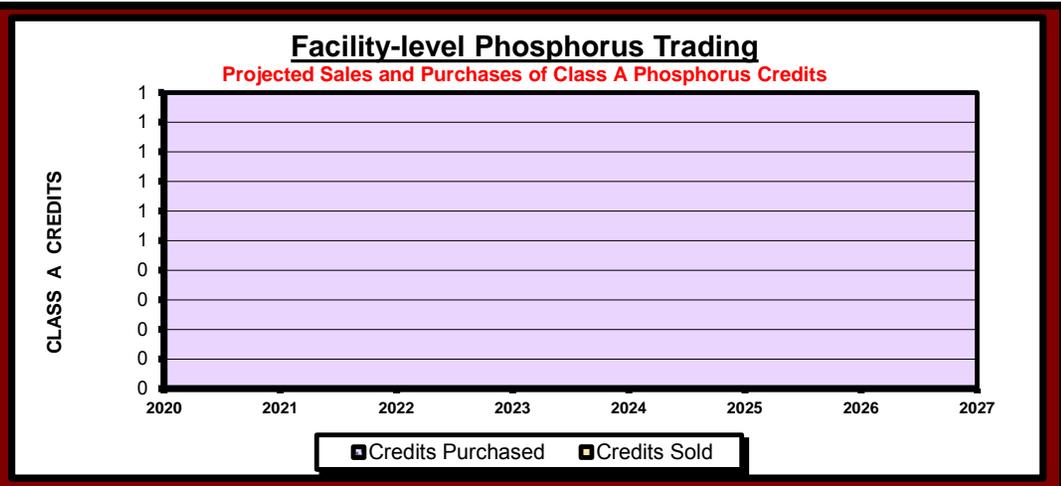
Loading & Credit Summary	
Design Flow (mgd)	7.50
Projected Flow (mgd)	2.95
Projected Avg. Annual Concentration (mg/L)	4.80
Discharged Load (end of pipe)	43,169
Delivery Factor	0.80
Expected Load	34,535
Delivered WLA	97,458
Expected Credits (delivered)	62,923
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(274)
WQIF-Held Credits	(24,365)
Expected Net Credits	38,284
Class A Credit Sales (Purchases)	0
Expected Class B Credits	38,284

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
2.95	3.09	3.23	3.37	3.05	3.19	3.33	3.47
4.80	4.90	4.90	5.00	5.00	5.00	5.00	5.00
43,169	46,158	48,247	51,363	46,369	48,501	50,632	52,764
0.80	0.64	0.64	0.64	0.64	0.64	0.64	0.64
34,535	29,541	30,878	32,873	29,676	31,040	32,405	33,769
97,458	77,966	77,966	77,966	77,966	77,966	77,966	77,966
62,923	48,425	47,088	45,093	48,290	46,926	45,561	44,197
0	0	0	0	0	0	0	0
(274)	(274)	0	0	0	0	0	0
(24,365)	(19,492)	(19,492)	(19,492)	(19,492)	(19,492)	(19,492)	(19,492)
38,284	28,659	27,596	25,601	28,798	27,434	26,069	24,705
0	0	0	0	0	0	0	0
38,284	28,659	27,596	25,601	28,798	27,434	26,069	24,705

* Represents private trade with Loudoun Milling

PHOSPHORUS FACILITY SUMMARY

Leesburg
 POTOMAC Trading Basin



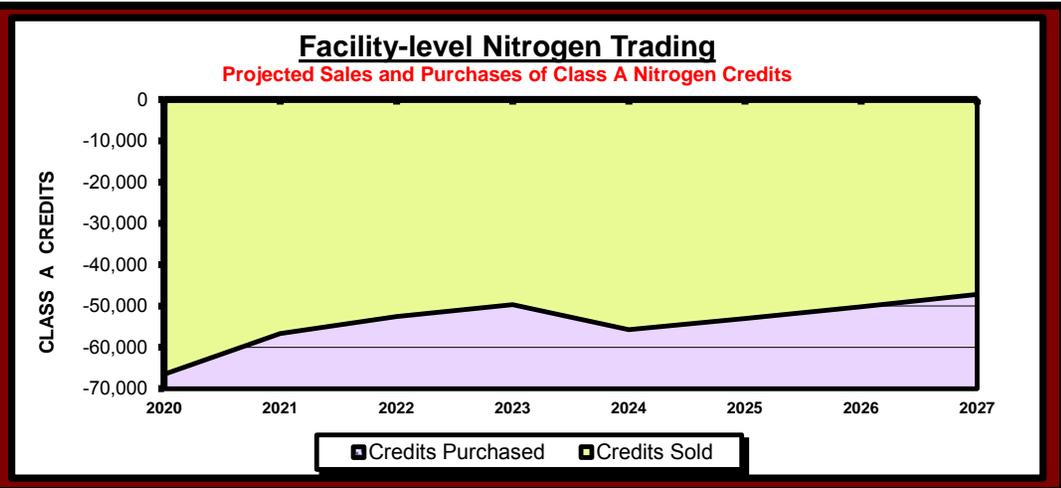
Loading & Credit Summary	
Design Flow (mgd)	7.50
Projected Flow (mgd)	2.95
Projected Avg. Annual Concentration (mg/L)	0.50
Discharged Load (end of pipe)	4,497
Delivery Factor	0.54
Expected Load	2,428
Delivered WLA	4,934
Expected Credits (delivered)	2,506
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(27)
WQIF-Held Credits	(1,234)
Expected Net Credits	1,245
Class A Credit Sales (Purchases)	0
Expected Class B Credits	1,245

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
2.95	3.09	3.23	3.37	3.05	3.19	3.33	3.47
0.50	0.52	0.54	0.55	0.55	0.55	0.55	0.55
4,497	4,898	5,317	5,650	5,101	5,335	5,570	5,804
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
2,428	2,302	2,499	2,655	2,397	2,507	2,618	2,728
4,934	4,294	4,294	4,294	4,294	4,294	4,294	4,294
2,506	1,992	1,795	1,639	1,897	1,787	1,676	1,566
0	0	0	0	0	0	0	0
(27)	(27)	0	0	0	0	0	0
(1,234)	(1,074)	(1,074)	(1,074)	(1,074)	(1,074)	(1,074)	(1,074)
1,245	891	721	565	823	713	602	492
0	0	0	0	0	0	0	0
1,245	891	721	565	823	713	602	492

* Represents private trade with Loudoun Milling

NITROGEN FACILITY SUMMARY

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

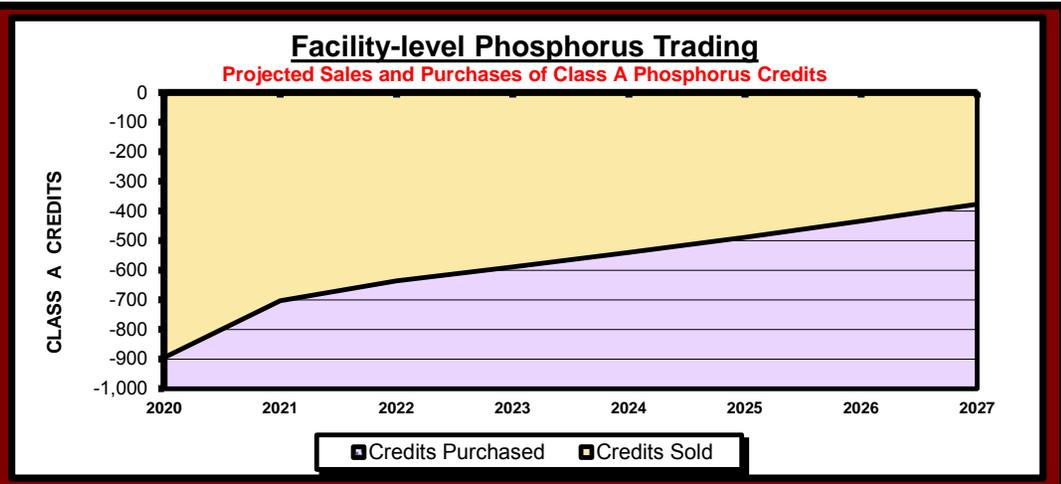


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
5.56	6.09	6.56	6.89	7.23	7.59	7.97	8.37
3.50	3.50	3.50	3.50	3.00	3.00	3.00	3.00
59,267	64,916	69,926	73,444	66,058	69,347	72,819	76,474
0.89	0.82	0.82	0.82	0.82	0.82	0.82	0.82
52,747	53,231	57,339	60,224	54,168	56,865	59,712	62,709
119,264	109,884	109,884	109,884	109,884	109,884	109,884	109,884
66,517	56,653	52,545	49,660	55,716	53,019	50,172	47,175
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
66,517	56,653	52,545	49,660	55,716	53,019	50,172	47,175
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

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

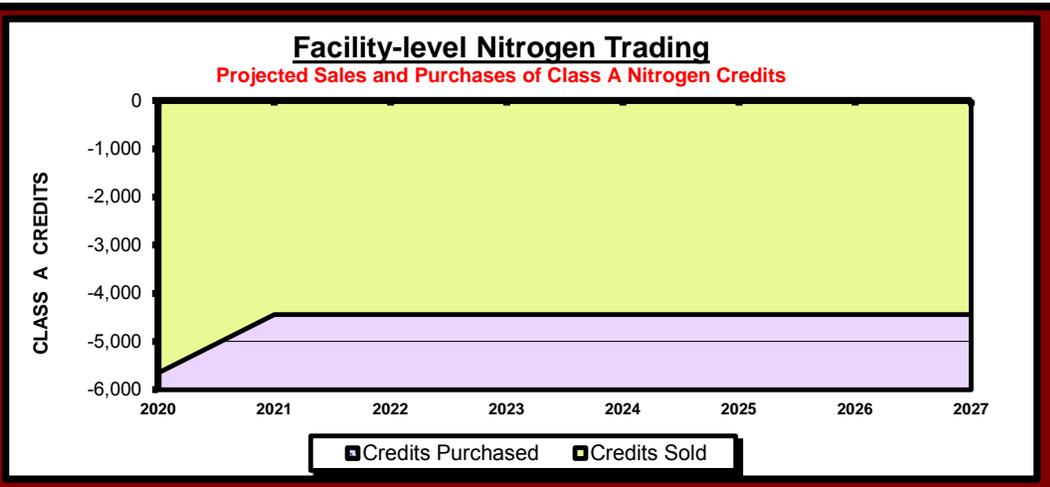


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
5.56	6.09	6.56	6.89	7.23	7.59	7.97	8.37
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
1,693	1,855	1,998	2,098	2,202	2,312	2,427	2,549
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
914	872	939	986	1,035	1,086	1,141	1,198
1,809	1,575	1,575	1,575	1,575	1,575	1,575	1,575
895	703	636	589	540	489	434	377
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
895	703	636	589	540	489	434	377
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Luray
<i>POTOMAC Trading Basin</i>

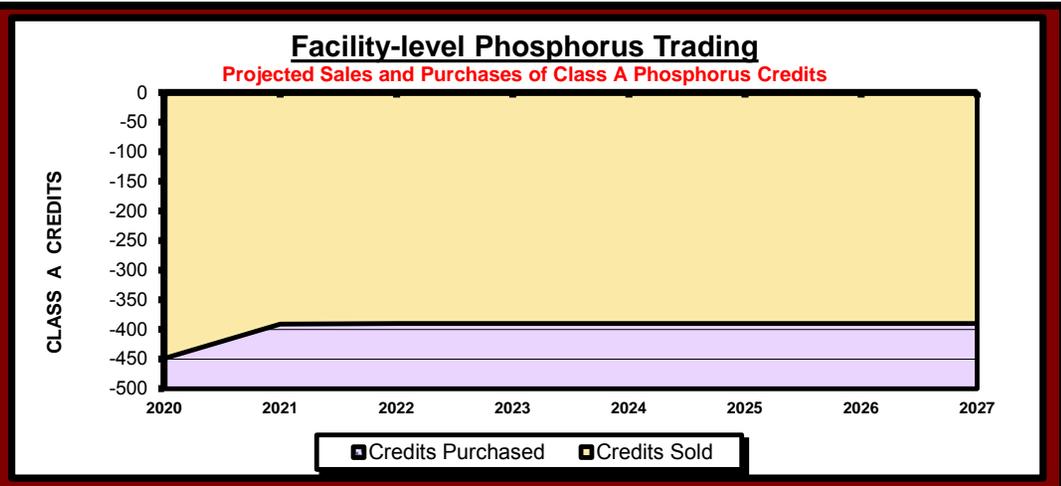


Loading & Credit Summary	
Design Flow (mgd)	1.60
Projected Flow (mgd)	0.90
Projected Avg. Annual Concentration (mg/L)	2.20
Discharged Load (end of pipe)	6,030
Delivery Factor	0.42
Expected Load	2,533
Delivered WLA	8,187
Expected Credits (delivered)	5,654
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	5,654
Class A Credit Sales (Purchases)	5,654
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
6,030	6,030	6,030	6,030	6,030	6,030	6,030	6,030
0.42	0.33	0.33	0.33	0.33	0.33	0.33	0.33
2,533	1,990	1,990	1,990	1,990	1,990	1,990	1,990
8,187	6,432	6,432	6,432	6,432	6,432	6,432	6,432
5,654	4,442	4,442	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
5,654	4,442	4,442	4,442	4,442	4,442	4,442	4,442
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Luray
POTOMAC Trading Basin



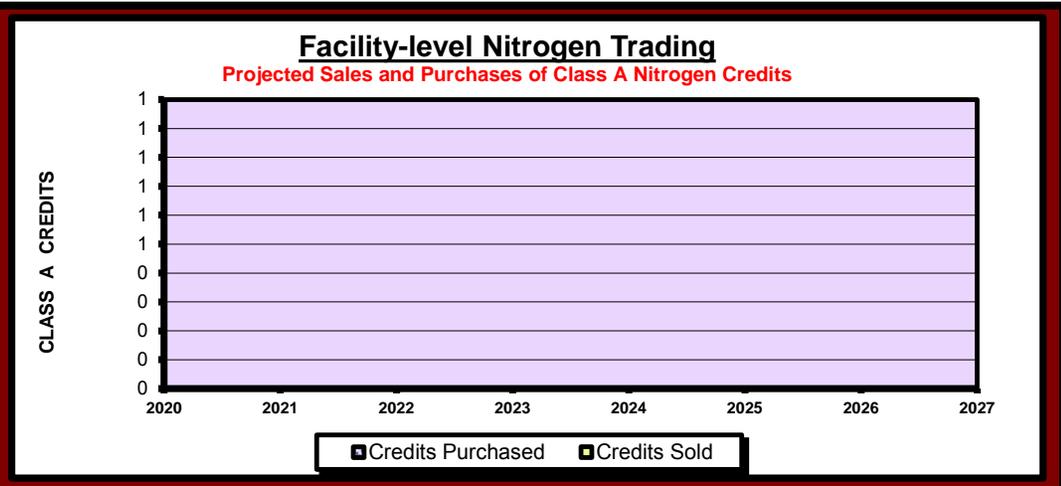
Loading & Credit Summary	
Design Flow (mgd)	1.60
Projected Flow (mgd)	0.90
Projected Avg. Annual Concentration (mg/L)	0.22
Discharged Load (end of pipe)	603
Delivery Factor	0.54
Expected Load	326
Delivered WLA	789
Expected Credits (delivered)	463
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(1)
WQIF-Held Credits	0
Expected Net Credits	462
Class A Credit Sales (Purchases)	449
Expected Class B Credits	13

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23
603	603	630	630	630	630	630	630
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
326	283	296	296	296	296	296	296
789	687	687	687	687	687	687	687
463	404	391	391	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
462	403	390	390	390	390	390	390
449	391	390	390	390	390	390	390
13	12	0	0	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

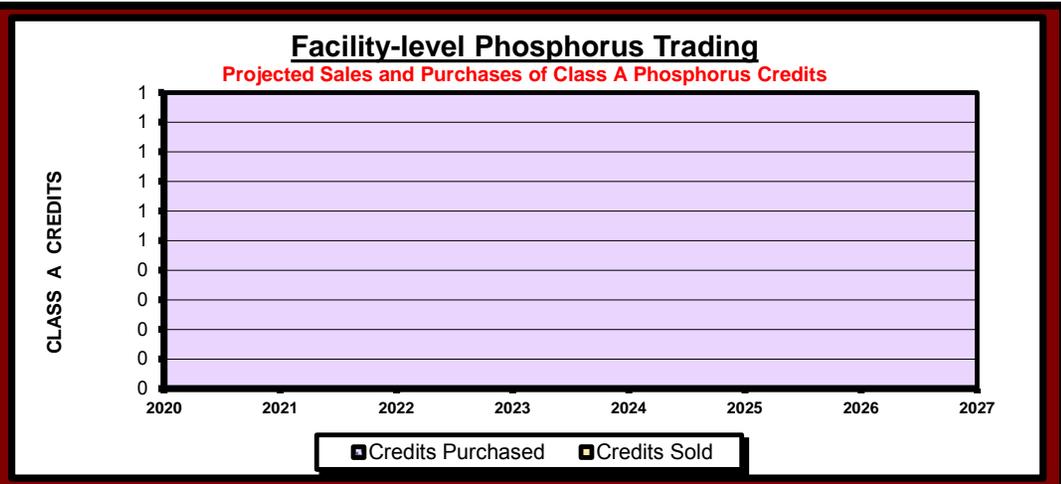
Design Flow (mgd)	Projected Flow (mgd)	Projected Avg. Annual Concentration (mg/L)	Discharged Load (end of pipe)	Delivery Factor	Expected Load	Delivered WLA	Expected Credits (delivered)	Transfers In (Out) within Owner Bubble	Transfers In (Out) from Private Exchange	WQIF-Held Credits	Expected Net Credits
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2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
0.76	0.76	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
9,259	9,259	9,259	9,259	9,259	9,259	9,259	9,259
0.33	0.22	0.22	0.22	0.22	0.22	0.22	0.22
3,055	2,037	2,037	2,037	2,037	2,037	2,037	2,037
6,030	4,020	4,020	4,020	4,020	4,020	4,020	4,020
2,975	1,983	1,983	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
2,975	1,983	1,983	1,983	1,983	1,983	1,983	1,983
0	0	0	0	0	0	0	0
2,975	1,983	1,983	1,983	1,983	1,983	1,983	1,983

PHOSPHORUS FACILITY SUMMARY

Massanutten PSC

POTOMAC Trading Basin



Loading & Credit Summary

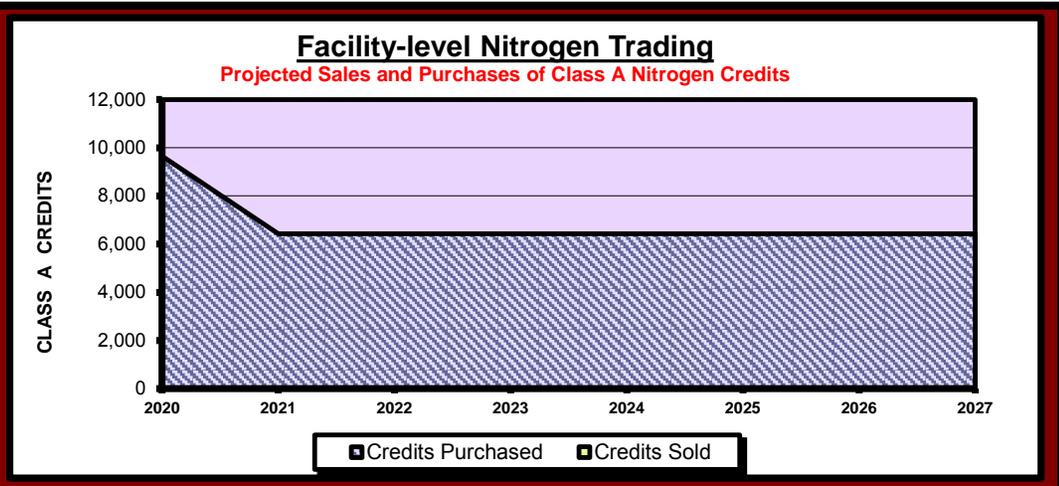
Design Flow (mgd)	Projected Flow (mgd)	Projected Avg. Annual Concentration (mg/L)	Discharged Load (end of pipe)	Delivery Factor	Expected Load	Delivered WLA	Expected Credits (delivered)	Transfers In (Out) within Owner Bubble	Transfers In (Out) from Private Exchange	WQIF-Held Credits	Expected Net Credits
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2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
694	694	694	694	694	694	694	694
0.53	0.47	0.47	0.47	0.47	0.47	0.47	0.47
368	326	326	326	326	326	326	326
727	644	644	644	644	644	644	644
359	318	318	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
359	318	318	318	318	318	318	318
0	0	0	0	0	0	0	0
359	318	318	318	318	318	318	318

NITROGEN FACILITY SUMMARY

Merck

POTOMAC Trading Basin



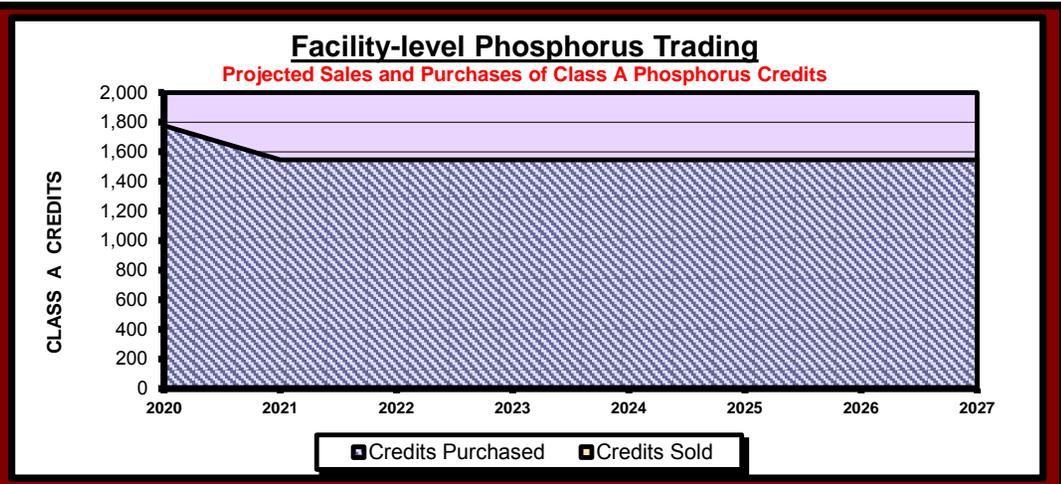
Loading & Credit Summary	
Design Flow (mgd)	1.20
Projected Flow (mgd)	1.20
Projected Avg. Annual Concentration (mg/L)	12.00
Discharged Load (end of pipe)	43,856
Delivery Factor	0.33
Expected Load	14,473
Delivered WLA	4,824
Expected Credits (delivered)	(9,649)
Transfers In (Out) within Owner Bubble	0
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
43,856	43,856	43,856	43,856	43,856	43,856	43,856	43,856
0.33	0.22	0.22	0.22	0.22	0.22	0.22	0.22
14,473	9,648	9,648	9,648	9,648	9,648	9,648	9,648
4,824	3,216	3,216	3,216	3,216	3,216	3,216	3,216
(9,649)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(9,649)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
4,386	4,386	4,386	4,386	4,386	4,386	4,386	4,386
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
2,368	2,061	2,061	2,061	2,061	2,061	2,061	2,061
592	515	515	515	515	515	515	515
(1,776)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(1,776)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)
(1,776)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)	(1,546)
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



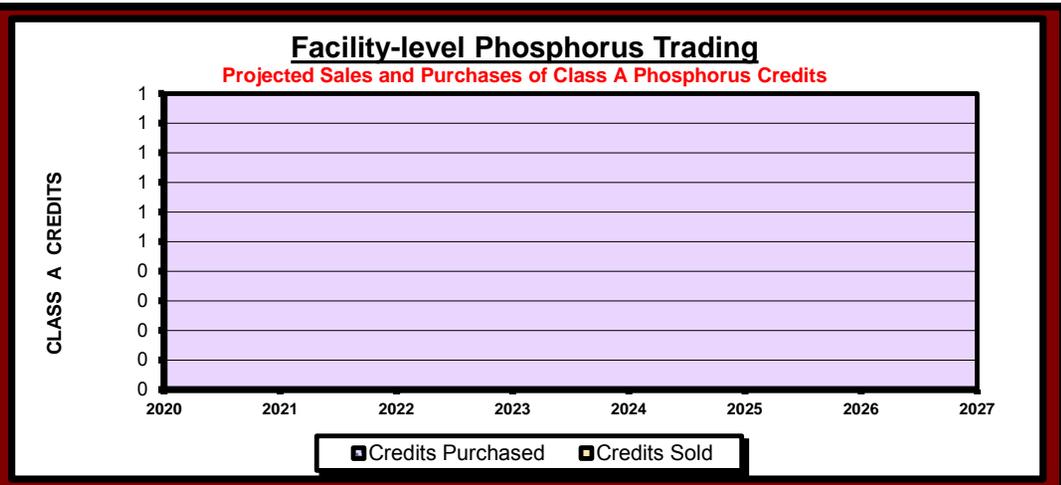
Loading & Credit Summary

Design Flow (mgd)
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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.22	0.22	0.22	0.22	0.22	0.22	0.22
18,091	12,060	12,060	12,060	12,060	12,060	12,060	12,060
18,091	12,060	12,060	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
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

MillerCoors LLC
POTOMAC Trading Basin



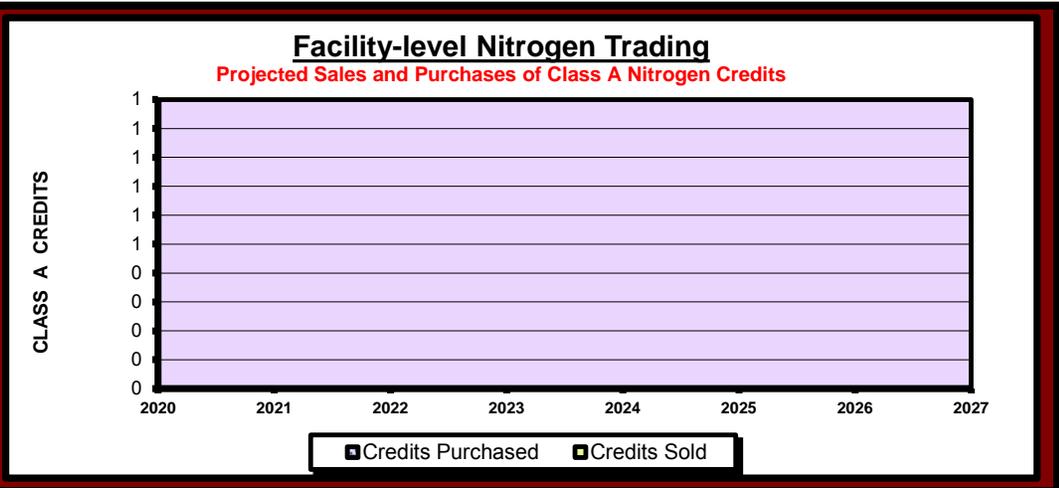
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.47	0.47	0.47	0.47	0.47	0.47	0.47
2,220	1,932	1,932	1,932	1,932	1,932	1,932	1,932
2,220	1,933	1,933	1,933	1,933	1,933	1,933	1,933
0	1	1	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	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0
0	1	1	1	1	1	1	1

NITROGEN FACILITY SUMMARY

Mt. Jackson
POTOMAC Trading Basin



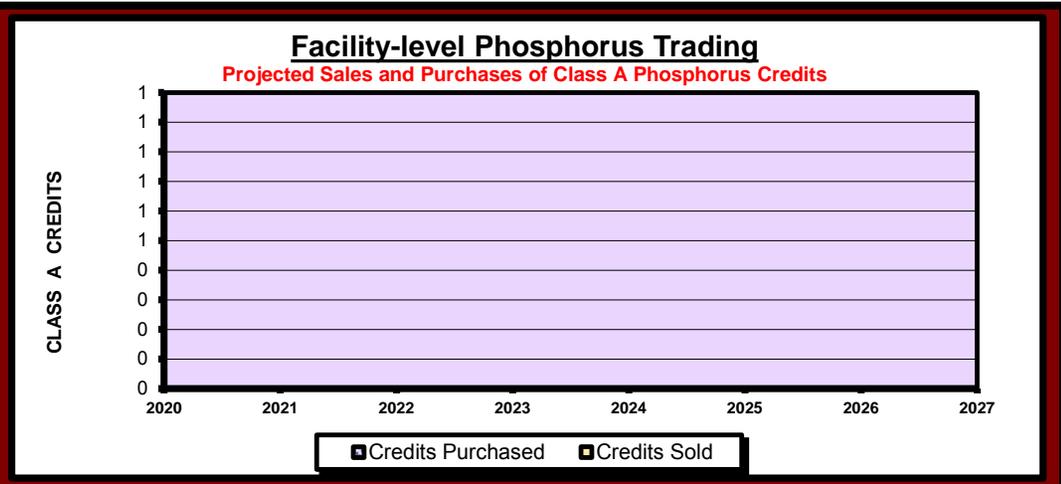
Loading & Credit Summary

Design Flow (mgd)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Projected Flow (mgd)	0.55	0.55	0.56	0.56	0.56	0.56	0.56	0.56
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)	6,700	6,700	6,822	6,822	6,822	6,822	6,822	6,822
Delivery Factor	0.34	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Expected Load	2,278	1,675	1,706	1,706	1,706	1,706	1,706	1,706
Delivered WLA	2,900	2,132	2,132	2,132	2,132	2,132	2,132	2,132
Expected Credits (delivered)	622	457	426	426	426	426	426	426
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	622	457	426	426	426	426	426	426
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	622	457	426	426	426	426	426	426

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
0.55	0.55	0.56	0.56	0.56	0.56	0.56	0.56
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
6,700	6,700	6,822	6,822	6,822	6,822	6,822	6,822
0.34	0.25	0.25	0.25	0.25	0.25	0.25	0.25
2,278	1,675	1,706	1,706	1,706	1,706	1,706	1,706
2,900	2,132	2,132	2,132	2,132	2,132	2,132	2,132
622	457	426	426	426	426	426	426
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
622	457	426	426	426	426	426	426
0	0	0	0	0	0	0	0
622	457	426	426	426	426	426	426

PHOSPHORUS FACILITY SUMMARY

Mt. Jackson
POTOMAC Trading Basin



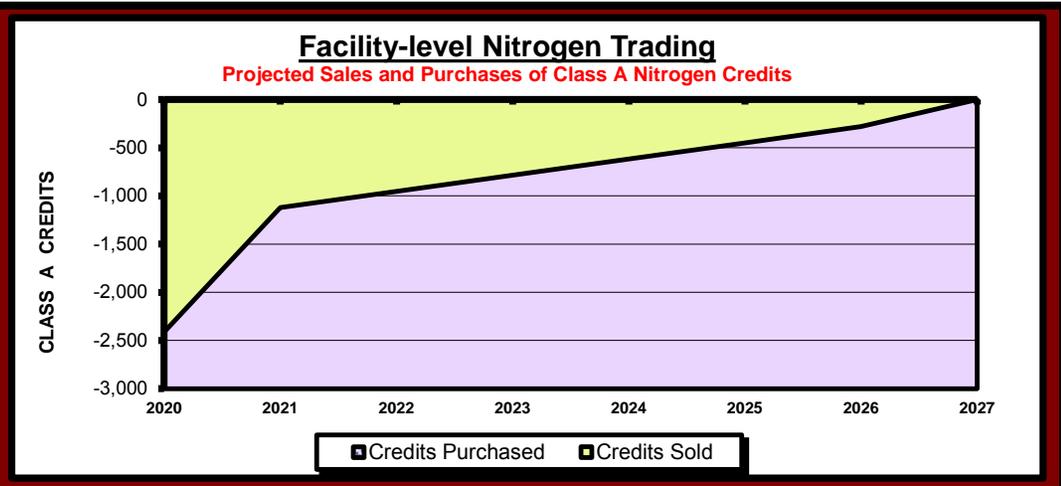
Loading & Credit Summary

Design Flow (mgd)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Projected Flow (mgd)	0.55	0.55	0.56	0.56	0.56	0.56	0.56	0.56
Projected Avg. Annual Concentration (mg/L)	0.20	0.20	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	335	335	512	512	512	512	512	512
Delivery Factor	0.53	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	178	157	240	240	240	240	240	240
Delivered WLA	339	301	301	301	301	301	301	301
Expected Credits (delivered)	161	144	61	61	61	61	61	61
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	161	144	61	61	61	61	61	61
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	161	144	61	61	61	61	61	61

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
0.55	0.55	0.56	0.56	0.56	0.56	0.56	0.56
0.20	0.20	0.30	0.30	0.30	0.30	0.30	0.30
335	335	512	512	512	512	512	512
0.53	0.47	0.47	0.47	0.47	0.47	0.47	0.47
178	157	240	240	240	240	240	240
339	301	301	301	301	301	301	301
161	144	61	61	61	61	61	61
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
161	144	61	61	61	61	61	61
0	0	0	0	0	0	0	0
161	144	61	61	61	61	61	61

NITROGEN FACILITY SUMMARY

Purcellville
<i>POTOMAC Trading Basin</i>



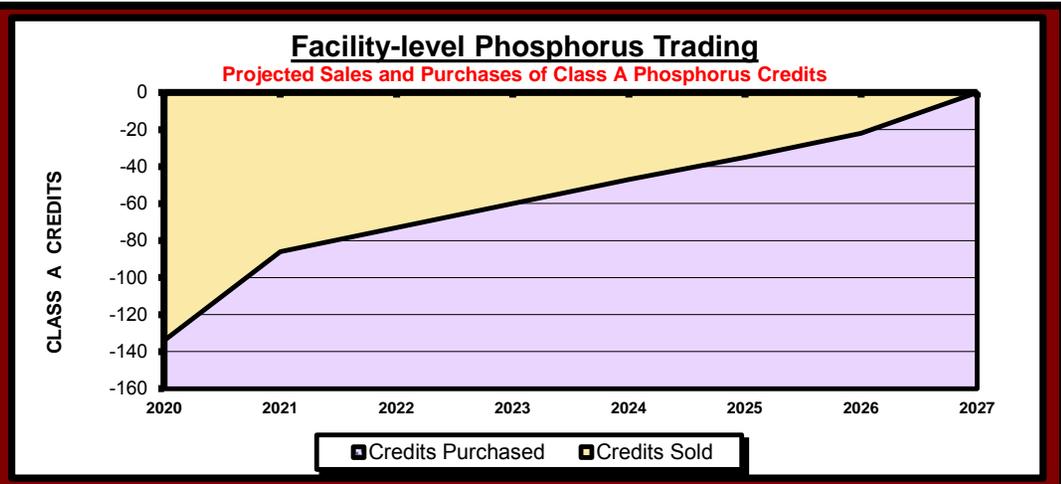
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
0.95	1.10	1.16	1.22	1.28	1.34	1.40	1.50
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
11,573	13,400	14,131	14,862	15,593	16,324	17,055	18,273
0.72	0.46	0.46	0.46	0.46	0.46	0.46	0.46
8,333	6,164	6,500	6,837	7,173	7,509	7,845	8,406
13,157	8,406	8,406	8,406	8,406	8,406	8,406	8,406
4,824	2,242	1,906	1,569	1,233	897	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	0
4,824	2,242	1,906	1,569	1,233	897	561	0
2,412	1,121	953	785	617	450	280	0
2,412	1,121	953	784	616	447	281	0

PHOSPHORUS FACILITY SUMMARY

Purcellville
<i>POTOMAC Trading Basin</i>



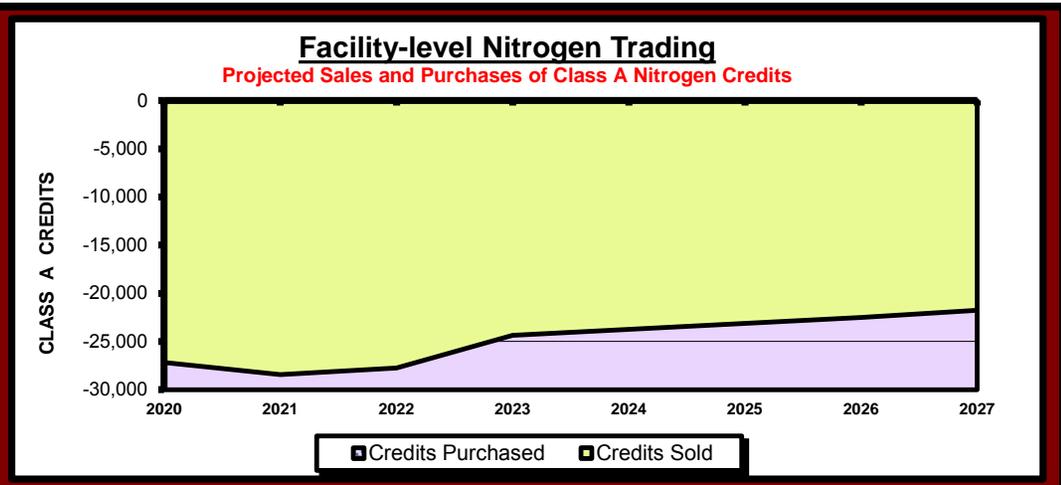
Loading & Credit Summary

Design Flow (mgd)	1.50
Projected Flow (mgd)	0.95
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	868
Delivery Factor	0.53
Expected Load	460
Delivered WLA	727
Expected Credits (delivered)	267
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	267
Class A Credit Sales (Purchases)	134
Expected Class B Credits	133

2020	2021	2022	2023	2024	2025	2026	2027	
Planning Period					Future Estimates (non-binding)			
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	
0.95	1.10	1.16	1.22	1.28	1.34	1.40	1.50	
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	
868	1,005	1,060	1,115	1,169	1,224	1,279	1,371	
0.53	0.47	0.47	0.47	0.47	0.47	0.47	0.47	
460	472	498	524	550	575	601	644	
727	644	644	644	644	644	644	644	
267	172	146	120	94	69	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	0	
267	172	146	120	94	69	43	0	
134	86	73	60	47	35	22	0	
133	86	73	60	47	34	21	0	

NITROGEN FACILITY SUMMARY

PWCSA-HL Mooney
 POTOMAC Trading Basin



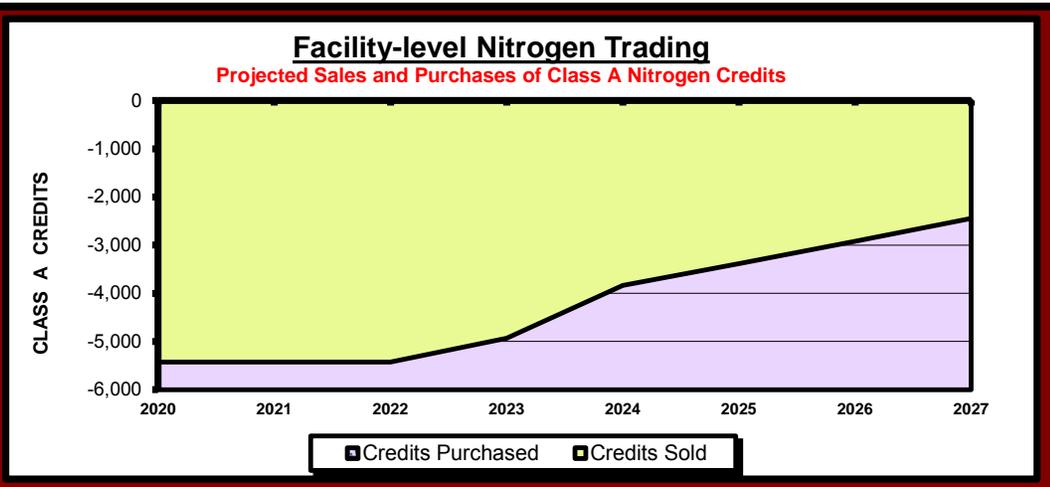
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
19.75	19.85	19.95	20.05	20.15	20.25	20.35	20.45
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
180,449	181,363	182,277	183,190	184,104	185,018	185,931	186,845
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
180,449	181,363	182,277	183,190	184,104	185,018	185,931	186,845
219,280	219,280	219,280	219,280	219,280	219,280	219,280	219,280
38,831	37,917	37,003	36,090	35,176	34,262	33,349	32,435
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
38,831	37,917	37,003	36,090	35,176	34,262	33,349	32,435
27,182	28,438	27,752	24,363	23,743	23,124	22,509	21,763
11,649	9,479	9,251	11,727	11,433	11,138	10,840	10,672

NITROGEN FACILITY SUMMARY

Stafford Co-Aquia
POTOMAC Trading Basin



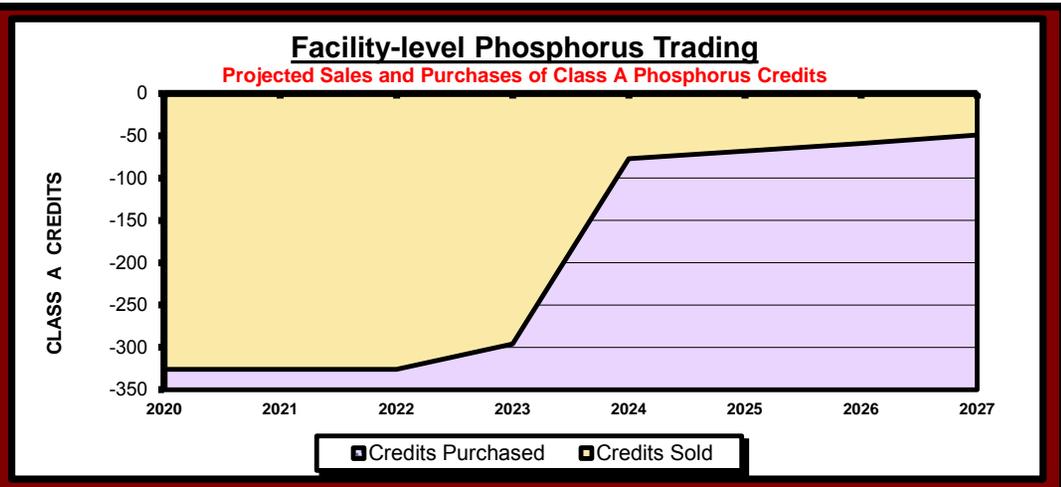
Loading & Credit Summary

Design Flow (mgd)	8.00
Projected Flow (mgd)	7.34
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	67,063
Delivery Factor	1.00
Expected Load	67,063
Delivered WLA	73,093
Expected Credits (delivered)	6,030
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	6,030
Class A Credit Sales (Purchases)	5,427
Expected Class B Credits	603

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
7.34	7.34	7.34	7.46	6.60	6.77	6.93	7.11
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
67,063	67,063	67,063	68,160	60,302	61,810	63,355	64,939
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
67,063	67,063	67,063	68,160	60,302	61,810	63,355	64,939
73,093	73,093	73,093	73,093	73,093	73,093	73,093	73,093
6,030	6,030	6,030	4,933	12,791	11,283	9,738	8,154
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
6,030	6,030	6,030	4,933	12,791	11,283	9,738	8,154
5,427	5,427	5,427	4,933	3,837	3,385	2,921	2,446
603	603	603	0	8,954	7,898	6,817	5,708

PHOSPHORUS FACILITY SUMMARY

Stafford Co-Aquia
POTOMAC Trading Basin

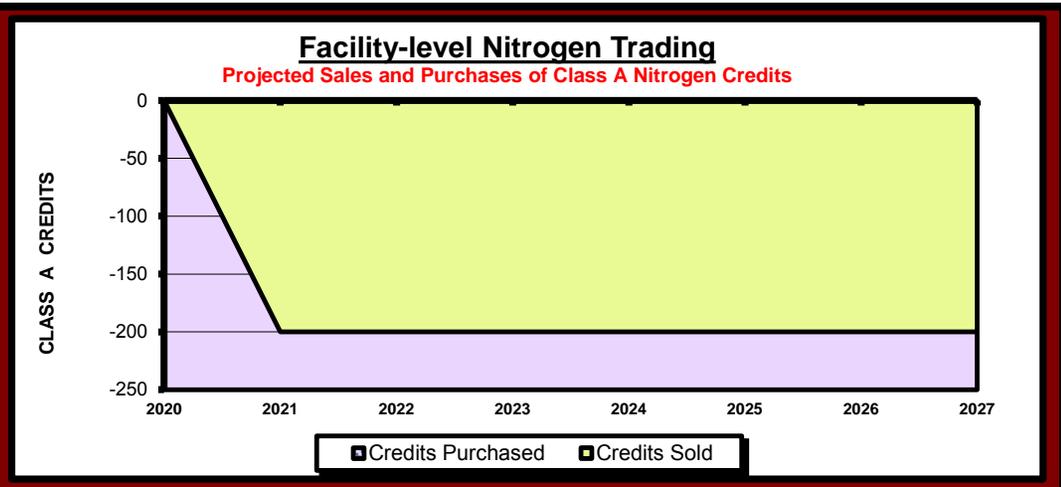


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

2020	2021	2022	2023	2024	2025	2026	2027
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
7.34	7.34	7.34	7.46	6.60	6.77	6.93	7.11
0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
4,024	4,024	4,024	4,090	3,618	3,709	3,801	3,896
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4,024	4,024	4,024	4,090	3,618	3,709	3,801	3,896
4,386	4,386	4,386	4,386	4,386	4,386	4,386	4,386
362	362	362	296	768	677	585	490
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
362	362	362	296	768	677	585	490
326	326	326	296	77	68	59	49
36	36	36	0	691	609	526	441

NITROGEN FACILITY SUMMARY

Stoney Creek
 POTOMAC Trading Basin



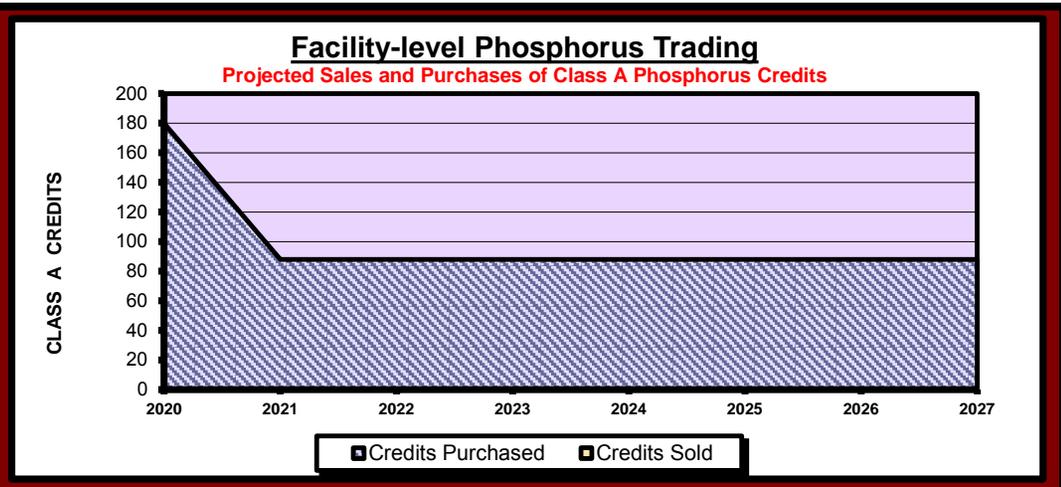
Loading & Credit Summary	
Discharged Load (end of pipe)	
Design Flow (mgd)	0.60
Projected Flow (mgd)	0.33
Projected Avg. Annual Concentration (mg/L)	8.00
Delivery Factor	0.35
Expected Load	2,814
Delivered WLA*	2,891
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	0
Transfers In (Out)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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
0.33	0.35	0.35	0.35	0.35	0.35	0.35	0.35
8.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
8,040	7,462	7,462	7,462	7,462	7,462	7,462	7,462
0.35	0.25	0.25	0.25	0.25	0.25	0.25	0.25
2,814	1,865	1,865	1,865	1,865	1,865	1,865	1,865
2,891	2,065	2,065	2,065	2,065	2,065	2,065	2,065
77	200	200	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	200	200	200	200	200	200	200
0	200	200	200	200	200	200	200
77	0	0	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

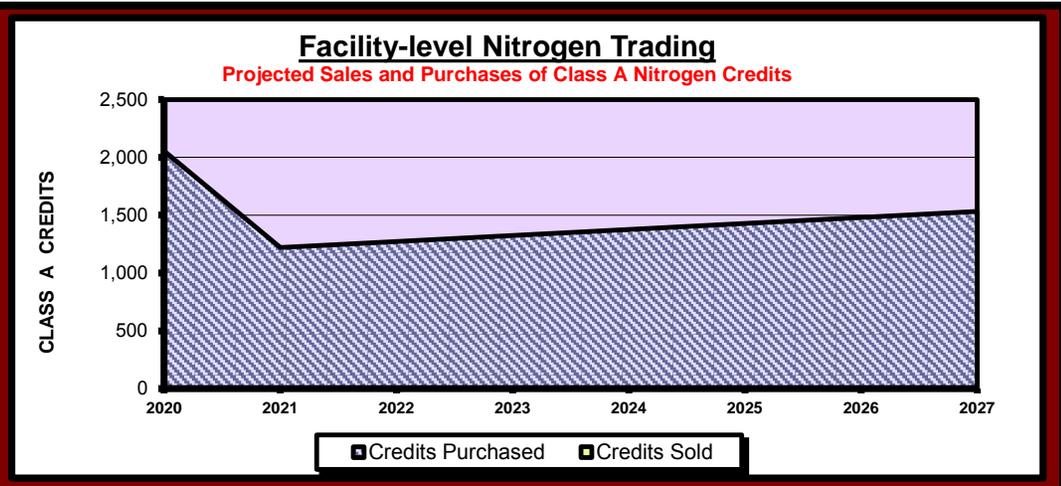
Design Flow (mgd)	0.60
Projected Flow (mgd)	0.33
Projected Avg. Annual Concentration (mg/L)	1.00
Discharged Load (end of pipe)	1,005
Delivery Factor	0.53
Expected Load	533
Delivered WLA*	354
Expected Credits (delivered)	(179)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange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

	2020	2021	2022	2023	2024	2025	2026	2027
	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	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Projected Avg. Annual Concentration (mg/L)	1.00	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Discharged Load (end of pipe)	1,005	853	853	853	853	853	853	853
Delivery Factor	0.53	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	533	401	401	401	401	401	401	401
Delivered WLA*	354	313	313	313	313	313	313	313
Expected Credits (delivered)	(179)	(88)	(88)	(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)	(88)	(88)	(88)	(88)	(88)	(88)	(88)
Class A Credit Sales (Purchases)	(180)	(88)	(88)	(88)	(88)	(88)	(88)	(88)
Expected Class B Credits	1	0	0	0	0	0	0	0

* Reflects consolidation of the Shrine Mont STP wasteload allocation

NITROGEN FACILITY SUMMARY

Strasburg
<i>POTOMAC Trading Basin</i>

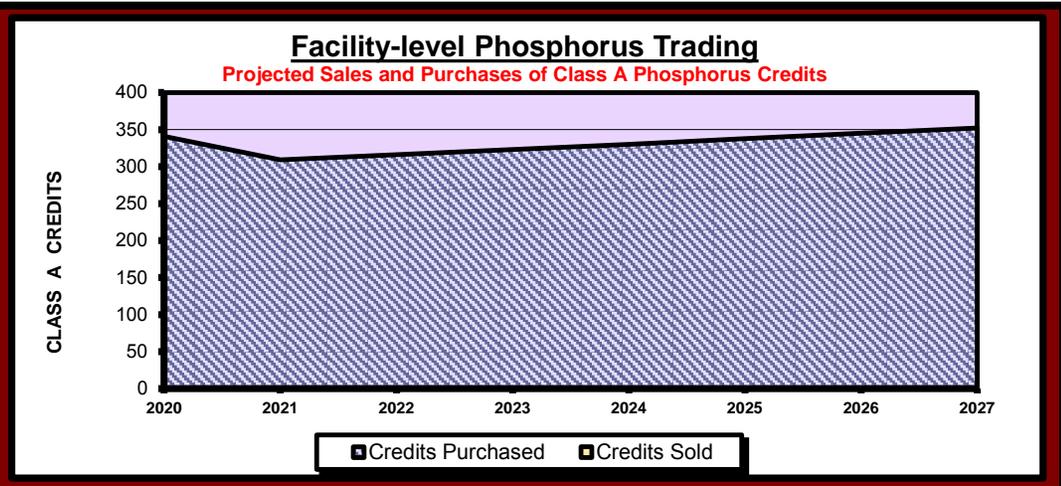


Loading & Credit Summary	
Design Flow (mgd)	2.00
Projected Flow (mgd)	1.01
Projected Avg. Annual Concentration (mg/L)	5.00
Discharged Load (end of pipe)	15,380
Delivery Factor	0.43
Expected Load	6,613
Delivered WLA	5,134
Expected Credits (delivered)	(1,479)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(1,479)
Class A Credit Sales (Purchases)	(2,056)
Expected Class B Credits	577

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
15,380	15,532	15,685	15,837	15,989	16,141	16,294	16,446
0.43	0.34	0.34	0.34	0.34	0.34	0.34	0.34
6,613	5,281	5,333	5,385	5,436	5,488	5,540	5,592
5,134	4,059	4,059	4,059	4,059	4,059	4,059	4,059
(1,479)	(1,222)	(1,274)	(1,326)	(1,377)	(1,429)	(1,481)	(1,533)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(1,479)	(1,222)	(1,274)	(1,326)	(1,377)	(1,429)	(1,481)	(1,533)
(2,056)	(1,222)	(1,274)	(1,326)	(1,377)	(1,429)	(1,481)	(1,533)
577	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Strasburg
 POTOMAC Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	2.00
Projected Flow (mgd)	1.01
Projected Avg. Annual Concentration (mg/L)	0.50
Discharged Load (end of pipe)	1,538
Delivery Factor	0.53
Expected Load	815
Delivered WLA	474
Expected Credits (delivered)	(341)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(341)
Class A Credit Sales (Purchases)	(341)
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
1,538	1,553	1,568	1,584	1,599	1,614	1,629	1,645
0.53	0.47	0.47	0.47	0.47	0.47	0.47	0.47
815	730	737	744	751	759	766	773
474	421	421	421	421	421	421	421
(341)	(309)	(316)	(323)	(330)	(338)	(345)	(352)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(341)	(309)	(316)	(323)	(330)	(338)	(345)	(352)
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

UOSA

POTOMAC Trading Basin



Loading & Credit Summary

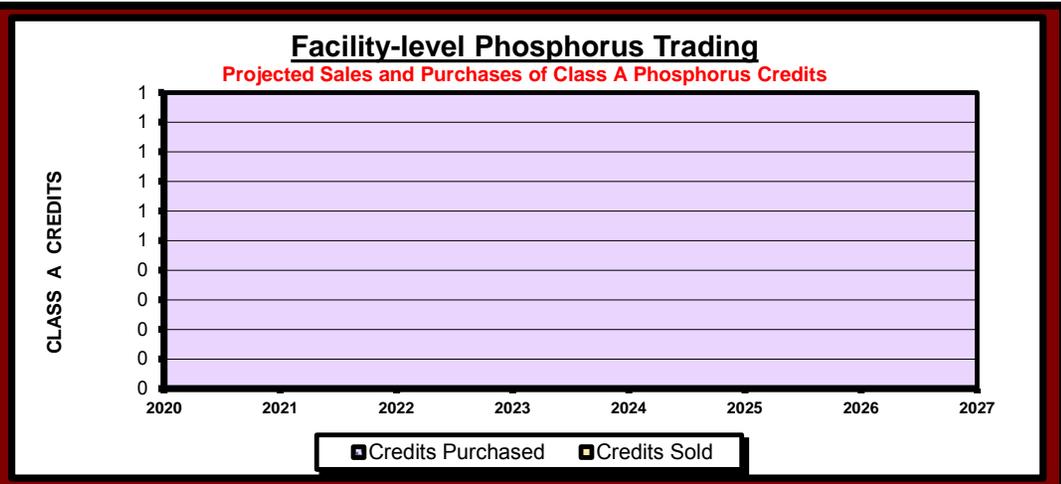
Design Flow (mgd)	Projected Flow (mgd)	Projected Avg. Annual Concentration (mg/L)	Discharged Load (end of pipe)	Delivery Factor	Expected Load	Delivered WLA	Expected Credits (delivered)	Transfers In (Out) within Owner Bubble	Transfers In (Out) from Private Exchange	WQIF-Held Credits	Expected Net Credits	Class A Credit Sales (Purchases)	Expected Class B Credits
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2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
35.76	36.13	34.27	36.37	37.56	37.96	38.36	38.76
11.94	11.95	12.60	11.80	11.50	11.35	11.25	11.10
1,300,376	1,314,931	1,315,079	1,307,051	1,315,499	1,312,167	1,314,311	1,310,310
0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
299,087	302,434	302,468	300,622	302,565	301,798	302,292	301,371
302,607	302,607	302,607	302,607	302,607	302,607	302,607	302,607
3,520	173	139	1,985	42	809	315	1,236
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3,520	173	139	1,985	42	809	315	1,236
0	0	0	0	0	0	0	0
3,520	173	139	1,985	42	809	315	1,236

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
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2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
35.76	36.13	34.27	36.37	37.56	37.96	38.36	38.76
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
10,891	11,004	10,437	11,077	11,439	11,561	11,683	11,805
0.30	0.31	0.31	0.31	0.31	0.31	0.31	0.31
3,267	3,411	3,236	3,434	3,546	3,584	3,622	3,659
4,934	5,098	5,098	5,098	5,098	5,098	5,098	5,098
1,667	1,687	1,862	1,664	1,552	1,514	1,476	1,439
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,667	1,687	1,862	1,664	1,552	1,514	1,476	1,439
0	0	0	0	0	0	0	0
1,667	1,687	1,862	1,664	1,552	1,514	1,476	1,439

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.

