Exchange Compliance Plan
2021 Annual Update

Submitted to the
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SECTION 1

Introduction

1.1 Purpose

This Chesapeake Bay Nutrient Credit Exchange Program Compliance Plan 2021 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 2020 Annual Update, which was submitted by The Exchange to the Virginia Department of Environmental Quality ("DEQ") on January 31, 2020 and approved by DEQ on February 6, 2020. 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 2020 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)
  EPA Water Quality Trading Policy to Promote Market-Based Mechanisms for Improving Water Quality (2019)

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)
- Virginia Chesapeake Bay TMDL Phase III Watershed Implementation Plan (2019)

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 and II Watershed Implementation Plans, DEQ has been conducting 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. DEQ presentations during Fall 2020 through and including the State Water Control Board's December 2020 meeting, and the Board's own December 2020 actions, confirms that the James River nitrogen allocations (with Stage 1A and 1B modifications) are consistent with applicable water quality standards.

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 2028). 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 2021 through 2025. 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)
Fairfax-Noman Cole WWTP and City of Fairfax MS4 (Nitrogen/Phosphorus)
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/Lake Arrowhead Complex (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

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)
City of Lynchburg WWTP and City of Lynchburg MS4 (Nitrogen)
City of Richmond WWTP and City of Richmond MS4 (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 Bas
Exchange Compliance Plan

EXHIBIT 2-1
Nitrogen Plan Summary: Potomac-Shenandoah River Basin

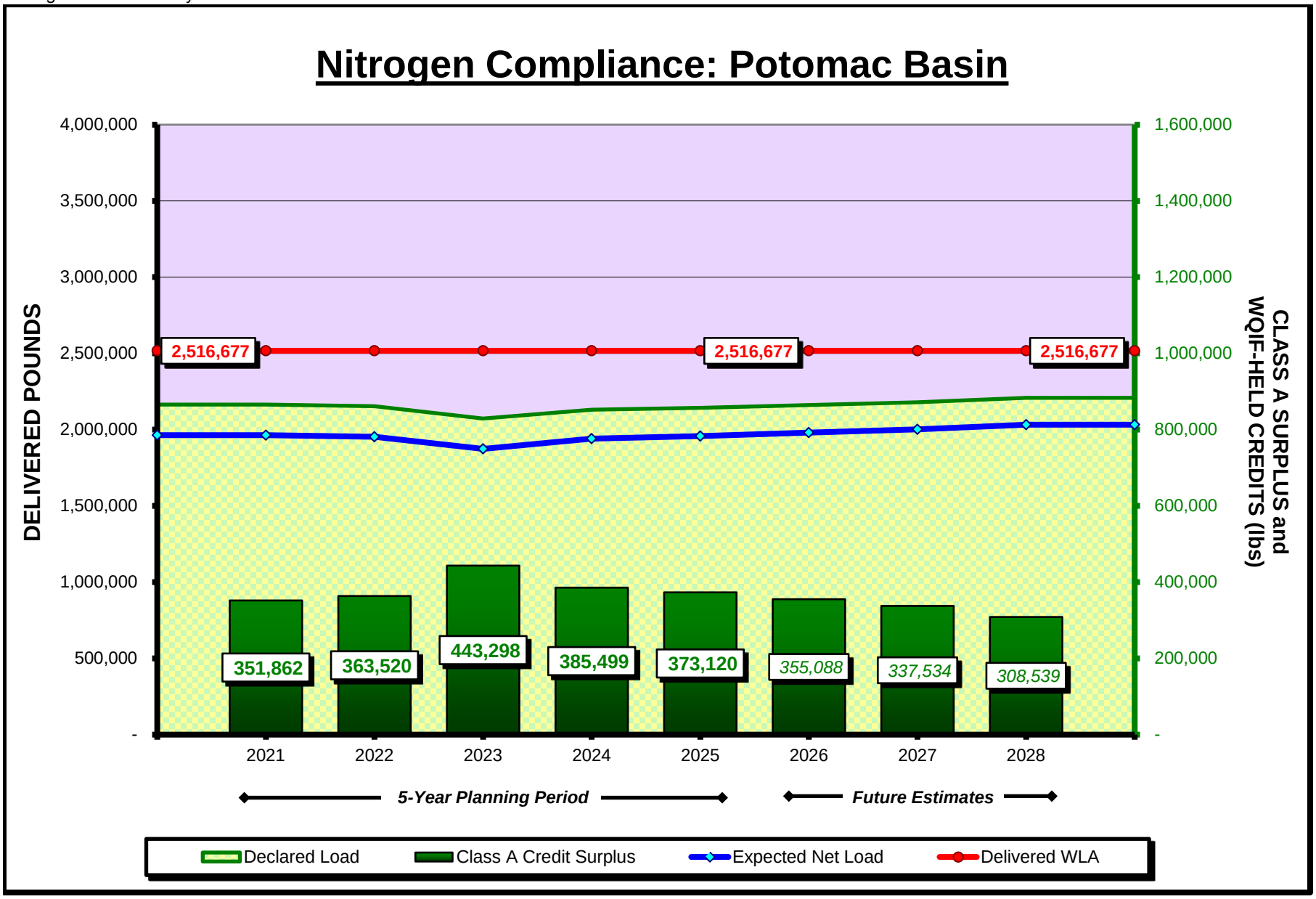


EXHIBIT 2-2
2021 Nitrogen Trading Ledger: Potomac-Shenandoah River Basin

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**	**1,940,558**	**576,119**	**-**	**(2,983)**	**(19,492)**	**553,644**	**359,516**	**(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	69,052	40,832	-	-	-	40,832	40,832	-	-
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)	-
Molson Coors Shenandoah	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.*

EXHIBIT 2-3
2022 Nitrogen Trading Ledger: Potomac-Shenandoah River Basin

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**	**1,930,107**	**586,570**	**-**	**(3,824)**	**(19,492)**	**563,254**	**371,226**	**(7,706)**	**199,734**
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	2,851	1,584	-	-	-	1,584	1,300	-	284
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)	-
Molson Coors Shenandoah	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.*

EXHIBIT 2-4
2023 Nitrogen Trading Ledger: Potomac-Shenandoah River Basin

POTOMAC 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:	$ 0.06	$ 4.04	$ 0.01
The Exchange (group)	**2,516,677**	**1,847,910**	**668,767**	**-**	**(5,655)**	**(19,492)**	**643,620**		**451,056**	**(7,758)**	**200,322**
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	2,914	1,521	-	-	-	1,521		1,450	-	71
Broadway Regional	3,538	3,134	404	-	-	-	404		-	-	404
Fairfax Co-Noman Cole	612,158	402,653	209,505	-	(1,155)	-	208,350		208,350	-	-
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)	-
Molson Coors Shenandoah	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.*

EXHIBIT 2-5
2024 Nitrogen Trading Ledger: Potomac-Shenandoah River Basin

POTOMAC Basin: Nitrogen 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: $ 0.07	$ 4.13	$ 0.01
The Exchange (group)	**2,516,677**	**1,911,366**	**605,311**	**-**	**(10,655)**	**(19,492)**	**575,164**	**393,308**	**(7,809)**	**189,665**
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	2,914	1,521	-	-	-	1,521	1,450	-	71
Broadway Regional	3,538	3,172	366	-	-	-	366	-	-	366
Fairfax Co-Noman Cole	612,158	438,561	173,597	-	(1,155)	-	172,442	172,442	-	-
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	63,196	46,688	-	-	-	46,688	46,688	-	-
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)	-
Molson Coors Shenandoah	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.*

EXHIBIT 2-6
2025 Nitrogen Trading Ledger: Potomac-Shenandoah River Basin

POTOMAC Basin: Nitrogen Credit Ledger

Compliance Year:	2025	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	$ 4.21	$ 0.01
The Exchange (group)	**2,516,677**	**1,927,203**	**589,474**	**-**	**(10,446)**	**(19,492)**	**559,536**		**380,981**	**(7,861)**	**186,416**
ACSA-Fishersville	2,924	1,243	1,681	(1,400)	-	-	281		281	-	-
ACSA-Greenville	854	418	436	(151)	-	-	285		285	-	-
ACSA-Harriston	626	156	470	(80)	-	-	390		390	-	-
ACSA-Middle River	4,970	2,593	2,377	-	-	-	2,377		2,377	-	-
ACSA-Mt. Sidney	513	751	(238)	238	-	-	-		-	-	-
ACSA-Stuarts Draft	1,462	367	1,095	(507)	-	-	588		588	-	-
ACSA-Vesper View	626	506	120	(50)	-	-	70		70	-	-
ACSA-Weyers Cave	914	2,864	(1,950)	1,950	-	-	-		-	-	-
Alexandria Renew Ent.	493,381	392,877	100,504	-	-	-	100,504		-	-	100,504
Arlington Co.	365,284	237,554	127,730	-	(8,117)	-	119,613		119,613	-	-
Berryville	4,435	2,977	1,458	-	-	-	1,458		1,400	-	58
Broadway Regional	3,538	3,302	236	-	-	-	236		-	-	236
Fairfax Co-Noman Cole	612,158	447,697	164,461	-	(1,155)	-	163,306		163,306	-	-
FCWSA-Vint Hill	579	317	262	-	-	-	262		-	-	262
Front Royal	24,365	20,877	3,488	-	-	-	3,488		3,300	-	188
FWSA-Opequon	25,589	15,158	10,431	-	(59)	-	10,372		-	-	10,372
FWSA-Parkins Mill	12,791	6,620	6,171	-	-	-	6,171		-	-	6,171
HRRSA-North River	36,432	25,873	10,559	-	(1,115)	-	9,444		-	-	9,444
KGCSA-Dahlgren S.D.	9,137	2,235	6,902	(213)	-	-	6,689		6,689	-	-
KGCSA-Fairview Beach	1,827	369	1,458	-	-	-	1,458		1,458	-	-
KGCSA-Purkins Corner	1,096	1,309	(213)	213	-	-	-		-	-	-
Leesburg	77,966	31,089	46,877	-	-	(19,492)	27,385		-	-	27,385
Loudoun Water- Broad Run	109,884	75,083	34,801	-	-	-	34,801		34,801	-	-
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)	-
Molson Coors Shenandoah	12,060	12,060	-	-	-	-	-		-	-	-
Mt. Jackson	2,132	1,706	426	-	-	-	426		-	-	426
Purcellville	8,406	5,604	2,802	-	-	-	2,802		1,401	-	1,401
PWCSA-HL Mooney	219,280	185,018	34,262	-	-	-	34,262		23,124	-	11,138
Stafford Co-Aquia	73,093	61,855	11,238	-	-	-	11,238		3,385	-	7,853
Stoney Creek	2,065	1,599	466	-	-	-	466		-	-	466
Strasburg	4,059	5,488	(1,429)	-	-	-	(1,429)		-	(1,429)	-
UOSA	302,607	302,484	123	-	-	-	123		-	-	123
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.*

EXHIBIT 2-7
Phosphorus Plan Summary: Potomac-Shenandoah River Basin

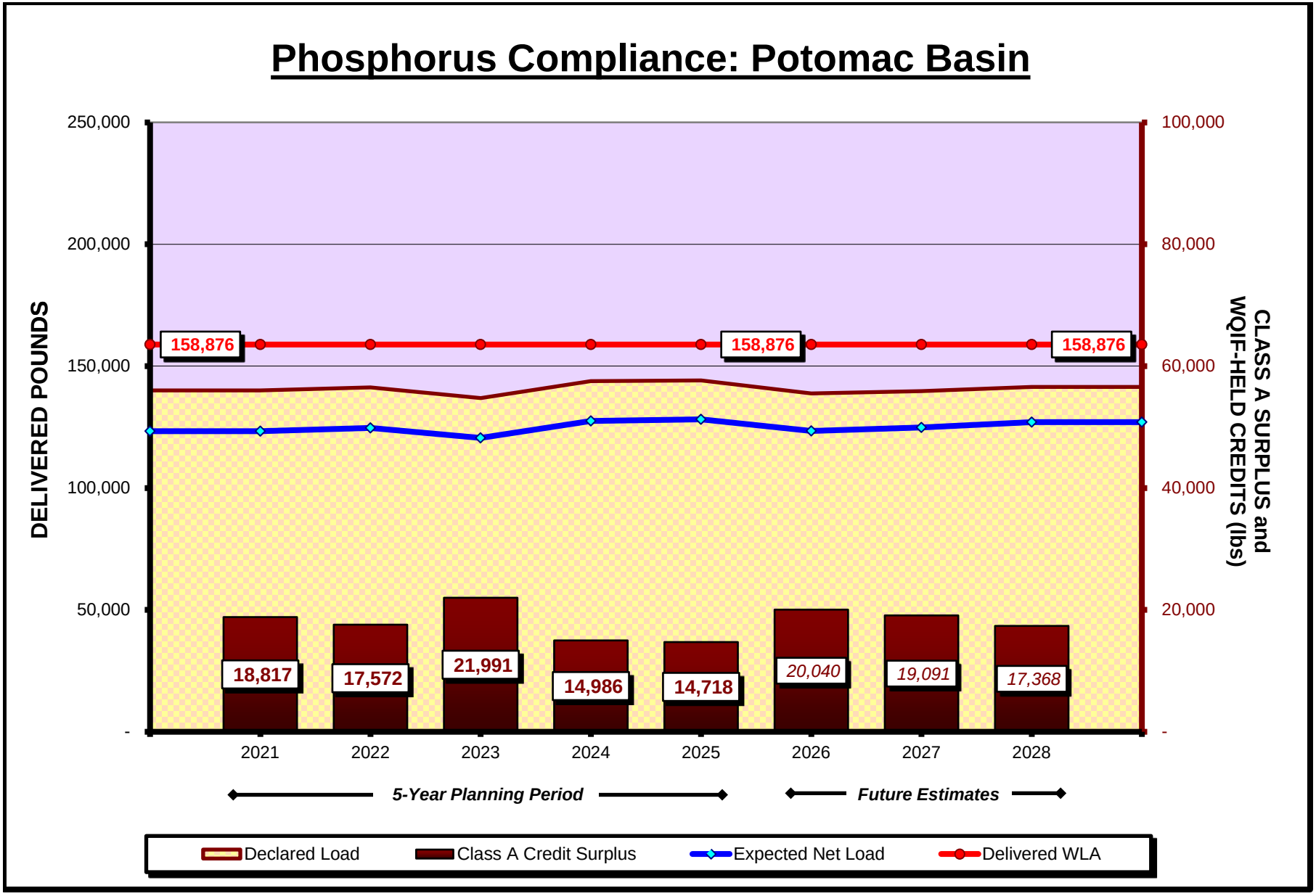


EXHIBIT 2-8
2021 Phosphorus Trading Ledger: Potomac-Shenandoah River Basin

POTOMAC Basin: Phosphorus Credit Ledger

Compliance Year:	2021	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)		
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits	Class A Sales	Class A* Purchases	Class B Sales**
								PRICE: $ 1.07	$ 5.82	$ 0.16
The Exchange (group)	**158,876**	**121,561**	**37,315**	**-**	**(640)**	**(1,074)**	**35,601**	**23,663**	**(4,846)**	**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	1,131	444	-	-	-	444	703	-	-
Luray	687	283	404	-	(1)	-	403	391	-	12
Massanutten PSC	644	326	318	-	-	-	318	-	-	318
Merck	515	4,724	(4,209)	-	-	-	(4,209)	-	(4,209)	-
Molson Coors Shenandoah	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.*

EXHIBIT 2-9
2022 Phosphorus Trading Ledger: Potomac-Shenandoah River Basin

POTOMAC 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: $ 1.32	$ 5.93	$ 0.20
The Exchange (group)	**158,876**	**122,880**	**35,996**	**-**	**(686)**	**(1,074)**	**34,236**	**23,369**	**(5,797)**	**16,664**
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	193	108	-	-	-	108	90	-	18
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	5,668	(5,153)	-	-	-	(5,153)	-	(5,153)	-
Molson Coors Shenandoah	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.*

EXHIBIT 2-10
2023 Phosphorus Trading Ledger: Potomac-Shenandoah River Basin

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	Class B Sales**
								PRICE:	$ 1.28	$ 6.08	$ 0.25
The Exchange (group)	**158,876**	**119,161**	**39,715**	**-**	**(316)**	**(1,074)**	**38,325**		**28,723**	**(6,732)**	**16,334**
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	198	103	-	-	-	103		85	-	18
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	6,596	(6,081)	-	-	-	(6,081)		-	(6,081)	-
Molson Coors Shenandoah	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.*

EXHIBIT 2-11
2024 Phosphorus Trading Ledger: Potomac-Shenandoah River Basin

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	Class B Sales**
								PRICE:	$ 2.04	$ 6.22	$ 0.32
The Exchange (group)	**158,876**	**125,439**	**33,437**	**-**	**(1,016)**	**(1,074)**	**31,347**		**23,601**	**(8,615)**	**16,361**
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	198	103	-	-	-	103		85	-	18
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	8,468	(7,953)	-	-	-	(7,953)		-	(7,953)	-
Molson Coors Shenandoah	1,933	1,932	1	-	-	-	1		-	-	1
Mt. Jackson	301	240	61	-	-	-	61		-	-	61
Purcellville	644	550	94	-	-	-	94		47	-	47
PWCSA-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.*

EXHIBIT 2-12
2025 Phosphorus Trading Ledger: Potomac-Shenandoah River Basin

POTOMAC Basin: Phosphorus Credit Ledger

Compliance Year:	2025	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:	$ 2.10	$ 6.34	$ 0.34
The Exchange (group)	**158,876**	**126,129**	**32,747**	**-**	**(990)**	**(1,074)**	**30,683**		**23,341**	**(8,623)**	**15,965**
ACSA-Fishersville	1,718	608	1,110	(500)	-	-	610		610	-	-
ACSA-Greenville	894	518	376	(376)	-	-	-		-	-	-
ACSA-Harriston	358	399	(41)	41	-	-	-		-	-	-
ACSA-Middle River	2,920	1,693	1,227	-	-	-	1,227		1,227	-	-
ACSA-Mt. Sidney	537	699	(162)	162	-	-	-		-	-	-
ACSA-Stuarts Draft	1,718	480	1,238	(655)	-	-	583		583	-	-
ACSA-Vesper View	358	389	(31)	31	-	-	-		-	-	-
ACSA-Weyers Cave	215	1,512	(1,297)	1,297	-	-	-		-	-	-
Alexandria Renew Ent.	29,603	23,573	6,030	-	-	-	6,030		-	-	6,030
Arlington Co.	21,925	14,253	7,672	-	(916)	-	6,756		6,756	-	-
Berryville	301	202	99	-	-	-	99		80	-	19
Broadway Regional	1,039	970	69	-	-	-	69		-	-	69
Fairfax Co-Noman Cole	36,729	26,862	9,867	-	-	-	9,867		9,867	-	-
FCWSA-Vint Hill	148	81	67	-	-	-	67		-	-	67
Front Royal	1,718	1,962	(244)	-	-	-	(244)		-	(244)	-
FWSA-Opequon	5,411	3,392	2,019	-	-	-	2,019		-	-	2,019
FWSA-Parkins Mill	2,147	1,482	665	-	-	-	665		-	-	665
HRRSA-North River	9,200	6,573	2,627	-	(73)	-	2,554		-	-	2,554
KGCSA-Dahlgren S.D.	914	235	679	-	-	-	679		679	-	-
KGCSA-Fairview Beach	183	20	163	-	-	-	163		163	-	-
KGCSA-Purkins Corner	110	63	47	-	-	-	47		47	-	-
Leesburg	4,294	2,511	1,783	-	-	(1,074)	709		-	-	709
Loudoun Water- Broad Run	1,575	1,230	345	-	-	-	345		345	-	-
Luray	687	296	391	-	(1)	-	390		390	-	-
Massanutten PSC	644	326	318	-	-	-	318		-	-	318
Merck	515	8,468	(7,953)	-	-	-	(7,953)		-	(7,953)	-
Molson Coors Shenandoah	1,933	1,932	1	-	-	-	1		-	-	1
Mt. Jackson	301	240	61	-	-	-	61		-	-	61
Purcellville	644	429	215	-	-	-	215		107	-	108
PWCSA-HL Mooney	13,157	11,101	2,056	-	-	-	2,056		1,479	-	577
Stafford Co-Aquia	4,386	3,711	675	-	-	-	675		-	-	675
Stoney Creek	313	401	(88)	-	-	-	(88)		-	(88)	-
Strasburg	421	759	(338)	-	-	-	(338)		-	(338)	-
UOSA	5,098	3,545	1,553	-	-	-	1,553		-	-	1,553
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.*

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.

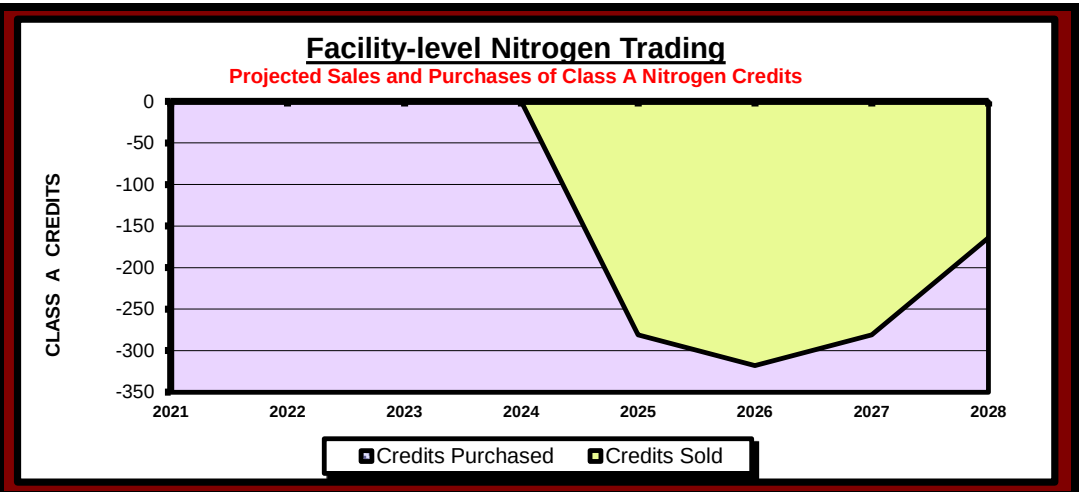
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Fishersville	(1,715)	(1,755)	(1,747)	(1,681)	(1,400)	(1,327)	(1,327)	(1,400)
Greenville	(425)	(517)	-	-	(151)	(151)	(151)	(151)
Harriston	-	(56)	-	-	(80)	(80)	(80)	(50)
Middle River	-	-	-	-	-	-	-	-
Mt. Sidney	351	382	203	164	238	238	238	238
Stuarts Draft	(1,076)	(1,073)	(811)	(384)	(507)	(667)	(667)	(624)
Vesper View	-	-	-	-	(50)	(50)	(50)	(50)
Weyers Cave	2,865	3,019	2,355	1,901	1,950	2,037	2,037	2,037
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Fishersville	-	-	-	-	281	318	281	164
Greenville	126	-	503	471	285	285	285	285
Harriston	490	419	522	470	390	364	364	394
Middle River	2,502	2,393	2,492	2,355	2,377	2,295	2,218	2,136
Mt. Sidney	-	-	-	-	-	-	-	-
Stuarts Draft	-	-	281	700	588	417	406	438
Vesper View	288	266	192	157	70	70	70	70
Weyers Cave	-	-	-	-	-	-	-	-
Expected Net Credits	**3,406**	**3,078**	**3,990**	**4,153**	**3,991**	**3,749**	**3,624**	**3,487**
Class A Sales (Purchases)	**3,406**	**3,078**	**3,990**	**4,153**	**3,991**	**3,749**	**3,624**	**3,487**
Expected Class B Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Fishersville	(1,126)	(1,145)	(1,142)	(1,110)	(500)	(562)	(562)	(562)
Greenville	(279)	-	-	-	(376)	(376)	(376)	(376)
Harriston	-	-	-	67	41	108	108	108
Middle River	-	-	-	-	-	-	-	-
Mt. Sidney	279	309	80	66	162	162	162	162
Stuarts Draft	(46)	(393)	(153)	(184)	(655)	(705)	(705)	(705)
Vesper View	-	-	-	16	31	31	31	31
Weyers Cave	1,172	1,229	1,215	1,145	1,297	1,342	1,342	1,342
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Fishersville	-	-	-	-	610	530	512	490
Greenville	228	465	482	433	-	-	-	-
Harriston	131	106	104	-	-	-	-	-
Middle River	1,309	1,238	1,303	1,213	1,227	1,174	1,124	1,070
Mt. Sidney	-	-	-	-	-	-	-	-
Stuarts Draft	1,169	817	1,082	1,040	583	519	505	491
Vesper View	61	41	-	-	-	-	-	-
Weyers Cave	-	-	-	-	-	-	-	-
Expected Net Credits	**2,898**	**2,667**	**2,971**	**2,686**	**2,420**	**2,223**	**2,141**	**2,051**
Class A Sales (Purchases)	**2,898**	**2,667**	**2,971**	**2,686**	**2,420**	**2,223**	**2,141**	**2,051**
Expected Class B Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NITROGEN FACILITY SUMMARY

ACSA-Fishersville

POTOMAC Trading Basin

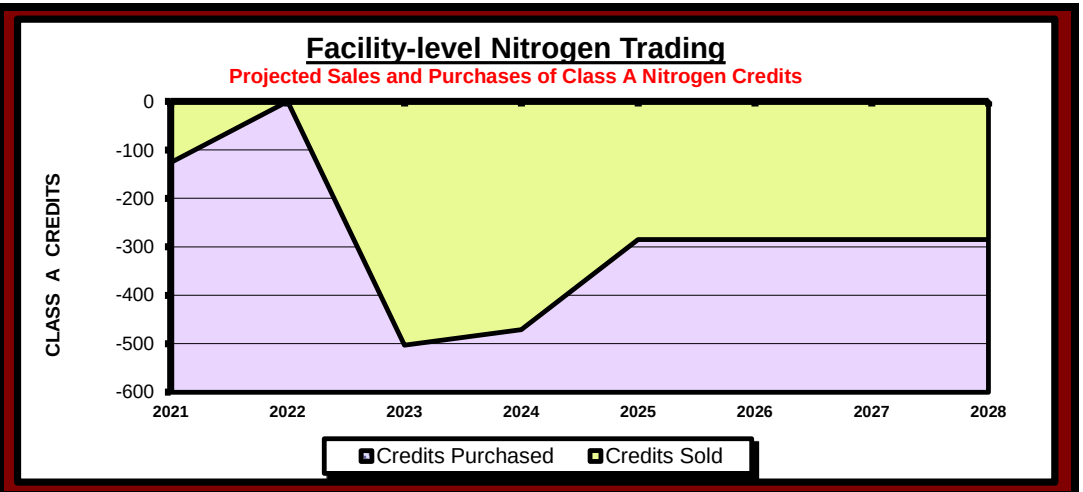


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Projected Flow (mgd)	1.65	1.60	1.61	1.70	1.70	1.75	1.80	1.86
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	20,155	19,492	19,613	20,710	20,710	21,319	21,928	22,659
Delivery Factor	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Expected Load	1,209	1,169	1,177	1,243	1,243	1,279	1,316	1,360
Delivered WLA	2,924	2,924	2,924	2,924	2,924	2,924	2,924	2,924
Expected Credits (delivered)	1,715	1,755	1,747	1,681	1,681	1,645	1,608	1,564
Transfers In (Out) within Owner Bubble	(1,715)	(1,755)	(1,747)	(1,681)	(1,400)	(1,327)	(1,327)	(1,400)
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**	**281**	**318**	**281**	**164**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**281**	**318**	**281**	**164**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

ACSA-Greenville

POTOMAC Trading Basin

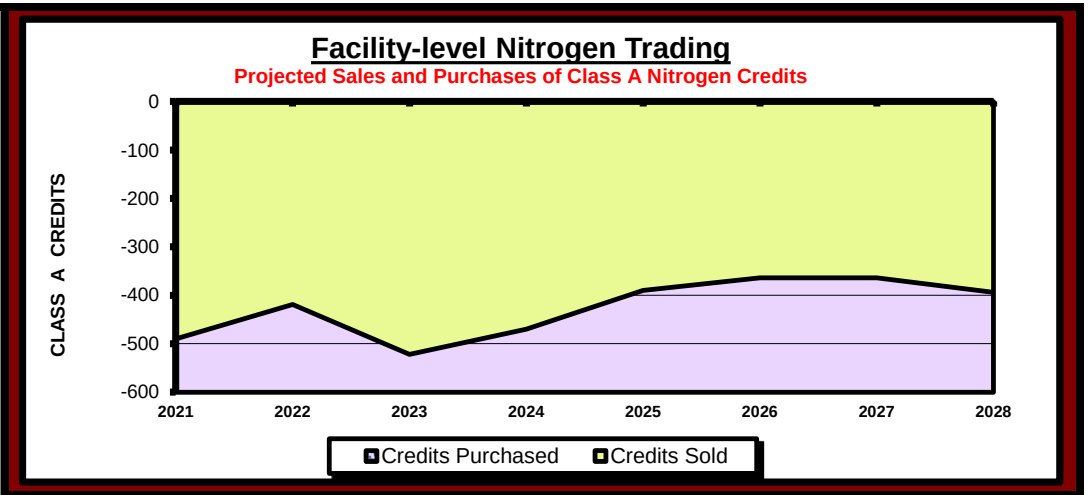


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Projected Flow (mgd)	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	36.83	36.83	38.41	38.06	38.12	38.12	38.12	38.12
Discharged Load (end of pipe)	5,050	5,608	5,849	6,375	6,966	6,966	6,966	6,966
Delivery Factor	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Expected Load	303	337	351	383	418	418	418	418
Delivered WLA	854	854	854	854	854	854	854	854
Expected Credits (delivered)	551	517	503	471	436	436	436	436
Transfers In (Out) within Owner Bubble	(425)	(517)	0	0	(151)	(151)	(151)	(151)
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	**126**	**0**	**503**	**471**	**285**	**285**	**285**	**285**
Class A Credit Sales (Purchases)	**126**	**0**	**503**	**471**	**285**	**285**	**285**	**285**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

ACSA-Harriston

POTOMAC Trading Basin

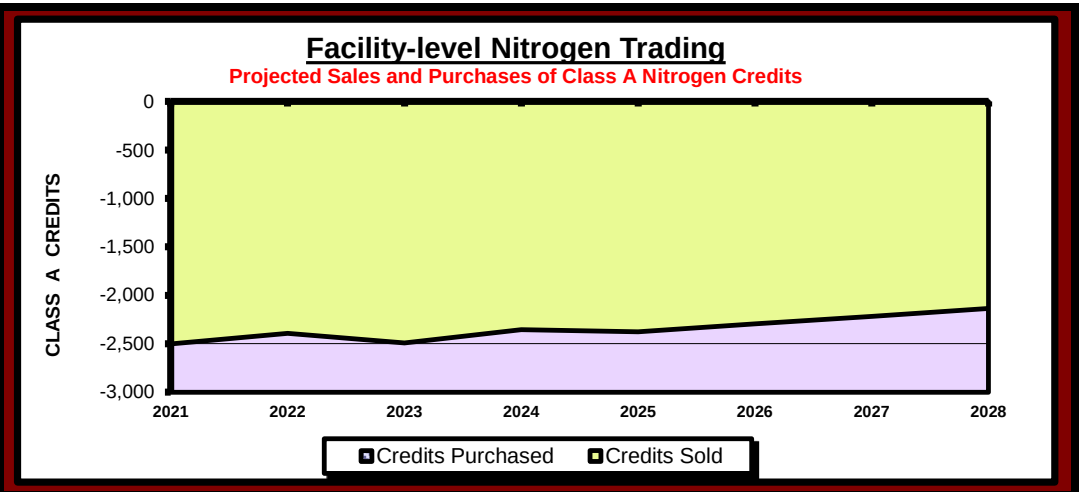


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.05	0.05	0.04	0.06	0.06	0.07	0.07	0.07
Projected Avg. Annual Concentration (mg/L)	9.00	9.00	7.78	7.77	7.75	7.75	7.75	7.75
Discharged Load (end of pipe)	1,234	1,371	948	1,420	1,416	1,652	1,652	1,652
Delivery Factor	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Expected Load	136	151	104	156	156	182	182	182
Delivered WLA	626	626	626	626	626	626	626	626
Expected Credits (delivered)	490	475	522	470	470	444	444	444
Transfers In (Out) within Owner Bubble	0	(56)	0	0	(80)	(80)	(80)	(50)
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	**490**	**419**	**522**	**470**	**390**	**364**	**364**	**394**
Class A Credit Sales (Purchases)	**490**	**419**	**522**	**470**	**390**	**364**	**364**	**394**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

ACSA-Middle River

POTOMAC Trading Basin

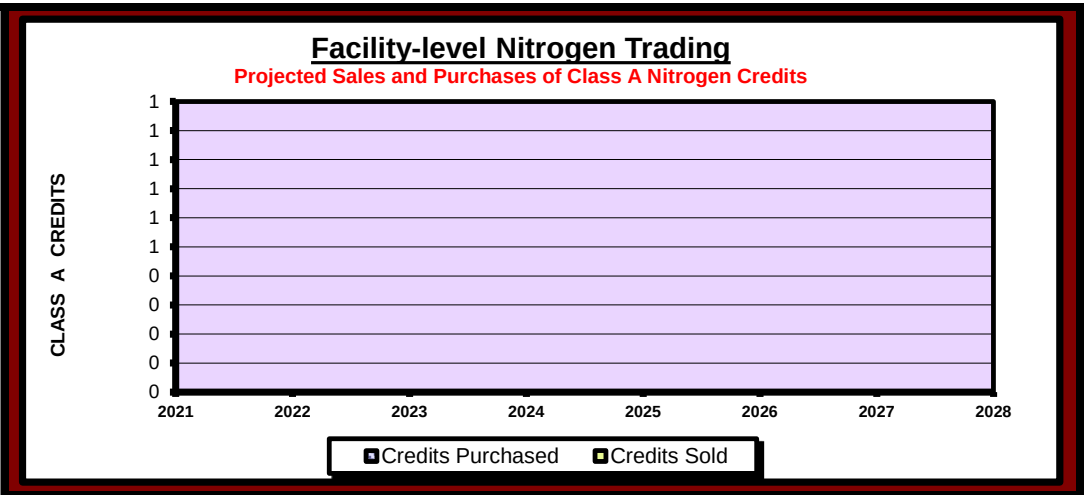


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80
Projected Flow (mgd)	4.50	4.70	4.52	4.77	4.73	4.88	5.02	5.17
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	41,134	42,942	41,298	43,582	43,216	44,587	45,866	47,237
Delivery Factor	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Expected Load	2,468	2,577	2,478	2,615	2,593	2,675	2,752	2,834
Delivered WLA	4,970	4,970	4,970	4,970	4,970	4,970	4,970	4,970
Expected Credits (delivered)	2,502	2,393	2,492	2,355	2,377	2,295	2,218	2,136
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	**2,502**	**2,393**	**2,492**	**2,355**	**2,377**	**2,295**	**2,218**	**2,136**
Class A Credit Sales (Purchases)	**2,502**	**2,393**	**2,492**	**2,355**	**2,377**	**2,295**	**2,218**	**2,136**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

ACSA-Mt. Sidney

POTOMAC Trading Basin

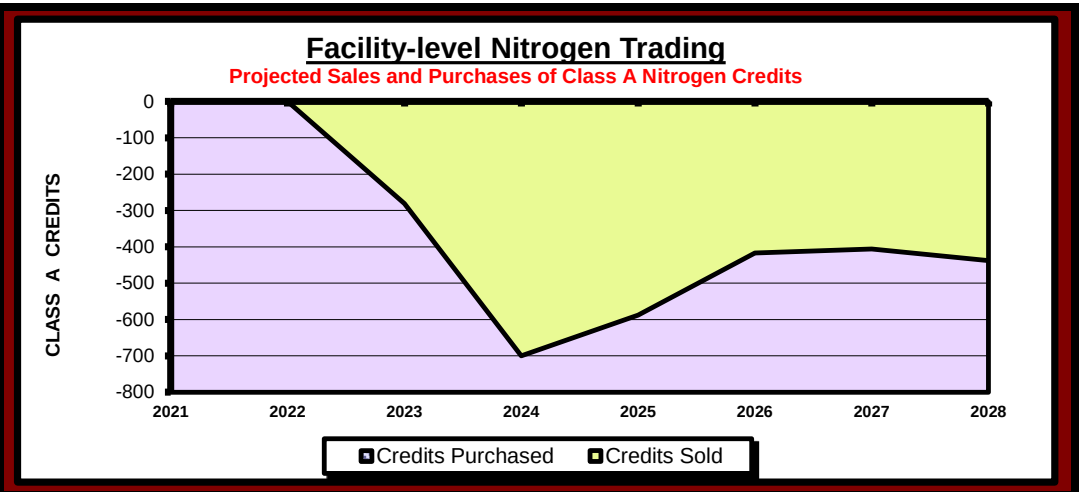


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Projected Flow (mgd)	0.14	0.14	0.11	0.11	0.12	0.12	0.12	0.12
Projected Avg. Annual Concentration (mg/L)	35.00	35.00	35.63	33.67	34.24	34.24	34.24	34.24
Discharged Load (end of pipe)	14,397	14,923	11,936	11,280	12,514	12,514	12,514	12,514
Delivery Factor	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Expected Load	864	895	716	677	751	751	751	751
Delivered WLA	513	513	513	513	513	513	513	513
Expected Credits (delivered)	(351)	(382)	(203)	(164)	(238)	(238)	(238)	(238)
Transfers In (Out) within Owner Bubble	351	382	203	164	238	238	238	238
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**

NITROGEN FACILITY SUMMARY

ACSA-Stuarts Draft

POTOMAC Trading Basin

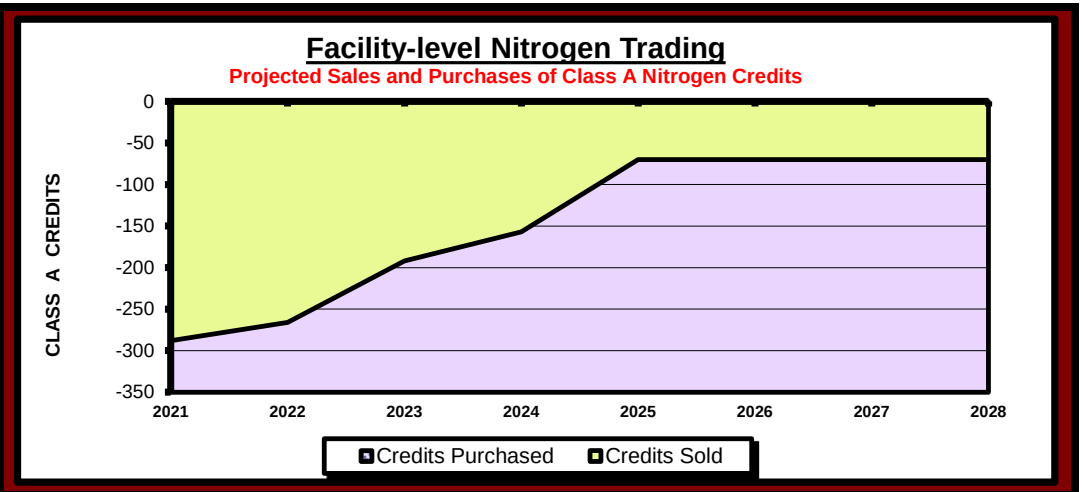


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Projected Flow (mgd)	1.41	1.42	1.35	1.38	1.34	1.38	1.42	1.46
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	12,854	12,974	12,335	12,609	12,243	12,609	12,974	13,340
Delivery Factor	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Expected Load	386	389	370	378	367	378	389	400
Delivered WLA	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462
Expected Credits (delivered)	1,076	1,073	1,092	1,084	1,095	1,084	1,073	1,062
Transfers In (Out) within Owner Bubble	(1,076)	(1,073)	(811)	(384)	(507)	(667)	(667)	(624)
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**	**281**	**700**	**588**	**417**	**406**	**438**
Class A Credit Sales (Purchases)	**0**	**0**	**281**	**700**	**588**	**417**	**406**	**438**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

ACSA-Vesper View

POTOMAC Trading Basin

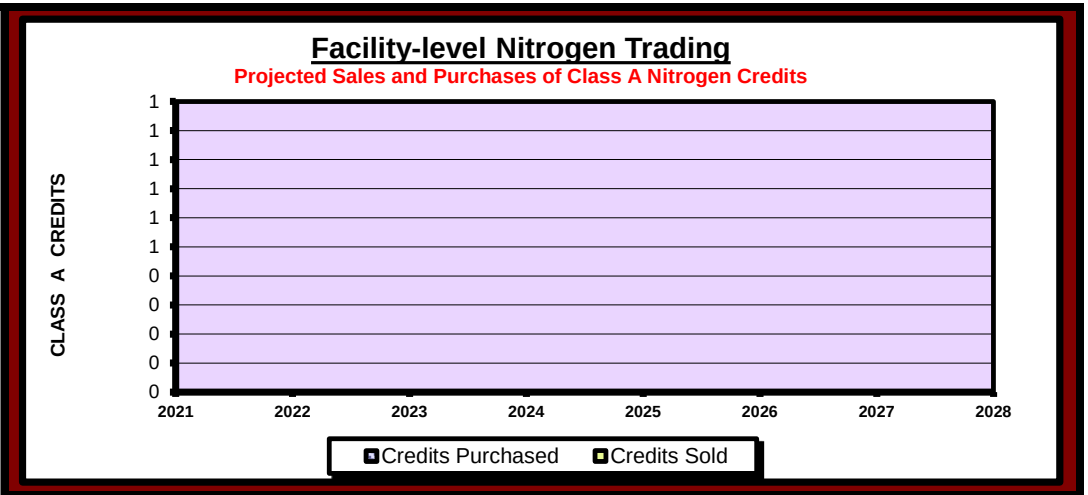


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	17.92	17.92	21.57	23.31	25.19	25.19	25.19	25.19
Discharged Load (end of pipe)	3,071	3,275	3,942	4,260	4,603	4,603	4,603	4,603
Delivery Factor	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Expected Load	338	360	434	469	506	506	506	506
Delivered WLA	626	626	626	626	626	626	626	626
Expected Credits (delivered)	288	266	192	157	120	120	120	120
Transfers In (Out) within Owner Bubble	0	0	0	0	(50)	(50)	(50)	(50)
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	**288**	**266**	**192**	**157**	**70**	**70**	**70**	**70**
Class A Credit Sales (Purchases)	**288**	**266**	**192**	**157**	**70**	**70**	**70**	**70**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

ACSA-Weyers Cave

POTOMAC Trading Basin

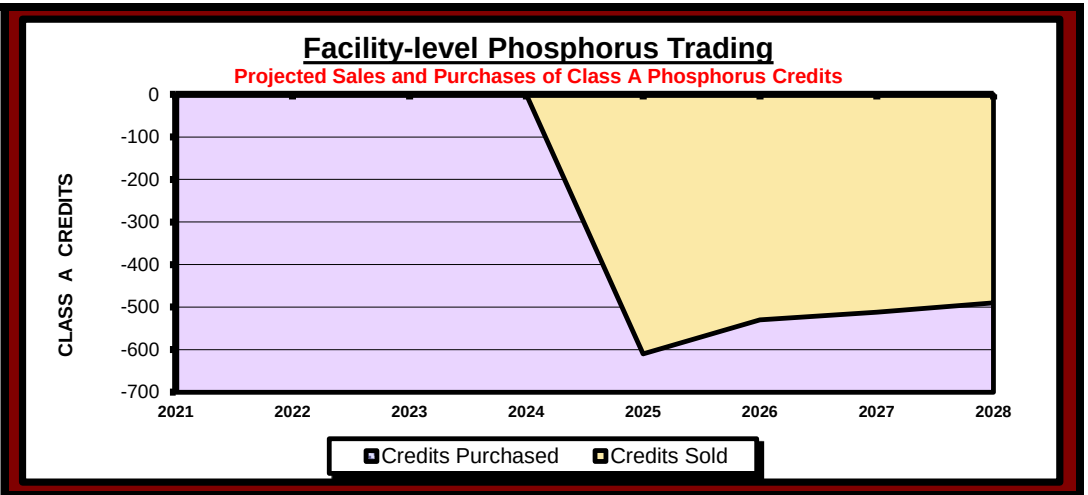


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Projected Flow (mgd)	0.39	0.41	0.37	0.33	0.33	0.34	0.34	0.34
Projected Avg. Annual Concentration (mg/L)	21.00	21.00	19.34	18.67	19.00	19.00	19.00	19.00
Discharged Load (end of pipe)	25,194	26,222	21,793	18,764	19,096	19,674	19,674	19,674
Delivery Factor	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Expected Load	3,779	3,933	3,269	2,815	2,864	2,951	2,951	2,951
Delivered WLA	914	914	914	914	914	914	914	914
Expected Credits (delivered)	(2,865)	(3,019)	(2,355)	(1,901)	(1,950)	(2,037)	(2,037)	(2,037)
Transfers In (Out) within Owner Bubble	2,865	3,019	2,355	1,901	1,950	2,037	2,037	2,037
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

ACSA-Fishersville

POTOMAC Trading Basin

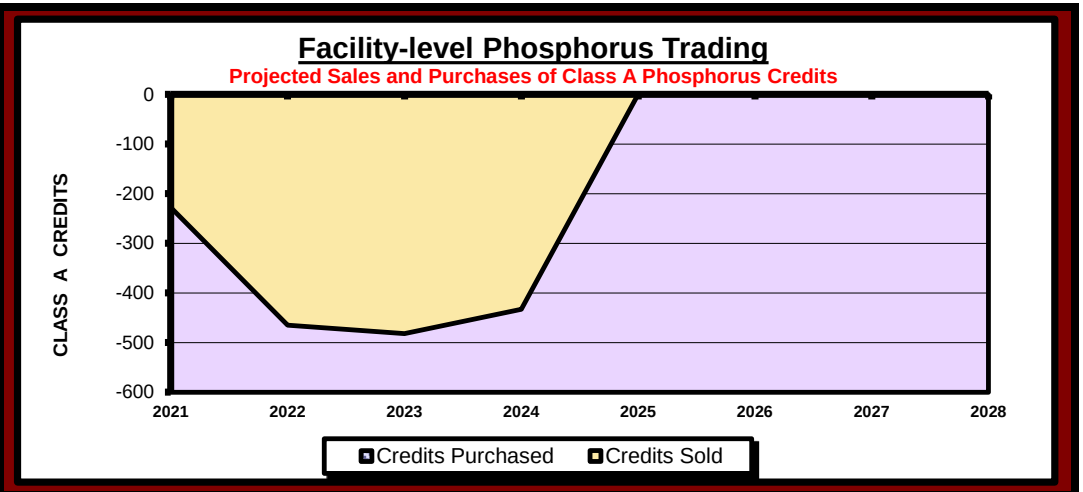


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Projected Flow (mgd)	1.65	1.60	1.61	1.70	1.70	1.75	1.80	1.86
Projected Avg. Annual Concentration (mg/L)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Discharged Load (end of pipe)	1,260	1,218	1,226	1,294	1,294	1,332	1,371	1,416
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	592	573	576	608	608	626	644	666
Delivered WLA	1,718	1,718	1,718	1,718	1,718	1,718	1,718	1,718
Expected Credits (delivered)	1,126	1,145	1,142	1,110	1,110	1,092	1,074	1,052
Transfers In (Out) within Owner Bubble	(1,126)	(1,145)	(1,142)	(1,110)	(500)	(562)	(562)	(562)
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**	**610**	**530**	**512**	**490**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**610**	**530**	**512**	**490**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

ACSA-Greenville

POTOMAC Trading Basin

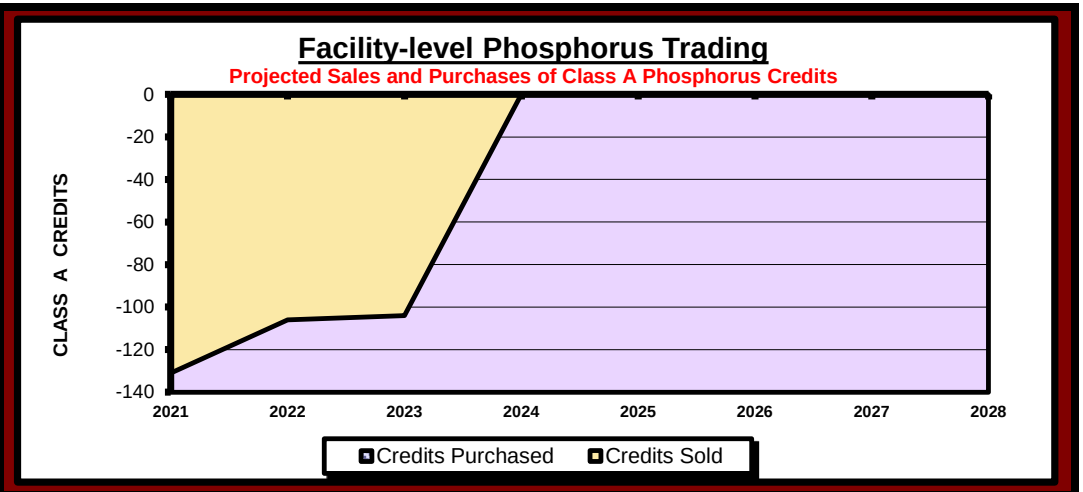


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Projected Flow (mgd)	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	6.00	6.00	5.75	5.85	6.03	6.03	6.03	6.03
Discharged Load (end of pipe)	823	914	876	980	1,102	1,102	1,102	1,102
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	387	429	412	461	518	518	518	518
Delivered WLA	894	894	894	894	894	894	894	894
Expected Credits (delivered)	507	465	482	433	376	376	376	376
Transfers In (Out) within Owner Bubble	(279)	0	0	0	(376)	(376)	(376)	(376)
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	**228**	**465**	**482**	**433**	**0**	**0**	**0**	**0**
Class A Credit Sales (Purchases)	**228**	**465**	**482**	**433**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