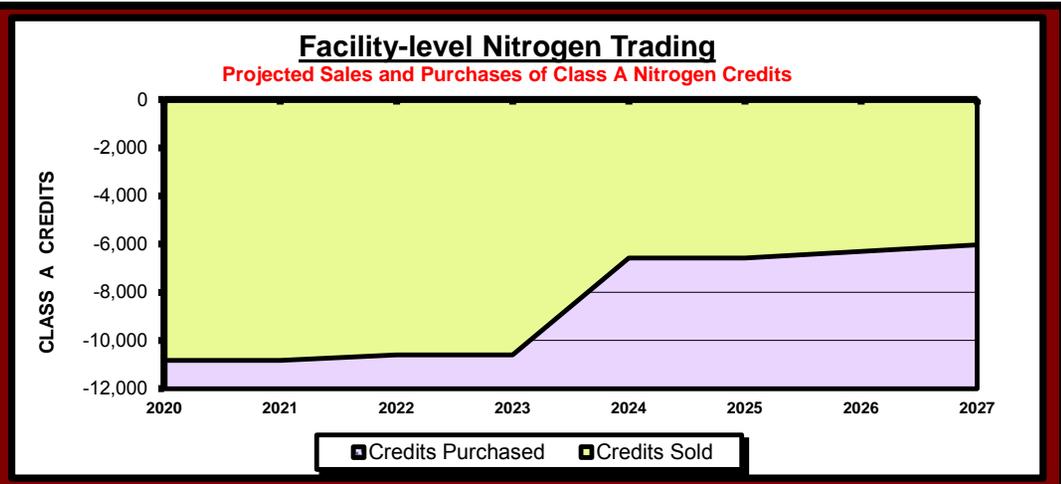
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply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

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
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	18,045	18,045	17,665	17,665	10,964	10,964	10,507	10,051
VA Am. Water PW Sec. 8	18,045	18,045	17,665	17,665	10,051	10,051	9,137	9,137
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	36,090	36,090	35,330	35,330	21,015	21,015	19,644	19,188
Class A Sales (Purchases)	21,654	21,654	21,198	21,198	12,609	12,609	11,786	11,513
<i>Expected Class B Credits</i>	14,436	14,436	14,132	14,132	8,406	8,406	7,858	7,675
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
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	1,083	1,083	1,060	1,060	658	658	631	603
VA Am. Water PW Sec. 8	1,083	1,083	1,060	1,060	603	603	548	548
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	2,166	2,166	2,120	2,120	1,261	1,261	1,179	1,151
Class A Sales (Purchases)	1,300	1,300	1,272	1,272	757	757	708	691
<i>Expected Class B Credits</i>	866	866	848	848	504	504	471	460
<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>



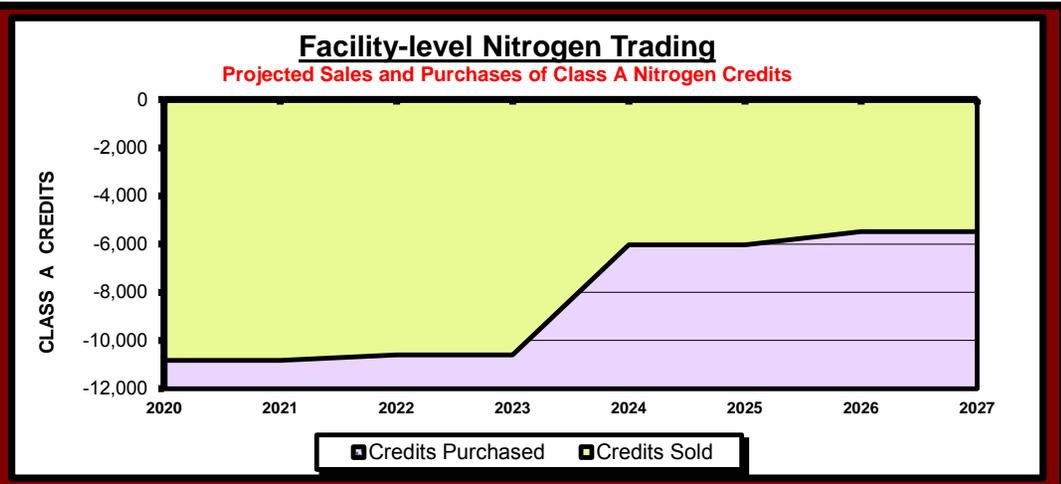
Loading & Credit Summary	
Design Flow (mgd)	4.60
Projected Flow (mgd)	3.15
Projected Avg. Annual Concentration (mg/L)	2.50
Discharged Load (end of pipe)	23,984
Delivery Factor	1.00
Expected Load	23,984
Delivered WLA	42,029
Expected Credits (delivered)	18,045
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	18,045
Class A Credit Sales (Purchases)	10,827
Expected Class B Credits	7,218

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
3.15	3.15	3.20	3.20	3.40	3.40	3.45	3.50
2.50	2.50	2.50	2.50	3.00	3.00	3.00	3.00
23,984	23,984	24,364	24,364	31,065	31,065	31,522	31,978
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
23,984	23,984	24,364	24,364	31,065	31,065	31,522	31,978
42,029	42,029	42,029	42,029	42,029	42,029	42,029	42,029
18,045	18,045	17,665	17,665	10,964	10,964	10,507	10,051
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
18,045	18,045	17,665	17,665	10,964	10,964	10,507	10,051
10,827	10,827	10,599	10,599	6,578	6,578	6,304	6,031
7,218	7,218	7,066	7,066	4,386	4,386	4,203	4,020

NITROGEN FACILITY SUMMARY

VA Am. Water PW Sec. 8

POTOMAC Trading Basin



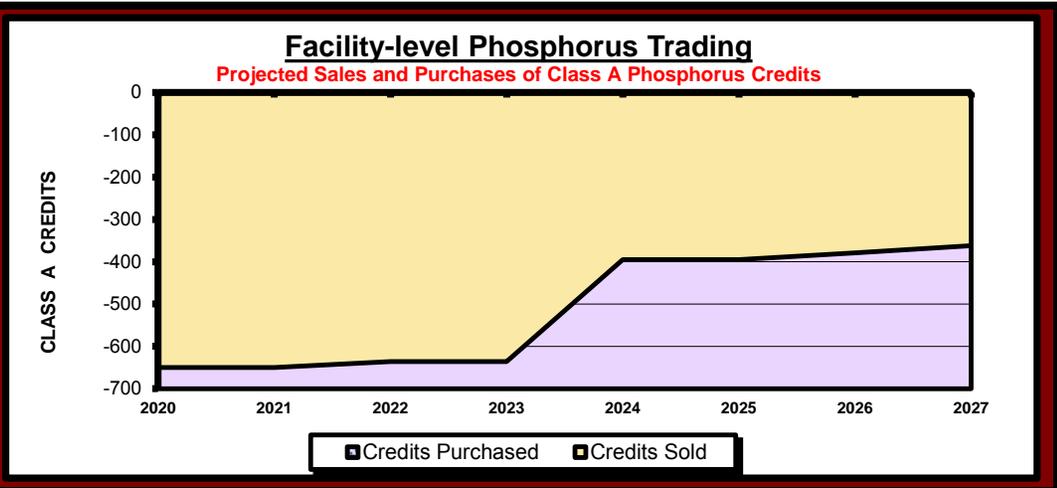
Loading & Credit Summary

Design Flow (mgd)	4.60
Projected Flow (mgd)	3.15
Projected Avg. Annual Concentration (mg/L)	2.50
Discharged Load (end of pipe)	23,984
Delivery Factor	1.00
Expected Load	23,984
Delivered WLA	42,029
Expected Credits (delivered)	18,045
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	18,045
Class A Credit Sales (Purchases)	10,827
Expected Class B Credits	7,218

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
3.15	3.15	3.20	3.20	3.50	3.50	3.60	3.60
2.50	2.50	2.50	2.50	3.00	3.00	3.00	3.00
23,984	23,984	24,364	24,364	31,978	31,978	32,892	32,892
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
23,984	23,984	24,364	24,364	31,978	31,978	32,892	32,892
42,029	42,029	42,029	42,029	42,029	42,029	42,029	42,029
18,045	18,045	17,665	17,665	10,051	10,051	9,137	9,137
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
18,045	18,045	17,665	17,665	10,051	10,051	9,137	9,137
10,827	10,827	10,599	10,599	6,031	6,031	5,482	5,482
7,218	7,218	7,066	7,066	4,020	4,020	3,655	3,655

PHOSPHORUS FACILITY SUMMARY

VA Am. Water PW Sec. 1
POTOMAC Trading Basin



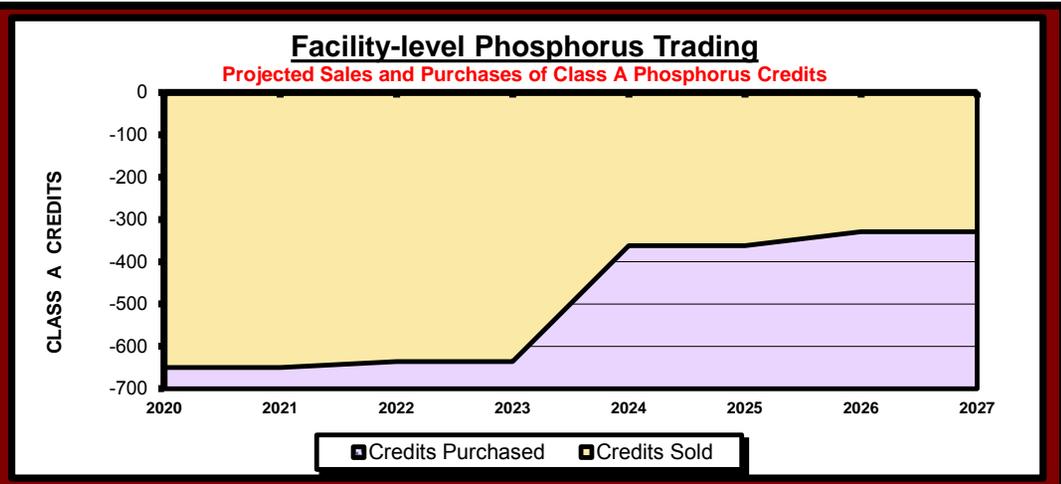
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
3.15	3.15	3.20	3.20	3.40	3.40	3.45	3.50
0.15	0.15	0.15	0.15	0.18	0.18	0.18	0.18
1,439	1,439	1,462	1,462	1,864	1,864	1,891	1,919
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,439	1,439	1,462	1,462	1,864	1,864	1,891	1,919
2,522	2,522	2,522	2,522	2,522	2,522	2,522	2,522
1,083	1,083	1,060	1,060	658	658	631	603
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,083	1,083	1,060	1,060	658	658	631	603
650	650	636	636	395	395	379	362
433	433	424	424	263	263	252	241

PHOSPHORUS FACILITY SUMMARY

VA Am. Water PW Sec. 8
POTOMAC Trading Basin



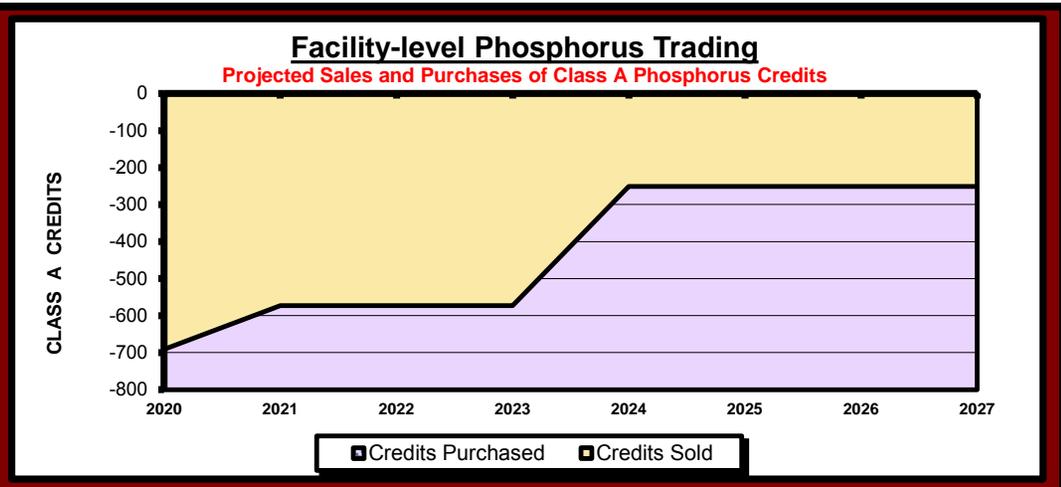
Loading & Credit Summary

Design Flow (mgd)	4.60
Projected Flow (mgd)	3.15
Projected Avg. Annual Concentration (mg/L)	0.15
Discharged Load (end of pipe)	1,439
Delivery Factor	1.00
Expected Load	1,439
Delivered WLA	2,522
Expected Credits (delivered)	1,083
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,083
Class A Credit Sales (Purchases)	650
Expected Class B Credits	433

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
3.15	3.15	3.20	3.20	3.50	3.50	3.60	3.60
0.15	0.15	0.15	0.15	0.18	0.18	0.18	0.18
1,439	1,439	1,462	1,462	1,919	1,919	1,974	1,974
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,439	1,439	1,462	1,462	1,919	1,919	1,974	1,974
2,522	2,522	2,522	2,522	2,522	2,522	2,522	2,522
1,083	1,083	1,060	1,060	603	603	548	548
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,083	1,083	1,060	1,060	603	603	548	548
650	650	636	636	362	362	329	329
433	433	424	424	241	241	219	219

PHOSPHORUS FACILITY SUMMARY

Waynesboro
POTOMAC Trading Basin



Loading & Credit Summary

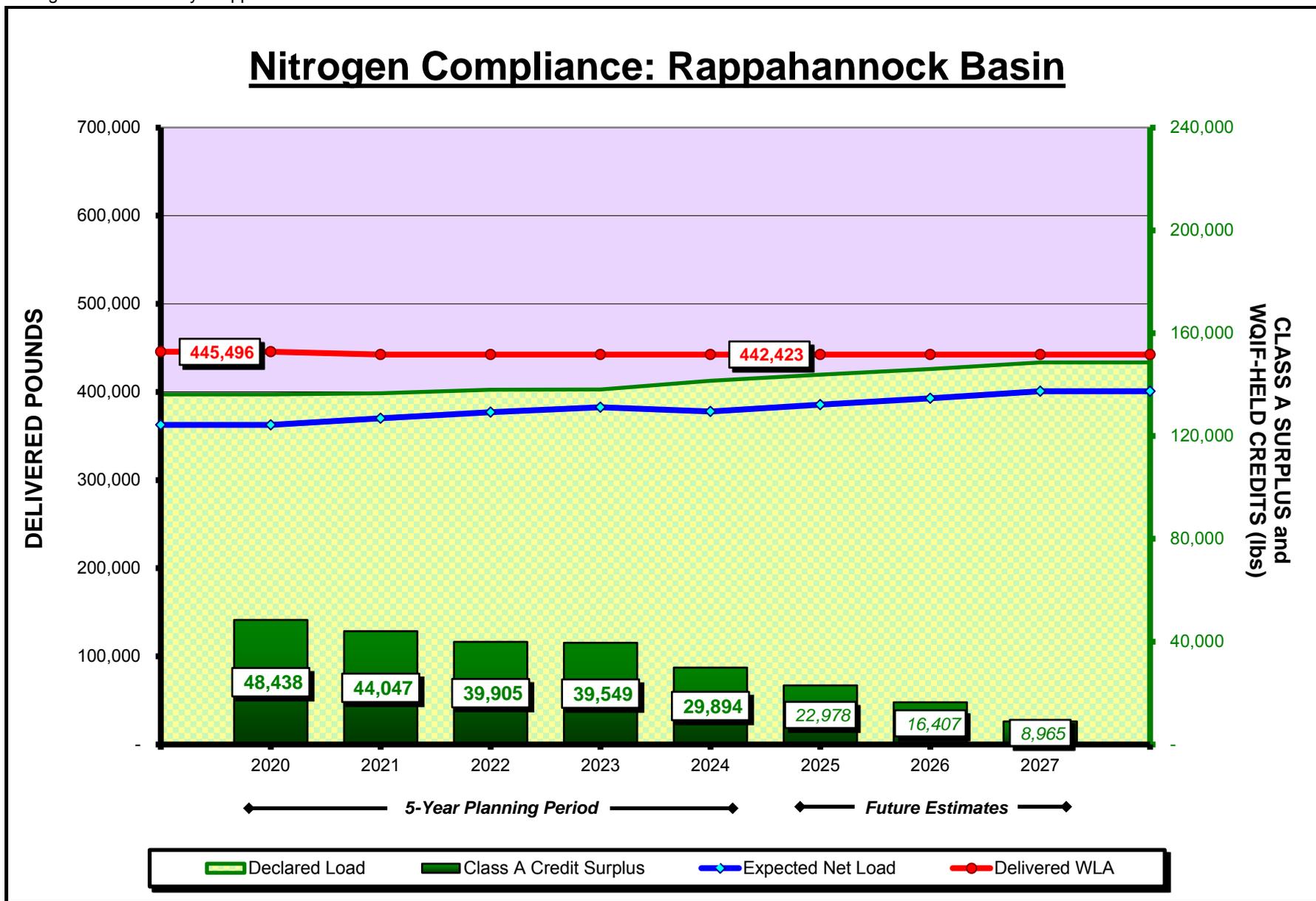
Design Flow (mgd)	6.00
Projected Flow (mgd)	3.90
Projected Avg. Annual Concentration (mg/L)	0.20
Discharged Load (end of pipe)	2,376
Delivery Factor	0.54
Expected Load	1,283
Delivered WLA	1,974
Expected Credits (delivered)	691
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	691
Class A Credit Sales (Purchases)	691
Expected Class B Credits	0

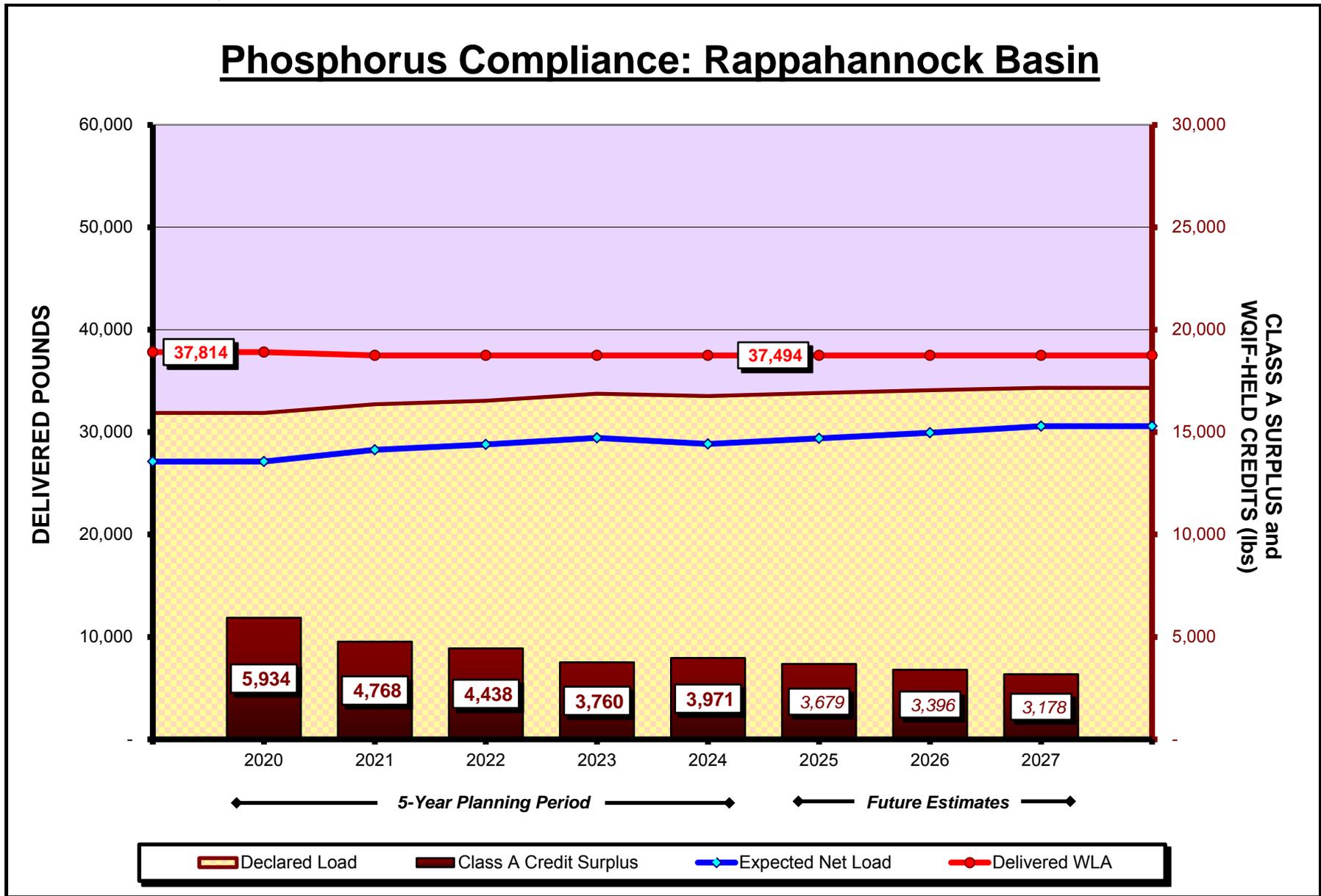
2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
3.90	4.00	4.00	4.00	4.00	4.00	4.00	4.10
0.20	0.20	0.20	0.20	0.25	0.25	0.25	0.25
2,376	2,436	2,436	2,436	3,046	3,046	3,046	3,122
0.54	0.47	0.47	0.47	0.47	0.47	0.47	0.47
1,283	1,145	1,145	1,145	1,431	1,431	1,431	1,467
1,974	1,718	1,718	1,718	1,718	1,718	1,718	1,718
691	573	573	573	287	287	287	251
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
691	573	573	573	287	287	287	251
691	573	573	573	251	251	251	251
0	0	0	0	36	36	36	0

SECTION 3

Rappahannock River Basin Exchange Compliance Plan







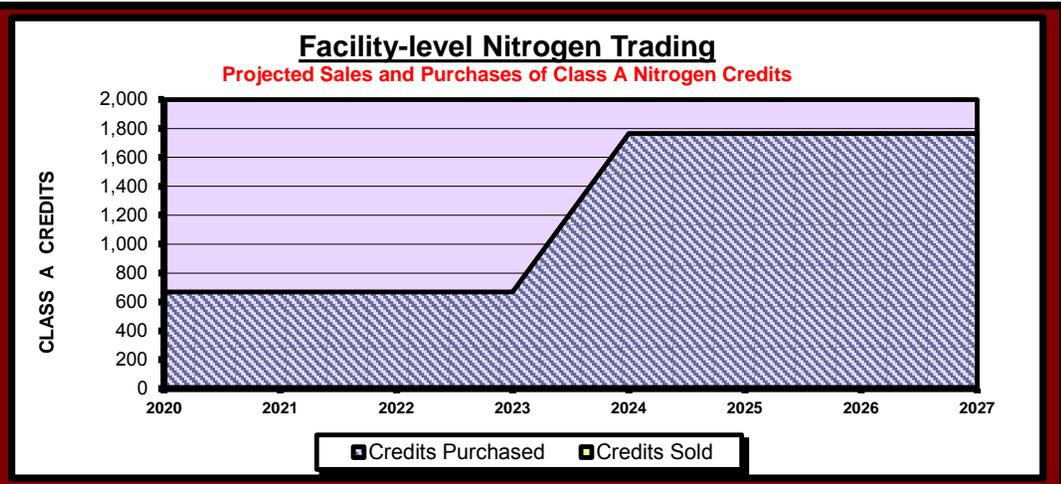
Rappahannock River Basin

Supplemental Information for Individual Facilities



NITROGEN FACILITY SUMMARY

American Water-Fort AP Hill
RAPPAHANNOCK Trading Basin



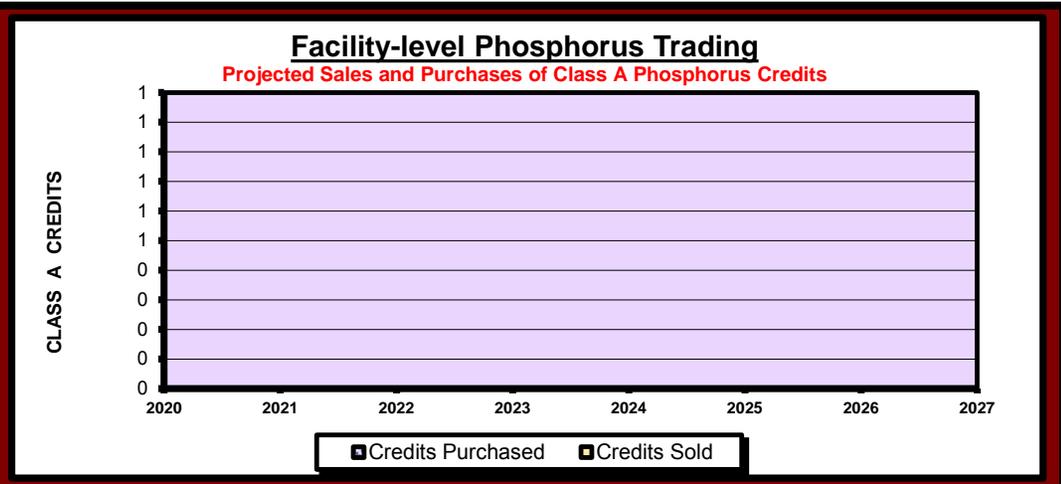
Loading & Credit Summary

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)	(670)
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
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	30.00	30.00	30.00	30.00
7,127	7,127	7,127	7,127	8,223	8,223	8,223	8,223
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
7,127	7,127	7,127	7,127	8,223	8,223	8,223	8,223
6,457	6,457	6,457	6,457	6,457	6,457	6,457	6,457
(670)	(670)	(670)	(670)	(1,766)	(1,766)	(1,766)	(1,766)
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)	(1,766)	(1,766)	(1,766)	(1,766)
(670)	(670)	(670)	(670)	(1,766)	(1,766)	(1,766)	(1,766)
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

American Water-Fort AP Hill
RAPPAHANNOCK Trading Basin



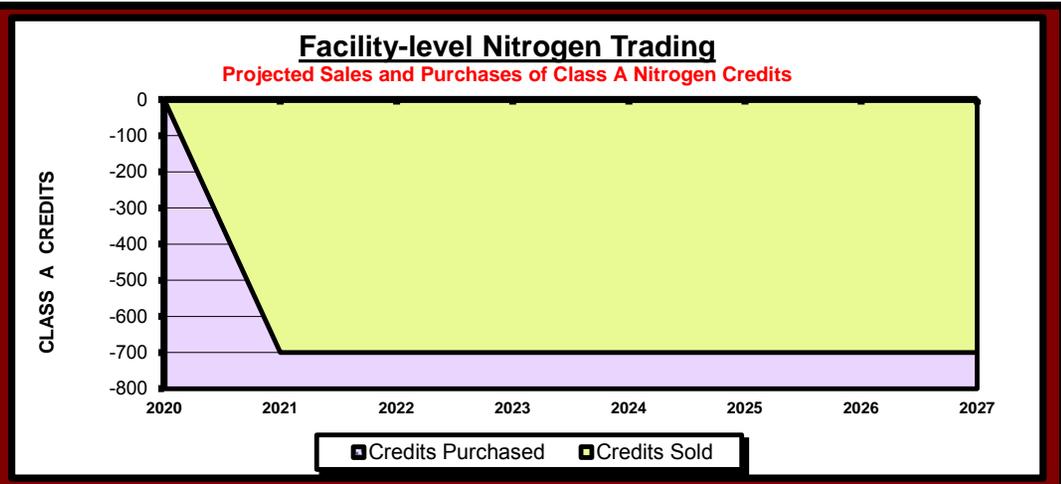
Loading & Credit Summary

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

	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
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	384	384	384	384	384	384	384
Delivery Factor	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	380	384	384	384	384	384	384	384
Delivered WLA	479	484	484	484	484	484	484	484
Expected Credits (delivered)	99	100	100	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	100	100	100	100	100	100	100
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	99	100	100	100	100	100	100	100

NITROGEN FACILITY SUMMARY

Aqua Virginia-Pres. Lakes
RAPPAHANNOCK Trading Basin



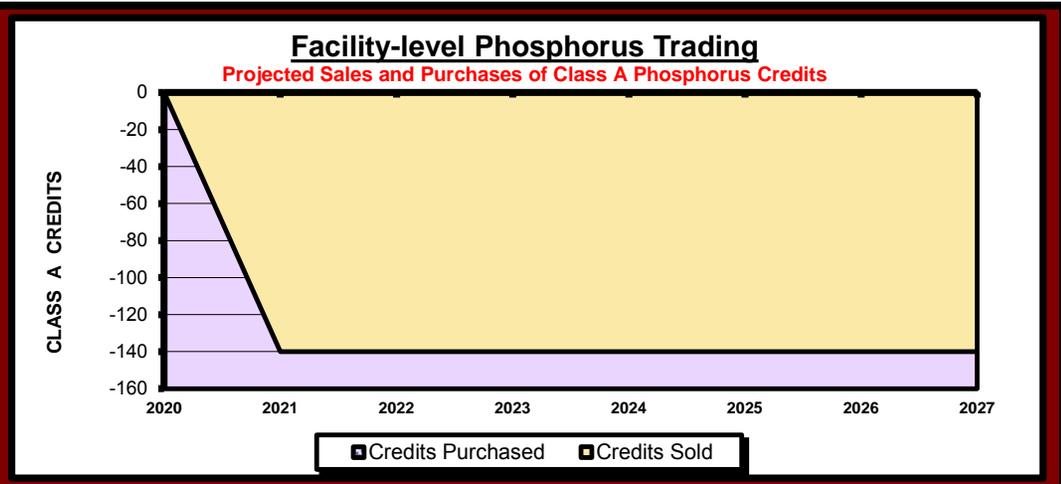
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
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	700	700	700	700	700	700	700
727	27	27	27	27	27	27	27

PHOSPHORUS 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)	1.00	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Discharged Load (end of pipe)	158	127	127	127	127	127	127	127
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	158	127	127	127	127	127	127	127
Delivered WLA	267	267	267	267	267	267	267	267
Expected Credits (delivered)	109	140	140	140	140	140	140	140
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	109	140	140	140	140	140	140	140
Class A Credit Sales (Purchases)	0	140	140	140	140	140	140	140
Expected Class B Credits	109	0	0	0	0	0	0	0

2020	2021	2022	2023	2024	2025	2026	2027
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
1.00	0.80	0.80	0.80	0.80	0.80	0.80	0.80
158	127	127	127	127	127	127	127
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
158	127	127	127	127	127	127	127
267	267	267	267	267	267	267	267
109	140	140	140	140	140	140	140
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	140	140	140	140	140	140	140
0	140	140	140	140	140	140	140
109	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Culpeper (Town)
RAPPAHANNOCK Trading Basin



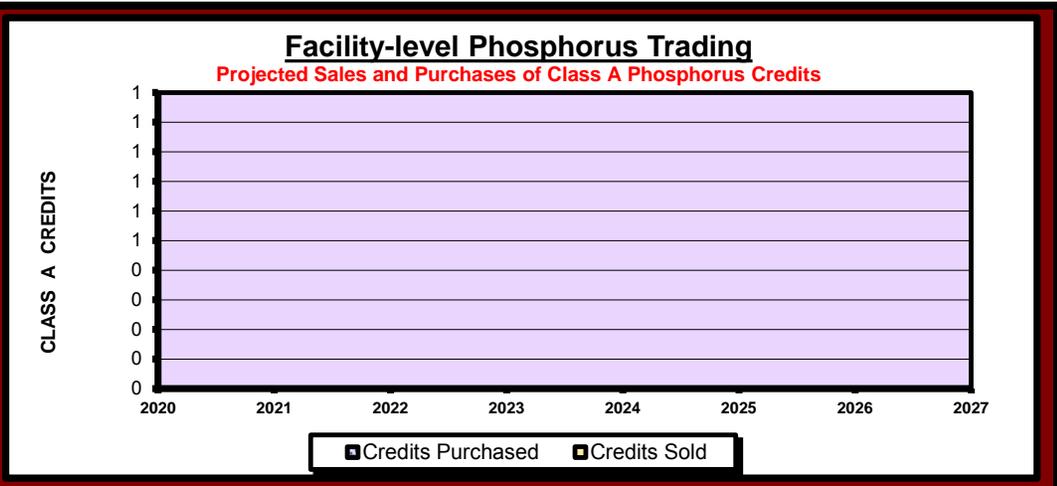
Loading & Credit Summary

Design Flow (mgd)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Projected Flow (mgd)	5.20	5.40	5.60	5.80	6.00	6.00	6.00	6.00
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)	47,511	49,338	51,165	52,993	54,820	54,820	54,820	54,820
Delivery Factor	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Expected Load	23,280	24,176	25,071	25,966	26,862	26,862	26,862	26,862
Delivered WLA	35,816	35,816	35,816	35,816	35,816	35,816	35,816	35,816
Expected Credits (delivered)	12,536	11,640	10,745	9,850	8,954	8,954	8,954	8,954
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	12,536	11,640	10,745	9,850	8,954	8,954	8,954	8,954
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	12,536	11,640	10,745	9,850	8,954	8,954	8,954	8,954

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
5.20	5.40	5.60	5.80	6.00	6.00	6.00	6.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
47,511	49,338	51,165	52,993	54,820	54,820	54,820	54,820
0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
23,280	24,176	25,071	25,966	26,862	26,862	26,862	26,862
35,816	35,816	35,816	35,816	35,816	35,816	35,816	35,816
12,536	11,640	10,745	9,850	8,954	8,954	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
12,536	11,640	10,745	9,850	8,954	8,954	8,954	8,954
0	0	0	0	0	0	0	0
12,536	11,640	10,745	9,850	8,954	8,954	8,954	8,954

PHOSPHORUS FACILITY SUMMARY

Culpeper (Town)
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
5.20	5.40	5.60	5.80	6.00	6.00	6.00	6.00
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
3,167	3,289	3,411	3,533	3,655	3,655	3,655	3,655
0.78	0.75	0.75	0.75	0.75	0.75	0.75	0.75
2,471	2,467	2,558	2,650	2,741	2,741	2,741	2,741
4,277	4,112	4,112	4,112	4,112	4,112	4,112	4,112
1,806	1,645	1,554	1,462	1,371	1,371	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
1,806	1,645	1,554	1,462	1,371	1,371	1,371	1,371
0	0	0	0	0	0	0	0
1,806	1,645	1,554	1,462	1,371	1,371	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.

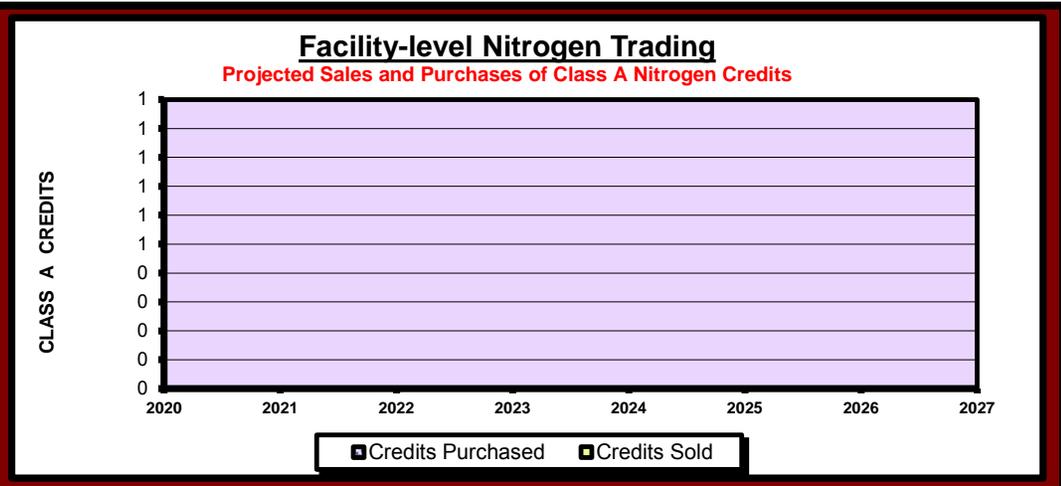
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Marshall	371	463	556	648	741	834	926	1,019
Remington	(371)	(463)	(556)	(648)	(741)	(834)	(926)	(1,019)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Marshall	-	-	-	-	-	-	-	-
Remington	3,449	3,237	3,025	2,814	2,601	2,389	2,177	1,965
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	3,449	3,237	3,025	2,814	2,601	2,389	2,177	1,965
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</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>2,177</i>	<i>1,965</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		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Marshall	-	-	-	-	-	-	-	-
Remington	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Marshall	169	151	137	124	110	96	83	69
Remington	456	424	411	397	383	370	356	342
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	625	575	548	521	493	466	439	411
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>625</i>	<i>575</i>	<i>548</i>	<i>521</i>	<i>493</i>	<i>466</i>	<i>439</i>	<i>411</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)	0.40
Projected Avg. Annual Concentration (mg/L)	8.00
Discharged Load (end of pipe)	9,746
Delivery Factor	0.19
Expected Load	1,852
Delivered WLA	1,481
Expected Credits (delivered)	(371)
Transfers In (Out) within Owner Bubble	371
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
0.40	0.42	0.44	0.46	0.48	0.50	0.52	0.54
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
9,746	10,233	10,720	11,208	11,695	12,182	12,670	13,157
0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
1,852	1,944	2,037	2,129	2,222	2,315	2,407	2,500
1,481	1,481	1,481	1,481	1,481	1,481	1,481	1,481
(371)	(463)	(556)	(648)	(741)	(834)	(926)	(1,019)
371	463	556	648	741	834	926	1,019
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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

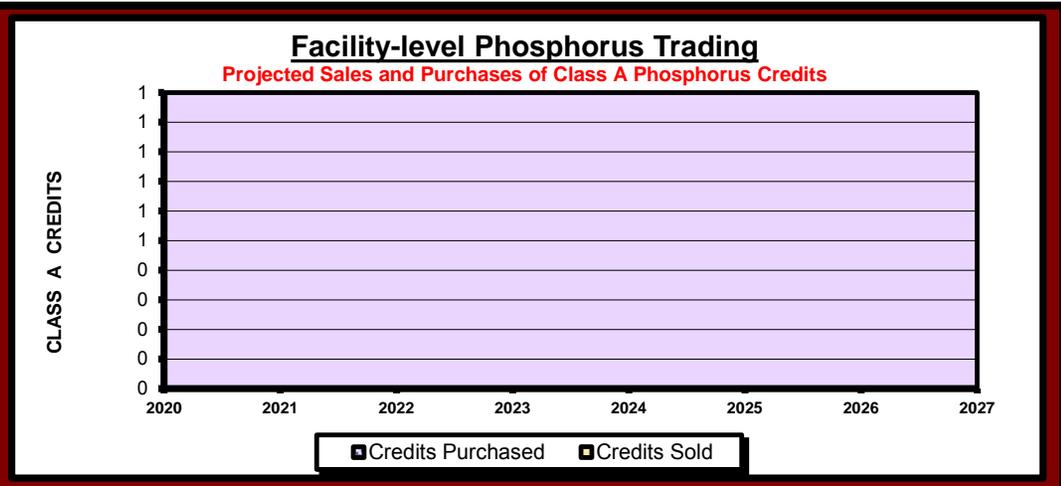
Design Flow (mgd)	Projected Flow (mgd)	Projected Avg. Annual Concentration (mg/L)	Discharged Load (end of pipe)	Delivery Factor	Expected Load	Delivered WLA	Expected Credits (delivered)	Transfers In (Out) within Owner Bubble	Transfers In (Out) from Private Exchange	WQIF-Held Credits	Expected Net Credits
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2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1.36	1.38	1.40	1.42	1.44	1.46	1.48	1.50
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
16,568	16,811	17,055	17,299	17,542	17,786	18,030	18,273
0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
8,118	8,238	8,357	8,476	8,596	8,715	8,835	8,954
11,938	11,938	11,938	11,938	11,938	11,938	11,938	11,938
3,820	3,700	3,581	3,462	3,342	3,223	3,103	2,984
(371)	(463)	(556)	(648)	(741)	(834)	(926)	(1,019)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3,449	3,237	3,025	2,814	2,601	2,389	2,177	1,965
0	0	0	0	0	0	0	0
3,449	3,237	3,025	2,814	2,601	2,389	2,177	1,965

PHOSPHORUS FACILITY SUMMARY

FCWSA-Marshall

RAPPAHANNOCK Trading Basin

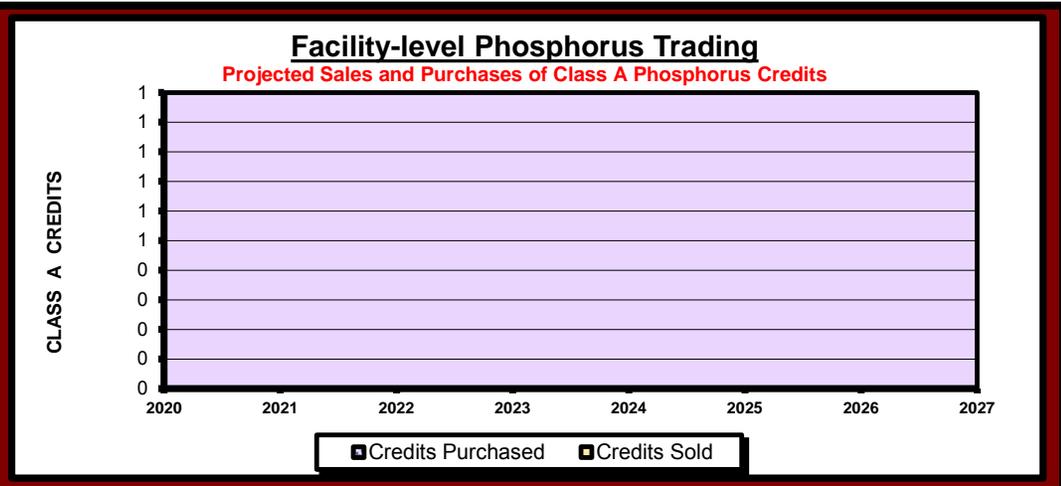


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
0.40	0.42	0.44	0.46	0.48	0.50	0.52	0.54
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
365	384	402	420	439	457	475	493
0.77	0.75	0.75	0.75	0.75	0.75	0.75	0.75
281	288	302	315	329	343	356	370
450	439	439	439	439	439	439	439
169	151	137	124	110	96	83	69
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
169	151	137	124	110	96	83	69
0	0	0	0	0	0	0	0
169	151	137	124	110	96	83	69

PHOSPHORUS FACILITY SUMMARY

FCWSA-Remington
RAPPAHANNOCK Trading Basin



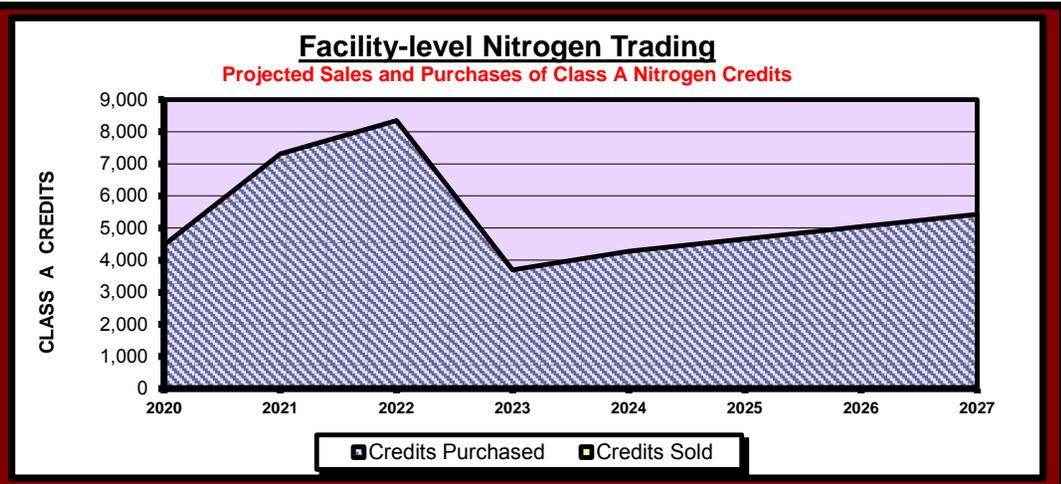
Loading & Credit Summary

Design Flow (mgd)	2.00
Projected Flow (mgd)	1.36
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	1,243
Delivery Factor	0.78
Expected Load	969
Delivered WLA	1,425
Expected Credits (delivered)	456
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	456
Class A Credit Sales (Purchases)	0
Expected Class B Credits	456

	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	1.36	1.38	1.40	1.42	1.44	1.46	1.48	1.50
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)	1,243	1,261	1,279	1,297	1,316	1,334	1,352	1,371
Delivery Factor	0.78	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Expected Load	969	946	959	973	987	1,000	1,014	1,028
Delivered WLA	1,425	1,370	1,370	1,370	1,370	1,370	1,370	1,370
Expected Credits (delivered)	456	424	411	397	383	370	356	342
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	456	424	411	397	383	370	356	342
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	456	424	411	397	383	370	356	342

NITROGEN FACILITY SUMMARY

Fredericksburg
RAPPAHANNOCK Trading Basin



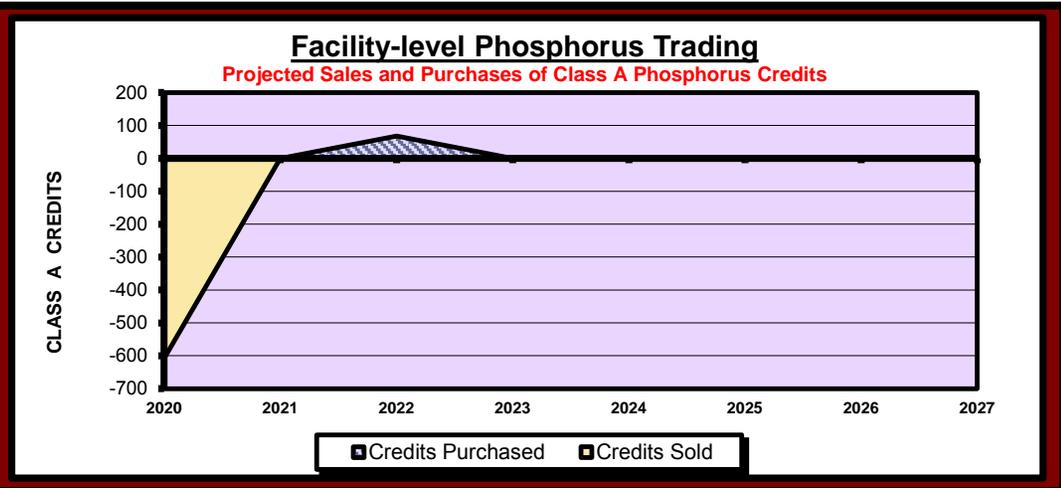
Loading & Credit Summary

Design Flow (mgd)	4.50
Projected Flow (mgd)	2.95
Projected Avg. Annual Concentration (mg/L)	6.60
Discharged Load (end of pipe)	59,297
Delivery Factor	1.00
Expected Load	59,297
Delivered WLA	54,820
Expected Credits (delivered)	(4,477)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(4,477)
Class A Credit Sales (Purchases)	(4,477)
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
2.95	3.00	3.05	3.05	3.08	3.10	3.12	3.14
6.60	6.80	6.80	6.30	6.30	6.30	6.30	6.30
59,297	62,129	63,165	58,520	59,096	59,480	59,864	60,247
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
59,297	62,129	63,165	58,520	59,096	59,480	59,864	60,247
54,820	54,820	54,820	54,820	54,820	54,820	54,820	54,820
(4,477)	(7,309)	(8,345)	(3,700)	(4,276)	(4,660)	(5,044)	(5,427)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(4,477)	(7,309)	(8,345)	(3,700)	(4,276)	(4,660)	(5,044)	(5,427)
(4,477)	(7,309)	(8,345)	(3,700)	(4,276)	(4,660)	(5,044)	(5,427)
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Fredericksburg
RAPPAHANNOCK Trading Basin



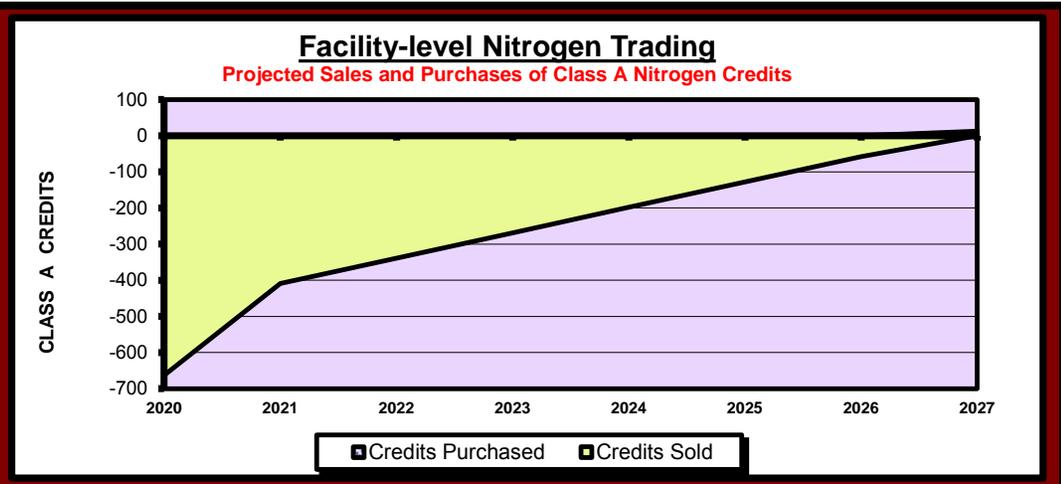
Loading & Credit Summary

Design Flow (mgd)	2.95	3.00	3.05	3.05	3.08	3.10	3.12	3.14
Projected Flow (mgd)	0.39	0.45	0.45	0.43	0.43	0.43	0.43	0.43
Projected Avg. Annual Concentration (mg/L)	Discharged Load (end of pipe)							
Discharged Load (end of pipe)	3,504	4,112	4,180	3,994	4,034	4,060	4,086	4,112
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	3,504	4,112	4,180	3,994	4,034	4,060	4,086	4,112
Delivered WLA	4,112	4,112	4,112	4,112	4,112	4,112	4,112	4,112
Expected Credits (delivered)								
Expected Credits (delivered)	608	0	(68)	118	78	52	26	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								
Expected Net Credits	608	0	(68)	118	78	52	26	0
Class A Credit Sales (Purchases)								
Class A Credit Sales (Purchases)	608	0	(68)	0	0	0	0	0
Expected Class B Credits								
Expected Class B Credits	0	0	0	118	78	52	26	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
2.95	3.00	3.05	3.05	3.08	3.10	3.12	3.14
0.39	0.45	0.45	0.43	0.43	0.43	0.43	0.43
3,504	4,112	4,180	3,994	4,034	4,060	4,086	4,112
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3,504	4,112	4,180	3,994	4,034	4,060	4,086	4,112
4,112	4,112	4,112	4,112	4,112	4,112	4,112	4,112
608	0	(68)	118	78	52	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	0
608	0	(68)	118	78	52	26	0
608	0	(68)	0	0	0	0	0
0	0	0	118	78	52	26	0

NITROGEN FACILITY SUMMARY

Greene Co-Rapidan
RAPPAHANNOCK Trading Basin



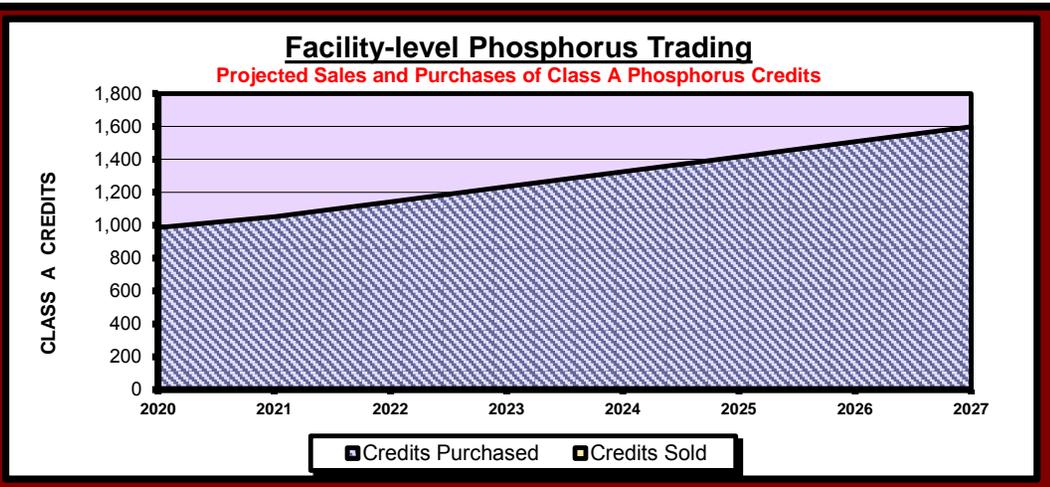
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.22
11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
5,025	5,360	5,695	6,030	6,365	6,700	7,035	7,370
0.29	0.21	0.21	0.21	0.21	0.21	0.21	0.21
1,457	1,126	1,196	1,266	1,337	1,407	1,477	1,548
2,120	1,535	1,535	1,535	1,535	1,535	1,535	1,535
663	409	339	269	198	128	58	(13)
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	409	339	269	198	128	58	(13)
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Greene Co-Rapidan
RAPPAHANNOCK Trading Basin

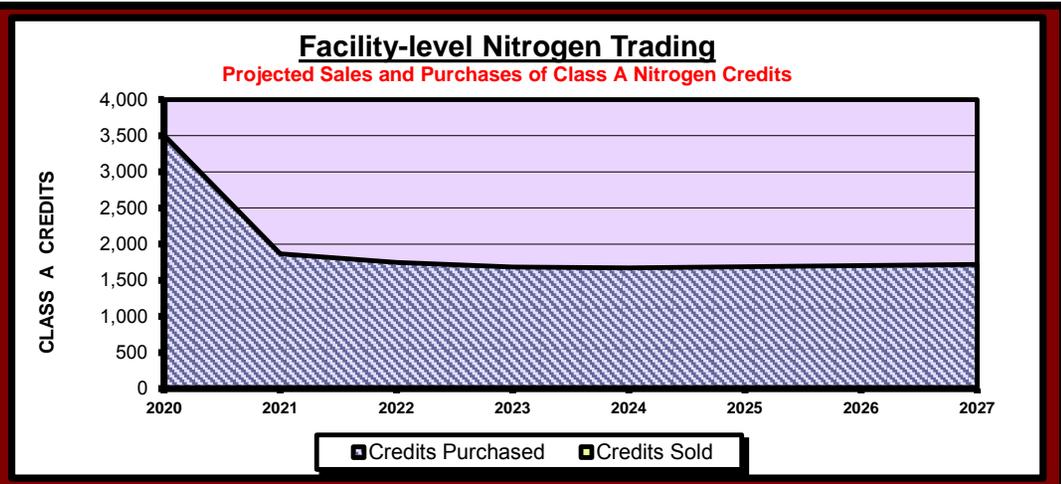


Loading & Credit Summary	
Design Flow (mgd)	0.60
Projected Flow (mgd)	0.15
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	1,827
Delivery Factor	0.77
Expected Load	1,407
Delivered WLA	422
Expected Credits (delivered)	(985)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(985)
Class A Credit Sales (Purchases)	(985)
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.22
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1,827	1,949	2,071	2,193	2,315	2,436	2,558	2,680
0.77	0.75	0.75	0.75	0.75	0.75	0.75	0.75
1,407	1,462	1,553	1,645	1,736	1,827	1,919	2,010
422	411	411	411	411	411	411	411
(985)	(1,051)	(1,142)	(1,234)	(1,325)	(1,416)	(1,508)	(1,599)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(985)	(1,051)	(1,142)	(1,234)	(1,325)	(1,416)	(1,508)	(1,599)
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

HRSD-Urbanna
RAPPAHANNOCK Trading Basin



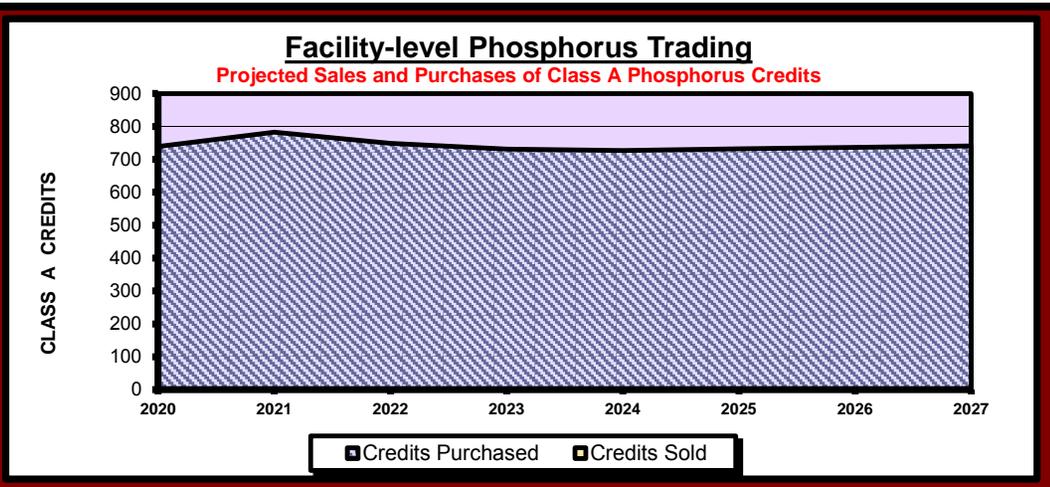
Loading & Credit Summary

Design Flow (mgd)	0.10
Projected Flow (mgd)	0.06
Projected Avg. Annual Concentration (mg/L)	28.00
Discharged Load (end of pipe)	4,724
Delivery Factor	1.00
Expected Load	4,724
Delivered WLA	1,218
Expected Credits (delivered)	(3,506)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(3,506)
Class A Credit Sales (Purchases)	(3,506)
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
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	0.05	0.05	0.05	0.05	0.05	0.05
28.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
4,724	3,083	2,965	2,900	2,888	2,904	2,921	2,938
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4,724	3,083	2,965	2,900	2,888	2,904	2,921	2,938
1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218
(3,506)	(1,865)	(1,747)	(1,682)	(1,670)	(1,686)	(1,703)	(1,720)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(3,506)	(1,865)	(1,747)	(1,682)	(1,670)	(1,686)	(1,703)	(1,720)
(3,506)	(1,865)	(1,747)	(1,682)	(1,670)	(1,686)	(1,703)	(1,720)
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)	0.06
Projected Avg. Annual Concentration (mg/L)	5.10
Discharged Load (end of pipe)	
Delivery Factor	0.96
Expected Load	826
Delivered WLA	87
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	

2020	2021	2022	2023	2024	2025	2026	2027
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	0.05	0.05	0.05	0.05	0.05	0.05
5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10
861	874	840	822	818	823	828	832
0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
826	874	840	822	818	823	828	832
87	91	91	91	91	91	91	91
(739)	(783)	(749)	(731)	(727)	(732)	(737)	(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
(739)	(783)	(749)	(731)	(727)	(732)	(737)	(741)
(739)	(783)	(749)	(731)	(727)	(732)	(737)	(741)
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.

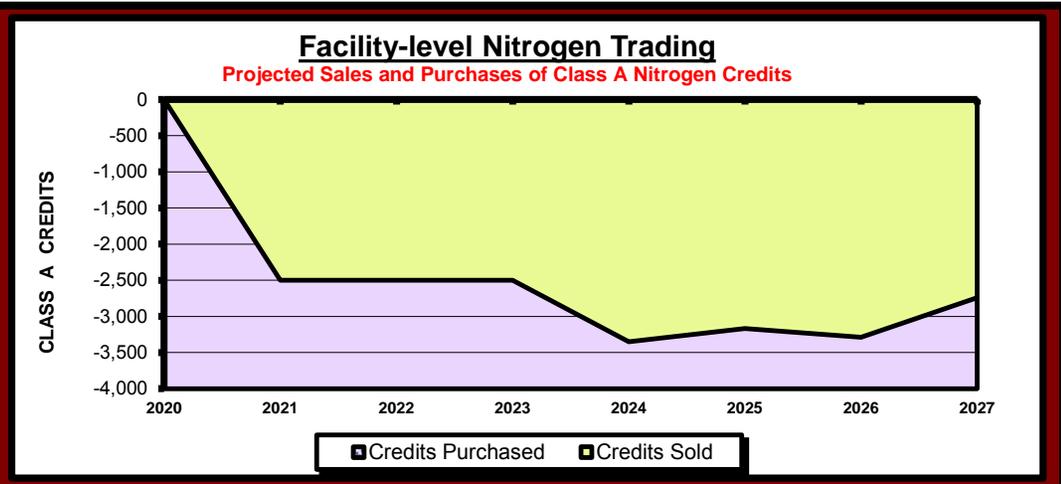
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply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

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Hopyard Farms	-	-	-	(487)	(121)	(121)	-	-
Oakland Park	-	-	-	487	121	121	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Hopyard Farms	2,741	3,045	3,197	2,619	3,351	3,168	3,289	2,741
Oakland Park	183	183	335	-	-	-	183	183
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	2,924	3,228	3,532	2,619	3,351	3,168	3,472	2,924
Class A Sales (Purchases)	0	2,500	2,500	2,500	3,351	3,168	3,472	2,924
<i>Expected Class B Credits</i>	2,924	728	1,032	119	0	0	0	0
<i>WQIF-Held Credits</i>	1,523	1,523	1,523	1,523	1,523	1,523	1,523	1,523

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Hopyard Farms	(24)	(24)	(9)	(91)	(24)	(24)	-	-
Oakland Park	24	24	9	91	24	24	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Hopyard Farms	164	167	197	33	136	159	183	115
Oakland Park	-	-	-	-	-	-	14	14
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	164	167	197	33	136	159	197	129
Class A Sales (Purchases)	0	0	0	0	136	159	197	129
<i>Expected Class B Credits</i>	164	167	197	33	0	0	0	0
<i>WQIF-Held Credits</i>	113	114	114	114	114	114	114	114

NITROGEN FACILITY SUMMARY

KGCSA-Hopyard Farms
RAPPAHANNOCK Trading Basin



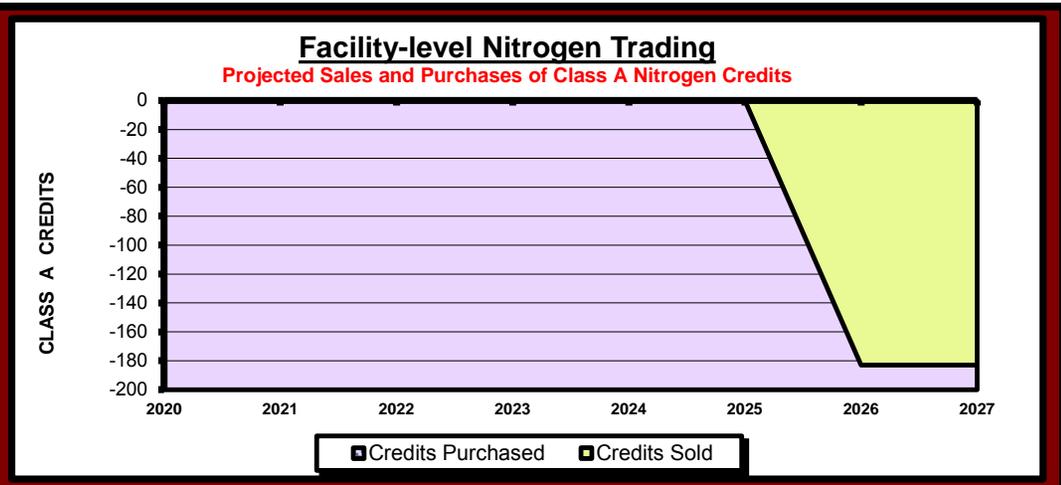
Loading & Credit Summary

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

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	0.10	0.10	0.09	0.08	0.06	0.07	0.07	0.10
Projected Avg. Annual Concentration (mg/L)	6.00	5.00	5.00	6.00	6.00	6.00	6.00	6.00
Discharged Load (end of pipe)	1,827	1,523	1,371	1,462	1,096	1,279	1,279	1,827
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,827	1,523	1,371	1,462	1,096	1,279	1,279	1,827
Delivered WLA	6,091	6,091	6,091	6,091	6,091	6,091	6,091	6,091
Expected Credits (delivered)	4,264	4,568	4,720	4,629	4,995	4,812	4,812	4,264
Transfers In (Out) within Owner Bubble	0	0	0	(487)	(121)	(121)	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	(1,523)	(1,523)	(1,523)	(1,523)	(1,523)	(1,523)	(1,523)	(1,523)
Expected Net Credits	2,741	3,045	3,197	2,619	3,351	3,168	3,289	2,741
Class A Credit Sales (Purchases)	0	2,500	2,500	2,500	3,351	3,168	3,289	2,741
Expected Class B Credits	2,741	545	697	119	0	0	0	0

NITROGEN FACILITY SUMMARY

KGCSA-Oakland Park
RAPPAHANNOCK Trading Basin



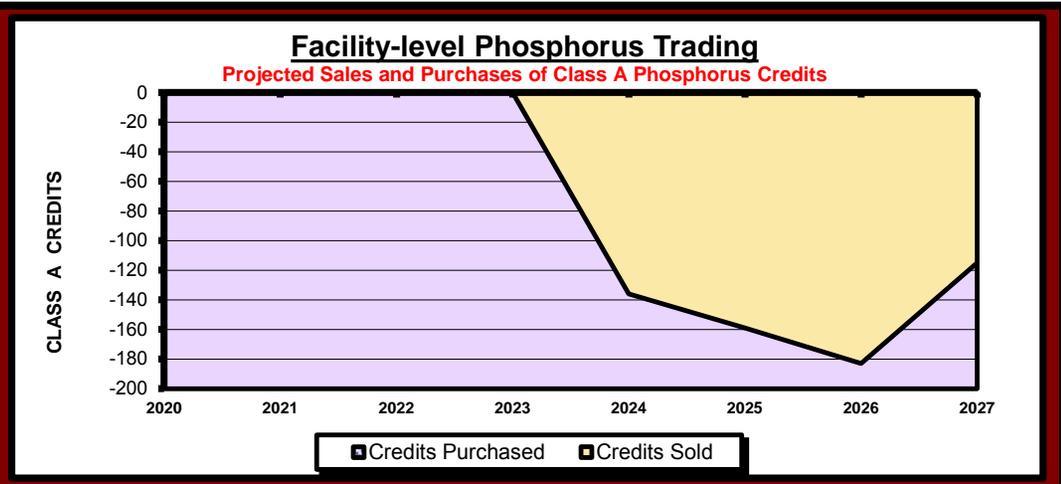
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
0.10	0.10	0.09	0.06	0.05	0.05	0.05	0.05
5.00	5.00	5.00	12.00	12.00	12.00	10.00	10.00
1,523	1,523	1,371	2,193	1,827	1,827	1,523	1,523
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,523	1,523	1,371	2,193	1,827	1,827	1,523	1,523
1,706	1,706	1,706	1,706	1,706	1,706	1,706	1,706
183	183	335	(487)	(121)	(121)	183	183
0	0	0	487	121	121	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
183	183	335	0	0	0	183	183
0	0	0	0	0	0	183	183
183	183	335	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

KGCSA-Hopyard Farms
RAPPAHANNOCK Trading Basin



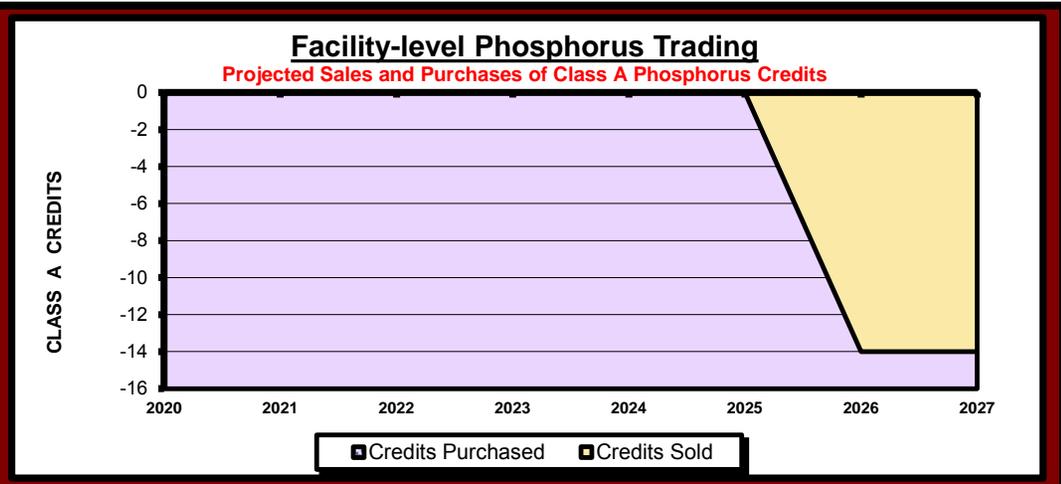
Loading & Credit Summary

Design Flow (mgd)	0.38
Projected Flow (mgd)	0.10
Projected Avg. Annual Concentration (mg/L)	0.50
Discharged Load (end of pipe)	152
Delivery Factor	0.99
Expected Load	151
Delivered WLA	452
Expected Credits (delivered)	301
Transfers In (Out) within Owner Bubble	(24)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	(113)
Expected Net Credits	164
Class A Credit Sales (Purchases)	0
Expected Class B Credits	164

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
0.10	0.10	0.09	0.08	0.06	0.07	0.07	0.10
0.50	0.50	0.50	0.90	1.00	0.75	0.75	0.75
152	152	137	219	183	160	160	228
0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
151	152	137	219	183	160	160	228
452	457	457	457	457	457	457	457
301	305	320	238	274	297	297	229
(24)	(24)	(9)	(91)	(24)	(24)	0	0
0	0	0	0	0	0	0	0
(113)	(114)	(114)	(114)	(114)	(114)	(114)	(114)
164	167	197	33	136	159	183	115
0	0	0	0	136	159	183	115
164	167	197	33	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

KGCSA-Oakland Park
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

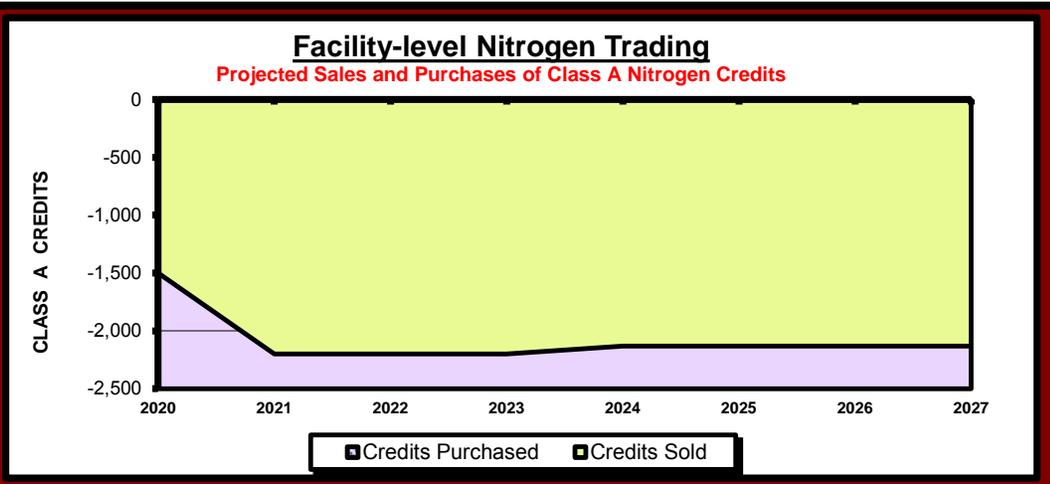
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits
Expected Net Credits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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
0.10	0.10	0.09	0.06	0.05	0.05	0.05	0.05
0.50	0.50	0.50	1.20	1.00	1.00	0.75	0.75
152	152	137	219	152	152	114	114
0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
148	152	137	219	152	152	114	114
124	128	128	128	128	128	128	128
(24)	(24)	(9)	(91)	(24)	(24)	14	14
24	24	9	91	24	24	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	14
0	0	0	0	0	0	14	14
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Kilmarnock

RAPPAHANNOCK Trading Basin



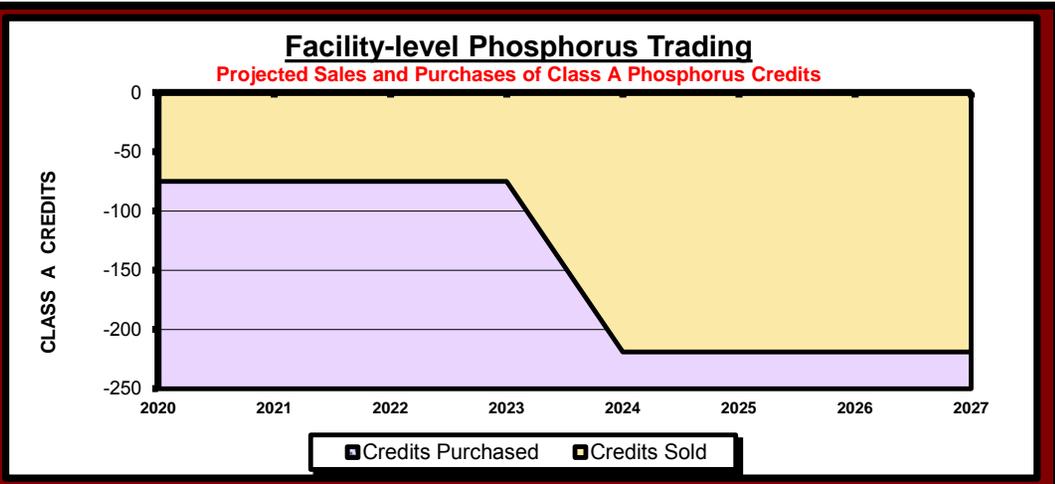
Loading & Credit Summary

Design Flow (mgd)	0.50
Projected Flow (mgd)	0.35
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	3,198
Delivery Factor	1.00
Expected Load	3,198
Delivered WLA	6,091
Expected Credits (delivered)	2,893
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	2,893
Class A Credit Sales (Purchases)	1,500
Expected Class B Credits	1,393

2020	2021	2022	2023	2024	2025	2026	2027
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	0.26	0.26	0.26	0.26
3.00	3.00	3.00	3.00	5.00	5.00	5.00	5.00
3,198	3,198	3,198	3,198	3,959	3,959	3,959	3,959
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3,198	3,198	3,198	3,198	3,959	3,959	3,959	3,959
6,091	6,091	6,091	6,091	6,091	6,091	6,091	6,091
2,893	2,893	2,893	2,893	2,132	2,132	2,132	2,132
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	2,132	2,132	2,132	2,132
1,500	2,200	2,200	2,200	2,132	2,132	2,132	2,132
1,393	693	693	693	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Kilmarnock
RAPPAHANNOCK Trading Basin



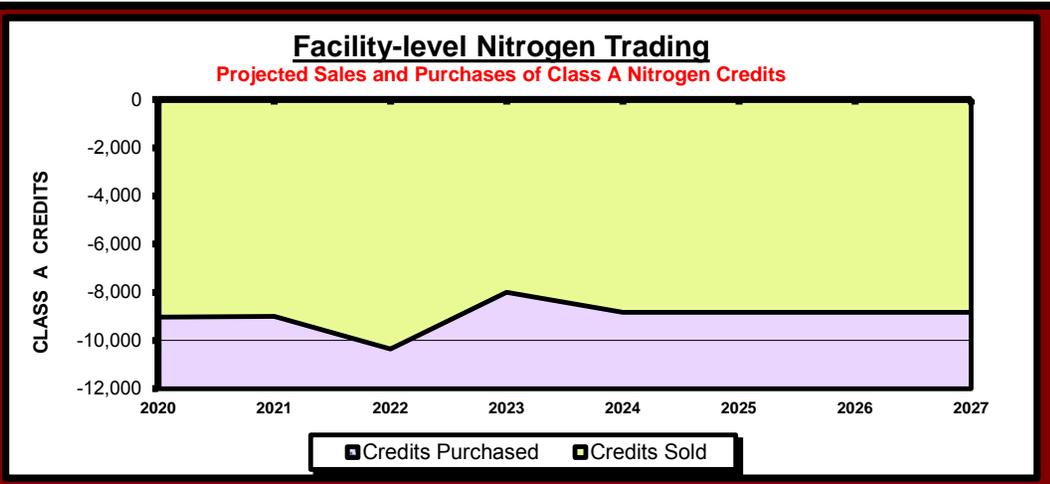
Loading & Credit Summary

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)	75
Expected Class B Credits	60

2020	2021	2022	2023	2024	2025	2026	2027	
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	0.26	0.26	0.26	0.26	
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	
320	320	320	320	238	238	238	238	
0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
317	320	320	320	238	238	238	238	
452	457	457	457	457	457	457	457	
135	137	137	137	219	219	219	219	
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	137	137	137	219	219	219	219	
75	75	75	75	219	219	219	219	
60	62	62	62	0	0	0	0	

NITROGEN FACILITY SUMMARY

Omega Protein
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

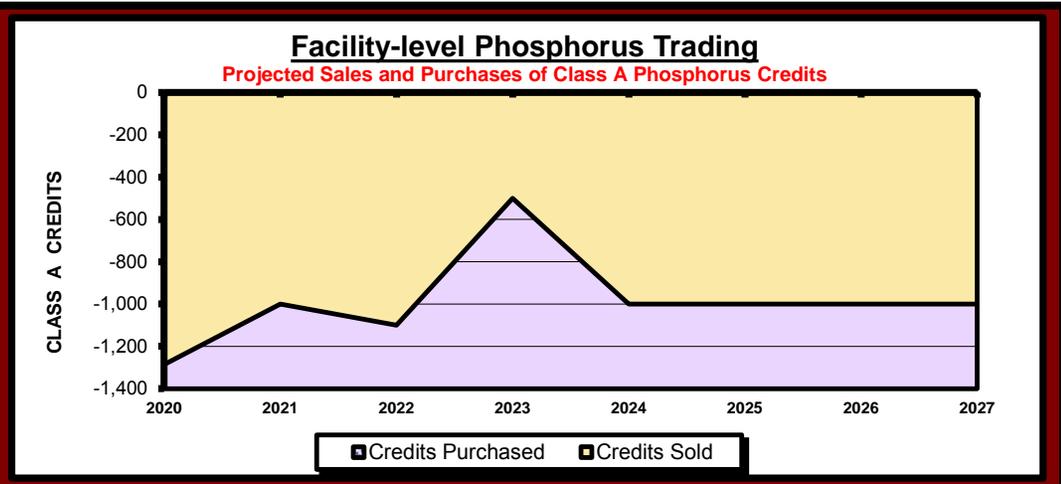
Design Flow (mgd)	3.21
Projected Flow (mgd)	0.18
Projected Avg. Annual Concentration (mg/L)	20.00
Discharged Load (end of pipe)	10,659
Delivery Factor	1.00
Expected Load	10,659
Delivered WLA	21,213
Expected Credits (delivered)	10,554
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(100)
WQIF-Held Credits	0
Expected Net Credits	10,454
Class A Credit Sales (Purchases)	9,031
Expected Class B Credits	1,423

2020	2021	2022	2023	2024	2025	2026	2027
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	0.20	0.20	0.20	0.20	0.20
20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
10,659	10,659	10,659	12,182	12,182	12,182	12,182	12,182
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10,659	10,659	10,659	12,182	12,182	12,182	12,182	12,182
21,213	21,213	21,213	21,213	21,213	21,213	21,213	21,213
10,554	10,554	10,554	9,031	9,031	9,031	9,031	9,031
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	8,931	8,931	8,931	8,931	8,931
9,031	9,000	10,354	8,000	8,831	8,831	8,831	8,831
1,423	1,454	100	931	100	100	100	100

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

PHOSPHORUS FACILITY SUMMARY

Omega Protein
RAPPAHANNOCK Trading Basin



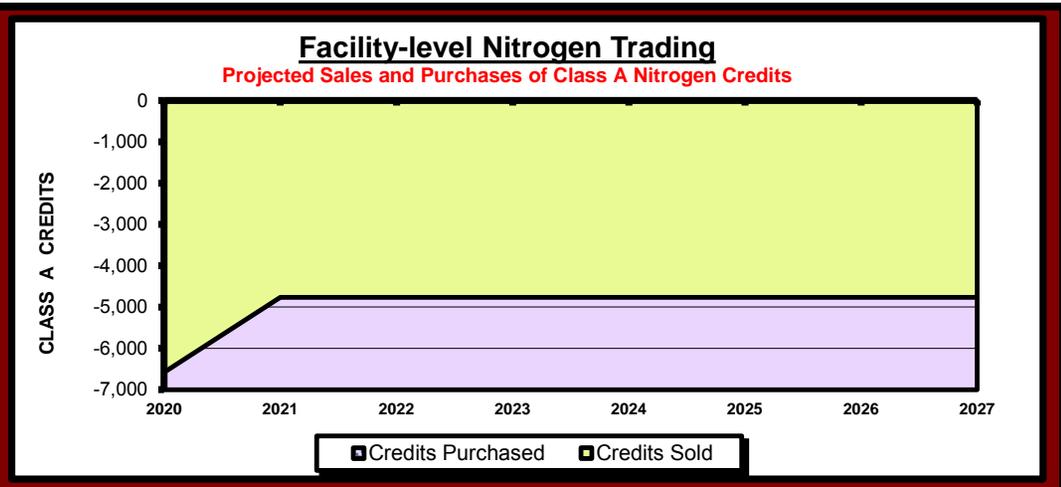
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange*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

2020	2021	2022	2023	2024	2025	2026	2027	
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	0.20	0.20	0.20	0.20	0.20	
0.50	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
266	426	426	487	487	487	487	487	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
266	426	426	487	487	487	487	487	
1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591	
1,325	1,165	1,165	1,104	1,104	1,104	1,104	1,104	
0	0	0	0	0	0	0	0	
(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	
0	0	0	0	0	0	0	0	
1,305	1,145	1,145	1,084	1,084	1,084	1,084	1,084	
1,286	1,000	1,100	500	1,000	1,000	1,000	1,000	
19	145	45	584	84	84	84	84	

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

NITROGEN FACILITY SUMMARY

Orange (Town)
RAPPAHANNOCK Trading Basin

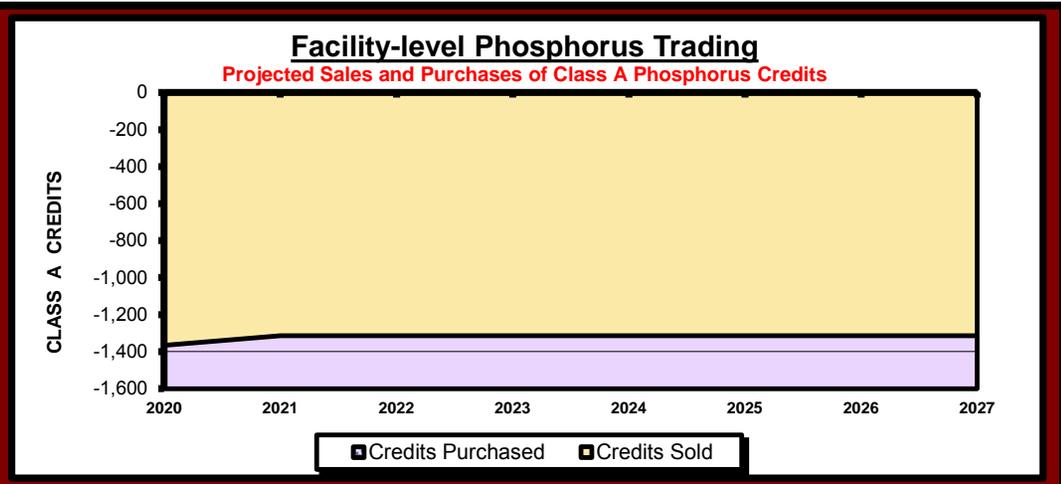


Loading & Credit Summary
Design Flow (mgd)
Projected Flow (mgd)
Projected Avg. Annual Concentration (mg/L)
Discharged Load (end of pipe)
Delivery Factor
Expected Load
Delivered WLA
Expected Credits (delivered)
Transfers In (Out) within Owner Bubble
Transfers In (Out) from Private Exchange
WQIF-Held Credits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

2020	2021	2022	2023	2024	2025	2026	2027
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
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	0.21	0.21	0.21	0.21	0.21	0.21	0.21
4,019	2,910	2,910	2,910	2,910	2,910	2,910	2,910
10,599	7,675	7,675	7,675	7,675	7,675	7,675	7,675
6,580	4,765	4,765	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	4,765	4,765	4,765	4,765	4,765	4,765	4,765
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Orange (Town)
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

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Projected Avg. Annual Concentration (mg/L)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Discharged Load (end of pipe)	990	990	990	990	990	990	990	990
Delivery Factor	0.78	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Expected Load	772	742	742	742	742	742	742	742
Delivered WLA	2,138	2,056	2,056	2,056	2,056	2,056	2,056	2,056
Expected Credits (delivered)	1,366	1,314	1,314	1,314	1,314	1,314	1,314	1,314
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	1,366	1,314	1,314	1,314	1,314	1,314	1,314	1,314
Class A Credit Sales (Purchases)	1,366	1,314	1,314	1,314	1,314	1,314	1,314	1,314
Expected Class B Credits	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Reedville S.D.
RAPPAHANNOCK Trading Basin



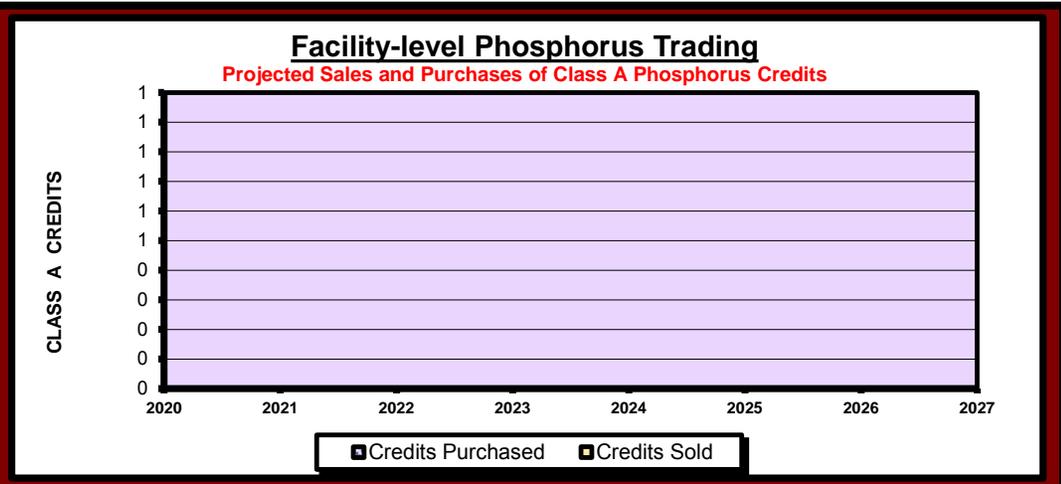
Loading & Credit Summary

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

	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Projected Flow (mgd)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Projected Avg. Annual Concentration (mg/L)	6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10
Discharged Load (end of pipe)	2,415	2,415	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	2,415	2,415	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)	21	21	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	21	21	21	21	21	21	21	21
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	21	21	21	21	21	21	21	21

PHOSPHORUS FACILITY SUMMARY

Reedville S.D.
RAPPAHANNOCK Trading Basin

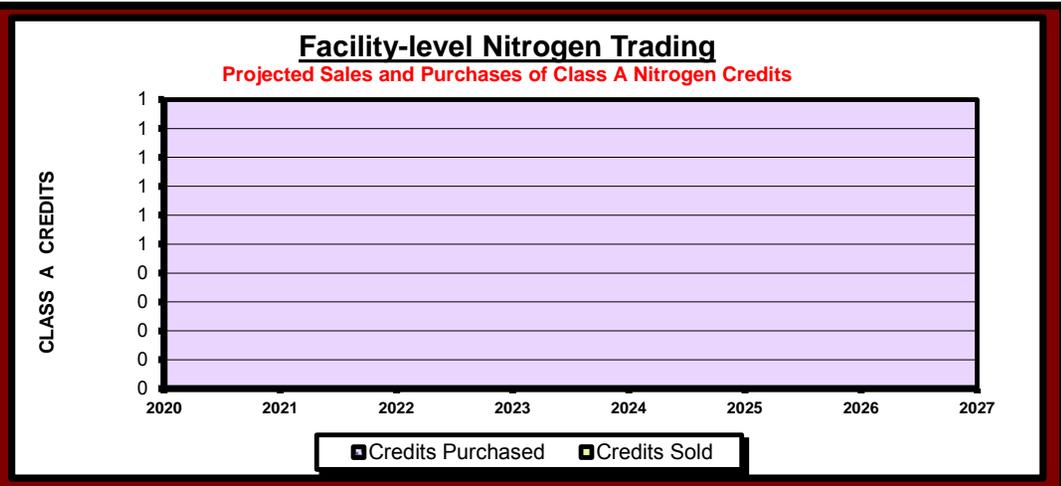


Loading & Credit Summary	
Design Flow (mgd)	0.20
Projected Flow (mgd)	0.13
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	119
Delivery Factor	0.98
Expected Load	116
Delivered WLA	179
Expected Credits (delivered)	63
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	63
Class A Credit Sales (Purchases)	0
Expected Class B Credits	63

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.13	0.13	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
119	119	119	119	119	119	119	119
0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
116	119	119	119	119	119	119	119
179	183	183	183	183	183	183	183
63	64	64	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
63	64	64	64	64	64	64	64
0	0	0	0	0	0	0	0
63	64	64	64	64	64	64	64

NITROGEN FACILITY SUMMARY

RSA-Wilderness Shores
RAPPAHANNOCK Trading Basin



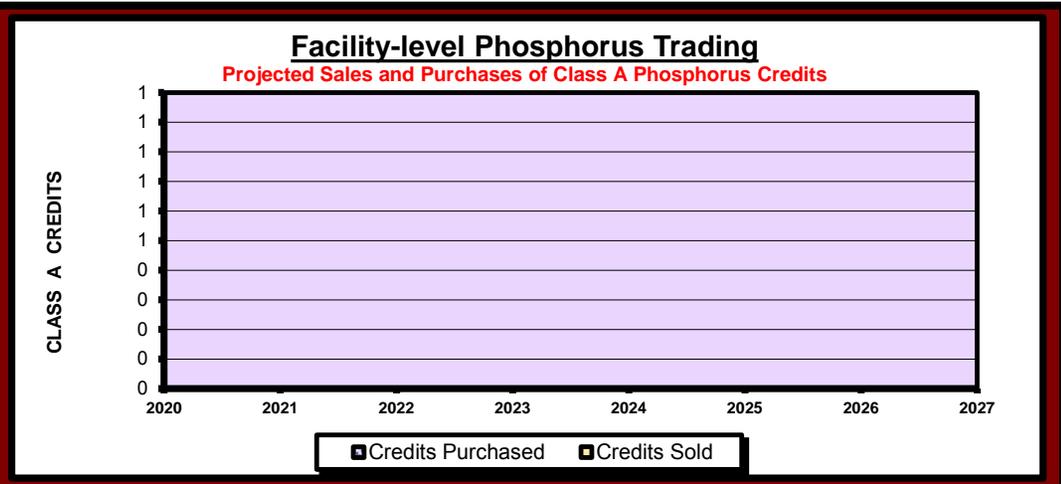
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0.92	0.94	0.94	0.94	0.96	0.96	0.98	0.98
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
8,406	8,588	8,588	8,588	8,771	8,771	8,954	8,954
0.41	0.45	0.45	0.45	0.45	0.45	0.45	0.45
3,446	3,865	3,865	3,865	3,947	3,947	4,029	4,029
6,243	6,853	6,853	6,853	6,853	6,853	6,853	6,853
2,797	2,988	2,988	2,988	2,906	2,906	2,824	2,824
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	2,988	2,988	2,988	2,906	2,906	2,824	2,824
0	0	0	0	0	0	0	0
2,797	2,988	2,988	2,988	2,906	2,906	2,824	2,824

PHOSPHORUS 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	0.94	0.94	0.94	0.96	0.96	0.98	0.98
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)	841	859	859	859	877	877	895	895
Delivery Factor	0.77	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Expected Load	647	644	644	644	658	658	672	672
Delivered WLA	879	857	857	857	857	857	857	857
Expected Credits (delivered)	232	213	213	213	199	199	185	185
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	232	213	213	213	199	199	185	185
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	232	213	213	213	199	199	185	185

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0.92	0.94	0.94	0.94	0.96	0.96	0.98	0.98
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
841	859	859	859	877	877	895	895
0.77	0.75	0.75	0.75	0.75	0.75	0.75	0.75
647	644	644	644	658	658	672	672
879	857	857	857	857	857	857	857
232	213	213	213	199	199	185	185
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	213	213	213	199	199	185	185
0	0	0	0	0	0	0	0
232	213	213	213	199	199	185	185

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.

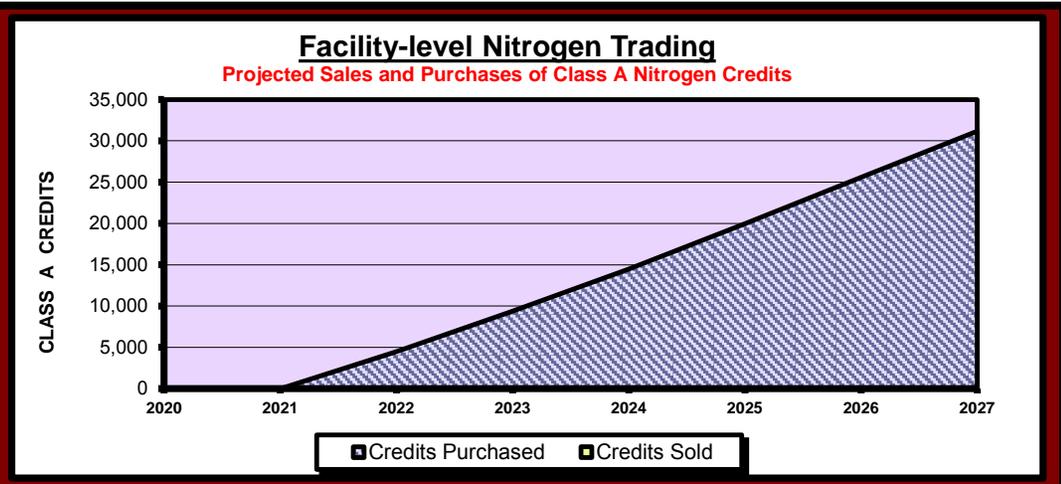
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply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

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
FMC	17,534	21,433	19,118	16,438	13,514	10,469	7,301	4,134
Massaponax	(17,534)	(21,433)	(19,118)	(16,438)	(13,514)	(10,469)	(7,301)	(4,134)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
FMC	-	-	(4,508)	(9,380)	(14,497)	(19,979)	(25,583)	(31,186)
Massaponax	7,066	487	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	7,066	487	(4,508)	(9,380)	(14,497)	(19,979)	(25,583)	(31,186)
Class A Sales (Purchases)	5,000	0	(4,508)	(9,380)	(14,497)	(19,979)	(25,583)	(31,186)
<i>Expected Class B Credits</i>	<i>2,066</i>	<i>487</i>	<i>0</i>	<i>0</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		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
FMC	-	-	-	-	-	-	-	-
Massaponax	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
FMC	1,170	1,024	941	859	777	686	594	503
Massaponax	1,662	1,461	1,251	1,050	831	602	365	127
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	2,832	2,485	2,192	1,909	1,608	1,288	959	630
Class A Sales (Purchases)	1,750	1,500	1,225	955	805	645	480	316
<i>Expected Class B Credits</i>	<i>1,082</i>	<i>985</i>	<i>967</i>	<i>954</i>	<i>803</i>	<i>643</i>	<i>479</i>	<i>314</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



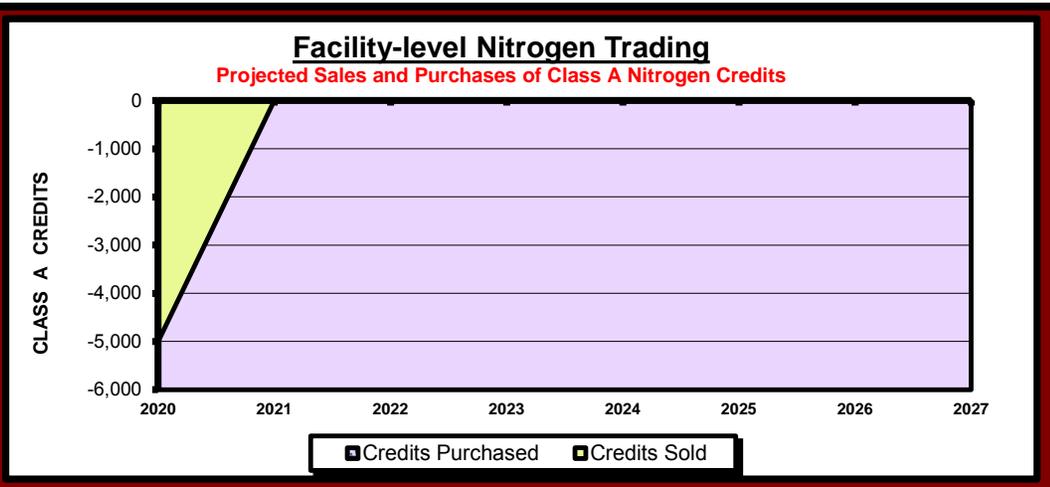
Loading & Credit Summary

Design Flow (mgd)	4.00
Projected Flow (mgd)	2.72
Projected Avg. Annual Concentration (mg/L)	8.00
Discharged Load (end of pipe)	66,271
Delivery Factor	1.00
Expected Load	66,271
Delivered WLA	48,737
Expected Credits (delivered)	(17,534)
Transfers In (Out) within Owner Bubble	17,534
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

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	2.72	2.88	2.97	3.06	3.15	3.25	3.35	3.45
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)	66,271	70,170	72,363	74,555	76,748	79,185	81,621	84,057
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	66,271	70,170	72,363	74,555	76,748	79,185	81,621	84,057
Delivered WLA	48,737	48,737	48,737	48,737	48,737	48,737	48,737	48,737
Expected Credits (delivered)	(17,534)	(21,433)	(23,626)	(25,818)	(28,011)	(30,448)	(32,884)	(35,320)
Transfers In (Out) within Owner Bubble	17,534	21,433	19,118	16,438	13,514	10,469	7,301	4,134
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	0	(4,508)	(9,380)	(14,497)	(19,979)	(25,583)	(31,186)
Class A Credit Sales (Purchases)	0	0	(4,508)	(9,380)	(14,497)	(19,979)	(25,583)	(31,186)
Expected Class B Credits	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Spotsy Co-Massaponax
RAPPAHANNOCK Trading Basin

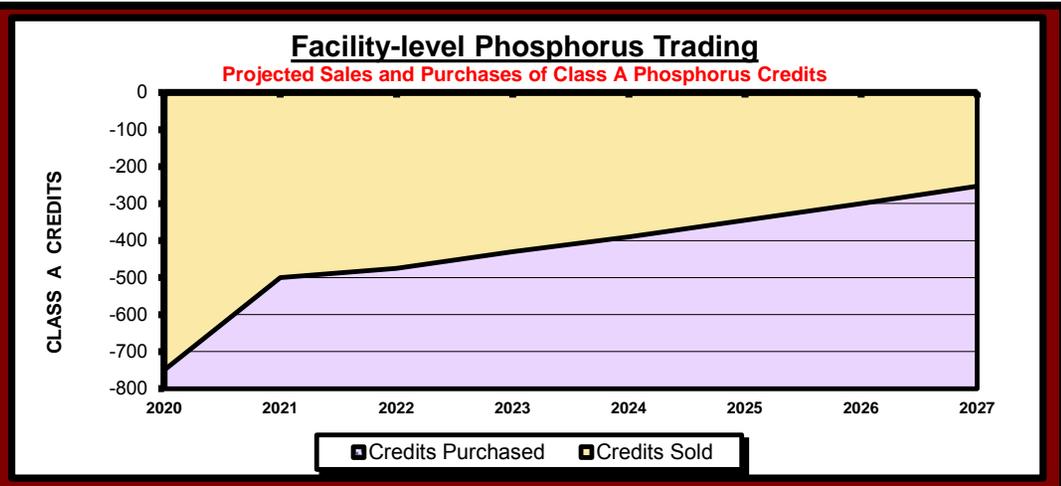


Loading & Credit Summary	
Design Flow (mgd)	8.00
Projected Flow (mgd)	7.38
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	89,905
Delivery Factor	1.00
Expected Load	89,905
Delivered WLA	114,505
Expected Credits (delivered)	24,600
Transfers In (Out) within Owner Bubble	(17,534)
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	7,066
Class A Credit Sales (Purchases)	5,000
Expected Class B Credits	2,066

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
7.38	7.60	7.83	8.05	8.29	8.54	8.80	9.06
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
89,905	92,585	95,387	98,067	100,991	104,036	107,204	110,371
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
89,905	92,585	95,387	98,067	100,991	104,036	107,204	110,371
114,505	114,505	114,505	114,505	114,505	114,505	114,505	114,505
24,600	21,920	19,118	16,438	13,514	10,469	7,301	4,134
(17,534)	(21,433)	(19,118)	(16,438)	(13,514)	(10,469)	(7,301)	(4,134)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
7,066	487	0	0	0	0	0	0
5,000	0	0	0	0	0	0	0
2,066	487	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Spotsy Co-FMC
RAPPAHANNOCK Trading Basin



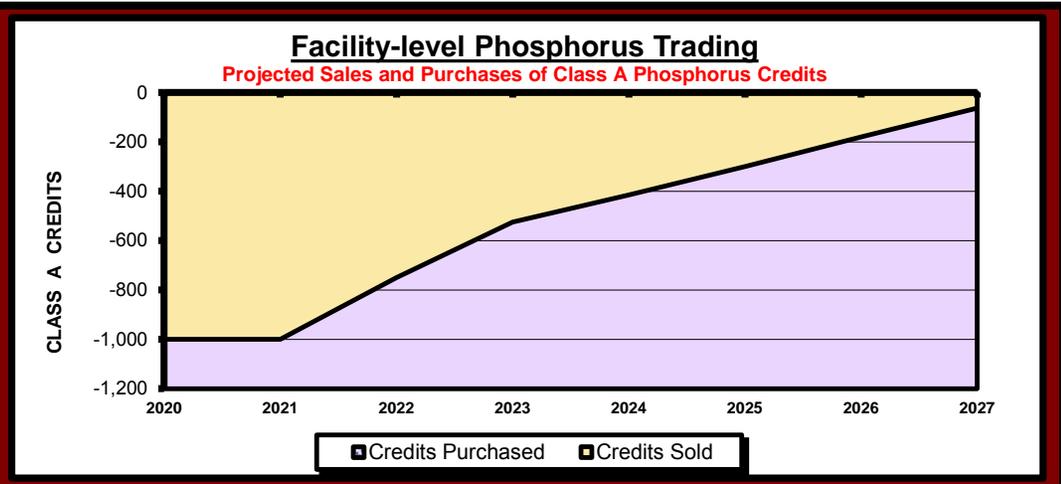
Loading & Credit Summary

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

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	2.72	2.88	2.97	3.06	3.15	3.25	3.35	3.45
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)	2,485	2,631	2,714	2,796	2,878	2,969	3,061	3,152
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	2,485	2,631	2,714	2,796	2,878	2,969	3,061	3,152
Delivered WLA	3,655	3,655	3,655	3,655	3,655	3,655	3,655	3,655
Expected Credits (delivered)	1,170	1,024	941	859	777	686	594	503
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	1,170	1,024	941	859	777	686	594	503
Class A Credit Sales (Purchases)	750	500	475	430	390	345	300	253
Expected Class B Credits	420	524	466	429	387	341	294	250

PHOSPHORUS FACILITY SUMMARY

Spotsy Co-Massaponax
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

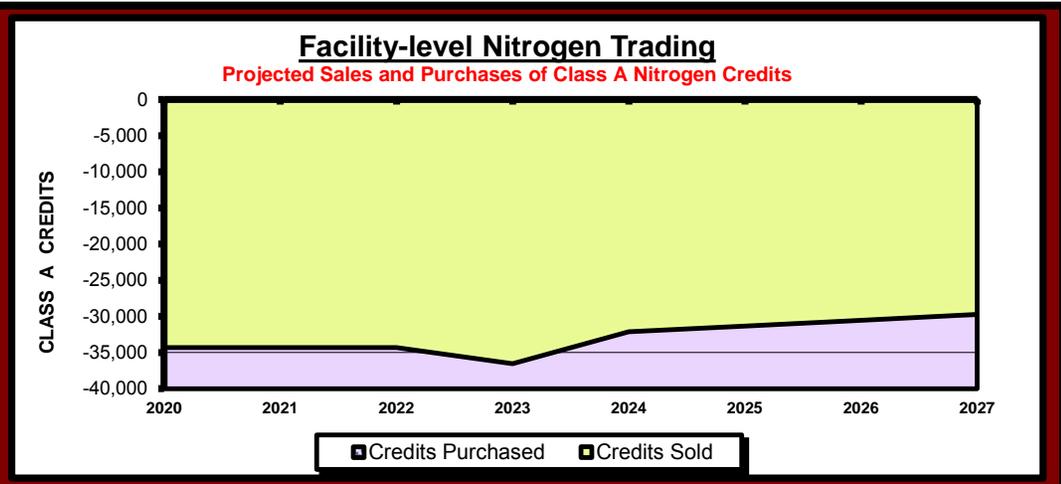
Design Flow (mgd)	8.00
Projected Flow (mgd)	7.38
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	6,743
Delivery Factor	1.00
Expected Load	6,743
Delivered WLA*	8,405
Expected Credits (delivered)	1,662
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,662
Class A Credit Sales (Purchases)	1,000
Expected Class B Credits	662

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
7.38	7.60	7.83	8.05	8.29	8.54	8.80	9.06
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
6,743	6,944	7,154	7,355	7,574	7,803	8,040	8,278
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6,743	6,944	7,154	7,355	7,574	7,803	8,040	8,278
8,405	8,405	8,405	8,405	8,405	8,405	8,405	8,405
1,662	1,461	1,251	1,050	831	602	365	127
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	1,461	1,251	1,050	831	602	365	127
1,000	1,000	750	525	415	300	180	63
662	461	501	525	416	302	185	64

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

NITROGEN FACILITY SUMMARY

Stafford Co-L. Falls Run
RAPPAHANNOCK Trading Basin



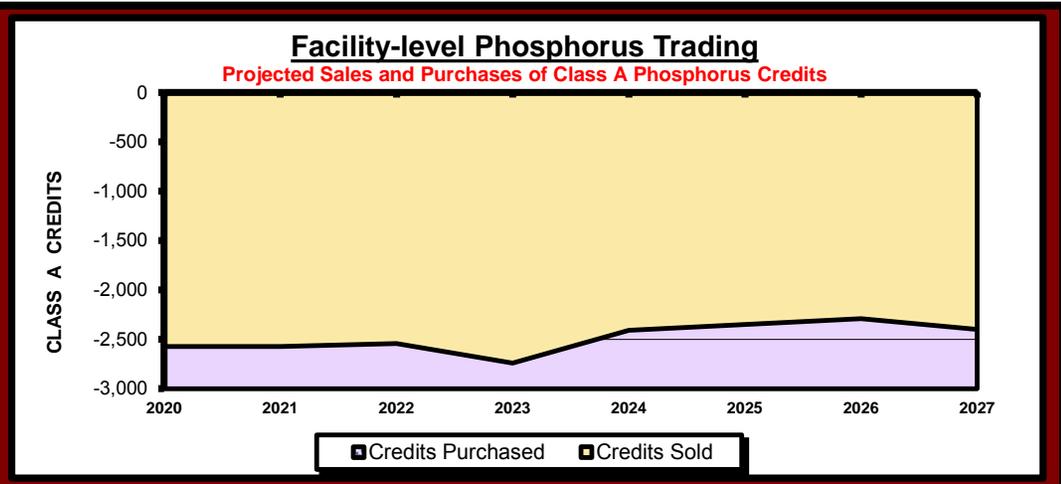
Loading & Credit Summary

Design Flow (mgd)	8.00
Projected Flow (mgd)	4.87
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	59,328
Delivery Factor	1.00
Expected Load	59,328
Delivered WLA	97,458
Expected Credits (delivered)	38,130
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	38,130
Class A Credit Sales (Purchases)	34,317
Expected Class B Credits	3,813

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
4.87	4.87	4.87	5.00	3.94	4.04	4.14	4.25
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
59,328	59,328	59,328	60,911	48,034	49,235	50,466	51,727
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
59,328	59,328	59,328	60,911	48,034	49,235	50,466	51,727
97,458	97,458	97,458	97,458	97,458	97,458	97,458	97,458
38,130	38,130	38,130	36,547	49,424	48,223	46,992	45,731
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
38,130	38,130	38,130	36,547	49,424	48,223	46,992	45,731
34,317	34,317	34,317	36,547	32,126	31,345	30,545	29,725
3,813	3,813	3,813	0	17,298	16,878	16,447	16,006

PHOSPHORUS FACILITY SUMMARY

Stafford Co-L. Falls Run
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
4.87	4.87	4.87	5.00	3.94	4.04	4.14	4.25
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
4,450	4,450	4,450	4,568	3,603	3,693	3,785	3,880
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4,450	4,450	4,450	4,568	3,603	3,693	3,785	3,880
7,309	7,309	7,309	7,309	7,309	7,309	7,309	7,309
2,859	2,859	2,859	2,741	3,706	3,616	3,524	3,429
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,859	2,859	2,859	2,741	3,706	3,616	3,524	3,429
2,573	2,573	2,543	2,741	2,409	2,350	2,291	2,400
286	286	316	0	1,297	1,266	1,233	1,029