ACSA-Harriston

POTOMAC Trading Basin

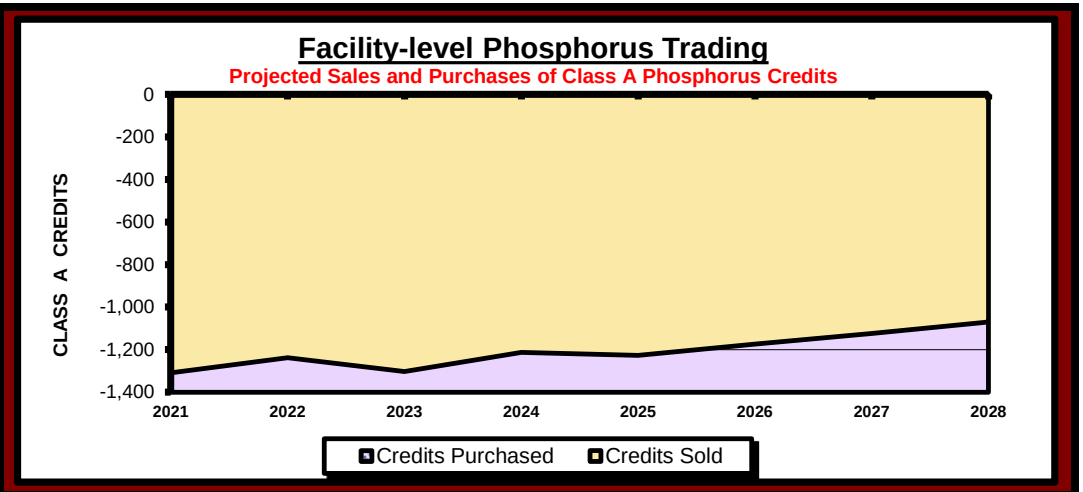


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.05	0.05	0.04	0.06	0.06	0.07	0.07	0.07
Projected Avg. Annual Concentration (mg/L)	3.52	3.52	4.43	4.95	4.65	4.65	4.65	4.65
Discharged Load (end of pipe)	483	536	540	905	850	991	991	991
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	227	252	254	425	399	466	466	466
Delivered WLA	358	358	358	358	358	358	358	358
Expected Credits (delivered)	131	106	104	(67)	(41)	(108)	(108)	(108)
Transfers In (Out) within Owner Bubble	0	0	0	67	41	108	108	108
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	**131**	**106**	**104**	**0**	**0**	**0**	**0**	**0**
Class A Credit Sales (Purchases)	**131**	**106**	**104**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

ACSA-Middle River

POTOMAC Trading Basin

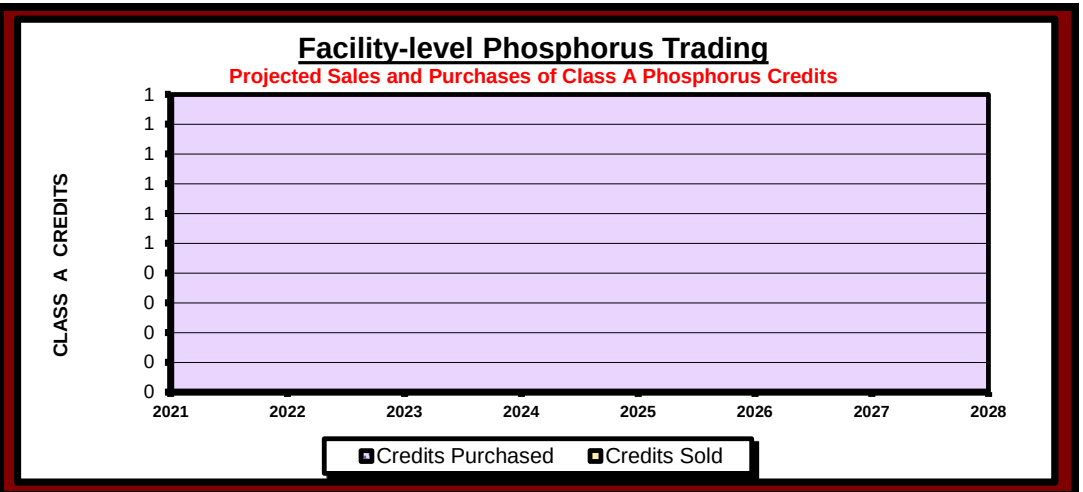


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80
Projected Flow (mgd)	4.50	4.70	4.52	4.77	4.73	4.88	5.02	5.17
Projected Avg. Annual Concentration (mg/L)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Discharged Load (end of pipe)	3,428	3,579	3,441	3,632	3,601	3,716	3,822	3,936
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	1,611	1,682	1,617	1,707	1,693	1,746	1,796	1,850
Delivered WLA	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920
Expected Credits (delivered)	1,309	1,238	1,303	1,213	1,227	1,174	1,124	1,070
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	**1,309**	**1,238**	**1,303**	**1,213**	**1,227**	**1,174**	**1,124**	**1,070**
Class A Credit Sales (Purchases)	**1,309**	**1,238**	**1,303**	**1,213**	**1,227**	**1,174**	**1,124**	**1,070**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

ACSA-Mt. Sidney

POTOMAC Trading Basin

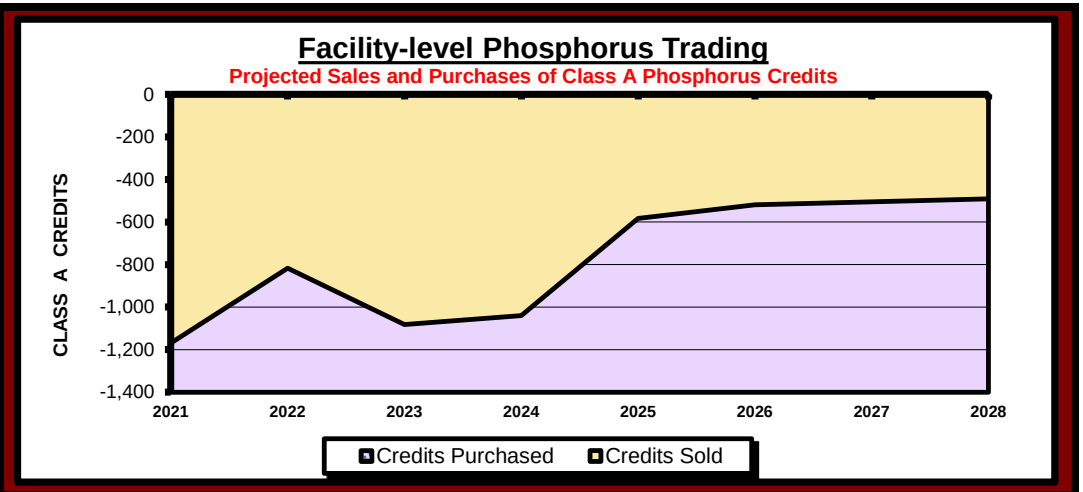


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Projected Flow (mgd)	0.14	0.14	0.11	0.11	0.12	0.12	0.12	0.12
Projected Avg. Annual Concentration (mg/L)	4.22	4.22	3.92	3.83	4.07	4.07	4.07	4.07
Discharged Load (end of pipe)	1,736	1,799	1,313	1,283	1,487	1,487	1,487	1,487
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	816	846	617	603	699	699	699	699
Delivered WLA	537	537	537	537	537	537	537	537
Expected Credits (delivered)	(279)	(309)	(80)	(66)	(162)	(162)	(162)	(162)
Transfers In (Out) within Owner Bubble	279	309	80	66	162	162	162	162
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

ACSA-Stuarts Draft

POTOMAC Trading Basin

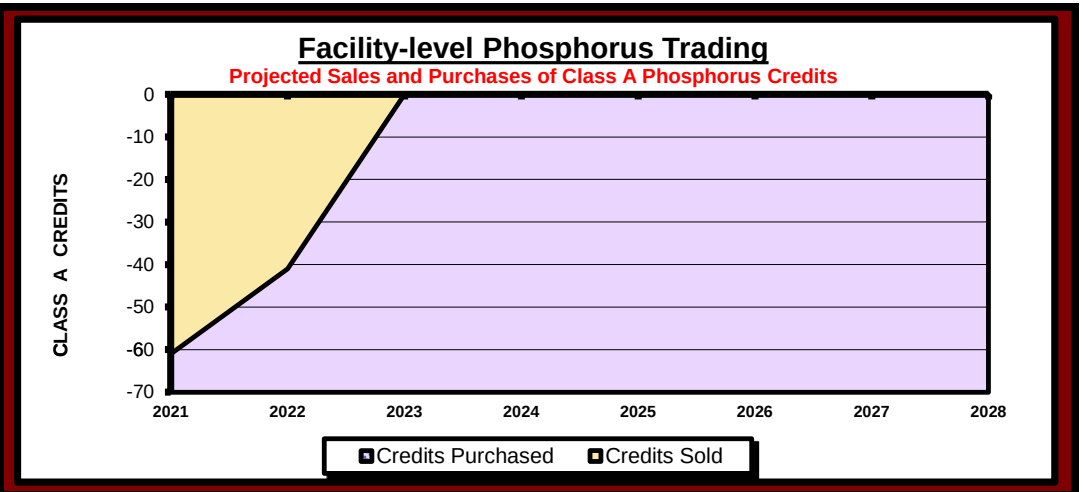


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Projected Flow (mgd)	1.41	1.42	1.35	1.38	1.34	1.38	1.42	1.46
Projected Avg. Annual Concentration (mg/L)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Discharged Load (end of pipe)	1,071	1,081	1,028	1,051	1,020	1,051	1,081	1,112
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	503	508	483	494	480	494	508	522
Delivered WLA	1,718	1,718	1,718	1,718	1,718	1,718	1,718	1,718
Expected Credits (delivered)	1,215	1,210	1,235	1,224	1,238	1,224	1,210	1,196
Transfers In (Out) within Owner Bubble	(46)	(393)	(153)	(184)	(655)	(705)	(705)	(705)
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	**1,169**	**817**	**1,082**	**1,040**	**583**	**519**	**505**	**491**
Class A Credit Sales (Purchases)	**1,169**	**817**	**1,082**	**1,040**	**583**	**519**	**505**	**491**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

ACSA-Vesper View

POTOMAC Trading Basin

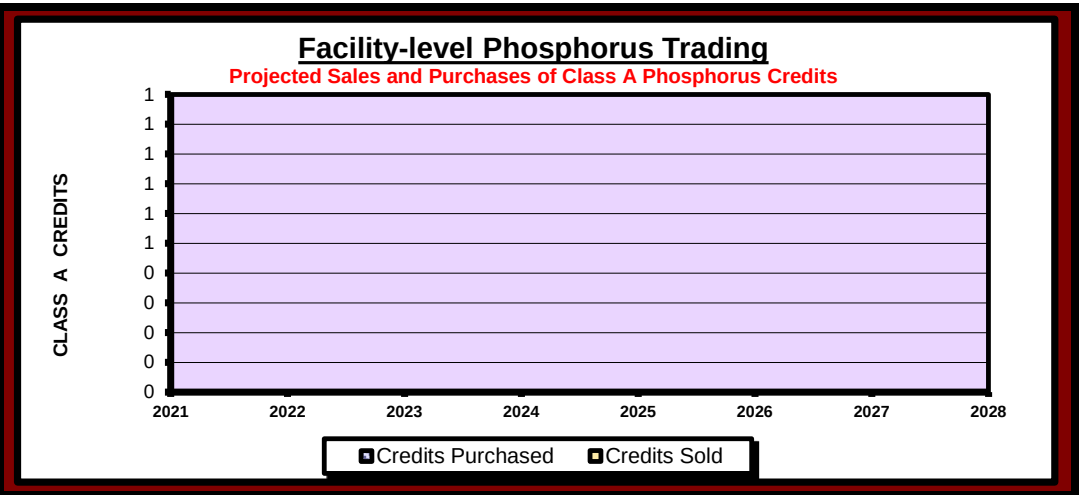


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	3.69	3.69	4.17	4.35	4.53	4.53	4.53	4.53
Discharged Load (end of pipe)	632	674	762	795	828	828	828	828
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	297	317	358	374	389	389	389	389
Delivered WLA	358	358	358	358	358	358	358	358
Expected Credits (delivered)	61	41	0	(16)	(31)	(31)	(31)	(31)
Transfers In (Out) within Owner Bubble	0	0	0	16	31	31	31	31
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**	**41**	**0**	**0**	**0**	**0**	**0**	**0**
Class A Credit Sales (Purchases)	**61**	**41**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

ACSA-Weyers Cave

POTOMAC Trading Basin

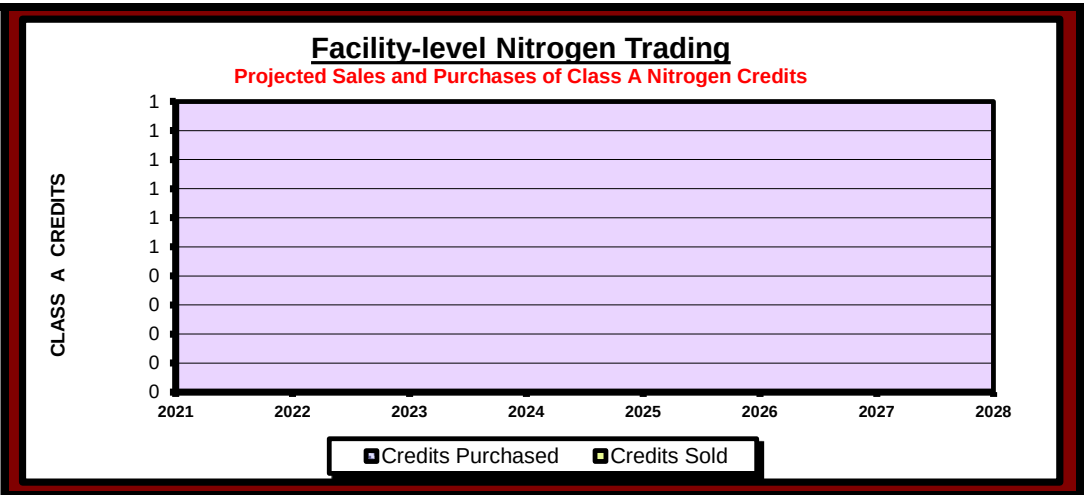


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Projected Flow (mgd)	0.39	0.41	0.37	0.33	0.33	0.34	0.34	0.34
Projected Avg. Annual Concentration (mg/L)	2.46	2.46	2.70	2.88	3.20	3.20	3.20	3.20
Discharged Load (end of pipe)	2,951	3,072	3,043	2,895	3,216	3,314	3,314	3,314
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	1,387	1,444	1,430	1,360	1,512	1,557	1,557	1,557
Delivered WLA	215	215	215	215	215	215	215	215
Expected Credits (delivered)	(1,172)	(1,229)	(1,215)	(1,145)	(1,297)	(1,342)	(1,342)	(1,342)
Transfers In (Out) within Owner Bubble	1,172	1,229	1,215	1,145	1,297	1,342	1,342	1,342
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**

NITROGEN FACILITY SUMMARY

Alexandria Renew Ent.

POTOMAC Trading Basin



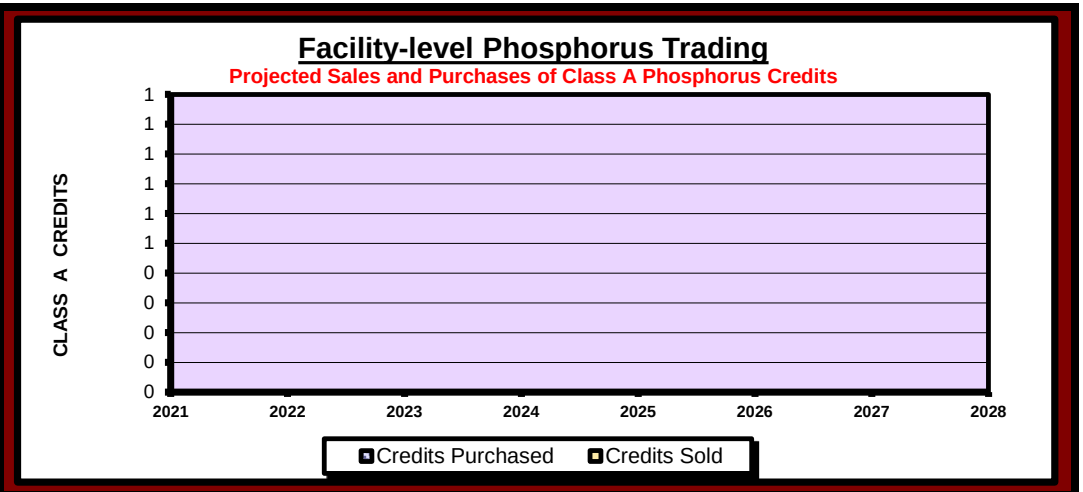
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
Projected Flow (mgd)	41.05	41.05	41.05	43.00	43.00	43.00	43.00	43.00
Projected Avg. Annual Concentration (mg/L)	3.00	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	392,877	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	392,877	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	100,504	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**	**100,504**	**100,504**	**100,504**	**100,504**	**100,504**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**118,320**	**118,320**	**118,320**	**100,504**	**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



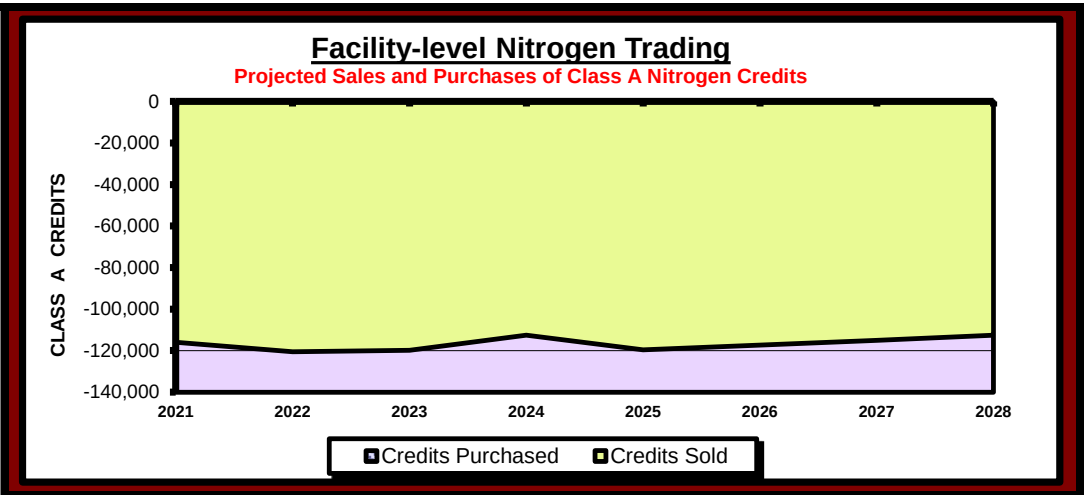
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
Projected Flow (mgd)	41.05	41.05	41.05	43.00	43.00	43.00	43.00	43.00
Projected Avg. Annual Concentration (mg/L)	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Discharged Load (end of pipe)	22,504	22,504	22,504	23,573	23,573	23,573	23,573	23,573
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	22,504	22,504	22,504	23,573	23,573	23,573	23,573	23,573
Delivered WLA*	29,603	29,603	29,603	29,603	29,603	29,603	29,603	29,603
Expected Credits (delivered)	7,099	7,099	7,099	6,030	6,030	6,030	6,030	6,030
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	**7,099**	**7,099**	**7,099**	**6,030**	**6,030**	**6,030**	**6,030**	**6,030**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**7,099**	**7,099**	**7,099**	**6,030**	**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



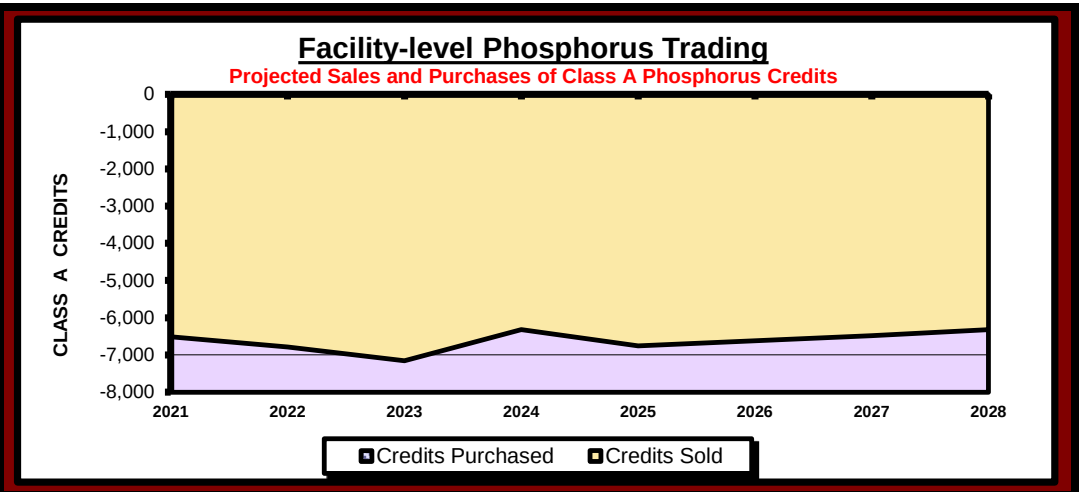
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Projected Flow (mgd)	27.00	26.50	26.50	26.75	26.00	26.25	26.50	26.75
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	246,690	242,122	242,122	244,406	237,554	239,838	242,122	244,406
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	246,690	242,122	242,122	244,406	237,554	239,838	242,122	244,406
Delivered WLA*	365,284	365,284	365,284	365,284	365,284	365,284	365,284	365,284
Expected Credits (delivered)	118,594	123,162	123,162	120,878	127,730	125,446	123,162	120,878
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange**	(2,625)	(2,625)	(3,326)	(8,326)	(8,117)	(8,117)	(8,117)	(8,313)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**115,969**	**120,537**	**119,836**	**112,552**	**119,613**	**117,329**	**115,045**	**112,565**
Class A Credit Sales (Purchases)	**115,969**	**120,537**	**119,836**	**112,552**	**119,613**	**117,329**	**115,045**	**112,565**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

** Reflects allocation transfer to George Mason University of 183 delivered pounds of TN (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



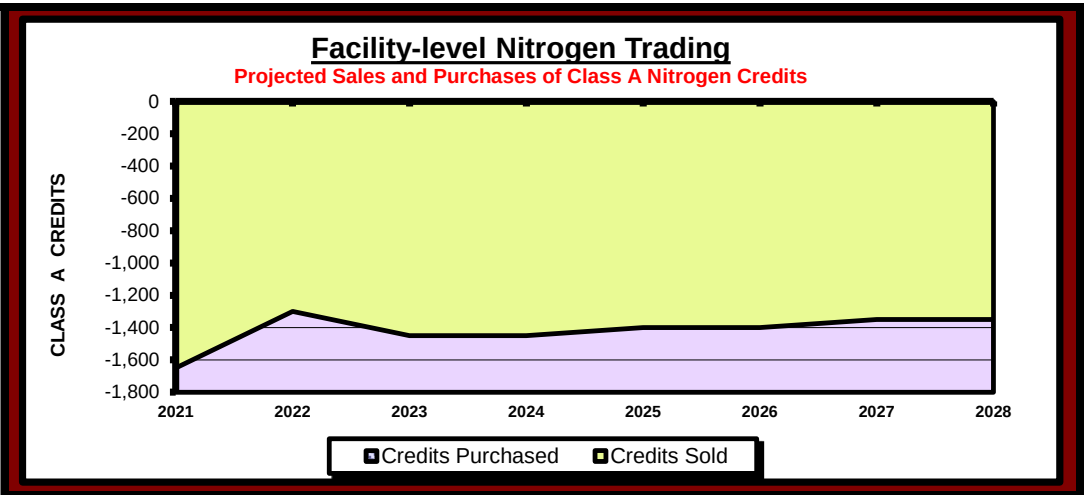
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Projected Flow (mgd)	27.00	26.50	26.50	26.75	26.00	26.25	26.50	26.75
Projected Avg. Annual Concentration (mg/L)	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Discharged Load (end of pipe)	14,801	14,527	14,527	14,664	14,253	14,390	14,527	14,664
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	14,801	14,527	14,527	14,664	14,253	14,390	14,527	14,664
Delivered WLA*	21,925	21,925	21,925	21,925	21,925	21,925	21,925	21,925
Expected Credits (delivered)	7,124	7,398	7,398	7,261	7,672	7,535	7,398	7,261
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange**	(612)	(612)	(242)	(942)	(916)	(916)	(916)	(941)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**6,512**	**6,786**	**7,156**	**6,319**	**6,756**	**6,619**	**6,482**	**6,320**
Class A Credit Sales (Purchases)	**6,512**	**6,786**	**7,156**	**6,319**	**6,756**	**6,619**	**6,482**	**6,320**
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

POTOMAC Trading Basin

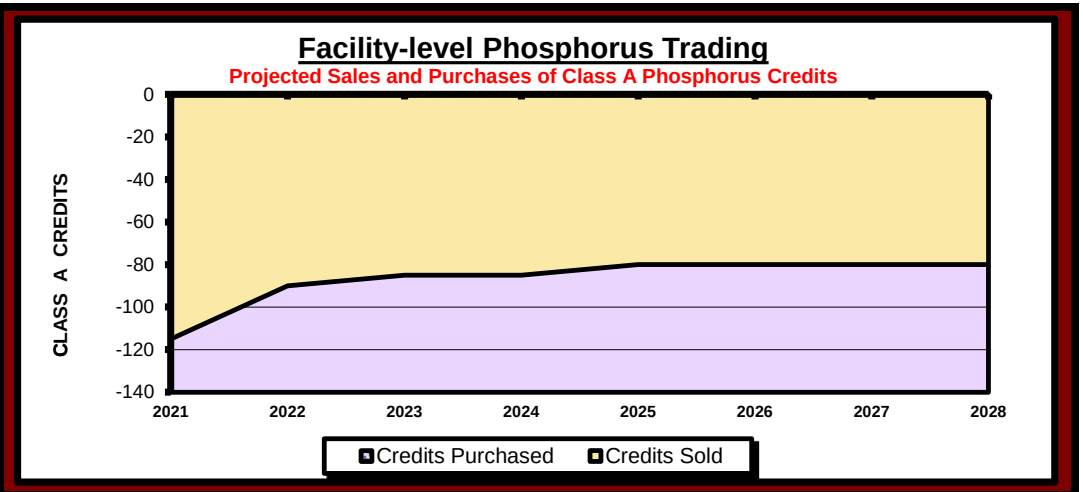


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Projected Flow (mgd)	0.42	0.45	0.46	0.46	0.47	0.47	0.48	0.48
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	5,117	5,482	5,604	5,604	5,726	5,726	5,847	5,847
Delivery Factor	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Expected Load	2,661	2,851	2,914	2,914	2,977	2,977	3,041	3,041
Delivered WLA	4,435	4,435	4,435	4,435	4,435	4,435	4,435	4,435
Expected Credits (delivered)	1,774	1,584	1,521	1,521	1,458	1,458	1,394	1,394
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	**1,774**	**1,584**	**1,521**	**1,521**	**1,458**	**1,458**	**1,394**	**1,394**
Class A Credit Sales (Purchases)	**1,650**	**1,300**	**1,450**	**1,450**	**1,400**	**1,400**	**1,350**	**1,350**
Expected Class B Credits	**124**	**284**	**71**	**71**	**58**	**58**	**44**	**44**

PHOSPHORUS FACILITY SUMMARY

Berryville

POTOMAC Trading Basin

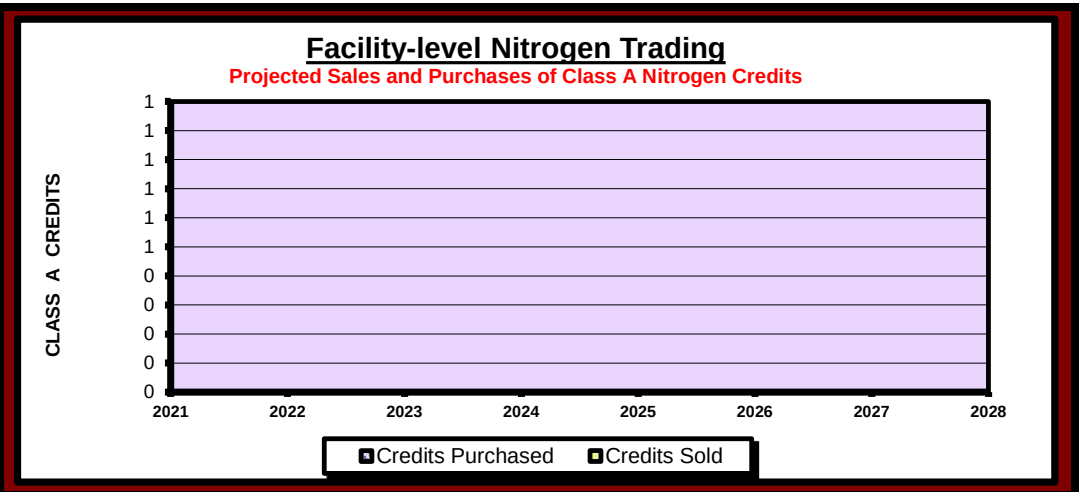


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Projected Flow (mgd)	0.42	0.45	0.46	0.46	0.47	0.47	0.48	0.48
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	384	411	420	420	429	429	439	439
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	180	193	198	198	202	202	206	206
Delivered WLA	301	301	301	301	301	301	301	301
Expected Credits (delivered)	121	108	103	103	99	99	95	95
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	**121**	**108**	**103**	**103**	**99**	**99**	**95**	**95**
Class A Credit Sales (Purchases)	**115**	**90**	**85**	**85**	**80**	**80**	**80**	**80**
Expected Class B Credits	**6**	**18**	**18**	**18**	**19**	**19**	**15**	**15**

NITROGEN FACILITY SUMMARY

Broadway Regional

POTOMAC Trading Basin



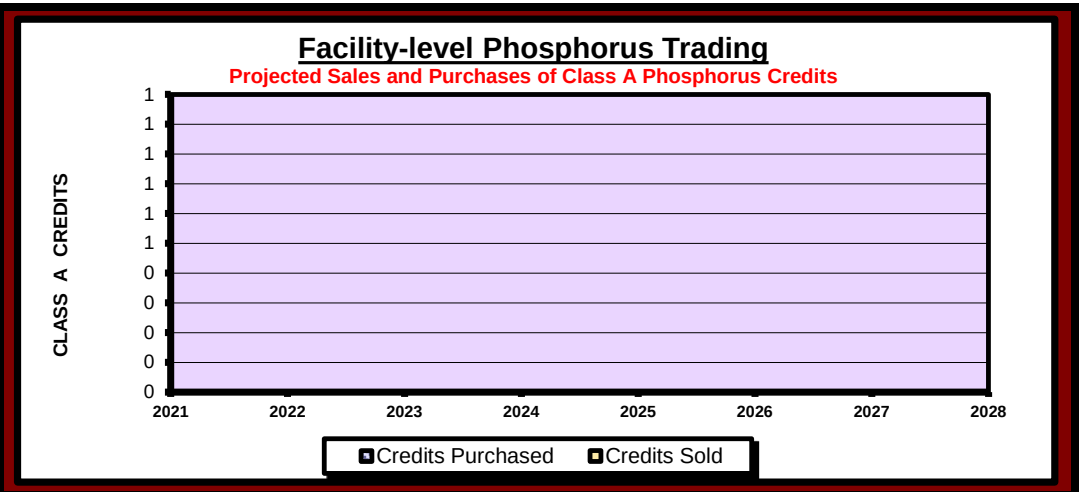
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92
Projected Flow (mgd)	2.39	2.42	2.45	2.48	2.51	2.54	2.57	2.60
Projected Avg. Annual Concentration (mg/L)	3.50	3.50	3.50	3.50	3.60	3.60	3.60	3.60
Discharged Load (end of pipe)	25,476	25,796	26,116	26,435	27,520	27,849	28,178	28,506
Delivery Factor	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Expected Load	3,057	3,096	3,134	3,172	3,302	3,342	3,381	3,421
Delivered WLA*	3,538	3,538	3,538	3,538	3,538	3,538	3,538	3,538
Expected Credits (delivered)	481	442	404	366	236	196	157	117
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	**481**	**442**	**404**	**366**	**236**	**196**	**157**	**117**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**481**	**442**	**404**	**366**	**236**	**196**	**157**	**117**

** 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



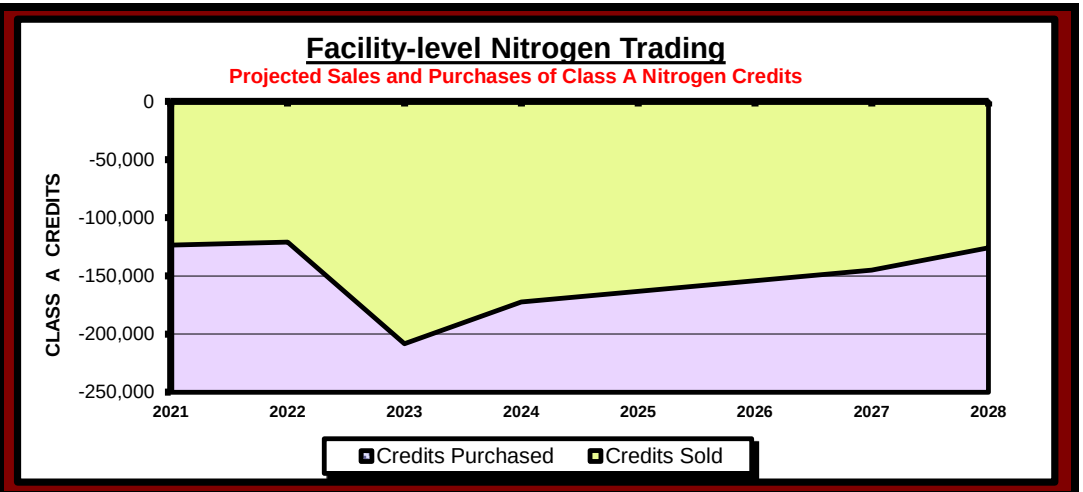
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92
Projected Flow (mgd)	2.39	2.42	2.45	2.48	2.51	2.54	2.57	2.60
Projected Avg. Annual Concentration (mg/L)	0.26	0.26	0.26	0.26	0.27	0.27	0.27	0.27
Discharged Load (end of pipe)	1,893	1,916	1,940	1,964	2,064	2,089	2,113	2,138
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	889	901	912	923	970	982	993	1,005
Delivered WLA*	1,039	1,039	1,039	1,039	1,039	1,039	1,039	1,039
Expected Credits (delivered)	150	138	127	116	69	57	46	34
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	**150**	**138**	**127**	**116**	**69**	**57**	**46**	**34**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**150**	**138**	**127**	**116**	**69**	**57**	**46**	**34**

** 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



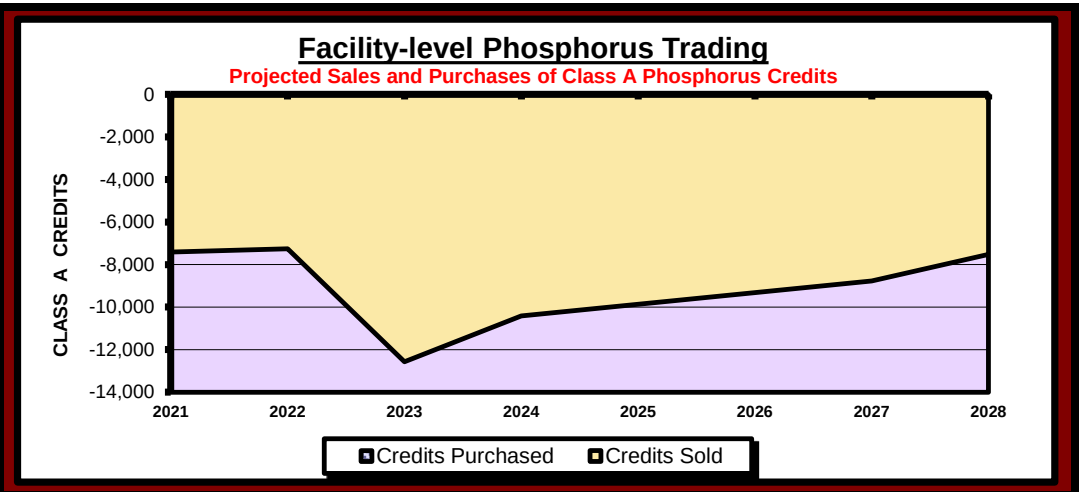
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	67.00	67.00	67.00	67.00	67.00	67.00	67.00	67.00
Projected Flow (mgd)	53.47	53.76	44.07	48.00	49.00	50.00	51.00	53.00
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	488,547	491,188	402,653	438,561	447,697	456,834	465,971	484,244
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	488,547	491,188	402,653	438,561	447,697	456,834	465,971	484,244
Delivered WLA	612,158	612,158	612,158	612,158	612,158	612,158	612,158	612,158
Expected Credits (delivered)	123,611	120,970	209,505	173,597	164,461	155,324	146,187	127,914
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(25)	(25)	(1,155)	(1,155)	(1,155)	(1,155)	(1,155)	(2,072)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**123,586**	**120,945**	**208,350**	**172,442**	**163,306**	**154,169**	**145,032**	**125,842**
Class A Credit Sales (Purchases)	**123,528**	**120,945**	**208,350**	**172,442**	**163,306**	**154,169**	**145,032**	**125,842**
Expected Class B Credits	**58**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

** Represents private trades with Fairfax County Department of Vehicle Services and City of Fairfax*

PHOSPHORUS FACILITY SUMMARY

Fairfax Co-Noman Cole

POTOMAC Trading Basin



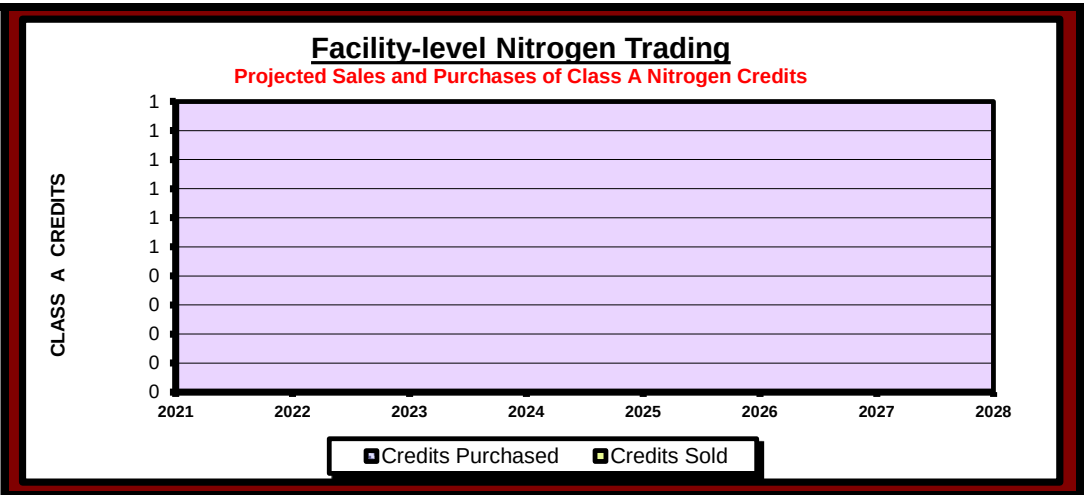
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	67.00	67.00	67.00	67.00	67.00	67.00	67.00	67.00
Projected Flow (mgd)	53.47	53.76	44.07	48.00	49.00	50.00	51.00	53.00
Projected Avg. Annual Concentration (mg/L)	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Discharged Load (end of pipe)	29,313	29,471	24,159	26,314	26,862	27,410	27,958	29,055
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	29,313	29,471	24,159	26,314	26,862	27,410	27,958	29,055
Delivered WLA	36,729	36,729	36,729	36,729	36,729	36,729	36,729	36,729
Expected Credits (delivered)	7,416	7,258	12,570	10,415	9,867	9,319	8,771	7,674
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	(153)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**7,416**	**7,258**	**12,570**	**10,415**	**9,867**	**9,319**	**8,771**	**7,521**
Class A Credit Sales (Purchases)	**7,411**	**7,258**	**12,570**	**10,415**	**9,867**	**9,319**	**8,771**	**7,521**
Expected Class B Credits	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

** Represents private trade with City of Fairfax*

NITROGEN FACILITY SUMMARY

FCWSA-Vint Hill

POTOMAC Trading Basin

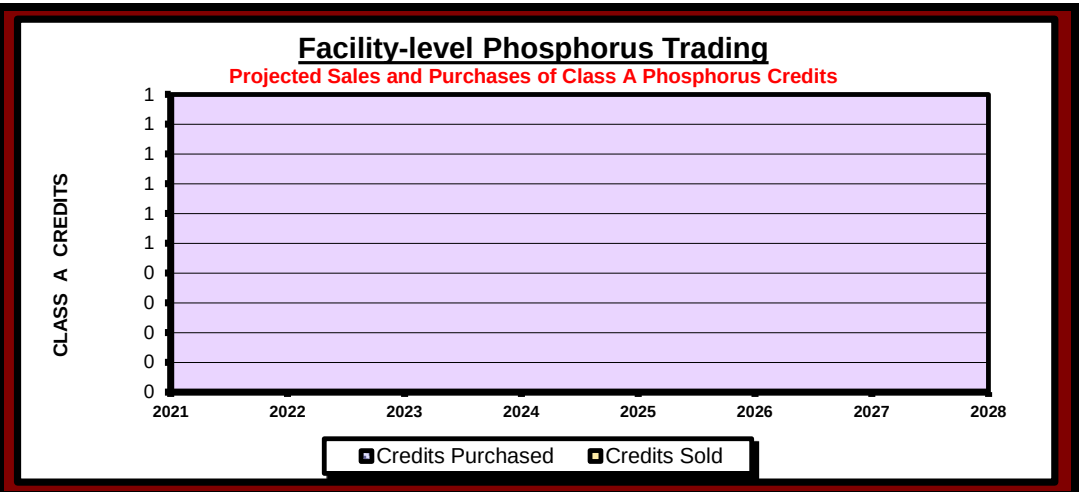


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Projected Flow (mgd)	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	5,360	5,604	5,847	6,091	6,335	6,578	6,822	7,066
Delivery Factor	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Expected Load	268	280	292	305	317	329	341	353
Delivered WLA	579	579	579	579	579	579	579	579
Expected Credits (delivered)	311	299	287	274	262	250	238	226
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	**311**	**299**	**287**	**274**	**262**	**250**	**238**	**226**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**311**	**299**	**287**	**274**	**262**	**250**	**238**	**226**

PHOSPHORUS FACILITY SUMMARY

FCWSA-Vint Hill

POTOMAC Trading Basin

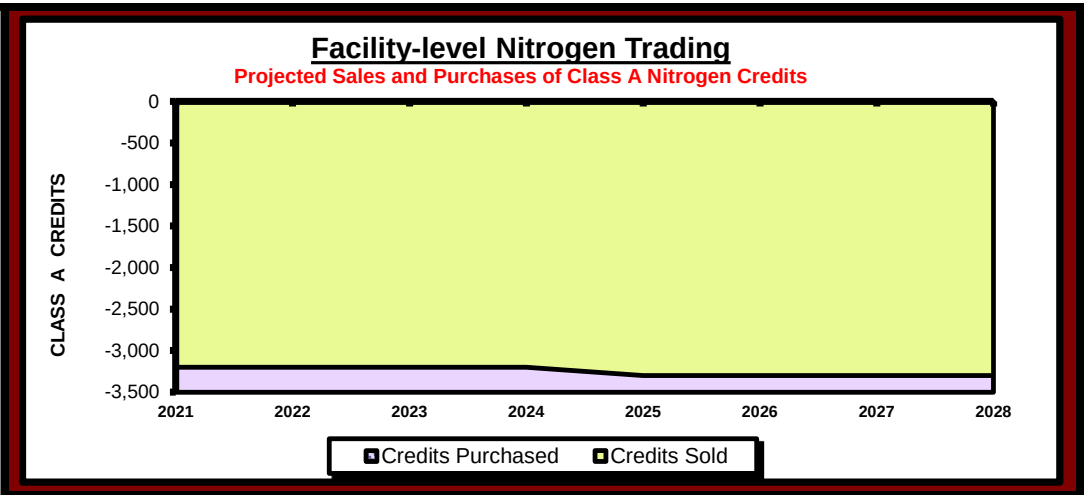


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Projected Flow (mgd)	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	402	420	439	457	475	493	512	530
Delivery Factor	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Expected Load	68	71	75	78	81	84	87	90
Delivered WLA	148	148	148	148	148	148	148	148
Expected Credits (delivered)	80	77	73	70	67	64	61	58
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	**80**	**77**	**73**	**70**	**67**	**64**	**61**	**58**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**80**	**77**	**73**	**70**	**67**	**64**	**61**	**58**

NITROGEN FACILITY SUMMARY

Front Royal

POTOMAC Trading Basin

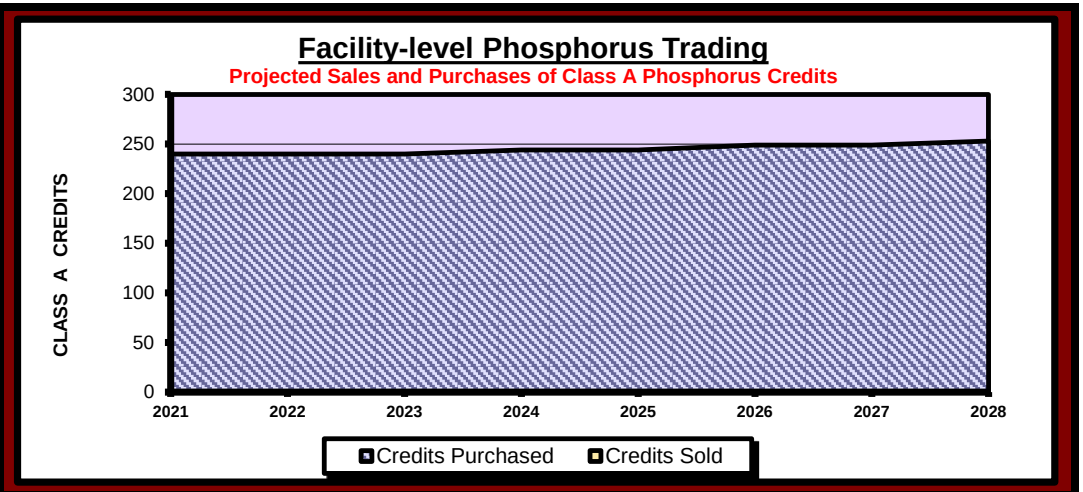


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Projected Flow (mgd)	4.56	4.56	4.56	4.57	4.57	4.58	4.58	4.59
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	41,663	41,663	41,663	41,755	41,755	41,846	41,846	41,937
Delivery Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Expected Load	20,832	20,832	20,832	20,877	20,877	20,923	20,923	20,969
Delivered WLA	24,365	24,365	24,365	24,365	24,365	24,365	24,365	24,365
Expected Credits (delivered)	3,533	3,533	3,533	3,488	3,488	3,442	3,442	3,396
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	**3,533**	**3,533**	**3,533**	**3,488**	**3,488**	**3,442**	**3,442**	**3,396**
Class A Credit Sales (Purchases)	**3,200**	**3,200**	**3,200**	**3,200**	**3,300**	**3,300**	**3,300**	**3,300**
Expected Class B Credits	**333**	**333**	**333**	**288**	**188**	**142**	**142**	**96**

PHOSPHORUS FACILITY SUMMARY

Front Royal

POTOMAC Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Projected Flow (mgd)	4.56	4.56	4.56	4.57	4.57	4.58	4.58	4.59
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	4,166	4,166	4,166	4,175	4,175	4,185	4,185	4,194
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	1,958	1,958	1,958	1,962	1,962	1,967	1,967	1,971
Delivered WLA	1,718	1,718	1,718	1,718	1,718	1,718	1,718	1,718
Expected Credits (delivered)	(240)	(240)	(240)	(244)	(244)	(249)	(249)	(253)
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	**(240)**	**(240)**	**(240)**	**(244)**	**(244)**	**(249)**	**(249)**	**(253)**
Class A Credit Sales (Purchases)	**(240)**	**(240)**	**(240)**	**(244)**	**(244)**	**(249)**	**(249)**	**(253)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Owner Bubble: Frederick-Winchester Service Authority

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

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

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

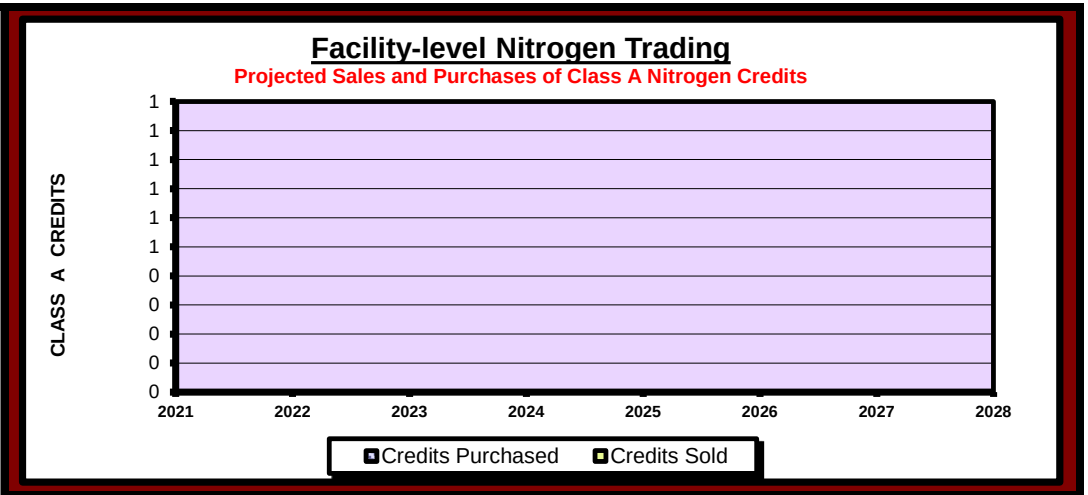
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Opequon	-	-	-	-	-	-	-	-
Parkins Mill	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Opequon	10,546	11,678	11,199	10,799	10,431	10,000	9,600	9,200
Parkins Mill	7,227	6,939	6,651	6,363	6,171	5,884	5,596	5,308
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	**17,773**	**18,617**	**17,850**	**17,162**	**16,602**	**15,884**	**15,196**	**14,508**
Private Exchanges	(59)	(59)	(59)	(59)	(59)	(59)	(59)	(59)
Expected Net Credits	**17,714**	**18,558**	**17,791**	**17,103**	**16,543**	**15,825**	**15,137**	**14,449**
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	*17,714*	*18,558*	*17,791*	*17,103*	*16,543*	*15,825*	*15,137*	*14,449*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Opequon	-	-	-	-	-	-	-	-
Parkins Mill	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Opequon	2,405	2,298	2,190	2,101	2,019	1,922	1,832	1,743
Parkins Mill	902	837	773	708	665	601	537	472
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	**3,307**	**3,135**	**2,963**	**2,809**	**2,684**	**2,523**	**2,369**	**2,215**
Private Exchanges	-	-	-	-	-	-	-	-
Expected Net Credits	**3,307**	**3,135**	**2,963**	**2,809**	**2,684**	**2,523**	**2,369**	**2,215**
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	*3,307*	*3,135*	*2,963*	*2,809*	*2,684*	*2,523*	*2,369*	*2,215*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NITROGEN FACILITY SUMMARY

FWSA-Opequon

POTOMAC Trading Basin



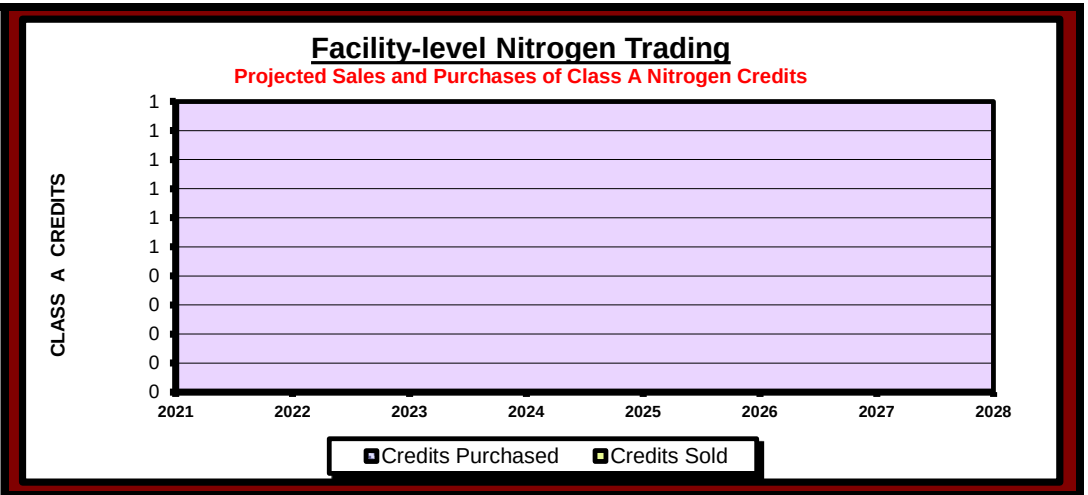
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	12.60	12.60	12.60	12.60	12.60	12.60	12.60	12.60
Projected Flow (mgd)	8.40	8.70	9.00	9.25	9.48	9.75	10.00	10.25
Projected Avg. Annual Concentration (mg/L)	2.80	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Discharged Load (end of pipe)	71,632	66,241	68,525	70,429	72,180	74,236	76,139	78,042
Delivery Factor	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Expected Load	15,043	13,911	14,390	14,790	15,158	15,589	15,989	16,389
Delivered WLA	25,589	25,589	25,589	25,589	25,589	25,589	25,589	25,589
Expected Credits (delivered)	10,546	11,678	11,199	10,799	10,431	10,000	9,600	9,200
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(59)	(59)	(59)	(59)	(59)	(59)	(59)	(59)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**10,487**	**11,619**	**11,140**	**10,740**	**10,372**	**9,941**	**9,541**	**9,141**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**10,487**	**11,619**	**11,140**	**10,740**	**10,372**	**9,941**	**9,541**	**9,141**

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

NITROGEN FACILITY SUMMARY

FWSA-Parkins Mill

POTOMAC Trading Basin

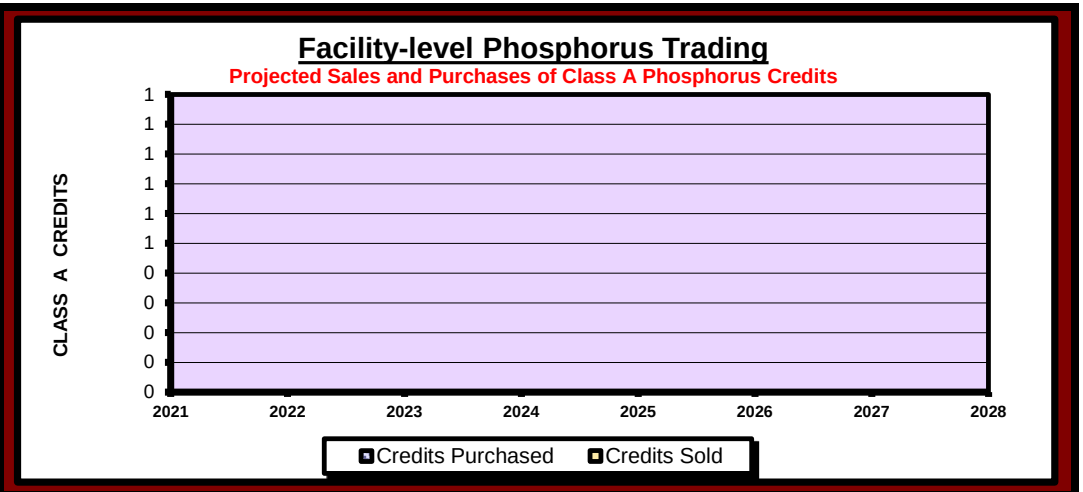


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Projected Flow (mgd)	2.90	3.05	3.20	3.35	3.45	3.60	3.75	3.90
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	26,496	27,867	29,237	30,608	31,522	32,892	34,263	35,633
Delivery Factor	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Expected Load	5,564	5,852	6,140	6,428	6,620	6,907	7,195	7,483
Delivered WLA	12,791	12,791	12,791	12,791	12,791	12,791	12,791	12,791
Expected Credits (delivered)	7,227	6,939	6,651	6,363	6,171	5,884	5,596	5,308
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	**7,227**	**6,939**	**6,651**	**6,363**	**6,171**	**5,884**	**5,596**	**5,308**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**7,227**	**6,939**	**6,651**	**6,363**	**6,171**	**5,884**	**5,596**	**5,308**

PHOSPHORUS FACILITY SUMMARY

FWSA-Opequon

POTOMAC Trading Basin

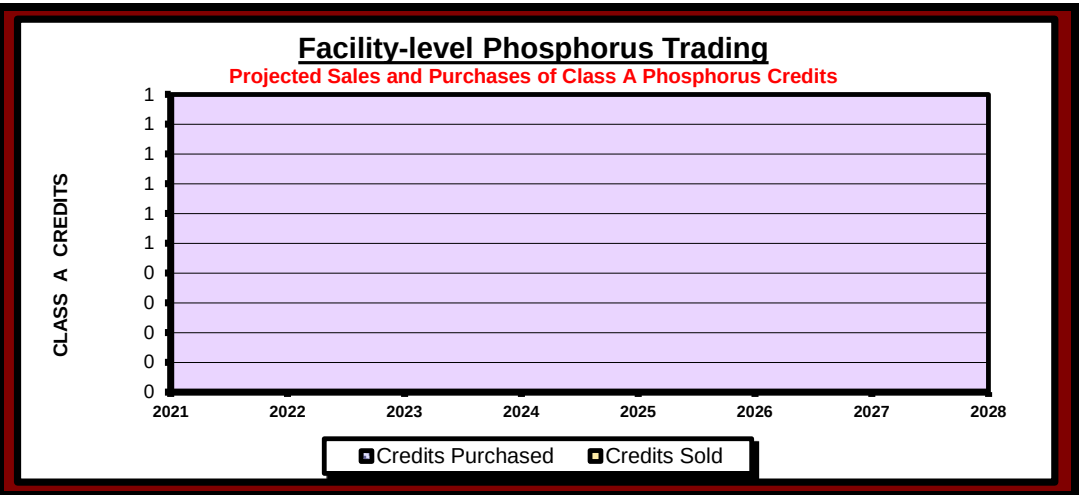


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	12.60	12.60	12.60	12.60	12.60	12.60	12.60	12.60
Projected Flow (mgd)	8.40	8.70	9.00	9.25	9.48	9.75	10.00	10.25
Projected Avg. Annual Concentration (mg/L)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Discharged Load (end of pipe)	6,396	6,624	6,853	7,043	7,218	7,424	7,614	7,804
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	3,006	3,113	3,221	3,310	3,392	3,489	3,579	3,668
Delivered WLA	5,411	5,411	5,411	5,411	5,411	5,411	5,411	5,411
Expected Credits (delivered)	2,405	2,298	2,190	2,101	2,019	1,922	1,832	1,743
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	**2,405**	**2,298**	**2,190**	**2,101**	**2,019**	**1,922**	**1,832**	**1,743**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**2,405**	**2,298**	**2,190**	**2,101**	**2,019**	**1,922**	**1,832**	**1,743**

PHOSPHORUS FACILITY SUMMARY

FWSA-Parkins Mill

POTOMAC Trading Basin

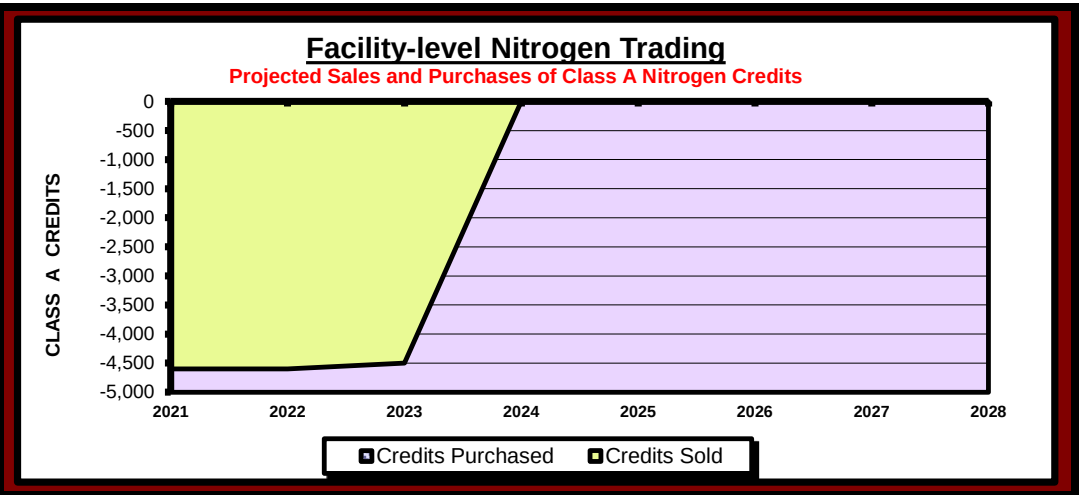


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Projected Flow (mgd)	2.90	3.05	3.20	3.35	3.45	3.60	3.75	3.90
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	2,650	2,787	2,924	3,061	3,152	3,289	3,426	3,563
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	1,245	1,310	1,374	1,439	1,482	1,546	1,610	1,675
Delivered WLA	2,147	2,147	2,147	2,147	2,147	2,147	2,147	2,147
Expected Credits (delivered)	902	837	773	708	665	601	537	472
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	**902**	**837**	**773**	**708**	**665**	**601**	**537**	**472**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**902**	**837**	**773**	**708**	**665**	**601**	**537**	**472**

NITROGEN FACILITY SUMMARY

HRRSA-North River

POTOMAC Trading Basin



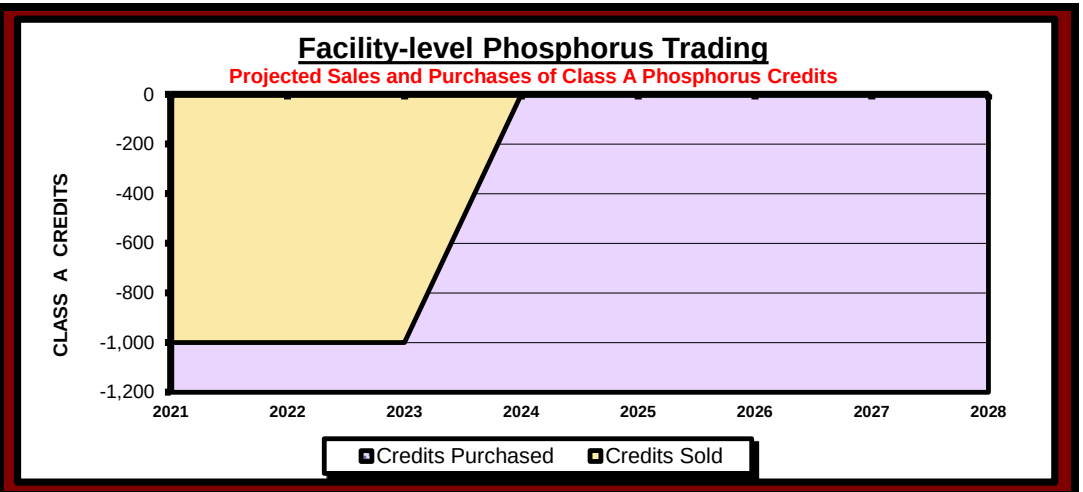
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Projected Flow (mgd)	15.20	15.20	15.60	16.40	16.40	16.40	16.60	16.90
Projected Avg. Annual Concentration (mg/L)	3.80	3.80	3.80	3.70	3.70	3.70	3.70	3.70
Discharged Load (end of pipe)	175,912	175,912	180,541	184,805	184,805	184,805	187,058	190,439
Delivery Factor	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Expected Load	24,628	24,628	25,276	25,873	25,873	25,873	26,188	26,661
Delivered WLA*	36,432	36,432	36,432	36,432	36,432	36,432	36,432	36,432
Expected Credits (delivered)	11,804	11,804	11,156	10,559	10,559	10,559	10,244	9,771
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange**	0	(1,115)	(1,115)	(1,115)	(1,115)	(1,115)	(1,115)	(1,115)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**11,804**	**10,689**	**10,041**	**9,444**	**9,444**	**9,444**	**9,129**	**8,656**
Class A Credit Sales (Purchases)	**4,600**	**4,600**	**4,500**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**7,204**	**6,089**	**5,541**	**9,444**	**9,444**	**9,444**	**9,129**	**8,656**

** 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

POTOMAC Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Projected Flow (mgd)	15.20	15.20	15.60	16.40	16.40	16.40	16.60	16.90
Projected Avg. Annual Concentration (mg/L)	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Discharged Load (end of pipe)	12,962	12,962	13,303	13,985	13,985	13,985	14,156	14,412
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	6,092	6,092	6,252	6,573	6,573	6,573	6,653	6,773
Delivered WLA*	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200
Expected Credits (delivered)	3,108	3,108	2,948	2,627	2,627	2,627	2,547	2,427
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange**	0	(73)	(73)	(73)	(73)	(73)	(73)	(73)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**3,108**	**3,035**	**2,875**	**2,554**	**2,554**	**2,554**	**2,474**	**2,354**
Class A Credit Sales (Purchases)	**1,000**	**1,000**	**1,000**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**2,108**	**2,035**	**1,875**	**2,554**	**2,554**	**2,554**	**2,474**	**2,354**

** 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.

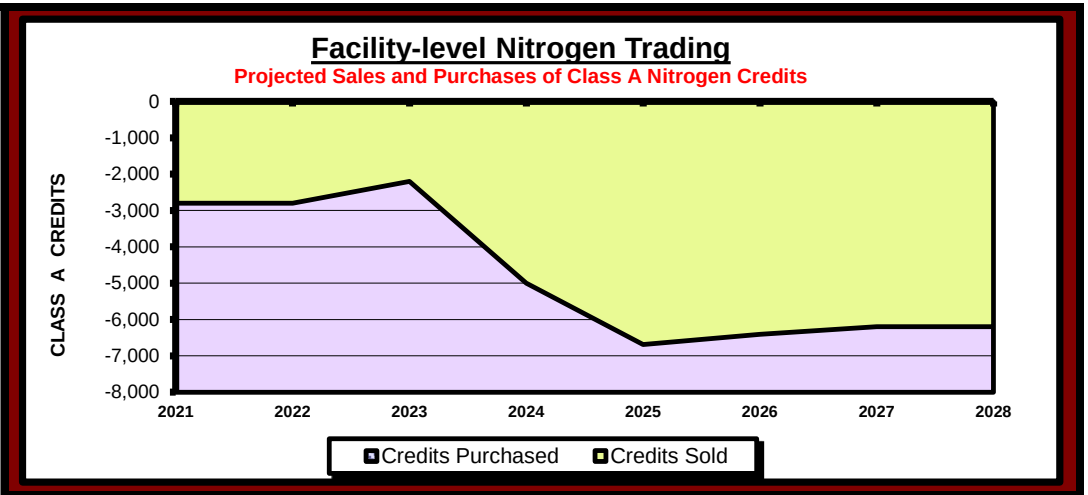
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Dahlgren	(1,508)	(1,508)	(1,797)	(439)	(213)	(213)	(213)	(213)
Fairview Beach	-	-	-	-	-	-	-	-
Purkins Corner	1,508	1,508	1,797	439	213	213	213	213
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Dahlgren	3,061	3,061	2,772	5,957	6,689	6,408	6,198	6,198
Fairview Beach	365	365	365	913	1,458	1,458	1,417	1,417
Purkins Corner	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**3,426**	**3,426**	**3,137**	**6,870**	**8,147**	**7,866**	**7,615**	**7,615**
Class A Sales (Purchases)	**3,100**	**3,100**	**2,200**	**5,913**	**8,147**	**7,866**	**7,615**	**7,615**
Expected Class B Credits	*326*	*326*	*937*	*957*	*0*	*0*	*0*	*0*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Dahlgren	(137)	(137)	(200)	-	-	-	-	-
Fairview Beach	-	-	36	-	-	-	-	-
Purkins Corner	137	137	164	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Dahlgren	320	320	257	640	679	650	628	628
Fairview Beach	-	-	-	-	163	163	161	161
Purkins Corner	-	-	-	14	47	47	47	47
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**320**	**320**	**257**	**654**	**889**	**860**	**836**	**836**
Class A Sales (Purchases)	**300**	**300**	**200**	**514**	**889**	**860**	**836**	**836**
Expected Class B Credits	*20*	*20*	*57*	*140*	*0*	*0*	*0*	*0*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NITROGEN FACILITY SUMMARY

KGCSA-Dahlgren S.D.

POTOMAC Trading Basin

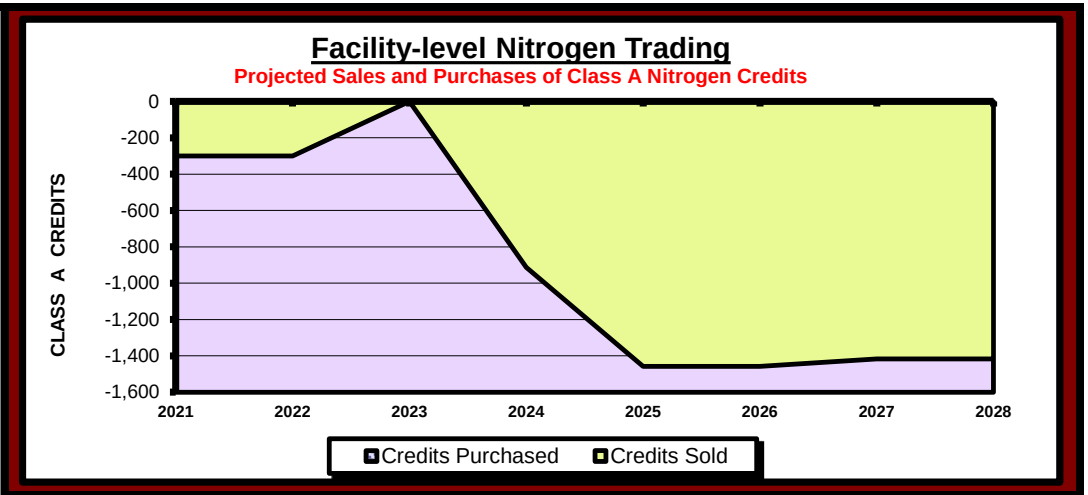


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.50	0.50	0.50	0.30	0.32	0.36	0.39	0.39
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	2.29	2.30	2.30	2.30
Discharged Load (end of pipe)	4,568	4,568	4,568	2,741	2,235	2,516	2,726	2,726
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	4,568	4,568	4,568	2,741	2,235	2,516	2,726	2,726
Delivered WLA	9,137	9,137	9,137	9,137	9,137	9,137	9,137	9,137
Expected Credits (delivered)	4,569	4,569	4,569	6,396	6,902	6,621	6,411	6,411
Transfers In (Out) within Owner Bubble	(1,508)	(1,508)	(1,797)	(439)	(213)	(213)	(213)	(213)
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	**3,061**	**3,061**	**2,772**	**5,957**	**6,689**	**6,408**	**6,198**	**6,198**
Class A Credit Sales (Purchases)	**2,800**	**2,800**	**2,200**	**5,000**	**6,689**	**6,408**	**6,198**	**6,198**
Expected Class B Credits	**261**	**261**	**572**	**957**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

KGCSA-Fairview Beach

POTOMAC Trading Basin

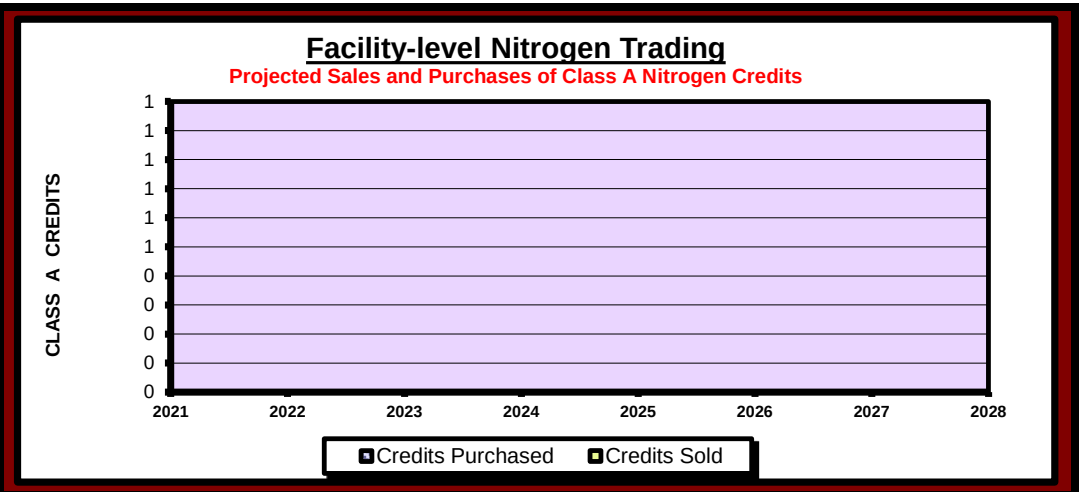


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Projected Flow (mgd)	0.08	0.08	0.08	0.06	0.05	0.05	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	6.00	6.00	6.00	5.00	2.24	2.24	2.24	2.24
Discharged Load (end of pipe)	1,462	1,462	1,462	914	369	369	410	410
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,462	1,462	1,462	914	369	369	410	410
Delivered WLA	1,827	1,827	1,827	1,827	1,827	1,827	1,827	1,827
Expected Credits (delivered)	365	365	365	913	1,458	1,458	1,417	1,417
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	**365**	**365**	**365**	**913**	**1,458**	**1,458**	**1,417**	**1,417**
Class A Credit Sales (Purchases)	**300**	**300**	**0**	**913**	**1,458**	**1,458**	**1,417**	**1,417**
Expected Class B Credits	**65**	**65**	**365**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

KGCSA-Purkins Corner

POTOMAC Trading Basin

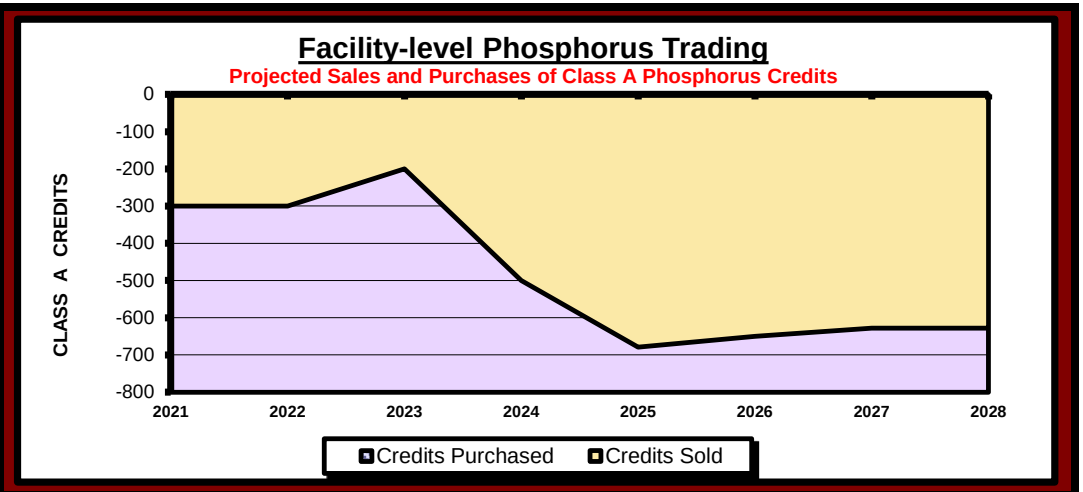


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Projected Flow (mgd)	0.09	0.09	0.10	0.06	0.06	0.06	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	9.50	9.50	9.50	8.00	6.93	6.93	6.93	6.93
Discharged Load (end of pipe)	2,604	2,604	2,893	1,535	1,309	1,309	1,309	1,309
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	2,604	2,604	2,893	1,535	1,309	1,309	1,309	1,309
Delivered WLA	1,096	1,096	1,096	1,096	1,096	1,096	1,096	1,096
Expected Credits (delivered)	(1,508)	(1,508)	(1,797)	(439)	(213)	(213)	(213)	(213)
Transfers In (Out) within Owner Bubble	1,508	1,508	1,797	439	213	213	213	213
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

KGCSA-Dahlgren S.D.

POTOMAC Trading Basin

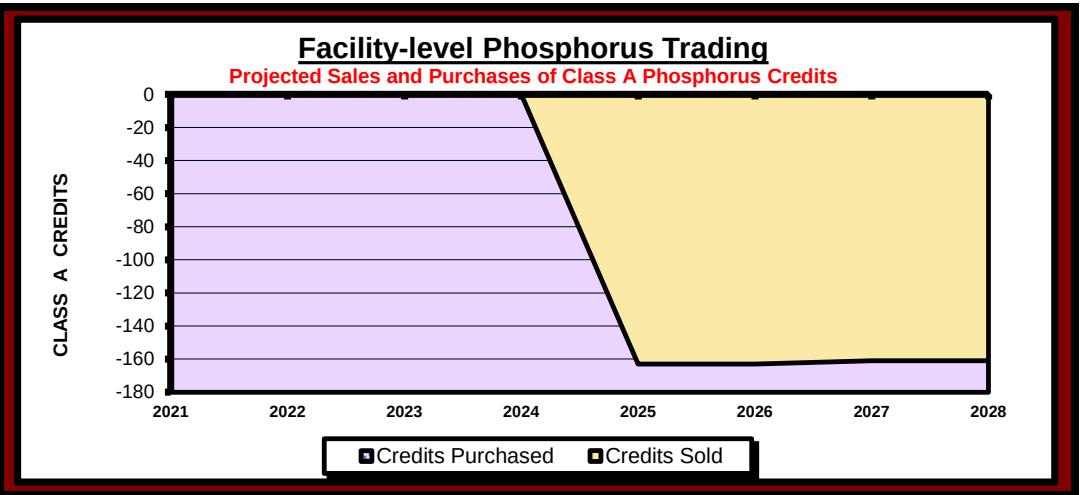


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.50	0.50	0.50	0.30	0.32	0.36	0.39	0.39
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.24	0.24	0.24	0.24
Discharged Load (end of pipe)	457	457	457	274	235	264	286	286
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	457	457	457	274	235	264	286	286
Delivered WLA	914	914	914	914	914	914	914	914
Expected Credits (delivered)	457	457	457	640	679	650	628	628
Transfers In (Out) within Owner Bubble	(137)	(137)	(200)	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	**320**	**320**	**257**	**640**	**679**	**650**	**628**	**628**
Class A Credit Sales (Purchases)	**300**	**300**	**200**	**500**	**679**	**650**	**628**	**628**
Expected Class B Credits	**20**	**20**	**57**	**140**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

KGCSA-Fairview Beach

POTOMAC Trading Basin

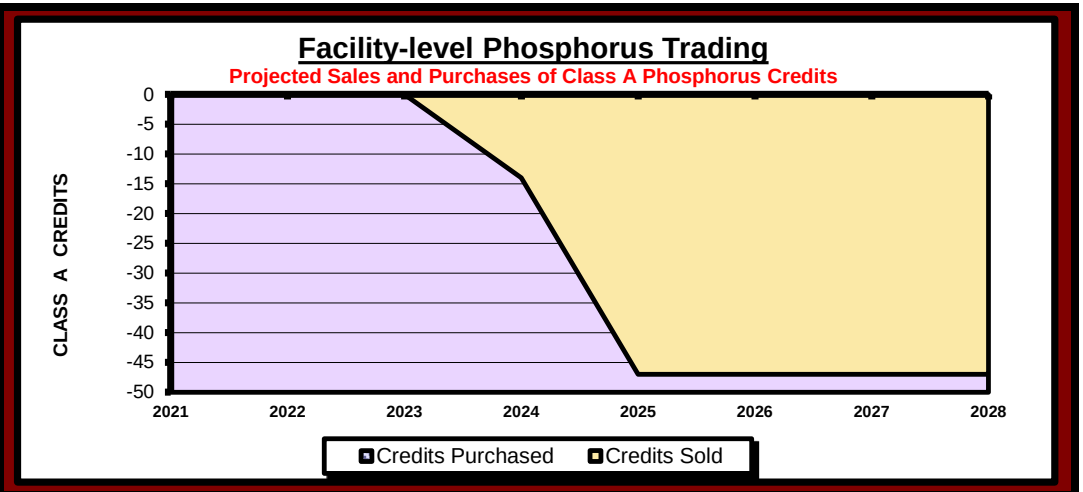


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Projected Flow (mgd)	0.08	0.08	0.08	0.06	0.05	0.05	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	0.75	0.75	0.90	1.00	0.12	0.12	0.12	0.12
Discharged Load (end of pipe)	183	183	219	183	20	20	22	22
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	183	183	219	183	20	20	22	22
Delivered WLA	183	183	183	183	183	183	183	183
Expected Credits (delivered)	0	0	(36)	0	163	163	161	161
Transfers In (Out) within Owner Bubble	0	0	36	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**0**	**0**	**0**	**0**	**163**	**163**	**161**	**161**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**163**	**163**	**161**	**161**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

KGCSA-Purkins Corner

POTOMAC Trading Basin

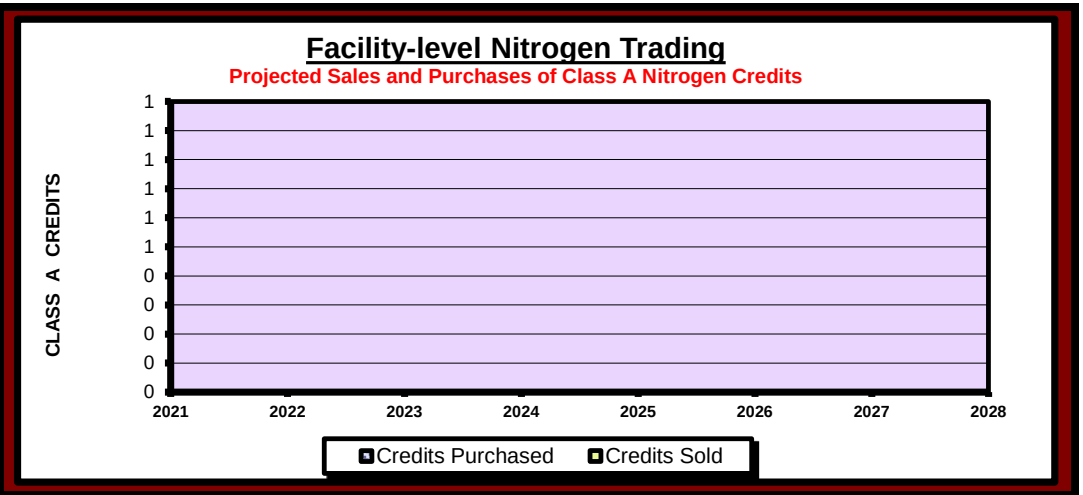


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Projected Flow (mgd)	0.09	0.09	0.10	0.06	0.06	0.06	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	0.90	0.90	0.90	0.50	0.33	0.33	0.33	0.33
Discharged Load (end of pipe)	247	247	274	96	63	63	63	63
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	247	247	274	96	63	63	63	63
Delivered WLA	110	110	110	110	110	110	110	110
Expected Credits (delivered)	(137)	(137)	(164)	14	47	47	47	47
Transfers In (Out) within Owner Bubble	137	137	164	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**0**	**0**	**0**	**14**	**47**	**47**	**47**	**47**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**14**	**47**	**47**	**47**	**47**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

Leesburg

POTOMAC Trading Basin



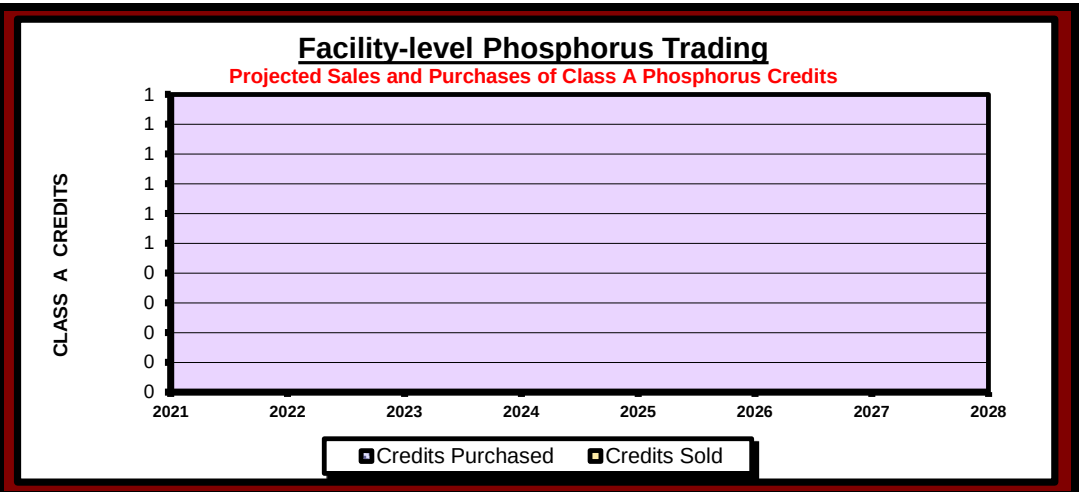
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Projected Flow (mgd)	3.09	3.23	3.37	3.05	3.19	3.33	3.47	3.61
Projected Avg. Annual Concentration (mg/L)	4.90	4.90	5.00	5.00	5.00	5.10	5.10	5.20
Discharged Load (end of pipe)	46,158	48,247	51,363	46,369	48,577	51,723	53,897	57,171
Delivery Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Expected Load	29,541	30,878	32,873	29,676	31,089	33,103	34,494	36,590
Delivered WLA	77,966	77,966	77,966	77,966	77,966	77,966	77,966	77,966
Expected Credits (delivered)	48,425	47,088	45,093	48,290	46,877	44,863	43,472	41,376
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(274)	0	0	0	0	0	0	0
WQIF-Held Credits	(19,492)	(19,492)	(19,492)	(19,492)	(19,492)	(19,492)	(19,492)	(19,492)
Expected Net Credits	**28,659**	**27,596**	**25,601**	**28,798**	**27,385**	**25,371**	**23,980**	**21,884**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**28,659**	**27,596**	**25,601**	**28,798**	**27,385**	**25,371**	**23,980**	**21,884**

** Represents private trade with Loudoun Milling*

PHOSPHORUS FACILITY SUMMARY

Leesburg

POTOMAC Trading Basin



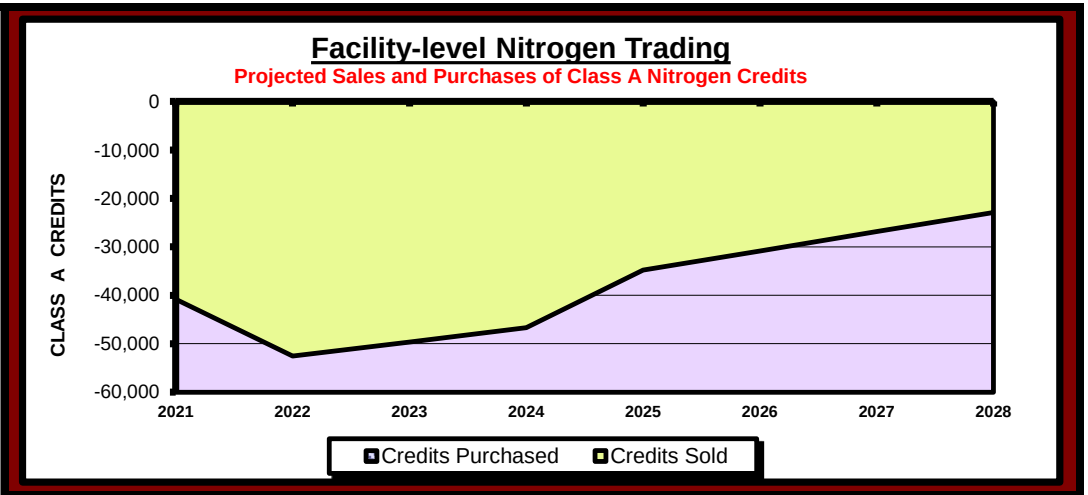
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Projected Flow (mgd)	3.09	3.23	3.37	3.05	3.19	3.33	3.47	3.61
Projected Avg. Annual Concentration (mg/L)	0.52	0.54	0.55	0.55	0.55	0.55	0.55	0.55
Discharged Load (end of pipe)	4,898	5,317	5,650	5,101	5,343	5,578	5,812	6,047
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	2,302	2,499	2,655	2,397	2,511	2,622	2,732	2,842
Delivered WLA	4,294	4,294	4,294	4,294	4,294	4,294	4,294	4,294
Expected Credits (delivered)	1,992	1,795	1,639	1,897	1,783	1,672	1,562	1,452
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(27)	0	0	0	0	0	0	0
WQIF-Held Credits	(1,074)	(1,074)	(1,074)	(1,074)	(1,074)	(1,074)	(1,074)	(1,074)
Expected Net Credits	**891**	**721**	**565**	**823**	**709**	**598**	**488**	**378**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**891**	**721**	**565**	**823**	**709**	**598**	**488**	**378**

** Represents private trade with Loudoun Milling*

NITROGEN FACILITY SUMMARY

Loudoun Water- Broad Run

POTOMAC Trading Basin

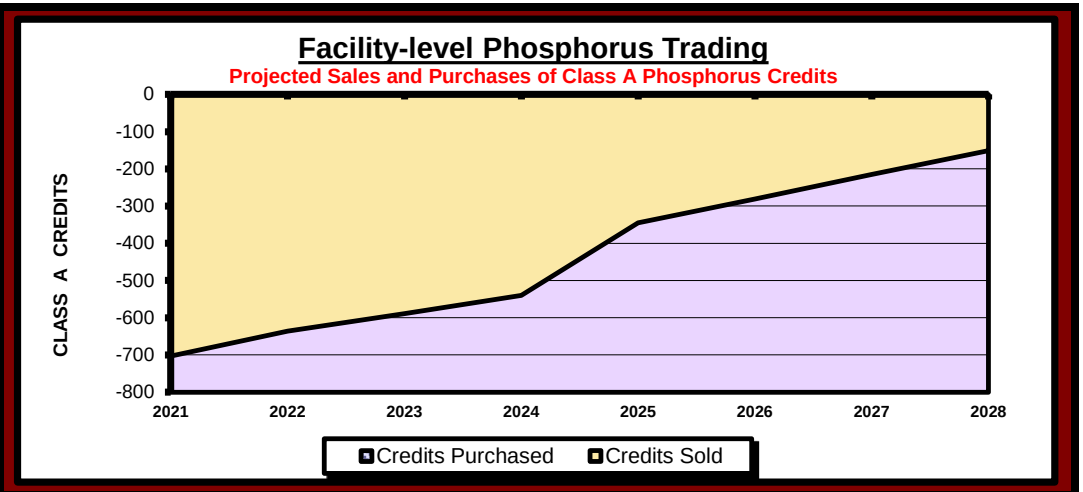


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Projected Flow (mgd)	7.90	6.56	6.89	7.23	8.59	9.04	9.50	9.95
Projected Avg. Annual Concentration (mg/L)	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Discharged Load (end of pipe)	84,210	69,926	73,444	77,068	91,565	96,362	101,265	106,062
Delivery Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Expected Load	69,052	57,339	60,224	63,196	75,083	79,016	83,037	86,971
Delivered WLA	109,884	109,884	109,884	109,884	109,884	109,884	109,884	109,884
Expected Credits (delivered)	40,832	52,545	49,660	46,688	34,801	30,868	26,847	22,913
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	**40,832**	**52,545**	**49,660**	**46,688**	**34,801**	**30,868**	**26,847**	**22,913**
Class A Credit Sales (Purchases)	**40,832**	**52,545**	**49,660**	**46,688**	**34,801**	**30,868**	**26,847**	**22,913**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Loudoun Water- Broad Run

POTOMAC Trading Basin

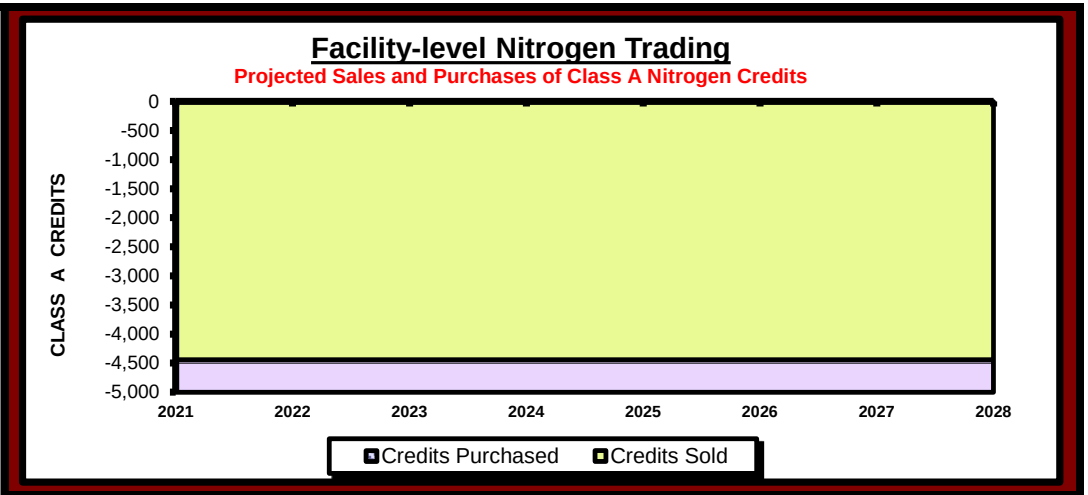


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Projected Flow (mgd)	7.90	6.56	6.89	7.23	8.59	9.04	9.50	9.95
Projected Avg. Annual Concentration (mg/L)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Discharged Load (end of pipe)	2,406	1,998	2,098	2,202	2,616	2,753	2,893	3,030
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	1,131	939	986	1,035	1,230	1,294	1,360	1,424
Delivered WLA	1,575	1,575	1,575	1,575	1,575	1,575	1,575	1,575
Expected Credits (delivered)	444	636	589	540	345	281	215	151
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	**444**	**636**	**589**	**540**	**345**	**281**	**215**	**151**
Class A Credit Sales (Purchases)	**703**	**636**	**589**	**540**	**345**	**281**	**215**	**151**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

Luray

POTOMAC Trading Basin

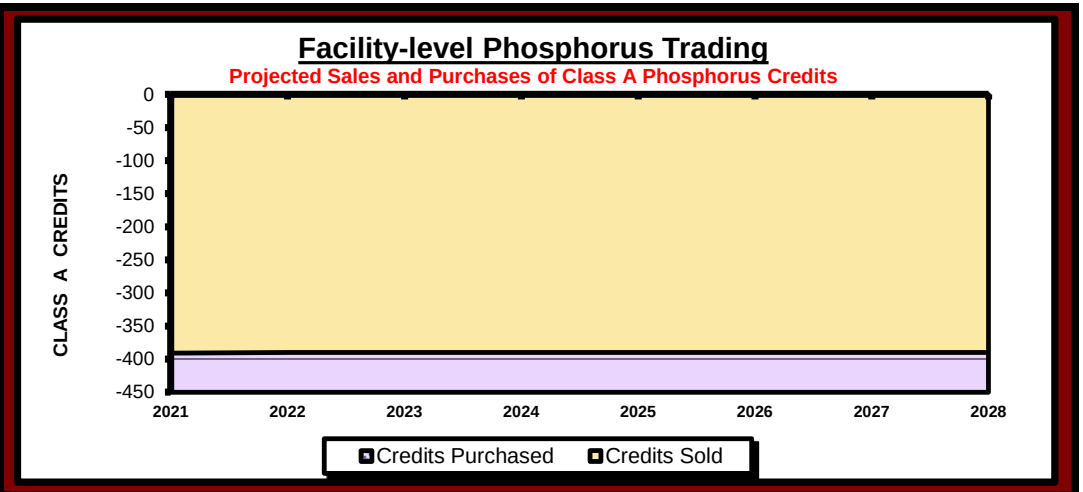


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
Projected Flow (mgd)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Projected Avg. Annual Concentration (mg/L)	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Discharged Load (end of pipe)	6,030	6,030	6,030	6,030	6,030	6,030	6,030	6,030
Delivery Factor	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Expected Load	1,990	1,990	1,990	1,990	1,990	1,990	1,990	1,990
Delivered WLA	6,432	6,432	6,432	6,432	6,432	6,432	6,432	6,432
Expected Credits (delivered)	4,442	4,442	4,442	4,442	4,442	4,442	4,442	4,442
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**4,442**	**4,442**	**4,442**	**4,442**	**4,442**	**4,442**	**4,442**	**4,442**
Class A Credit Sales (Purchases)	**4,442**	**4,442**	**4,442**	**4,442**	**4,442**	**4,442**	**4,442**	**4,442**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Luray

POTOMAC Trading Basin



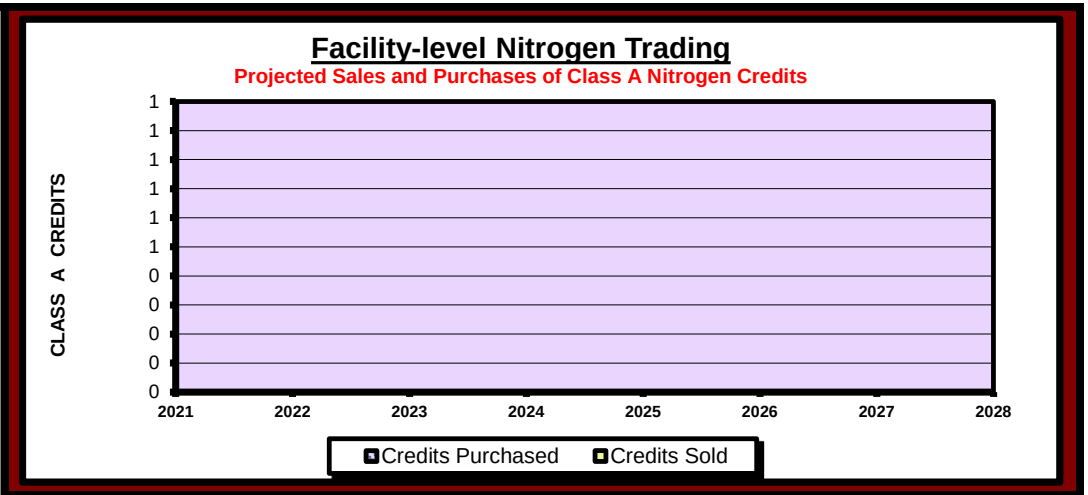
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
Projected Flow (mgd)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Projected Avg. Annual Concentration (mg/L)	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Discharged Load (end of pipe)	603	630	630	630	630	630	630	630
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	283	296	296	296	296	296	296	296
Delivered WLA	687	687	687	687	687	687	687	687
Expected Credits (delivered)	404	391	391	391	391	391	391	391
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**403**	**390**	**390**	**390**	**390**	**390**	**390**	**390**
Class A Credit Sales (Purchases)	**391**	**390**	**390**	**390**	**390**	**390**	**390**	**390**
Expected Class B Credits	**12**	**0**	**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