NITROGEN FACILITY SUMMARY

Tappahannock
RAPPAHANNOCK Trading Basin

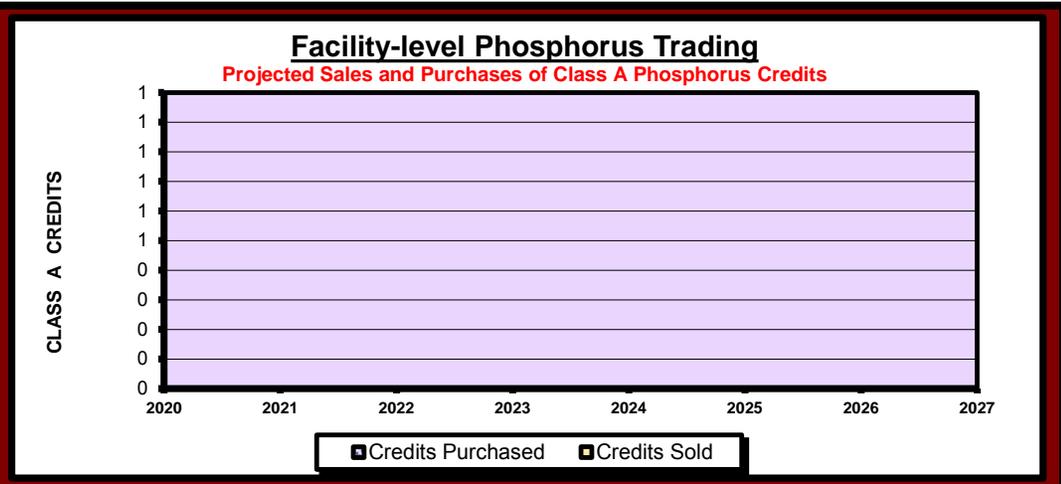


Loading & Credit Summary	
Design Flow (mgd)	0.80
Projected Flow (mgd)	0.64
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	7,797
Delivery Factor	1.00
Expected Load	7,797
Delivered WLA	9,746
Expected Credits (delivered)	1,949
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,949
Class A Credit Sales (Purchases)	0
Expected Class B Credits	1,949

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
0.64	0.64	0.65	0.66	0.66	0.67	0.67	0.67
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
7,797	7,797	7,918	8,040	8,040	8,162	8,162	8,162
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
7,797	7,797	7,918	8,040	8,040	8,162	8,162	8,162
9,746	9,746	9,746	9,746	9,746	9,746	9,746	9,746
1,949	1,949	1,828	1,706	1,706	1,584	1,584	1,584
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	1,949	1,828	1,706	1,706	1,584	1,584	1,584
0	0	0	0	0	0	0	0
1,949	1,949	1,828	1,706	1,706	1,584	1,584	1,584

PHOSPHORUS FACILITY SUMMARY

Tappahannock
RAPPAHANNOCK Trading Basin



Loading & Credit Summary

Design Flow (mgd)	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Projected Flow (mgd)	0.64	0.64	0.65	0.66	0.66	0.67	0.67	0.67
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)	585	585	594	603	603	612	612	612
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	585	585	594	603	603	612	612	612
Delivered WLA	731	731	731	731	731	731	731	731
Expected Credits (delivered)	146	146	137	128	128	119	119	119
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	146	146	137	128	128	119	119	119
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	146	146	137	128	128	119	119	119

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
0.64	0.64	0.65	0.66	0.66	0.67	0.67	0.67
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
585	585	594	603	603	612	612	612
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
585	585	594	603	603	612	612	612
731	731	731	731	731	731	731	731
146	146	137	128	128	119	119	119
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	146	137	128	128	119	119	119
0	0	0	0	0	0	0	0
146	146	137	128	128	119	119	119

NITROGEN FACILITY SUMMARY

Warsaw

RAPPAHANNOCK Trading Basin



Loading & Credit Summary

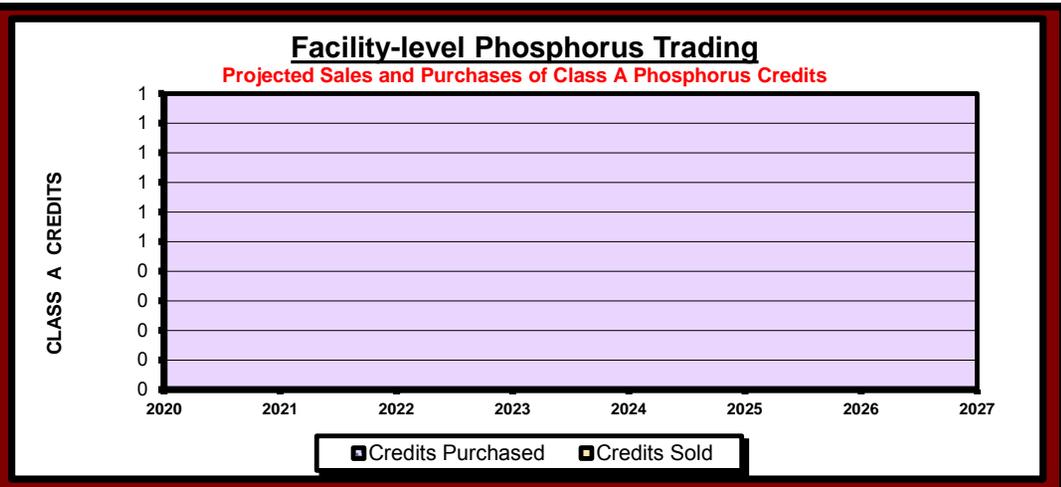
Design Flow (mgd)	0.30
Projected Flow (mgd)	0.25
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	3,046
Delivery Factor	1.00
Expected Load	3,046
Delivered WLA	3,655
Expected Credits (delivered)	609
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange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

2020	2021	2022	2023	2024	2025	2026	2027
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

2020	2021	2022	2023	2024	2025	2026	2027	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
226	228	228	228	228	228	228	228	
271	274	274	274	274	274	274	274	
45	46	46	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	46	46	46	46	46	46	46	
0	0	0	0	0	0	0	0	
45	46	46	46	46	46	46	46	

NITROGEN FACILITY SUMMARY

Westmoreland Co-Montross
RAPPAHANNOCK Trading Basin



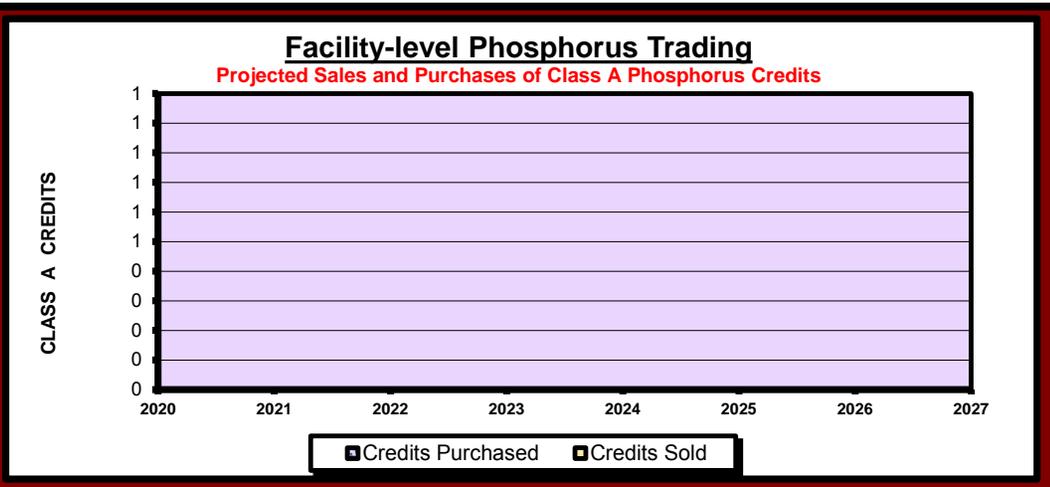
Loading & Credit Summary

Design Flow (mgd)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Projected Flow (mgd)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
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)	731	731	731	731	731	731	731	731
Delivery Factor	0.74	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Expected Load	541	460	460	460	460	460	460	460
Delivered WLA	1,172	998	998	998	998	998	998	998
Expected Credits (delivered)	631	538	538	538	538	538	538	538
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	631	538	538	538	538	538	538	538
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	631	538	538	538	538	538	538	538

2020	2021	2022	2023	2024	2025	2026	2027
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	0.63	0.63	0.63	0.63	0.63	0.63	0.63
541	460	460	460	460	460	460	460
1,172	998	998	998	998	998	998	998
631	538	538	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	538	538	538	538	538	538	538
0	0	0	0	0	0	0	0
631	538	538	538	538	538	538	538

PHOSPHORUS FACILITY SUMMARY

Westmoreland Co-Montross
RAPPAHANNOCK Trading Basin



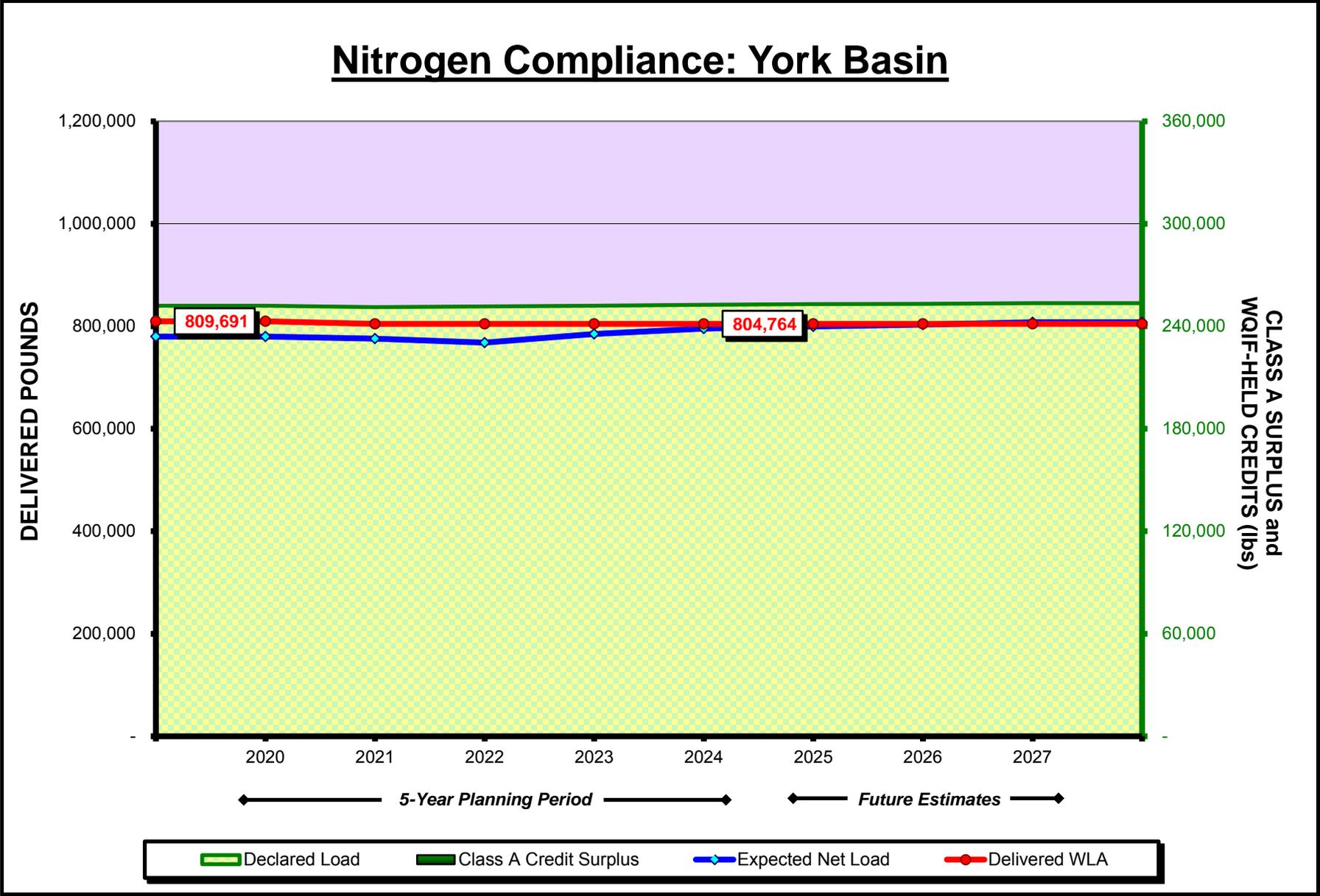
Loading & Credit Summary	
Design Flow (mgd)	0.13
Projected Flow (mgd)	0.06
Projected Avg. Annual Concentration (mg/L)	0.50
Discharged Load (end of pipe)	91
Delivery Factor	0.92
Expected Load	84
Delivered WLA	109
Expected Credits (delivered)	25
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	25
Class A Credit Sales (Purchases)	0
Expected Class B Credits	25

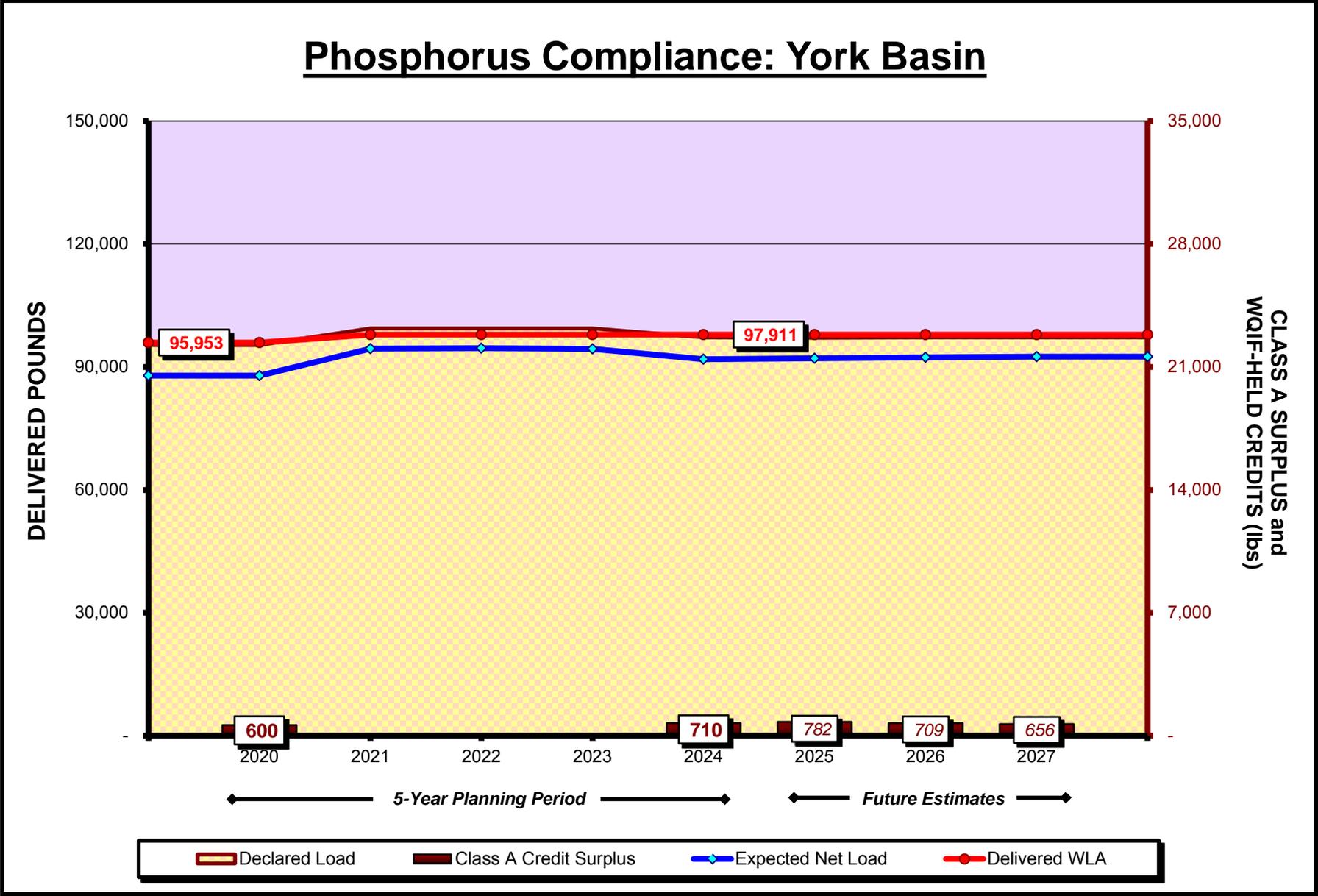
2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
91	91	91	91	91	91	91	91
0.92	0.88	0.88	0.88	0.88	0.88	0.88	0.88
84	80	80	80	80	80	80	80
109	105	105	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
0	0	0	0	0	0	0	0
25	25	25	25	25	25	25	25

SECTION 4

York River Basin Exchange Compliance Plan







York River Basin

Supplemental Information for Individual Facilities



NITROGEN FACILITY SUMMARY

819 Virginia LLC
 YORK Trading Basin

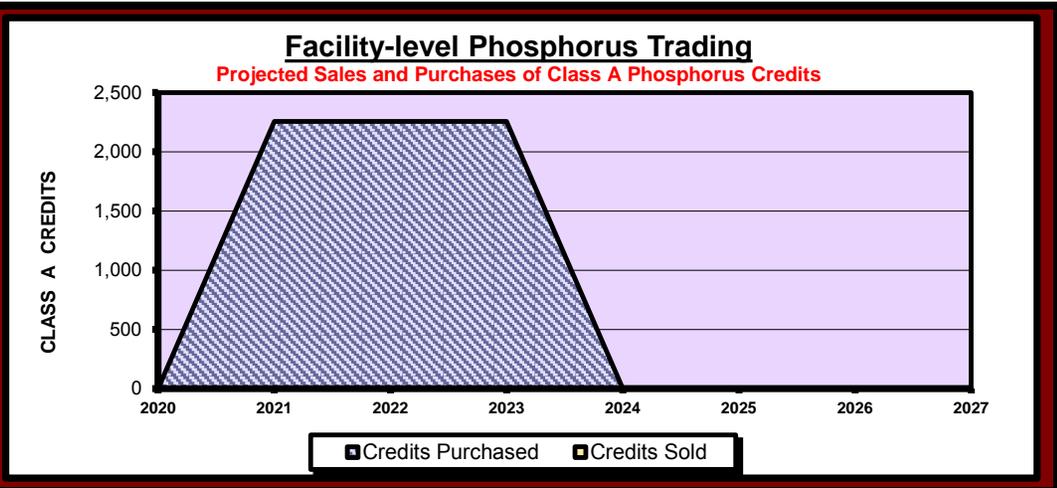


Loading & Credit Summary	
Design Flow (mgd)	4.20
Projected Flow (mgd)	4.20
Projected Avg. Annual Concentration (mg/L)	2.50
Discharged Load (end of pipe)	31,978
Delivery Factor	0.51
Expected Load	16,309
Delivered WLA	24,137
Expected Credits (delivered)	7,828
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	7,828
Class A Credit Sales (Purchases)	0
Expected Class B Credits	7,828

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
4.20	1.50	1.50	1.50	1.50	1.50	1.50	1.50
2.50	8.00	8.00	8.00	8.00	8.00	8.00	8.00
31,978	36,547	36,547	36,547	36,547	36,547	36,547	36,547
0.51	0.50	0.50	0.50	0.50	0.50	0.50	0.50
16,309	18,273	18,273	18,273	18,273	18,273	18,273	18,273
24,137	23,664	23,664	23,664	23,664	23,664	23,664	23,664
7,828	5,391	5,391	5,391	5,391	5,391	5,391	5,391
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	5,391	5,391	5,391	5,391	5,391	5,391	5,391
0	0	0	0	0	0	0	0
7,828	5,391	5,391	5,391	5,391	5,391	5,391	5,391

PHOSPHORUS FACILITY SUMMARY

819 Virginia LLC
 YORK Trading Basin



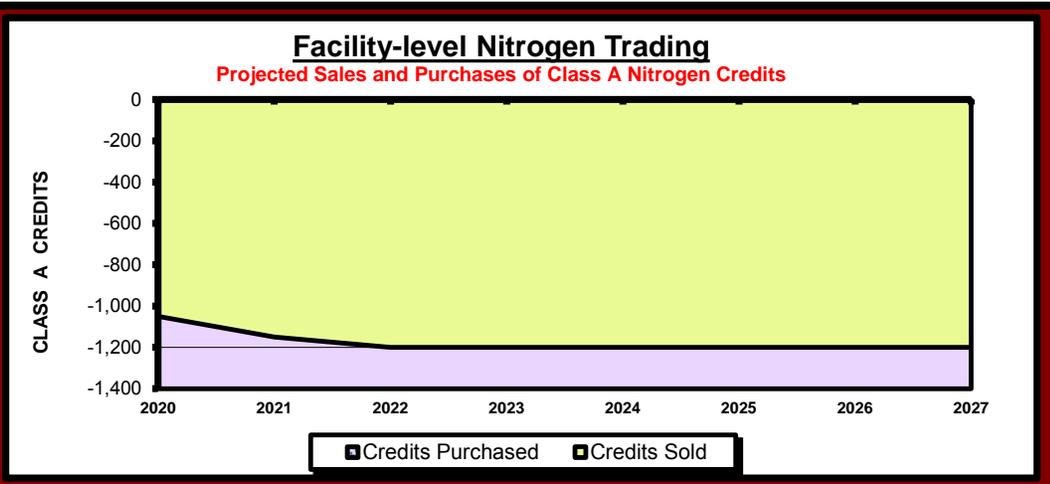
Loading & Credit Summary

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

	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
Projected Flow (mgd)	4.20	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Projected Avg. Annual Concentration (mg/L)	0.40	3.00	3.00	3.00	2.00	2.00	2.00	2.00
Discharged Load (end of pipe)	5,117	13,705	13,705	13,705	9,137	9,137	9,137	9,137
Delivery Factor	0.55	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Expected Load	2,814	8,908	8,908	8,908	5,939	5,939	5,939	5,939
Delivered WLA	5,628	6,651	6,651	6,651	6,651	6,651	6,651	6,651
Expected Credits (delivered)	2,814	(2,257)	(2,257)	(2,257)	712	712	712	712
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	2,814	(2,257)	(2,257)	(2,257)	712	712	712	712
Class A Credit Sales (Purchases)	0	(2,257)	(2,257)	(2,257)	0	0	0	0
Expected Class B Credits	2,814	0	0	0	712	712	712	712

NITROGEN FACILITY SUMMARY

Aqua Virginia- Lake Land'O
 YORK Trading Basin



Loading & Credit Summary

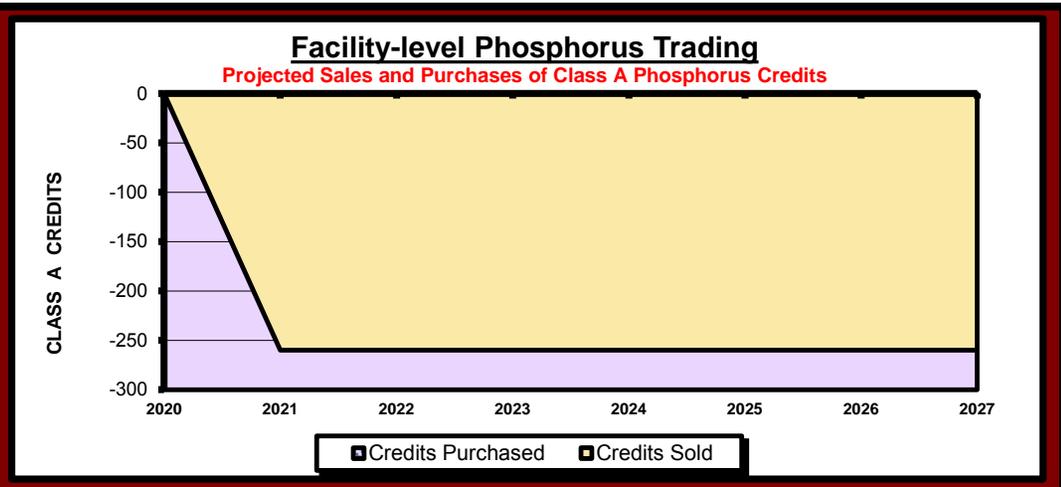
Design Flow (mgd)	0.22
Projected Flow (mgd)	0.20
Projected Avg. Annual Concentration (mg/L)	6.10
Discharged Load (end of pipe)	3,716
Delivery Factor	0.58
Expected Load	2,155
Delivered WLA	3,303
Expected Credits (delivered)	1,148
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,148
Class A Credit Sales (Purchases)*	1,050
Expected Class B Credits	98

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
6.10	6.10	6.10	6.10	6.10	6.30	6.30	6.30
3,716	3,716	3,716	3,716	3,716	3,837	3,837	3,837
0.58	0.65	0.65	0.65	0.65	0.65	0.65	0.65
2,155	2,415	2,415	2,415	2,415	2,494	2,494	2,494
3,303	3,702	3,702	3,702	3,702	3,702	3,702	3,702
1,148	1,287	1,287	1,287	1,287	1,208	1,208	1,208
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,148	1,287	1,287	1,287	1,287	1,208	1,208	1,208
1,050	1,150	1,200	1,200	1,200	1,200	1,200	1,200
98	137	87	87	87	8	8	8

* Although a new Participant for the 2020 Compliance Plan Annual Update, a Class A market shortfall allows this facility to sell Class A credits

PHOSPHORUS FACILITY SUMMARY

Aqua Virginia- Lake Land'O
 YORK Trading Basin



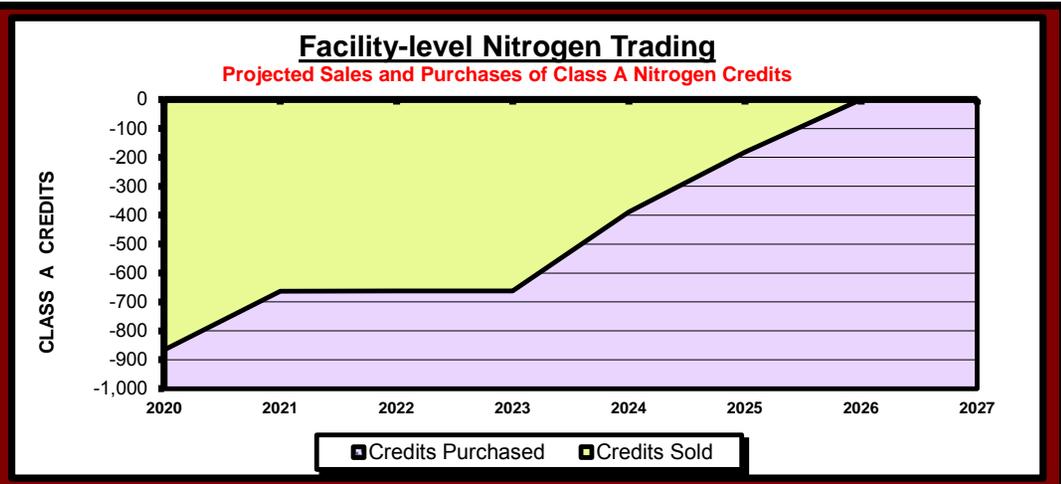
Loading & Credit Summary	
Design Flow (mgd)	0.22
Projected Flow (mgd)	0.20
Projected Avg. Annual Concentration (mg/L)	0.62
Discharged Load (end of pipe)	378
Delivery Factor	0.69
Expected Load	261
Delivered WLA	525
Expected Credits (delivered)	264
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(264)
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
378	378	378	378	378	378	378	378
0.69	0.72	0.72	0.72	0.72	0.72	0.72	0.72
261	272	272	272	272	272	272	272
525	548	548	548	548	548	548	548
264	276	276	276	276	276	276	276
0	0	0	0	0	0	0	0
(264)	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	276	276	276	276	276	276	276
0	260	260	260	260	260	260	260
0	16	16	16	16	16	16	16

* This adjustment implements the credit sales restriction applicable to this new Participant (as of 2020 Update) in accordance with Section 4.8(d) of the Credit Exchange Policy; sales restrictions beyond 2020 were not enforced because of a shortfall in the Class A Credit market when this Participant joined the Exchange

NITROGEN FACILITY SUMMARY

Caroline Co.
 YORK Trading Basin



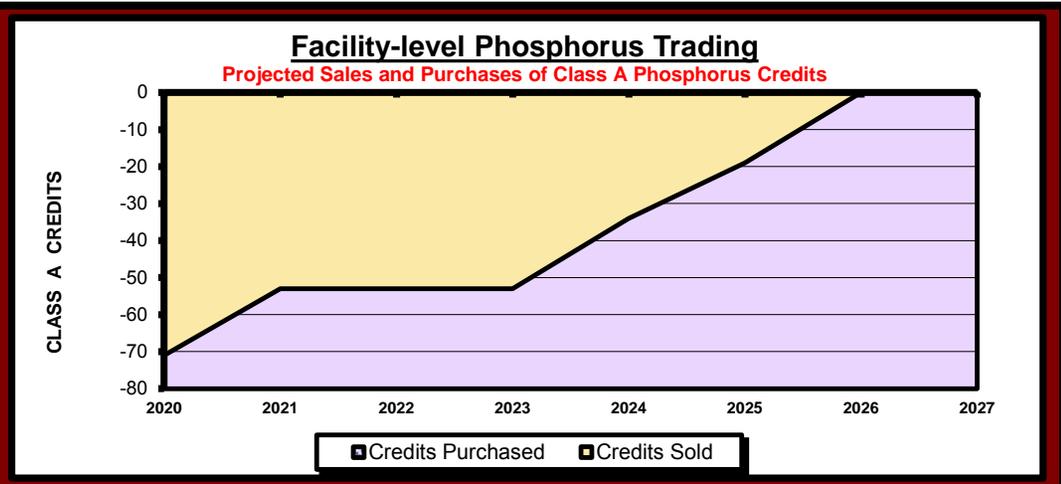
Loading & Credit Summary

Design Flow (mgd)	1.50
Projected Flow (mgd)	0.72
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	6,578
Delivery Factor	0.58
Expected Load	3,815
Delivered WLA	5,299
Expected Credits (delivered)	1,484
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,484
Class A Credit Sales (Purchases)	866
Expected Class B Credits	618

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
0.72	0.77	0.77	0.77	0.81	0.84	0.88	0.91
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
6,578	7,035	7,035	7,035	7,401	7,675	8,040	8,314
0.58	0.65	0.65	0.65	0.65	0.65	0.65	0.65
3,815	4,573	4,573	4,573	4,810	4,989	5,226	5,404
5,299	5,939	5,939	5,939	5,939	5,939	5,939	5,939
1,484	1,366	1,366	1,366	1,129	950	713	535
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,484	1,366	1,366	1,366	1,129	950	713	535
866	663	662	662	389	182	0	0
618	703	704	704	740	768	713	535

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

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	0.72	0.77	0.77	0.77	0.81	0.84	0.88	0.91
Projected Avg. Annual Concentration (mg/L)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Discharged Load (end of pipe)	439	469	469	469	493	512	536	554
Delivery Factor	0.68	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Expected Load	298	338	338	338	355	368	386	399
Delivered WLA	414	438	438	438	438	438	438	438
Expected Credits (delivered)	116	100	100	100	83	70	52	39
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	116	100	100	100	83	70	52	39
Class A Credit Sales (Purchases)	71	53	53	53	34	19	0	0
Expected Class B Credits	45	47	47	47	49	51	52	39

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		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Ashland	16,745	14,854	5,902	6,292	8,241	8,657	9,091	9,564
Doswell	6,310	9,593	666	813	963	1,114	1,268	1,424
Totopotomoy	(23,055)	(24,447)	(6,568)	(7,105)	(9,204)	(9,771)	(10,359)	(10,988)
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Ashland	-	-	-	-	-	-	-	-
Doswell	-	-	-	-	-	-	-	-
Totopotomoy	27,818	24,794	33,244	14,896	8,607	6,992	5,356	3,680
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	27,818	24,794	33,244	14,896	8,607	6,992	5,356	3,680
Private Exchanges			(90)	(90)	(90)	(90)	(90)	(587)
Expected Net Credits	27,818	24,794	33,154	14,806	8,517	6,902	5,266	3,093
Class A Sales (Purchases)	10,000	8,000	7,000	5,000	4,000	3,000	3,000	2,000
Expected Class B Credits	17,818	16,794	26,154	9,806	4,517	3,902	2,266	1,093
WQIF-Held Credits	47,694	47,145	47,145	47,145	47,145	47,145	47,145	47,145

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Ashland	3,928	3,910	2,503	2,565	2,871	2,936	3,005	3,079
Doswell	668	1,227	265	281	297	313	330	347
Totopotomoy	(4,596)	(5,137)	(2,768)	(2,846)	(3,168)	(3,249)	(3,335)	(3,426)
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Ashland	-	-	-	-	-	-	-	-
Doswell	-	-	-	-	-	-	-	-
Totopotomoy	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	-	-	-	-	-	-	-	-
Private Exchanges	-	-	-	-	-	-	-	-
Expected Net Credits	-	-	-	-	-	-	-	-
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	0	0	0	0	0	0	0	0
WQIF-Held Credits	1,108	576	2,357	1,169	585	439	288	131

NITROGEN FACILITY SUMMARY

Hanover Co-Ashland

YORK Trading Basin



Loading & Credit Summary

Design Flow (mgd)	2.00
Projected Flow (mgd)	1.85
Projected Avg. Annual Concentration (mg/L)	11.28
Discharged Load (end of pipe)	63,555
Delivery Factor	0.62
Expected Load	39,404
Delivered WLA	22,659
Expected Credits (delivered)	(16,745)
Transfers In (Out) within Owner Bubble	16,745
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
1.85	1.85	1.38	1.40	1.50	1.52	1.55	1.57
11.28	11.28	11.28	11.28	11.28	11.28	11.28	11.28
63,555	63,555	47,277	47,987	51,531	52,287	53,077	53,936
0.62	0.55	0.55	0.55	0.55	0.55	0.55	0.55
39,404	34,955	26,003	26,393	28,342	28,758	29,192	29,665
22,659	20,101	20,101	20,101	20,101	20,101	20,101	20,101
(16,745)	(14,854)	(5,902)	(6,292)	(8,241)	(8,657)	(9,091)	(9,564)
16,745	14,854	5,902	6,292	8,241	8,657	9,091	9,564
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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

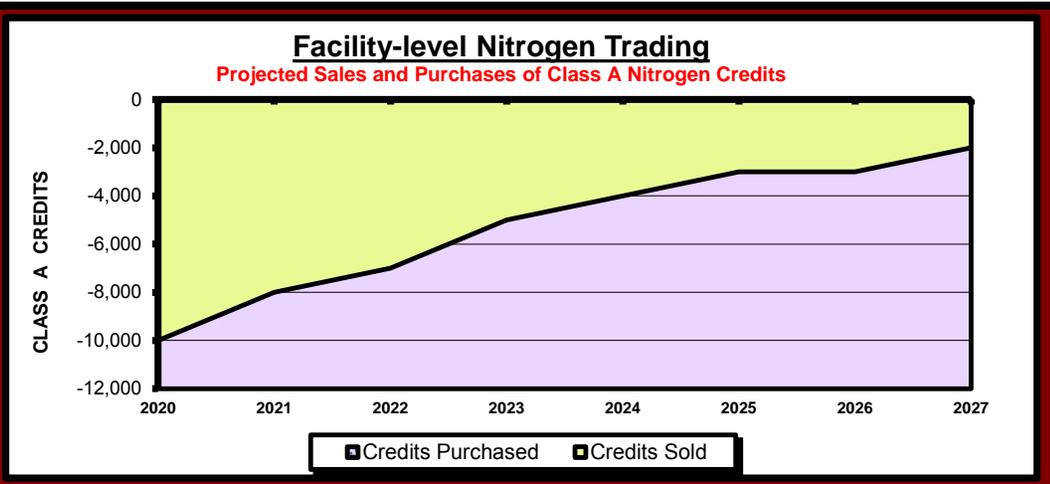


Loading & Credit Summary	
Design Flow (mgd)	1.00
Projected Flow (mgd)	0.47
Projected Avg. Annual Concentration (mg/L)	20.50
Discharged Load (end of pipe)	29,344
Delivery Factor	0.57
Expected Load	16,726
Delivered WLA	10,416
Expected Credits (delivered)	(6,310)
Transfers In (Out) within Owner Bubble	6,310
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.47	0.60	0.31	0.32	0.32	0.33	0.33	0.34
20.50	20.50	20.50	20.50	20.50	20.50	20.50	20.50
29,344	37,460	19,607	19,901	20,199	20,502	20,810	21,122
0.57	0.50	0.50	0.50	0.50	0.50	0.50	0.50
16,726	18,730	9,803	9,950	10,100	10,251	10,405	10,561
10,416	9,137	9,137	9,137	9,137	9,137	9,137	9,137
(6,310)	(9,593)	(666)	(813)	(963)	(1,114)	(1,268)	(1,424)
6,310	9,593	666	813	963	1,114	1,268	1,424
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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)	2.85
Projected Avg. Annual Concentration (mg/L)	8.00
Discharged Load (end of pipe)	69,439
Delivery Factor	0.87
Expected Load	60,412
Delivered WLA	158,979
Expected Credits (delivered)	98,567
Transfers In (Out) within Owner Bubble	(23,055)
Transfers In (Out) from Private Exchange*	0
WQIF-Held Credits	(47,694)
Expected Net Credits	27,818
Class A Credit Sales (Purchases)	10,000
Expected Class B Credits	17,818

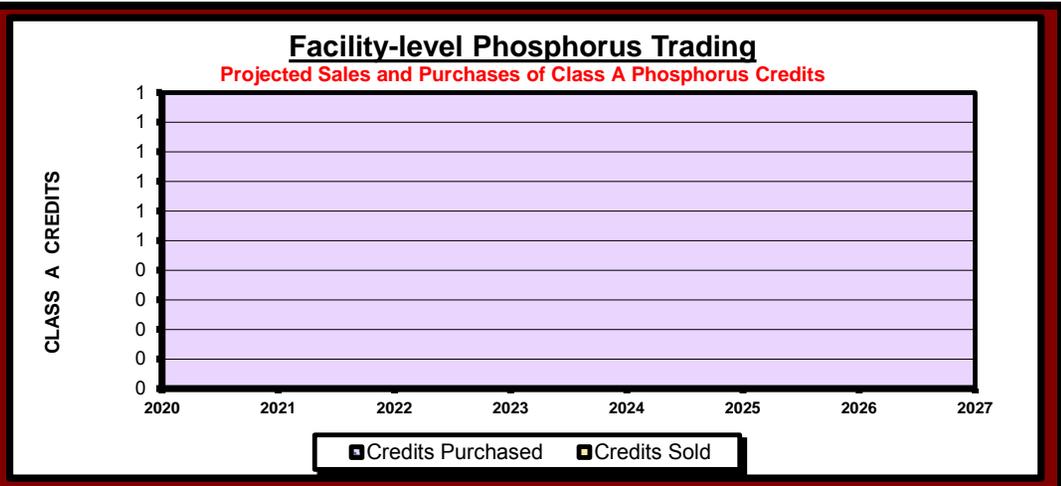
2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
2.85	2.90	3.35	4.20	4.40	4.45	4.50	4.55
8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
69,439	70,657	81,621	102,331	107,204	108,422	109,640	110,858
0.87	0.86	0.86	0.86	0.86	0.86	0.86	0.86
60,412	60,765	70,194	88,005	92,195	93,243	94,291	95,338
158,979	157,151	157,151	157,151	157,151	157,151	157,151	157,151
98,567	96,386	86,957	69,146	64,956	63,908	62,860	61,813
(23,055)	(24,447)	(6,568)	(7,105)	(9,204)	(9,771)	(10,359)	(10,988)
0	0	(90)	(90)	(90)	(90)	(90)	(587)
(47,694)	(47,145)	(47,145)	(47,145)	(47,145)	(47,145)	(47,145)	(47,145)
27,818	24,794	33,154	14,806	8,517	6,902	5,266	3,093
10,000	8,000	7,000	5,000	4,000	3,000	3,000	2,000
17,818	16,794	26,154	9,806	4,517	3,902	2,266	1,093

* Represents private trade with Hanover County to meet MS4 requirements

PHOSPHORUS FACILITY SUMMARY

Hanover Co-Ashland

YORK Trading Basin



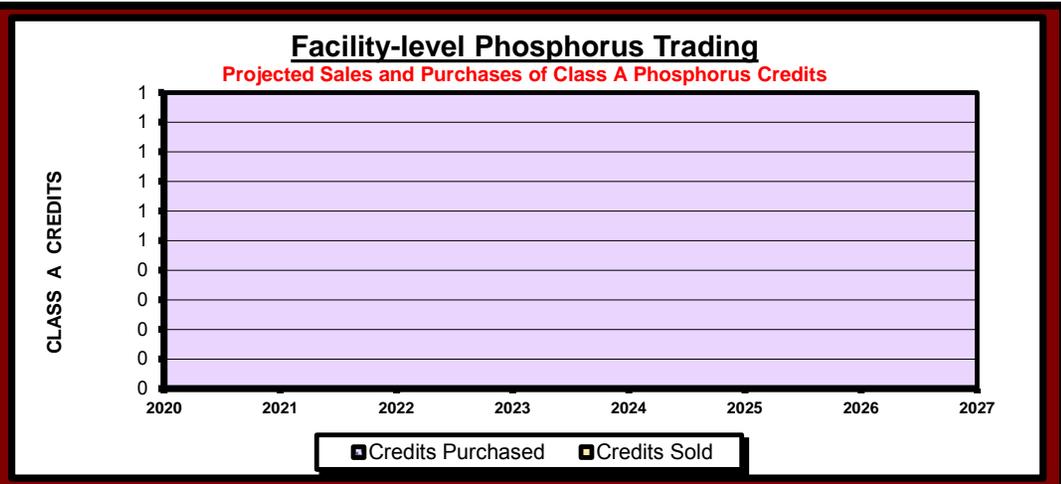
Loading & Credit Summary

Design Flow (mgd)	2.00
Projected Flow (mgd)	1.85
Projected Avg. Annual Concentration (mg/L)	1.70
Discharged Load (end of pipe)	9,578
Delivery Factor	0.55
Expected Load	5,268
Delivered WLA	1,340
Expected Credits (delivered)	(3,928)
Transfers In (Out) within Owner Bubble	3,928
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

	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	1.85	1.85	1.38	1.40	1.50	1.52	1.55	1.57
Projected Avg. Annual Concentration (mg/L)	1.70	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Discharged Load (end of pipe)	9,578	8,451	6,287	6,381	6,853	6,953	7,058	7,172
Delivery Factor	0.55	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Expected Load	5,268	5,493	4,086	4,148	4,454	4,519	4,588	4,662
Delivered WLA	1,340	1,583	1,583	1,583	1,583	1,583	1,583	1,583
Expected Credits (delivered)	(3,928)	(3,910)	(2,503)	(2,565)	(2,871)	(2,936)	(3,005)	(3,079)
Transfers In (Out) within Owner Bubble	3,928	3,910	2,503	2,565	2,871	2,936	3,005	3,079
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	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

PHOSPHORUS FACILITY SUMMARY

Hanover Co-Doswell
 YORK Trading Basin



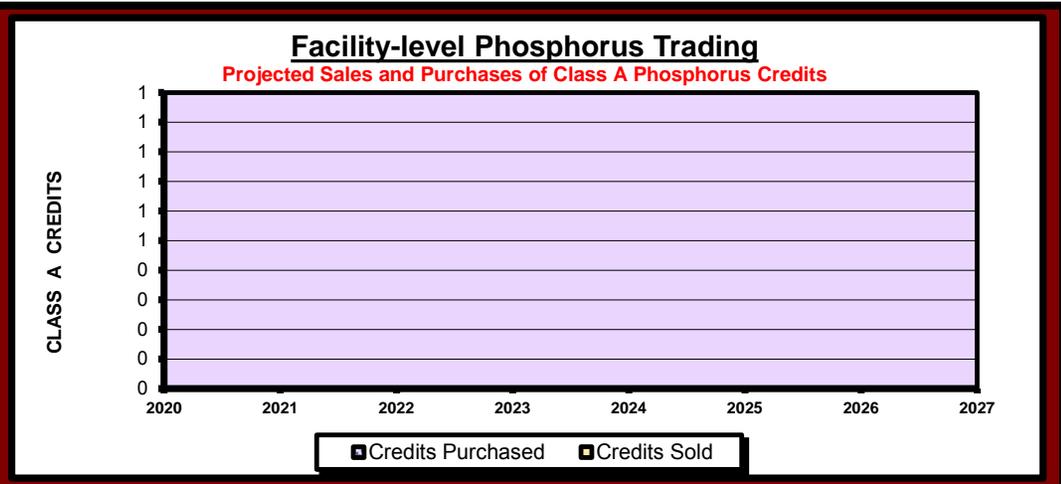
Loading & Credit Summary

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

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	0.47	0.60	0.31	0.32	0.32	0.33	0.33	0.34
Projected Avg. Annual Concentration (mg/L)	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
Discharged Load (end of pipe)	2,433	3,106	1,626	1,650	1,675	1,700	1,726	1,752
Delivery Factor	0.55	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Expected Load	1,338	2,019	1,057	1,073	1,089	1,105	1,122	1,139
Delivered WLA	670	792	792	792	792	792	792	792
Expected Credits (delivered)	(668)	(1,227)	(265)	(281)	(297)	(313)	(330)	(347)
Transfers In (Out) within Owner Bubble	668	1,227	265	281	297	313	330	347
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	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

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
Class A Credit Sales (Purchases)
Expected Class B Credits

	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Projected Flow (mgd)	2.85	2.90	3.35	4.20	4.40	4.45	4.50	4.55
Projected Avg. Annual Concentration (mg/L)	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Discharged Load (end of pipe)	4,774	4,858	5,611	7,035	7,370	7,454	7,538	7,622
Delivery Factor	0.77	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Expected Load	3,676	3,789	4,377	5,487	5,749	5,814	5,879	5,945
Delivered WLA	9,380	9,502	9,502	9,502	9,502	9,502	9,502	9,502
Expected Credits (delivered)	5,704	5,713	5,125	4,015	3,753	3,688	3,623	3,557
Transfers In (Out) within Owner Bubble	(4,596)	(5,137)	(2,768)	(2,846)	(3,168)	(3,249)	(3,335)	(3,426)
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	(1,108)	(576)	(2,357)	(1,169)	(585)	(439)	(288)	(131)
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

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		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
King William	(798)	(825)	(773)	(763)	(600)	(560)	(520)	(479)
West Point	12,539	12,691	13,368	12,854	13,987	14,184	14,383	14,584
York	(11,741)	(11,866)	(12,595)	(12,091)	(13,387)	(13,624)	(13,863)	(14,105)
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
King William	-	-	-	-	-	-	-	-
West Point	-	-	-	-	-	-	-	-
York	19,211	23,602	23,537	25,028	21,585	20,515	19,440	18,359
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	19,211	23,602	23,537	25,028	21,585	20,515	19,440	18,359
Private Exchanges	5	5	5	5	5	5	5	5
Expected Net Credits	19,216	23,607	23,542	25,033	21,590	20,520	19,445	18,364
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>19,216</i>	<i>23,607</i>	<i>23,542</i>	<i>25,033</i>	<i>21,590</i>	<i>20,520</i>	<i>19,445</i>	<i>18,364</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		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
King William	(143)	(145)	(141)	(140)	(128)	(125)	(122)	(119)
West Point	3,298	3,324	3,440	3,352	3,546	3,580	3,614	3,649
York	(3,155)	(3,179)	(3,299)	(3,212)	(3,418)	(3,455)	(3,492)	(3,530)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
King William	-	-	-	-	-	-	-	-
West Point	-	-	-	-	-	-	-	-
York	950	1,189	1,108	1,253	921	836	750	663
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	950	1,189	1,108	1,253	921	836	750	663
Private Exchanges	-	-	-	-	-	-	-	-
Expected Net Credits	950	1,189	1,108	1,253	921	836	750	663
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>950</i>	<i>1,189</i>	<i>1,108</i>	<i>1,253</i>	<i>921</i>	<i>836</i>	<i>750</i>	<i>663</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	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.05	0.05	0.05	0.05	0.07	0.07	0.07	0.08
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)	626	599	651	661	824	864	904	945
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	626	599	651	661	824	864	904	945
Delivered WLA	1,424	1,424	1,424	1,424	1,424	1,424	1,424	1,424
Expected Credits (delivered)	798	825	773	763	600	560	520	479
Transfers In (Out) within Owner Bubble	(798)	(825)	(773)	(763)	(600)	(560)	(520)	(479)
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	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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.05	0.05	0.07	0.07	0.07	0.08
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
626	599	651	661	824	864	904	945
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
626	599	651	661	824	864	904	945
1,424	1,424	1,424	1,424	1,424	1,424	1,424	1,424
798	825	773	763	600	560	520	479
(798)	(825)	(773)	(763)	(600)	(560)	(520)	(479)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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	

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
0.44	0.44	0.46	0.45	0.47	0.47	0.48	0.48
17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50
23,503	23,655	24,332	23,818	24,951	25,148	25,347	25,548
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
23,503	23,655	24,332	23,818	24,951	25,148	25,347	25,548
10,964	10,964	10,964	10,964	10,964	10,964	10,964	10,964
(12,539)	(12,691)	(13,368)	(12,854)	(13,987)	(14,184)	(14,383)	(14,584)
12,539	12,691	13,368	12,854	13,987	14,184	14,383	14,584
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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



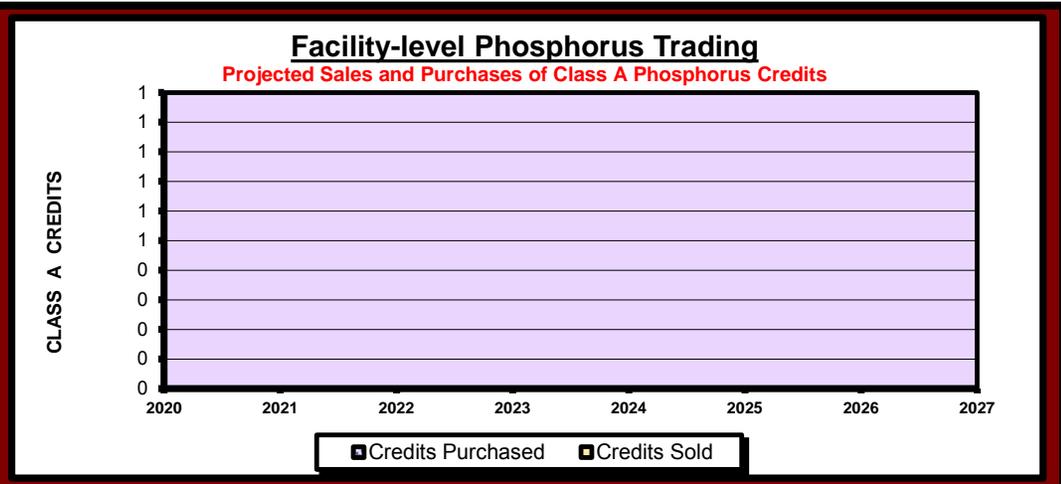
	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Projected Flow (mgd)	13.41	13.16	13.12	13.07	13.19	13.23	13.28	13.32
Projected Avg. Annual Concentration (mg/L)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Discharged Load (end of pipe)	244,975	240,459	239,795	238,808	240,955	241,788	242,624	243,463
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	244,975	240,459	239,795	238,808	240,955	241,788	242,624	243,463
Delivered WLA*	275,927	275,927	275,927	275,927	275,927	275,927	275,927	275,927
Expected Credits (delivered)	30,952	35,468	36,132	37,119	34,972	34,139	33,303	32,464
Transfers In (Out) within Owner Bubble	(11,741)	(11,866)	(12,595)	(12,091)	(13,387)	(13,624)	(13,863)	(14,105)
Transfers In (Out) from Private Exchange**	5	5	5	5	5	5	5	5
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	19,216	23,607	23,542	25,033	21,590	20,520	19,445	18,364
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	19,216	23,607	23,542	25,033	21,590	20,520	19,445	18,364

* Reflects consolidation of the HRSD-Mathews WLA

** Represents credits received via private trade with the Department of Energy-Jefferson Lab

PHOSPHORUS FACILITY SUMMARY

HRSD-King William
 YORK Trading Basin



Loading & Credit Summary

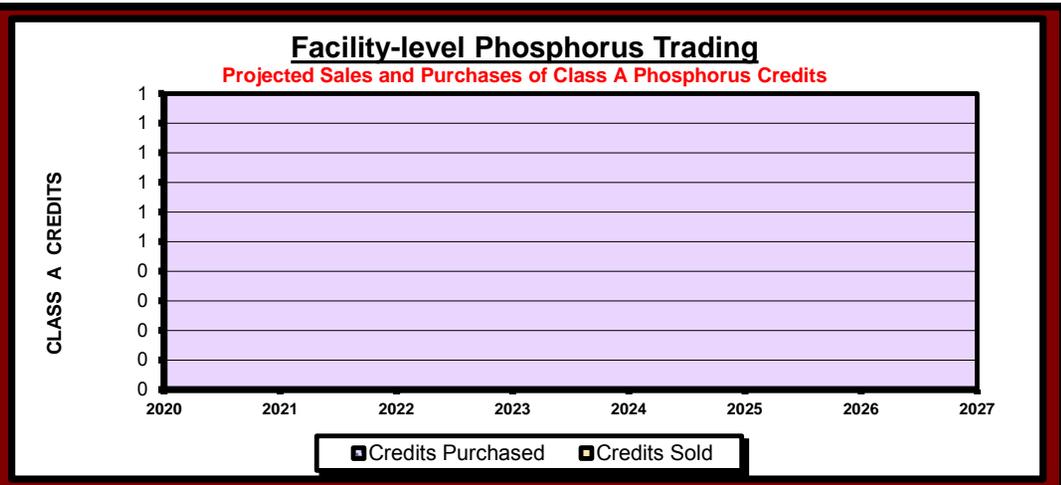
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.05	0.05	0.05	0.05	0.07	0.07	0.07	0.08
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	47	45	49	50	62	65	68	71
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	47	45	49	50	62	65	68	71
Delivered WLA	190	190	190	190	190	190	190	190
Expected Credits (delivered)	143	145	141	140	128	125	122	119
Transfers In (Out) within Owner Bubble	(143)	(145)	(141)	(140)	(128)	(125)	(122)	(119)
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	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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.05	0.05	0.07	0.07	0.07	0.08
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
47	45	49	50	62	65	68	71
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
47	45	49	50	62	65	68	71
190	190	190	190	190	190	190	190
143	145	141	140	128	125	122	119
(143)	(145)	(141)	(140)	(128)	(125)	(122)	(119)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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



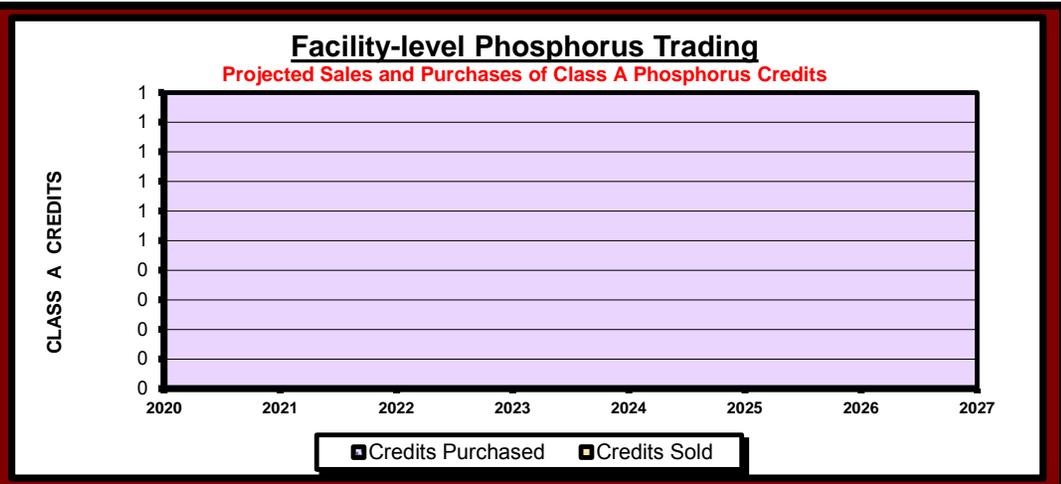
Loading & Credit Summary

Design Flow (mgd)	0.60
Projected Flow (mgd)	0.44
Projected Avg. Annual Concentration (mg/L)	3.00
Discharged Load (end of pipe)	4,029
Delivery Factor	1.00
Expected Load	4,029
Delivered WLA	731
Expected Credits (delivered)	(3,298)
Transfers In (Out) within Owner Bubble	3,298
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
0.44	0.44	0.46	0.45	0.47	0.47	0.48	0.48
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
4,029	4,055	4,171	4,083	4,277	4,311	4,345	4,380
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4,029	4,055	4,171	4,083	4,277	4,311	4,345	4,380
731	731	731	731	731	731	731	731
(3,298)	(3,324)	(3,440)	(3,352)	(3,546)	(3,580)	(3,614)	(3,649)
3,298	3,324	3,440	3,352	3,546	3,580	3,614	3,649
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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