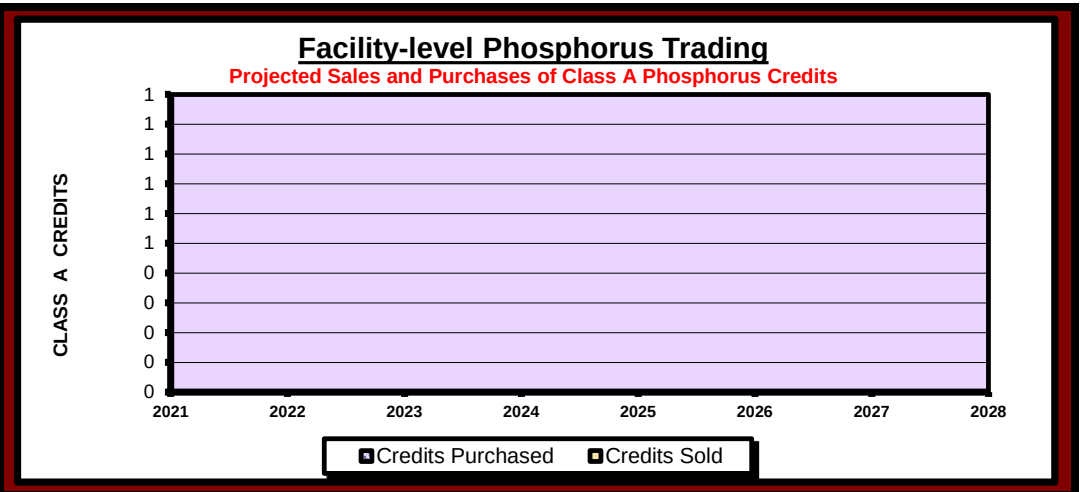


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Projected Flow (mgd)	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	9,259	9,259	9,259	9,259	9,259	9,259	9,259	9,259
Delivery Factor	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Expected Load	2,037	2,037	2,037	2,037	2,037	2,037	2,037	2,037
Delivered WLA	4,020	4,020	4,020	4,020	4,020	4,020	4,020	4,020
Expected Credits (delivered)	1,983	1,983	1,983	1,983	1,983	1,983	1,983	1,983
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	**1,983**	**1,983**	**1,983**	**1,983**	**1,983**	**1,983**	**1,983**	**1,983**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**1,983**	**1,983**	**1,983**	**1,983**	**1,983**	**1,983**	**1,983**	**1,983**

PHOSPHORUS FACILITY SUMMARY

Massanutten PSC

POTOMAC Trading Basin

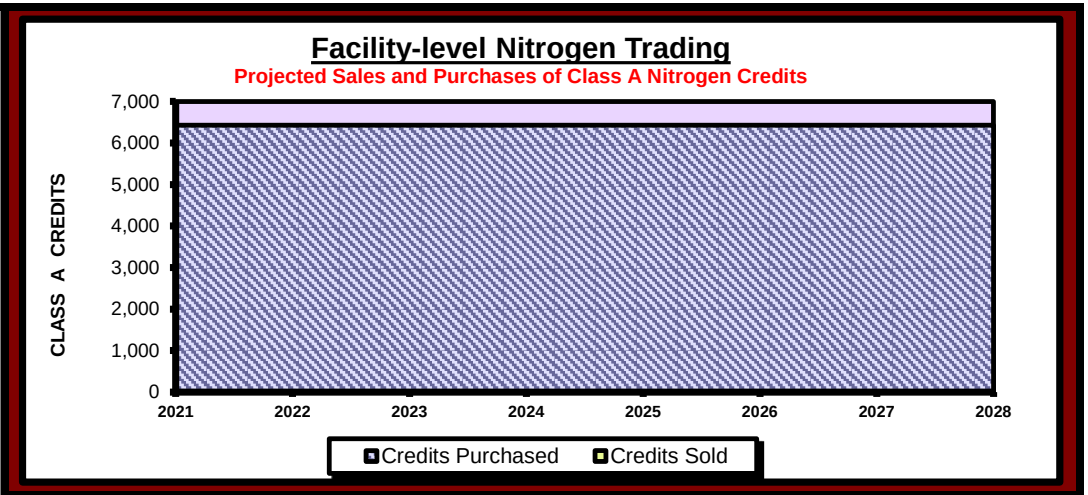


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Projected Flow (mgd)	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	694	694	694	694	694	694	694	694
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	326	326	326	326	326	326	326	326
Delivered WLA	644	644	644	644	644	644	644	644
Expected Credits (delivered)	318	318	318	318	318	318	318	318
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	**318**	**318**	**318**	**318**	**318**	**318**	**318**	**318**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**318**	**318**	**318**	**318**	**318**	**318**	**318**	**318**

NITROGEN FACILITY SUMMARY

Merck

POTOMAC Trading Basin

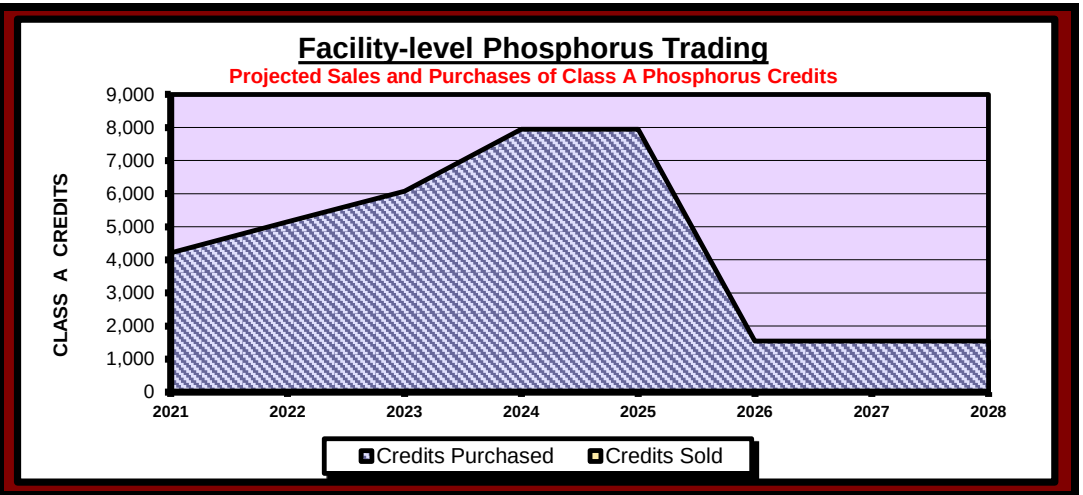


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Projected Flow (mgd)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Projected Avg. Annual Concentration (mg/L)	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Discharged Load (end of pipe)	43,856	43,856	43,856	43,856	43,856	43,856	43,856	43,856
Delivery Factor	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Expected Load	9,648	9,648	9,648	9,648	9,648	9,648	9,648	9,648
Delivered WLA	3,216	3,216	3,216	3,216	3,216	3,216	3,216	3,216
Expected Credits (delivered)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)	(6,432)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**(6,432)**	**(6,432)**	**(6,432)**	**(6,432)**	**(6,432)**	**(6,432)**	**(6,432)**	**(6,432)**
Class A Credit Sales (Purchases)	**(6,432)**	**(6,432)**	**(6,432)**	**(6,432)**	**(6,432)**	**(6,432)**	**(6,432)**	**(6,432)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Merck

POTOMAC Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Projected Flow (mgd)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Projected Avg. Annual Concentration (mg/L)	2.75	3.30	3.84	4.93	4.93	1.20	1.20	1.20
Discharged Load (end of pipe)	10,050	12,060	14,034	18,018	18,018	4,386	4,386	4,386
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	4,724	5,668	6,596	8,468	8,468	2,061	2,061	2,061
Delivered WLA	515	515	515	515	515	515	515	515
Expected Credits (delivered)	(4,209)	(5,153)	(6,081)	(7,953)	(7,953)	(1,546)	(1,546)	(1,546)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**(4,209)**	**(5,153)**	**(6,081)**	**(7,953)**	**(7,953)**	**(1,546)**	**(1,546)**	**(1,546)**
Class A Credit Sales (Purchases)	**(4,209)**	**(5,153)**	**(6,081)**	**(7,953)**	**(7,953)**	**(1,546)**	**(1,546)**	**(1,546)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Merck – Additional Information

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

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

Discharged TN WLA: 43,835 lbs/yr
Discharged TP WLA: 4,384 lbs/yr

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

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

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

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

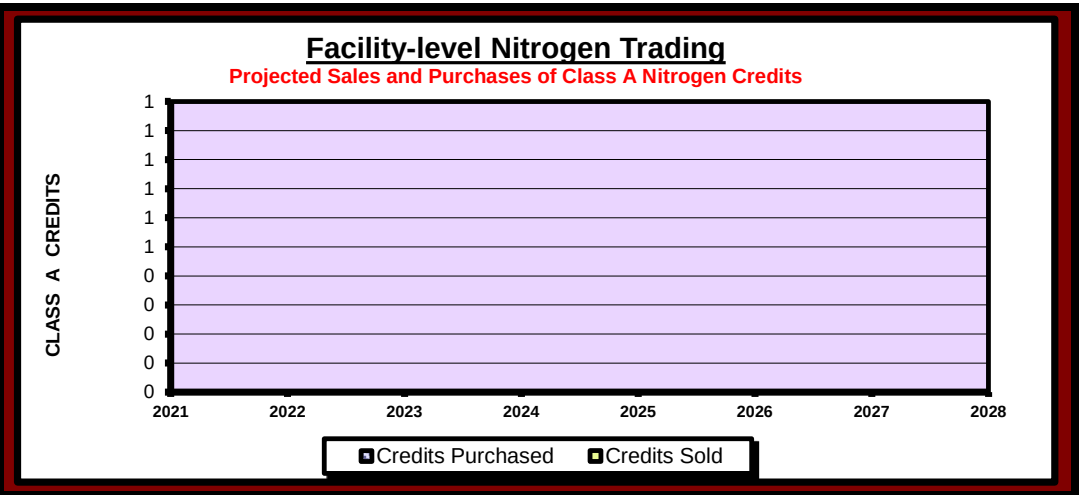
Delivered TP WLA: 515 lbs/yr (0.47 DF for Compliance Year 2021 and beyond)

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

Molson Coors Shenandoah

POTOMAC Trading Basin

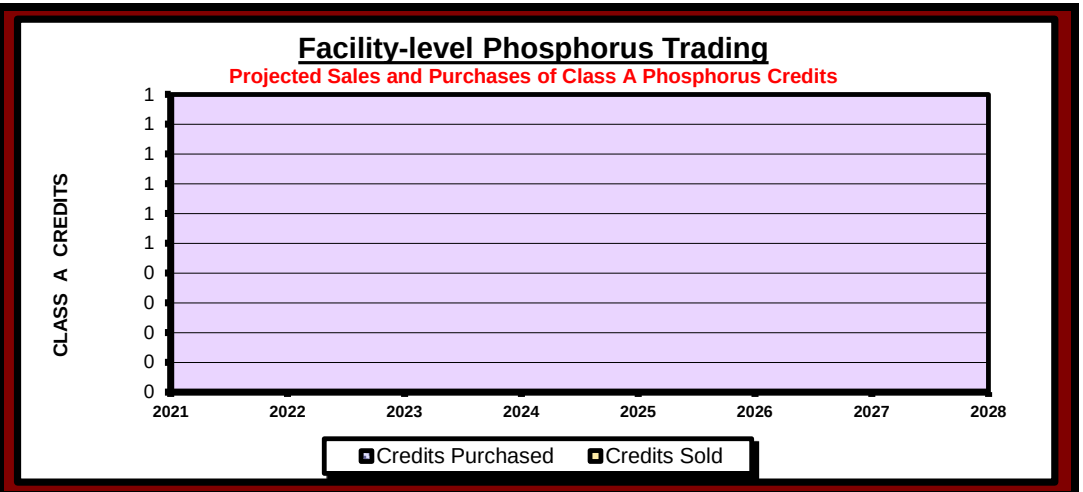


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Projected Flow (mgd)	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	54,820	54,820	54,820	54,820	54,820	54,820	54,820	54,820
Delivery Factor	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Expected Load	12,060	12,060	12,060	12,060	12,060	12,060	12,060	12,060
Delivered WLA	12,060	12,060	12,060	12,060	12,060	12,060	12,060	12,060
Expected Credits (delivered)	0	0	0	0	0	0	0	0
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**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

Molson Coors Shenandoah

POTOMAC Trading Basin

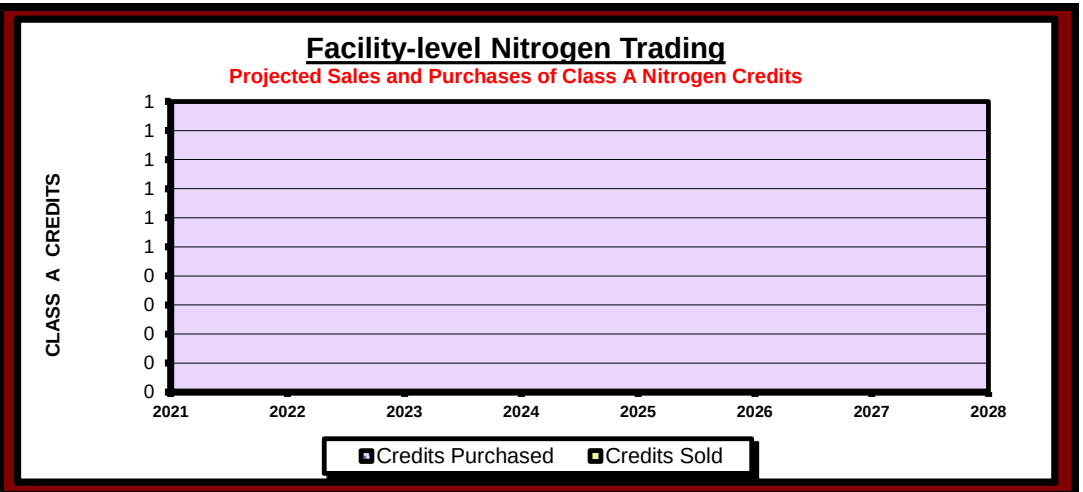


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Projected Flow (mgd)	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	4,112	4,112	4,112	4,112	4,112	4,112	4,112	4,112
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	1,932	1,932	1,932	1,932	1,932	1,932	1,932	1,932
Delivered WLA	1,933	1,933	1,933	1,933	1,933	1,933	1,933	1,933
Expected Credits (delivered)	1	1	1	1	1	1	1	1
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**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

NITROGEN FACILITY SUMMARY

Mt. Jackson

POTOMAC Trading Basin

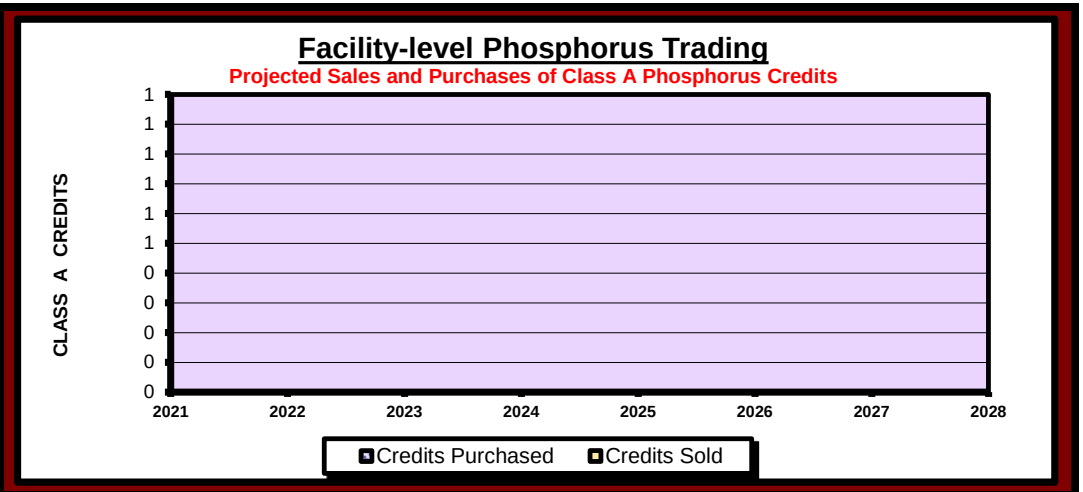


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Projected Flow (mgd)	0.55	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	6,700	6,822	6,822	6,822	6,822	6,822	6,822	6,822
Delivery Factor	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Expected Load	1,675	1,706	1,706	1,706	1,706	1,706	1,706	1,706
Delivered WLA	2,132	2,132	2,132	2,132	2,132	2,132	2,132	2,132
Expected Credits (delivered)	457	426	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	**457**	**426**	**426**	**426**	**426**	**426**	**426**	**426**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**457**	**426**	**426**	**426**	**426**	**426**	**426**	**426**

PHOSPHORUS FACILITY SUMMARY

Mt. Jackson

POTOMAC Trading Basin

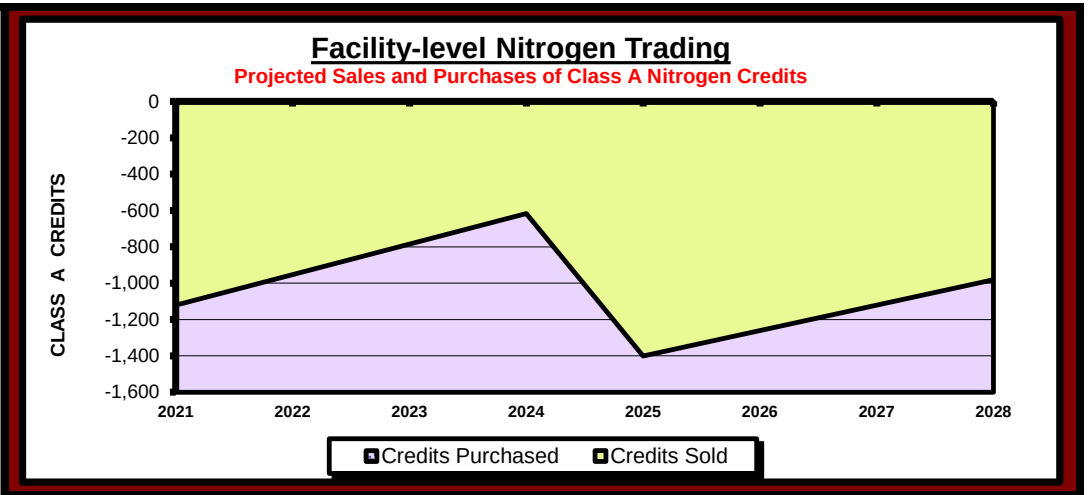


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Projected Flow (mgd)	0.55	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Projected Avg. Annual Concentration (mg/L)	0.20	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	335	512	512	512	512	512	512	512
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	157	240	240	240	240	240	240	240
Delivered WLA	301	301	301	301	301	301	301	301
Expected Credits (delivered)	144	61	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	**144**	**61**	**61**	**61**	**61**	**61**	**61**	**61**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**144**	**61**	**61**	**61**	**61**	**61**	**61**	**61**

NITROGEN FACILITY SUMMARY

Purcellville

POTOMAC Trading Basin

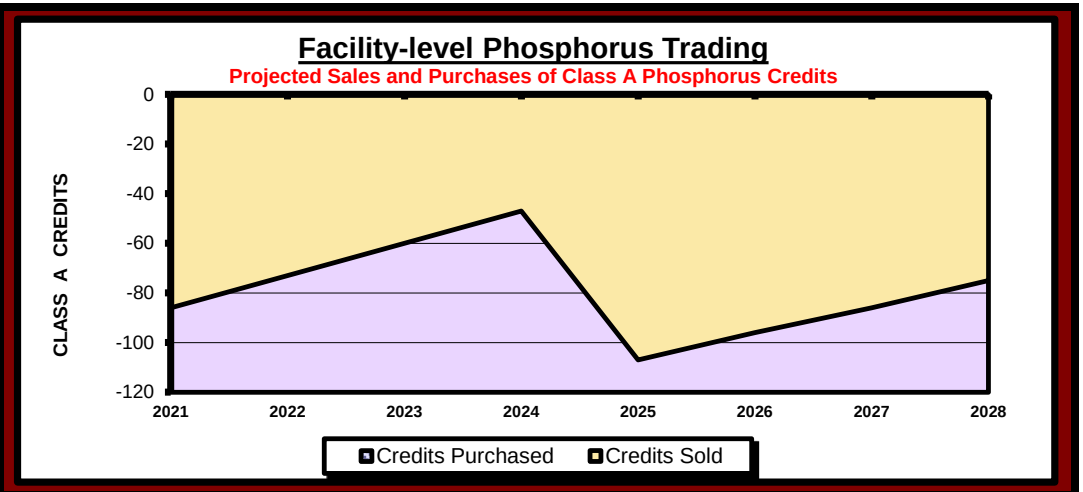


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Projected Flow (mgd)	1.10	1.16	1.22	1.28	1.00	1.05	1.10	1.15
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	13,400	14,131	14,862	15,593	12,182	12,791	13,400	14,010
Delivery Factor	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Expected Load	6,164	6,500	6,837	7,173	5,604	5,884	6,164	6,444
Delivered WLA	8,406	8,406	8,406	8,406	8,406	8,406	8,406	8,406
Expected Credits (delivered)	2,242	1,906	1,569	1,233	2,802	2,522	2,242	1,962
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	**2,242**	**1,906**	**1,569**	**1,233**	**2,802**	**2,522**	**2,242**	**1,962**
Class A Credit Sales (Purchases)	**1,121**	**953**	**785**	**617**	**1,401**	**1,261**	**1,121**	**981**
Expected Class B Credits	**1,121**	**953**	**784**	**616**	**1,401**	**1,261**	**1,121**	**981**

PHOSPHORUS FACILITY SUMMARY

Purcellville

POTOMAC Trading Basin

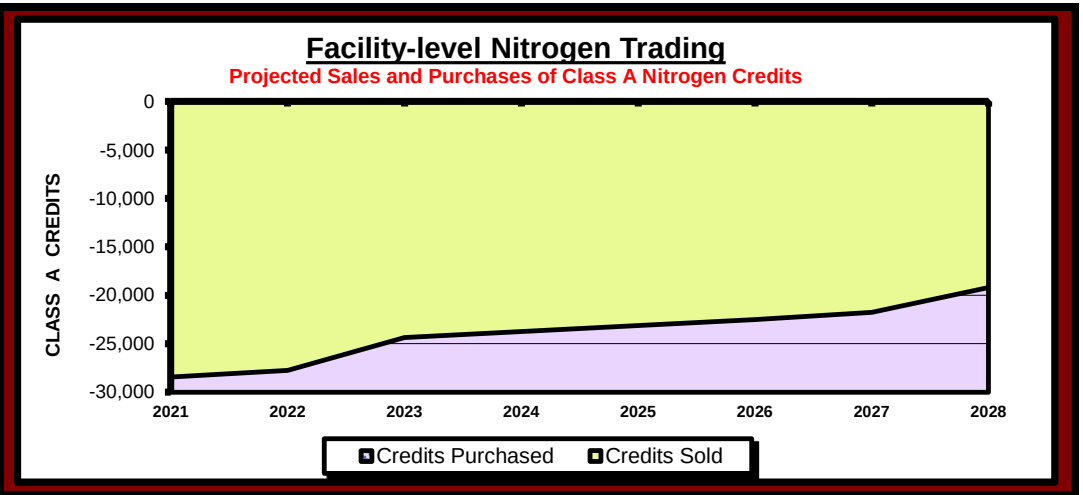


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Projected Flow (mgd)	1.10	1.16	1.22	1.28	1.00	1.05	1.10	1.15
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	1,005	1,060	1,115	1,169	914	959	1,005	1,051
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	472	498	524	550	429	451	472	494
Delivered WLA	644	644	644	644	644	644	644	644
Expected Credits (delivered)	172	146	120	94	215	193	172	150
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	**172**	**146**	**120**	**94**	**215**	**193**	**172**	**150**
Class A Credit Sales (Purchases)	**86**	**73**	**60**	**47**	**107**	**96**	**86**	**75**
Expected Class B Credits	**86**	**73**	**60**	**47**	**108**	**97**	**86**	**75**

NITROGEN FACILITY SUMMARY

PWCSA-HL Mooney

POTOMAC Trading Basin

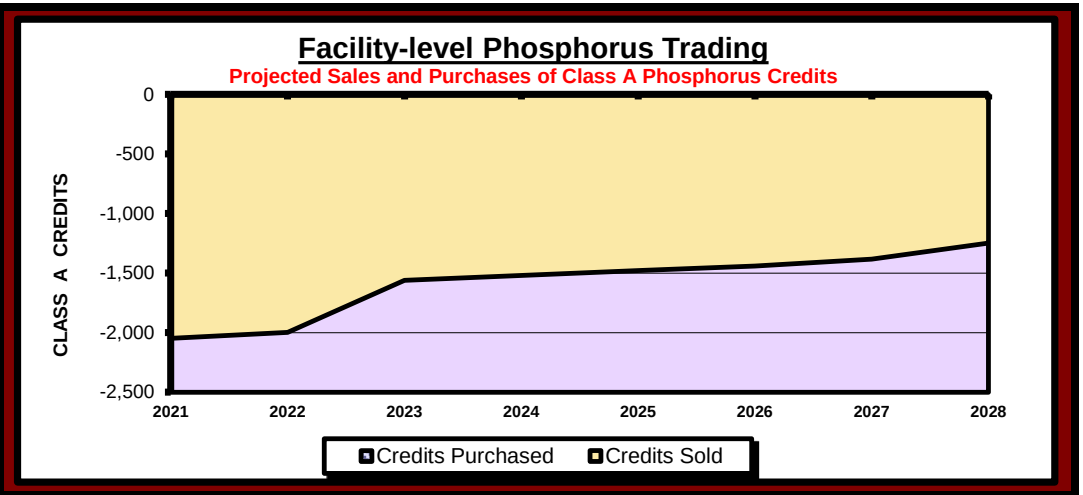


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
Projected Flow (mgd)	19.85	19.95	20.05	20.15	20.25	20.35	20.45	20.50
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	181,363	182,277	183,190	184,104	185,018	185,931	186,845	187,302
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	181,363	182,277	183,190	184,104	185,018	185,931	186,845	187,302
Delivered WLA	219,280	219,280	219,280	219,280	219,280	219,280	219,280	219,280
Expected Credits (delivered)	37,917	37,003	36,090	35,176	34,262	33,349	32,435	31,978
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	**37,917**	**37,003**	**36,090**	**35,176**	**34,262**	**33,349**	**32,435**	**31,978**
Class A Credit Sales (Purchases)	**28,438**	**27,752**	**24,363**	**23,743**	**23,124**	**22,509**	**21,763**	**19,200**
Expected Class B Credits	**9,479**	**9,251**	**11,727**	**11,433**	**11,138**	**10,840**	**10,672**	**12,778**

PHOSPHORUS FACILITY SUMMARY

PWCSA-HL Mooney

POTOMAC Trading Basin

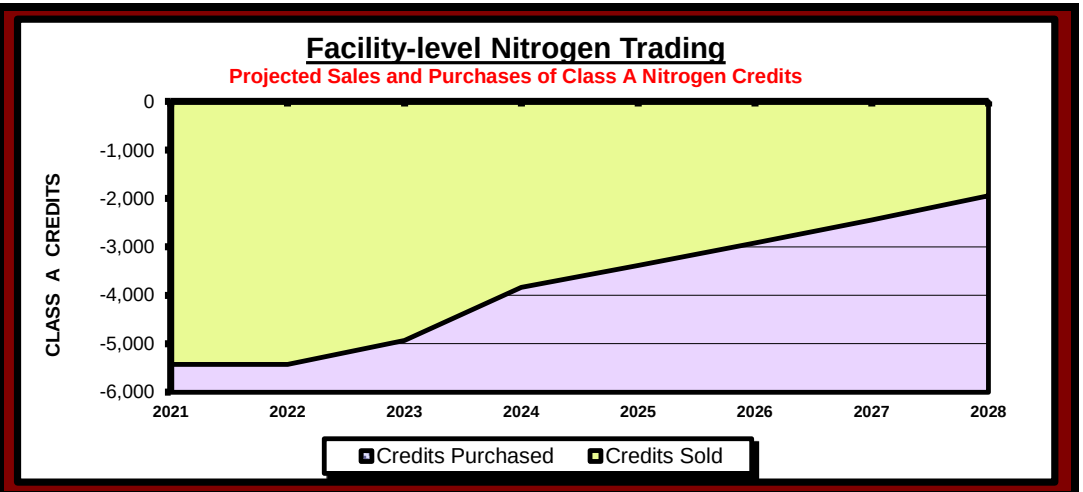


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
Projected Flow (mgd)	19.85	19.95	20.05	20.15	20.25	20.35	20.45	20.50
Projected Avg. Annual Concentration (mg/L)	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Discharged Load (end of pipe)	10,882	10,937	10,991	11,046	11,101	11,156	11,211	11,238
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	10,882	10,937	10,991	11,046	11,101	11,156	11,211	11,238
Delivered WLA	13,157	13,157	13,157	13,157	13,157	13,157	13,157	13,157
Expected Credits (delivered)	2,275	2,220	2,166	2,111	2,056	2,001	1,946	1,919
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	**2,275**	**2,220**	**2,166**	**2,111**	**2,056**	**2,001**	**1,946**	**1,919**
Class A Credit Sales (Purchases)	**2,048**	**1,998**	**1,561**	**1,520**	**1,479**	**1,441**	**1,383**	**1,248**
Expected Class B Credits	**227**	**222**	**605**	**591**	**577**	**560**	**563**	**671**

NITROGEN FACILITY SUMMARY

Stafford Co-Aquia

POTOMAC Trading Basin

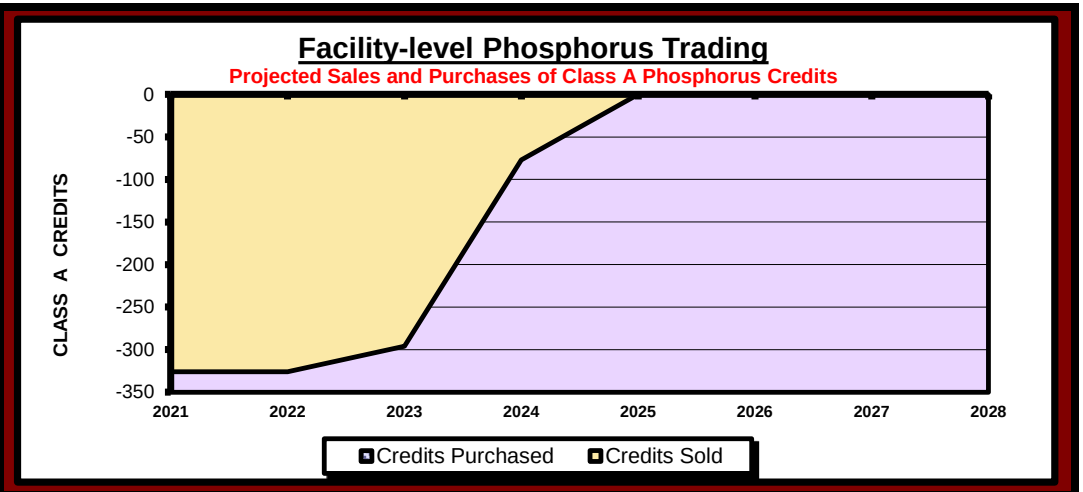


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Projected Flow (mgd)	7.34	7.34	7.46	6.60	6.77	6.93	7.11	7.29
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	67,063	67,063	68,160	60,302	61,855	63,317	64,962	66,606
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	67,063	67,063	68,160	60,302	61,855	63,317	64,962	66,606
Delivered WLA	73,093	73,093	73,093	73,093	73,093	73,093	73,093	73,093
Expected Credits (delivered)	6,030	6,030	4,933	12,791	11,238	9,776	8,131	6,487
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	**6,030**	**6,030**	**4,933**	**12,791**	**11,238**	**9,776**	**8,131**	**6,487**
Class A Credit Sales (Purchases)	**5,427**	**5,427**	**4,933**	**3,837**	**3,385**	**2,921**	**2,446**	**1,946**
Expected Class B Credits	**603**	**603**	**0**	**8,954**	**7,853**	**6,855**	**5,685**	**4,541**

PHOSPHORUS FACILITY SUMMARY

Stafford Co-Aquia

POTOMAC Trading Basin

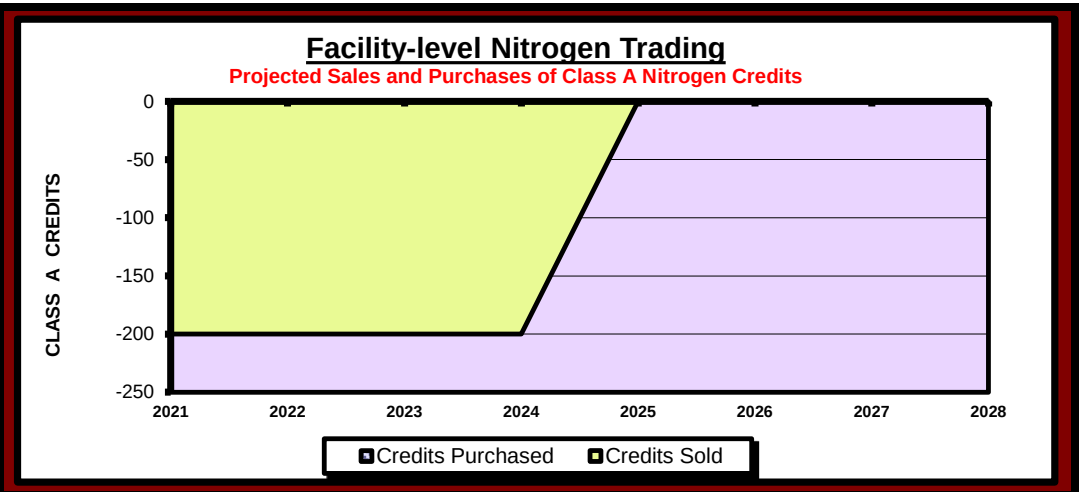


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Projected Flow (mgd)	7.34	7.34	7.46	6.60	6.77	6.93	7.11	7.29
Projected Avg. Annual Concentration (mg/L)	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Discharged Load (end of pipe)	4,024	4,024	4,090	3,618	3,711	3,799	3,898	3,996
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	4,024	4,024	4,090	3,618	3,711	3,799	3,898	3,996
Delivered WLA	4,386	4,386	4,386	4,386	4,386	4,386	4,386	4,386
Expected Credits (delivered)	362	362	296	768	675	587	488	390
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	**362**	**362**	**296**	**768**	**675**	**587**	**488**	**390**
Class A Credit Sales (Purchases)	**326**	**326**	**296**	**77**	**0**	**0**	**0**	**0**
Expected Class B Credits	**36**	**36**	**0**	**691**	**675**	**587**	**488**	**390**

NITROGEN FACILITY SUMMARY

Stoney Creek

POTOMAC Trading Basin



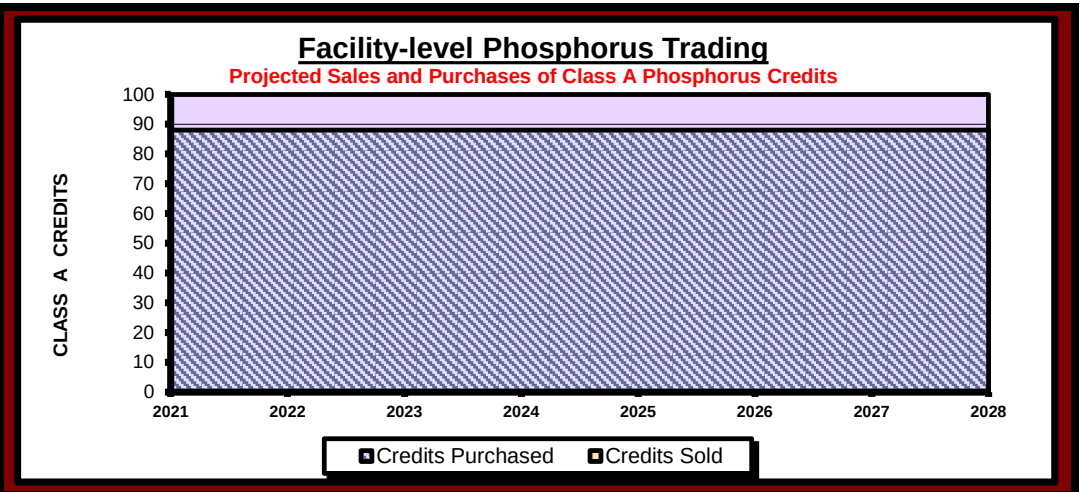
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Projected Avg. Annual Concentration (mg/L)	7.00	7.00	7.00	7.00	6.00	6.00	6.00	6.00
Discharged Load (end of pipe)	7,462	7,462	7,462	7,462	6,396	6,396	6,396	6,396
Delivery Factor	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Expected Load	1,865	1,865	1,865	1,865	1,599	1,599	1,599	1,599
Delivered WLA*	2,065	2,065	2,065	2,065	2,065	2,065	2,065	2,065
Expected Credits (delivered)	200	200	200	200	466	466	466	466
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	**200**	**200**	**200**	**200**	**466**	**466**	**466**	**466**
Class A Credit Sales (Purchases)	**200**	**200**	**200**	**200**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**0**	**0**	**0**	**466**	**466**	**466**	**466**

** Reflects consolidation of the Shrine Mont STP wasteload allocation*

PHOSPHORUS FACILITY SUMMARY

Stoney Creek

POTOMAC Trading Basin



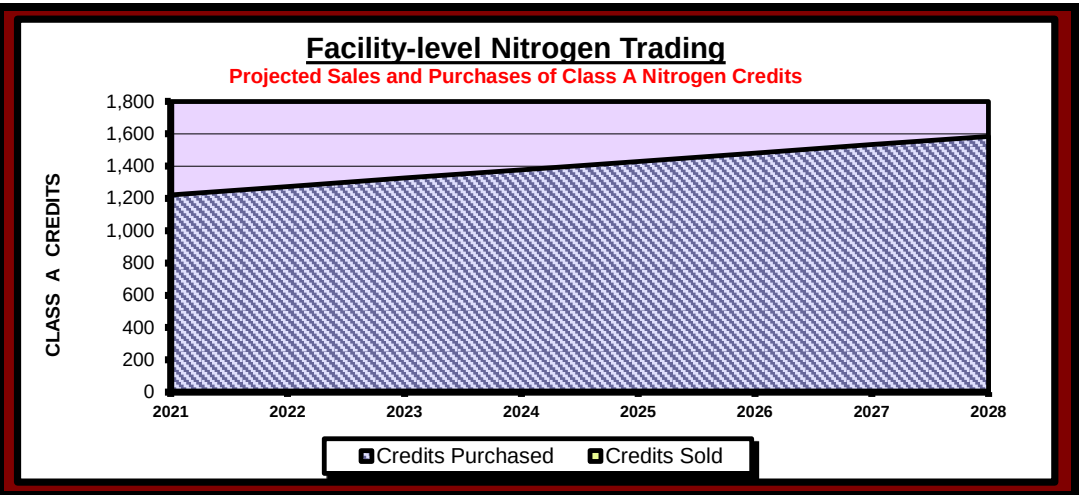
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Projected Avg. Annual Concentration (mg/L)	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Discharged Load (end of pipe)	853	853	853	853	853	853	853	853
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	401	401	401	401	401	401	401	401
Delivered WLA*	313	313	313	313	313	313	313	313
Expected Credits (delivered)	(88)	(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	**(88)**	**(88)**	**(88)**	**(88)**	**(88)**	**(88)**	**(88)**	**(88)**
Class A Credit Sales (Purchases)	**(88)**	**(88)**	**(88)**	**(88)**	**(88)**	**(88)**	**(88)**	**(88)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

** Reflects consolidation of the Shrine Mont STP wasteload allocation*

NITROGEN FACILITY SUMMARY

Strasburg

POTOMAC Trading Basin

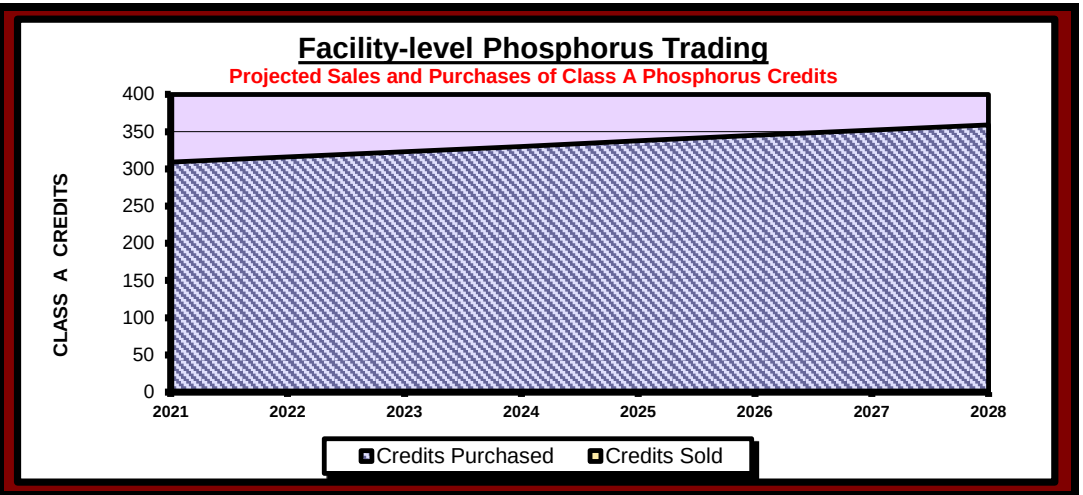


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.09
Projected Avg. Annual Concentration (mg/L)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Discharged Load (end of pipe)	15,532	15,685	15,837	15,989	16,141	16,294	16,446	16,598
Delivery Factor	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Expected Load	5,281	5,333	5,385	5,436	5,488	5,540	5,592	5,643
Delivered WLA	4,059	4,059	4,059	4,059	4,059	4,059	4,059	4,059
Expected Credits (delivered)	(1,222)	(1,274)	(1,326)	(1,377)	(1,429)	(1,481)	(1,533)	(1,584)
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	**(1,222)**	**(1,274)**	**(1,326)**	**(1,377)**	**(1,429)**	**(1,481)**	**(1,533)**	**(1,584)**
Class A Credit Sales (Purchases)	**(1,222)**	**(1,274)**	**(1,326)**	**(1,377)**	**(1,429)**	**(1,481)**	**(1,533)**	**(1,584)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Strasburg

POTOMAC Trading Basin

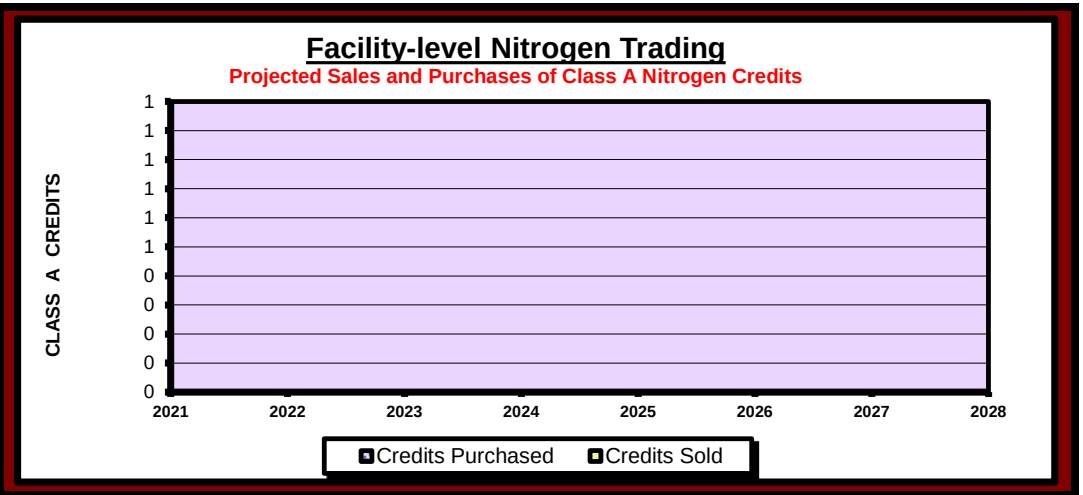


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.09
Projected Avg. Annual Concentration (mg/L)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Discharged Load (end of pipe)	1,553	1,568	1,584	1,599	1,614	1,629	1,645	1,660
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	730	737	744	751	759	766	773	780
Delivered WLA	421	421	421	421	421	421	421	421
Expected Credits (delivered)	(309)	(316)	(323)	(330)	(338)	(345)	(352)	(359)
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	**(309)**	**(316)**	**(323)**	**(330)**	**(338)**	**(345)**	**(352)**	**(359)**
Class A Credit Sales (Purchases)	**(309)**	**(316)**	**(323)**	**(330)**	**(338)**	**(345)**	**(352)**	**(359)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

UOSA

POTOMAC Trading Basin

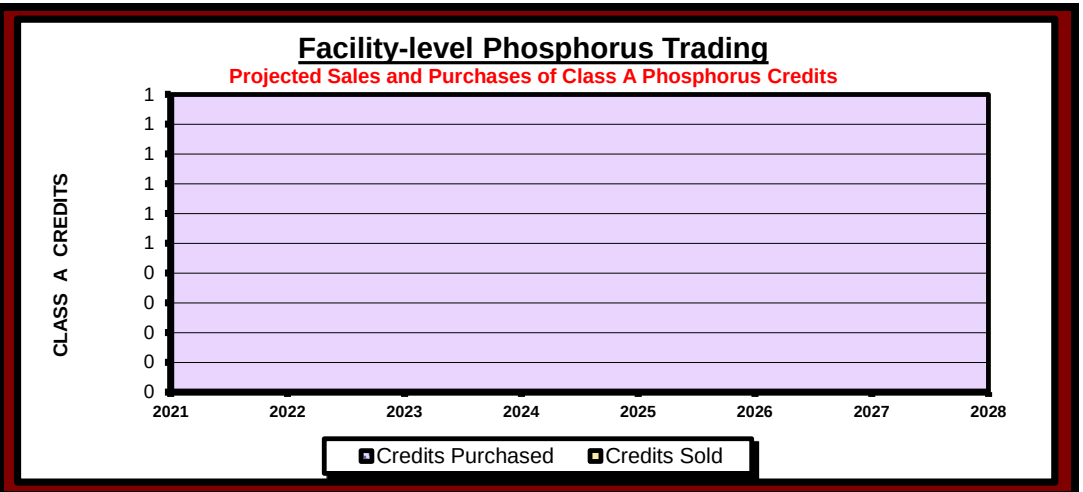


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
Projected Flow (mgd)	36.13	34.27	36.37	37.56	37.55	37.86	38.16	38.47
Projected Avg. Annual Concentration (mg/L)	11.95	12.60	11.80	11.50	11.50	11.40	11.30	11.20
Discharged Load (end of pipe)	1,314,931	1,315,079	1,307,051	1,315,499	1,315,149	1,314,476	1,313,270	1,312,222
Delivery Factor	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Expected Load	302,434	302,468	300,622	302,565	302,484	302,329	302,052	301,811
Delivered WLA	302,607	302,607	302,607	302,607	302,607	302,607	302,607	302,607
Expected Credits (delivered)	173	139	1,985	42	123	278	555	796
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	**173**	**139**	**1,985**	**42**	**123**	**278**	**555**	**796**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**173**	**139**	**1,985**	**42**	**123**	**278**	**555**	**796**

PHOSPHORUS FACILITY SUMMARY

UOSA

POTOMAC Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
Projected Flow (mgd)	36.13	34.27	36.37	37.56	37.55	37.86	38.16	38.47
Projected Avg. Annual Concentration (mg/L)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Discharged Load (end of pipe)	11,004	10,437	11,077	11,439	11,436	11,530	11,622	11,716
Delivery Factor	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Expected Load	3,411	3,236	3,434	3,546	3,545	3,574	3,603	3,632
Delivered WLA	5,098	5,098	5,098	5,098	5,098	5,098	5,098	5,098
Expected Credits (delivered)	1,687	1,862	1,664	1,552	1,553	1,524	1,495	1,466
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	**1,687**	**1,862**	**1,664**	**1,552**	**1,553**	**1,524**	**1,495**	**1,466**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**1,687**	**1,862**	**1,664**	**1,552**	**1,553**	**1,524**	**1,495**	**1,466**

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.