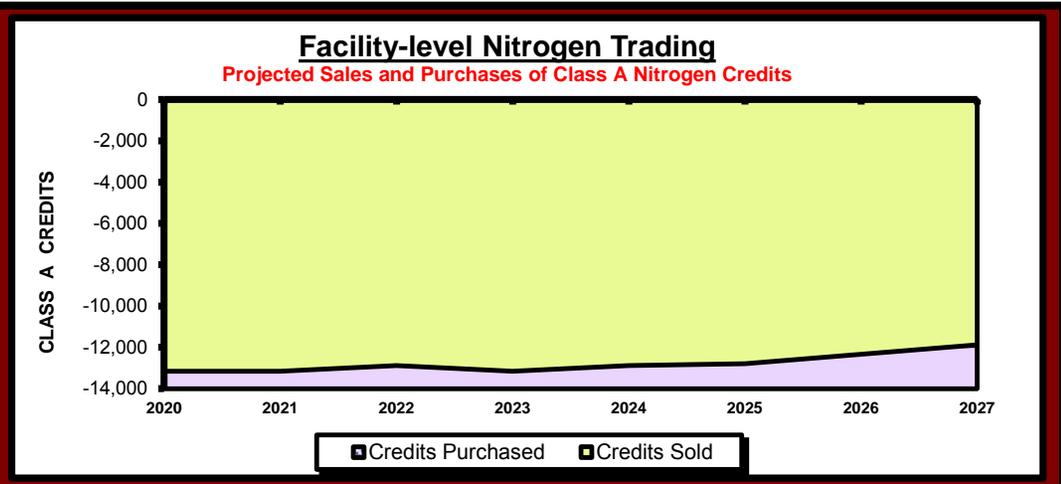


	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Projected Flow (mgd)	13.41	13.16	13.12	13.07	13.19	13.23	13.28	13.32
Projected Avg. Annual Concentration (mg/L)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Discharged Load (end of pipe)	14,290	14,027	13,988	13,930	14,056	14,104	14,153	14,202
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	14,290	14,027	13,988	13,930	14,056	14,104	14,153	14,202
Delivered WLA*	18,395	18,395	18,395	18,395	18,395	18,395	18,395	18,395
Expected Credits (delivered)	4,105	4,368	4,407	4,465	4,339	4,291	4,242	4,193
Transfers In (Out) within Owner Bubble	(3,155)	(3,179)	(3,299)	(3,212)	(3,418)	(3,455)	(3,492)	(3,530)
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	950	1,189	1,108	1,253	921	836	750	663
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	950	1,189	1,108	1,253	921	836	750	663

* Reflects consolidation of the HRSD-Mathews WLA

NITROGEN FACILITY SUMMARY

New Kent Co-Parham
 YORK Trading Basin



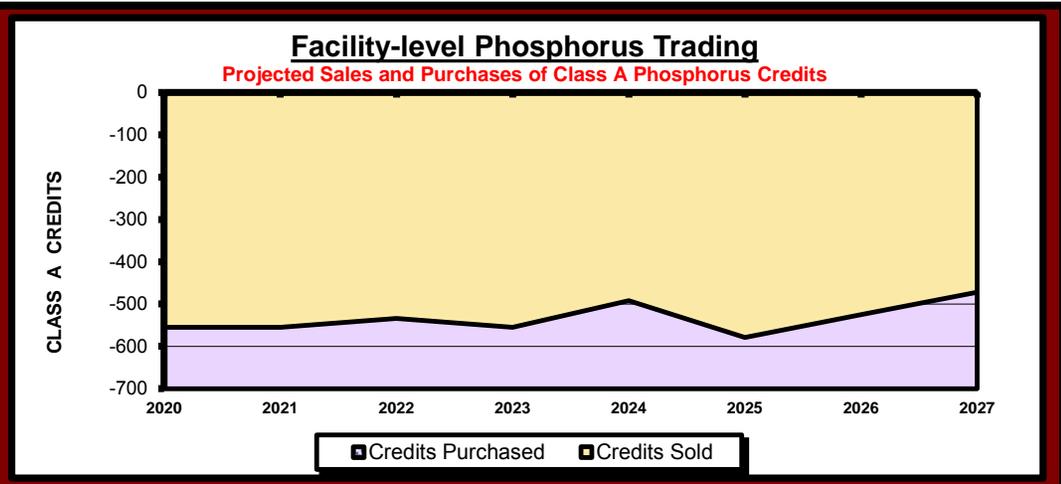
Loading & Credit Summary

Design Flow (mgd)	2.00
Projected Flow (mgd)	0.48
Projected Avg. Annual Concentration (mg/L)	6.00
Discharged Load (end of pipe)	8,771
Delivery Factor	1.00
Expected Load	8,771
Delivered WLA	36,547
Expected Credits (delivered)	27,776
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	27,776
Class A Credit Sales (Purchases)	13,157
Expected Class B Credits	14,619

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0.48	0.48	0.50	0.50	0.55	0.60	0.65	0.70
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
8,771	8,771	9,137	9,137	10,050	10,964	11,878	12,791
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
8,771	8,771	9,137	9,137	10,050	10,964	11,878	12,791
36,547	36,547	36,547	36,547	36,547	36,547	36,547	36,547
27,776	27,776	27,410	27,410	26,497	25,583	24,669	23,756
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
27,776	27,776	27,410	27,410	26,497	25,583	24,669	23,756
13,157	13,157	12,882	13,157	12,882	12,792	12,335	11,878
14,619	14,619	14,528	14,253	13,615	12,791	12,334	11,878

PHOSPHORUS FACILITY SUMMARY

New Kent Co-Parham
 YORK Trading Basin



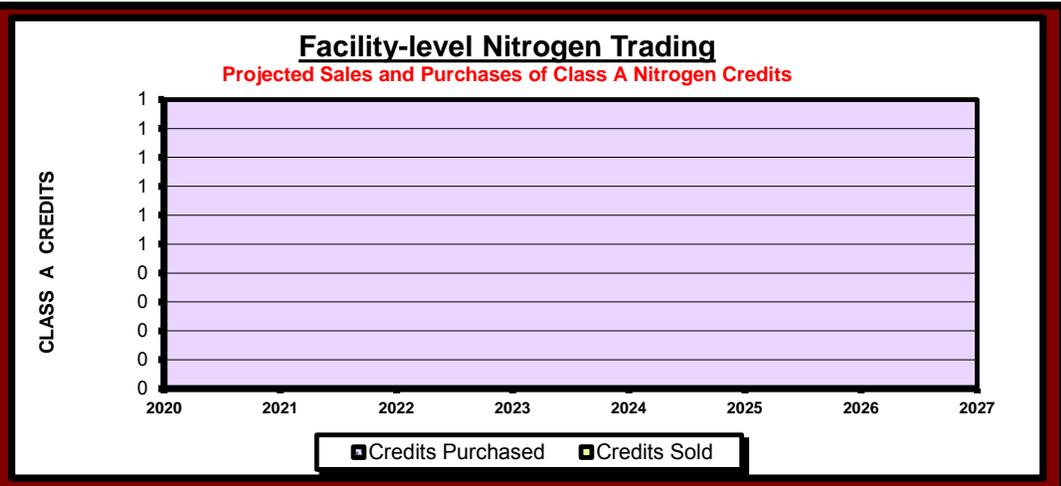
Loading & Credit Summary

Design Flow (mgd)	2.00
Projected Flow (mgd)	0.48
Projected Avg. Annual Concentration (mg/L)	0.70
Discharged Load (end of pipe)	1,023
Delivery Factor	1.00
Expected Load	1,023
Delivered WLA	2,436
Expected Credits (delivered)	1,413
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,413
Class A Credit Sales (Purchases)	555
Expected Class B Credits	858

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0.48	0.48	0.50	0.50	0.55	0.60	0.65	0.70
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
1,023	1,023	1,066	1,066	1,173	1,279	1,386	1,492
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,023	1,023	1,066	1,066	1,173	1,279	1,386	1,492
2,436	2,436	2,436	2,436	2,436	2,436	2,436	2,436
1,413	1,413	1,370	1,370	1,263	1,157	1,050	944
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,413	1,413	1,370	1,370	1,263	1,157	1,050	944
555	555	534	555	492	579	525	472
858	858	836	815	771	578	525	472

NITROGEN FACILITY SUMMARY

RSA-Gordonville
 YORK Trading Basin



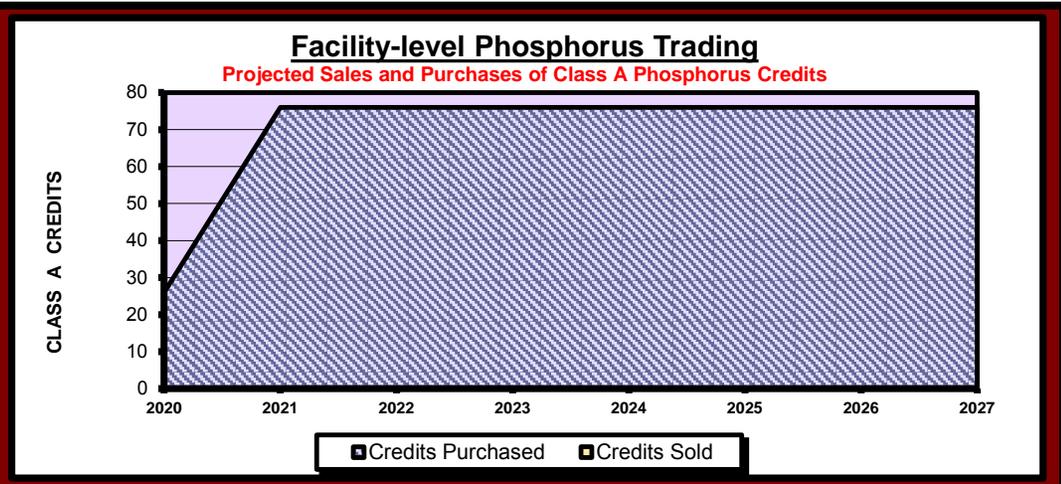
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.06	0.06	0.06	0.06	0.06	0.06	0.06
429	515	515	515	515	515	515	515
859	1,031	1,031	1,031	1,031	1,031	1,031	1,031
430	516	516	516	516	516	516	516
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(247)	(296)	(296)	(296)	(296)	(296)	(296)	(296)
183	220	220	220	220	220	220	220
0	0	0	0	0	0	0	0
183	220	220	220	220	220	220	220

PHOSPHORUS FACILITY SUMMARY

RSA-Gordonville
 YORK Trading Basin



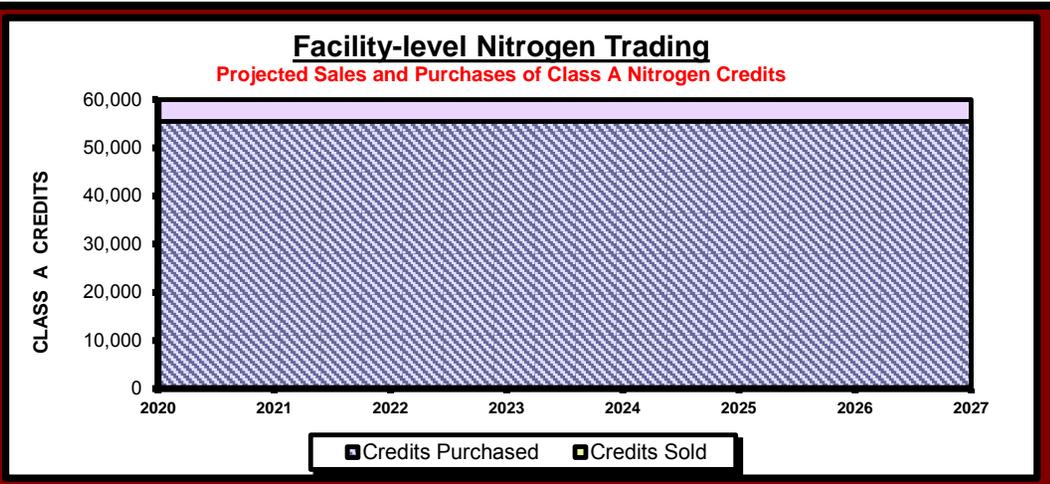
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
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
0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
1,288	1,288	1,288	1,288	1,288	1,288	1,288	1,288
0.18	0.53	0.53	0.53	0.53	0.53	0.53	0.53
232	683	683	683	683	683	683	683
206	607	607	607	607	607	607	607
(26)	(76)	(76)	(76)	(76)	(76)	(76)	(76)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(26)	(76)	(76)	(76)	(76)	(76)	(76)	(76)
(26)	(76)	(76)	(76)	(76)	(76)	(76)	(76)
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

WestRock-West Point Mill
 YORK Trading Basin



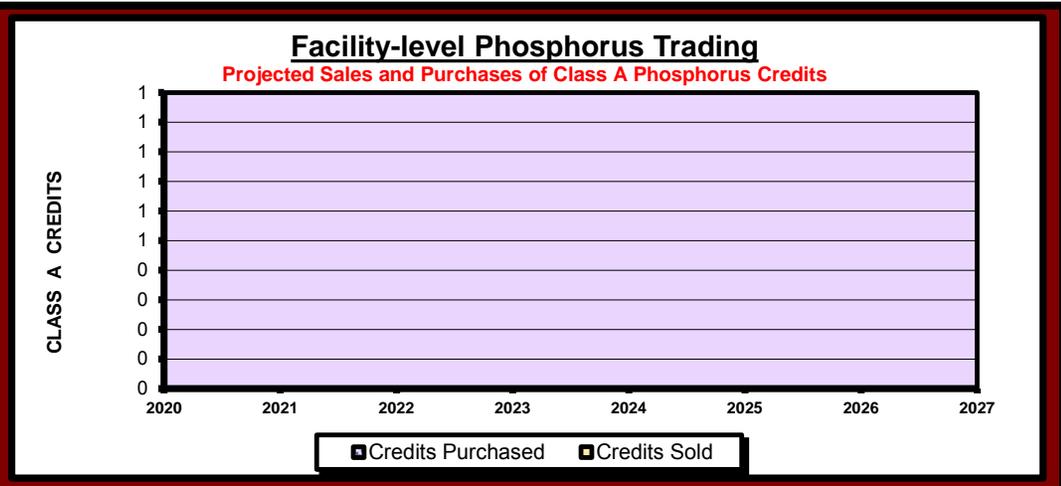
Loading & Credit Summary

Design Flow (mgd)	23.00
Projected Flow (mgd)	16.80
Projected Avg. Annual Concentration (mg/L)	6.15
Discharged Load (end of pipe)	314,667
Delivery Factor	1.00
Expected Load	314,667
Delivered WLA	259,177
Expected Credits (delivered)	(55,490)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(55,490)
Class A Credit Sales (Purchases)	(55,490)
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
16.80	16.80	16.80	16.80	16.80	16.80	16.80	16.80
6.15	6.15	6.15	6.15	6.15	6.15	6.15	6.15
314,667	314,667	314,667	314,667	314,667	314,667	314,667	314,667
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
314,667	314,667	314,667	314,667	314,667	314,667	314,667	314,667
259,177	259,177	259,177	259,177	259,177	259,177	259,177	259,177
(55,490)	(55,490)	(55,490)	(55,490)	(55,490)	(55,490)	(55,490)	(55,490)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(55,490)	(55,490)	(55,490)	(55,490)	(55,490)	(55,490)	(55,490)	(55,490)
(55,490)	(55,490)	(55,490)	(55,490)	(55,490)	(55,490)	(55,490)	(55,490)
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

WestRock-West Point Mill
 YORK Trading Basin

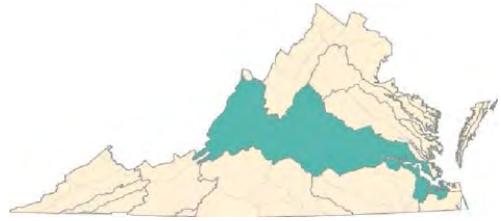


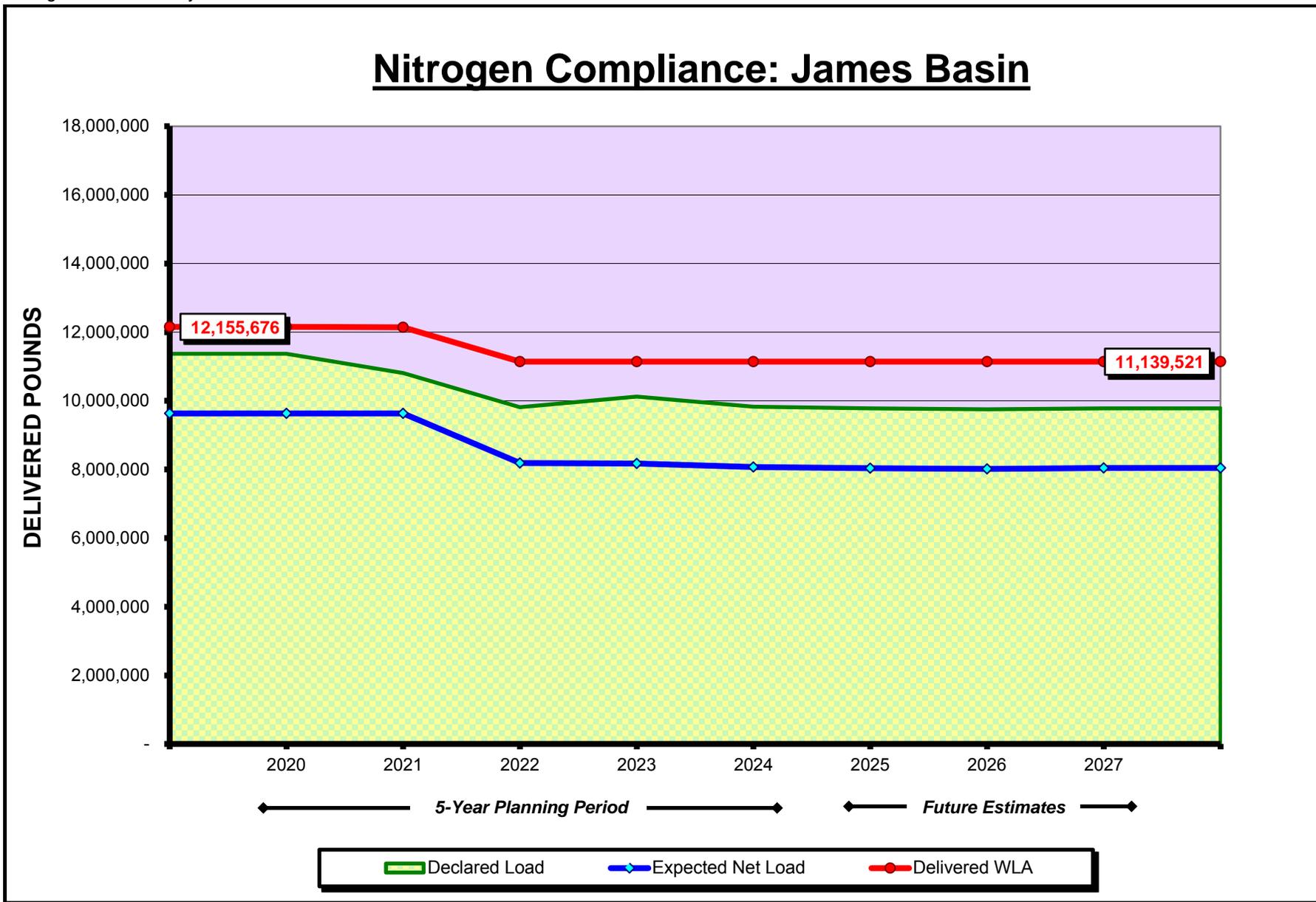
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

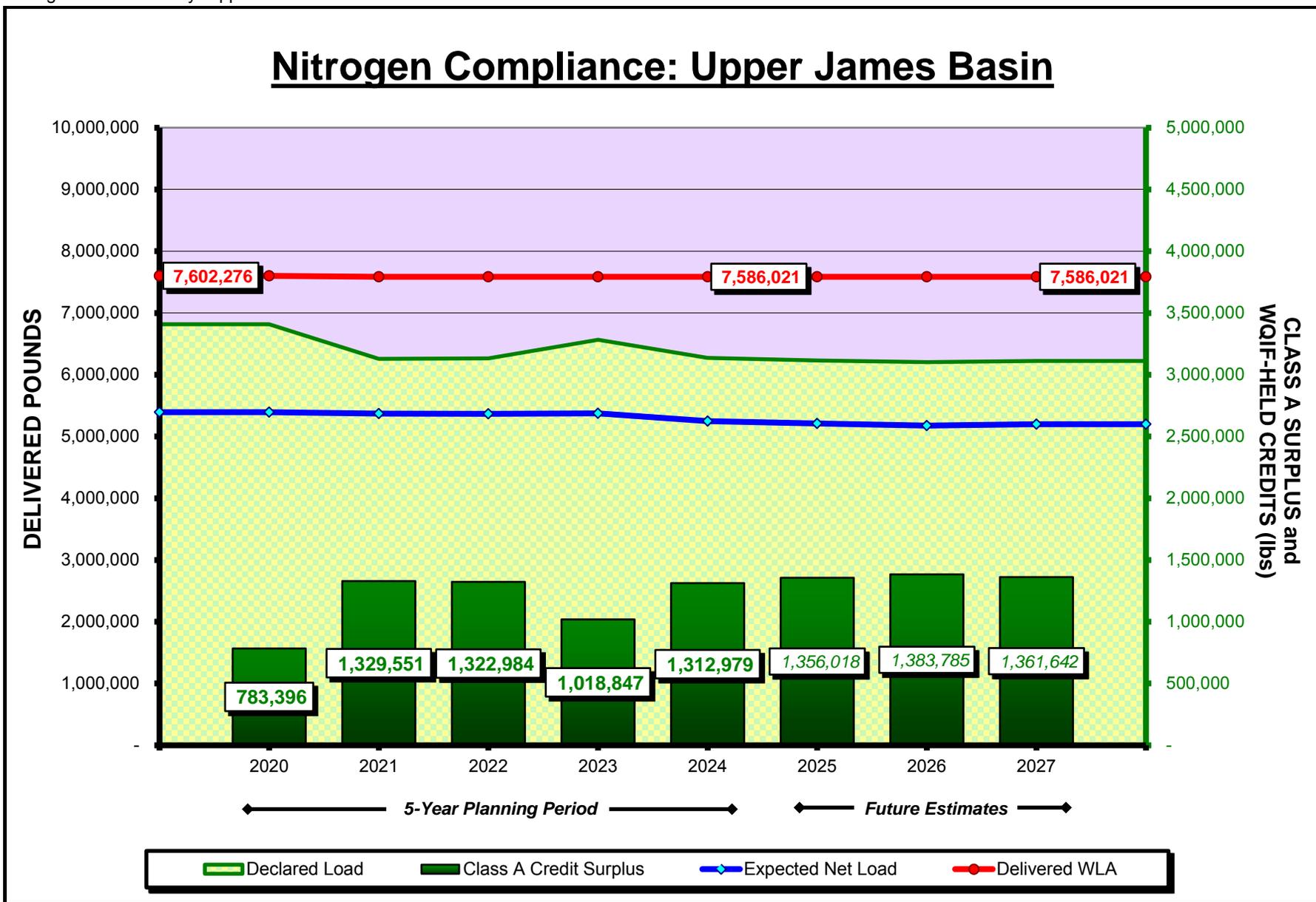
2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
16.80	16.80	16.80	16.80	16.80	16.80	16.80	16.80
1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
53,212	53,212	53,212	53,212	53,212	53,212	53,212	53,212
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
53,212	53,212	53,212	53,212	53,212	53,212	53,212	53,212
56,038	56,038	56,038	56,038	56,038	56,038	56,038	56,038
2,826	2,826	2,826	2,826	2,826	2,826	2,826	2,826
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,826	2,826	2,826	2,826	2,826	2,826	2,826	2,826
0	0	0	0	0	0	0	0
2,826	2,826	2,826	2,826	2,826	2,826	2,826	2,826

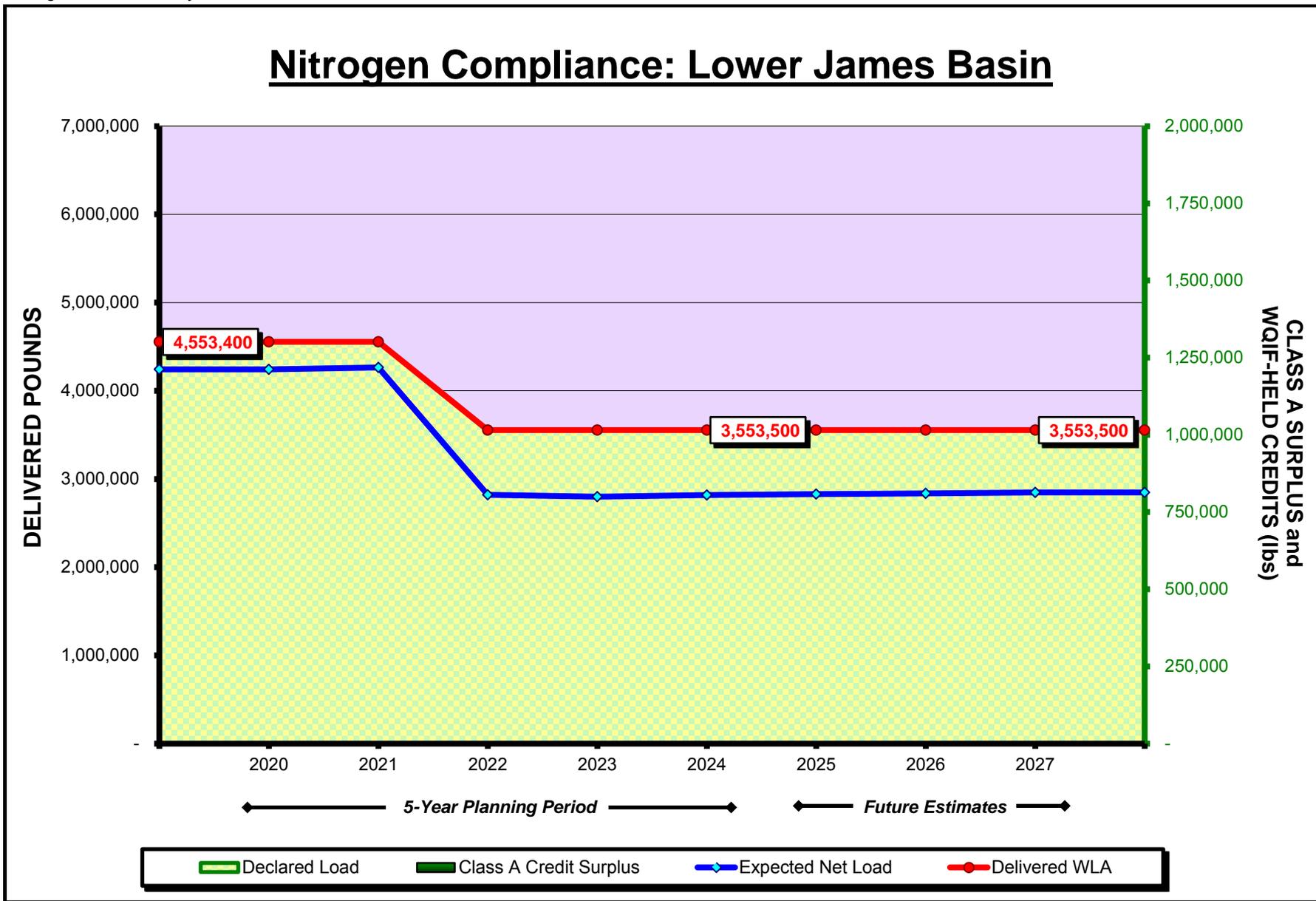
SECTION 5

James River Basin Exchange Compliance Plan









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	7,602,276	5,385,668	2,216,608	-	(1,766)	(4,276)	2,210,566		860,904	(77,508)	1,427,170
AdvanSix-Hopewell	1,090,798	774,790	316,008	-	-	-	316,008	-	-	-	316,008
Alleghany Co-L. Jackson	16,629	6,271	10,358	-	-	(4,276)	6,082	4,500	-	-	1,582
Alleghany 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)	-	-
Aqua Virginia-Manakin Farms	3,548	1,945	1,603	-	(1,603)	-	-	-	-	-	-
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.	182,738	151,973	30,765	-	-	-	30,765	-	-	-	30,765
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	243,099	189,070	54,029	-	-	-	54,029	-	-	-	54,029
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 Water Renewal	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	189,606	71,174	118,432	-	(163)	-	118,269	118,268	-	-	1
South Central WWA	350,239	446,325	(96,086)	-	171,694	-	75,608	-	-	-	75,608
Tyson Foods-Glen Allen	3,128	3,128	-	-	-	-	-	-	-	-	-
WestRock-Covington	43,384	35,930	7,454	-	-	-	7,454	7,454	-	-	-
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	4,553,400	4,242,200	311,200	-	(1)	-	311,199		-	-	311,199
HRSD (Bubble)	4,553,400	4,242,200	311,200	-	(1)	-	311,199	-	-	-	311,199

* 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:		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:	\$ 0.18	\$ 3.87	\$ 0.03	
UPPER JAMES BASIN	7,586,021	5,362,989	2,223,032	-	(1,699)	(4,440)	2,216,893		1,405,992	(76,441)	887,342	
AdvanSix-Hopewell	1,090,798	774,790	316,008	-	-	-	316,008		75,000	-	241,008	
Alleghany Co-L. Jackson	17,268	6,513	10,755	-	-	(4,440)	6,315		4,500	-	1,815	
Alleghany 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	11,543	93	-	-	-	93		-	-	93	
Aqua Virginia-Manakin Farms	3,509	1,973	1,536	-	(1,536)	-	-		-	-	-	
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.	182,738	154,638	28,100	-	-	-	28,100		-	-	28,100	
Chesterfield-Proctors Cr.	411,151	239,914	171,237	-	(50,000)	-	121,237		-	-	121,237	
Covington	11,512	18,427	(6,915)	-	-	-	(6,915)		-	(6,915)	-	
Crewe	2,284	665	1,619	-	-	-	1,619		1,619	-	-	
Dominion-Chesterfield	243,099	189,070	54,029	-	-	-	54,029		-	-	54,029	
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 Water Renewal	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	181,116	68,610	112,506	-	(163)	-	112,343		112,342	-	1	
South Central WWA	350,239	400,239	(50,000)	-	50,000	-	-		-	-	-	
Tyson Foods-Glen Allen	3,519	3,519	-	-	-	-	-		-	-	-	
WestRock-Covington	43,384	35,930	7,454	-	-	-	7,454		7,454	-	-	
								PRICE:	No Sale	No Sale	No Sale	
LOWER JAMES BASIN	4,553,400	4,262,688	290,712	-	(1)	-	290,711		-	-	290,711	
HRSD (Bubble)	4,553,400	4,262,688	290,712	-	(1)	-	290,711		-	-	290,711	

* 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		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:	\$ 0.19	\$ 3.94	\$ 0.03
UPPER JAMES BASIN	7,586,021	5,360,659	2,225,362	-	(163)	(4,440)	2,220,759		1,401,988	(79,004)	897,775
AdvanSix-Hopewell	1,090,798	730,325	360,473	-	-	-	360,473		100,000	-	260,473
Alleghany Co-L. Jackson	17,268	6,513	10,755	-	-	(4,440)	6,315		4,500	-	1,815
Alleghany 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	11,543	93	-	-	-	93		-	-	93
Aqua Virginia-Manakin Farms	3,509	1,973	1,536	-	-	-	1,536		-	-	1,536
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.	182,738	157,303	25,435	-	-	-	25,435		-	-	25,435
Chesterfield-Proctors Cr.	411,151	242,579	168,572	-	(50,000)	-	118,572		-	-	118,572
Covington	11,512	18,427	(6,915)	-	-	-	(6,915)		-	(6,915)	-
Crewe	2,284	665	1,619	-	-	-	1,619		1,619	-	-
Dominion-Chesterfield	243,099	189,070	54,029	-	-	-	54,029		-	-	54,029
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 Water Renewal	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	181,116	69,858	111,258	-	(163)	-	111,095		111,094	-	1
South Central WWA	350,239	400,239	(50,000)	-	50,000	-	-		-	-	-
Tyson Foods-Glen Allen	3,519	2,593	926	-	-	-	926		-	-	926
WestRock-Covington	43,384	35,930	7,454	-	-	-	7,454		7,454	-	-
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	3,553,400	2,819,663	733,737	-	(1)	-	733,736		-	-	733,736
HRSD (Bubble)	3,553,400	2,819,663	733,737	-	(1)	-	733,736		-	-	733,736

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

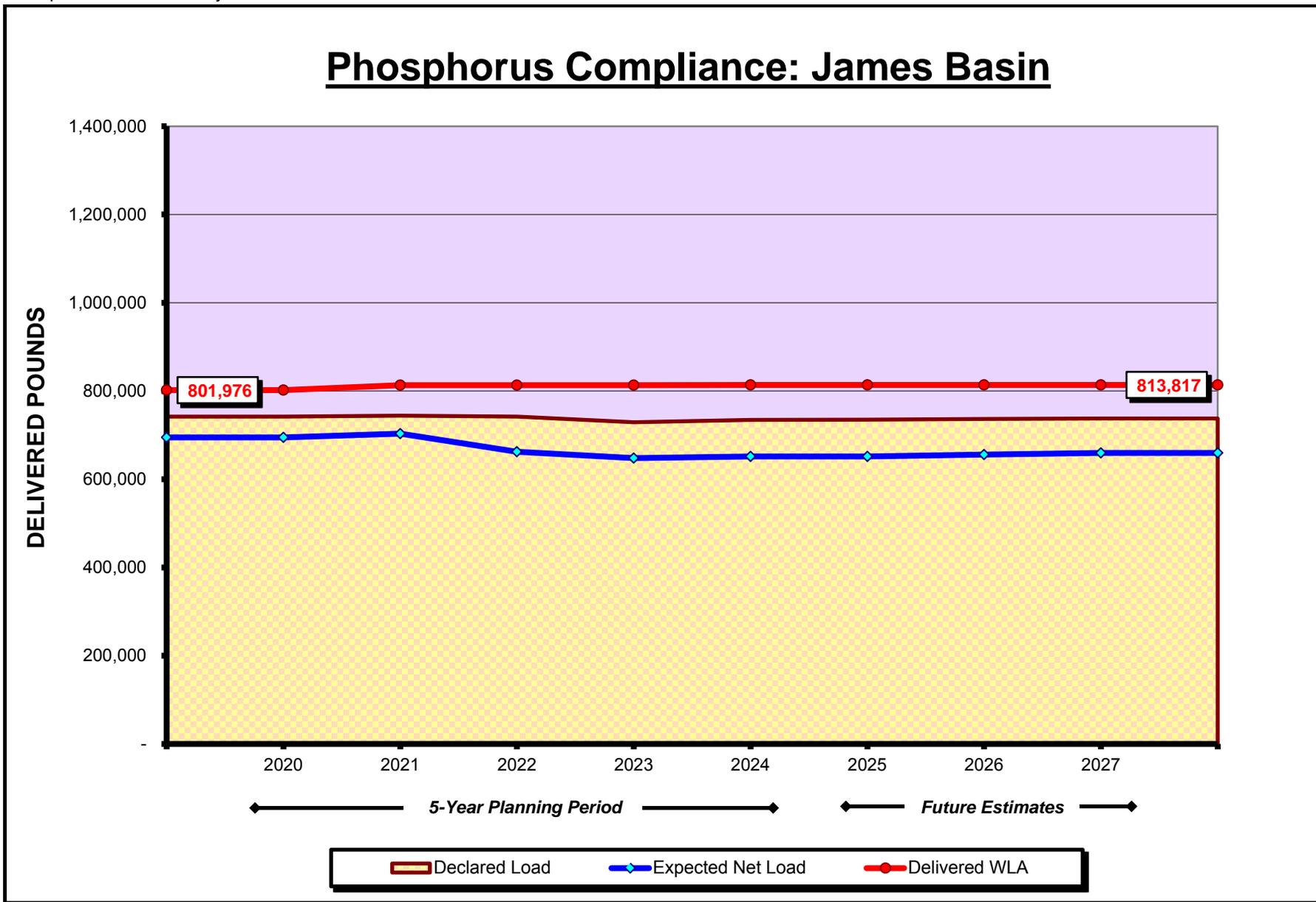
** Class A and Class B Credit Sales are estimates only; actual Credits generated—and the resulting sales prices—may vary from estimates based on Delivered Loads in the Compliance Year.

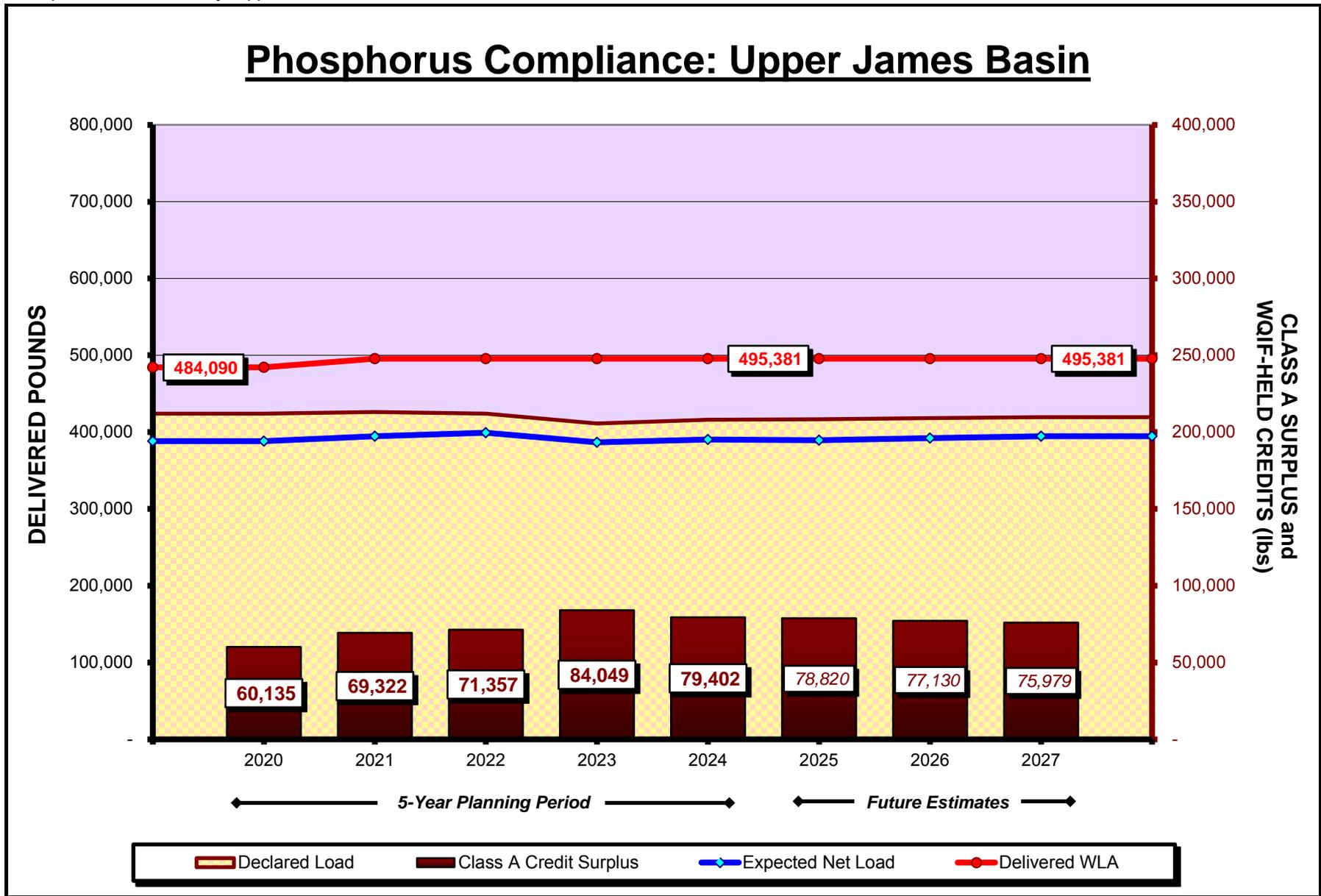
JAMES Basin: Nitrogen Credit Ledger

Compliance Year:		2023		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:	\$ 0.24	\$ 4.04	\$ 0.02	
UPPER JAMES BASIN	7,586,021	5,371,462	2,214,559	-	(163)	(4,440)	2,209,956		1,092,846	(73,999)	1,191,109	
AdvanSix-Hopewell	1,090,798	723,625	367,173	-	-	-	367,173		100,000	-	267,173	
Alleghany Co-L. Jackson	17,268	6,513	10,755	-	-	(4,440)	6,315		4,500	-	1,815	
Alleghany 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	11,543	93	-	-	-	93		-	-	93	
Aqua Virginia-Manakin Farms	3,509	1,973	1,536	-	-	-	1,536		-	-	1,536	
Buena Vista	22,613	28,307	(5,694)	-	-	-	(5,694)		-	(5,694)	-	
BWX Technologies, Inc	119,680	102,916	16,764	-	-	-	16,764		15,000	-	1,764	
Chesterfield-Falling Cr.	182,738	157,303	25,435	-	-	-	25,435		-	-	25,435	
Chesterfield-Proctors Cr.	411,151	242,579	168,572	-	(50,000)	-	118,572		-	-	118,572	
Covington	11,512	18,427	(6,915)	-	-	-	(6,915)		-	(6,915)	-	
Crewe	2,284	665	1,619	-	-	-	1,619		1,619	-	-	
Dominion-Chesterfield	243,099	189,070	54,029	-	-	-	54,029		-	-	54,029	
DuPont-Spruance	201,080	262,470	(61,390)	-	-	-	(61,390)		-	(61,390)	-	
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	944,940	197,145	-	-	-	197,145		177,431	-	19,714	
Hopewell Water Renewal	1,827,336	1,260,862	566,474	-	-	-	566,474		-	-	566,474	
Lynchburg	343,052	210,197	132,855	-	-	-	132,855		97,000	-	35,855	
MSA-Lexington	16,994	4,721	12,273	-	-	-	12,273		800	-	11,473	
Philip Morris	139,724	45,683	94,041	-	-	-	94,041		60,000	-	34,041	
Richmond	1,093,652	548,201	545,451	-	-	-	545,451		500,000	-	45,451	
RWSA-Moores Creek	181,116	70,482	110,634	-	(163)	-	110,471		110,470	-	1	
South Central WWA	350,239	400,239	(50,000)	-	50,000	-	-		-	-	-	
Tyson Foods-Glen Allen	3,519	2,593	926	-	-	-	926		-	-	926	
WestRock-Covington	43,384	35,930	7,454	-	-	-	7,454		7,454	-	-	
								PRICE:	No Sale	No Sale	No Sale	
LOWER JAMES BASIN	3,553,400	2,798,088	755,312	-	(1)	-	755,311		-	-	755,311	
HRSD (Bubble)	3,553,400	2,798,088	755,312	-	(1)	-	755,311		-	-	755,311	

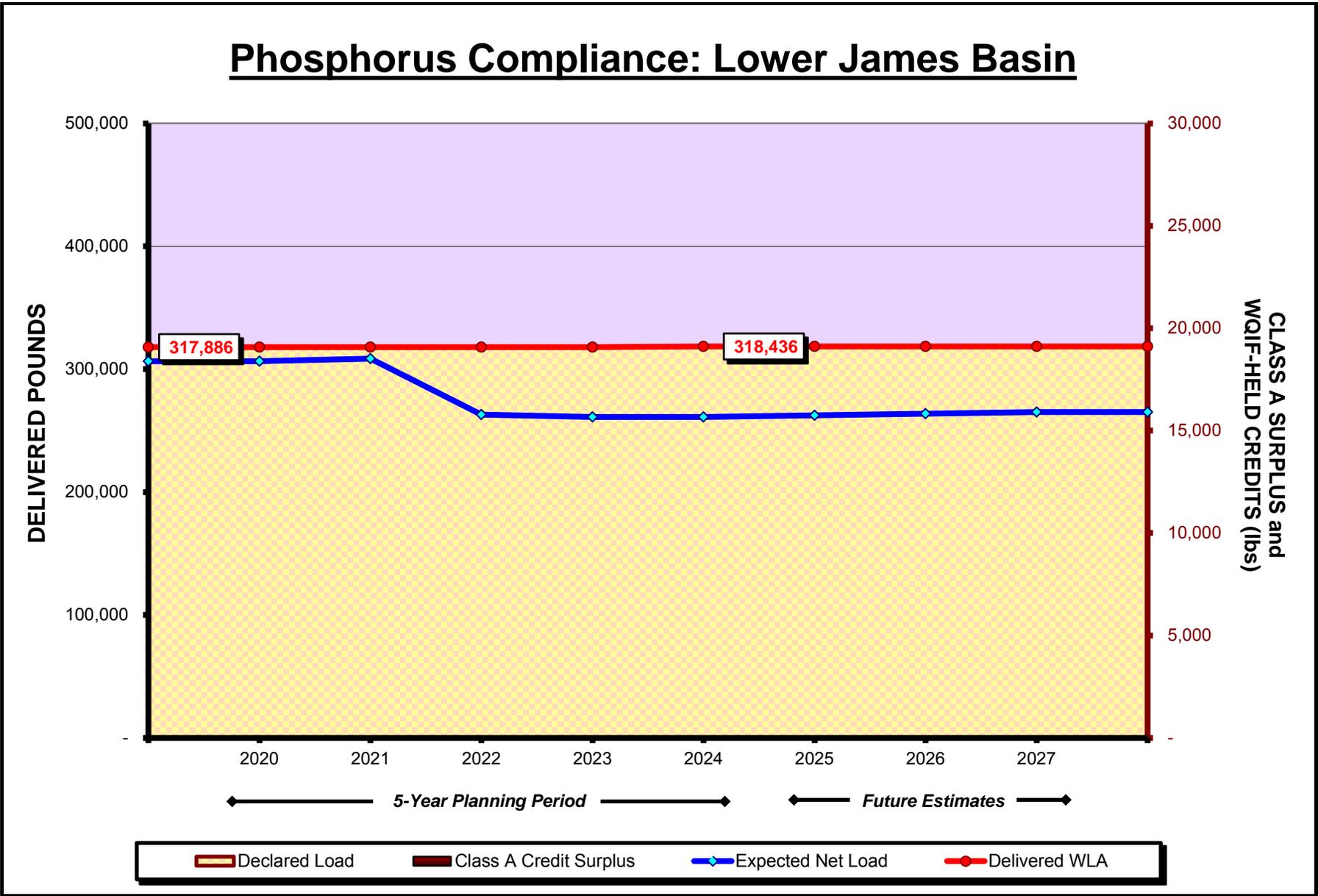
* For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.

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Phosphorus Compliance: Lower James Basin



JAMES Basin: Phosphorus 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:	\$ 1.11	\$ 5.81	\$ 0.26	
UPPER JAMES BASIN	484,090	387,211	96,879	-	(348)	(734)	95,797		76,436	(16,301)	35,662	
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)	-	
Aqua Virginia-Manakin Farms	352	63	289	-	(289)	-	-		-	-	-	
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 Water Renewal	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	12,227	6,573	5,654	-	(59)	-	5,595		5,594	-	1	
South Central WWA	28,404	25,609	2,795	-	-	-	2,795		-	-	2,795	
Tyson Foods-Glen Allen	188	150	38	-	-	-	38		-	-	38	
WestRock-Covington	63,869	39,196	24,673	-	-	-	24,673		24,673	-	-	
								PRICE:	No Sale	No Sale	No Sale	
LOWER JAMES BASIN	317,886	306,509	11,377	-	(1)	-	11,376		-	-	11,376	
HRSD (Bubble)	317,886	306,509	11,377	-	(1)	-	11,376		-	-	11,376	

* 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			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:	\$ 0.86	\$ 5.82	\$ 0.25	
UPPER JAMES BASIN	495,381	393,573	101,808	-	(368)	(789)	100,651		83,106	(13,784)	31,329	
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	872	5	-	-	-	5		-	-	5	
Aqua Virginia-Manakin Farms	378	69	309	-	(309)	-	-		-	-	-	
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 Water Renewal	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	13,153	7,136	6,017	-	(59)	-	5,958		5,957	-	1	
South Central WWA	28,404	25,865	2,539	-	-	-	2,539		-	-	2,539	
Tyson Foods-Glen Allen	147	117	30	-	-	-	30		-	-	30	
WestRock-Covington	68,707	42,166	26,541	-	-	-	26,541		26,541	-	-	
								PRICE:	No Sale	No Sale	No Sale	
LOWER JAMES BASIN	317,886	308,570	9,316	-	(1)	-	9,315		-	-	9,315	
HRSD (Bubble)	317,886	308,570	9,316	-	(1)	-	9,315		-	-	9,315	

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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:	\$ 0.74	\$ 5.93	\$ 0.27	
UPPER JAMES BASIN	495,381	398,233	97,148	-	(59)	(789)	96,300		82,860	(11,503)	24,943	
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	872	5	-	-	-	5		-	-	5	
Aqua Virginia-Manakin Farms	378	69	309	-	-	-	309		-	-	309	
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)	(40)	-	3,363		-	-	3,363	
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	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 Water Renewal	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	13,153	7,265	5,888	-	(59)	-	5,829		5,828	-	1	
South Central WWA	28,404	26,124	2,280	-	-	-	2,280		-	-	2,280	
Tyson Foods-Glen Allen	147	84	63	-	-	-	63		-	-	63	
WestRock-Covington	68,707	42,166	26,541	-	-	-	26,541		26,541	-	-	
								PRICE:	No Sale	No Sale	No Sale	
LOWER JAMES BASIN	317,886	263,087	54,799	-	(1)	-	54,798		-	-	54,798	
HRSD (Bubble)	317,886	263,087	54,799	-	(1)	-	54,798		-	-	54,798	

*** 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: Phosphorus Credit Ledger

Compliance Year:		2023	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:	\$ 0.60	\$ 6.08	\$ 0.26
UPPER JAMES BASIN	495,381	385,934	109,447	-	(59)	(789)	108,599		94,579	(10,530)	24,550
AdvanSix-Hopewell	41,841	36,181	5,660	-	-	-	5,660	-	-	-	5,660
Alleghany Co-L. Jackson	3,069	856	2,213	(427)	-	(789)	997	450	-	-	547
Alleghany Co-Low Moor	438	865	(427)	427	-	-	-	-	-	-	-
Amherst (Town)	526	649	(123)	-	-	-	(123)	-	(123)	-	-
Aqua Virginia-L. Monticello	877	872	5	-	-	-	5	-	-	-	5
Aqua Virginia-Manakin Farms	378	69	309	-	-	-	309	-	-	-	309
Buena Vista	1,972	5,382	(3,410)	-	-	-	(3,410)	-	(3,410)	-	-
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)	(40)	-	3,363	-	-	-	3,363
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	12,222	(5,883)	-	-	-	(5,883)	-	(5,883)	-	-
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	67,496	25,127	-	-	-	25,127	22,614	-	-	2,513
Hopewell Water Renewal	61,749	58,840	2,909	-	-	-	2,909	-	-	-	2,909
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	34,263	21,311	-	-	-	21,311	20,000	-	-	1,311
RWSA-Moores Creek	13,153	7,330	5,823	-	(59)	-	5,764	5,763	-	-	1
South Central WWA	28,404	26,385	2,019	-	-	-	2,019	-	-	-	2,019
Tyson Foods-Glen Allen	147	84	63	-	-	-	63	-	-	-	63
WestRock-Covington	68,707	42,166	26,541	-	-	-	26,541	26,541	-	-	-
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	317,886	261,041	56,845	-	(1)	-	56,844		-	-	56,844
HRSD (Bubble)	317,886	261,041	56,845	-	(1)	-	56,844	-	-	-	56,844

* 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

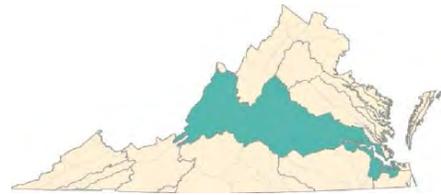
Compliance Year:		2024		Credit Forecasts		Preliminary Use of Credits			Credit Exchange (Pounds)			
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**	
								PRICE:	\$ 0.90	\$ 6.22	\$ 0.37	
UPPER JAMES BASIN	495,381	389,535	105,846	-	(59)	(789)	104,998		94,628	(15,226)	25,596	
AdvanSix-Hopewell	41,841	32,892	8,949	-	-	-	8,949		-	-	8,949	
Alleghany Co-L. Jackson	3,069	856	2,213	(427)	-	(789)	997		750	-	247	
Alleghany Co-Low Moor	438	865	(427)	427	-	-	-		-	-	-	
Amherst (Town)	526	908	(382)	-	-	-	(382)		-	(382)	-	
Aqua Virginia-L. Monticello	877	872	5	-	-	-	5		-	-	5	
Aqua Virginia-Manakin Farms	378	69	309	-	-	-	309		-	-	309	
Buena Vista	1,972	5,896	(3,924)	-	-	-	(3,924)		-	(3,924)	-	
BWX Technologies, Inc	877	519	358	-	-	-	358		100	-	258	
Chesterfield-Falling Cr.	12,473	15,989	(3,516)	3,516	-	-	-		-	-	-	
Chesterfield-Proctors Cr.	33,344	26,985	6,359	(3,516)	(40)	-	2,803		-	-	2,803	
Covington	2,631	1,808	823	-	-	-	823		800	-	23	
Crewe	327	37	290	-	-	-	290		290	-	-	
Dominion-Chesterfield	170	210	(40)	-	40	-	-		-	-	-	
DuPont-Spruance	6,339	16,115	(9,776)	-	-	-	(9,776)		-	(9,776)	-	
Georgia-Pacific	28,594	14,001	14,593	-	-	-	14,593		12,000	-	2,593	
Greif Packaging	17,098	11,244	5,854	-	-	-	5,854		5,000	-	854	
Henrico Co	92,623	67,016	25,607	-	-	-	25,607		23,046	-	2,561	
Hopewell Water Renewal	61,749	59,267	2,482	-	-	-	2,482		-	-	2,482	
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	34,263	21,311	-	-	-	21,311		20,000	-	1,311	
RWSA-Moores Creek	13,153	7,914	5,239	-	(59)	-	5,180		5,180	-	-	
South Central WWA	28,404	26,649	1,755	-	-	-	1,755		-	-	1,755	
Tyson Foods-Glen Allen	147	84	63	-	-	-	63		-	-	63	
WestRock-Covington	68,707	42,166	26,541	-	-	-	26,541		26,541	-	-	
								PRICE:	No Sale	No Sale	No Sale	
LOWER JAMES BASIN	318,436	261,095	57,341	-	(1)	-	57,340		-	-	57,340	
HRSD (Bubble)	318,436	261,095	57,341	-	(1)	-	57,340		-	-	57,340	

*** 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.

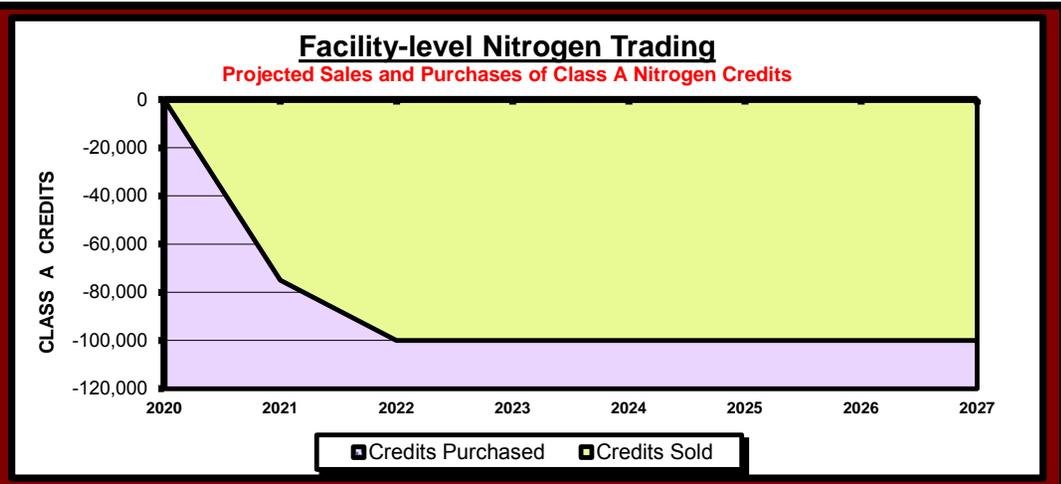
James River Basin

Supplemental Information for Individual Facilities



NITROGEN FACILITY SUMMARY

AdvanSix-Hopewell
 UPPER JAMES Trading Basin



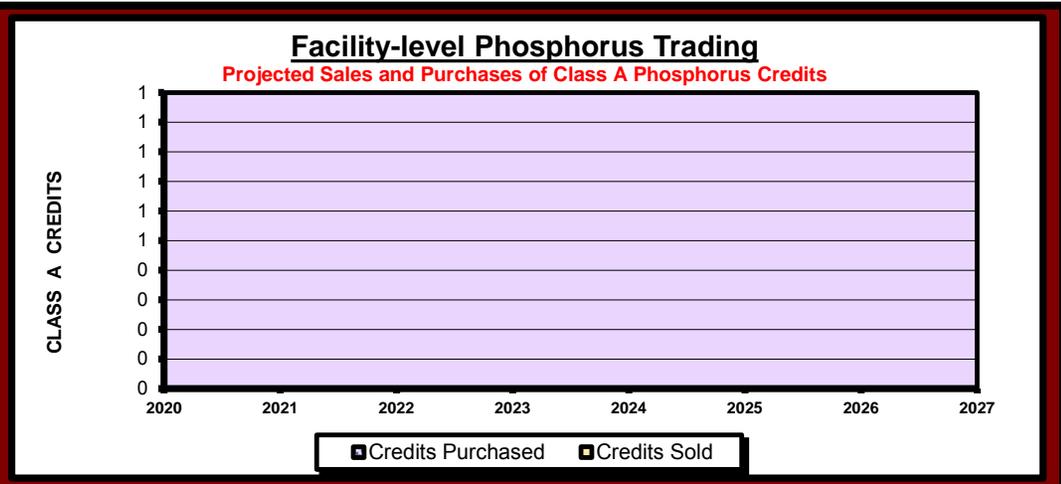
Loading & Credit Summary

Design Flow (mgd)	121.00
Projected Flow (mgd)	106.00
Projected Avg. Annual Concentration (mg/L)	2.40
Discharged Load (end of pipe)	774,790
Delivery Factor	1.00
Expected Load	774,790
Delivered WLA	1,090,798
Expected Credits (delivered)	316,008
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	316,008
Class A Credit Sales (Purchases)	0
Expected Class B Credits	316,008

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
121.00	121.00	121.00	121.00	121.00	121.00	121.00	121.00
106.00	106.00	109.00	108.00	108.00	108.00	108.00	106.00
2.40	2.40	2.20	2.20	1.90	2.00	2.00	2.00
774,790	774,790	730,325	723,625	624,949	657,841	657,841	645,659
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
774,790	774,790	730,325	723,625	624,949	657,841	657,841	645,659
1,090,798	1,090,798	1,090,798	1,090,798	1,090,798	1,090,798	1,090,798	1,090,798
316,008	316,008	360,473	367,173	465,849	432,957	432,957	445,139
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
316,008	316,008	360,473	367,173	465,849	432,957	432,957	445,139
0	75,000	100,000	100,000	100,000	100,000	100,000	100,000
316,008	241,008	260,473	267,173	365,849	332,957	332,957	345,139

PHOSPHORUS FACILITY SUMMARY

AdvanSix-Hopewell
 UPPER JAMES Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	121.00
Projected Flow (mgd)	106.00
Projected Avg. Annual Concentration (mg/L)	0.10
Discharged Load (end of pipe)	32,283
Delivery Factor	1.00
Expected Load	32,283
Delivered WLA	41,841
Expected Credits (delivered)	9,558
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	9,558
Class A Credit Sales (Purchases)	0
Expected Class B Credits	9,558

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
121.00	121.00	121.00	121.00	121.00	121.00	121.00	121.00
106.00	106.00	109.00	108.00	108.00	108.00	108.00	106.00
0.10	0.10	0.11	0.11	0.10	0.10	0.10	0.10
32,283	32,283	36,516	36,181	32,892	32,892	32,892	32,283
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
32,283	32,283	36,516	36,181	32,892	32,892	32,892	32,283
41,841	41,841	41,841	41,841	41,841	41,841	41,841	41,841
9,558	9,558	5,325	5,660	8,949	8,949	8,949	9,558
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
9,558	9,558	5,325	5,660	8,949	8,949	8,949	9,558
0	0	0	0	0	0	0	0
9,558	9,558	5,325	5,660	8,949	8,949	8,949	9,558

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.