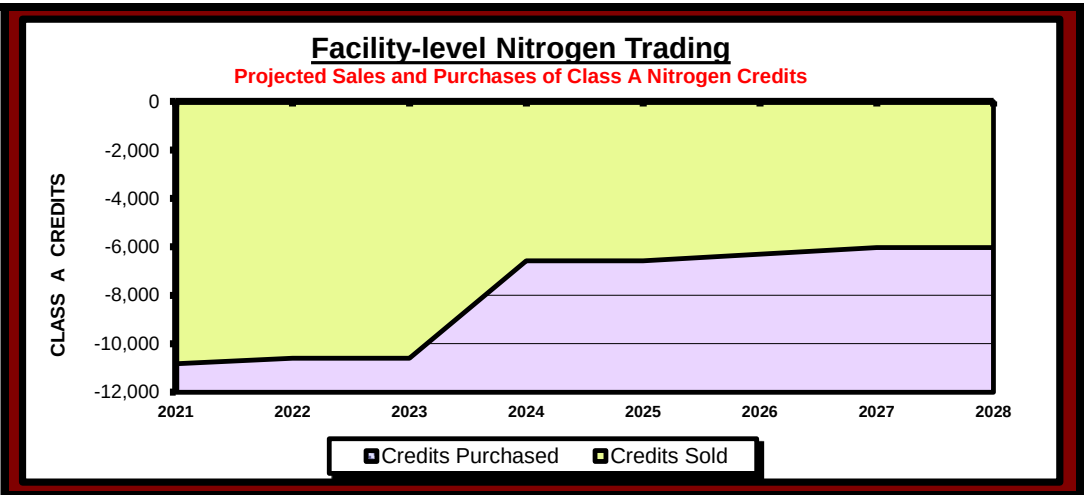
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
VA Am. Water PW Sec. 1	-	-	-	-	-	-	-	-
VA Am. Water PW Sec. 8	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
VA Am. Water PW Sec. 1	18,045	17,665	17,665	10,964	10,964	10,507	10,051	10,051
VA Am. Water PW Sec. 8	18,045	17,665	17,665	10,051	10,051	9,137	9,137	9,137
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**36,090**	**35,330**	**35,330**	**21,015**	**21,015**	**19,644**	**19,188**	**19,188**
Class A Sales (Purchases)	**21,654**	**21,198**	**21,198**	**12,609**	**12,609**	**11,786**	**11,513**	**11,513**
Expected Class B Credits	*14,436*	*14,132*	*14,132*	*8,406*	*8,406*	*7,858*	*7,675*	*7,675*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
VA Am. Water PW Sec. 1	-	-	-	-	-	-	-	-
VA Am. Water PW Sec. 8	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
VA Am. Water PW Sec. 1	1,083	1,060	1,060	658	658	631	603	603
VA Am. Water PW Sec. 8	1,083	1,060	1,060	603	603	548	548	548
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**2,166**	**2,120**	**2,120**	**1,261**	**1,261**	**1,179**	**1,151**	**1,151**
Class A Sales (Purchases)	**1,300**	**1,272**	**1,272**	**757**	**757**	**708**	**691**	**691**
Expected Class B Credits	*866*	*848*	*848*	*504*	*504*	*471*	*460*	*460*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NITROGEN FACILITY SUMMARY

VA Am. Water PW Sec. 1

POTOMAC Trading Basin

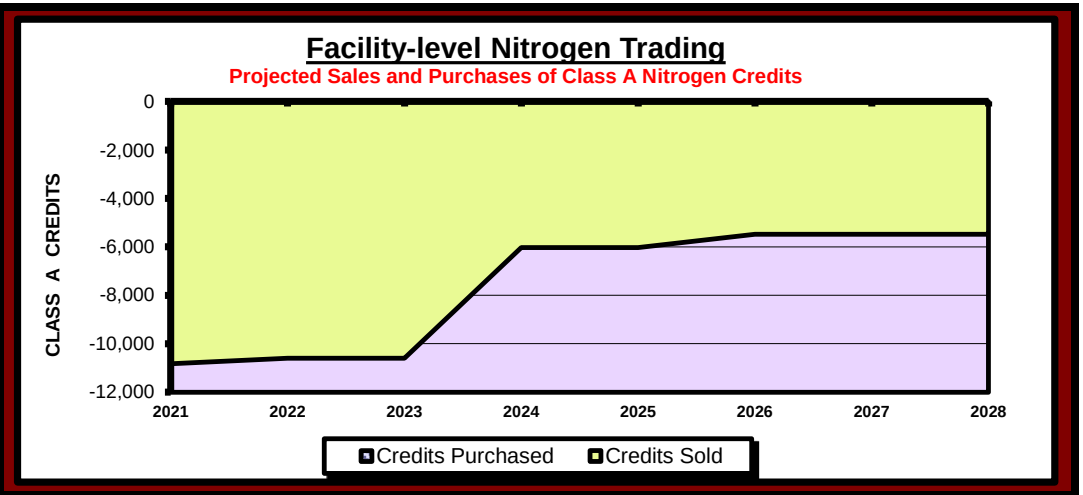


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
Projected Flow (mgd)	3.15	3.20	3.20	3.40	3.40	3.45	3.50	3.50
Projected Avg. Annual Concentration (mg/L)	2.50	2.50	2.50	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	23,984	24,364	24,364	31,065	31,065	31,522	31,978	31,978
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	23,984	24,364	24,364	31,065	31,065	31,522	31,978	31,978
Delivered WLA	42,029	42,029	42,029	42,029	42,029	42,029	42,029	42,029
Expected Credits (delivered)	18,045	17,665	17,665	10,964	10,964	10,507	10,051	10,051
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**18,045**	**17,665**	**17,665**	**10,964**	**10,964**	**10,507**	**10,051**	**10,051**
Class A Credit Sales (Purchases)	**10,827**	**10,599**	**10,599**	**6,578**	**6,578**	**6,304**	**6,031**	**6,031**
Expected Class B Credits	**7,218**	**7,066**	**7,066**	**4,386**	**4,386**	**4,203**	**4,020**	**4,020**

NITROGEN FACILITY SUMMARY

VA Am. Water PW Sec. 8

POTOMAC Trading Basin

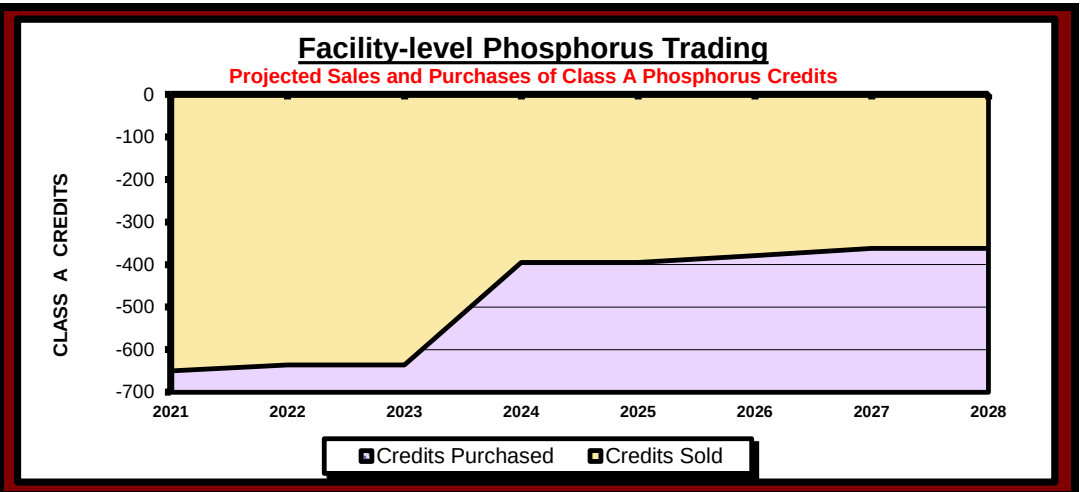


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
Projected Flow (mgd)	3.15	3.20	3.20	3.50	3.50	3.60	3.60	3.60
Projected Avg. Annual Concentration (mg/L)	2.50	2.50	2.50	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	23,984	24,364	24,364	31,978	31,978	32,892	32,892	32,892
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	23,984	24,364	24,364	31,978	31,978	32,892	32,892	32,892
Delivered WLA	42,029	42,029	42,029	42,029	42,029	42,029	42,029	42,029
Expected Credits (delivered)	18,045	17,665	17,665	10,051	10,051	9,137	9,137	9,137
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**18,045**	**17,665**	**17,665**	**10,051**	**10,051**	**9,137**	**9,137**	**9,137**
Class A Credit Sales (Purchases)	**10,827**	**10,599**	**10,599**	**6,031**	**6,031**	**5,482**	**5,482**	**5,482**
Expected Class B Credits	**7,218**	**7,066**	**7,066**	**4,020**	**4,020**	**3,655**	**3,655**	**3,655**

PHOSPHORUS FACILITY SUMMARY

VA Am. Water PW Sec. 1

POTOMAC Trading Basin

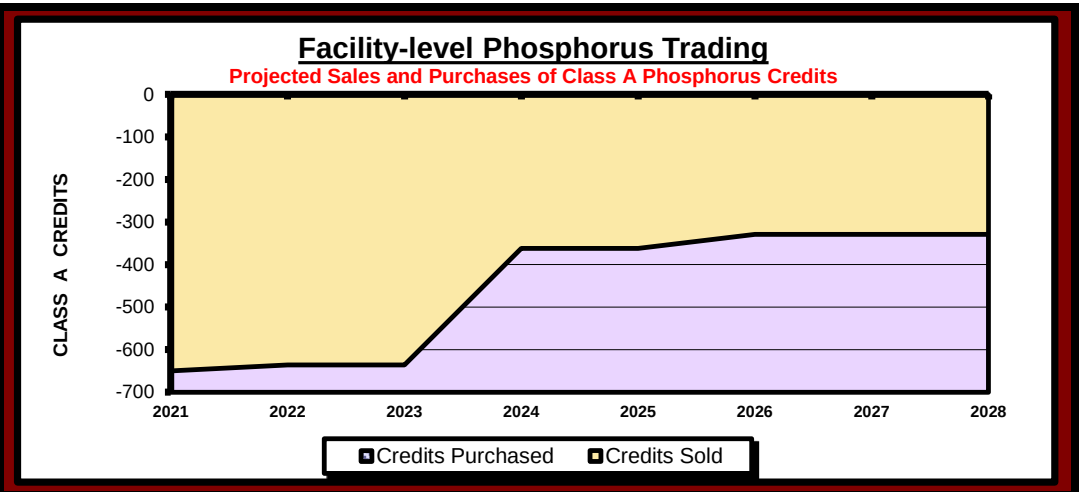


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
Projected Flow (mgd)	3.15	3.20	3.20	3.40	3.40	3.45	3.50	3.50
Projected Avg. Annual Concentration (mg/L)	0.15	0.15	0.15	0.18	0.18	0.18	0.18	0.18
Discharged Load (end of pipe)	1,439	1,462	1,462	1,864	1,864	1,891	1,919	1,919
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,439	1,462	1,462	1,864	1,864	1,891	1,919	1,919
Delivered WLA	2,522	2,522	2,522	2,522	2,522	2,522	2,522	2,522
Expected Credits (delivered)	1,083	1,060	1,060	658	658	631	603	603
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	**1,083**	**1,060**	**1,060**	**658**	**658**	**631**	**603**	**603**
Class A Credit Sales (Purchases)	**650**	**636**	**636**	**395**	**395**	**379**	**362**	**362**
Expected Class B Credits	**433**	**424**	**424**	**263**	**263**	**252**	**241**	**241**

PHOSPHORUS FACILITY SUMMARY

VA Am. Water PW Sec. 8

POTOMAC Trading Basin

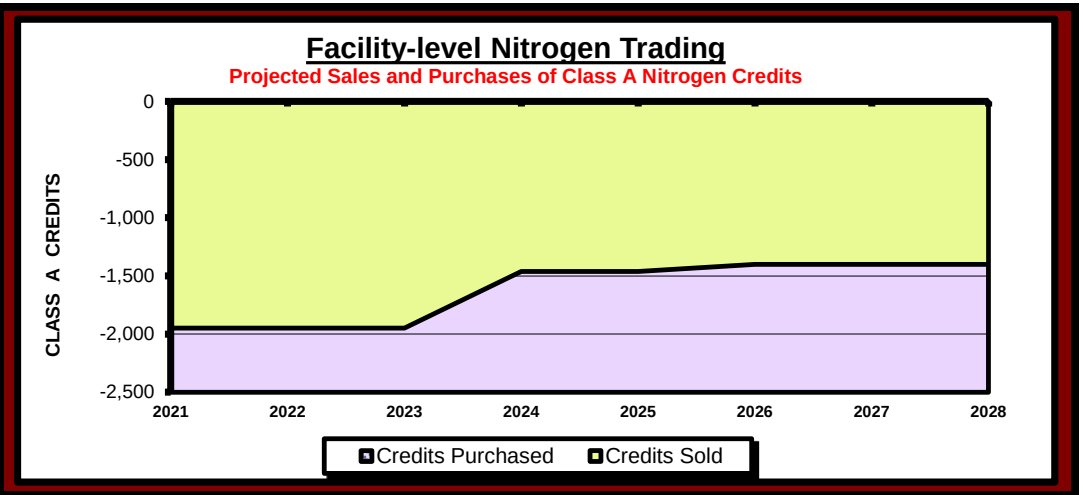


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
Projected Flow (mgd)	3.15	3.20	3.20	3.50	3.50	3.60	3.60	3.60
Projected Avg. Annual Concentration (mg/L)	0.15	0.15	0.15	0.18	0.18	0.18	0.18	0.18
Discharged Load (end of pipe)	1,439	1,462	1,462	1,919	1,919	1,974	1,974	1,974
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,439	1,462	1,462	1,919	1,919	1,974	1,974	1,974
Delivered WLA	2,522	2,522	2,522	2,522	2,522	2,522	2,522	2,522
Expected Credits (delivered)	1,083	1,060	1,060	603	603	548	548	548
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	**1,083**	**1,060**	**1,060**	**603**	**603**	**548**	**548**	**548**
Class A Credit Sales (Purchases)	**650**	**636**	**636**	**362**	**362**	**329**	**329**	**329**
Expected Class B Credits	**433**	**424**	**424**	**241**	**241**	**219**	**219**	**219**

NITROGEN FACILITY SUMMARY

Waynesboro

POTOMAC Trading Basin

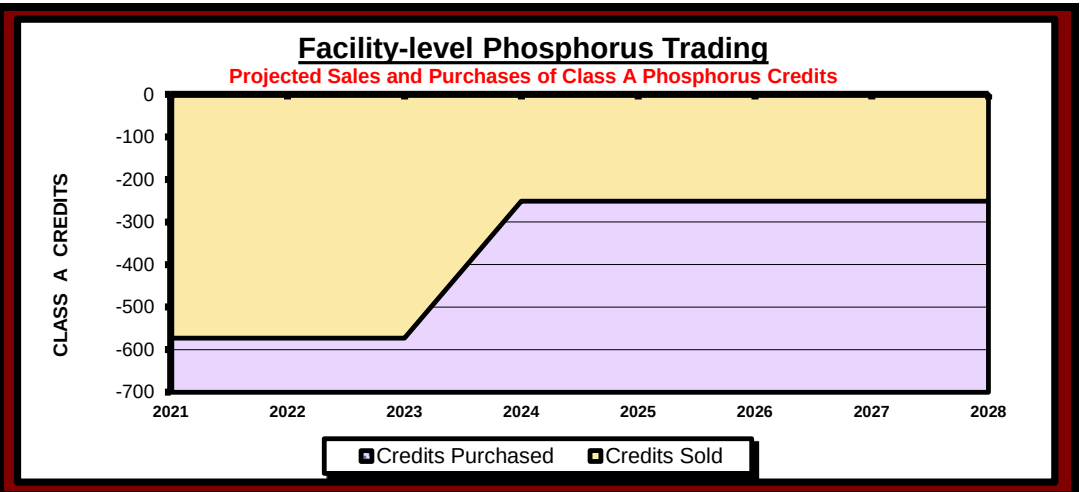


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Projected Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.10	4.10	4.10
Projected Avg. Annual Concentration (mg/L)	2.00	2.00	2.00	2.50	2.50	2.50	2.50	2.50
Discharged Load (end of pipe)	24,364	24,364	24,364	30,456	30,456	31,217	31,217	31,217
Delivery Factor	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Expected Load	1,949	1,949	1,949	2,436	2,436	2,497	2,497	2,497
Delivered WLA	3,898	3,898	3,898	3,898	3,898	3,898	3,898	3,898
Expected Credits (delivered)	1,949	1,949	1,949	1,462	1,462	1,401	1,401	1,401
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	**1,949**	**1,949**	**1,949**	**1,462**	**1,462**	**1,401**	**1,401**	**1,401**
Class A Credit Sales (Purchases)	**1,949**	**1,949**	**1,949**	**1,462**	**1,462**	**1,401**	**1,401**	**1,401**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Waynesboro

POTOMAC Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Projected Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.10	4.10	4.10
Projected Avg. Annual Concentration (mg/L)	0.20	0.20	0.20	0.25	0.25	0.25	0.25	0.25
Discharged Load (end of pipe)	2,436	2,436	2,436	3,046	3,046	3,122	3,122	3,122
Delivery Factor	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Expected Load	1,145	1,145	1,145	1,431	1,431	1,467	1,467	1,467
Delivered WLA	1,718	1,718	1,718	1,718	1,718	1,718	1,718	1,718
Expected Credits (delivered)	573	573	573	287	287	251	251	251
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	**573**	**573**	**573**	**287**	**287**	**251**	**251**	**251**
Class A Credit Sales (Purchases)	**573**	**573**	**573**	**251**	**251**	**251**	**251**	**251**
Expected Class B Credits	**0**	**0**	**0**	**36**	**36**	**0**	**0**	**0**

SECTION 3

Rappahannock River Basin Exchange Compliance Plan

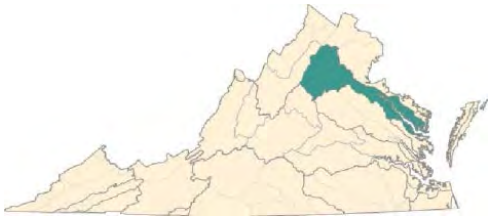


EXHIBIT 3-1
Nitrogen Plan Summary: Rappahannock River Basin

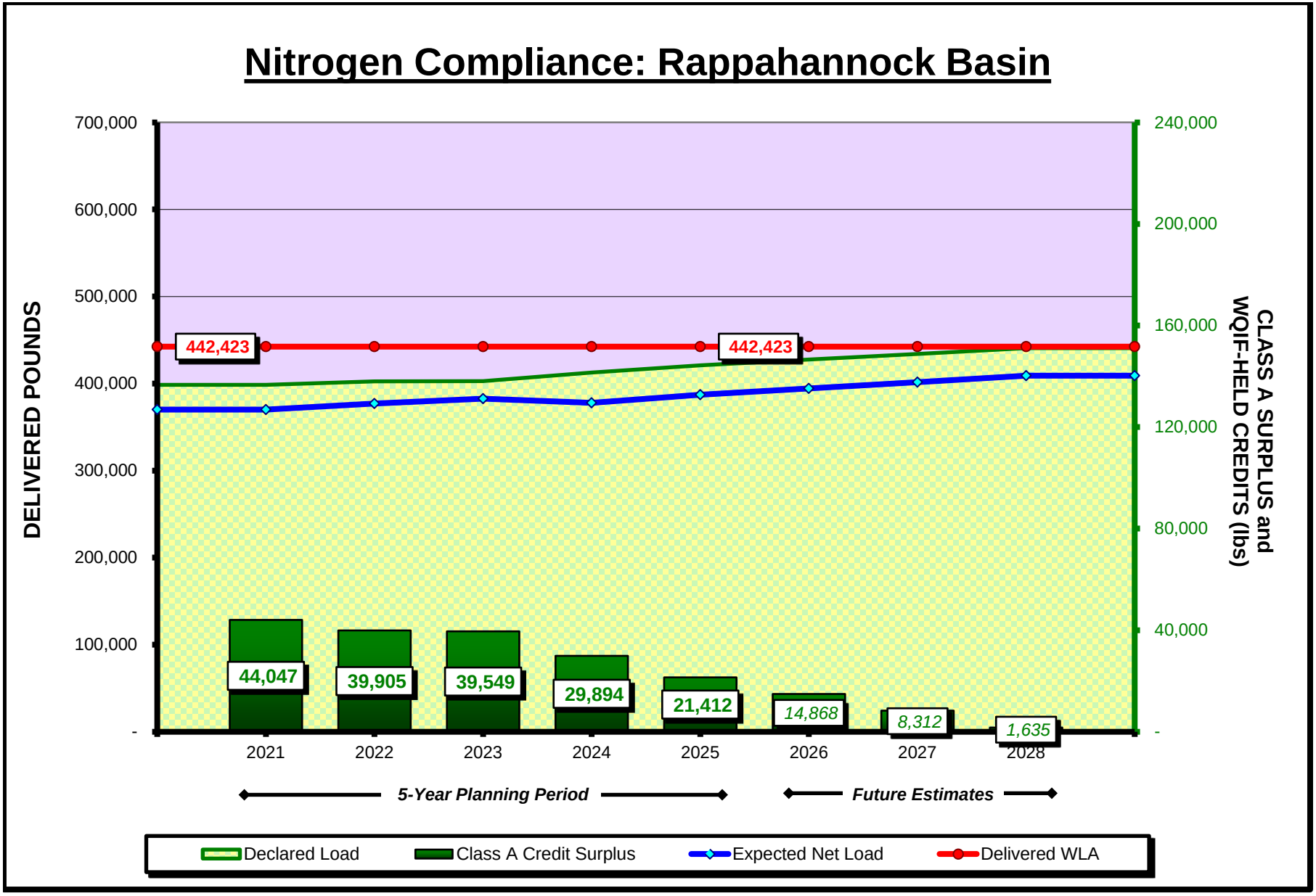


EXHIBIT 3-2
2021 Nitrogen Trading Ledger: Rappahannock River Basin

RAPPAHANNOCK 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:	$ 0.63	$ 3.87	$ 0.13
The Exchange (group)	**442,423**	**368,569**	**73,854**	**-**	**(100)**	**(1,523)**	**72,231**		**53,891**	**(9,844)**	**28,184**
American Water-Fort AP Hill	6,457	7,127	(670)	-	-	-	(670)		-	(670)	-
Aqua Virginia-Pres. Lakes	1,994	1,267	727	-	-	-	727		700	-	27
Culpeper (Town)	35,816	24,176	11,640	-	-	-	11,640		-	-	11,640
FCWSA-Marshall	1,481	1,944	(463)	463	-	-	-		-	-	-
FCWSA-Remington	11,938	8,238	3,700	(463)	-	-	3,237		-	-	3,237
Fredericksburg	54,820	62,129	(7,309)	-	-	-	(7,309)		-	(7,309)	-
Greene Co-Rapidan	1,535	1,126	409	-	-	-	409		409	-	-
HRSD-Urbanna	1,218	3,083	(1,865)	-	-	-	(1,865)		-	(1,865)	-
KGCSA-Hopyard Farms	6,091	1,523	4,568	-	-	(1,523)	3,045		2,500	-	545
KGCSA-Oakland Park	1,706	1,523	183	-	-	-	183		-	-	183
Kilmarnock	6,091	3,198	2,893	-	-	-	2,893		2,200	-	693
Omega Protein	21,213	10,659	10,554	-	(100)	-	10,454		9,000	-	1,454
Orange (Town)	7,675	2,910	4,765	-	-	-	4,765		4,765	-	-
Reedville S.D.	2,436	2,415	21	-	-	-	21		-	-	21
RSA-Wilderness Shores	6,853	3,865	2,988	-	-	-	2,988		-	-	2,988
Spotsy Co-FMC	48,737	70,170	(21,433)	21,433	-	-	-		-	-	-
Spotsy Co-Massaponax	114,505	92,585	21,920	(21,433)	-	-	487		-	-	487
Stafford Co-L. Falls Run	97,458	59,328	38,130	-	-	-	38,130		34,317	-	3,813
Tappahannock	9,746	7,797	1,949	-	-	-	1,949		-	-	1,949
Warsaw	3,655	3,046	609	-	-	-	609		-	-	609
Westmoreland Co-Montross	998	460	538	-	-	-	538		-	-	538
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**** 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.*

EXHIBIT 3-3
2022 Nitrogen Trading Ledger: Rappahannock River Basin

RAPPAHANNOCK 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:	$ 0.98	$ 3.94	$ 0.23
The Exchange (group)	**442,423**	**375,476**	**66,947**	**-**	**(100)**	**(1,523)**	**65,324**		**55,175**	**(15,270)**	**25,419**
American Water-Fort AP Hill	6,457	7,127	(670)	-	-	-	(670)		-	(670)	-
Aqua Virginia-Pres. Lakes	1,994	1,267	727	-	-	-	727		700	-	27
Culpeper (Town)	35,816	25,071	10,745	-	-	-	10,745		-	-	10,745
FCWSA-Marshall	1,481	2,037	(556)	556	-	-	-		-	-	-
FCWSA-Remington	11,938	8,357	3,581	(556)	-	-	3,025		-	-	3,025
Fredericksburg	54,820	63,165	(8,345)	-	-	-	(8,345)		-	(8,345)	-
Greene Co-Rapidan	1,535	1,196	339	-	-	-	339		339	-	-
HRSD-Urbanna	1,218	2,965	(1,747)	-	-	-	(1,747)		-	(1,747)	-
KGCSA-Hopyard Farms	6,091	1,371	4,720	-	-	(1,523)	3,197		2,500	-	697
KGCSA-Oakland Park	1,706	1,371	335	-	-	-	335		-	-	335
Kilmarnock	6,091	3,198	2,893	-	-	-	2,893		2,200	-	693
Omega Protein	21,213	10,659	10,554	-	(100)	-	10,454		10,354	-	100
Orange (Town)	7,675	2,910	4,765	-	-	-	4,765		4,765	-	-
Reedville S.D.	2,436	2,415	21	-	-	-	21		-	-	21
RSA-Wilderness Shores	6,853	3,865	2,988	-	-	-	2,988		-	-	2,988
Spotsy Co-FMC	48,737	72,363	(23,626)	19,118	-	-	(4,508)		-	(4,508)	-
Spotsy Co-Massaponax	114,505	95,387	19,118	(19,118)	-	-	-		-	-	-
Stafford Co-L. Falls Run	97,458	59,328	38,130	-	-	-	38,130		34,317	-	3,813
Tappahannock	9,746	7,918	1,828	-	-	-	1,828		-	-	1,828
Warsaw	3,655	3,046	609	-	-	-	609		-	-	609
Westmoreland Co-Montross	998	460	538	-	-	-	538		-	-	538
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**** 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.*

EXHIBIT 3-4
2023 Nitrogen Trading Ledger: Rappahannock River Basin

RAPPAHANNOCK 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:	$ 1.02	$ 4.04	$ 0.30
The Exchange (group)	**442,423**	**380,955**	**61,468**	**-**	**(100)**	**(1,523)**	**59,845**		**54,981**	**(15,432)**	**20,296**
American Water-Fort AP Hill	6,457	7,127	(670)	-	-	-	(670)		-	(670)	-
Aqua Virginia-Pres. Lakes	1,994	1,267	727	-	-	-	727		700	-	27
Culpeper (Town)	35,816	25,966	9,850	-	-	-	9,850		-	-	9,850
FCWSA-Marshall	1,481	2,129	(648)	648	-	-	-		-	-	-
FCWSA-Remington	11,938	8,476	3,462	(648)	-	-	2,814		-	-	2,814
Fredericksburg	54,820	58,520	(3,700)	-	-	-	(3,700)		-	(3,700)	-
Greene Co-Rapidan	1,535	1,266	269	-	-	-	269		269	-	-
HRSD-Urbanna	1,218	2,900	(1,682)	-	-	-	(1,682)		-	(1,682)	-
KGCSA-Hopyard Farms	6,091	1,462	4,629	(487)	-	(1,523)	2,619		2,500	-	119
KGCSA-Oakland Park	1,706	2,193	(487)	487	-	-	-		-	-	-
Kilmarnock	6,091	3,198	2,893	-	-	-	2,893		2,200	-	693
Omega Protein	21,213	12,182	9,031	-	(100)	-	8,931		8,000	-	931
Orange (Town)	7,675	2,910	4,765	-	-	-	4,765		4,765	-	-
Reedville S.D.	2,436	2,415	21	-	-	-	21		-	-	21
RSA-Wilderness Shores	6,853	3,865	2,988	-	-	-	2,988		-	-	2,988
Spotsy Co-FMC	48,737	74,555	(25,818)	16,438	-	-	(9,380)		-	(9,380)	-
Spotsy Co-Massaponax	114,505	98,067	16,438	(16,438)	-	-	-		-	-	-
Stafford Co-L. Falls Run	97,458	60,911	36,547	-	-	-	36,547		36,547	-	-
Tappahannock	9,746	8,040	1,706	-	-	-	1,706		-	-	1,706
Warsaw	3,655	3,046	609	-	-	-	609		-	-	609
Westmoreland Co-Montross	998	460	538	-	-	-	538		-	-	538
	-	-	-	-	-	-	-		-	-	-
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**** 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.*

EXHIBIT 3-5
2024 Nitrogen Trading Ledger: Rappahannock River Basin

RAPPAHANNOCK Basin: Nitrogen 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:	$ 1.58	$ 4.13	$ 0.26
The Exchange (group)	**442,423**	**376,146**	**66,277**	**-**	**(100)**	**(1,523)**	**64,654**		**52,103**	**(22,209)**	**34,760**
American Water-Fort AP Hill	6,457	8,223	(1,766)	-	-	-	(1,766)		-	(1,766)	-
Aqua Virginia-Pres. Lakes	1,994	1,267	727	-	-	-	727		700	-	27
Culpeper (Town)	35,816	26,862	8,954	-	-	-	8,954		-	-	8,954
FCWSA-Marshall	1,481	2,222	(741)	741	-	-	-		-	-	-
FCWSA-Remington	11,938	8,596	3,342	(741)	-	-	2,601		-	-	2,601
Fredericksburg	54,820	59,096	(4,276)	-	-	-	(4,276)		-	(4,276)	-
Greene Co-Rapidan	1,535	1,337	198	-	-	-	198		198	-	-
HRSD-Urbanna	1,218	2,888	(1,670)	-	-	-	(1,670)		-	(1,670)	-
KGCSA-Hopyard Farms	6,091	1,096	4,995	(121)	-	(1,523)	3,351		3,351	-	-
KGCSA-Oakland Park	1,706	1,827	(121)	121	-	-	-		-	-	-
Kilmarnock	6,091	3,959	2,132	-	-	-	2,132		2,132	-	-
Omega Protein	21,213	12,182	9,031	-	(100)	-	8,931		8,831	-	100
Orange (Town)	7,675	2,910	4,765	-	-	-	4,765		4,765	-	-
Reedville S.D.	2,436	2,415	21	-	-	-	21		-	-	21
RSA-Wilderness Shores	6,853	3,947	2,906	-	-	-	2,906		-	-	2,906
Spotsy Co-FMC	48,737	76,748	(28,011)	13,514	-	-	(14,497)		-	(14,497)	-
Spotsy Co-Massaponax	114,505	100,991	13,514	(13,514)	-	-	-		-	-	-
Stafford Co-L. Falls Run	97,458	48,034	49,424	-	-	-	49,424		32,126	-	17,298
Tappahannock	9,746	8,040	1,706	-	-	-	1,706		-	-	1,706
Warsaw	3,655	3,046	609	-	-	-	609		-	-	609
Westmoreland Co-Montross	998	460	538	-	-	-	538		-	-	538
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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	-	-	-	-	-	-	-		-	-	-

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.*

EXHIBIT 3-6
2025 Nitrogen Trading Ledger: Rappahannock River Basin

RAPPAHANNOCK Basin: Nitrogen Credit Ledger

Compliance Year:	2025	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:	$ 2.07	$ 4.21	$ 0.32
The Exchange (group)	**442,423**	**385,476**	**56,947**	**-**	**(100)**	**(1,523)**	**55,324**		**47,290**	**(25,878)**	**33,912**
American Water-Fort AP Hill	6,457	6,441	16	-	-	-	16		16	-	-
Aqua Virginia-Pres. Lakes	1,994	1,218	776	-	-	-	776		750	-	26
Culpeper (Town)	35,816	26,862	8,954	-	-	-	8,954		-	-	8,954
FCWSA-Marshall	1,481	2,315	(834)	834	-	-	-		-	-	-
FCWSA-Remington	11,938	8,715	3,223	(834)	-	-	2,389		-	-	2,389
Fredericksburg	54,820	59,096	(4,276)	-	-	-	(4,276)		-	(4,276)	-
Greene Co-Rapidan	1,535	1,407	128	-	-	-	128		128	-	-
HRSD-Urbanna	1,218	2,841	(1,623)	-	-	-	(1,623)		-	(1,623)	-
KGCSA-Hopyard Farms	6,091	419	5,672	-	-	(1,523)	4,149		4,149	-	-
KGCSA-Oakland Park	1,706	553	1,153	-	-	-	1,153		1,153	-	-
Kilmarnock	6,091	3,959	2,132	-	-	-	2,132		2,132	-	-
Omega Protein	21,213	18,273	2,940	-	(100)	-	2,840		2,840	-	-
Orange (Town)	7,675	2,910	4,765	-	-	-	4,765		4,765	-	-
Reedville S.D.	2,436	2,415	21	-	-	-	21		-	-	21
RSA-Wilderness Shores	6,853	3,947	2,906	-	-	-	2,906		-	-	2,906
Spotsy Co-FMC	48,737	79,185	(30,448)	10,469	-	-	(19,979)		-	(19,979)	-
Spotsy Co-Massaponax	114,505	104,036	10,469	(10,469)	-	-	-		-	-	-
Stafford Co-L. Falls Run	97,458	49,216	48,242	-	-	-	48,242		31,357	-	16,885
Tappahannock	9,746	8,162	1,584	-	-	-	1,584		-	-	1,584
Warsaw	3,655	3,046	609	-	-	-	609		-	-	609
Westmoreland Co-Montross	998	460	538	-	-	-	538		-	-	538
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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	-	-	-	-	-	-	-		-	-	-

**** 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.*

EXHIBIT 3-7
Phosphorus Plan Summary: Rappahannock River Basin

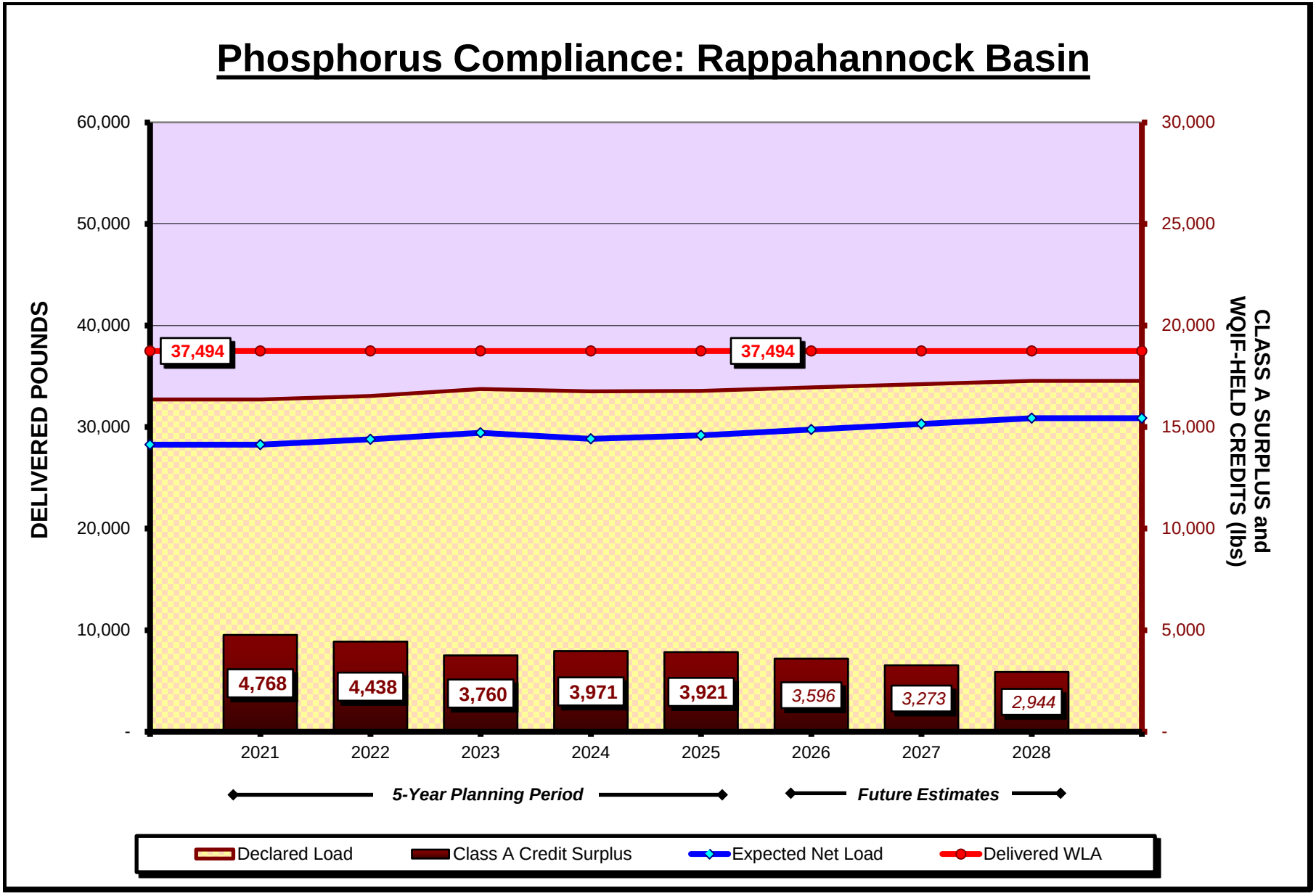

EXHIBIT 3-8
2021 Phosphorus Trading Ledger: Rappahannock River Basin

RAPPAHANNOCK 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:	$ 1.45	$ 5.82	$ 0.23
The Exchange (group)	**37,494**	**28,133**	**9,361**	**-**	**(20)**	**(114)**	**9,227**		**6,602**	**(1,834)**	**4,459**
American Water-Fort AP Hill	484	384	100	-	-	-	100		-	-	100
Aqua Virginia-Pres. Lakes	267	127	140	-	-	-	140		140	-	-
Culpeper (Town)	4,112	2,467	1,645	-	-	-	1,645		-	-	1,645
FCWSA-Marshall	439	288	151	-	-	-	151		-	-	151
FCWSA-Remington	1,370	946	424	-	-	-	424		-	-	424
Fredericksburg	4,112	4,112	-	-	-	-	-		-	-	-
Greene Co-Rapidan	411	1,462	(1,051)	-	-	-	(1,051)		-	(1,051)	-
HRSD-Urbanna	91	874	(783)	-	-	-	(783)		-	(783)	-
KGCSA-Hopyard Farms	457	152	305	(24)	-	(114)	167		-	-	167
KGCSA-Oakland Park	128	152	(24)	24	-	-	-		-	-	-
Kilmarnock	457	320	137	-	-	-	137		75	-	62
Omega Protein	1,591	426	1,165	-	(20)	-	1,145		1,000	-	145
Orange (Town)	2,056	742	1,314	-	-	-	1,314		1,314	-	-
Reedville S.D.	183	119	64	-	-	-	64		-	-	64
RSA-Wilderness Shores	857	644	213	-	-	-	213		-	-	213
Spotsy Co-FMC	3,655	2,631	1,024	-	-	-	1,024		500	-	524
Spotsy Co-Massaponax	8,405	6,944	1,461	-	-	-	1,461		1,000	-	461
Stafford Co-L. Falls Run	7,309	4,450	2,859	-	-	-	2,859		2,573	-	286
Tappahannock	731	585	146	-	-	-	146		-	-	146
Warsaw	274	228	46	-	-	-	46		-	-	46
Westmoreland Co-Montross	105	80	25	-	-	-	25		-	-	25
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

**** 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.*

EXHIBIT 3-9
2022 Phosphorus Trading Ledger: Rappahannock River Basin

RAPPAHANNOCK 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:	$ 1.63	$ 5.93	$ 0.27
The Exchange (group)	**37,494**	**28,648**	**8,846**	**-**	**(20)**	**(114)**	**8,712**		**6,397**	**(1,959)**	**4,274**
American Water-Fort AP Hill	484	384	100	-	-	-	100		-	-	100
Aqua Virginia-Pres. Lakes	267	127	140	-	-	-	140		140	-	-
Culpeper (Town)	4,112	2,558	1,554	-	-	-	1,554		-	-	1,554
FCWSA-Marshall	439	302	137	-	-	-	137		-	-	137
FCWSA-Remington	1,370	959	411	-	-	-	411		-	-	411
Fredericksburg	4,112	4,180	(68)	-	-	-	(68)		-	(68)	-
Greene Co-Rapidan	411	1,553	(1,142)	-	-	-	(1,142)		-	(1,142)	-
HRSD-Urbanna	91	840	(749)	-	-	-	(749)		-	(749)	-
KGCSA-Hopyard Farms	457	137	320	(9)	-	(114)	197		-	-	197
KGCSA-Oakland Park	128	137	(9)	9	-	-	-		-	-	-
Kilmarnock	457	320	137	-	-	-	137		75	-	62
Omega Protein	1,591	426	1,165	-	(20)	-	1,145		1,100	-	45
Orange (Town)	2,056	742	1,314	-	-	-	1,314		1,314	-	-
Reedville S.D.	183	119	64	-	-	-	64		-	-	64
RSA-Wilderness Shores	857	644	213	-	-	-	213		-	-	213
Spotsy Co-FMC	3,655	2,714	941	-	-	-	941		475	-	466
Spotsy Co-Massaponax	8,405	7,154	1,251	-	-	-	1,251		750	-	501
Stafford Co-L. Falls Run	7,309	4,450	2,859	-	-	-	2,859		2,543	-	316
Tappahannock	731	594	137	-	-	-	137		-	-	137
Warsaw	274	228	46	-	-	-	46		-	-	46
Westmoreland Co-Montross	105	80	25	-	-	-	25		-	-	25
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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	-	-	-	-	-	-	-		-	-	-

**** 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.*

EXHIBIT 3-10
2023 Phosphorus Trading Ledger: Rappahannock River Basin

RAPPAHANNOCK 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:	$ 1.87	$ 6.08	$ 0.27
The Exchange (group)	**37,494**	**29,290**	**8,204**	**-**	**(20)**	**(114)**	**8,070**		**5,725**	**(1,965)**	**4,310**
American Water-Fort AP Hill	484	384	100	-	-	-	100		-	-	100
Aqua Virginia-Pres. Lakes	267	127	140	-	-	-	140		140	-	-
Culpeper (Town)	4,112	2,650	1,462	-	-	-	1,462		-	-	1,462
FCWSA-Marshall	439	315	124	-	-	-	124		-	-	124
FCWSA-Remington	1,370	973	397	-	-	-	397		-	-	397
Fredericksburg	4,112	3,994	118	-	-	-	118		-	-	118
Greene Co-Rapidan	411	1,645	(1,234)	-	-	-	(1,234)		-	(1,234)	-
HRSD-Urbanna	91	822	(731)	-	-	-	(731)		-	(731)	-
KGCSA-Hopyard Farms	457	219	238	(91)	-	(114)	33		-	-	33
KGCSA-Oakland Park	128	219	(91)	91	-	-	-		-	-	-
Kilmarnock	457	320	137	-	-	-	137		75	-	62
Omega Protein	1,591	487	1,104	-	(20)	-	1,084		500	-	584
Orange (Town)	2,056	742	1,314	-	-	-	1,314		1,314	-	-
Reedville S.D.	183	119	64	-	-	-	64		-	-	64
RSA-Wilderness Shores	857	644	213	-	-	-	213		-	-	213
Spotsy Co-FMC	3,655	2,796	859	-	-	-	859		430	-	429
Spotsy Co-Massaponax	8,405	7,355	1,050	-	-	-	1,050		525	-	525
Stafford Co-L. Falls Run	7,309	4,568	2,741	-	-	-	2,741		2,741	-	-
Tappahannock	731	603	128	-	-	-	128		-	-	128
Warsaw	274	228	46	-	-	-	46		-	-	46
Westmoreland Co-Montross	105	80	25	-	-	-	25		-	-	25
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

**** 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.*

EXHIBIT 3-11
2024 Phosphorus Trading Ledger: Rappahannock River Basin

RAPPAHANNOCK 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:	$ 1.90	$ 6.22	$ 0.27
The Exchange (group)	**37,494**	**28,701**	**8,793**	**-**	**(20)**	**(114)**	**8,659**		**6,023**	**(2,052)**	**4,688**
American Water-Fort AP Hill	484	384	100	-	-	-	100		-	-	100
Aqua Virginia-Pres. Lakes	267	127	140	-	-	-	140		140	-	-
Culpeper (Town)	4,112	2,741	1,371	-	-	-	1,371		-	-	1,371
FCWSA-Marshall	439	329	110	-	-	-	110		-	-	110
FCWSA-Remington	1,370	987	383	-	-	-	383		-	-	383
Fredericksburg	4,112	4,034	78	-	-	-	78		-	-	78
Greene Co-Rapidan	411	1,736	(1,325)	-	-	-	(1,325)		-	(1,325)	-
HRSD-Urbanna	91	818	(727)	-	-	-	(727)		-	(727)	-
KGCSA-Hopyard Farms	457	183	274	(24)	-	(114)	136		136	-	-
KGCSA-Oakland Park	128	152	(24)	24	-	-	-		-	-	-
Kilmarnock	457	238	219	-	-	-	219		219	-	-
Omega Protein	1,591	487	1,104	-	(20)	-	1,084		1,000	-	84
Orange (Town)	2,056	742	1,314	-	-	-	1,314		1,314	-	-
Reedville S.D.	183	119	64	-	-	-	64		-	-	64
RSA-Wilderness Shores	857	658	199	-	-	-	199		-	-	199
Spotsy Co-FMC	3,655	2,878	777	-	-	-	777		390	-	387
Spotsy Co-Massaponax	8,405	7,574	831	-	-	-	831		415	-	416
Stafford Co-L. Falls Run	7,309	3,603	3,706	-	-	-	3,706		2,409	-	1,297
Tappahannock	731	603	128	-	-	-	128		-	-	128
Warsaw	274	228	46	-	-	-	46		-	-	46
Westmoreland Co-Montross	105	80	25	-	-	-	25		-	-	25
	-	-	-	-	-	-	-		-	-	-
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**** 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.*

EXHIBIT 3-12
2025 Phosphorus Trading Ledger: Rappahannock River Basin

RAPPAHANNOCK Basin: Phosphorus Credit Ledger

Compliance Year:	2025	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:	$ 2.00	$ 6.34	$ 0.30
The Exchange (group)	**37,494**	**29,057**	**8,437**	**-**	**(20)**	**(114)**	**8,303**		**6,051**	**(2,130)**	**4,382**
American Water-Fort AP Hill	484	384	100	-	-	-	100		-	-	100
Aqua Virginia-Pres. Lakes	267	122	145	-	-	-	145		140	-	5
Culpeper (Town)	4,112	2,741	1,371	-	-	-	1,371		-	-	1,371
FCWSA-Marshall	439	343	96	-	-	-	96		-	-	96
FCWSA-Remington	1,370	1,000	370	-	-	-	370		-	-	370
Fredericksburg	4,112	4,034	78	-	-	-	78		-	-	78
Greene Co-Rapidan	411	1,827	(1,416)	-	-	-	(1,416)		-	(1,416)	-
HRSD-Urbanna	91	805	(714)	-	-	-	(714)		-	(714)	-
KGCSA-Hopyard Farms	457	74	383	-	-	(114)	269		269	-	-
KGCSA-Oakland Park	128	39	89	-	-	-	89		89	-	-
Kilmarnock	457	238	219	-	-	-	219		219	-	-
Omega Protein	1,591	548	1,043	-	(20)	-	1,023		1,023	-	-
Orange (Town)	2,056	742	1,314	-	-	-	1,314		1,314	-	-
Reedville S.D.	183	119	64	-	-	-	64		-	-	64
RSA-Wilderness Shores	857	658	199	-	-	-	199		-	-	199
Spotsy Co-FMC	3,655	2,969	686	-	-	-	686		345	-	341
Spotsy Co-Massaponax	8,405	7,803	602	-	-	-	602		300	-	302
Stafford Co-L. Falls Run	7,309	3,691	3,618	-	-	-	3,618		2,352	-	1,266
Tappahannock	731	612	119	-	-	-	119		-	-	119
Warsaw	274	228	46	-	-	-	46		-	-	46
Westmoreland Co-Montross	105	80	25	-	-	-	25		-	-	25
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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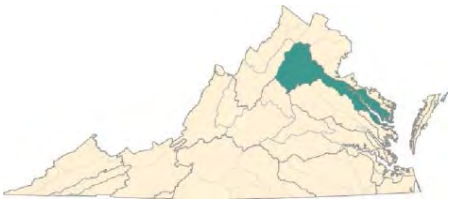
	-	-	-	-	-	-	-		-	-	-