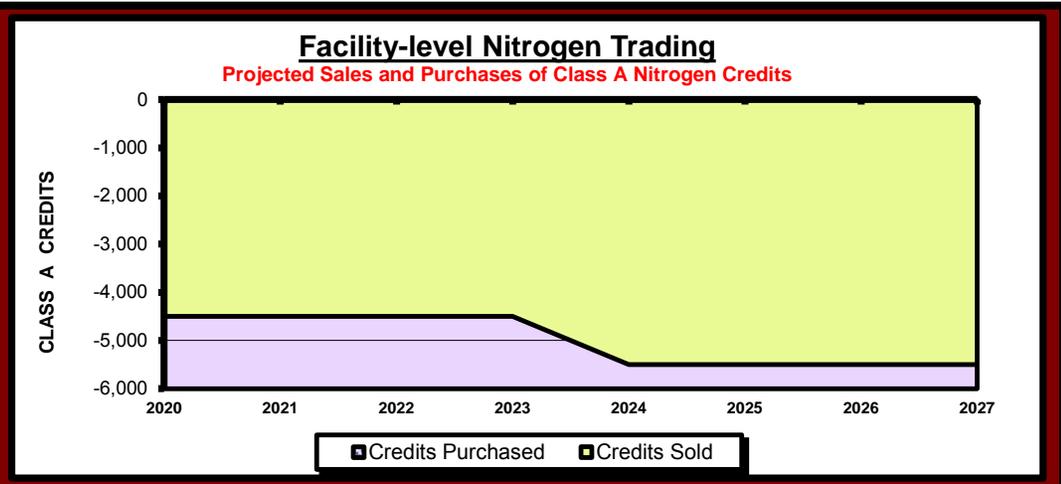
Expected Net Credits for an owner bubble may be either positive or negative. If Expected Net Credits is positive, the owner may pledge a percentage of such Credits to the Exchange. If Expected Net Credits is negative, Net Expected Credits identifies the number of Credits that must be purchased to comply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

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Lower Jackson	-	-	-	-	-	-	-	-
Low Moor	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Lower Jackson	6,082	6,315	6,315	6,315	6,315	6,315	6,315	6,315
Low Moor	198	115	658	658	658	658	658	658
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	6,280	6,430	6,973	6,973	6,973	6,973	6,973	6,973
Class A Sales (Purchases)	4,500	4,500	4,500	4,500	5,500	5,500	5,500	5,500
<i>Expected Class B Credits</i>	1,780	1,930	2,473	2,473	1,473	1,473	1,473	1,473
<i>WQIF-Held Credits</i>	4,276	4,440	4,440	4,440	4,440	4,440	4,440	4,440

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Lower Jackson	(849)	(968)	(427)	(427)	(427)	(427)	(427)	(427)
Low Moor	849	968	427	427	427	427	427	427
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Lower Jackson	474	456	997	997	997	997	997	997
Low Moor	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	474	456	997	997	997	997	997	997
Class A Sales (Purchases)	300	300	300	450	750	750	750	750
<i>Expected Class B Credits</i>	174	156	697	547	247	247	247	247
<i>WQIF-Held Credits</i>	734	789	789	789	789	789	789	789

NITROGEN FACILITY SUMMARY

Allegheny Co-L. Jackson
 UPPER JAMES Trading Basin



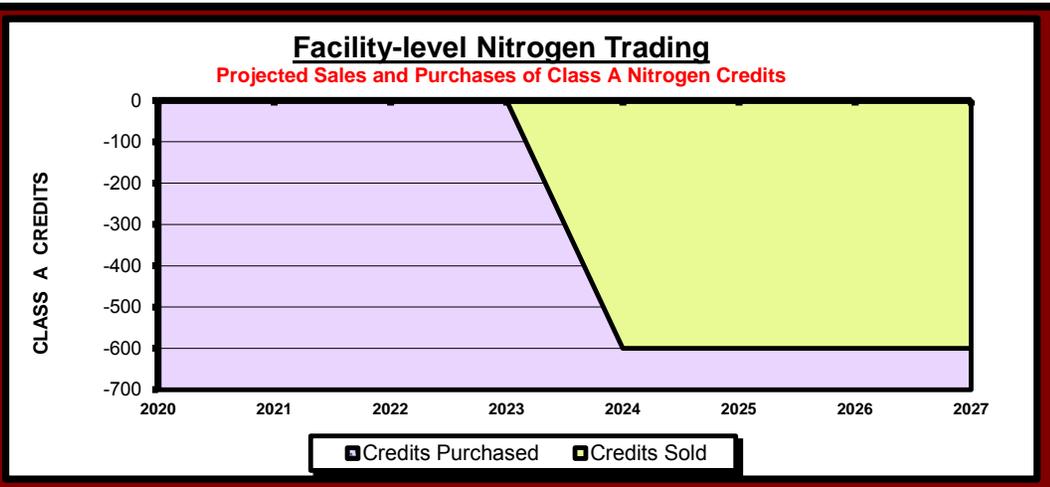
Loading & Credit Summary

Design Flow (mgd)	2.60
Projected Flow (mgd)	1.32
Projected Avg. Annual Concentration (mg/L)	6.00
Discharged Load (end of pipe)	24,121
Delivery Factor	0.26
Expected Load	6,271
Delivered WLA	16,629
Expected Credits (delivered)	10,358
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	(4,276)
Expected Net Credits	6,082
Class A Credit Sales (Purchases)	4,500
Expected Class B Credits	1,582

2020	2021	2022	2023	2024	2025	2026	2027
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	0.27	0.27	0.27	0.27	0.27	0.27	0.27
6,271	6,513	6,513	6,513	6,513	6,513	6,513	6,513
16,629	17,268	17,268	17,268	17,268	17,268	17,268	17,268
10,358	10,755	10,755	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)	(4,440)	(4,440)	(4,440)	(4,440)	(4,440)	(4,440)	(4,440)
6,082	6,315	6,315	6,315	6,315	6,315	6,315	6,315
4,500	4,500	4,500	4,500	5,500	5,500	5,500	5,500
1,582	1,815	1,815	1,815	815	815	815	815

NITROGEN FACILITY SUMMARY

Allegheny Co-Low Moor
 UPPER JAMES Trading Basin



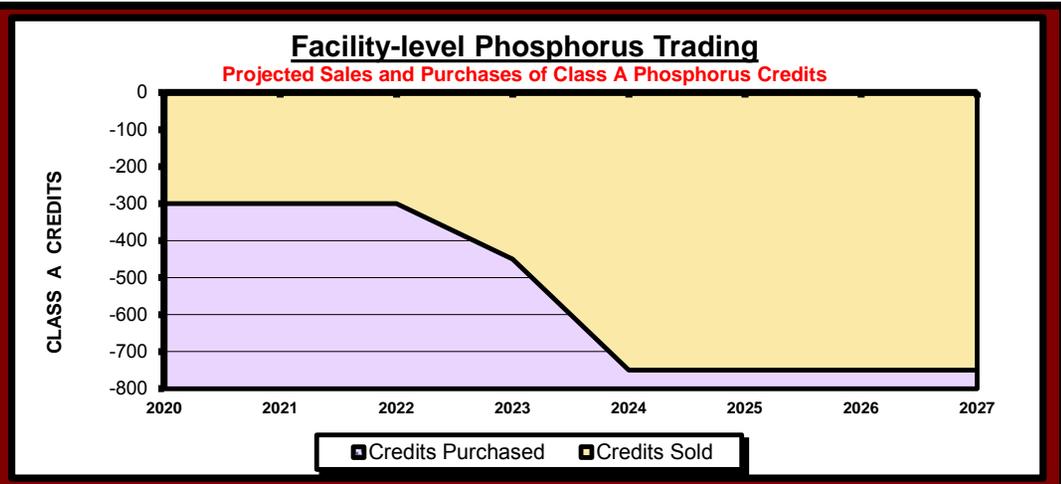
Loading & Credit Summary

Design Flow (mgd)	0.50
Projected Flow (mgd)	0.25
Projected Avg. Annual Concentration (mg/L)	11.00
Discharged Load (end of pipe)	8,375
Delivery Factor	0.26
Expected Load	2,178
Delivered WLA	2,376
Expected Credits (delivered)	198
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	198
Class A Credit Sales (Purchases)	0
Expected Class B Credits	198

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.25	0.26	0.20	0.20	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	8,710	6,700	6,700	6,700	6,700	6,700	6,700
0.26	0.27	0.27	0.27	0.27	0.27	0.27	0.27
2,178	2,352	1,809	1,809	1,809	1,809	1,809	1,809
2,376	2,467	2,467	2,467	2,467	2,467	2,467	2,467
198	115	658	658	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	115	658	658	658	658	658	658
0	0	0	0	600	600	600	600
198	115	658	658	58	58	58	58

PHOSPHORUS FACILITY SUMMARY

Allegheny Co-L. Jackson
 UPPER JAMES Trading Basin



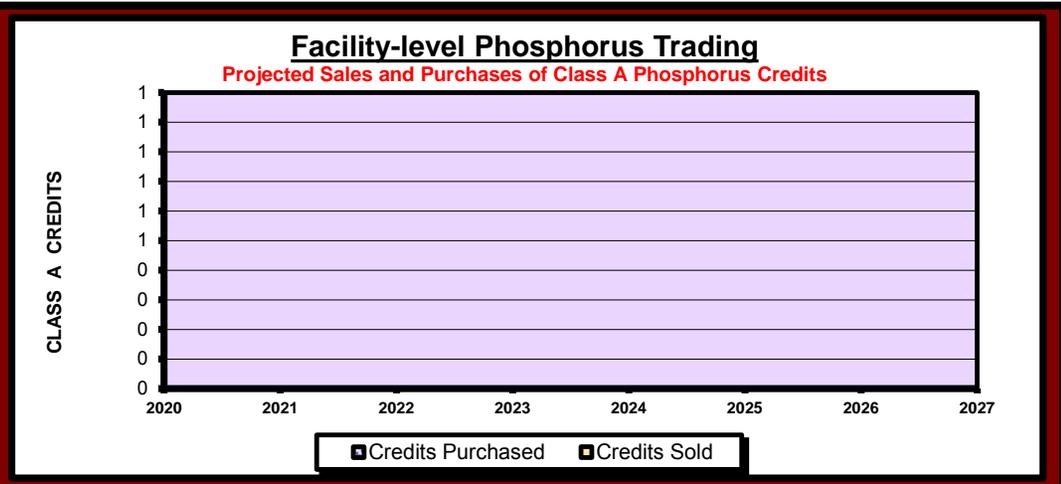
Loading & Credit Summary

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

	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Projected Flow (mgd)	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32
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)	1,206	1,206	1,206	1,206	1,206	1,206	1,206	1,206
Delivery Factor	0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	796	856	856	856	856	856	856	856
Delivered WLA	2,853	3,069	3,069	3,069	3,069	3,069	3,069	3,069
Expected Credits (delivered)	2,057	2,213	2,213	2,213	2,213	2,213	2,213	2,213
Transfers In (Out) within Owner Bubble	(849)	(968)	(427)	(427)	(427)	(427)	(427)	(427)
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	(734)	(789)	(789)	(789)	(789)	(789)	(789)	(789)
Expected Net Credits	474	456	997	997	997	997	997	997
Class A Credit Sales (Purchases)	300	300	300	450	750	750	750	750
Expected Class B Credits	174	156	697	547	247	247	247	247

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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.25	0.26	0.20	0.20	0.20	0.20	0.20	0.20
2.50	2.50	2.00	2.00	2.00	2.00	2.00	2.00
1,903	1,980	1,218	1,218	1,218	1,218	1,218	1,218
0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
1,256	1,406	865	865	865	865	865	865
407	438	438	438	438	438	438	438
(849)	(968)	(427)	(427)	(427)	(427)	(427)	(427)
849	968	427	427	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

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

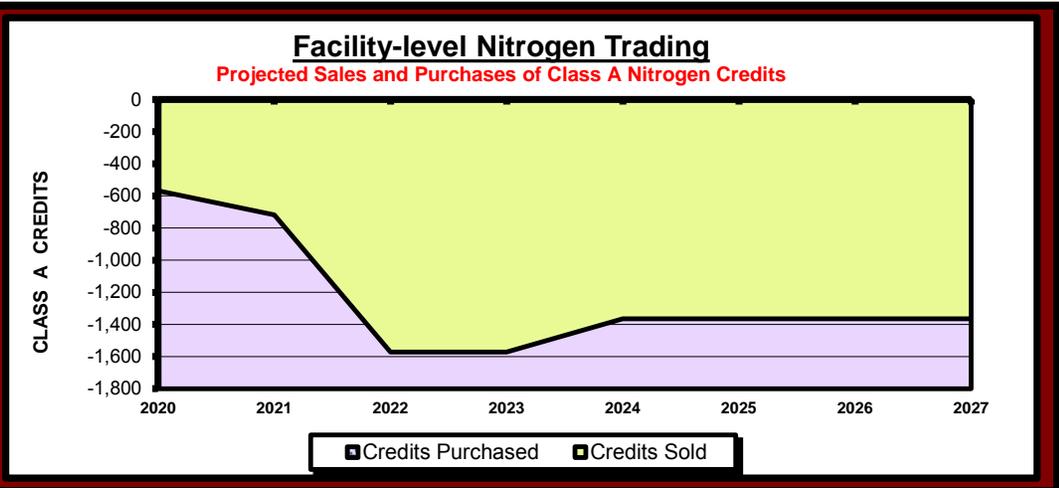
- TN: 0.26 delivery factor * 63,957 discharged pounds * 25.714% = 4,276 delivered pounds
- TP: 0.66 delivery factor * 4,323 discharged pounds * 25.714% = 734 delivered pounds

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

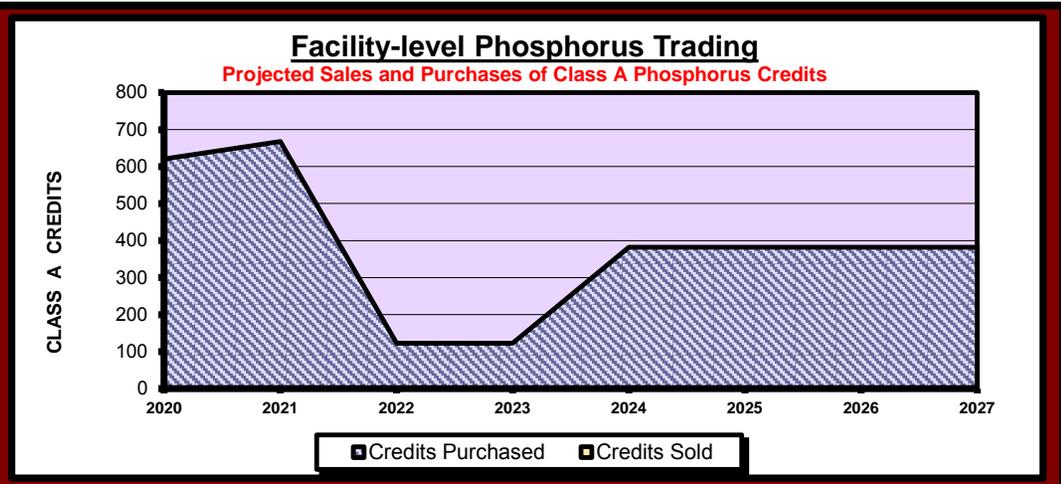


Loading & Credit Summary	
Design Flow (mgd)	
0.60	
Projected Flow (mgd)	
0.40	
Projected Avg. Annual Concentration (mg/L)	
6.26	
Discharged Load (end of pipe)	
7,626	
Delivery Factor	
0.34	
Expected Load	
2,593	
Delivered WLA	
3,728	
Expected Credits (delivered)	
1,135	
Transfers In (Out) within Owner Bubble	
0	
Transfers In (Out) from Private Exchange	
0	
WQIF-Held Credits	
0	
Expected Net Credits	
1,135	
Class A Credit Sales (Purchases)	
568	
Expected Class B Credits	
567	

2020	2021	2022	2023	2024	2025	2026	2027
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	0.30	0.30	0.42	0.42	0.42	0.42
6.26	6.26	4.00	4.00	3.61	3.61	3.61	3.61
7,626	7,626	3,655	3,655	4,618	4,618	4,618	4,618
0.34	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2,593	3,279	1,572	1,572	1,986	1,986	1,986	1,986
3,728	4,715	4,715	4,715	4,715	4,715	4,715	4,715
1,135	1,436	3,143	3,143	2,729	2,729	2,729	2,729
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,135	1,436	3,143	3,143	2,729	2,729	2,729	2,729
568	718	1,572	1,572	1,365	1,365	1,365	1,365
567	718	1,571	1,571	1,364	1,364	1,364	1,364

PHOSPHORUS FACILITY SUMMARY

Amherst (Town)
<i>UPPER JAMES Trading Basin</i>



Loading & Credit Summary	
Design Flow (mgd)	
Design Flow (mgd)	0.60
Projected Flow (mgd)	0.40
Projected Avg. Annual Concentration (mg/L)	1.38
Discharged Load (end of pipe)	
Discharged Load (end of pipe)	1,681
Delivery Factor	0.66
Expected Load	1,110
Delivered WLA	489
Expected Credits (delivered)	
Expected Credits (delivered)	(621)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	
Expected Net Credits	(621)
Class A Credit Sales (Purchases)	
Class A Credit Sales (Purchases)	(621)
Expected Class B Credits	
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
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	0.30	0.30	0.42	0.42	0.42	0.42
1.38	1.38	1.00	1.00	1.00	1.00	1.00	1.00
1,681	1,681	914	914	1,279	1,279	1,279	1,279
0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
1,110	1,194	649	649	908	908	908	908
489	526	526	526	526	526	526	526
(621)	(668)	(123)	(123)	(382)	(382)	(382)	(382)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(621)	(668)	(123)	(123)	(382)	(382)	(382)	(382)
(621)	(668)	(123)	(123)	(382)	(382)	(382)	(382)
0	0	0	0	0	0	0	0

Owner Bubble: Aqua Virginia (James Basin)

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		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Lake Monticello	-	-	-	-	-	-	-	-
Manakin Farms Lagoon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Lake Monticello	(2,836)	93	93	93	93	93	93	93
Manakin Farms Lagoon	-	-	1,536	1,536	1,536	1,536	1,536	1,536
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	(2,836)	93	1,629	1,629	1,629	1,629	1,629	1,629
Class A Sales (Purchases)	(2,836)	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	0	93	1,629	1,629	1,629	1,629	1,629	1,629
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Lake Monticello	-	-	-	-	-	-	-	-
Manakin Farms Lagoon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Lake Monticello	(3,177)	5	5	5	5	5	5	5
Manakin Farms Lagoon	-	-	309	309	309	309	309	309
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	(3,177)	5	314	314	314	314	314	314
Class A Sales (Purchases)	(3,177)	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	0	5	314	314	314	314	314	314
<i>WQIF-Held Credits</i>	0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Aqua Virginia-L. Monticello
 UPPER JAMES Trading Basin

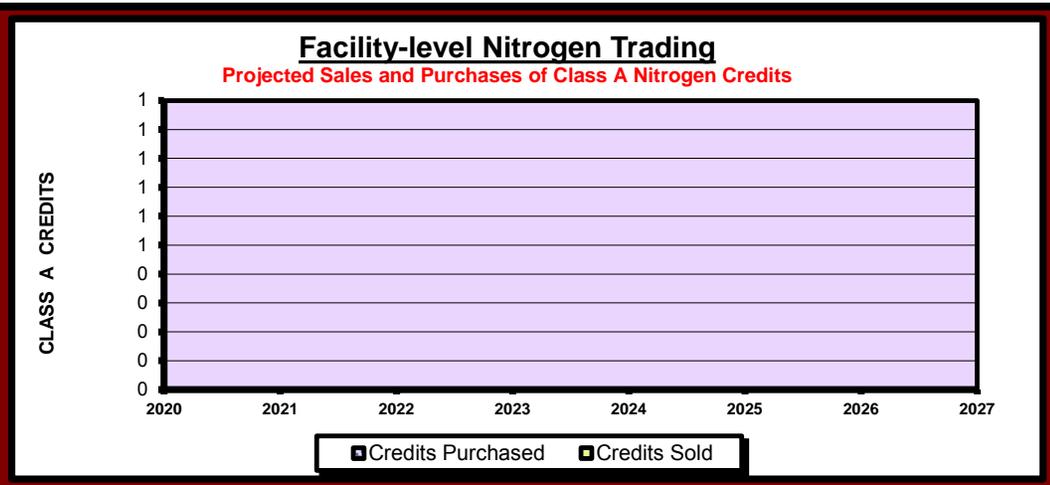


Loading & Credit Summary	
Design Flow (mgd)	1.00
Projected Flow (mgd)	0.64
Projected Avg. Annual Concentration (mg/L)	11.50
Discharged Load (end of pipe)	22,415
Delivery Factor	0.67
Expected Load	15,018
Delivered WLA	12,182
Expected Credits (delivered)	(2,836)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(2,836)
Class A Credit Sales (Purchases)	(2,836)
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.64	0.63	0.63	0.63	0.63	0.63	0.63	0.63
11.50	9.40	9.40	9.40	9.40	9.40	9.40	9.40
22,415	18,036	18,036	18,036	18,036	18,036	18,036	18,036
0.67	0.64	0.64	0.64	0.64	0.64	0.64	0.64
15,018	11,543	11,543	11,543	11,543	11,543	11,543	11,543
12,182	11,636	11,636	11,636	11,636	11,636	11,636	11,636
(2,836)	93	93	93	93	93	93	93
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(2,836)	93	93	93	93	93	93	93
(2,836)	0	0	0	0	0	0	0
0	93	93	93	93	93	93	93

NITROGEN FACILITY SUMMARY

Aqua Virginia-Manakin Farm
 UPPER JAMES Trading Basin



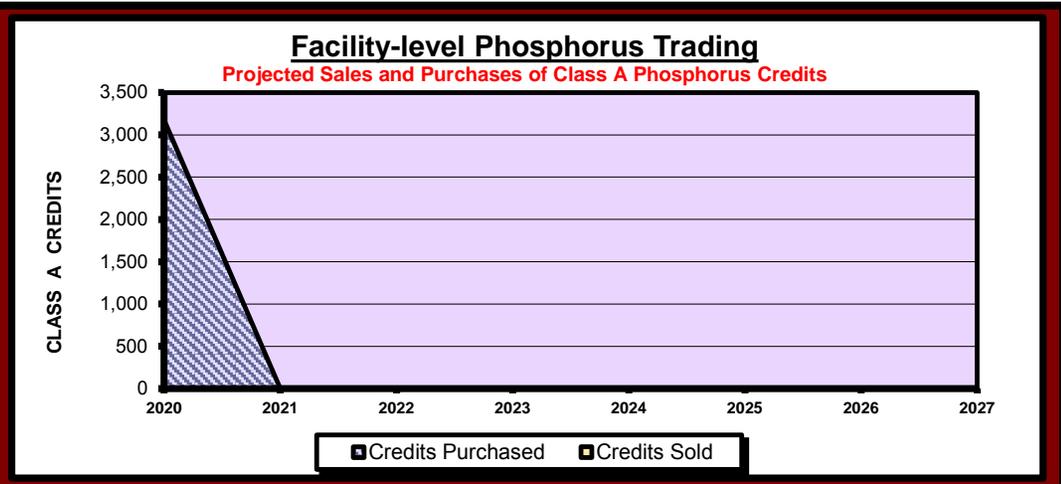
Loading & Credit Summary	
Design Flow (mgd)	0.10
Projected Flow (mgd)	0.08
Projected Avg. Annual Concentration (mg/L)	9.20
Discharged Load (end of pipe)	2,185
Delivery Factor	0.89
Expected Load	1,945
Delivered WLA	3,548
Expected Credits (delivered)	1,603
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(1,603)
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.20
2,185	2,242	2,242	2,242	2,242	2,242	2,242	2,242
0.89	0.88	0.88	0.88	0.88	0.88	0.88	0.88
1,945	1,973	1,973	1,973	1,973	1,973	1,973	1,973
3,548	3,509	3,509	3,509	3,509	3,509	3,509	3,509
1,603	1,536	1,536	1,536	1,536	1,536	1,536	1,536
0	0	0	0	0	0	0	0
(1,603)	(1,536)	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	1,536	1,536	1,536	1,536	1,536	1,536
0	0	0	0	0	0	0	0
0	0	1,536	1,536	1,536	1,536	1,536	1,536

* This adjustment implements the credit sales restriction applicable to this new Participant (as of 2020 Update) in accordance with Section 4.8(d) of the Credit Exchange Policy

PHOSPHORUS FACILITY SUMMARY

Aqua Virginia-L. Monticello
 UPPER JAMES Trading Basin



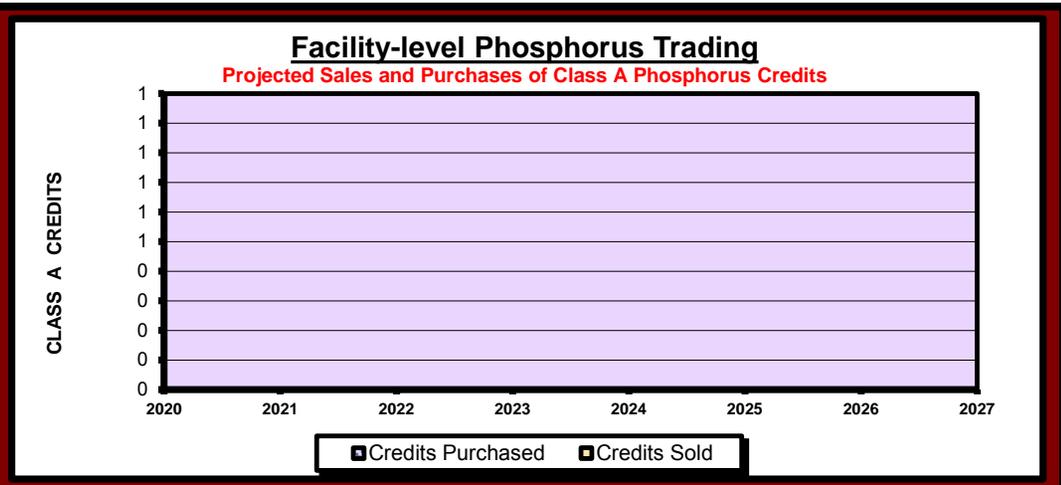
Loading & Credit Summary

Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.64	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Projected Avg. Annual Concentration (mg/L)	3.10	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Discharged Load (end of pipe)	6,042	1,228						
Delivery Factor	0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	3,988	872	872	872	872	872	872	872
Delivered WLA	811	877	877	877	877	877	877	877
Expected Credits (delivered)	(3,177)	5						
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	(3,177)	5						
Class A Credit Sales (Purchases)	(3,177)	0						
Expected Class B Credits	0	5						

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.64	0.63	0.63	0.63	0.63	0.63	0.63	0.63
3.10	0.64	0.64	0.64	0.64	0.64	0.64	0.64
6,042	1,228	1,228	1,228	1,228	1,228	1,228	1,228
0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
3,988	872	872	872	872	872	872	872
811	877	877	877	877	877	877	877
(3,177)	5	5	5	5	5	5	5
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(3,177)	5	5	5	5	5	5	5
(3,177)	0	0	0	0	0	0	0
0	5	5	5	5	5	5	5

PHOSPHORUS FACILITY SUMMARY

Aqua Virginia-Manakin Farm
 UPPER JAMES Trading Basin

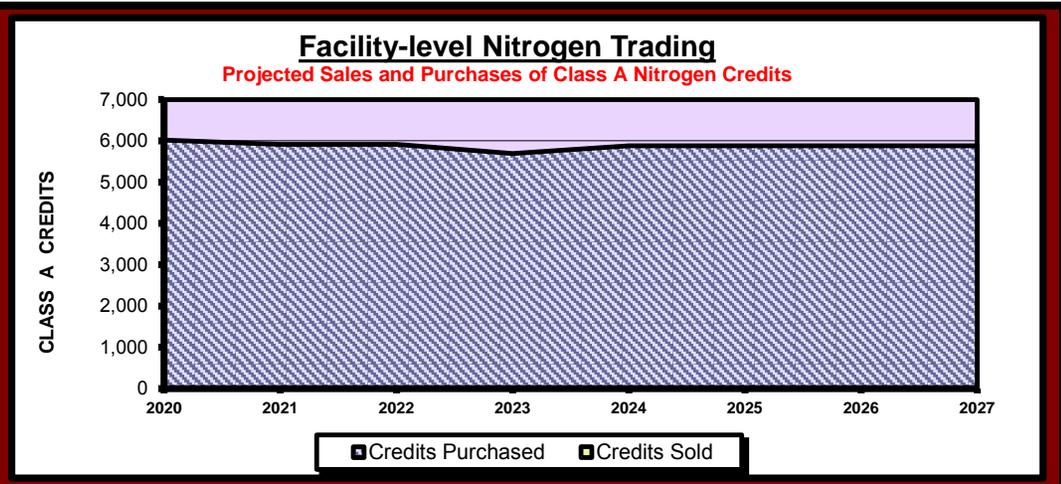


	2020	2021	2022	2023	2024	2025	2026	2027
	Planning Period					Future Estimates (non-binding)		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Projected Avg. Annual Concentration (mg/L)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Discharged Load (end of pipe)	95	97	97	97	97	97	97	97
Delivery Factor	0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	63	69	69	69	69	69	69	69
Delivered WLA	352	378	378	378	378	378	378	378
Expected Credits (delivered)	289	309	309	309	309	309	309	309
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(289)	(309)	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	0	0	309	309	309	309	309	309
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	0	0	309	309	309	309	309	309

* This adjustment implements the credit sales restriction applicable to this new Participant (as of 2020 Update) in accordance with Section 4.8(d) of the Credit Exchange Policy

NITROGEN FACILITY SUMMARY

Buena Vista
UPPER JAMES Trading Basin



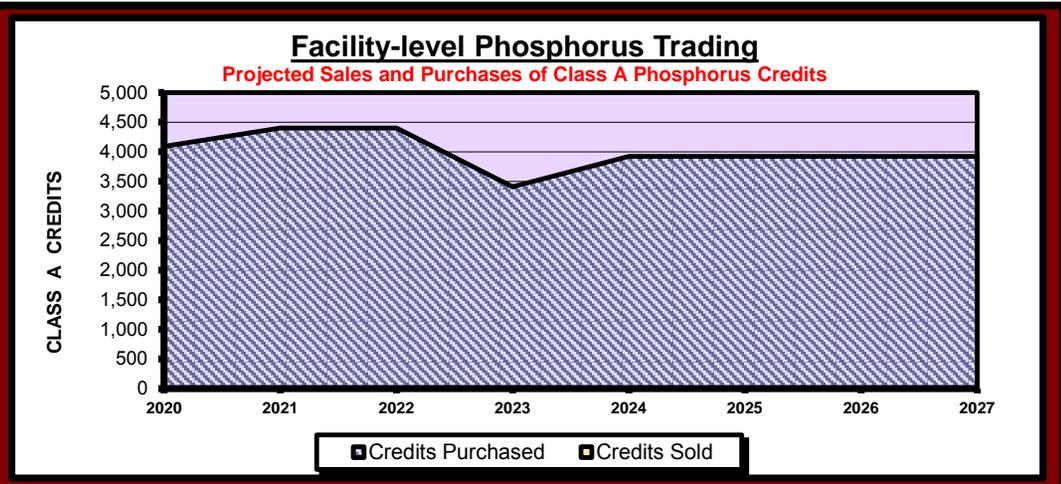
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
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	1.33	1.33	1.33	1.33
13.00	13.00	13.00	12.90	12.79	12.79	12.79	12.79
51,866	51,866	51,866	51,467	51,807	51,807	51,807	51,807
0.56	0.55	0.55	0.55	0.55	0.55	0.55	0.55
29,045	28,526	28,526	28,307	28,494	28,494	28,494	28,494
23,024	22,613	22,613	22,613	22,613	22,613	22,613	22,613
(6,021)	(5,913)	(5,913)	(5,694)	(5,881)	(5,881)	(5,881)	(5,881)
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)	(5,913)	(5,913)	(5,694)	(5,881)	(5,881)	(5,881)	(5,881)
(6,021)	(5,913)	(5,913)	(5,694)	(5,881)	(5,881)	(5,881)	(5,881)
0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

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

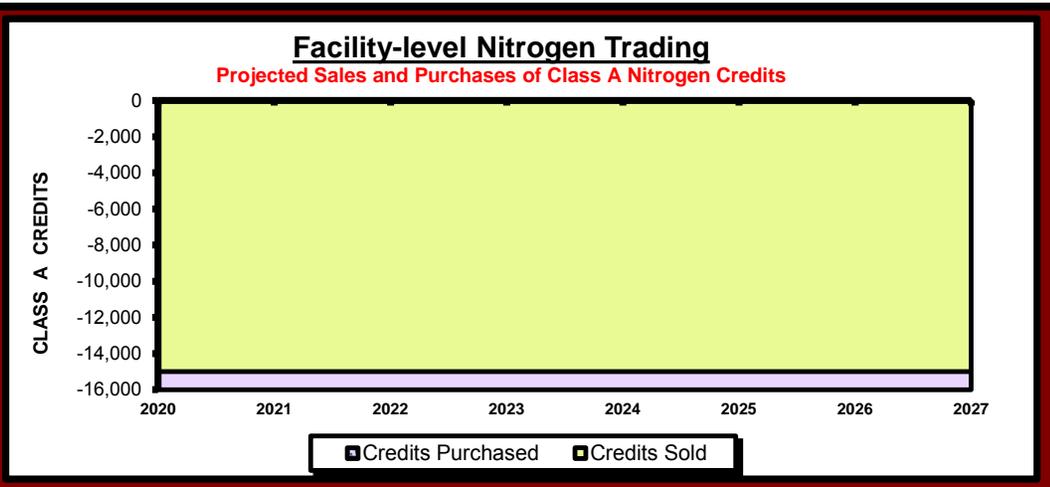


Loading & Credit Summary	
Design Flow (mgd)	2.25
Projected Flow (mgd)	1.31
Projected Avg. Annual Concentration (mg/L)	2.25
Discharged Load (end of pipe)	8,977
Delivery Factor	0.66
Expected Load	5,925
Delivered WLA	1,833
Expected Credits (delivered)	(4,092)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(4,092)
Class A Credit Sales (Purchases)	(4,092)
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
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	1.33	1.33	1.33	1.33
2.25	2.25	2.25	1.90	2.05	2.05	2.05	2.05
8,977	8,977	8,977	7,580	8,304	8,304	8,304	8,304
0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
5,925	6,374	6,374	5,382	5,896	5,896	5,896	5,896
1,833	1,972	1,972	1,972	1,972	1,972	1,972	1,972
(4,092)	(4,402)	(4,402)	(3,410)	(3,924)	(3,924)	(3,924)	(3,924)
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)	(4,402)	(4,402)	(3,410)	(3,924)	(3,924)	(3,924)	(3,924)
(4,092)	(4,402)	(4,402)	(3,410)	(3,924)	(3,924)	(3,924)	(3,924)
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

BWX Technologies, Inc
 UPPER JAMES Trading Basin



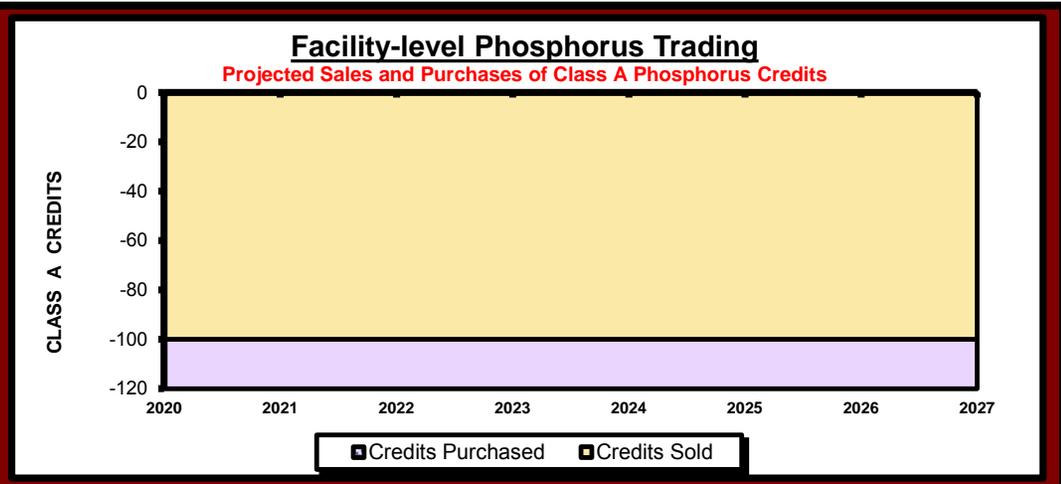
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
110.00	110.00	110.00	110.00	110.00	110.00	110.00	110.00
160,806	160,806	160,806	160,806	160,806	160,806	160,806	160,806
0.65	0.64	0.64	0.64	0.64	0.64	0.64	0.64
104,524	102,916	102,916	102,916	102,916	102,916	102,916	102,916
121,550	119,680	119,680	119,680	119,680	119,680	119,680	119,680
17,026	16,764	16,764	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
17,026	16,764	16,764	16,764	16,764	16,764	16,764	16,764
15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
2,026	1,764	1,764	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)	0.48
Projected Avg. Annual Concentration (mg/L)	0.44
Discharged Load (end of pipe)	643
Delivery Factor	0.66
Expected Load	425
Delivered WLA	815
Expected Credits (delivered)	390
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	390
Class A Credit Sales (Purchases)	100
Expected Class B Credits	290

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Projected Avg. Annual Concentration (mg/L)	0.44	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Discharged Load (end of pipe)	643	731	731	731	731	731	731	731
Delivery Factor	0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	425	519	519	519	519	519	519	519
Delivered WLA	815	877	877	877	877	877	877	877
Expected Credits (delivered)	390	358	358	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	390	358	358	358	358	358	358	358
Class A Credit Sales (Purchases)	100	100	100	100	100	100	100	100
Expected Class B Credits	290	258	258	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		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Falling Creek	-	-	-	-	-	-	-	-
Proctors Creek	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Falling Creek	30,765	28,100	25,435	25,435	22,846	20,105	17,364	14,623
Proctors Creek	173,902	171,237	168,572	168,572	165,831	163,242	160,654	158,065
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	204,667	199,337	194,007	194,007	188,677	183,347	178,018	172,688
Private Exchanges	(171,694)	(50,000)	(50,000)	(50,000)	(50,000)	-	-	-
Expected Net Credits	32,973	149,337	144,007	144,007	138,677	183,347	178,018	172,688
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>32,973</i>	<i>149,337</i>	<i>144,007</i>	<i>144,007</i>	<i>138,677</i>	<i>183,347</i>	<i>178,018</i>	<i>172,688</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		
	2020	2021	2022	2023	2024	2025	2026	2027
Credits Transferred within Bubble								
Falling Creek	4,244	2,991	3,257	3,257	3,516	3,790	4,064	4,338
Proctors Creek	(4,244)	(2,991)	(3,257)	(3,257)	(3,516)	(3,790)	(4,064)	(4,338)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	-	-	-	-	-	-	-	-
Credits Available outside Bubble								
Falling Creek	-	-	-	-	-	-	-	-
Proctors Creek	3,003	3,962	3,403	3,403	2,843	4,763	4,230	3,697
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	3,003	3,962	3,403	3,403	2,843	4,763	4,230	3,697
Private Exchanges	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)
Expected Net Credits	2,963	3,922	3,363	3,363	2,803	4,723	4,190	3,657
Class A Sales (Purchases)	0	0	0	0	0	0	0	0
<i>Expected Class B Credits</i>	<i>2,963</i>	<i>3,922</i>	<i>3,363</i>	<i>3,363</i>	<i>2,803</i>	<i>4,723</i>	<i>4,190</i>	<i>3,657</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

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	

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
9.98	10.16	10.33	10.33	10.50	10.68	10.86	11.04
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
151,973	154,638	157,303	157,303	159,892	162,633	165,374	168,115
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
151,973	154,638	157,303	157,303	159,892	162,633	165,374	168,115
182,738	182,738	182,738	182,738	182,738	182,738	182,738	182,738
30,765	28,100	25,435	25,435	22,846	20,105	17,364	14,623
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
30,765	28,100	25,435	25,435	22,846	20,105	17,364	14,623
0	0	0	0	0	0	0	0
30,765	28,100	25,435	25,435	22,846	20,105	17,364	14,623

NITROGEN FACILITY SUMMARY

Chesterfield-Proctors Cr.
 UPPER JAMES Trading Basin



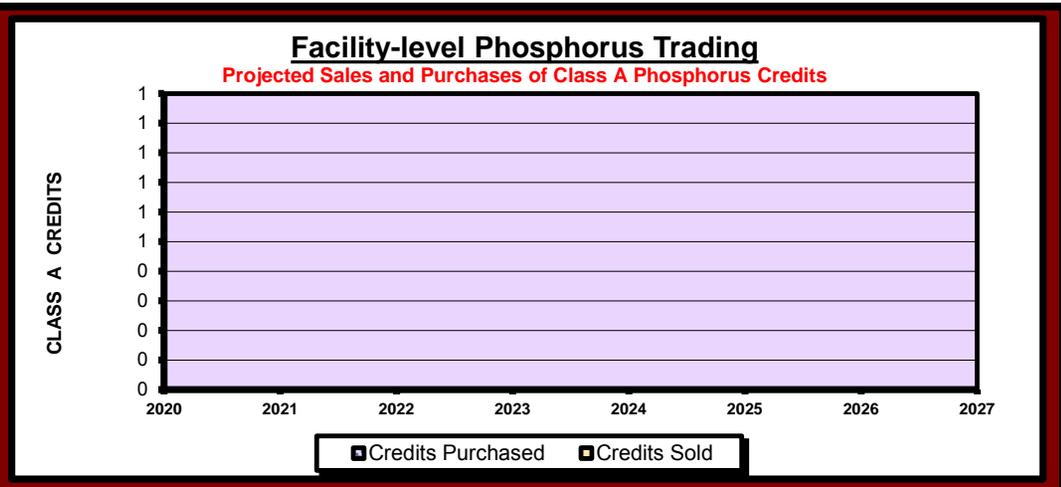
Loading & Credit Summary	
Design Flow (mgd)	27.00
Projected Flow (mgd)	15.58
Projected Avg. Annual Concentration (mg/L)	5.00
Discharged Load (end of pipe)	237,249
Delivery Factor	1.00
Expected Load	237,249
Delivered WLA	411,151
Expected Credits (delivered)	173,902
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	(171,694)
WQIF-Held Credits	0
Expected Net Credits	2,208
Class A Credit Sales (Purchases)	0
Expected Class B Credits	2,208

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
15.58	15.76	15.93	15.93	16.11	16.28	16.45	16.62
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
237,249	239,914	242,579	242,579	245,320	247,909	250,497	253,086
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
237,249	239,914	242,579	242,579	245,320	247,909	250,497	253,086
411,151	411,151	411,151	411,151	411,151	411,151	411,151	411,151
173,902	171,237	168,572	168,572	165,831	163,242	160,654	158,065
0	0	0	0	0	0	0	0
(171,694)	(50,000)	(50,000)	(50,000)	(50,000)	0	0	0
0	0	0	0	0	0	0	0
2,208	121,237	118,572	118,572	115,831	163,242	160,654	158,065
0	0	0	0	0	0	0	0
2,208	121,237	118,572	118,572	115,831	163,242	160,654	158,065

* Represents a Private Exchange of Credits with South Central Wastewater Authority

PHOSPHORUS FACILITY SUMMARY

Chesterfield-Falling Cr.
 UPPER JAMES Trading Basin

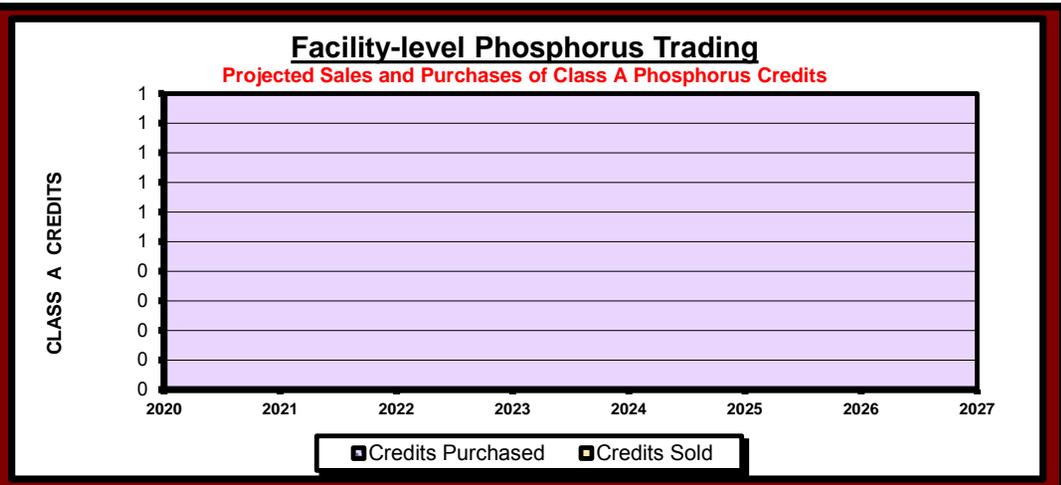


Loading & Credit Summary	
Design Flow (mgd)	12.00
Projected Flow (mgd)	9.98
Projected Avg. Annual Concentration (mg/L)	0.55
Discharged Load (end of pipe)	16,717
Delivery Factor	1.00
Expected Load	16,717
Delivered WLA	12,473
Expected Credits (delivered)	(4,244)
Transfers In (Out) within Owner Bubble	4,244
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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
9.98	10.16	10.33	10.33	10.50	10.68	10.86	11.04
0.55	0.50	0.50	0.50	0.50	0.50	0.50	0.50
16,717	15,464	15,730	15,730	15,989	16,263	16,537	16,811
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
16,717	15,464	15,730	15,730	15,989	16,263	16,537	16,811
12,473	12,473	12,473	12,473	12,473	12,473	12,473	12,473
(4,244)	(2,991)	(3,257)	(3,257)	(3,516)	(3,790)	(4,064)	(4,338)
4,244	2,991	3,257	3,257	3,516	3,790	4,064	4,338
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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



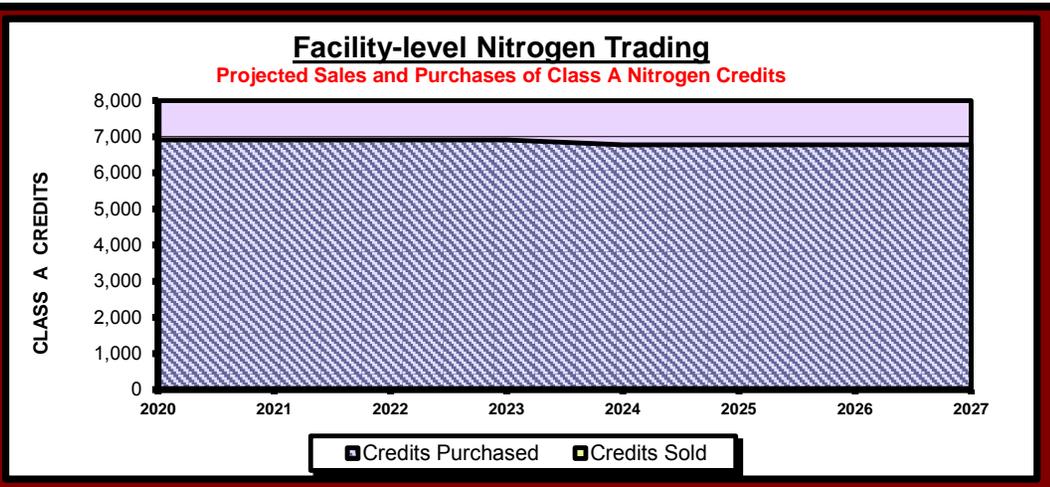
Loading & Credit Summary	
Design Flow (mgd)	27.00
Projected Flow (mgd)	15.58
Projected Avg. Annual Concentration (mg/L)	0.55
Discharged Load (end of pipe)	26,097
Delivery Factor	1.00
Expected Load	26,097
Delivered WLA	33,344
Expected Credits (delivered)	7,247
Transfers In (Out) within Owner Bubble	(4,244)
Transfers In (Out) from Private Exchange*	(40)
WQIF-Held Credits	0
Expected Net Credits	2,963
Class A Credit Sales (Purchases)	0
Expected Class B Credits	2,963

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
15.58	15.76	15.93	15.93	16.11	16.28	16.45	16.62
0.55	0.55	0.55	0.55	0.55	0.50	0.50	0.50
26,097	26,391	26,684	26,684	26,985	24,791	25,050	25,309
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
26,097	26,391	26,684	26,684	26,985	24,791	25,050	25,309
33,344	33,344	33,344	33,344	33,344	33,344	33,344	33,344
7,247	6,953	6,660	6,660	6,359	8,553	8,294	8,035
(4,244)	(2,991)	(3,257)	(3,257)	(3,516)	(3,790)	(4,064)	(4,338)
(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)
0	0	0	0	0	0	0	0
2,963	3,922	3,363	3,363	2,803	4,723	4,190	3,657
0	0	0	0	0	0	0	0
2,963	3,922	3,363	3,363	2,803	4,723	4,190	3,657

* Represents a Private Exchange of Credits with Dominion-Chesterfield

NITROGEN FACILITY SUMMARY

Covington
 UPPER JAMES Trading Basin



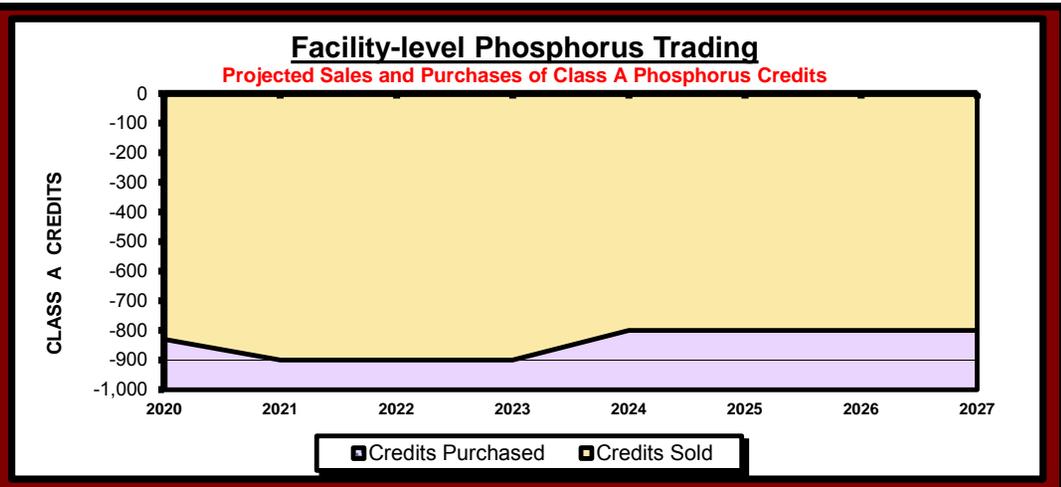
Loading & Credit Summary

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

	2020	2021	2022	2023	2024	2025	2026	2027
	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	2.20	2.20	2.20	2.20
Projected Avg. Annual Concentration (mg/L)	13.72	13.72	13.72	13.72	13.00	13.00	13.00	13.00
Discharged Load (end of pipe)	87,749	87,749	87,749	87,749	87,103	87,103	87,103	87,103
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	18,292	18,292	18,292	18,292
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)	(6,780)	(6,780)	(6,780)	(6,780)
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)	(6,780)	(6,780)	(6,780)	(6,780)
Class A Credit Sales (Purchases)	(6,915)	(6,915)	(6,915)	(6,915)	(6,780)	(6,780)	(6,780)	(6,780)
Expected Class B Credits	0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