**** 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.*

Rappahannock River Basin

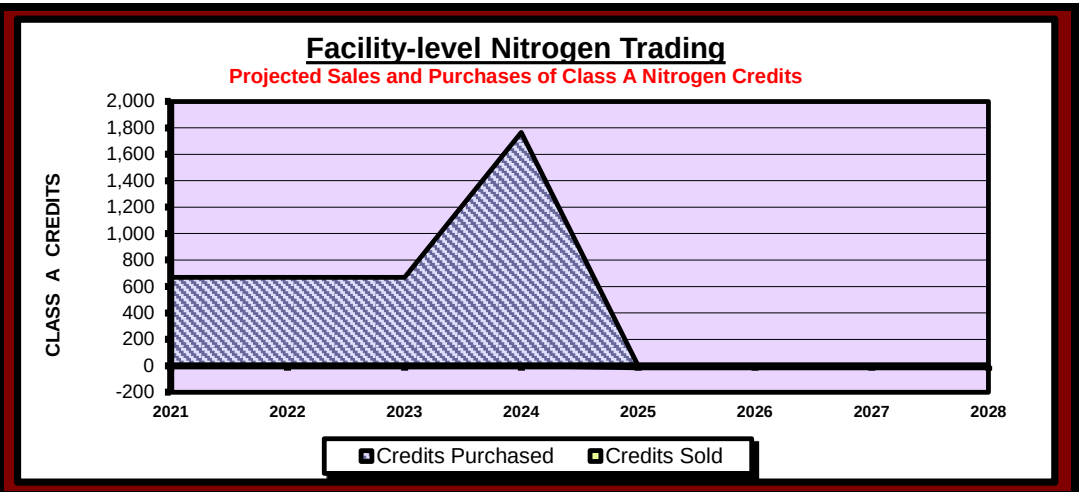
Supplemental Information for Individual Facilities



NITROGEN FACILITY SUMMARY

American Water-Fort AP Hil

RAPPAHANNOCK Trading Basin

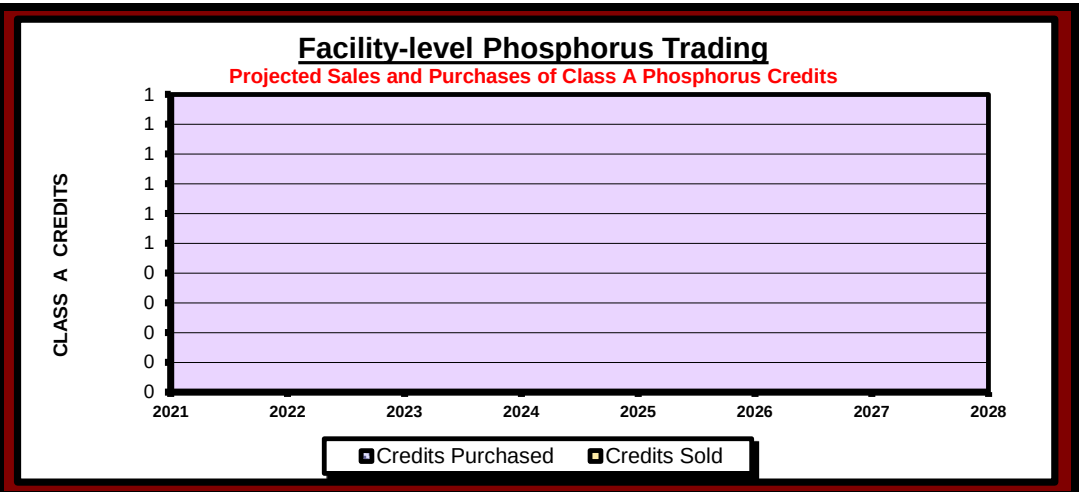


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Projected Flow (mgd)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Projected Avg. Annual Concentration (mg/L)	26.00	26.00	26.00	30.00	23.50	23.50	23.50	23.50
Discharged Load (end of pipe)	7,127	7,127	7,127	8,223	6,441	6,441	6,441	6,441
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	7,127	7,127	7,127	8,223	6,441	6,441	6,441	6,441
Delivered WLA	6,457	6,457	6,457	6,457	6,457	6,457	6,457	6,457
Expected Credits (delivered)	(670)	(670)	(670)	(1,766)	16	16	16	16
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	**(670)**	**(670)**	**(670)**	**(1,766)**	**16**	**16**	**16**	**16**
Class A Credit Sales (Purchases)	**(670)**	**(670)**	**(670)**	**(1,766)**	**16**	**16**	**16**	**16**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

American Water-Fort AP Hil

RAPPAHANNOCK Trading Basin

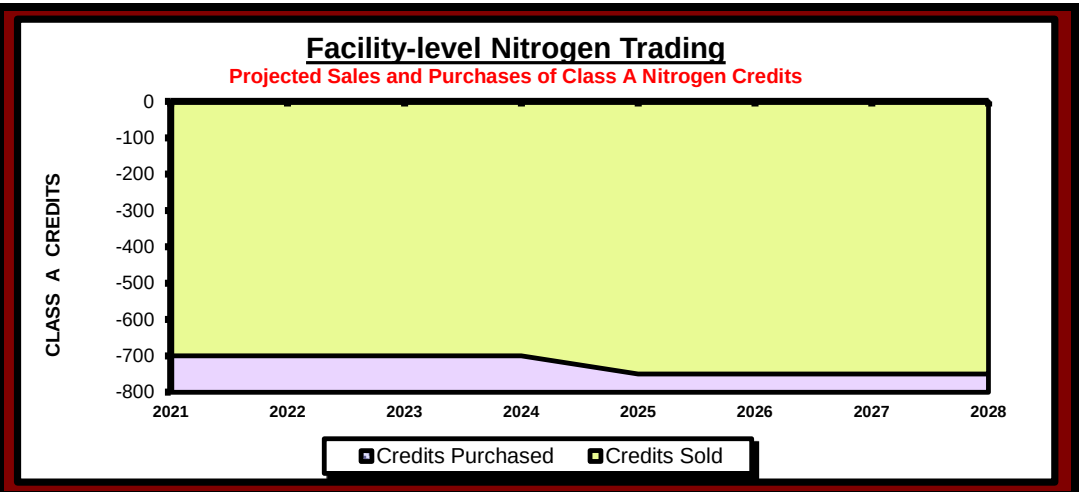


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Projected Flow (mgd)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Projected Avg. Annual Concentration (mg/L)	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
Discharged Load (end of pipe)	384	384	384	384	384	384	384	384
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	384	384	384	384	384	384	384	384
Delivered WLA	484	484	484	484	484	484	484	484
Expected Credits (delivered)	100	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	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

NITROGEN FACILITY SUMMARY

Aqua Virginia-Pres. Lakes

RAPPAHANNOCK Trading Basin

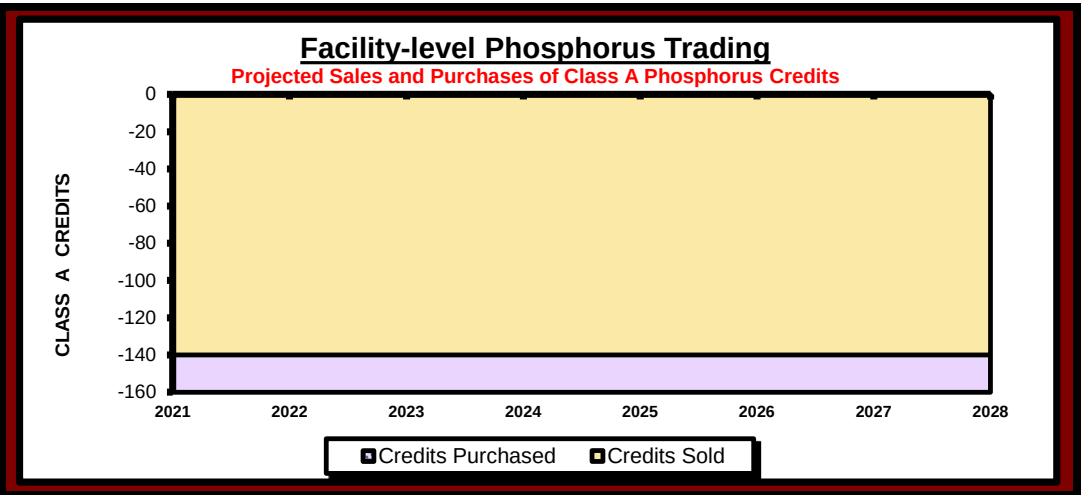


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Projected Flow (mgd)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Projected Avg. Annual Concentration (mg/L)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Discharged Load (end of pipe)	1,267	1,267	1,267	1,267	1,218	1,218	1,218	1,218
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,267	1,267	1,267	1,267	1,218	1,218	1,218	1,218
Delivered WLA	1,994	1,994	1,994	1,994	1,994	1,994	1,994	1,994
Expected Credits (delivered)	727	727	727	727	776	776	776	776
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**727**	**727**	**727**	**727**	**776**	**776**	**776**	**776**
Class A Credit Sales (Purchases)	**700**	**700**	**700**	**700**	**750**	**750**	**750**	**750**
Expected Class B Credits	**27**	**27**	**27**	**27**	**26**	**26**	**26**	**26**

PHOSPHORUS FACILITY SUMMARY

Aqua Virginia-Pres. Lakes

RAPPAHANNOCK Trading Basin

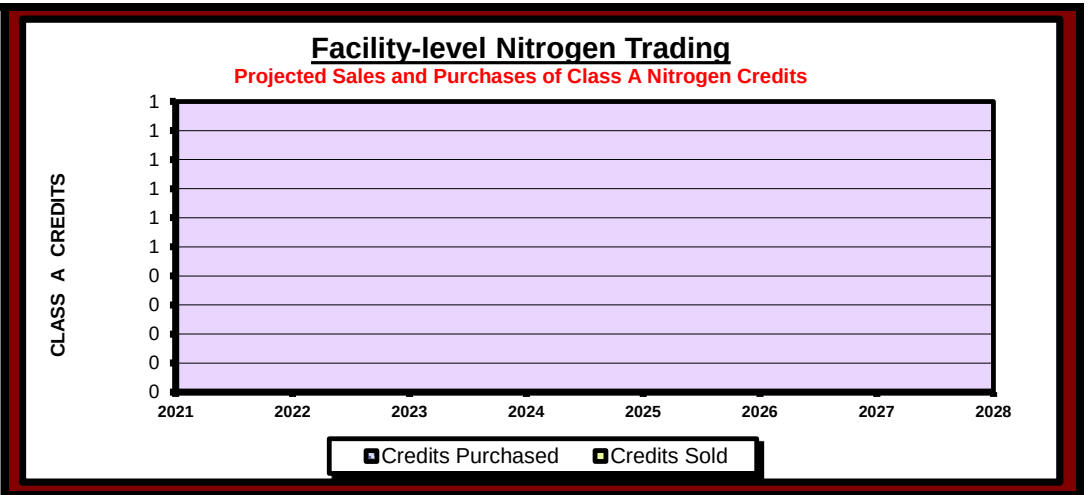


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Projected Flow (mgd)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Projected Avg. Annual Concentration (mg/L)	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Discharged Load (end of pipe)	127	127	127	127	122	122	122	122
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	127	127	127	127	122	122	122	122
Delivered WLA	267	267	267	267	267	267	267	267
Expected Credits (delivered)	140	140	140	140	145	145	145	145
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	**140**	**140**	**140**	**140**	**145**	**145**	**145**	**145**
Class A Credit Sales (Purchases)	**140**	**140**	**140**	**140**	**140**	**140**	**140**	**140**
Expected Class B Credits	**0**	**0**	**0**	**0**	**5**	**5**	**5**	**5**

NITROGEN FACILITY SUMMARY

Culpeper (Town)

RAPPAHANNOCK Trading Basin

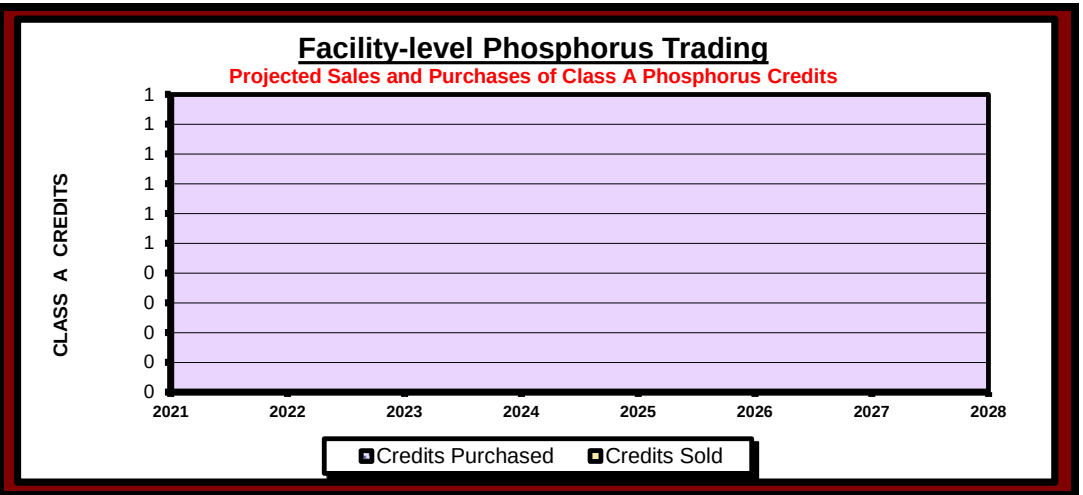


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Projected Flow (mgd)	5.40	5.60	5.80	6.00	6.00	6.00	6.00	6.00
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	49,338	51,165	52,993	54,820	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	24,176	25,071	25,966	26,862	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)	11,640	10,745	9,850	8,954	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	**11,640**	**10,745**	**9,850**	**8,954**	**8,954**	**8,954**	**8,954**	**8,954**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**11,640**	**10,745**	**9,850**	**8,954**	**8,954**	**8,954**	**8,954**	**8,954**

PHOSPHORUS FACILITY SUMMARY

Culpeper (Town)

RAPPAHANNOCK Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Projected Flow (mgd)	5.40	5.60	5.80	6.00	6.00	6.00	6.00	6.00
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)	3,289	3,411	3,533	3,655	3,655	3,655	3,655	3,655
Delivery Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Expected Load	2,467	2,558	2,650	2,741	2,741	2,741	2,741	2,741
Delivered WLA	4,112	4,112	4,112	4,112	4,112	4,112	4,112	4,112
Expected Credits (delivered)	1,645	1,554	1,462	1,371	1,371	1,371	1,371	1,371
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	**1,645**	**1,554**	**1,462**	**1,371**	**1,371**	**1,371**	**1,371**	**1,371**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**1,645**	**1,554**	**1,462**	**1,371**	**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.

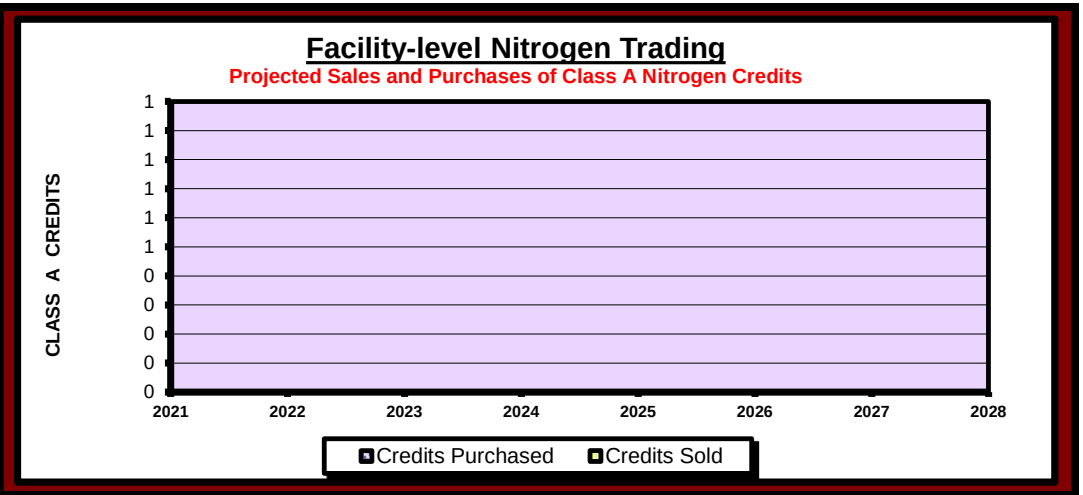
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Marshall	463	556	648	741	834	926	1,019	1,111
Remington	(463)	(556)	(648)	(741)	(834)	(926)	(1,019)	(1,111)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Marshall	-	-	-	-	-	-	-	-
Remington	3,237	3,025	2,814	2,601	2,389	2,177	1,965	1,754
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**3,237**	**3,025**	**2,814**	**2,601**	**2,389**	**2,177**	**1,965**	**1,754**
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	*3,237*	*3,025*	*2,814*	*2,601*	*2,389*	*2,177*	*1,965*	*1,754*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Marshall	-	-	-	-	-	-	-	-
Remington	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Marshall	151	137	124	110	96	83	69	55
Remington	424	411	397	383	370	356	342	328
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**575**	**548**	**521**	**493**	**466**	**439**	**411**	**383**
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	*575*	*548*	*521*	*493*	*466*	*439*	*411*	*383*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NITROGEN FACILITY SUMMARY

FCWSA-Marshall

RAPPAHANNOCK Trading Basin

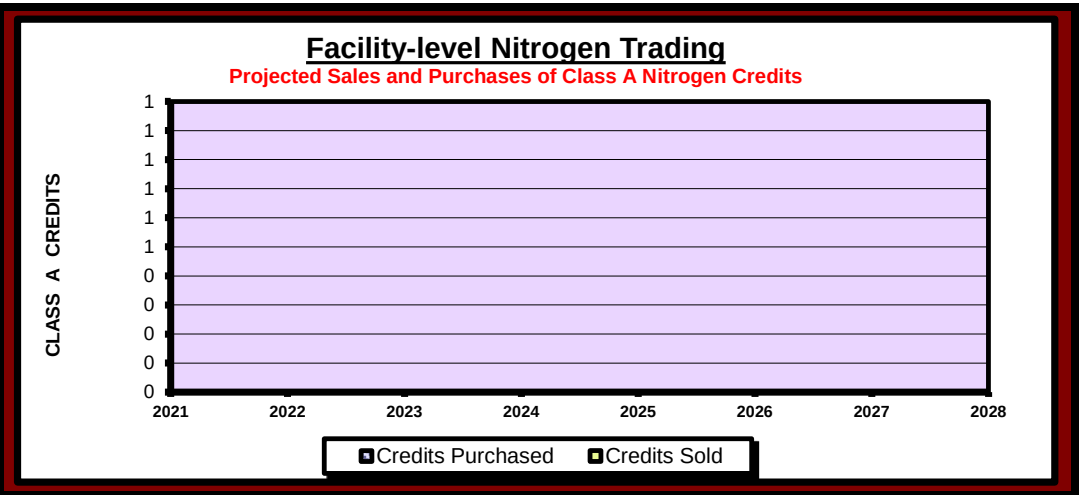


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Projected Flow (mgd)	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56
Projected Avg. Annual Concentration (mg/L)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Discharged Load (end of pipe)	10,233	10,720	11,208	11,695	12,182	12,670	13,157	13,644
Delivery Factor	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Expected Load	1,944	2,037	2,129	2,222	2,315	2,407	2,500	2,592
Delivered WLA	1,481	1,481	1,481	1,481	1,481	1,481	1,481	1,481
Expected Credits (delivered)	(463)	(556)	(648)	(741)	(834)	(926)	(1,019)	(1,111)
Transfers In (Out) within Owner Bubble	463	556	648	741	834	926	1,019	1,111
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**

NITROGEN FACILITY SUMMARY

FCWSA-Remington

RAPPAHANNOCK Trading Basin

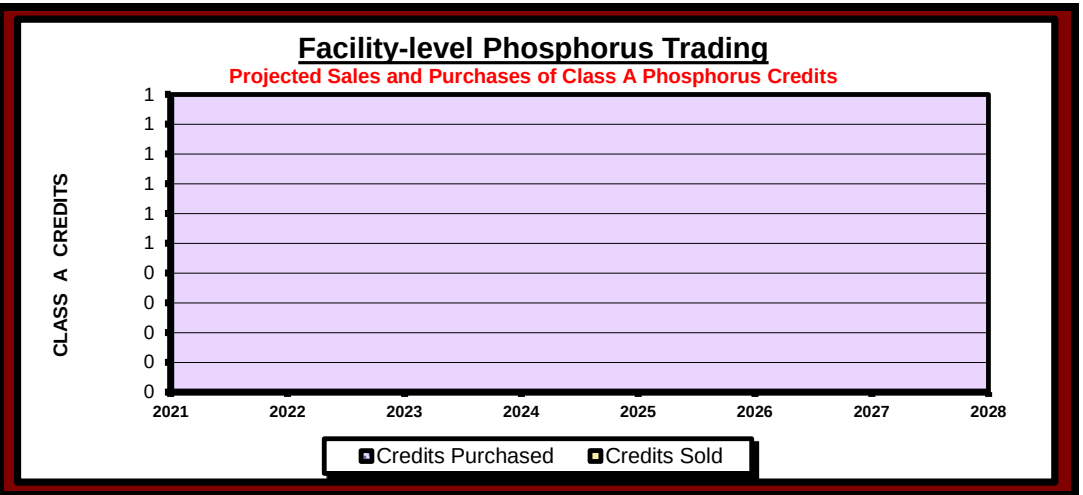


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	1.38	1.40	1.42	1.44	1.46	1.48	1.50	1.52
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	16,811	17,055	17,299	17,542	17,786	18,030	18,273	18,517
Delivery Factor	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Expected Load	8,238	8,357	8,476	8,596	8,715	8,835	8,954	9,073
Delivered WLA	11,938	11,938	11,938	11,938	11,938	11,938	11,938	11,938
Expected Credits (delivered)	3,700	3,581	3,462	3,342	3,223	3,103	2,984	2,865
Transfers In (Out) within Owner Bubble	(463)	(556)	(648)	(741)	(834)	(926)	(1,019)	(1,111)
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	**3,237**	**3,025**	**2,814**	**2,601**	**2,389**	**2,177**	**1,965**	**1,754**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**3,237**	**3,025**	**2,814**	**2,601**	**2,389**	**2,177**	**1,965**	**1,754**

PHOSPHORUS FACILITY SUMMARY

FCWSA-Marshall

RAPPAHANNOCK Trading Basin

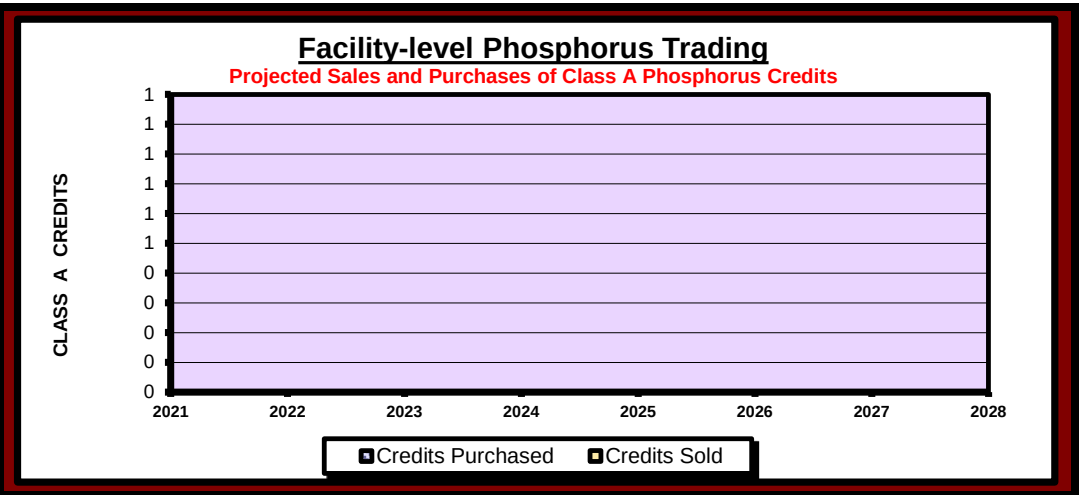


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Projected Flow (mgd)	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	384	402	420	439	457	475	493	512
Delivery Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Expected Load	288	302	315	329	343	356	370	384
Delivered WLA	439	439	439	439	439	439	439	439
Expected Credits (delivered)	151	137	124	110	96	83	69	55
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	**151**	**137**	**124**	**110**	**96**	**83**	**69**	**55**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**151**	**137**	**124**	**110**	**96**	**83**	**69**	**55**

PHOSPHORUS FACILITY SUMMARY

FCWSA-Remington

RAPPAHANNOCK Trading Basin

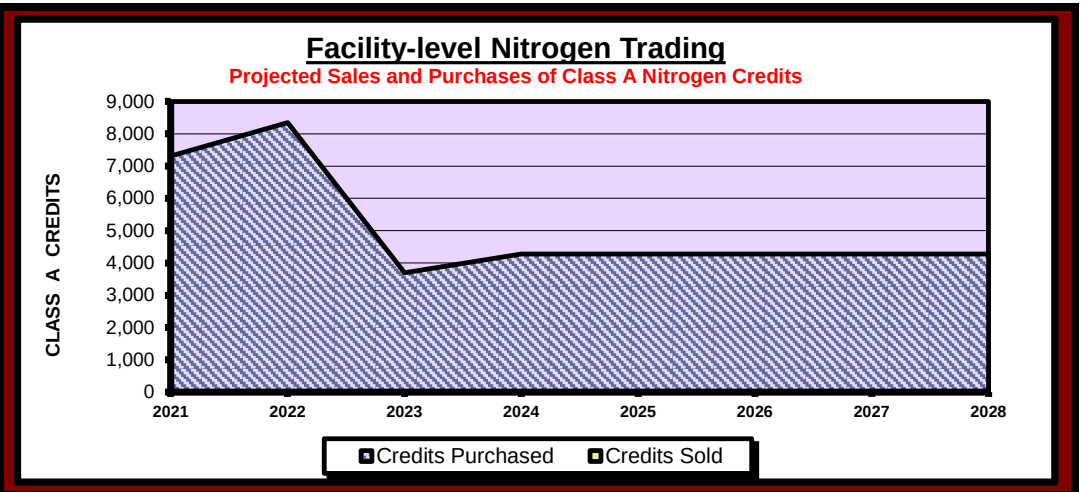


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	1.38	1.40	1.42	1.44	1.46	1.48	1.50	1.52
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	1,261	1,279	1,297	1,316	1,334	1,352	1,371	1,389
Delivery Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Expected Load	946	959	973	987	1,000	1,014	1,028	1,042
Delivered WLA	1,370	1,370	1,370	1,370	1,370	1,370	1,370	1,370
Expected Credits (delivered)	424	411	397	383	370	356	342	328
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	**424**	**411**	**397**	**383**	**370**	**356**	**342**	**328**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**424**	**411**	**397**	**383**	**370**	**356**	**342**	**328**

NITROGEN FACILITY SUMMARY

Fredericksburg

RAPPAHANNOCK Trading Basin

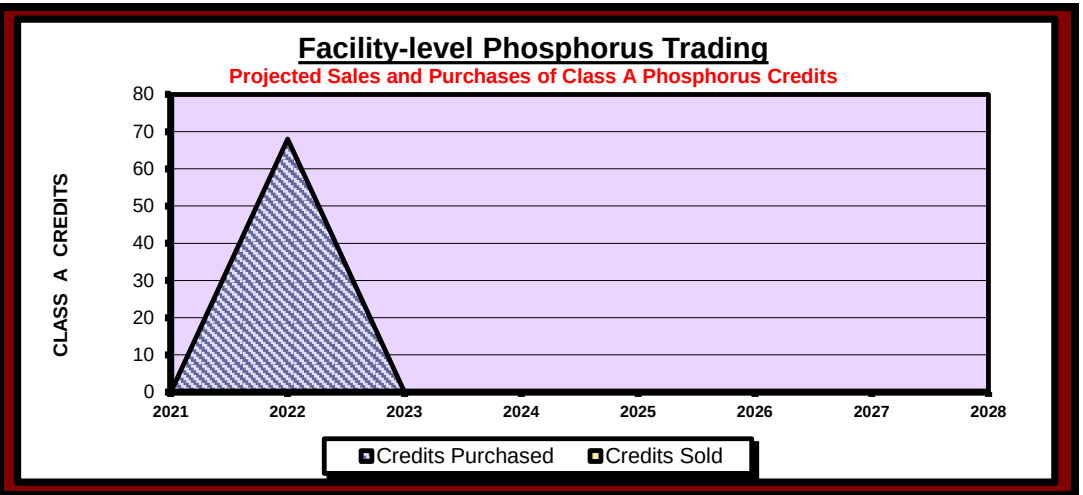


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Projected Flow (mgd)	3.00	3.05	3.05	3.08	3.08	3.08	3.08	3.08
Projected Avg. Annual Concentration (mg/L)	6.80	6.80	6.30	6.30	6.30	6.30	6.30	6.30
Discharged Load (end of pipe)	62,129	63,165	58,520	59,096	59,096	59,096	59,096	59,096
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	62,129	63,165	58,520	59,096	59,096	59,096	59,096	59,096
Delivered WLA	54,820	54,820	54,820	54,820	54,820	54,820	54,820	54,820
Expected Credits (delivered)	(7,309)	(8,345)	(3,700)	(4,276)	(4,276)	(4,276)	(4,276)	(4,276)
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	**(7,309)**	**(8,345)**	**(3,700)**	**(4,276)**	**(4,276)**	**(4,276)**	**(4,276)**	**(4,276)**
Class A Credit Sales (Purchases)	**(7,309)**	**(8,345)**	**(3,700)**	**(4,276)**	**(4,276)**	**(4,276)**	**(4,276)**	**(4,276)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Fredericksburg

RAPPAHANNOCK Trading Basin

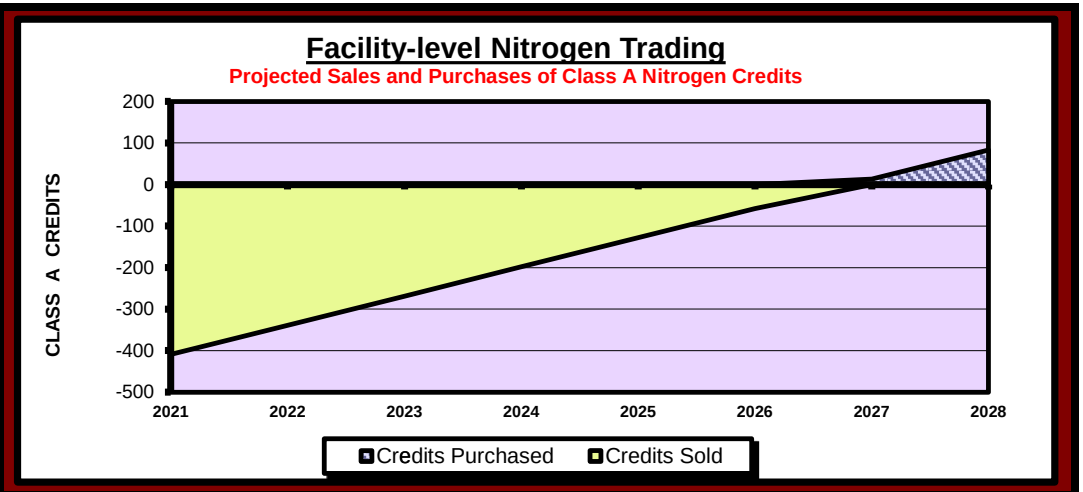


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Projected Flow (mgd)	3.00	3.05	3.05	3.08	3.08	3.08	3.08	3.08
Projected Avg. Annual Concentration (mg/L)	0.45	0.45	0.43	0.43	0.43	0.43	0.43	0.43
Discharged Load (end of pipe)	4,112	4,180	3,994	4,034	4,034	4,034	4,034	4,034
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	4,112	4,180	3,994	4,034	4,034	4,034	4,034	4,034
Delivered WLA	4,112	4,112	4,112	4,112	4,112	4,112	4,112	4,112
Expected Credits (delivered)	0	(68)	118	78	78	78	78	78
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**0**	**(68)**	**118**	**78**	**78**	**78**	**78**	**78**
Class A Credit Sales (Purchases)	**0**	**(68)**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**0**	**118**	**78**	**78**	**78**	**78**	**78**

NITROGEN FACILITY SUMMARY

Greene Co-Rapidan

RAPPAHANNOCK Trading Basin

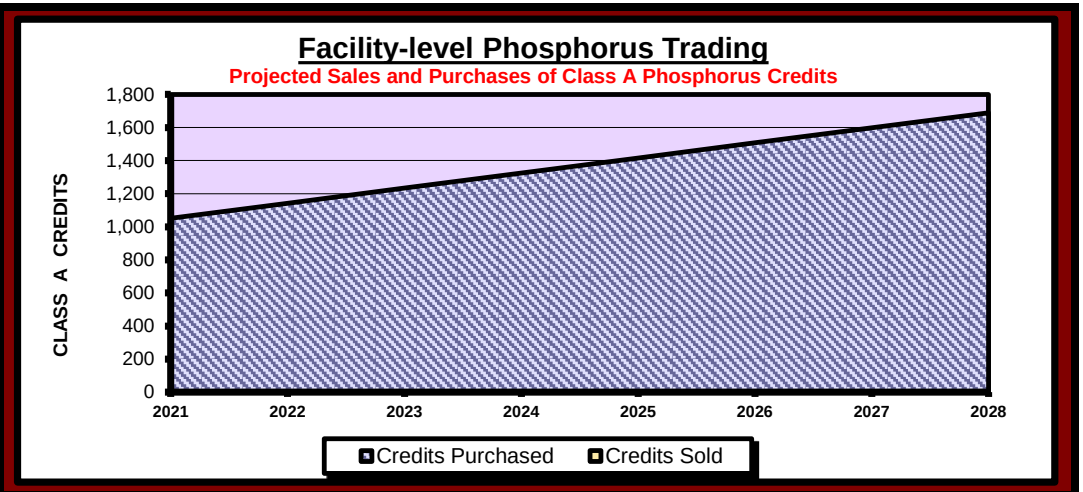


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23
Projected Avg. Annual Concentration (mg/L)	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Discharged Load (end of pipe)	5,360	5,695	6,030	6,365	6,700	7,035	7,370	7,705
Delivery Factor	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Expected Load	1,126	1,196	1,266	1,337	1,407	1,477	1,548	1,618
Delivered WLA	1,535	1,535	1,535	1,535	1,535	1,535	1,535	1,535
Expected Credits (delivered)	409	339	269	198	128	58	(13)	(83)
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	**409**	**339**	**269**	**198**	**128**	**58**	**(13)**	**(83)**
Class A Credit Sales (Purchases)	**409**	**339**	**269**	**198**	**128**	**58**	**(13)**	**(83)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Greene Co-Rapidan

RAPPAHANNOCK Trading Basin

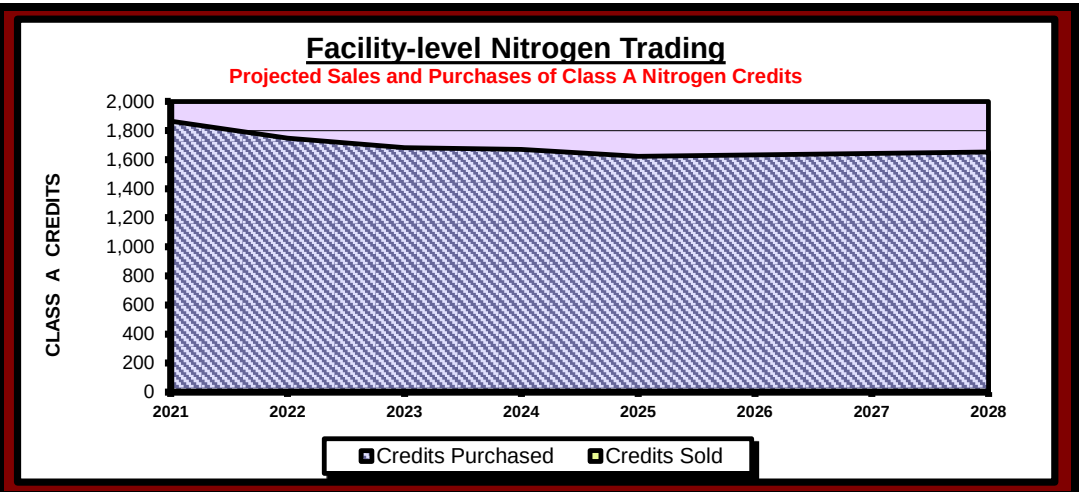


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	1,949	2,071	2,193	2,315	2,436	2,558	2,680	2,802
Delivery Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Expected Load	1,462	1,553	1,645	1,736	1,827	1,919	2,010	2,101
Delivered WLA	411	411	411	411	411	411	411	411
Expected Credits (delivered)	(1,051)	(1,142)	(1,234)	(1,325)	(1,416)	(1,508)	(1,599)	(1,690)
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	**(1,051)**	**(1,142)**	**(1,234)**	**(1,325)**	**(1,416)**	**(1,508)**	**(1,599)**	**(1,690)**
Class A Credit Sales (Purchases)	**(1,051)**	**(1,142)**	**(1,234)**	**(1,325)**	**(1,416)**	**(1,508)**	**(1,599)**	**(1,690)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

HRSD-Urbanna

RAPPAHANNOCK Trading Basin

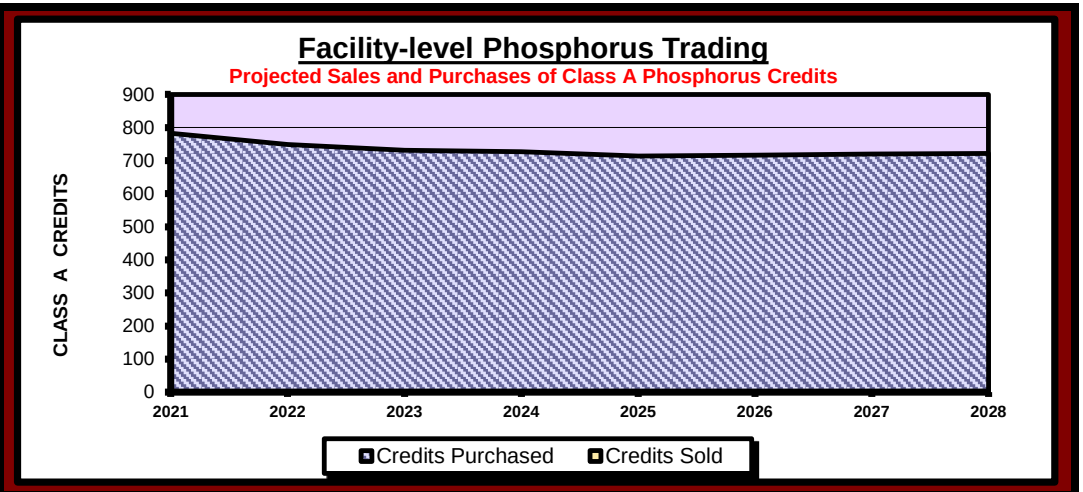


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Projected Avg. Annual Concentration (mg/L)	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
Discharged Load (end of pipe)	3,083	2,965	2,900	2,888	2,841	2,851	2,861	2,871
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	3,083	2,965	2,900	2,888	2,841	2,851	2,861	2,871
Delivered WLA	1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218
Expected Credits (delivered)	(1,865)	(1,747)	(1,682)	(1,670)	(1,623)	(1,633)	(1,643)	(1,653)
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	**(1,865)**	**(1,747)**	**(1,682)**	**(1,670)**	**(1,623)**	**(1,633)**	**(1,643)**	**(1,653)**
Class A Credit Sales (Purchases)	**(1,865)**	**(1,747)**	**(1,682)**	**(1,670)**	**(1,623)**	**(1,633)**	**(1,643)**	**(1,653)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

HRSD-Urbanna

RAPPAHANNOCK Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	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)	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Projected Avg. Annual Concentration (mg/L)	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10
Discharged Load (end of pipe)	874	840	822	818	805	808	811	813
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	874	840	822	818	805	808	811	813
Delivered WLA	91	91	91	91	91	91	91	91
Expected Credits (delivered)	(783)	(749)	(731)	(727)	(714)	(717)	(720)	(722)
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	**(783)**	**(749)**	**(731)**	**(727)**	**(714)**	**(717)**	**(720)**	**(722)**
Class A Credit Sales (Purchases)	**(783)**	**(749)**	**(731)**	**(727)**	**(714)**	**(717)**	**(720)**	**(722)**
Expected Class B Credits	**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.

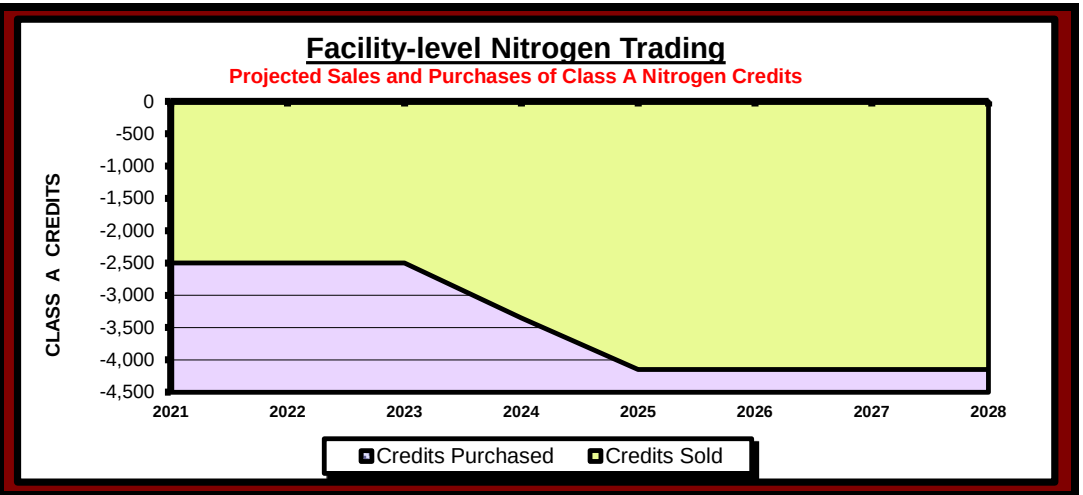
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Hopyard Farms	-	-	(487)	(121)	-	-	-	-
Oakland Park	-	-	487	121	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Hopyard Farms	3,045	3,197	2,619	3,351	4,149	4,149	4,149	4,149
Oakland Park	183	335	-	-	1,153	1,084	1,084	1,084
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**3,228**	**3,532**	**2,619**	**3,351**	**5,302**	**5,233**	**5,233**	**5,233**
Class A Sales (Purchases)	**2,500**	**2,500**	**2,500**	**3,351**	**5,302**	**5,233**	**5,233**	**5,233**
Expected Class B Credits	*728*	*1,032*	*119*	*0*	*0*	*0*	*0*	*0*
WQIF-Held Credits	*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		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Hopyard Farms	(24)	(9)	(91)	(24)	-	-	-	-
Oakland Park	24	9	91	24	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Hopyard Farms	167	197	33	136	269	269	269	269
Oakland Park	-	-	-	-	89	84	84	84
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**167**	**197**	**33**	**136**	**358**	**353**	**353**	**353**
Class A Sales (Purchases)	**0**	**0**	**0**	**136**	**358**	**353**	**353**	**353**
Expected Class B Credits	*167*	*197*	*33*	*0*	*0*	*0*	*0*	*0*
WQIF-Held Credits	*114*	*114*	*114*	*114*	*114*	*114*	*114*	*114*

NITROGEN FACILITY SUMMARY

KGCSA-Hopyard Farms

RAPPAHANNOCK Trading Basin

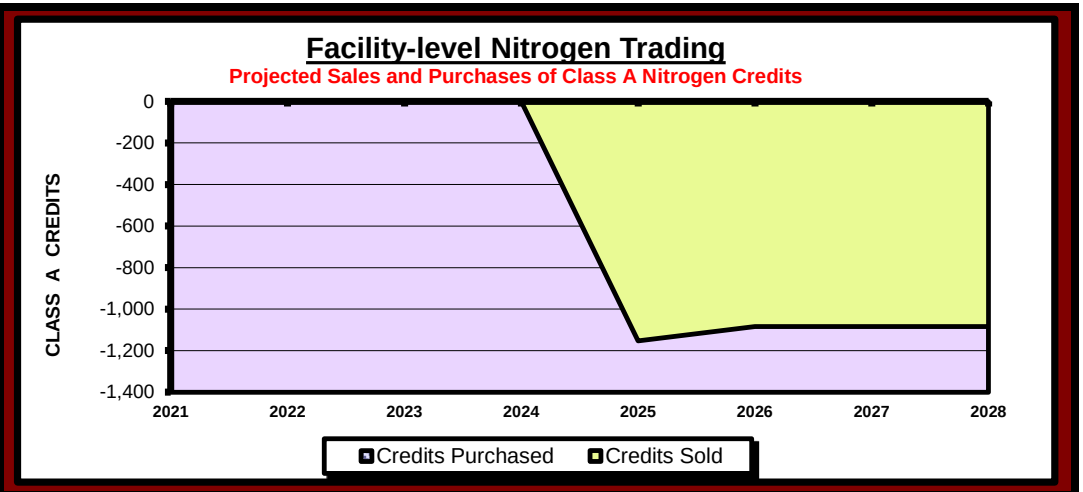


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Projected Flow (mgd)	0.10	0.09	0.08	0.06	0.05	0.05	0.05	0.05
Projected Avg. Annual Concentration (mg/L)	5.00	5.00	6.00	6.00	2.81	2.81	2.81	2.81
Discharged Load (end of pipe)	1,523	1,371	1,462	1,096	419	419	419	419
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,523	1,371	1,462	1,096	419	419	419	419
Delivered WLA	6,091	6,091	6,091	6,091	6,091	6,091	6,091	6,091
Expected Credits (delivered)	4,568	4,720	4,629	4,995	5,672	5,672	5,672	5,672
Transfers In (Out) within Owner Bubble	0	0	(487)	(121)	0	0	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	**3,045**	**3,197**	**2,619**	**3,351**	**4,149**	**4,149**	**4,149**	**4,149**
Class A Credit Sales (Purchases)	**2,500**	**2,500**	**2,500**	**3,351**	**4,149**	**4,149**	**4,149**	**4,149**
Expected Class B Credits	**545**	**697**	**119**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

KGCSA-Oakland Park

RAPPAHANNOCK Trading Basin

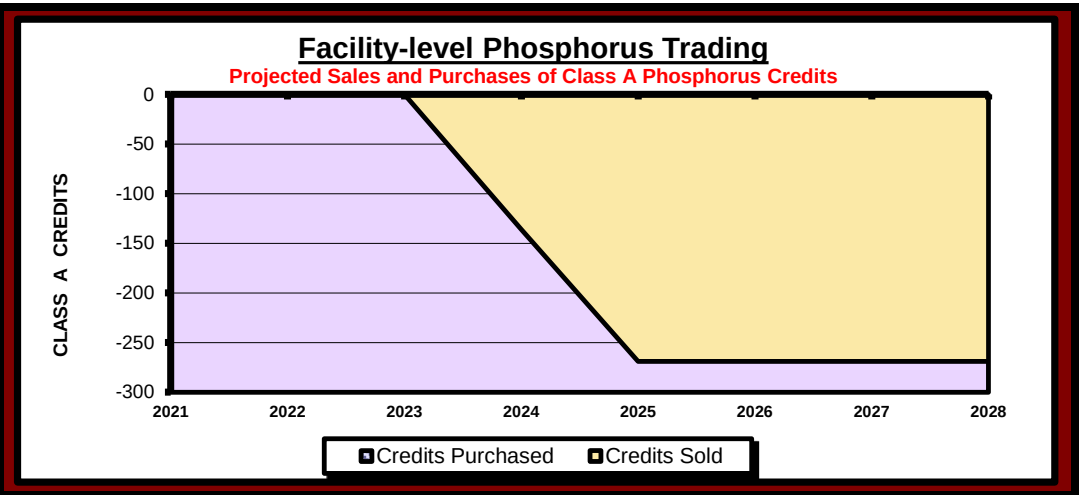


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Projected Flow (mgd)	0.10	0.09	0.06	0.05	0.04	0.05	0.05	0.05
Projected Avg. Annual Concentration (mg/L)	5.00	5.00	12.00	12.00	4.54	4.54	4.54	4.54
Discharged Load (end of pipe)	1,523	1,371	2,193	1,827	553	622	622	622
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,523	1,371	2,193	1,827	553	622	622	622
Delivered WLA	1,706	1,706	1,706	1,706	1,706	1,706	1,706	1,706
Expected Credits (delivered)	183	335	(487)	(121)	1,153	1,084	1,084	1,084
Transfers In (Out) within Owner Bubble	0	0	487	121	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	**183**	**335**	**0**	**0**	**1,153**	**1,084**	**1,084**	**1,084**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**1,153**	**1,084**	**1,084**	**1,084**
Expected Class B Credits	**183**	**335**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