Covington
 UPPER JAMES Trading Basin



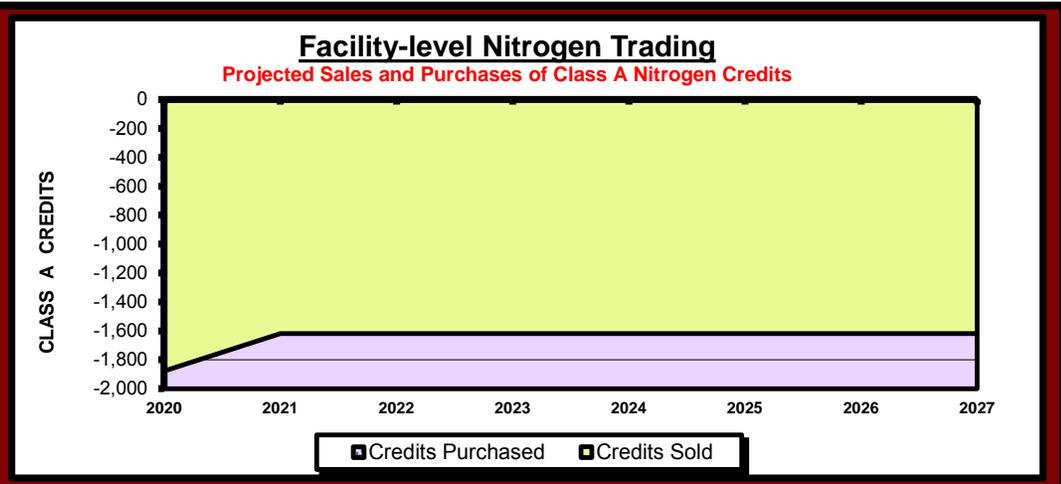
Loading & Credit Summary

Design Flow (mgd)	3.00
Projected Flow (mgd)	2.10
Projected Avg. Annual Concentration (mg/L)	0.38
Discharged Load (end of pipe)	2,430
Delivery Factor	0.66
Expected Load	1,604
Delivered WLA	2,445
Expected Credits (delivered)	841
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	841
Class A Credit Sales (Purchases)	830
Expected Class B Credits	11

	2020	2021	2022	2023	2024	2025	2026	2027
	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	2.20	2.20	2.20	2.20
Projected Avg. Annual Concentration (mg/L)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Discharged Load (end of pipe)	2,430	2,430	2,430	2,430	2,546	2,546	2,546	2,546
Delivery Factor	0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	1,604	1,726	1,726	1,726	1,808	1,808	1,808	1,808
Delivered WLA	2,445	2,631	2,631	2,631	2,631	2,631	2,631	2,631
Expected Credits (delivered)	841	905	905	905	823	823	823	823
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	841	905	905	905	823	823	823	823
Class A Credit Sales (Purchases)	830	900	900	900	800	800	800	800
Expected Class B Credits	11	5	5	5	23	23	23	23

NITROGEN FACILITY SUMMARY

Crewe
UPPER JAMES Trading Basin



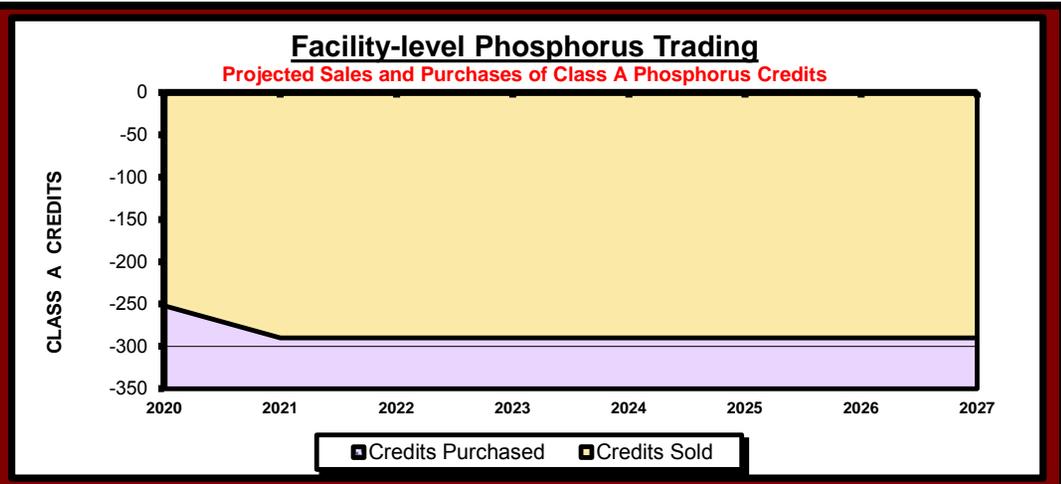
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.25	0.25	0.25	0.25	0.25	0.25	0.25
772	665	665	665	665	665	665	665
2,650	2,284	2,284	2,284	2,284	2,284	2,284	2,284
1,878	1,619	1,619	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	1,619	1,619	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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.53	0.53	0.53	0.53	0.53	0.53	0.53
32	37	37	37	37	37	37	37
284	327	327	327	327	327	327	327
252	290	290	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	290	290	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*	243,099
Expected Credits (delivered)	54,029
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	54,029
Class A Credit Sales (Purchases)	0
Expected Class B Credits	54,029

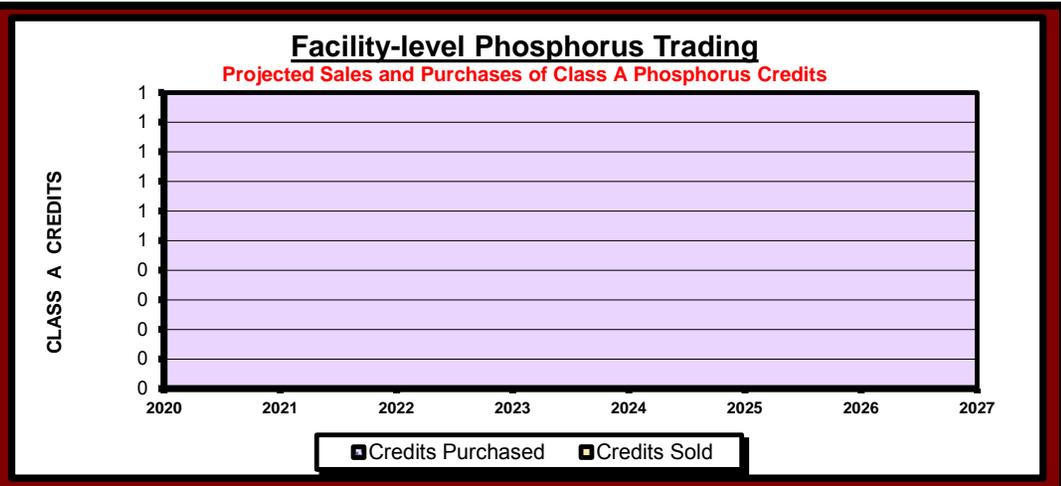
2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35
189,070	189,070	189,070	189,070	189,070	189,070	189,070	189,070
1.00	1.00	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
243,099	243,099	243,099	243,099	243,099	243,099	243,099	243,099
54,029	54,029	54,029	54,029	54,029	54,029	54,029	54,029
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
54,029	54,029	54,029	54,029	54,029	54,029	54,029	54,029
0	0	0	0	0	0	0	0
54,029	54,029	54,029	54,029	54,029	54,029	54,029	54,029

* Reflects expected approval of permanent allocation transfers to Tranlin, Inc (80,000 pounds) and Chesterfield County's Falling Creek facility (28,937 pounds)

PHOSPHORUS FACILITY SUMMARY

Dominion-Chesterfield

UPPER JAMES Trading Basin



Loading & Credit Summary

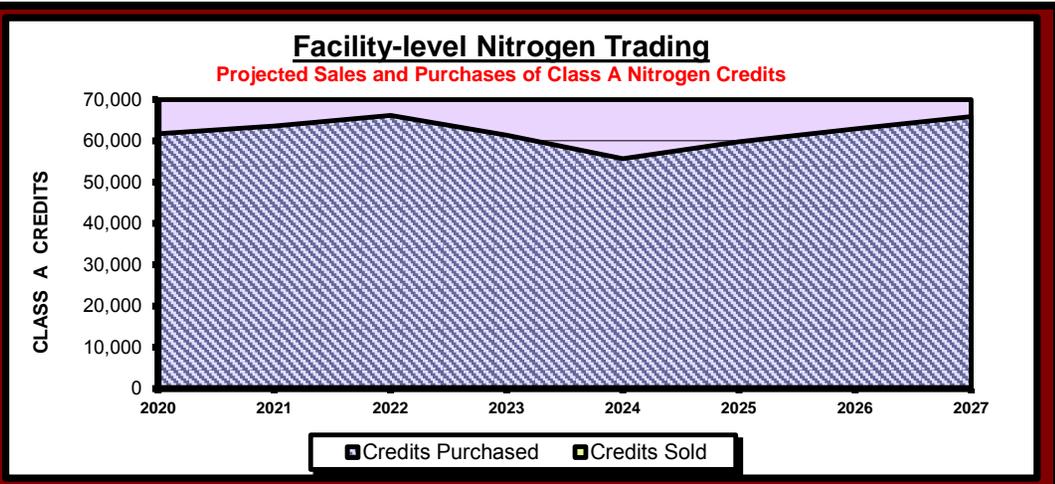
Design Flow (mgd)	13.50
Projected Flow (mgd)	6.00
Projected Avg. Annual Concentration (mg/L)	0.01
Discharged Load (end of pipe)	210
Delivery Factor	1.00
Expected Load	210
Delivered WLA	170
Expected Credits (delivered)	(40)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*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

2020	2021	2022	2023	2024	2025	2026	2027
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	210	210	210	210
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
210	210	210	210	210	210	210	210
170	170	170	170	170	170	170	170
(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)
0	0	0	0	0	0	0	0
40	40	40	40	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

* Represents a Private Exchange of Credits with Chesterfield County

NITROGEN FACILITY SUMMARY

DuPont-Spruance
 UPPER JAMES Trading Basin



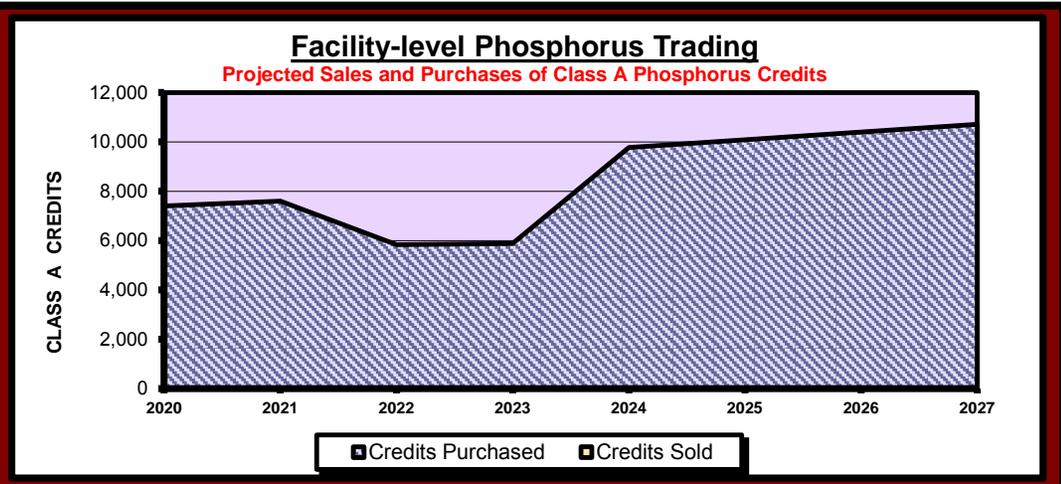
Loading & Credit Summary

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

	2020	2021	2022	2023	2024	2025	2026	2027
	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)	32.58	33.07	33.56	34.01	32.64	32.94	33.25	33.55
Projected Avg. Annual Concentration (mg/L)	2.65	2.63	2.61	2.53	2.58	2.60	2.61	2.61
Discharged Load (end of pipe)	262,816	264,693	267,256	262,470	256,780	260,872	263,982	267,004
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	262,816	264,693	267,256	262,470	256,780	260,872	263,982	267,004
Delivered WLA	201,080	201,080	201,080	201,080	201,080	201,080	201,080	201,080
Expected Credits (delivered)	(61,736)	(63,613)	(66,176)	(61,390)	(55,700)	(59,792)	(62,902)	(65,924)
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	(61,736)	(63,613)	(66,176)	(61,390)	(55,700)	(59,792)	(62,902)	(65,924)
Class A Credit Sales (Purchases)	(61,736)	(63,613)	(66,176)	(61,390)	(55,700)	(59,792)	(62,902)	(65,924)
Expected Class B Credits	0	0	0	0	0	0	0	0

PHOSPHORUS FACILITY SUMMARY

DuPont-Spruance
 UPPER JAMES Trading Basin



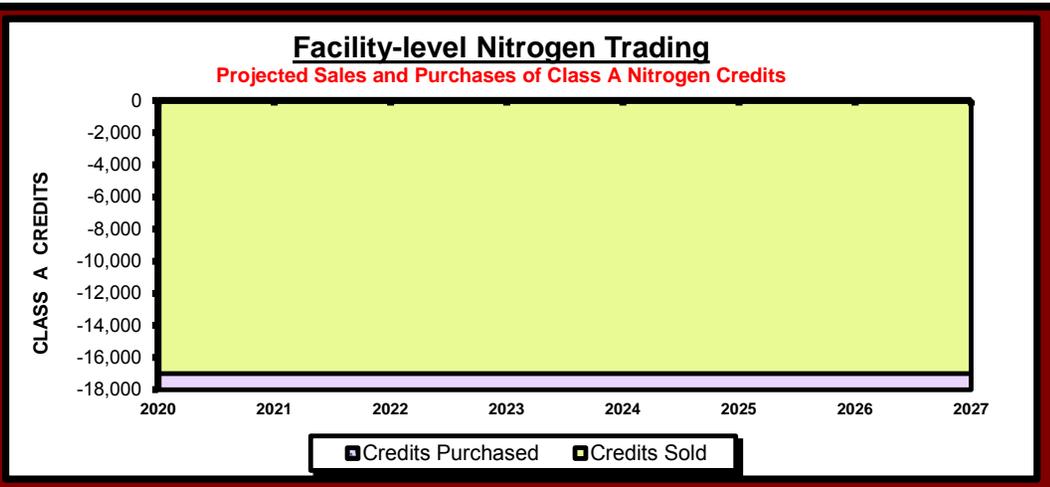
Loading & Credit Summary

Design Flow (mgd)	23.33
Projected Flow (mgd)	32.58
Projected Avg. Annual Concentration (mg/L)	0.14
Discharged Load (end of pipe)	13,743
Delivery Factor	1.00
Expected Load	13,743
Delivered WLA	6,339
Expected Credits (delivered)	(7,404)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(7,404)
Class A Credit Sales (Purchases)	(7,404)
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33
32.58	33.07	33.56	34.01	32.64	32.94	33.25	33.55
0.14	0.14	0.12	0.12	0.16	0.16	0.17	0.17
13,743	13,939	12,173	12,222	16,115	16,425	16,738	17,054
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13,743	13,939	12,173	12,222	16,115	16,425	16,738	17,054
6,339	6,339	6,339	6,339	6,339	6,339	6,339	6,339
(7,404)	(7,600)	(5,834)	(5,883)	(9,776)	(10,086)	(10,399)	(10,715)
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
(7,404)	(7,600)	(5,834)	(5,883)	(9,776)	(10,086)	(10,399)	(10,715)
0	0	0	0	0	0	0	0

NITROGEN FACILITY SUMMARY

Georgia-Pacific
 UPPER JAMES Trading Basin



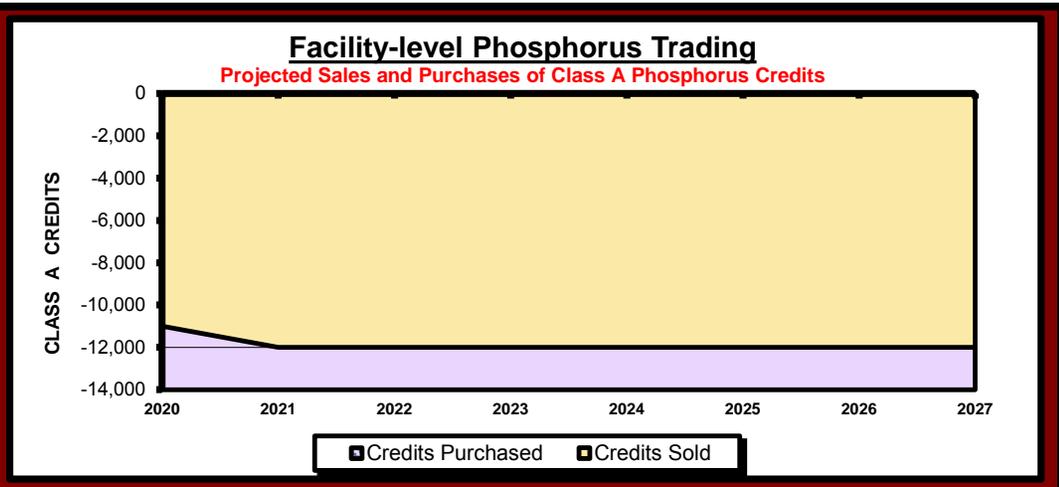
Loading & Credit Summary

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)	17,000
Expected Class B Credits	4,528

2020	2021	2022	2023	2024	2025	2026	2027
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	9.25	9.25	9.25	9.25
3.25	3.25	3.25	3.25	3.00	3.00	3.00	3.00
86,608	86,608	86,608	86,608	84,514	84,514	84,514	84,514
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
51,965	51,965	51,965	51,965	50,709	50,709	50,709	50,709
73,493	73,493	73,493	73,493	73,493	73,493	73,493	73,493
21,528	21,528	21,528	21,528	22,784	22,784	22,784	22,784
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	22,784	22,784	22,784	22,784
17,000	17,000	17,000	17,000	17,000	17,000	17,000	17,000
4,528	4,528	4,528	4,528	5,784	5,784	5,784	5,784

PHOSPHORUS 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)	0.70
Discharged Load (end of pipe)	18,654
Delivery Factor	0.66
Expected Load	12,312
Delivered WLA	26,580
Expected Credits (delivered)	14,268
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	14,268
Class A Credit Sales (Purchases)	11,000
Expected Class B Credits	3,268

2020	2021	2022	2023	2024	2025	2026	2027
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	9.25	9.25	9.25	9.25
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
18,654	18,654	18,654	18,654	19,720	19,720	19,720	19,720
0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
12,312	13,244	13,244	13,244	14,001	14,001	14,001	14,001
26,580	28,594	28,594	28,594	28,594	28,594	28,594	28,594
14,268	15,350	15,350	15,350	14,593	14,593	14,593	14,593
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	15,350	15,350	15,350	14,593	14,593	14,593	14,593
11,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
3,268	3,350	3,350	3,350	2,593	2,593	2,593	2,593

NITROGEN FACILITY SUMMARY

Greif Packaging
 UPPER JAMES Trading Basin

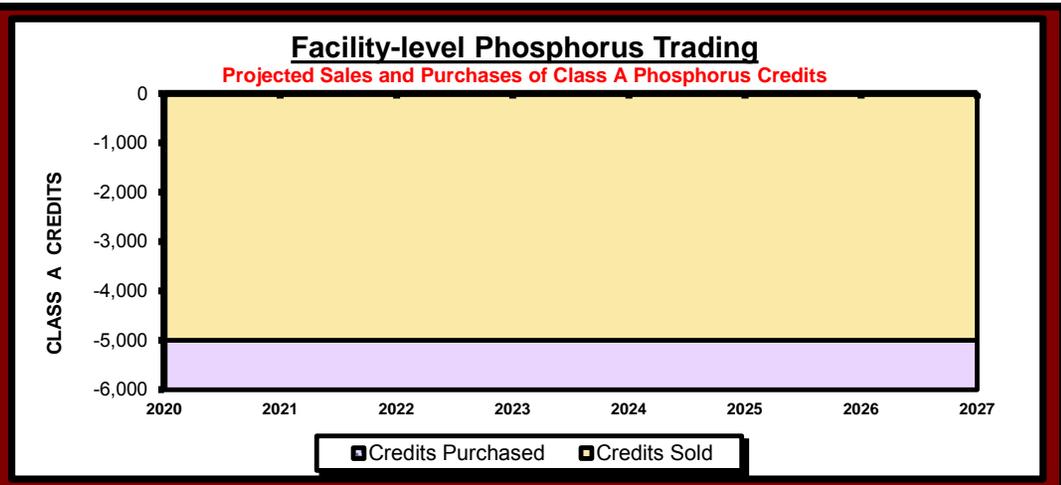


Loading & Credit Summary	
Design Flow (mgd)	6.50
Projected Flow (mgd)	6.50
Projected Avg. Annual Concentration (mg/L)	3.70
Discharged Load (end of pipe)	73,246
Delivery Factor	0.65
Expected Load	47,610
Delivered WLA	47,610
Expected Credits (delivered)	0
Transfers In (Out) within Owner Bubble	0
Transfers 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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.64	0.64	0.64	0.64	0.64	0.64	0.64
47,610	46,877	46,877	46,877	46,877	46,877	46,877	46,877
47,610	46,877	46,877	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



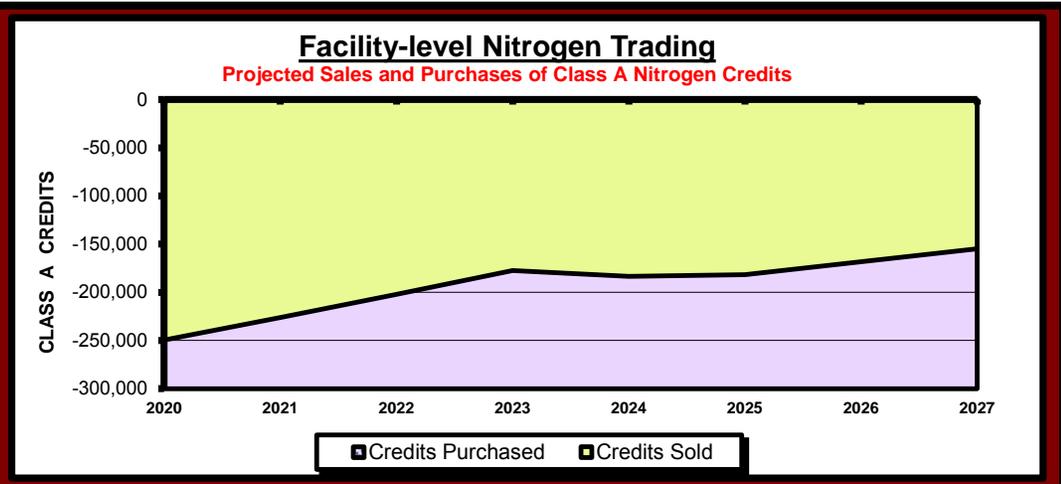
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.71	0.71	0.71	0.71	0.71	0.71	0.71
10,452	11,244	11,244	11,244	11,244	11,244	11,244	11,244
15,894	17,098	17,098	17,098	17,098	17,098	17,098	17,098
5,442	5,854	5,854	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	5,854	5,854	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	854	854	854	854	854	854	854

NITROGEN FACILITY SUMMARY

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



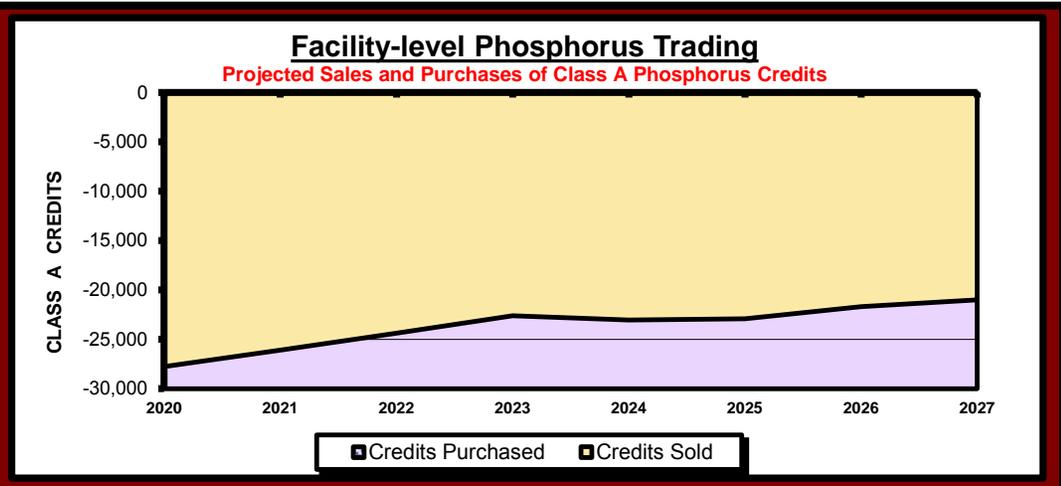
Loading & Credit Summary

Planning Period	
Design Flow (mgd)	75.00
Projected Flow (mgd)	57.95
Projected Avg. Annual Concentration (mg/L)	4.90
Discharged Load (end of pipe)	864,802
Delivery Factor	1.00
Expected Load	864,802
Delivered WLA	1,142,085
Expected Credits (delivered)	277,283
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	277,283
Class A Credit Sales (Purchases)	
Expected Class B Credits	27,728

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
57.95	59.69	61.48	63.32	62.87	63.00	64.00	65.00
4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90
864,802	890,768	917,481	944,940	938,224	940,164	955,088	970,011
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
864,802	890,768	917,481	944,940	938,224	940,164	955,088	970,011
1,142,085	1,142,085	1,142,085	1,142,085	1,142,085	1,142,085	1,142,085	1,142,085
277,283	251,317	224,604	197,145	203,861	201,921	186,997	172,074
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
277,283	251,317	224,604	197,145	203,861	201,921	186,997	172,074
249,555	226,185	202,144	177,431	183,475	181,729	168,297	154,867
27,728	25,132	22,460	19,714	20,386	20,192	18,700	17,207

PHOSPHORUS FACILITY SUMMARY

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

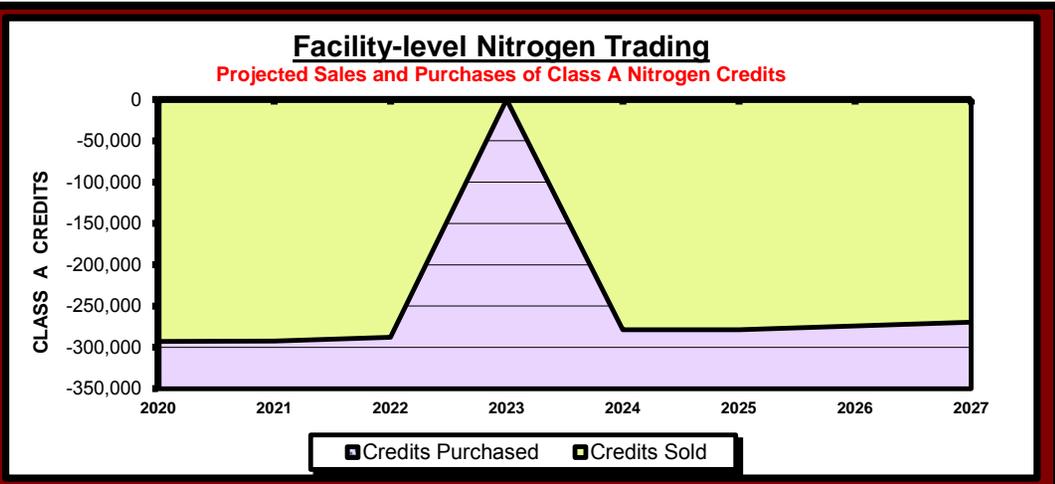


Loading & Credit Summary	
Design Flow (mgd)	75.00
Projected Flow (mgd)	57.95
Projected Avg. Annual Concentration (mg/L)	0.35
Discharged Load (end of pipe)	61,772
Delivery Factor	1.00
Expected Load	61,772
Delivered WLA	92,623
Expected Credits (delivered)	30,851
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	30,851
Class A Credit Sales (Purchases)	27,766
Expected Class B Credits	3,085

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
57.95	59.69	61.48	63.32	62.87	63.00	64.00	65.00
0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
61,772	63,626	65,534	67,496	67,016	67,155	68,221	69,286
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
61,772	63,626	65,534	67,496	67,016	67,155	68,221	69,286
92,623	92,623	92,623	92,623	92,623	92,623	92,623	92,623
30,851	28,997	27,089	25,127	25,607	25,468	24,402	23,337
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
30,851	28,997	27,089	25,127	25,607	25,468	24,402	23,337
27,766	26,097	24,380	22,614	23,046	22,921	21,692	21,003
3,085	2,900	2,709	2,513	2,561	2,547	2,710	2,334

NITROGEN FACILITY SUMMARY

Hopewell Water Renewal
 UPPER JAMES Trading Basin



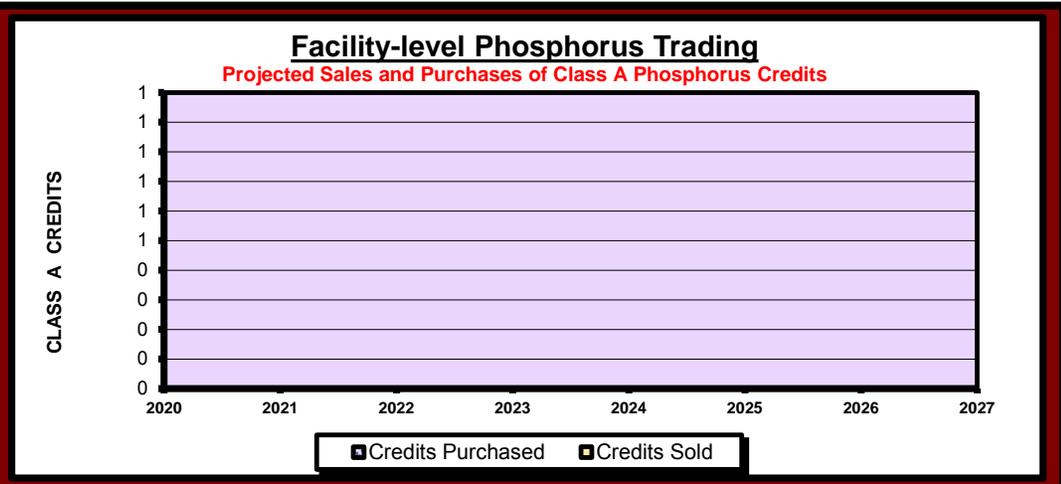
Loading & Credit Summary

Design Flow (mgd)	50.00
Projected Flow (mgd)	27.00
Projected Avg. Annual Concentration (mg/L)	15.10
Discharged Load (end of pipe)	
Delivery Factor	1.00
Expected Load	1,241,675
Delivered WLA	1,827,336
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	

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
27.00	27.20	27.40	27.60	27.80	27.80	28.00	28.20
15.10	15.00	15.00	15.00	15.00	15.00	15.00	15.00
1,241,675	1,242,588	1,251,725	1,260,862	1,269,999	1,269,999	1,279,135	1,288,272
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,241,675	1,242,588	1,251,725	1,260,862	1,269,999	1,269,999	1,279,135	1,288,272
1,827,336	1,827,336	1,827,336	1,827,336	1,827,336	1,827,336	1,827,336	1,827,336
585,661	584,748	575,611	566,474	557,337	557,337	548,201	539,064
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
585,661	584,748	575,611	566,474	557,337	557,337	548,201	539,064
292,831	292,374	287,805	0	278,669	278,669	274,101	269,532
292,830	292,374	287,806	566,474	278,668	278,668	274,100	269,532

PHOSPHORUS FACILITY SUMMARY

Hopewell Water Renewal
 UPPER JAMES Trading Basin



Loading & Credit Summary	
Design Flow (mgd)	50.00
Projected Flow (mgd)	27.00
Projected Avg. Annual Concentration (mg/L)	0.70
Discharged Load (end of pipe)	57,561
Delivery Factor	1.00
Expected Load	57,561
Delivered WLA	61,749
Expected Credits (delivered)	4,188
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	4,188
Class A Credit Sales (Purchases)	0
Expected Class B Credits	4,188

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
27.00	27.20	27.40	27.60	27.80	27.80	28.00	28.20
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
57,561	57,987	58,414	58,840	59,267	59,267	59,693	60,119
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
57,561	57,987	58,414	58,840	59,267	59,267	59,693	60,119
61,749	61,749	61,749	61,749	61,749	61,749	61,749	61,749
4,188	3,762	3,335	2,909	2,482	2,482	2,056	1,630
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4,188	3,762	3,335	2,909	2,482	2,482	2,056	1,630
0	0	0	0	0	0	0	0
4,188	3,762	3,335	2,909	2,482	2,482	2,056	1,630

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 and TP WLA are binding upon HRSD's regional system as a whole. 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); (4) acquisition of allocation by consolidation of the J.H. Miles facility (153,500 lbs/yr TN and 17,437 lbs/yr TP); and (5) an offset allocation provided to the Chesapeake Tunnel Joint Venture from 2019 through 2023 (100 lbs/yr TN and 550 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		
	2020	2021	2022	2023	2024	2025	2026	2027
Aggregate WLA								
Delivered WLA (Bubble)	4,553,400	4,553,400	3,553,400	3,553,400	3,553,500			
Projected Delivered Loads	2020	2021	2022	2023	2024	2025	2026	2027
Army Base	142,789	142,927	140,033	140,274	143,196			
Boat Harbor	1,167,275	1,167,414	1,313,407	1,305,253	1,323,973			
Ches/Eliz*	1,455,884	1,463,063	-	-	-			
James River	360,057	360,580	362,100	361,496	366,075			
Lawnes Point	-	-	-	-	-			
Nansemond	413,393	421,584	294,975	296,245	292,735			
VIP	423,308	424,199	432,080	422,161	419,066			
Williamsburg	279,494	282,921	277,068	272,659	272,724			
TOTAL Delivered Loads	4,242,200	4,262,688	2,819,663	2,798,088	2,817,769			
Net Credits Available	2020	2021	2022	2023	2024	2025	2026	2027
Expected Credits	311,200	290,712	733,737	755,312	735,731			
Private Exchanges**	(1)	(1)	(1)	(1)	(1)			
Expected Net Credits	311,199	290,711	733,736	755,311	735,730			
Class A Sales (Purchases)	0	0	0	0	0			
Expected Class B Credits	311,199	290,711	733,736	755,311	735,730			
WQIF-Held Credits	0	0	0	0	0			

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
	2020	2021	2022	2023	2024	2025	2026	2027
Aggregate WLA								
Delivered WLA (Bubble)	317,886	317,886	317,886	317,886	318,436			
Projected Delivered Loads	2020	2021	2022	2023	2024	2025	2026	2027
Army Base	25,385	25,409	24,895	24,938	25,457			
Boat Harbor	35,916	35,920	36,232	36,007	36,523			
Ches/Eliz*	49,445	49,689	-	-	-			
James River	32,005	32,052	32,187	32,133	32,540			
Lawnes Point	-	-	-	-	-			
Nansemond	66,143	67,453	70,794	71,099	70,256			
VIP	75,255	75,413	76,814	75,051	74,501			
Williamsburg	22,360	22,634	22,165	21,813	21,818			
TOTAL Delivered Loads	306,509	308,570	263,087	261,041	261,095			
Net Credits Available	2020	2021	2022	2023	2024	2025	2026	2027
Expected Credits	11,377	9,316	54,799	56,845	57,341			
Private Exchanges**	(1)	(1)	(1)	(1)	(1)			
Expected Net Credits	11,376	9,315	54,798	56,844	57,340			
Class A Sales (Purchases)	0	0	0	0	0			
Expected Class B Credits	11,376	9,315	54,798	56,844	57,340			
WQIF-Held Credits	0	0	0	0	0			

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

** Reflects private trade with the Department of Energy - Jefferson Lab (one pound each of nitrogen and phosphorus)

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

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

Check One:

- James River TN Compliance
 York River TP Compliance

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 under II.B.)

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

Consolidation of the Chesapeake-Elizabeth STP within the regional system is needed to reliably meet the 2022 reduction.

Implementation Schedule

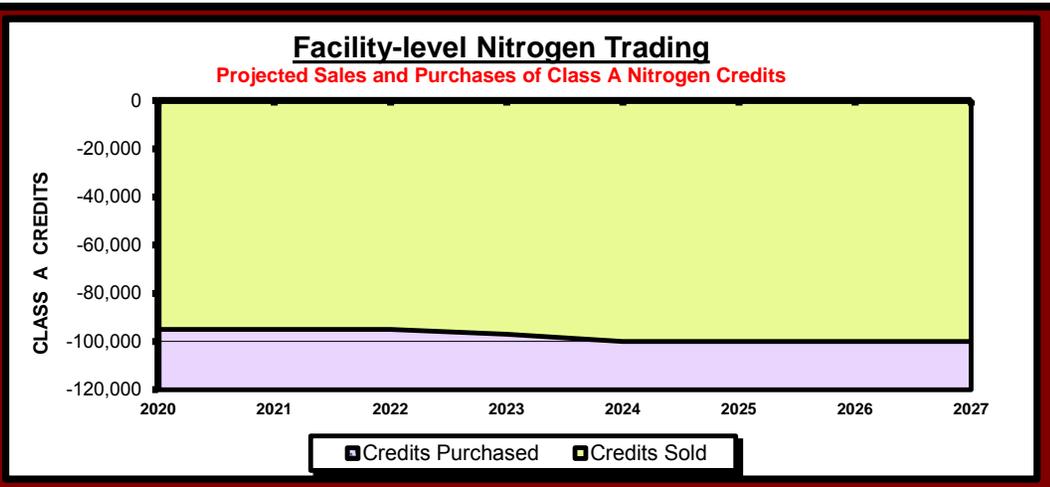
1. Does permittee anticipate using credit purchase to comply?
 NO YES
2. Is permittee implementing a capital project to comply?
 NO YES
(If YES, compliance is required as soon as possible but no later than the applicable tributary compliance schedule deadline.)
3. Capital Project Milestone Schedule (Specify estimated date for each milestone. For bubbles, specify facility name(s) and list multiple facility schedules if applicable.)

COMPLETE FLOW DIVERSIONS TO OTHER HRSD REGIONAL FACILITIES: June 30, 2022

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

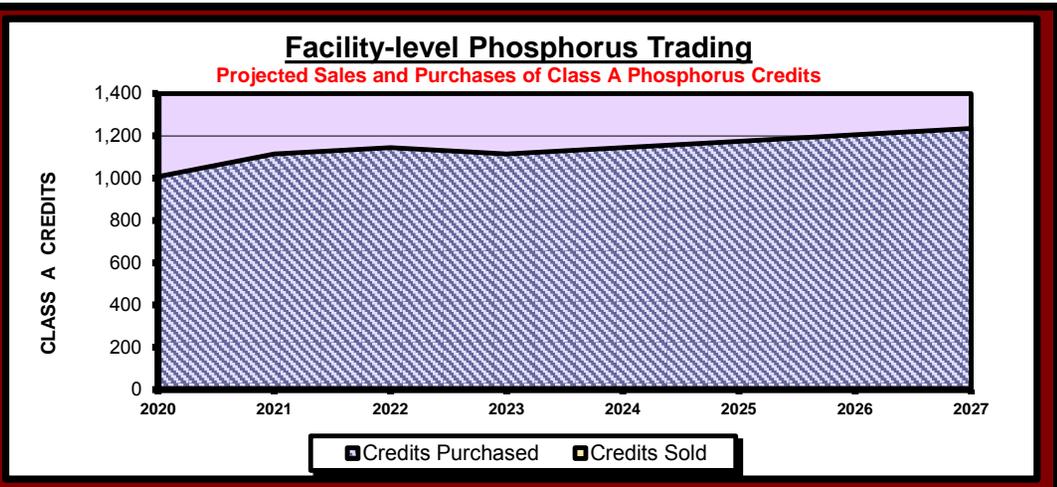


Loading & Credit Summary	
Design Flow (mgd)	22.00
Projected Flow (mgd)	13.46
Projected Avg. Annual Concentration (mg/L)	8.20
Discharged Load (end of pipe)	336,145
Delivery Factor	0.65
Expected Load	218,494
Delivered WLA	348,412
Expected Credits (delivered)	129,918
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	129,918
Class A Credit Sales (Purchases)	95,000
Expected Class B Credits	34,918

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
13.46	13.48	13.50	13.48	13.50	13.52	13.54	13.56
8.20	8.20	8.20	8.00	8.00	8.00	8.00	8.00
336,145	336,644	337,143	328,433	328,920	329,408	329,895	330,382
0.65	0.64	0.64	0.64	0.64	0.64	0.64	0.64
218,494	215,452	215,772	210,197	210,509	210,821	211,133	211,445
348,412	343,052	343,052	343,052	343,052	343,052	343,052	343,052
129,918	127,600	127,280	132,855	132,543	132,231	131,919	131,607
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
129,918	127,600	127,280	132,855	132,543	132,231	131,919	131,607
95,000	95,000	95,000	97,000	100,000	100,000	100,000	100,000
34,918	32,600	32,280	35,855	32,543	32,231	31,919	31,607

PHOSPHORUS FACILITY SUMMARY

Lynchburg
 UPPER JAMES Trading Basin

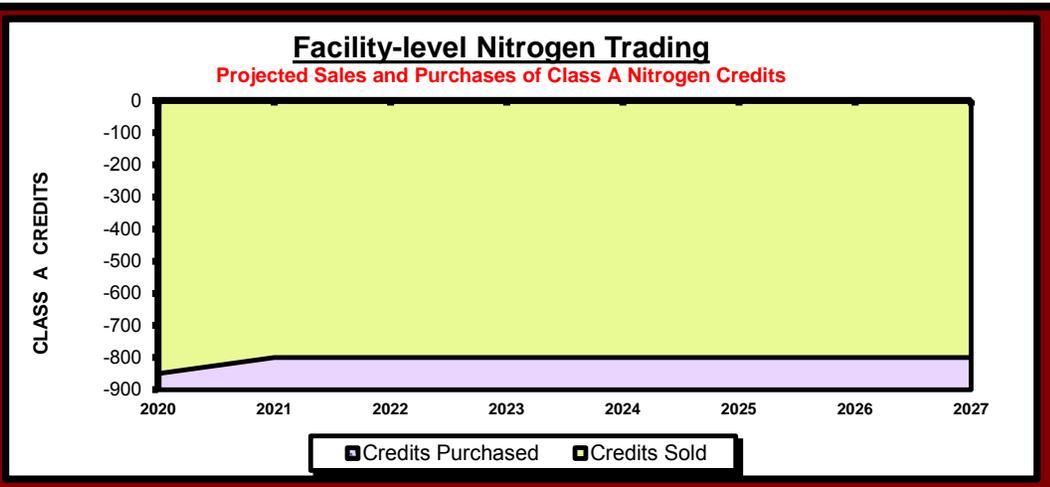


Loading & Credit Summary	
Design Flow (mgd)	22.00
Projected Flow (mgd)	13.46
Projected Avg. Annual Concentration (mg/L)	0.70
Discharged Load (end of pipe)	28,695
Delivery Factor	0.66
Expected Load	18,939
Delivered WLA	17,932
Expected Credits (delivered)	(1,007)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	(1,007)
Class A Credit Sales (Purchases)	(1,007)
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
13.46	13.48	13.50	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
28,695	28,738	28,781	28,738	28,781	28,823	28,866	28,908
0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
18,939	20,404	20,434	20,404	20,434	20,464	20,495	20,525
17,932	19,290	19,290	19,290	19,290	19,290	19,290	19,290
(1,007)	(1,114)	(1,144)	(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
(1,007)	(1,114)	(1,144)	(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

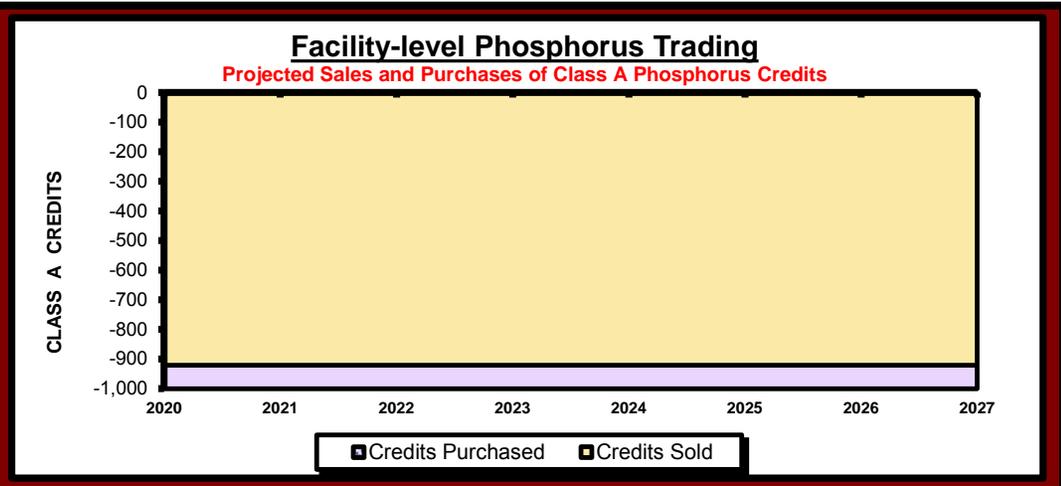


Loading & Credit Summary	
Design Flow (mgd)	3.00
Projected Flow (mgd)	1.00
Projected Avg. Annual Concentration (mg/L)	5.00
Discharged Load (end of pipe)	15,228
Delivery Factor	0.32
Expected Load	4,873
Delivered WLA	17,542
Expected Credits (delivered)	12,669
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	12,669
Class A Credit Sales (Purchases)	850
Expected Class B Credits	11,819

2020	2021	2022	2023	2024	2025	2026	2027
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	0.31	0.31	0.31	0.31	0.31	0.31	0.31
4,873	4,721	4,721	4,721	4,721	4,721	4,721	4,721
17,542	16,994	16,994	16,994	16,994	16,994	16,994	16,994
12,669	12,273	12,273	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	12,273	12,273	12,273	12,273	12,273	12,273	12,273
850	800	800	800	800	800	800	800
11,819	11,473	11,473	11,473	11,473	11,473	11,473	11,473

PHOSPHORUS FACILITY SUMMARY

MSA-Lexington
 UPPER JAMES Trading Basin

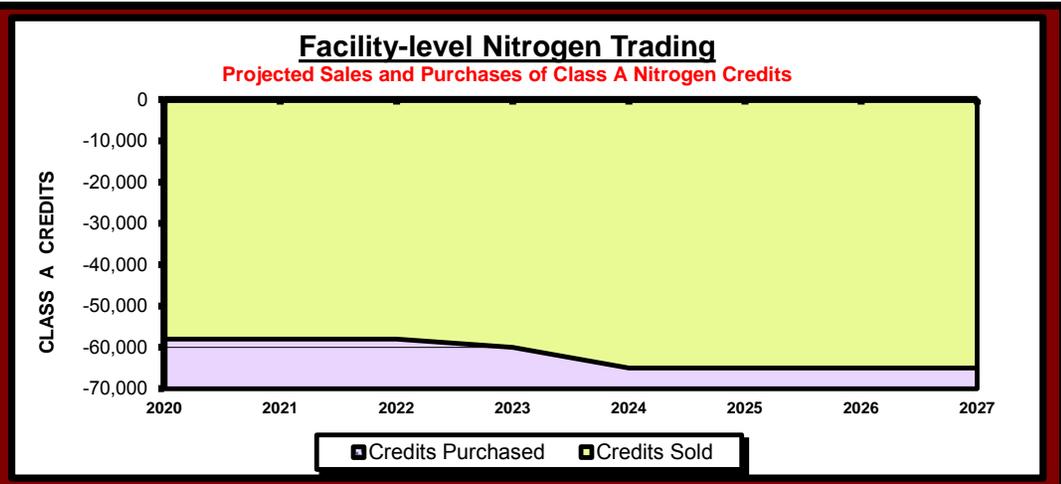


Loading & Credit Summary	
Design Flow (mgd)	3.00
Projected Flow (mgd)	1.00
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	914
Delivery Factor	0.66
Expected Load	603
Delivered WLA	2,445
Expected Credits (delivered)	1,842
Transfers In (Out) within Owner Bubble	0
Transfers 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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.71	0.71	0.71	0.71	0.71	0.71	0.71
603	649	649	649	649	649	649	649
2,445	2,631	2,631	2,631	2,631	2,631	2,631	2,631
1,842	1,982	1,982	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	1,982	1,982	1,982	1,982	1,982	1,982	1,982
921	921	921	921	921	921	921	921
921	1,061	1,061	1,061	1,061	1,061	1,061	1,061

NITROGEN FACILITY SUMMARY

Philip Morris
 UPPER JAMES Trading Basin



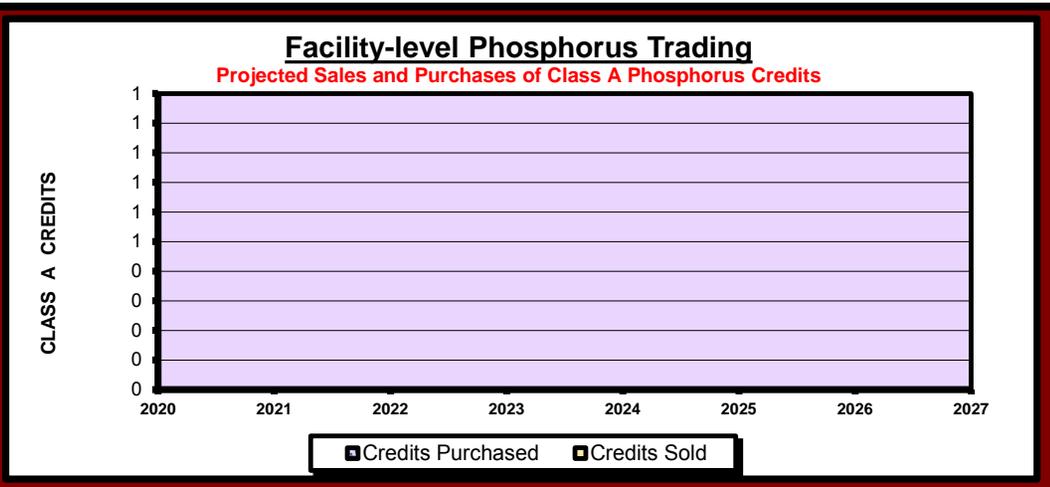
Loading & Credit Summary

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)	58,000
Expected Class B Credits	26,904

2020	2021	2022	2023	2024	2025	2026	2027
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	1.00	1.00	1.00	1.00	1.00
15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
54,820	54,820	54,820	45,683	45,683	45,683	45,683	45,683
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
54,820	54,820	54,820	45,683	45,683	45,683	45,683	45,683
139,724	139,724	139,724	139,724	139,724	139,724	139,724	139,724
84,904	84,904	84,904	94,041	94,041	94,041	94,041	94,041
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	94,041	94,041	94,041	94,041	94,041
58,000	58,000	58,000	60,000	65,000	65,000	65,000	65,000
26,904	26,904	26,904	34,041	29,041	29,041	29,041	29,041

PHOSPHORUS FACILITY SUMMARY

Philip Morris
 UPPER JAMES Trading Basin



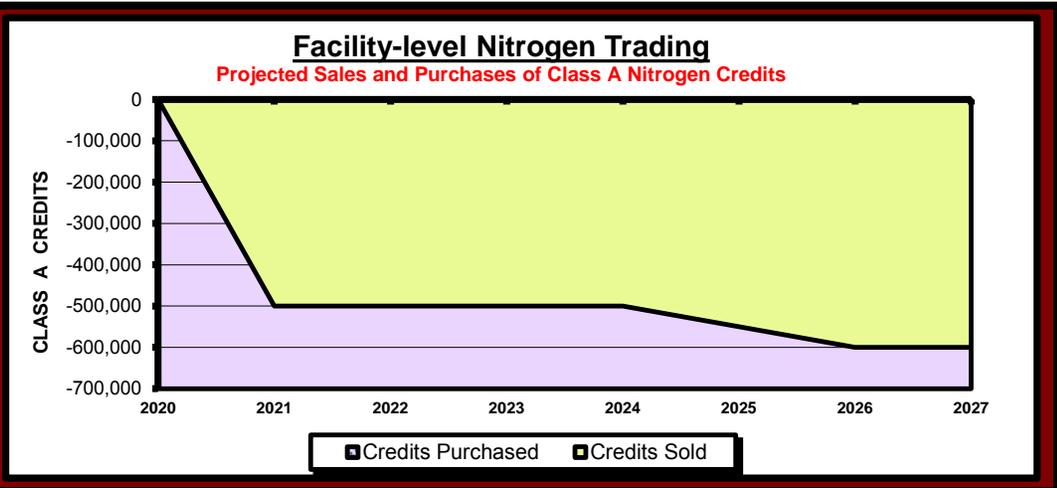
Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

2020	2021	2022	2023	2024	2025	2026	2027
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	1.00	1.00	1.00	1.00	1.00
0.50	0.50	0.50	0.60	0.60	0.60	0.60	0.60
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)	45.00
Projected Flow (mgd)	45.00
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	548,201
Delivery Factor	1.00
Expected Load	548,201
Delivered WLA*	1,093,652
Expected Credits (delivered)	545,451
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	545,451
Class A Credit Sales (Purchases)	0
Expected Class B Credits	545,451

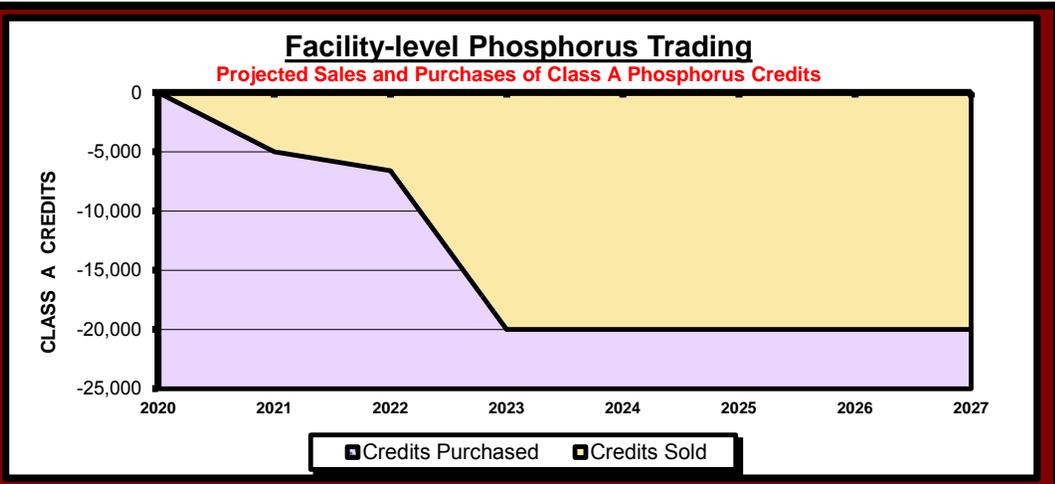
2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
4.00	4.00	4.00	4.00	3.75	3.50	3.00	3.00
548,201	548,201	548,201	548,201	513,938	479,676	411,151	411,151
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
548,201	548,201	548,201	548,201	513,938	479,676	411,151	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
545,451	545,451	545,451	545,451	579,714	613,976	682,501	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
545,451	545,451	545,451	545,451	579,714	613,976	682,501	682,501
0	500,000	500,000	500,000	500,000	550,000	600,000	600,000
545,451	45,451	45,451	45,451	79,714	63,976	82,501	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

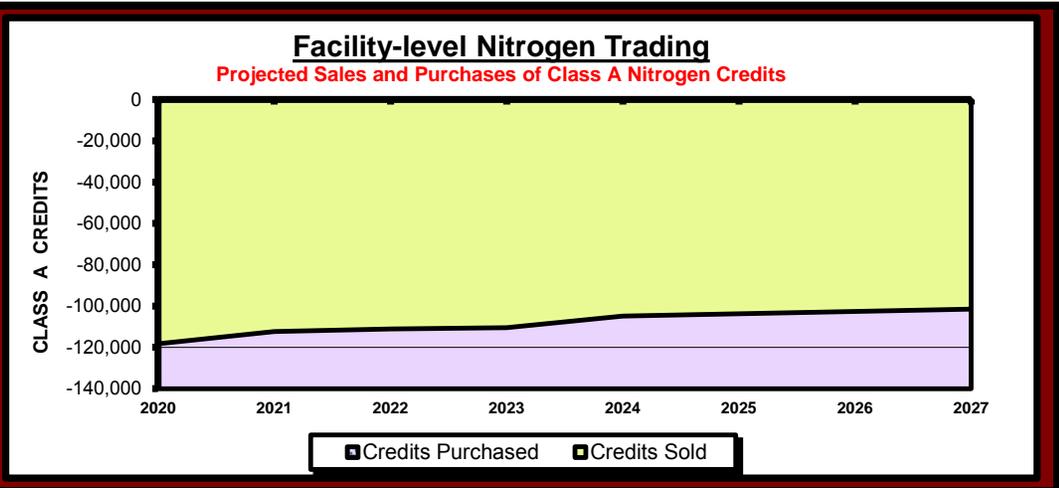
Design Flow (mgd)	45.00
Projected Flow (mgd)	45.00
Projected Avg. Annual Concentration (mg/L)	0.35
Discharged Load (end of pipe)	47,968
Delivery Factor	1.00
Expected Load	47,968
Delivered WLA*	55,574
Expected Credits (delivered)	7,606
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.25	0.25	0.25	0.25	0.25
47,968	47,968	47,968	34,263	34,263	34,263	34,263	34,263
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
47,968	47,968	47,968	34,263	34,263	34,263	34,263	34,263
55,574	55,574	55,574	55,574	55,574	55,574	55,574	55,574
7,606	7,606	7,606	21,311	21,311	21,311	21,311	21,311
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	21,311	21,311	21,311	21,311	21,311
0	5,000	6,600	20,000	20,000	20,000	20,000	20,000
7,606	2,606	1,006	1,311	1,311	1,311	1,311	1,311

* 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



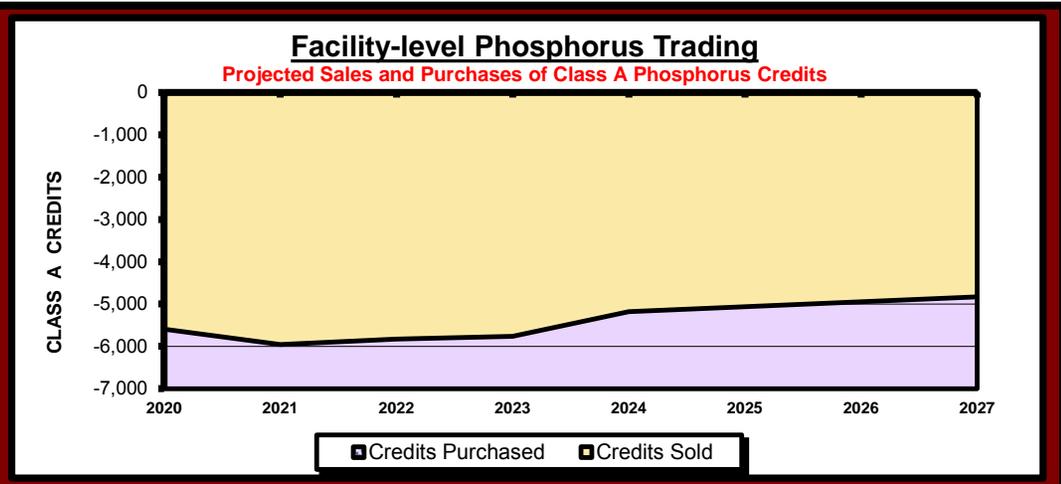
Loading & Credit Summary	
Design Flow (mgd)	15.00
Projected Flow (mgd)	10.90
Projected Avg. Annual Concentration (mg/L)	3.20
Discharged Load (end of pipe)	106,229
Delivery Factor	0.67
Expected Load	71,174
Delivered WLA*	189,606
Expected Credits (delivered)	118,432
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange**	(163)
WQIF-Held Credits	0
Expected Net Credits	118,269
Class A Credit Sales (Purchases)	118,268
Expected Class B Credits	1

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
10.90	11.00	11.20	11.30	12.20	12.38	12.56	12.74
3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
106,229	107,204	109,153	110,127	118,899	120,653	122,407	124,161
0.67	0.64	0.64	0.64	0.64	0.64	0.64	0.64
71,174	68,610	69,858	70,482	76,095	77,218	78,341	79,463
189,606	181,116	181,116	181,116	181,116	181,116	181,116	181,116
118,432	112,506	111,258	110,634	105,021	103,898	102,775	101,653
0	0	0	0	0	0	0	0
(163)	(163)	(163)	(163)	(163)	(163)	(163)	(163)
0	0	0	0	0	0	0	0
118,269	112,343	111,095	110,471	104,858	103,735	102,612	101,490
118,268	112,342	111,094	110,470	104,858	103,735	102,612	101,490
1	1	1	1	0	0	0	0

* Wasteload allocation reflects the consolidation of the Camelot WWTP
 ** Represents a private trade with Ryder Enterprises

PHOSPHORUS FACILITY SUMMARY

RWSA-Moores Creek
 UPPER JAMES Trading Basin



Loading & Credit Summary

Design Flow (mgd)	15.00
Projected Flow (mgd)	10.90
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	9,959
Delivery Factor	0.66
Expected Load	6,573
Delivered WLA*	12,227
Expected Credits (delivered)	5,654
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange**	(59)
WQIF-Held Credits	0
Expected Net Credits	5,595
Class A Credit Sales (Purchases)	5,594
Expected Class B Credits	1

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
10.90	11.00	11.20	11.30	12.20	12.38	12.56	12.74
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
9,959	10,050	10,233	10,324	11,147	11,311	11,476	11,640
0.66	0.71	0.71	0.71	0.71	0.71	0.71	0.71
6,573	7,136	7,265	7,330	7,914	8,031	8,148	8,264
12,227	13,153	13,153	13,153	13,153	13,153	13,153	13,153
5,654	6,017	5,888	5,823	5,239	5,122	5,005	4,889
0	0	0	0	0	0	0	0
(59)	(59)	(59)	(59)	(59)	(59)	(59)	(59)
0	0	0	0	0	0	0	0
5,595	5,958	5,829	5,764	5,180	5,063	4,946	4,830
5,594	5,957	5,828	5,763	5,180	5,063	4,946	4,830
1	1	1	1	0	0	0	0

* Wasteload allocation reflects the consolidation of the Camelot WWTP
 ** Represents a private trade with Ryder Enterprises

NITROGEN FACILITY SUMMARY

South Central WWA
 UPPER JAMES Trading Basin



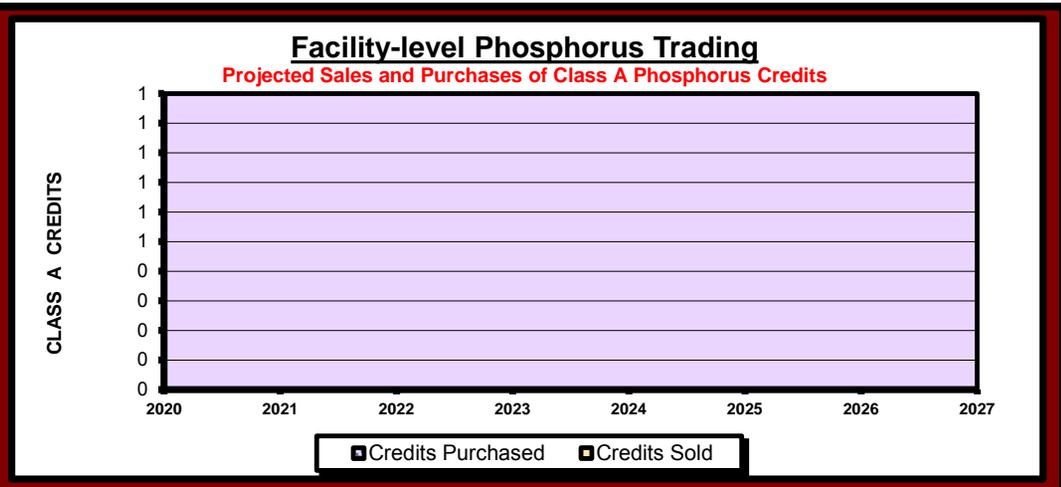
Loading & Credit Summary	
Design Flow (mgd)	23.00
Projected Flow (mgd)	12.01
Projected Avg. Annual Concentration (mg/L)	12.20
Discharged Load (end of pipe)	446,325
Delivery Factor	1.00
Expected Load	446,325
Delivered WLA	350,239
Expected Credits (delivered)	(96,086)
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange*	171,694
WQIF-Held Credits	0
Expected Net Credits	75,608
Class A Credit Sales (Purchases)	0
Expected Class B Credits	75,608

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
12.01	12.13	12.25	12.38	12.50	12.66	12.81	12.97
12.20	10.83	10.72	10.62	10.51	9.09	8.97	8.86
446,325	400,239	400,239	400,239	400,239	350,239	350,239	350,239
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
446,325	400,239	400,239	400,239	400,239	350,239	350,239	350,239
350,239	350,239	350,239	350,239	350,239	350,239	350,239	350,239
(96,086)	(50,000)	(50,000)	(50,000)	(50,000)	0	0	0
0	0	0	0	0	0	0	0
171,694	50,000	50,000	50,000	50,000	0	0	0
0	0	0	0	0	0	0	0
75,608	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
75,608	0	0	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

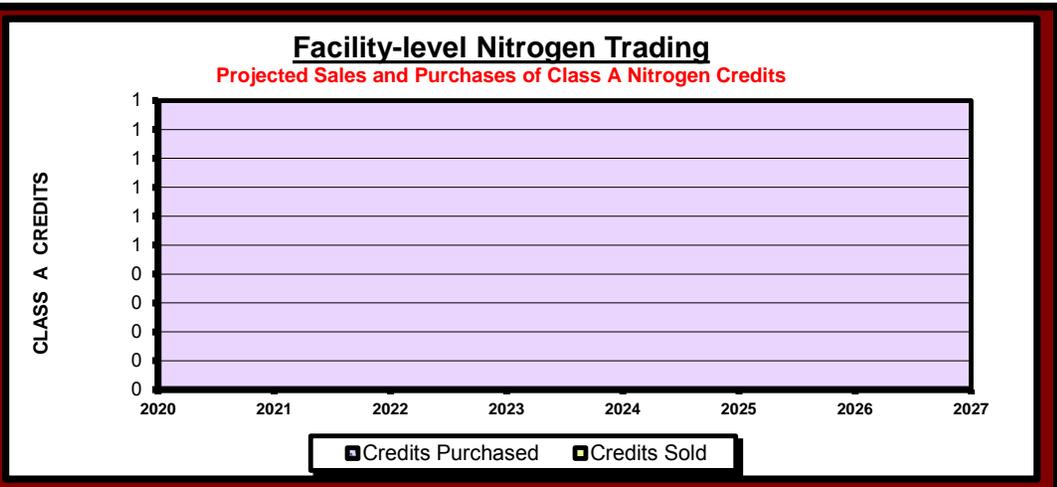


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
12.01	12.13	12.25	12.38	12.50	12.66	12.81	12.97
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
25,609	25,865	26,124	26,385	26,649	26,982	27,319	27,661
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25,609	25,865	26,124	26,385	26,649	26,982	27,319	27,661
28,404	28,404	28,404	28,404	28,404	28,404	28,404	28,404
2,795	2,539	2,280	2,019	1,755	1,422	1,085	743
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,795	2,539	2,280	2,019	1,755	1,422	1,085	743
0	0	0	0	0	0	0	0
2,795	2,539	2,280	2,019	1,755	1,422	1,085	743

NITROGEN FACILITY SUMMARY

Tyson Foods-Glen Allen
 UPPER JAMES Trading Basin

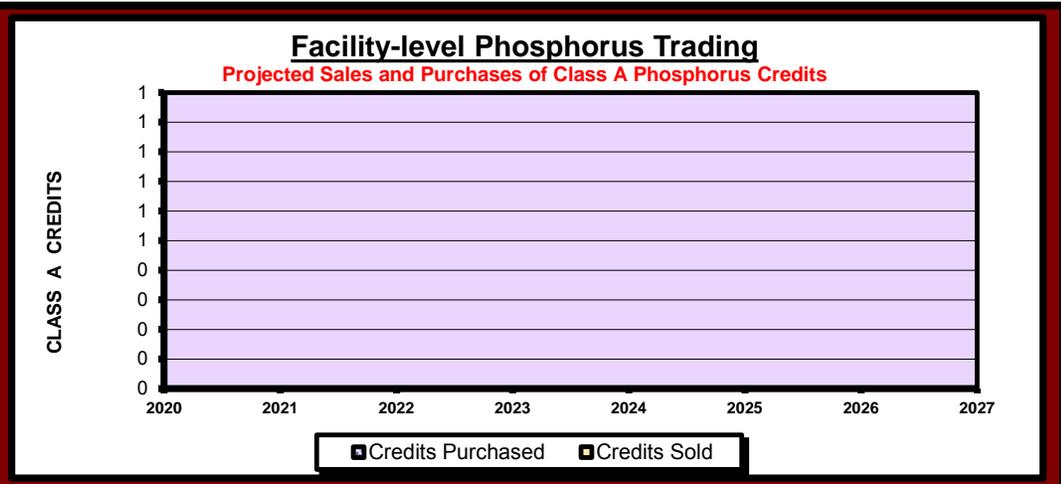


Loading & Credit Summary	
Design Flow (mgd)	1.07
Projected Flow (mgd)	1.07
Projected Avg. Annual Concentration (mg/L)	6.00
Discharged Load (end of pipe)	19,552
Delivery Factor	0.16
Expected Load	3,128
Delivered WLA	3,128
Expected Credits (delivered)	0
Transfers In (Out) within Owner Bubble	0
Transfers 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

2020	2021	2022	2023	2024	2025	2026	2027
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	1.10	1.10	1.10	1.10	1.10	1.10
6.00	6.00	4.30	4.30	4.04	4.04	4.04	4.04
19,552	19,552	14,405	14,405	13,534	13,534	13,534	13,534
0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.18
3,128	3,519	2,593	2,593	2,436	2,436	2,436	2,436
3,128	3,519	3,519	3,519	3,519	3,519	3,519	3,519
0	0	926	926	1,083	1,083	1,083	1,083
0	0	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	1,083	1,083	1,083	1,083
0	0	0	0	0	0	0	0
0	0	926	926	1,083	1,083	1,083	1,083

PHOSPHORUS FACILITY SUMMARY

Tyson Foods-Glen Allen
 UPPER JAMES Trading Basin



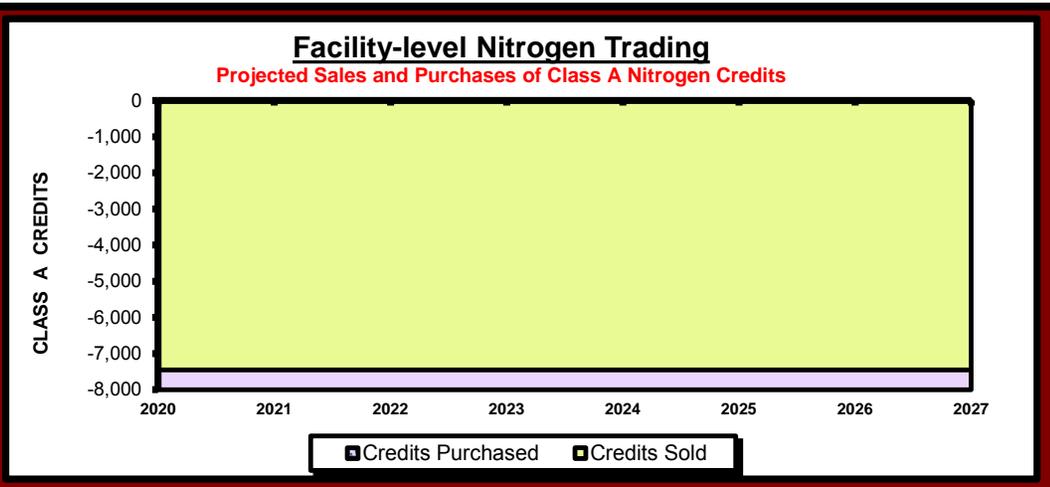
Loading & Credit Summary

Design Flow (mgd)	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Projected Flow (mgd)	1.07	1.07	1.10	1.10	1.10	1.10	1.10	1.10
Projected Avg. Annual Concentration (mg/L)	0.10	0.10	0.07	0.07	0.07	0.07	0.07	0.07
Discharged Load (end of pipe)	326	326	235	235	235	235	235	235
Delivery Factor	0.46	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Expected Load	150	117	84	84	84	84	84	84
Delivered WLA	188	147	147	147	147	147	147	147
Expected Credits (delivered)	38	30	63	63	63	63	63	63
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	38	30	63	63	63	63	63	63
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	38	30	63	63	63	63	63	63

2020	2021	2022	2023	2024	2025	2026	2027
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	1.10	1.10	1.10	1.10	1.10	1.10
0.10	0.10	0.07	0.07	0.07	0.07	0.07	0.07
326	326	235	235	235	235	235	235
0.46	0.36	0.36	0.36	0.36	0.36	0.36	0.36
150	117	84	84	84	84	84	84
188	147	147	147	147	147	147	147
38	30	63	63	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	30	63	63	63	63	63	63
0	0	0	0	0	0	0	0
38	30	63	63	63	63	63	63

NITROGEN FACILITY SUMMARY

WestRock-Covington
 UPPER JAMES Trading Basin

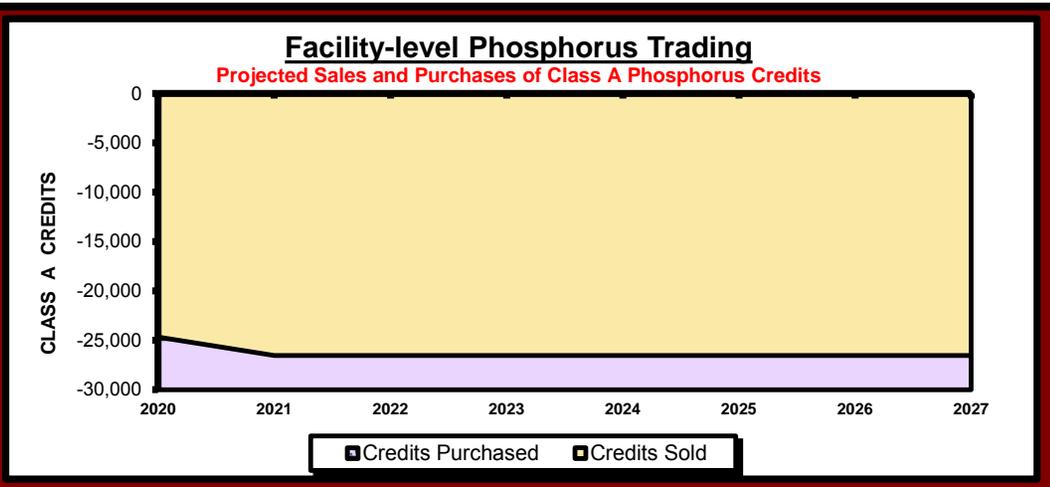


Loading & Credit Summary	
Design Flow (mgd)	35.00
Projected Flow (mgd)	32.50
Projected Avg. Annual Concentration (mg/L)	3.30
Discharged Load (end of pipe)	326,636
Delivery Factor	0.11
Expected Load	35,930
Delivered WLA	43,384
Expected Credits (delivered)	7,454
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	7,454
Class A Credit Sales (Purchases)	7,454
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
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
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-Covington
 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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.71	0.71	0.71	0.71	0.71	0.71	0.71
39,196	42,166	42,166	42,166	42,166	42,166	42,166	42,166
63,869	68,707	68,707	68,707	68,707	68,707	68,707	68,707
24,673	26,541	26,541	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	26,541	26,541	26,541	26,541	26,541	26,541	26,541
0	0	0	0	0	0	0	0

SECTION 6

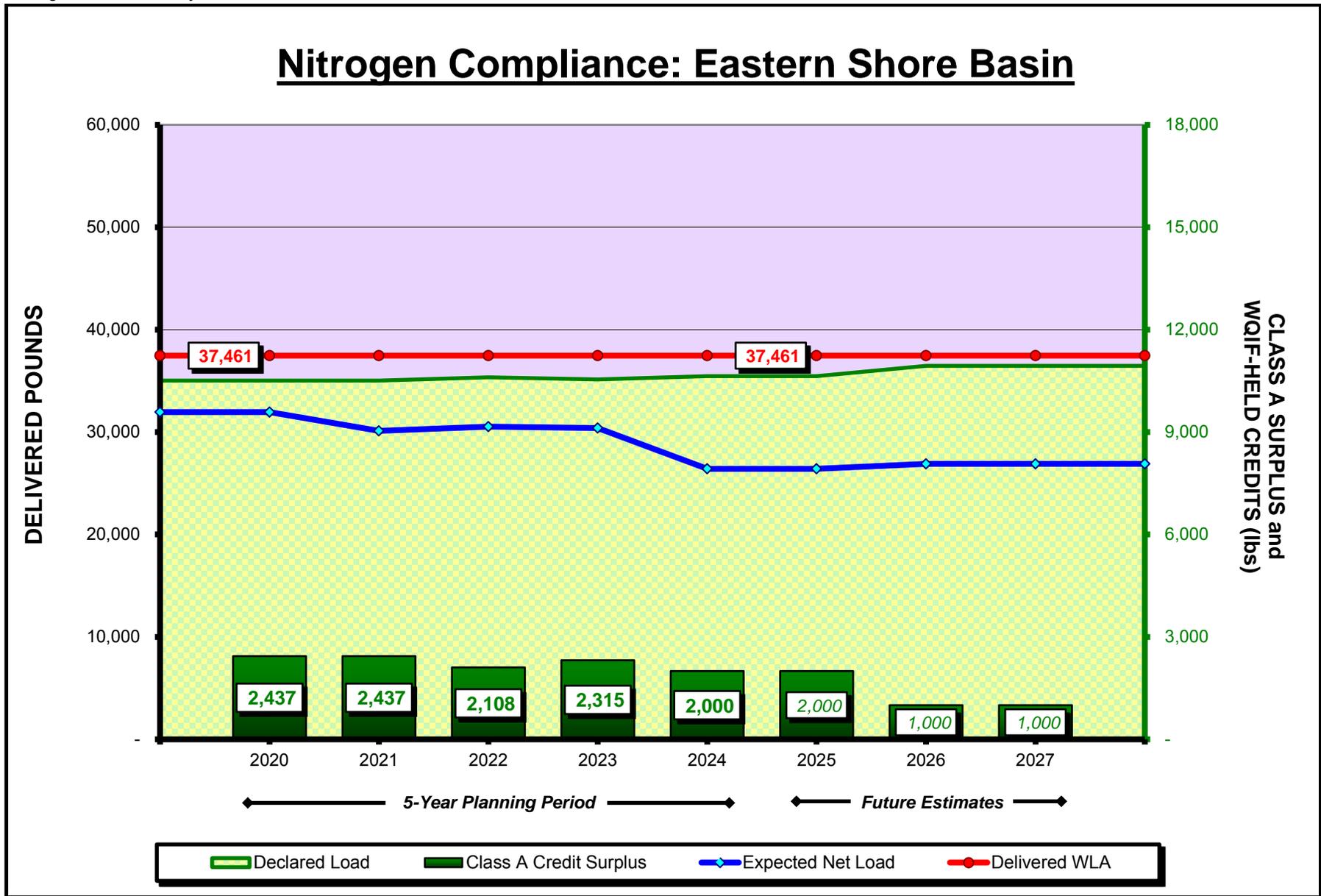
Eastern Shore Basin Exchange Compliance Plan

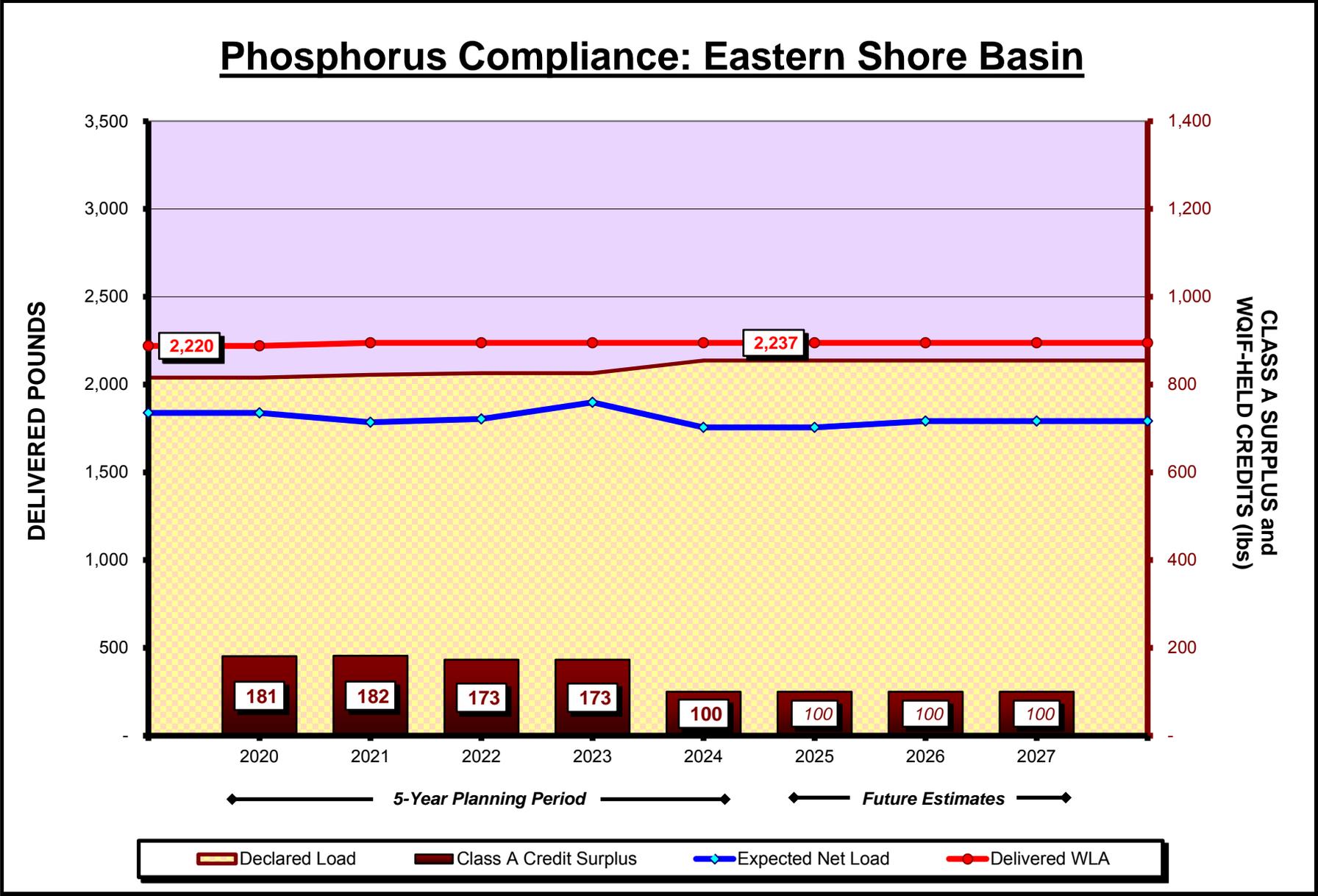


Consistent with similar disclosures made in conjunction with the original Exchange Compliance Plan dated July 31, 2007, and each annual update thereafter, Credit forecasts for the Eastern Shore basin may indicate a potential lack of Credit availability from facilities located within the Eastern Shore 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: Phosphorus 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)	2,220	1,839	381	-	-	-	381		181	-	200
Cape Charles	226	136	90	-	-	-	90		-	-	90
Onancock	678	497	181	-	-	-	181		181	-	-
Shore Health Services	87	52	35	-	-	-	35		-	-	35
Tangier Island	87	316	(229)	-	229	-	-		-	-	-
Tyson Foods-Temperanceville	1,142	838	304	-	(229)	-	75		-	-	75
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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	-	-	-	-	-	-	-		-	-	-
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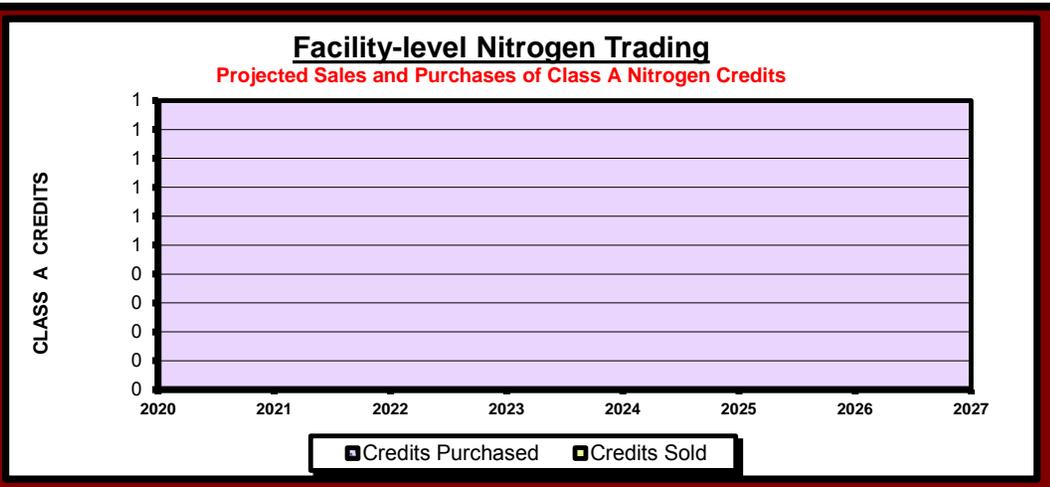
Eastern Shore Basin

Supplemental Information for Individual Facilities



NITROGEN FACILITY SUMMARY

Cape Charles
EASTERN SHORE Trading Basin

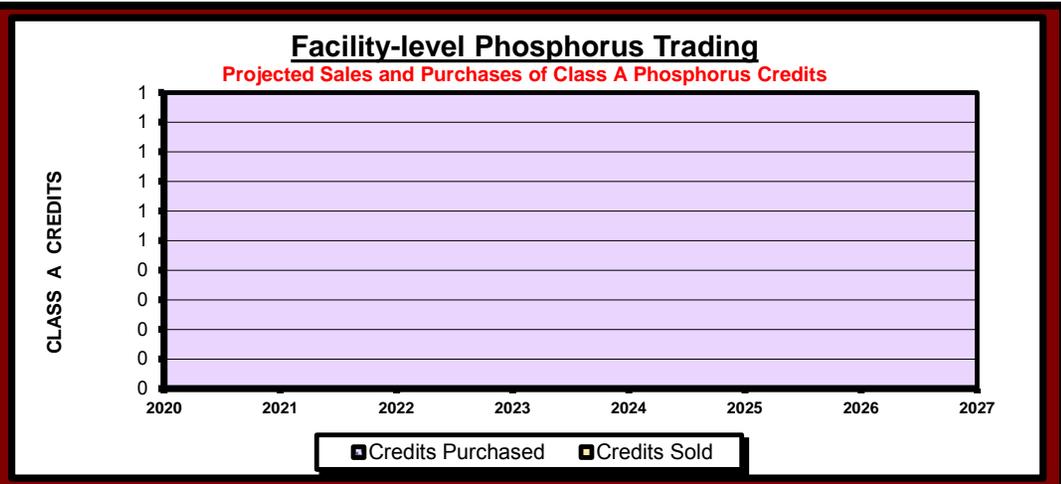


Loading & Credit Summary	
Design Flow (mgd)	0.25
Projected Flow (mgd)	0.15
Projected Avg. Annual Concentration (mg/L)	4.00
Discharged Load (end of pipe)	1,827
Delivery Factor	1.00
Expected Load	1,827
Delivered WLA	3,046
Expected Credits (delivered)	1,219
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	1,219
Class A Credit Sales (Purchases)	0
Expected Class B Credits	1,219

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
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
3,046	3,046	3,046	3,046	3,046	3,046	3,046	3,046
1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219
0	0	0	0	0	0	0	0
1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219

PHOSPHORUS FACILITY SUMMARY

Cape Charles
EASTERN SHORE Trading Basin



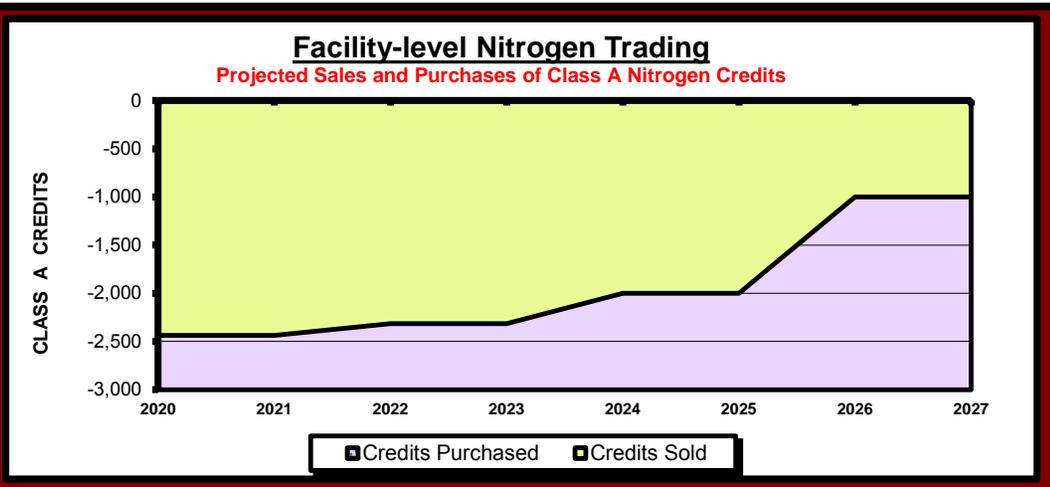
Loading & Credit Summary

Design Flow (mgd)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Projected Flow (mgd)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
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)	137	137	137	137	137	137	137	137
Delivery Factor	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	136	137	137	137	137	137	137	137
Delivered WLA	226	228	228	228	228	228	228	228
Expected Credits (delivered)	90	91	91	91	91	91	91	91
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	90	91	91	91	91	91	91	91
Class A Credit Sales (Purchases)	0	0	0	0	0	0	0	0
Expected Class B Credits	90	91	91	91	91	91	91	91

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
137	137	137	137	137	137	137	137
0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
136	137	137	137	137	137	137	137
226	228	228	228	228	228	228	228
90	91	91	91	91	91	91	91
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
90	91	91	91	91	91	91	91
0	0	0	0	0	0	0	0
90	91	91	91	91	91	91	91

NITROGEN FACILITY SUMMARY

Onancock
 EASTERN SHORE Trading Basin

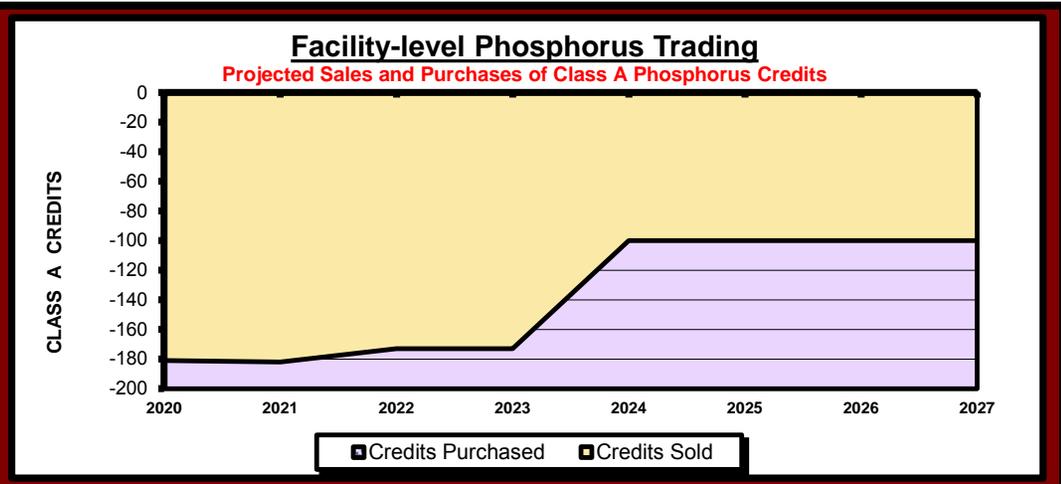


Loading & Credit Summary	
Design Flow (mgd)	
Projected Flow (mgd)	
Projected Avg. Annual Concentration (mg/L)	
Discharged Load (end of pipe)	
Delivery Factor	
Expected Load	
Delivered WLA	
Expected Credits (delivered)	
Transfers In (Out) within Owner Bubble	
Transfers In (Out) from Private Exchange	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

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
0.55	0.55	0.56	0.56	0.56	0.56	0.60	0.60
4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
6,700	6,700	6,822	6,822	6,822	6,822	7,309	7,309
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6,700	6,700	6,822	6,822	6,822	6,822	7,309	7,309
9,137	9,137	9,137	9,137	9,137	9,137	9,137	9,137
2,437	2,437	2,315	2,315	2,315	2,315	1,828	1,828
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,437	2,437	2,315	2,315	2,315	2,315	1,828	1,828
2,437	2,437	2,315	2,315	2,000	2,000	1,000	1,000
0	0	0	0	315	315	828	828

PHOSPHORUS FACILITY SUMMARY

Onancock
 EASTERN SHORE Trading Basin



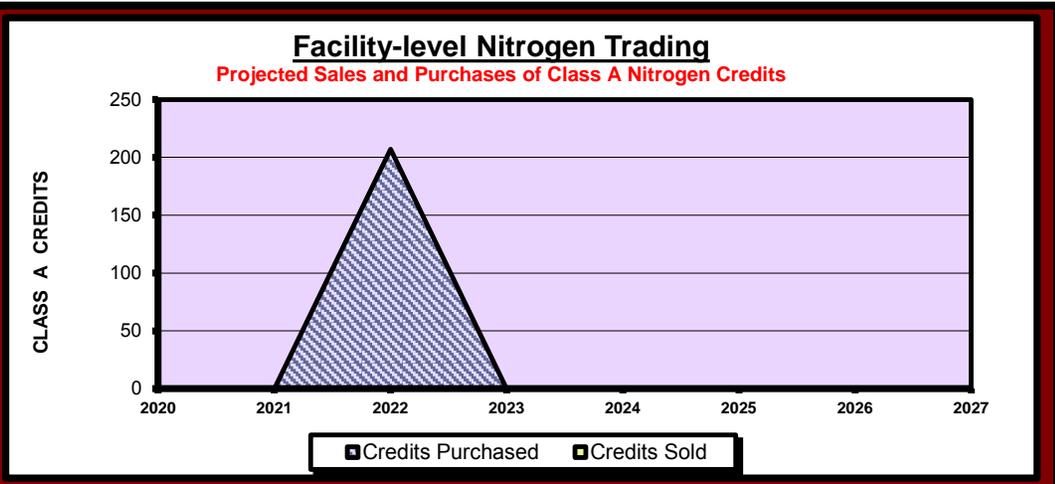
Loading & Credit Summary

Design Flow (mgd)	0.75
Projected Flow (mgd)	0.55
Projected Avg. Annual Concentration (mg/L)	0.30
Discharged Load (end of pipe)	503
Delivery Factor	0.99
Expected Load	497
Delivered WLA	678
Expected Credits (delivered)	181
Transfers In (Out) within Owner Bubble	0
Transfers In (Out) from Private Exchange	0
WQIF-Held Credits	0
Expected Net Credits	181
Class A Credit Sales (Purchases)	181
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
0.55	0.55	0.56	0.56	0.56	0.56	0.60	0.60
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
503	503	512	512	512	512	548	548
0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
497	503	512	512	512	512	548	548
678	685	685	685	685	685	685	685
181	182	173	173	173	173	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
181	182	173	173	173	173	137	137
181	182	173	173	100	100	100	100
0	0	0	0	73	73	37	37

NITROGEN FACILITY SUMMARY

Shore Health Services
EASTERN SHORE Trading Basin



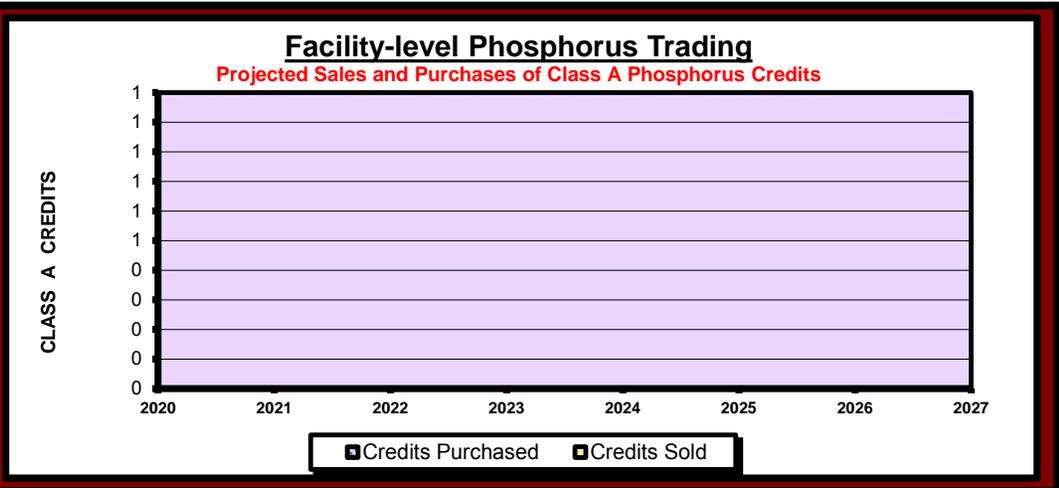
Loading & Credit Summary

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

2020	2021	2022	2023	2024	2025	2026	2027
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
16.20	16.20	19.50	16.20	16.20	16.20	16.20	16.20
1,135	1,135	1,425	1,135	1,135	1,135	1,135	1,135
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1,135	1,135	1,425	1,135	1,135	1,135	1,135	1,135
1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218
83	83	(207)	83	83	83	83	83
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
83	83	(207)	83	83	83	83	83
0	0	(207)	0	0	0	0	0
83	83	0	83	83	83	83	83

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

2020	2021	2022	2023	2024	2025	2026	2027
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	0.89	1.18	1.18	1.18	1.18	1.18
55	55	65	83	83	83	83	83
0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
52	55	65	83	83	83	83	83
87	91	91	91	91	91	91	91
35	36	26	8	8	8	8	8
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	36	26	8	8	8	8	8
0	0	0	0	0	0	0	0
35	36	26	8	8	8	8	8

NITROGEN FACILITY SUMMARY

Tangier Island
EASTERN SHORE Trading Basin



Loading & Credit Summary

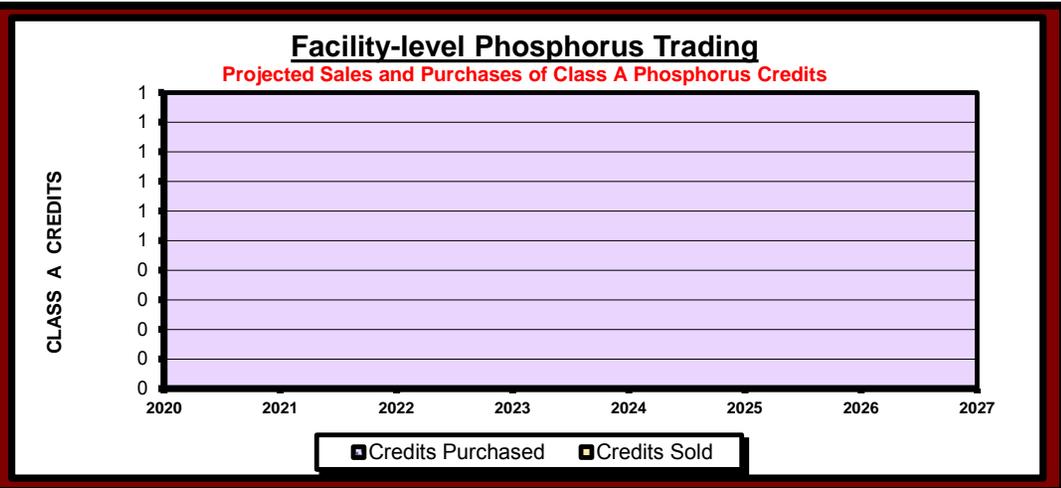
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	12.00	12.00	12.00	12.00	11.00	11.00	11.00	11.00
Discharged Load (end of pipe)	2,193	2,193	2,193	2,193	2,010	2,010	2,010	2,010
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	2,193	2,193	2,193	2,193	2,010	2,010	2,010	2,010
Delivered WLA	1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218
Expected Credits (delivered)	(975)	(975)	(975)	(975)	(792)	(792)	(792)	(792)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	975	975	975	975	792	792	792	792
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							

2020	2021	2022	2023	2024	2025	2026	2027
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	11.00	11.00	11.00	11.00
2,193	2,193	2,193	2,193	2,010	2,010	2,010	2,010
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2,193	2,193	2,193	2,193	2,010	2,010	2,010	2,010
1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218
(975)	(975)	(975)	(975)	(792)	(792)	(792)	(792)
0	0	0	0	0	0	0	0
975	975	975	975	792	792	792	792
0	0	0	0	0	0	0	0
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 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*	229
WQIF-Held Credits	0
Expected Net Credits	0
Class A Credit Sales (Purchases)	0
Expected Class B Credits	0

2020	2021	2022	2023	2024	2025	2026	2027
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	1.60	1.60	1.60	1.60
329	329	329	329	292	292	292	292
0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
316	329	329	329	292	292	292	292
87	91	91	91	91	91	91	91
(229)	(238)	(238)	(238)	(201)	(201)	(201)	(201)
0	0	0	0	0	0	0	0
229	238	238	238	201	201	201	201
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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 private trade with Tyson Foods-Temperanceville

NITROGEN FACILITY SUMMARY

Tyson Foods-Temperanceville
 EASTERN SHORE Trading Basin



Loading & Credit Summary

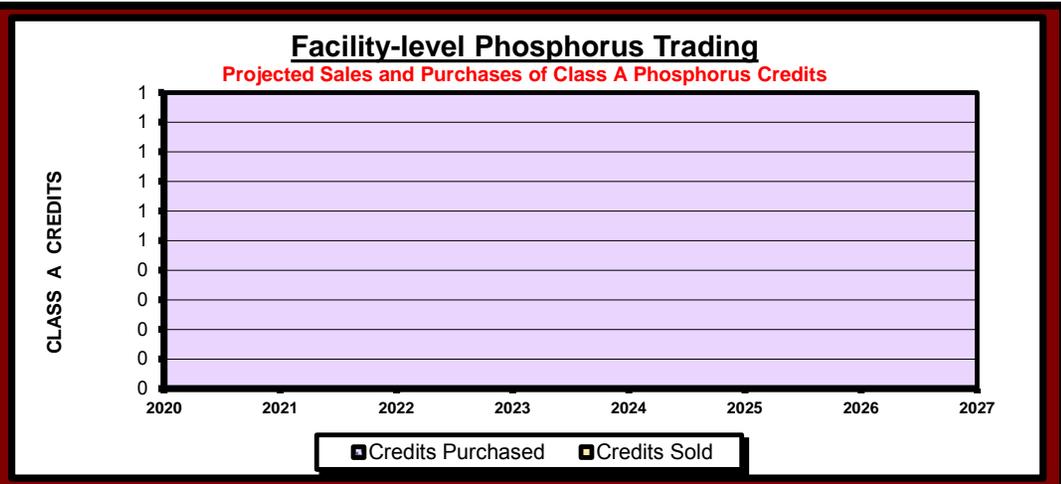
Design Flow (mgd)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Projected Flow (mgd)	1.10	1.00	1.00	1.10	1.20	1.20	1.20	1.20
Projected Avg. Annual Concentration (mg/L)	6.00	6.00	6.00	5.50	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	20,101	18,273	18,273	18,426	14,619	14,619	14,619	14,619
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	20,101	18,273	18,273	18,426	14,619	14,619	14,619	14,619
Delivered WLA	22,842	22,842	22,842	22,842	22,842	22,842	22,842	22,842
Expected Credits (delivered)	2,741	4,569	4,569	4,416	8,223	8,223	8,223	8,223
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(975)	(975)	(975)	(975)	(792)	(792)	(792)	(792)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	1,766	3,594	3,594	3,441	7,431	7,431	7,431	7,431
Class A Credit Sales (Purchases)	0							
Expected Class B Credits	1,766	3,594	3,594	3,441	7,431	7,431	7,431	7,431

2020	2021	2022	2023	2024	2025	2026	2027
Planning Period					Future Estimates (non-binding)		
1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
1.10	1.00	1.00	1.10	1.20	1.20	1.20	1.20
6.00	6.00	6.00	5.50	4.00	4.00	4.00	4.00
20,101	18,273	18,273	18,426	14,619	14,619	14,619	14,619
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20,101	18,273	18,273	18,426	14,619	14,619	14,619	14,619
22,842	22,842	22,842	22,842	22,842	22,842	22,842	22,842
2,741	4,569	4,569	4,416	8,223	8,223	8,223	8,223
0	0	0	0	0	0	0	0
(975)	(975)	(975)	(975)	(792)	(792)	(792)	(792)
0	0	0	0	0	0	0	0
1,766	3,594	3,594	3,441	7,431	7,431	7,431	7,431
0	0	0	0	0	0	0	0
1,766	3,594	3,594	3,441	7,431	7,431	7,431	7,431

* 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*	(229)
WQIF-Held Credits	0
Expected Net Credits	75
Class A Credit Sales (Purchases)	0
Expected Class B Credits	75

2020	2021	2022	2023	2024	2025	2026	2027
<i>Planning Period</i>					<i>Future Estimates (non-binding)</i>		
1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
1.10	1.00	1.00	1.10	1.20	1.20	1.20	1.20
0.25	0.25	0.25	0.25	0.20	0.20	0.20	0.20
838	761	761	838	731	731	731	731
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
838	761	761	838	731	731	731	731
1,142	1,142	1,142	1,142	1,142	1,142	1,142	1,142
304	381	381	304	411	411	411	411
0	0	0	0	0	0	0	0
(229)	(238)	(238)	(238)	(201)	(201)	(201)	(201)
0	0	0	0	0	0	0	0
75	143	143	66	210	210	210	210
0	0	0	0	0	0	0	0
75	143	143	66	210	210	210	210

* 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 2019 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
2023	2024	\$4.04	\$6.08	Firm
2024	2025	\$4.13	\$6.22	Firm

Revision: July 2019 Update

ATTACHMENT C

FACILITY DATA CHECKLIST FOR 2020 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		
	2024	2025	2026	2027
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)	\$ 4.13			
Facility Class A Purchase Cost⁵	\$ -			

PHOSPHORUS Data Checklist	New 5th Year	Estimates Beyond 5-year Planning Period		
	2024	2025	2026	2027
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)	\$ 6.22			
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.

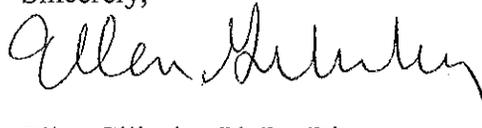
We share your concern with the completion of so many projects on such a tight timeline. However, at this early date it is not possible to determine how quickly individual construction projects will proceed and what the actual capabilities of the upgraded facilities will be. For instance, after a year 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
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

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.

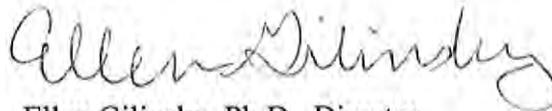
With respect to the Eastern Shore Basin, we share your concern that the basin is not large enough to provide ample trading partners. As you know a legislative change would be required to open up the Eastern Shore market to include purchases from the Potomac and Rappahannock Basins.

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



COMMONWEALTH of VIRGINIA

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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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TDD (804) 698-4021
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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, 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



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

TDD (804) 698-4021

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
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
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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 that reads 'Frederick K. Cunningham'.

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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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

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 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 that reads "Allan Brockenbrough, II".

Allan Brockenbrough, II, 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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www.deq.virginia.gov

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 that reads "Allan Brockenbrough, II".

Allan Brockenbrough, II, P.E.
Manager- Office of VPDES Permits

CC: Mr. Chris Pomeroy, Esq. - AquaLaw



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

P.O. Box 1105, Richmond, Virginia 23218

(800) 592-5482

www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

December 13, 2018

Mr. Frank W. Harksen, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

RE: Exchange Compliance Plan 2018 Annual Update

Dear Mr. Harksen:

We have reviewed the Virginia Nutrient Credit Exchange Association's *Exchange Compliance Plan 2018 Annual Update* and the document is approved for implementation under the Watershed General Permit.

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 black ink, appearing to read "Allan Brockenbrough, II".

Allan Brockenbrough, II, P.E.
Manager- Office of VPDES Permits

CC: Mr. Chris Pomeroy, Esq. - AquaLaw



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

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Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

February 6, 2019

Mr. Frank W. Harksen, President
Virginia Nutrient Credit Exchange Association, Inc.
P.O. Box 51
Richmond, VA 23218-0051

RE: Exchange Compliance Plan 2019 Annual Update

Dear Mr. Harksen:

We have reviewed the Virginia Nutrient Credit Exchange Association's *Exchange Compliance Plan 2019 Annual Update* and the document is approved for implementation under the Watershed General Permit.

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 cursive script, appearing to read "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 most recent major appropriation of Point Source WQIF funding occurred in the 2016-2018 Budget, which appropriated \$59 million to fully meet WQIF funding needs through June 30, 2018, as estimated by DEQ. No additional Point Source WQIF funds were included in the 2018-2020 Budget due to the absence of an immediate need.

In 2019, legislation (HB 1822) was enacted to establish an annual WQIF Needs Assessment to be performed by DEQ in collaboration with the Virginia Association of Municipal Wastewater Agencies (VAMWA). DEQ produced the first Needs Assessment Report in 2019.

HB 1822 also amended the WQIF to provide that the DEQ Director may at any time authorize grants for the design and installation of wastewater conveyance infrastructure that (a) diverts wastewater from one publicly owned treatment works that is eligible for grant funding under this chapter to another publicly owned treatment works that also is eligible for such funding; (b) diverts wastewater to a receiving treatment works that is capable of achieving compliance with its nutrient reduction or ammonia control discharge requirements and results in a net reduction in total phosphorus, total nitrogen, or nitrogen-containing ammonia discharges; and (c) results in a Water Quality Improvement Grant expense being incurred by the DEQ that is the same as or lower than the grant expense the DEQ would incur in funding design and installation of eligible nutrient removal or other applicable treatment technology at such treatment works that would have treated the wastewater in the absence of the diversion project.

In response to these and other developments, Exchange Participants expressed interest in additional WQIF funding for new certain major projects during 2019. In December 2019, the Governor’s Budget Bill (pending) proposed an appropriation of \$120 million in additional Point Source WQIF funding. This funding (and perhaps more) is critical for additional projects in the pipeline. These matters remain pending as of the date of this annual compliance plan update.

APPENDIX D

DEQ Director Letter





COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
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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