KGCSA-Hopyard Farms

RAPPAHANNOCK Trading Basin

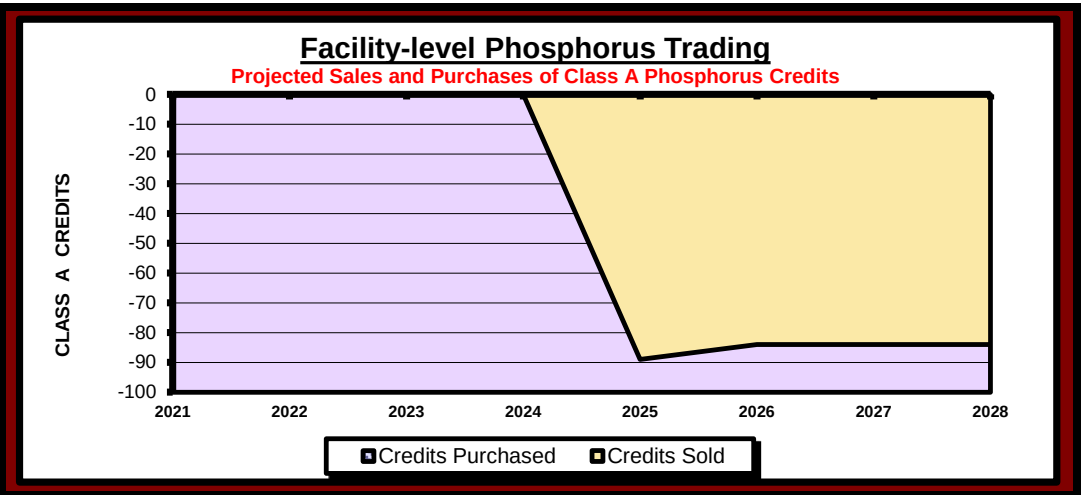


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Projected Flow (mgd)	0.10	0.09	0.08	0.06	0.05	0.05	0.05	0.05
Projected Avg. Annual Concentration (mg/L)	0.50	0.50	0.90	1.00	0.50	0.50	0.50	0.50
Discharged Load (end of pipe)	152	137	219	183	74	74	74	74
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	152	137	219	183	74	74	74	74
Delivered WLA	457	457	457	457	457	457	457	457
Expected Credits (delivered)	305	320	238	274	383	383	383	383
Transfers In (Out) within Owner Bubble	(24)	(9)	(91)	(24)	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	(114)	(114)	(114)	(114)	(114)	(114)	(114)	(114)
Expected Net Credits	**167**	**197**	**33**	**136**	**269**	**269**	**269**	**269**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**136**	**269**	**269**	**269**	**269**
Expected Class B Credits	**167**	**197**	**33**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

KGCSA-Oakland Park

RAPPAHANNOCK Trading Basin

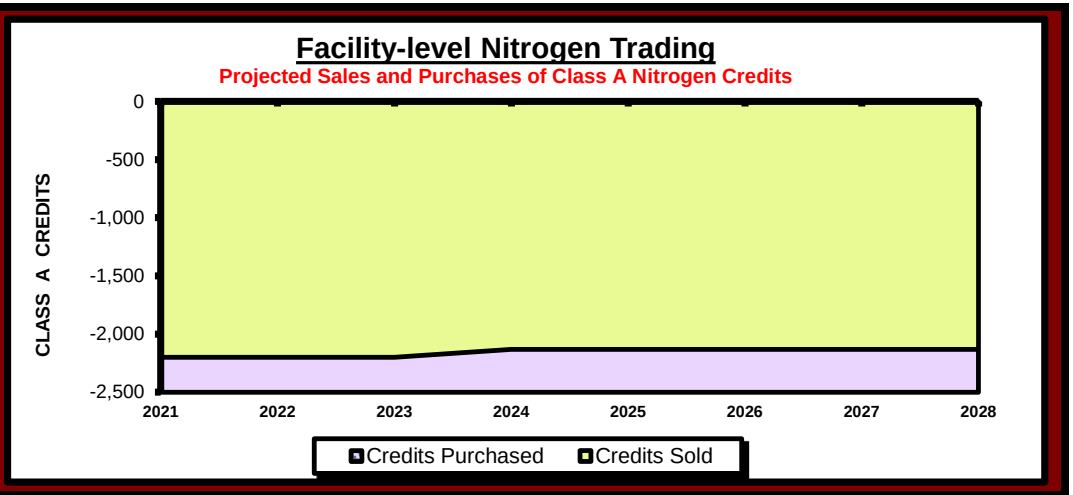


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Projected Flow (mgd)	0.10	0.09	0.06	0.05	0.04	0.05	0.05	0.05
Projected Avg. Annual Concentration (mg/L)	0.50	0.50	1.20	1.00	0.32	0.32	0.32	0.32
Discharged Load (end of pipe)	152	137	219	152	39	44	44	44
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	152	137	219	152	39	44	44	44
Delivered WLA	128	128	128	128	128	128	128	128
Expected Credits (delivered)	(24)	(9)	(91)	(24)	89	84	84	84
Transfers In (Out) within Owner Bubble	24	9	91	24	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**0**	**0**	**0**	**0**	**89**	**84**	**84**	**84**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**89**	**84**	**84**	**84**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

Kilmarnock

RAPPAHANNOCK Trading Basin

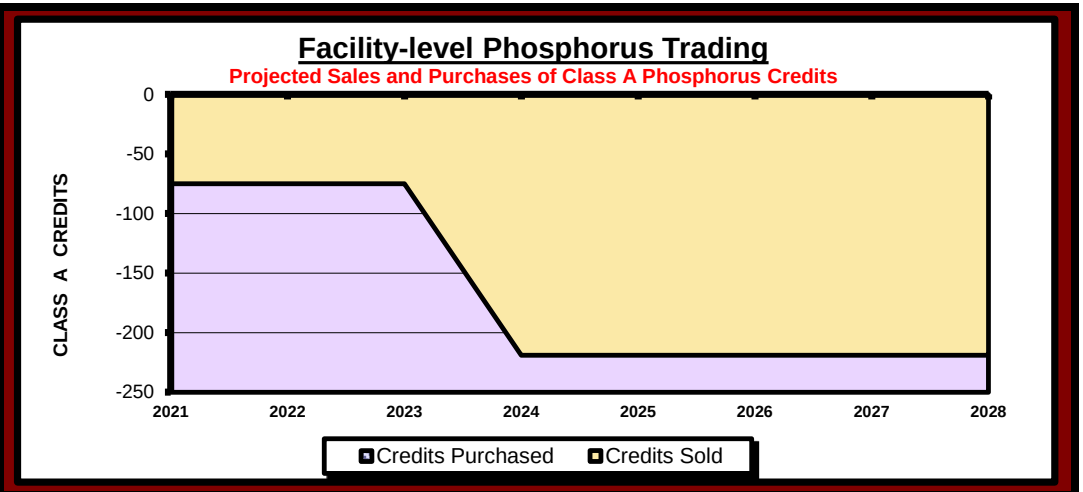


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Projected Flow (mgd)	0.35	0.35	0.35	0.26	0.26	0.26	0.26	0.26
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	5.00	5.00	5.00	5.00	5.00
Discharged Load (end of pipe)	3,198	3,198	3,198	3,959	3,959	3,959	3,959	3,959
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	3,198	3,198	3,198	3,959	3,959	3,959	3,959	3,959
Delivered WLA	6,091	6,091	6,091	6,091	6,091	6,091	6,091	6,091
Expected Credits (delivered)	2,893	2,893	2,893	2,132	2,132	2,132	2,132	2,132
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	**2,893**	**2,893**	**2,893**	**2,132**	**2,132**	**2,132**	**2,132**	**2,132**
Class A Credit Sales (Purchases)	**2,200**	**2,200**	**2,200**	**2,132**	**2,132**	**2,132**	**2,132**	**2,132**
Expected Class B Credits	**693**	**693**	**693**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Kilmarnock

RAPPAHANNOCK Trading Basin

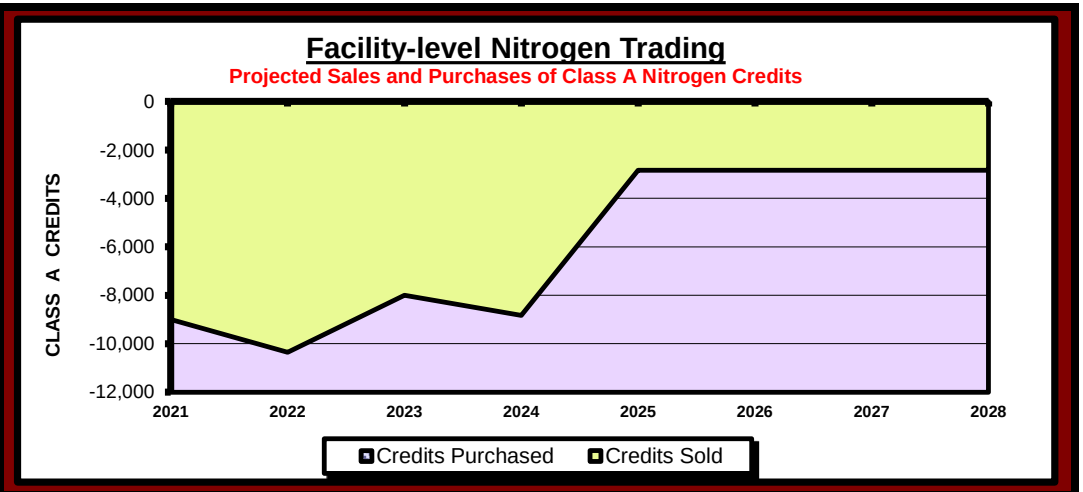


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Projected Flow (mgd)	0.35	0.35	0.35	0.26	0.26	0.26	0.26	0.26
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	320	320	320	238	238	238	238	238
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	320	320	320	238	238	238	238	238
Delivered WLA	457	457	457	457	457	457	457	457
Expected Credits (delivered)	137	137	137	219	219	219	219	219
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	**137**	**137**	**137**	**219**	**219**	**219**	**219**	**219**
Class A Credit Sales (Purchases)	**75**	**75**	**75**	**219**	**219**	**219**	**219**	**219**
Expected Class B Credits	**62**	**62**	**62**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

Omega Protein

RAPPAHANNOCK Trading Basin



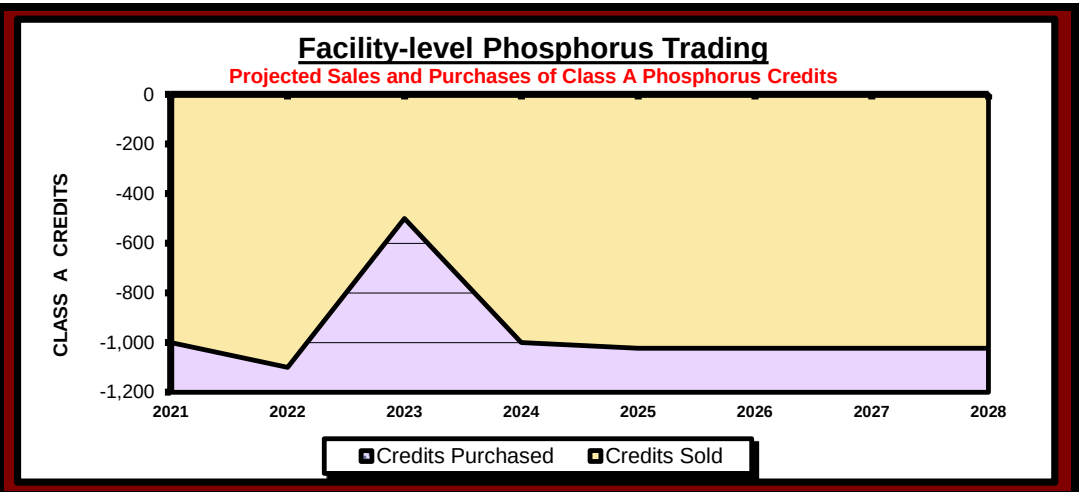
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21
Projected Flow (mgd)	0.18	0.18	0.20	0.20	0.20	0.20	0.20	0.20
Projected Avg. Annual Concentration (mg/L)	20.00	20.00	20.00	20.00	30.00	30.00	30.00	30.00
Discharged Load (end of pipe)	10,659	10,659	12,182	12,182	18,273	18,273	18,273	18,273
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	10,659	10,659	12,182	12,182	18,273	18,273	18,273	18,273
Delivered WLA	21,213	21,213	21,213	21,213	21,213	21,213	21,213	21,213
Expected Credits (delivered)	10,554	10,554	9,031	9,031	2,940	2,940	2,940	2,940
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**10,454**	**10,454**	**8,931**	**8,931**	**2,840**	**2,840**	**2,840**	**2,840**
Class A Credit Sales (Purchases)	**9,000**	**10,354**	**8,000**	**8,831**	**2,840**	**2,840**	**2,840**	**2,840**
Expected Class B Credits	**1,454**	**100**	**931**	**100**	**0**	**0**	**0**	**0**

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

PHOSPHORUS FACILITY SUMMARY

Omega Protein

RAPPAHANNOCK Trading Basin



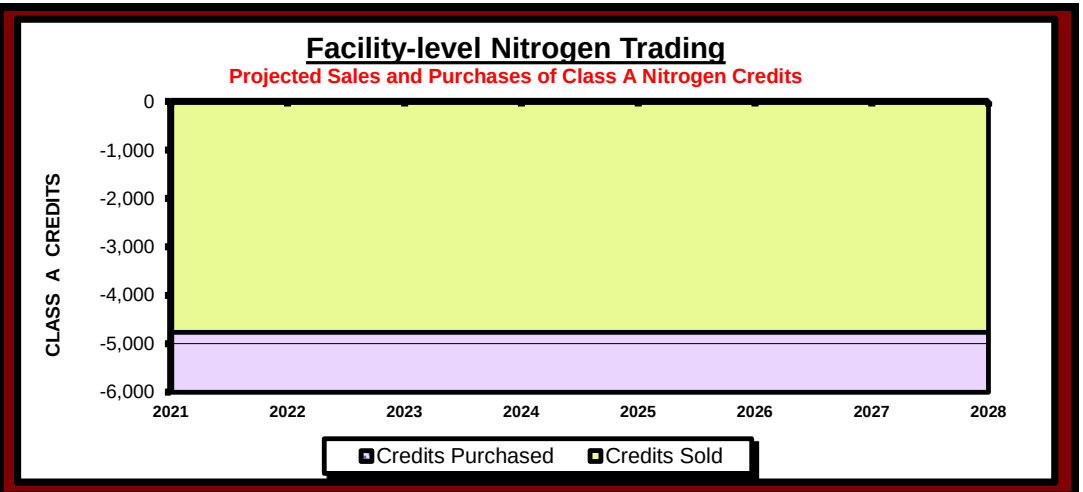
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21
Projected Flow (mgd)	0.18	0.18	0.20	0.20	0.20	0.20	0.20	0.20
Projected Avg. Annual Concentration (mg/L)	0.80	0.80	0.80	0.80	0.90	0.90	0.90	0.90
Discharged Load (end of pipe)	426	426	487	487	548	548	548	548
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	426	426	487	487	548	548	548	548
Delivered WLA	1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591
Expected Credits (delivered)	1,165	1,165	1,104	1,104	1,043	1,043	1,043	1,043
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**1,145**	**1,145**	**1,084**	**1,084**	**1,023**	**1,023**	**1,023**	**1,023**
Class A Credit Sales (Purchases)	**1,000**	**1,100**	**500**	**1,000**	**1,023**	**1,023**	**1,023**	**1,023**
Expected Class B Credits	**145**	**45**	**584**	**84**	**0**	**0**	**0**	**0**

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

NITROGEN FACILITY SUMMARY

Orange (Town)

RAPPAHANNOCK Trading Basin

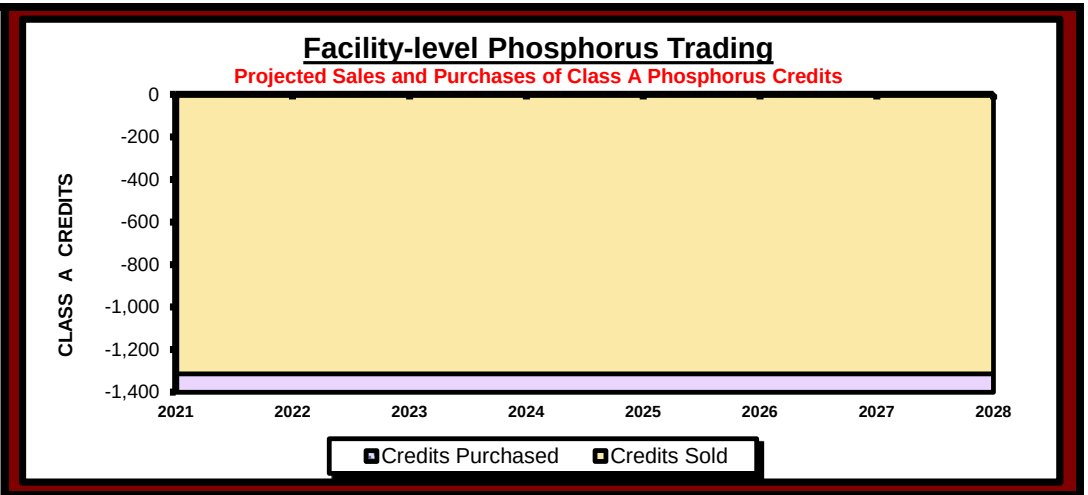


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Projected Flow (mgd)	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Projected Avg. Annual Concentration (mg/L)	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Discharged Load (end of pipe)	13,857	13,857	13,857	13,857	13,857	13,857	13,857	13,857
Delivery Factor	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Expected Load	2,910	2,910	2,910	2,910	2,910	2,910	2,910	2,910
Delivered WLA	7,675	7,675	7,675	7,675	7,675	7,675	7,675	7,675
Expected Credits (delivered)	4,765	4,765	4,765	4,765	4,765	4,765	4,765	4,765
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**4,765**	**4,765**	**4,765**	**4,765**	**4,765**	**4,765**	**4,765**	**4,765**
Class A Credit Sales (Purchases)	**4,765**	**4,765**	**4,765**	**4,765**	**4,765**	**4,765**	**4,765**	**4,765**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Orange (Town)

RAPPAHANNOCK Trading Basin

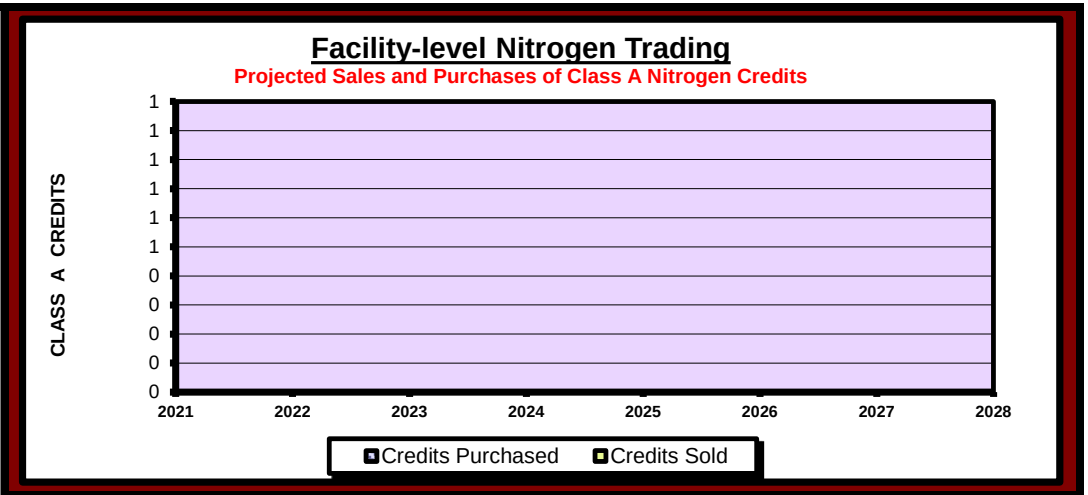


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Projected Flow (mgd)	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Projected Avg. Annual Concentration (mg/L)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Discharged Load (end of pipe)	990	990	990	990	990	990	990	990
Delivery Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Expected Load	742	742	742	742	742	742	742	742
Delivered WLA	2,056	2,056	2,056	2,056	2,056	2,056	2,056	2,056
Expected Credits (delivered)	1,314	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	**1,314**	**1,314**	**1,314**	**1,314**	**1,314**	**1,314**	**1,314**	**1,314**
Class A Credit Sales (Purchases)	**1,314**	**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

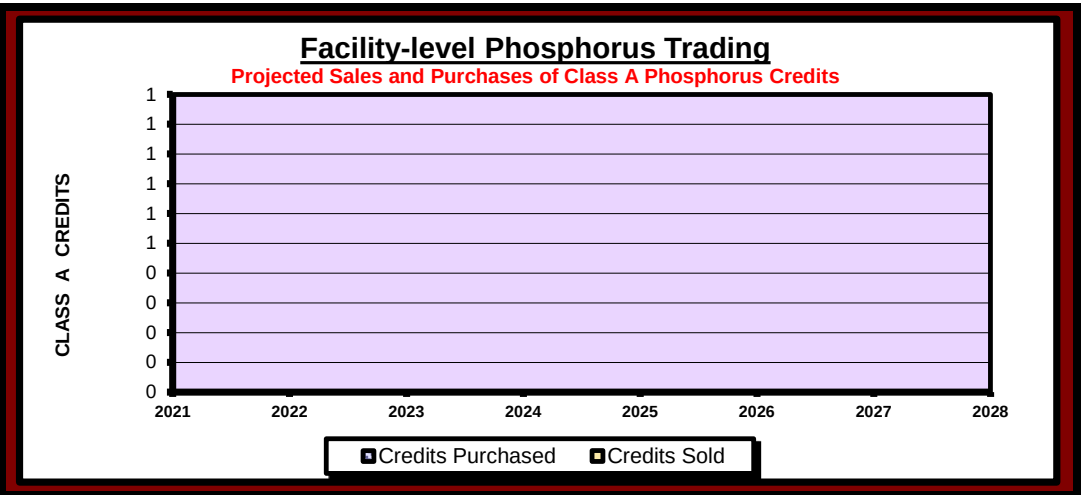


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Projected Flow (mgd)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Projected Avg. Annual Concentration (mg/L)	6.10	6.10	6.10	6.10	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

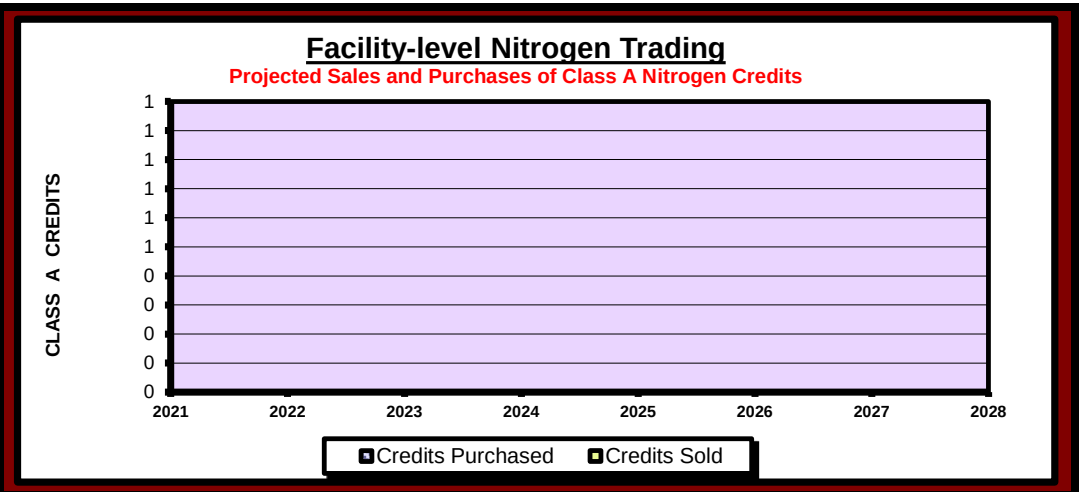


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Projected Flow (mgd)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	119	119	119	119	119	119	119	119
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	119	119	119	119	119	119	119	119
Delivered WLA	183	183	183	183	183	183	183	183
Expected Credits (delivered)	64	64	64	64	64	64	64	64
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	**64**	**64**	**64**	**64**	**64**	**64**	**64**	**64**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**64**	**64**	**64**	**64**	**64**	**64**	**64**	**64**

NITROGEN FACILITY SUMMARY

RSA-Wilderness Shores

RAPPAHANNOCK Trading Basin

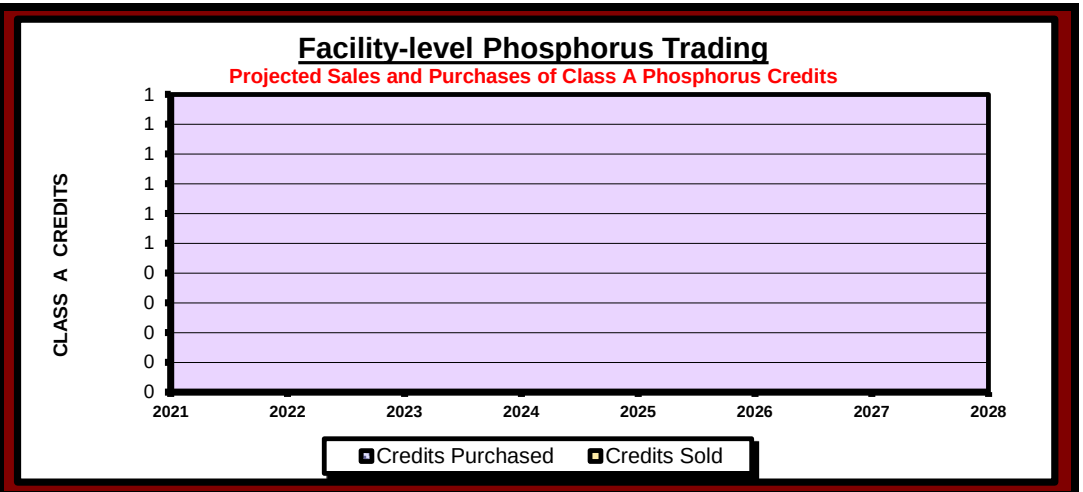


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	0.94	0.94	0.94	0.96	0.96	0.98	0.98	1.00
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	8,588	8,588	8,588	8,771	8,771	8,954	8,954	9,137
Delivery Factor	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Expected Load	3,865	3,865	3,865	3,947	3,947	4,029	4,029	4,112
Delivered WLA	6,853	6,853	6,853	6,853	6,853	6,853	6,853	6,853
Expected Credits (delivered)	2,988	2,988	2,988	2,906	2,906	2,824	2,824	2,741
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	**2,988**	**2,988**	**2,988**	**2,906**	**2,906**	**2,824**	**2,824**	**2,741**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**2,988**	**2,988**	**2,988**	**2,906**	**2,906**	**2,824**	**2,824**	**2,741**

PHOSPHORUS FACILITY SUMMARY

RSA-Wilderness Shores

RAPPAHANNOCK Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	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)	0.94	0.94	0.94	0.96	0.96	0.98	0.98	1.00
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)	859	859	859	877	877	895	895	914
Delivery Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Expected Load	644	644	644	658	658	672	672	685
Delivered WLA	857	857	857	857	857	857	857	857
Expected Credits (delivered)	213	213	213	199	199	185	185	172
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	**213**	**213**	**213**	**199**	**199**	**185**	**185**	**172**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**213**	**213**	**213**	**199**	**199**	**185**	**185**	**172**

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.

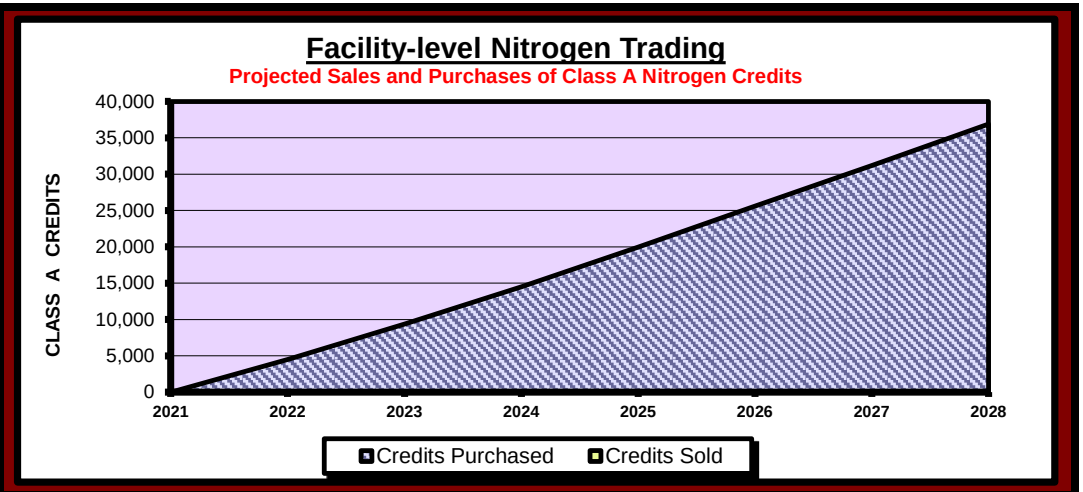
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
FMC	21,433	19,118	16,438	13,514	10,469	7,301	4,134	845
Massaponax	(21,433)	(19,118)	(16,438)	(13,514)	(10,469)	(7,301)	(4,134)	(845)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
FMC	-	(4,508)	(9,380)	(14,497)	(19,979)	(25,583)	(31,186)	(36,912)
Massaponax	487	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**487**	**(4,508)**	**(9,380)**	**(14,497)**	**(19,979)**	**(25,583)**	**(31,186)**	**(36,912)**
Class A Sales (Purchases)	**0**	**(4,508)**	**(9,380)**	**(14,497)**	**(19,979)**	**(25,583)**	**(31,186)**	**(36,912)**
Expected Class B Credits	*487*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
FMC	-	-	-	-	-	-	-	(120)
Massaponax	-	-	-	-	-	-	-	120
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
FMC	1,024	941	859	777	686	594	503	291
Massaponax	1,461	1,251	1,050	831	602	365	127	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**2,485**	**2,192**	**1,909**	**1,608**	**1,288**	**959**	**630**	**291**
Class A Sales (Purchases)	**1,500**	**1,225**	**955**	**805**	**645**	**480**	**316**	**146**
Expected Class B Credits	*985*	*967*	*954*	*803*	*643*	*479*	*314*	*145*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NITROGEN FACILITY SUMMARY

Spotsy Co-FMC

RAPPAHANNOCK Trading Basin

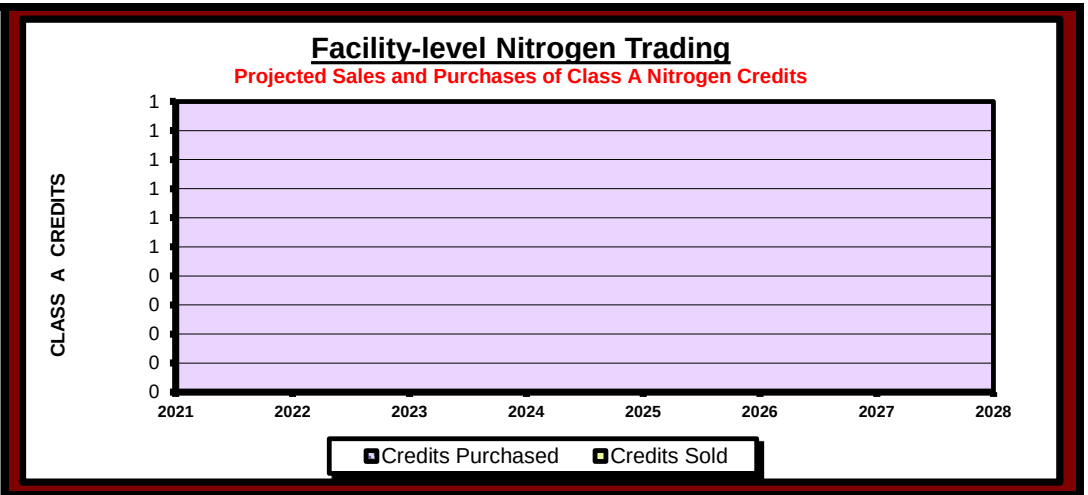


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Projected Flow (mgd)	2.88	2.97	3.06	3.15	3.25	3.35	3.45	3.55
Projected Avg. Annual Concentration (mg/L)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Discharged Load (end of pipe)	70,170	72,363	74,555	76,748	79,185	81,621	84,057	86,494
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	70,170	72,363	74,555	76,748	79,185	81,621	84,057	86,494
Delivered WLA	48,737	48,737	48,737	48,737	48,737	48,737	48,737	48,737
Expected Credits (delivered)	(21,433)	(23,626)	(25,818)	(28,011)	(30,448)	(32,884)	(35,320)	(37,757)
Transfers In (Out) within Owner Bubble	21,433	19,118	16,438	13,514	10,469	7,301	4,134	845
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**	**(4,508)**	**(9,380)**	**(14,497)**	**(19,979)**	**(25,583)**	**(31,186)**	**(36,912)**
Class A Credit Sales (Purchases)	**0**	**(4,508)**	**(9,380)**	**(14,497)**	**(19,979)**	**(25,583)**	**(31,186)**	**(36,912)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

Spotsy Co-Massaponax

RAPPAHANNOCK Trading Basin

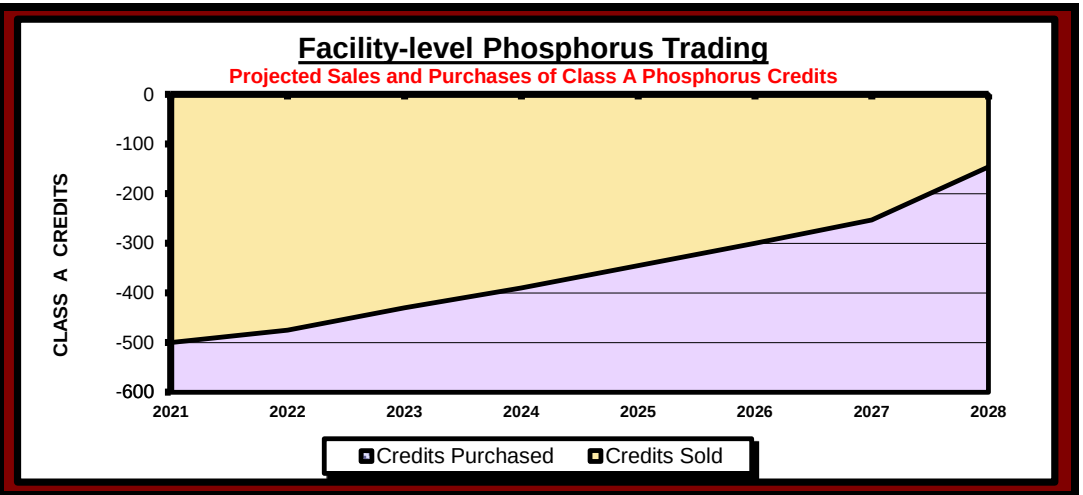


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Projected Flow (mgd)	7.60	7.83	8.05	8.29	8.54	8.80	9.06	9.33
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	92,585	95,387	98,067	100,991	104,036	107,204	110,371	113,660
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	92,585	95,387	98,067	100,991	104,036	107,204	110,371	113,660
Delivered WLA	114,505	114,505	114,505	114,505	114,505	114,505	114,505	114,505
Expected Credits (delivered)	21,920	19,118	16,438	13,514	10,469	7,301	4,134	845
Transfers In (Out) within Owner Bubble	(21,433)	(19,118)	(16,438)	(13,514)	(10,469)	(7,301)	(4,134)	(845)
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	**487**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**487**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Spotsy Co-FMC

RAPPAHANNOCK Trading Basin

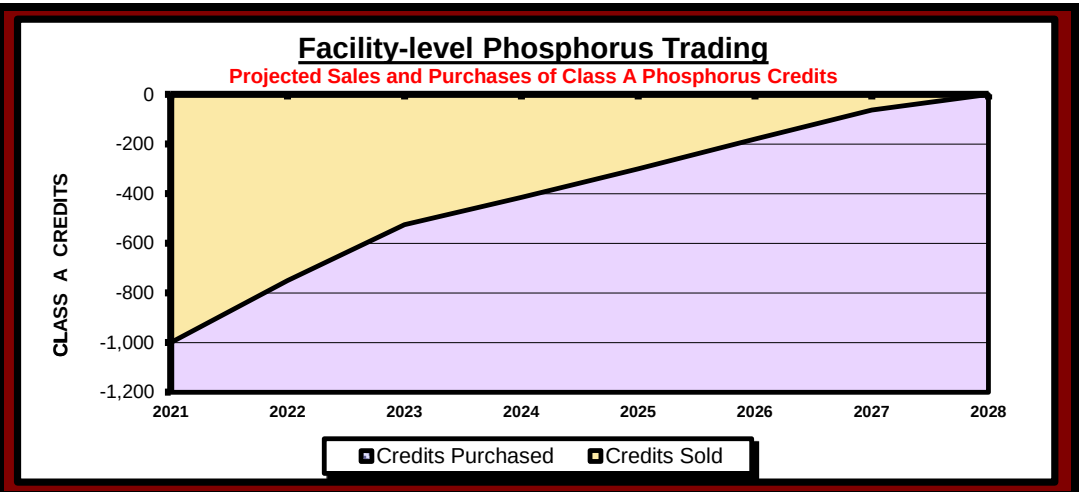


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Projected Flow (mgd)	2.88	2.97	3.06	3.15	3.25	3.35	3.45	3.55
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	2,631	2,714	2,796	2,878	2,969	3,061	3,152	3,244
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	2,631	2,714	2,796	2,878	2,969	3,061	3,152	3,244
Delivered WLA	3,655	3,655	3,655	3,655	3,655	3,655	3,655	3,655
Expected Credits (delivered)	1,024	941	859	777	686	594	503	411
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	(120)
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	**1,024**	**941**	**859**	**777**	**686**	**594**	**503**	**291**
Class A Credit Sales (Purchases)	**500**	**475**	**430**	**390**	**345**	**300**	**253**	**146**
Expected Class B Credits	**524**	**466**	**429**	**387**	**341**	**294**	**250**	**145**

PHOSPHORUS FACILITY SUMMARY

Spotsy Co-Massaponax

RAPPAHANNOCK Trading Basin



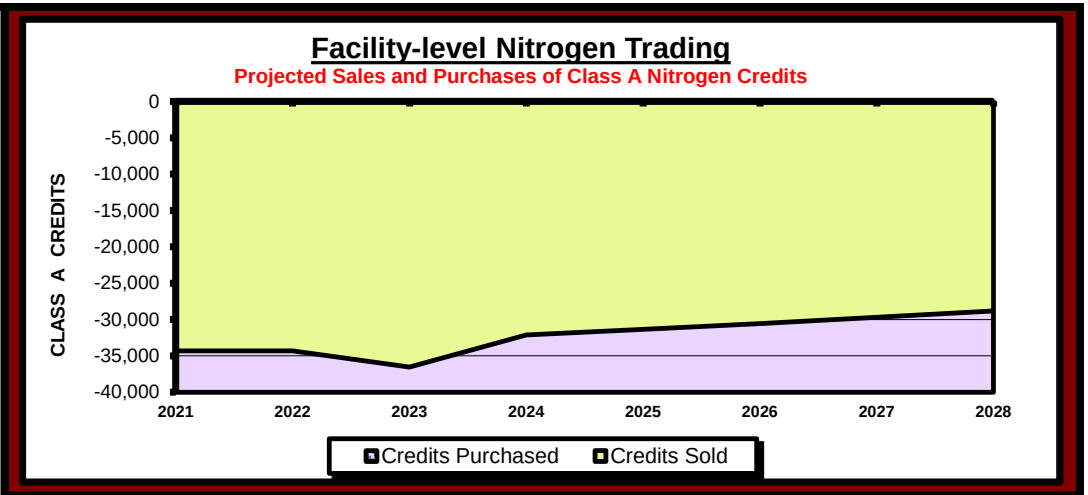
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Projected Flow (mgd)	7.60	7.83	8.05	8.29	8.54	8.80	9.06	9.33
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	6,944	7,154	7,355	7,574	7,803	8,040	8,278	8,525
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	6,944	7,154	7,355	7,574	7,803	8,040	8,278	8,525
Delivered WLA*	8,405	8,405	8,405	8,405	8,405	8,405	8,405	8,405
Expected Credits (delivered)	1,461	1,251	1,050	831	602	365	127	(120)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	120
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	**1,461**	**1,251**	**1,050**	**831**	**602**	**365**	**127**	**0**
Class A Credit Sales (Purchases)	**1,000**	**750**	**525**	**415**	**300**	**180**	**63**	**0**
Expected Class B Credits	**461**	**501**	**525**	**416**	**302**	**185**	**64**	**0**

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

NITROGEN FACILITY SUMMARY

Stafford Co-L. Falls Run

RAPPAHANNOCK Trading Basin

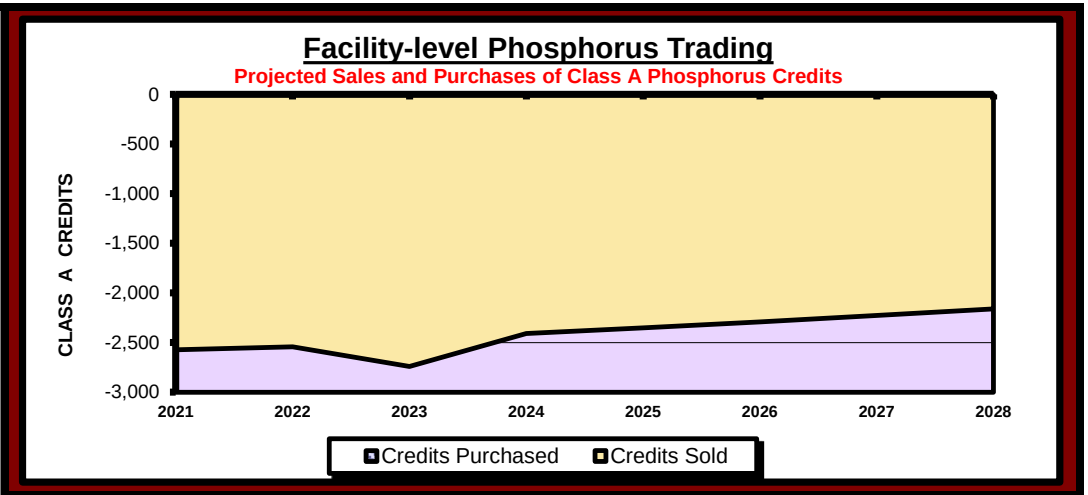


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Projected Flow (mgd)	4.87	4.87	5.00	3.94	4.04	4.14	4.25	4.36
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	59,328	59,328	60,911	48,034	49,216	50,434	51,775	53,115
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	59,328	59,328	60,911	48,034	49,216	50,434	51,775	53,115
Delivered WLA	97,458	97,458	97,458	97,458	97,458	97,458	97,458	97,458
Expected Credits (delivered)	38,130	38,130	36,547	49,424	48,242	47,024	45,683	44,343
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	**38,130**	**38,130**	**36,547**	**49,424**	**48,242**	**47,024**	**45,683**	**44,343**
Class A Credit Sales (Purchases)	**34,317**	**34,317**	**36,547**	**32,126**	**31,357**	**30,566**	**29,694**	**28,823**
Expected Class B Credits	**3,813**	**3,813**	**0**	**17,298**	**16,885**	**16,458**	**15,989**	**15,520**

PHOSPHORUS FACILITY SUMMARY

Stafford Co-L. Falls Run

RAPPAHANNOCK Trading Basin

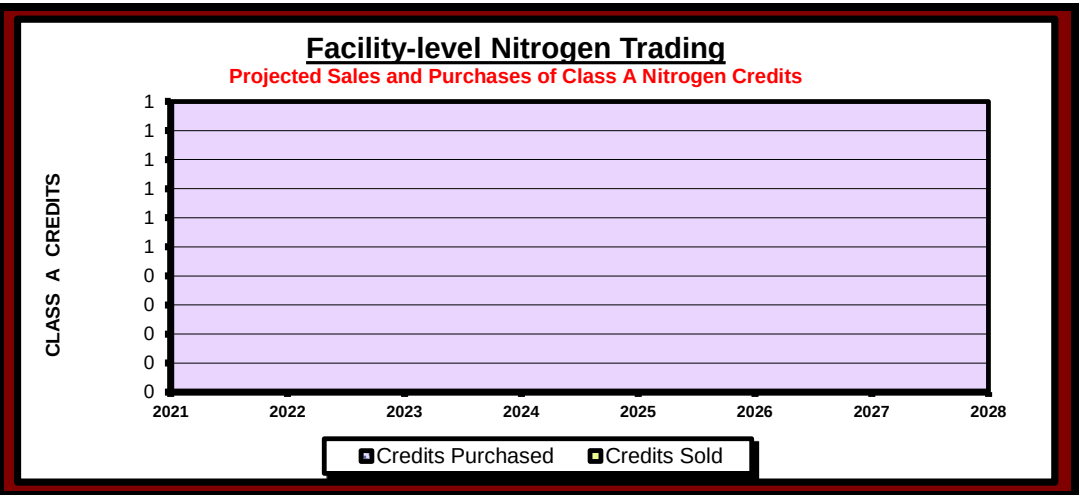


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Projected Flow (mgd)	4.87	4.87	5.00	3.94	4.04	4.14	4.25	4.36
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	4,450	4,450	4,568	3,603	3,691	3,783	3,883	3,984
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	4,450	4,450	4,568	3,603	3,691	3,783	3,883	3,984
Delivered WLA	7,309	7,309	7,309	7,309	7,309	7,309	7,309	7,309
Expected Credits (delivered)	2,859	2,859	2,741	3,706	3,618	3,526	3,426	3,325
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	**2,859**	**2,859**	**2,741**	**3,706**	**3,618**	**3,526**	**3,426**	**3,325**
Class A Credit Sales (Purchases)	**2,573**	**2,543**	**2,741**	**2,409**	**2,352**	**2,292**	**2,227**	**2,161**
Expected Class B Credits	**286**	**316**	**0**	**1,297**	**1,266**	**1,234**	**1,199**	**1,164**

NITROGEN FACILITY SUMMARY

Tappahannock

RAPPAHANNOCK Trading Basin

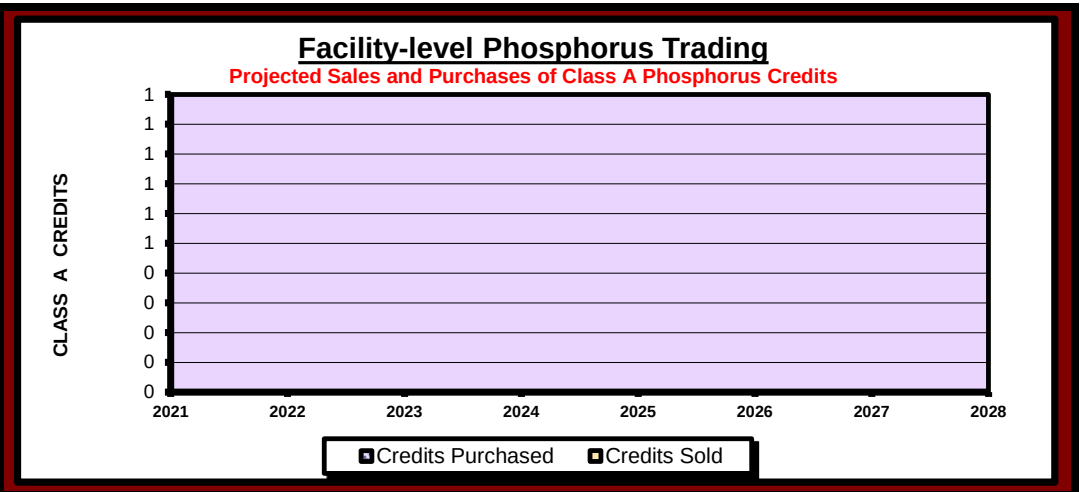


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Projected Flow (mgd)	0.64	0.65	0.66	0.66	0.67	0.67	0.67	0.67
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	7,797	7,918	8,040	8,040	8,162	8,162	8,162	8,162
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	7,797	7,918	8,040	8,040	8,162	8,162	8,162	8,162
Delivered WLA	9,746	9,746	9,746	9,746	9,746	9,746	9,746	9,746
Expected Credits (delivered)	1,949	1,828	1,706	1,706	1,584	1,584	1,584	1,584
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	**1,949**	**1,828**	**1,706**	**1,706**	**1,584**	**1,584**	**1,584**	**1,584**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**1,949**	**1,828**	**1,706**	**1,706**	**1,584**	**1,584**	**1,584**	**1,584**

PHOSPHORUS FACILITY SUMMARY

Tappahannock

RAPPAHANNOCK Trading Basin

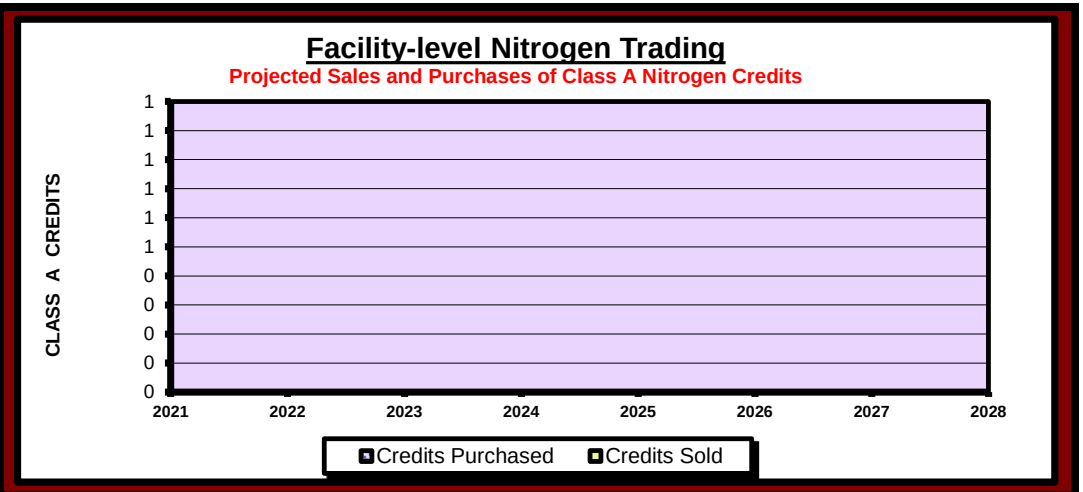


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Projected Flow (mgd)	0.64	0.65	0.66	0.66	0.67	0.67	0.67	0.67
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	585	594	603	603	612	612	612	612
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	585	594	603	603	612	612	612	612
Delivered WLA	731	731	731	731	731	731	731	731
Expected Credits (delivered)	146	137	128	128	119	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**	**137**	**128**	**128**	**119**	**119**	**119**	**119**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**146**	**137**	**128**	**128**	**119**	**119**	**119**	**119**

NITROGEN FACILITY SUMMARY

Warsaw

RAPPAHANNOCK Trading Basin

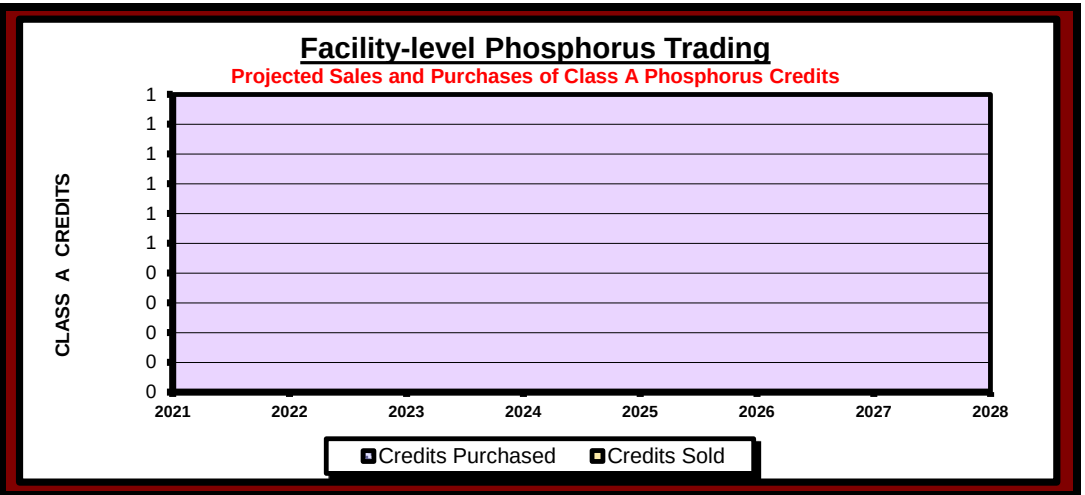


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Projected Flow (mgd)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	3,046	3,046	3,046	3,046	3,046	3,046	3,046	3,046
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	3,046	3,046	3,046	3,046	3,046	3,046	3,046	3,046
Delivered WLA	3,655	3,655	3,655	3,655	3,655	3,655	3,655	3,655
Expected Credits (delivered)	609	609	609	609	609	609	609	609
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	**609**	**609**	**609**	**609**	**609**	**609**	**609**	**609**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**609**	**609**	**609**	**609**	**609**	**609**	**609**	**609**

PHOSPHORUS FACILITY SUMMARY

Warsaw

RAPPAHANNOCK Trading Basin

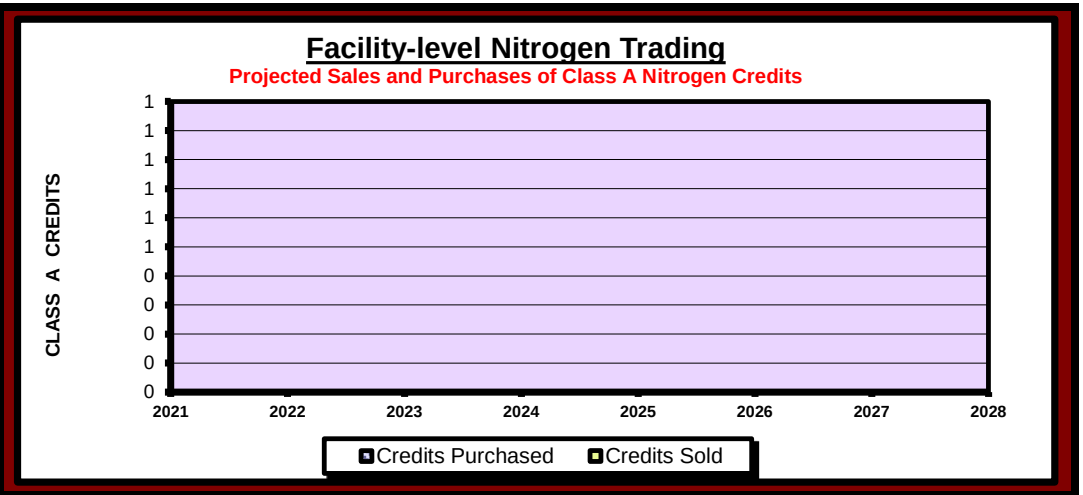


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Projected Flow (mgd)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	228	228	228	228	228	228	228	228
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	228	228	228	228	228	228	228	228
Delivered WLA	274	274	274	274	274	274	274	274
Expected Credits (delivered)	46	46	46	46	46	46	46	46
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	**46**	**46**	**46**	**46**	**46**	**46**	**46**	**46**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**46**	**46**	**46**	**46**	**46**	**46**	**46**	**46**

NITROGEN FACILITY SUMMARY

Westmoreland Co-Montross

RAPPAHANNOCK Trading Basin

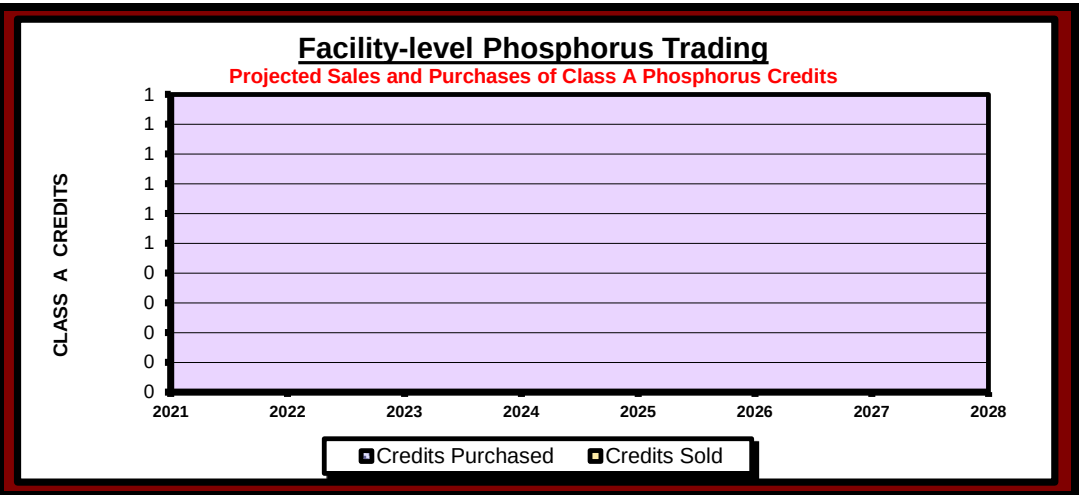


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Projected Flow (mgd)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	731	731	731	731	731	731	731	731
Delivery Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Expected Load	460	460	460	460	460	460	460	460
Delivered WLA	998	998	998	998	998	998	998	998
Expected Credits (delivered)	538	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	**538**	**538**	**538**	**538**	**538**	**538**	**538**	**538**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**538**	**538**	**538**	**538**	**538**	**538**	**538**	**538**

PHOSPHORUS FACILITY SUMMARY

Westmoreland Co-Montross

RAPPAHANNOCK Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
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)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Discharged Load (end of pipe)	91	91	91	91	91	91	91	91
Delivery Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Expected Load	80	80	80	80	80	80	80	80
Delivered WLA	105	105	105	105	105	105	105	105
Expected Credits (delivered)	25	25	25	25	25	25	25	25
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	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**

SECTION 4

York River Basin Exchange Compliance Plan

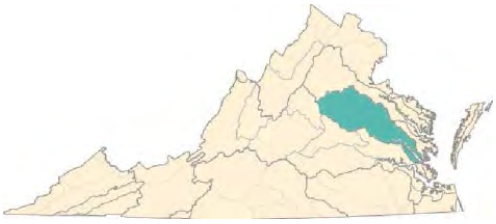


EXHIBIT 4-1
Nitrogen Plan Summary: York River Basin

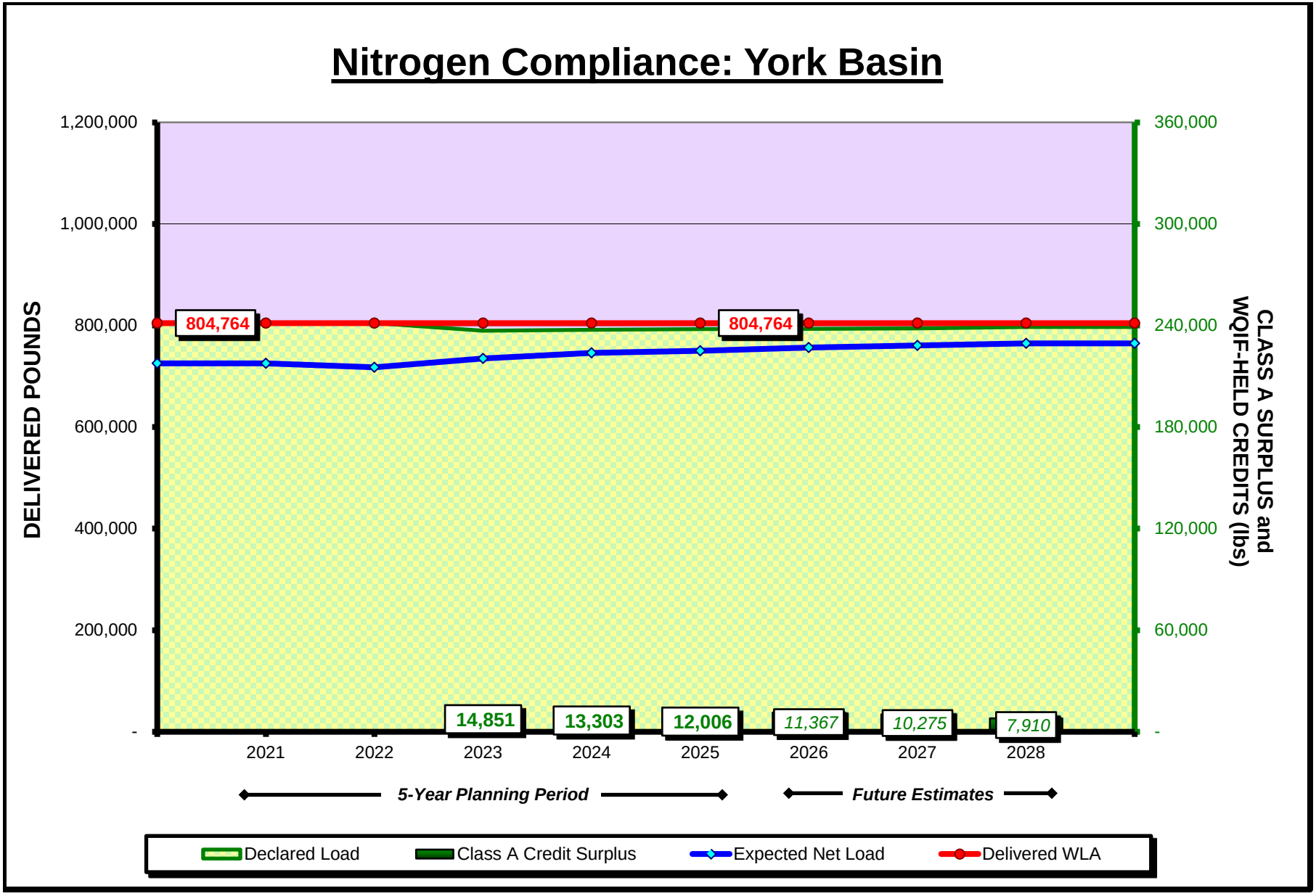


EXHIBIT 4-2
2021 Nitrogen Trading Ledger: York River Basin

YORK Basin: Nitrogen Credit Ledger

Compliance Year:	2021	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)		
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	$ 3.48	$ 3.87	$ 0.11
The Exchange (group)	**804,764**	**678,055**	**126,709**	**-**	**5**	**(47,441)**	**79,273**		**22,970**	**(22,970)**	**79,273**
819 Virginia LLC	23,664	18,273	5,391	-	-	-	5,391		-	-	5,391
Aqua Virginia- Lake Land'Or	3,702	2,415	1,287	-	-	-	1,287		1,150	-	137
Caroline Co.	5,939	4,573	1,366	-	-	-	1,366		663	-	703
Hanover Co-Ashland	20,101	34,955	(14,854)	14,854	-	-	-		-	-	-
Hanover Co-Doswell	9,137	18,730	(9,593)	9,593	-	-	-		-	-	-
Hanover Co-Totopotomoy	157,151	60,765	96,386	(24,447)	-	(47,145)	24,794		8,000	-	16,794
HRSD-King William	1,424	599	825	(825)	-	-	-		-	-	-
HRSD-West Point	10,964	23,655	(12,691)	12,691	-	-	-		-	-	-
HRSD-York	275,927	240,459	35,468	(11,866)	5	-	23,607		-	-	23,607
New Kent Co-Parham	36,547	8,771	27,776	-	-	-	27,776		13,157	-	14,619
RSA-Gordonsville	1,031	515	516	-	-	(296)	220		-	-	220
WestRock-West Point Mill	259,177	264,345	(5,168)	-	-	-	(5,168)		-	(22,970)	17,802

**** 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.*

EXHIBIT 4-3
2022 Nitrogen Trading Ledger: York River Basin

YORK 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: $ 3.54	$ 3.94	$ 0.09
The Exchange (group)	**804,764**	**670,036**	**134,728**	**-**	**(85)**	**(47,441)**	**87,202**	**21,744**	**(21,744)**	**87,202**
819 Virginia LLC	23,664	18,273	5,391	-	-	-	5,391	-	-	5,391
Aqua Virginia- Lake Land'Or	3,702	2,415	1,287	-	-	-	1,287	1,200	-	87
Caroline Co.	5,939	4,573	1,366	-	-	-	1,366	662	-	704
Hanover Co-Ashland	20,101	26,003	(5,902)	5,902	-	-	-	-	-	-
Hanover Co-Doswell	9,137	9,803	(666)	666	-	-	-	-	-	-
Hanover Co-Totopotomoy	157,151	70,194	86,957	(6,568)	(90)	(47,145)	33,154	7,000	-	26,154
HRSD-King William	1,424	651	773	(773)	-	-	-	-	-	-
HRSD-West Point	10,964	24,332	(13,368)	13,368	-	-	-	-	-	-
HRSD-York	275,927	239,795	36,132	(12,595)	5	-	23,542	-	-	23,542
New Kent Co-Parham	36,547	9,137	27,410	-	-	-	27,410	12,882	-	14,528
RSA-Gordonsville	1,031	515	516	-	-	(296)	220	-	-	220
WestRock-West Point Mill	259,177	264,345	(5,168)	-	-	-	(5,168)	-	(21,744)	16,576
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-

**** 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.*

EXHIBIT 4-4
2023 Nitrogen Trading Ledger: York River Basin

YORK 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:	$ 0.93	$ 4.04	$ 0.03
The Exchange (group)	**804,764**	**686,893**	**117,871**	**-**	**(688)**	**(47,441)**	**69,742**		**20,019**	**(5,168)**	**54,891**
819 Virginia LLC	23,664	18,273	5,391	-	-	-	5,391		-	-	5,391
Aqua Virginia- Lake Land'Or	3,702	2,415	1,287	-	-	-	1,287		1,200	-	87
Caroline Co.	5,939	4,573	1,366	-	-	-	1,366		662	-	704
Hanover Co-Ashland	20,101	26,393	(6,292)	6,292	-	-	-		-	-	-
Hanover Co-Doswell	9,137	9,950	(813)	813	-	-	-		-	-	-
Hanover Co-Totopotomoy	157,151	88,005	69,146	(7,105)	(90)	(47,145)	14,806		5,000	-	9,806
HRSD-King William	1,424	661	763	(763)	-	-	-		-	-	-
HRSD-West Point	10,964	23,818	(12,854)	12,854	-	-	-		-	-	-
HRSD-York	275,927	238,808	37,119	(12,091)	(598)	-	24,430		-	-	24,430
New Kent Co-Parham	36,547	9,137	27,410	-	-	-	27,410		13,157	-	14,253
RSA-Gordonsville	1,031	515	516	-	-	(296)	220		-	-	220
WestRock-West Point Mill	259,177	264,345	(5,168)	-	-	-	(5,168)		-	(5,168)	-

**** 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.*

EXHIBIT 4-5
2024 Nitrogen Trading Ledger: York River Basin

YORK Basin: Nitrogen 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:	$ 1.03	$ 4.13	$ 0.04
The Exchange (group)	**804,764**	**697,775**	**106,989**	**-**	**(688)**	**(47,441)**	**58,860**		**18,471**	**(5,168)**	**45,557**
819 Virginia LLC	23,664	18,273	5,391	-	-	-	5,391		-	-	5,391
Aqua Virginia- Lake Land'Or	3,702	2,415	1,287	-	-	-	1,287		1,200	-	87
Caroline Co.	5,939	4,810	1,129	-	-	-	1,129		389	-	740
Hanover Co-Ashland	20,101	28,342	(8,241)	8,241	-	-	-		-	-	-
Hanover Co-Doswell	9,137	10,100	(963)	963	-	-	-		-	-	-
Hanover Co-Totopotomoy	157,151	92,195	64,956	(9,204)	(90)	(47,145)	8,517		4,000	-	4,517
HRSD-King William	1,424	824	600	(600)	-	-	-		-	-	-
HRSD-West Point	10,964	24,951	(13,987)	13,987	-	-	-		-	-	-
HRSD-York	275,927	240,955	34,972	(13,387)	(598)	-	20,987		-	-	20,987
New Kent Co-Parham	36,547	10,050	26,497	-	-	-	26,497		12,882	-	13,615
RSA-Gordonsville	1,031	515	516	-	-	(296)	220		-	-	220
WestRock-West Point Mill	259,177	264,345	(5,168)	-	-	-	(5,168)		-	(5,168)	-

**** 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.*

EXHIBIT 4-6
2025 Nitrogen Trading Ledger: York River Basin

YORK Basin: Nitrogen Credit Ledger

Compliance Year:	2025	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:	$ 1.14	$ 4.21	$ 0.05
The Exchange (group)	**804,764**	**702,220**	**102,544**	**-**	**(688)**	**(47,441)**	**54,415**		**17,174**	**(5,168)**	**42,409**
819 Virginia LLC	23,664	22,842	822	-	-	-	822		-	-	822
Aqua Virginia- Lake Land'Or	3,702	2,494	1,208	-	-	-	1,208		1,200	-	8
Caroline Co.	5,939	4,989	950	-	-	-	950		182	-	768
Hanover Co-Ashland	20,101	28,758	(8,657)	8,657	-	-	-		-	-	-
Hanover Co-Doswell	9,137	10,251	(1,114)	1,114	-	-	-		-	-	-
Hanover Co-Totopotomoy	157,151	93,243	63,908	(9,771)	(90)	(47,145)	6,902		3,000	-	3,902
HRSD-King William	1,424	864	560	(560)	-	-	-		-	-	-
HRSD-West Point	10,964	24,540	(13,576)	13,576	-	-	-		-	-	-
HRSD-York	275,927	238,415	37,512	(13,016)	(598)	-	23,898		-	-	23,898
New Kent Co-Parham	36,547	10,964	25,583	-	-	-	25,583		12,792	-	12,791
RSA-Gordonsville	1,031	515	516	-	-	(296)	220		-	-	220
WestRock-West Point Mill	259,177	264,345	(5,168)	-	-	-	(5,168)		-	(5,168)	-

**** 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.*

EXHIBIT 4-7
Phosphorus Plan Summary: York River Basin

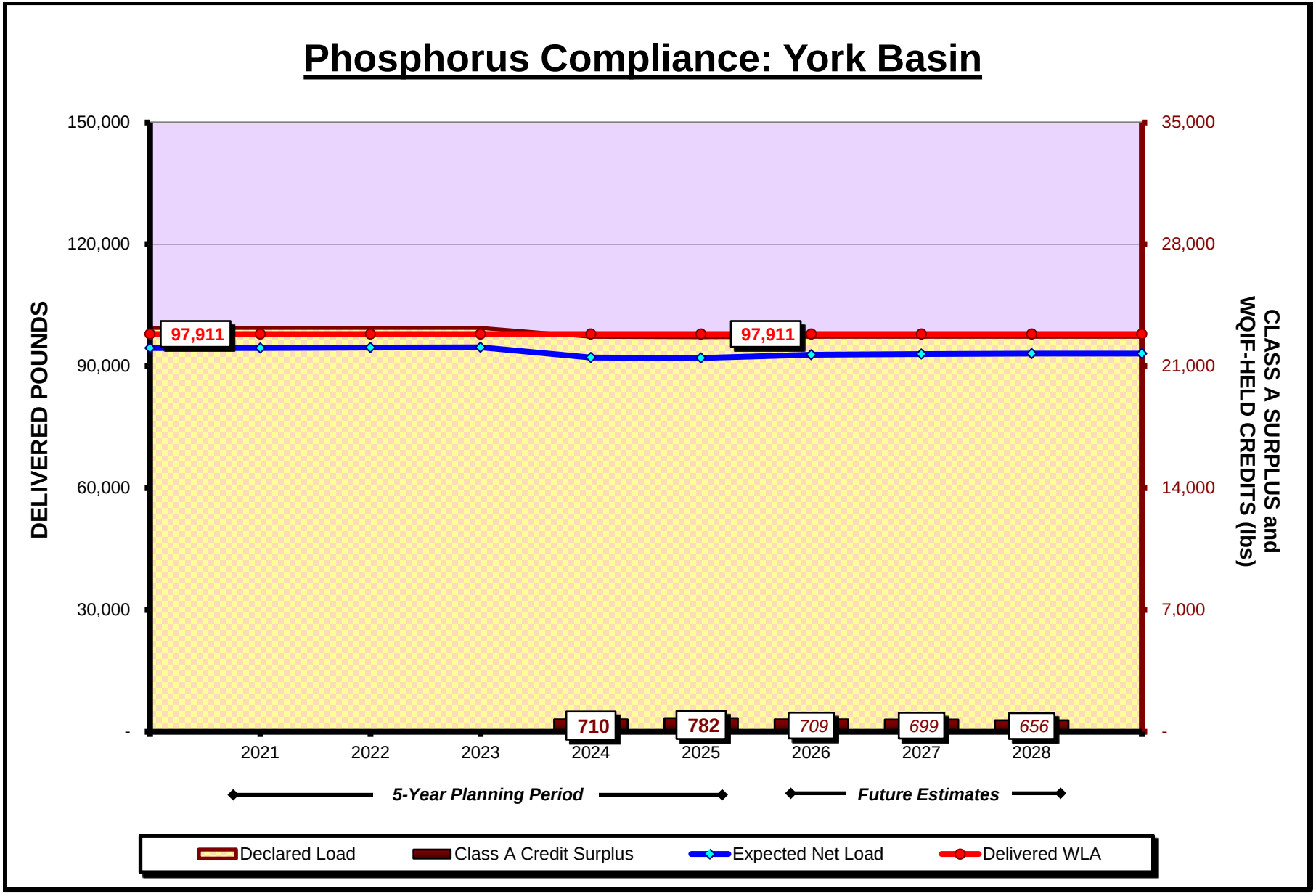

EXHIBIT 4-8
2021 Phosphorus Trading Ledger: York River Basin

YORK 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:	$ 14.07	$ 5.82	$ 0.27
The Exchange (group)	**97,911**	**93,863**	**4,048**	**-**	**-**	**(576)**	**3,472**		**868**	**(2,333)**	**4,937**
819 Virginia LLC	6,651	8,908	(2,257)	-	-	-	(2,257)		-	(2,257)	-
Aqua Virginia- Lake Land'Or	548	272	276	-	-	-	276		260	-	16
Caroline Co.	438	338	100	-	-	-	100		53	-	47
Hanover Co-Ashland	1,583	5,493	(3,910)	3,910	-	-	-		-	-	-
Hanover Co-Doswell	792	2,019	(1,227)	1,227	-	-	-		-	-	-
Hanover Co-Totopotomoy	9,502	3,789	5,713	(5,137)	-	(576)	-		-	-	-
HRSD-King William	190	45	145	(145)	-	-	-		-	-	-
HRSD-West Point	731	4,055	(3,324)	3,324	-	-	-		-	-	-
HRSD-York	18,395	14,027	4,368	(3,179)	-	-	1,189		-	-	1,189
New Kent Co-Parham	2,436	1,023	1,413	-	-	-	1,413		555	-	858
RSA-Gordonsville	607	683	(76)	-	-	-	(76)		-	(76)	-
WestRock-West Point Mill	56,038	53,211	2,827	-	-	-	2,827		-	-	2,827

**** For this Compliance Year, 63% 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.*

EXHIBIT 4-9
2022 Phosphorus Trading Ledger: York River Basin

YORK 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:	$ 14.70	$ 5.93	$ 0.28
The Exchange (group)	**97,911**	**92,206**	**5,705**	**-**	**-**	**(2,357)**	**3,348**		**847**	**(2,333)**	**4,834**
819 Virginia LLC	6,651	8,908	(2,257)	-	-	-	(2,257)		-	(2,257)	-
Aqua Virginia- Lake Land'Or	548	272	276	-	-	-	276		260	-	16
Caroline Co.	438	338	100	-	-	-	100		53	-	47
Hanover Co-Ashland	1,583	4,086	(2,503)	2,503	-	-	-		-	-	-
Hanover Co-Doswell	792	1,057	(265)	265	-	-	-		-	-	-
Hanover Co-Totopotomoy	9,502	4,377	5,125	(2,768)	-	(2,357)	-		-	-	-
HRSD-King William	190	49	141	(141)	-	-	-		-	-	-
HRSD-West Point	731	4,171	(3,440)	3,440	-	-	-		-	-	-
HRSD-York	18,395	13,988	4,407	(3,299)	-	-	1,108		-	-	1,108
New Kent Co-Parham	2,436	1,066	1,370	-	-	-	1,370		534	-	836
RSA-Gordonsville	607	683	(76)	-	-	-	(76)		-	(76)	-
WestRock-West Point Mill	56,038	53,211	2,827	-	-	-	2,827		-	-	2,827
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**** For this Compliance Year, 64% 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.*

EXHIBIT 4-10
2023 Phosphorus Trading Ledger: York River Basin

YORK 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:	$ 14.70	$ 6.08	$ 0.29
The Exchange (group)	**97,911**	**93,249**	**4,662**	**-**	**(209)**	**(1,169)**	**3,284**		**868**	**(2,333)**	**4,749**
819 Virginia LLC	6,651	8,908	(2,257)	-	-	-	(2,257)		-	(2,257)	-
Aqua Virginia- Lake Land'Or	548	272	276	-	-	-	276		260	-	16
Caroline Co.	438	338	100	-	-	-	100		53	-	47
Hanover Co-Ashland	1,583	4,148	(2,565)	2,565	-	-	-		-	-	-
Hanover Co-Doswell	792	1,073	(281)	281	-	-	-		-	-	-
Hanover Co-Totopotomoy	9,502	5,487	4,015	(2,846)	-	(1,169)	-		-	-	-
HRSD-King William	190	50	140	(140)	-	-	-		-	-	-
HRSD-West Point	731	4,083	(3,352)	3,352	-	-	-		-	-	-
HRSD-York	18,395	13,930	4,465	(3,212)	(209)	-	1,044		-	-	1,044
New Kent Co-Parham	2,436	1,066	1,370	-	-	-	1,370		555	-	815
RSA-Gordonsville	607	683	(76)	-	-	-	(76)		-	(76)	-
WestRock-West Point Mill	56,038	53,211	2,827	-	-	-	2,827		-	-	2,827
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**** For this Compliance Year, 63% 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.*

EXHIBIT 4-11
2024 Phosphorus Trading Ledger: York River Basin

YORK 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:	$ 0.54	$ 6.22	$ -
The Exchange (group)	**97,911**	**91,320**	**6,591**	**-**	**(209)**	**(585)**	**5,797**		**786**	**(76)**	**5,087**
819 Virginia LLC	6,651	5,939	712	-	-	-	712		-	-	712
Aqua Virginia- Lake Land'Or	548	272	276	-	-	-	276		260	-	16
Caroline Co.	438	355	83	-	-	-	83		34	-	49
Hanover Co-Ashland	1,583	4,454	(2,871)	2,871	-	-	-		-	-	-
Hanover Co-Doswell	792	1,089	(297)	297	-	-	-		-	-	-
Hanover Co-Totopotomoy	9,502	5,749	3,753	(3,168)	-	(585)	-		-	-	-
HRSD-King William	190	62	128	(128)	-	-	-		-	-	-
HRSD-West Point	731	4,277	(3,546)	3,546	-	-	-		-	-	-
HRSD-York	18,395	14,056	4,339	(3,418)	(209)	-	712		-	-	712
New Kent Co-Parham	2,436	1,173	1,263	-	-	-	1,263		492	-	771
RSA-Gordonsville	607	683	(76)	-	-	-	(76)		-	(76)	-
WestRock-West Point Mill	56,038	53,211	2,827	-	-	-	2,827		-	-	2,827

**** 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.*

EXHIBIT 4-12
2025 Phosphorus Trading Ledger: York River Basin

YORK Basin: Phosphorus Credit Ledger

Compliance Year:	*2025*	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:	$ 0.50	$ 6.34	$ -
The Exchange (group)	**97,911**	**91,370**	**6,541**	**-**	**(209)**	**(439)**	**5,893**		**858**	**(76)**	**5,111**
819 Virginia LLC	6,651	5,939	712	-	-	-	712		-	-	712
Aqua Virginia- Lake Land'Or	548	272	276	-	-	-	276		260	-	16
Caroline Co.	438	368	70	-	-	-	70		19	-	51
Hanover Co-Ashland	1,583	4,519	(2,936)	2,936	-	-	-		-	-	-
Hanover Co-Doswell	792	1,105	(313)	313	-	-	-		-	-	-
Hanover Co-Totopotomoy	9,502	5,814	3,688	(3,249)	-	(439)	-		-	-	-
HRSD-King William	190	65	125	(125)	-	-	-		-	-	-
HRSD-West Point	731	4,207	(3,476)	3,476	-	-	-		-	-	-
HRSD-York	18,395	13,908	4,487	(3,351)	(209)	-	927		-	-	927
New Kent Co-Parham	2,436	1,279	1,157	-	-	-	1,157		579	-	578
RSA-Gordonsville	607	683	(76)	-	-	-	(76)		-	(76)	-
WestRock-West Point Mill	56,038	53,211	2,827	-	-	-	2,827		-	-	2,827
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**** 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.*

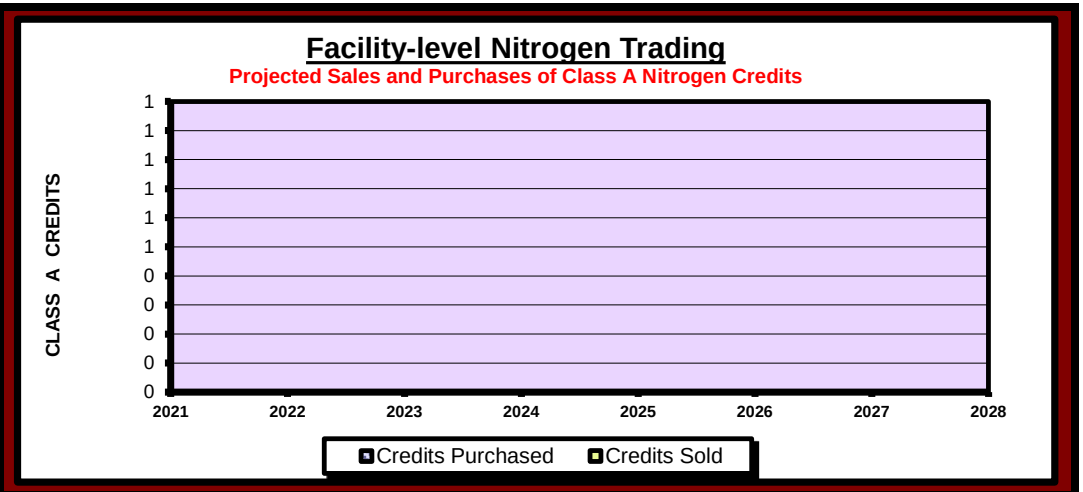
York River Basin

Supplemental Information for Individual Facilities

NITROGEN FACILITY SUMMARY

819 Virginia LLC

YORK Trading Basin

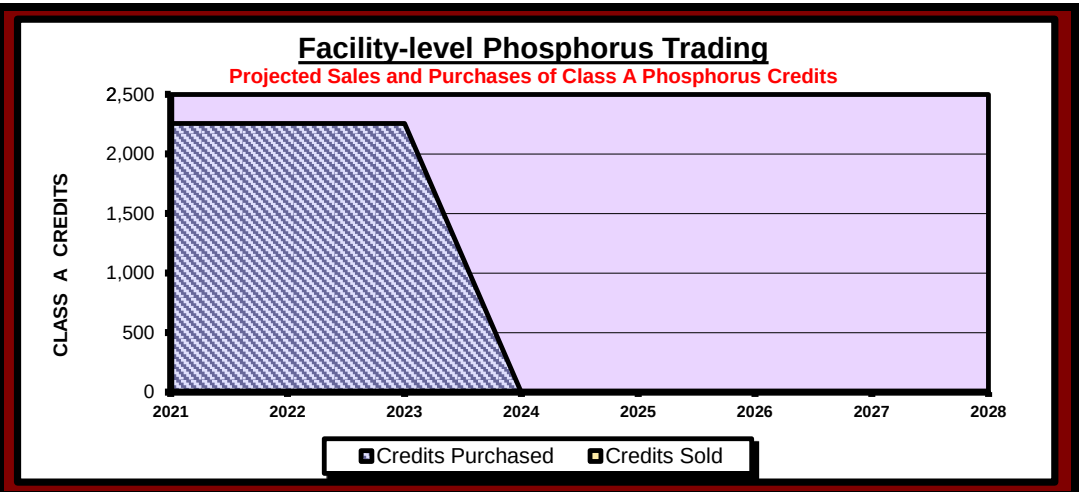


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
Projected Flow (mgd)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Projected Avg. Annual Concentration (mg/L)	8.00	8.00	8.00	8.00	10.00	10.00	10.00	10.00
Discharged Load (end of pipe)	36,547	36,547	36,547	36,547	45,683	45,683	45,683	45,683
Delivery Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Expected Load	18,273	18,273	18,273	18,273	22,842	22,842	22,842	22,842
Delivered WLA	23,664	23,664	23,664	23,664	23,664	23,664	23,664	23,664
Expected Credits (delivered)	5,391	5,391	5,391	5,391	822	822	822	822
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	**5,391**	**5,391**	**5,391**	**5,391**	**822**	**822**	**822**	**822**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**5,391**	**5,391**	**5,391**	**5,391**	**822**	**822**	**822**	**822**

PHOSPHORUS FACILITY SUMMARY

819 Virginia LLC

YORK Trading Basin

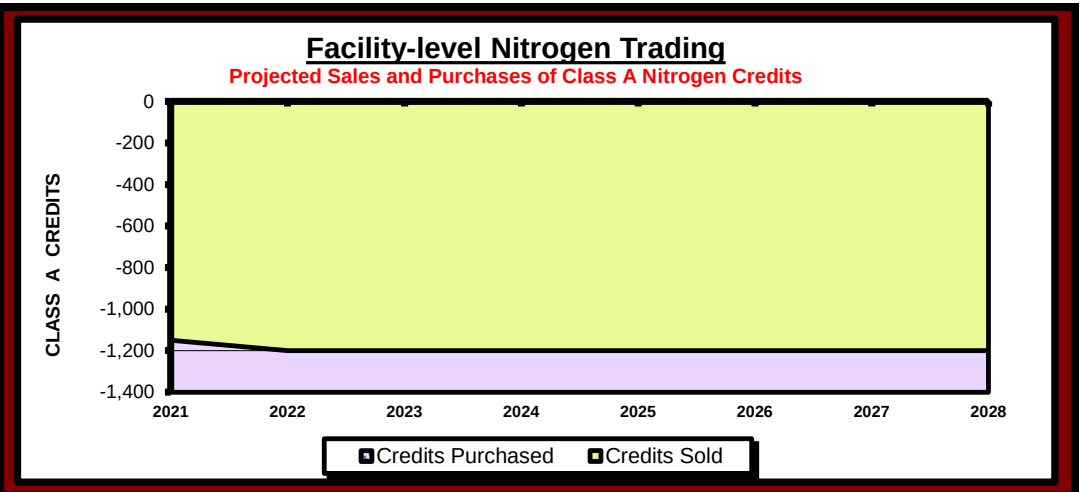


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
Projected Flow (mgd)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	2.00	2.00	2.00	2.00	2.00
Discharged Load (end of pipe)	13,705	13,705	13,705	9,137	9,137	9,137	9,137	9,137
Delivery Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Expected Load	8,908	8,908	8,908	5,939	5,939	5,939	5,939	5,939
Delivered WLA	6,651	6,651	6,651	6,651	6,651	6,651	6,651	6,651
Expected Credits (delivered)	(2,257)	(2,257)	(2,257)	712	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	**(2,257)**	**(2,257)**	**(2,257)**	**712**	**712**	**712**	**712**	**712**
Class A Credit Sales (Purchases)	**(2,257)**	**(2,257)**	**(2,257)**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**0**	**0**	**712**	**712**	**712**	**712**	**712**

NITROGEN FACILITY SUMMARY

Aqua Virginia- Lake Land'O

YORK Trading Basin



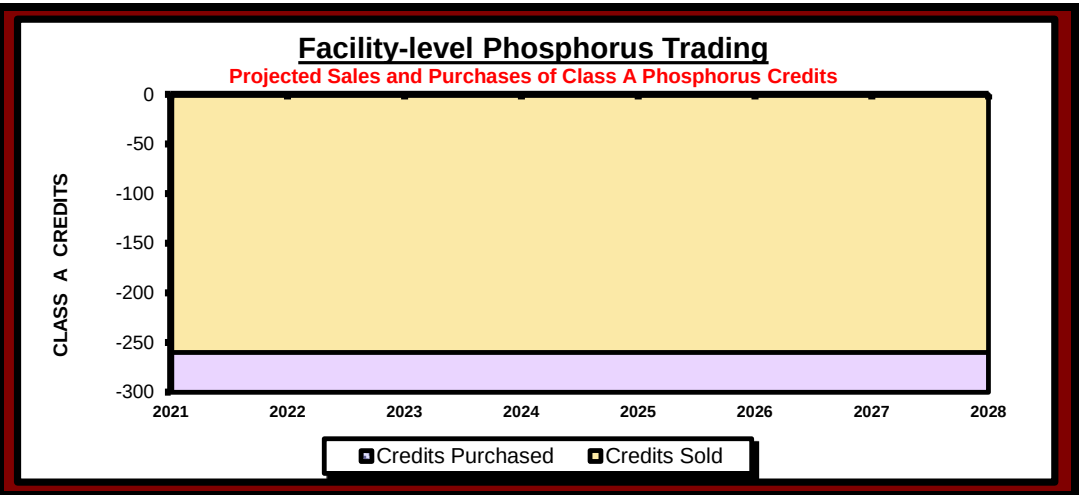
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Projected Flow (mgd)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Projected Avg. Annual Concentration (mg/L)	6.10	6.10	6.10	6.10	6.30	6.30	6.30	6.30
Discharged Load (end of pipe)	3,716	3,716	3,716	3,716	3,837	3,837	3,837	3,837
Delivery Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Expected Load	2,415	2,415	2,415	2,415	2,494	2,494	2,494	2,494
Delivered WLA	3,702	3,702	3,702	3,702	3,702	3,702	3,702	3,702
Expected Credits (delivered)	1,287	1,287	1,287	1,287	1,208	1,208	1,208	1,208
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	**1,287**	**1,287**	**1,287**	**1,287**	**1,208**	**1,208**	**1,208**	**1,208**
Class A Credit Sales (Purchases)*	**1,150**	**1,200**	**1,200**	**1,200**	**1,200**	**1,200**	**1,200**	**1,200**
Expected Class B Credits	**137**	**87**	**87**	**87**	**8**	**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

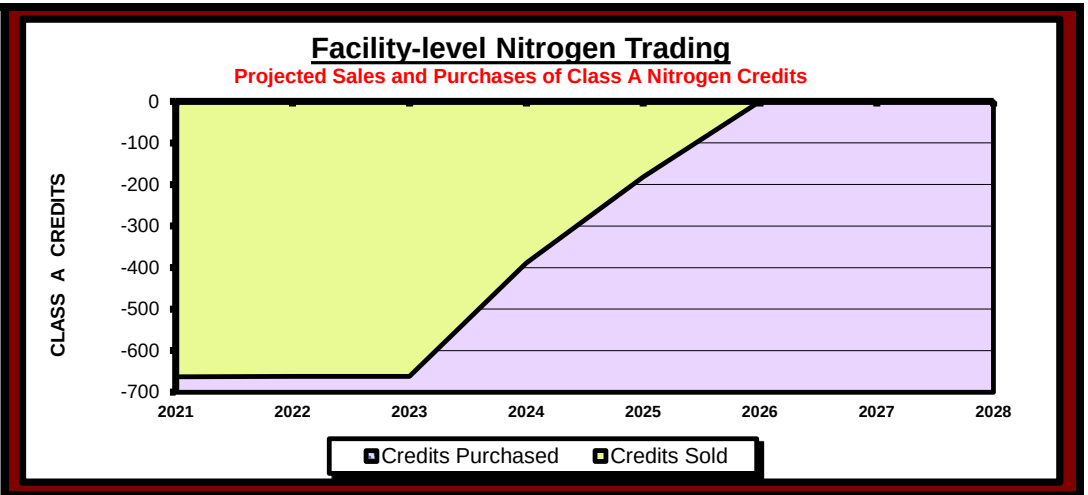


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Projected Flow (mgd)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Projected Avg. Annual Concentration (mg/L)	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Discharged Load (end of pipe)	378	378	378	378	378	378	378	378
Delivery Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Expected Load	272	272	272	272	272	272	272	272
Delivered WLA	548	548	548	548	548	548	548	548
Expected Credits (delivered)	276	276	276	276	276	276	276	276
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	**276**	**276**	**276**	**276**	**276**	**276**	**276**	**276**
Class A Credit Sales (Purchases)	**260**	**260**	**260**	**260**	**260**	**260**	**260**	**260**
Expected Class B Credits	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**

NITROGEN FACILITY SUMMARY

Caroline Co.

YORK Trading Basin

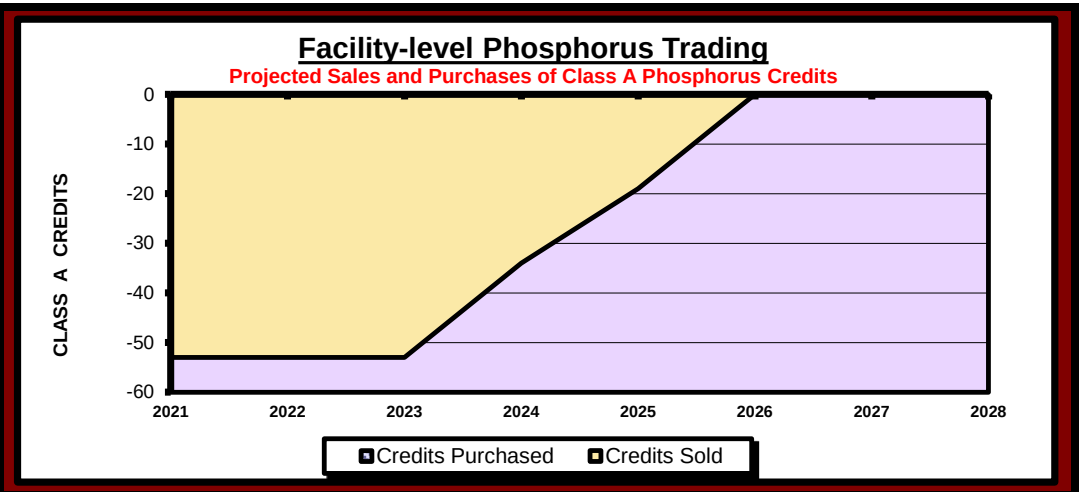


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Projected Flow (mgd)	0.77	0.77	0.77	0.81	0.84	0.88	0.91	0.94
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	7,035	7,035	7,035	7,401	7,675	8,040	8,314	8,588
Delivery Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Expected Load	4,573	4,573	4,573	4,810	4,989	5,226	5,404	5,583
Delivered WLA	5,939	5,939	5,939	5,939	5,939	5,939	5,939	5,939
Expected Credits (delivered)	1,366	1,366	1,366	1,129	950	713	535	356
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**	**1,366**	**1,366**	**1,129**	**950**	**713**	**535**	**356**
Class A Credit Sales (Purchases)	**663**	**662**	**662**	**389**	**182**	**0**	**0**	**0**
Expected Class B Credits	**703**	**704**	**704**	**740**	**768**	**713**	**535**	**356**

PHOSPHORUS FACILITY SUMMARY

Caroline Co.

YORK Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	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)	0.77	0.77	0.77	0.81	0.84	0.88	0.91	0.94
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)	469	469	469	493	512	536	554	573
Delivery Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Expected Load	338	338	338	355	368	386	399	412
Delivered WLA	438	438	438	438	438	438	438	438
Expected Credits (delivered)	100	100	100	83	70	52	39	26
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	**100**	**100**	**100**	**83**	**70**	**52**	**39**	**26**
Class A Credit Sales (Purchases)	**53**	**53**	**53**	**34**	**19**	**0**	**0**	**0**
Expected Class B Credits	**47**	**47**	**47**	**49**	**51**	**52**	**39**	**26**

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.

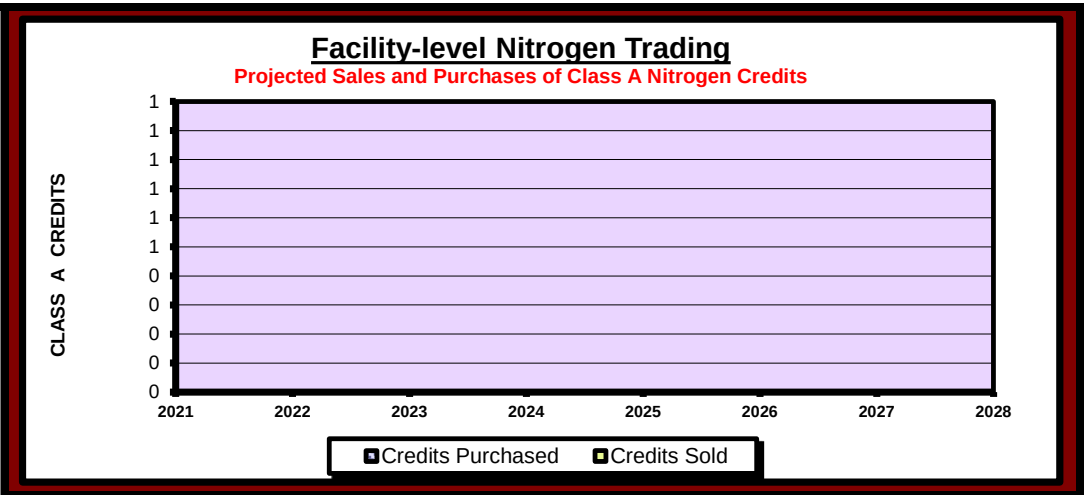
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Ashland	14,854	5,902	6,292	8,241	8,657	9,091	9,564	9,942
Doswell	9,593	666	813	963	1,114	1,268	1,424	1,582
Totopotomoy	(24,447)	(6,568)	(7,105)	(9,204)	(9,771)	(10,359)	(10,988)	(11,524)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Ashland	-	-	-	-	-	-	-	-
Doswell	-	-	-	-	-	-	-	-
Totopotomoy	24,794	33,244	14,896	8,607	6,992	5,356	3,680	2,096
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	**24,794**	**33,244**	**14,896**	**8,607**	**6,992**	**5,356**	**3,680**	**2,096**
Private Exchanges		(90)	(90)	(90)	(90)	(90)	(587)	(587)
Expected Net Credits	**24,794**	**33,154**	**14,806**	**8,517**	**6,902**	**5,266**	**3,093**	**1,509**
Class A Sales (Purchases)	**8,000**	**7,000**	**5,000**	**4,000**	**3,000**	**3,000**	**2,000**	**0**
Expected Class B Credits	*16,794*	*26,154*	*9,806*	*4,517*	*3,902*	*2,266*	*1,093*	*1,509*
WQIF-Held Credits	*47,145*	*47,145*	*47,145*	*47,145*	*47,145*	*47,145*	*47,145*	*47,145*

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Ashland	3,910	2,503	2,565	2,871	2,936	3,005	3,079	3,138
Doswell	1,227	265	281	297	313	330	347	364
Totopotomoy	(5,137)	(2,768)	(2,846)	(3,168)	(3,249)	(3,335)	(3,426)	(3,502)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
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	*576*	*2,357*	*1,169*	*585*	*439*	*288*	*131*	*536*

NITROGEN FACILITY SUMMARY

Hanover Co-Ashland

YORK Trading Basin

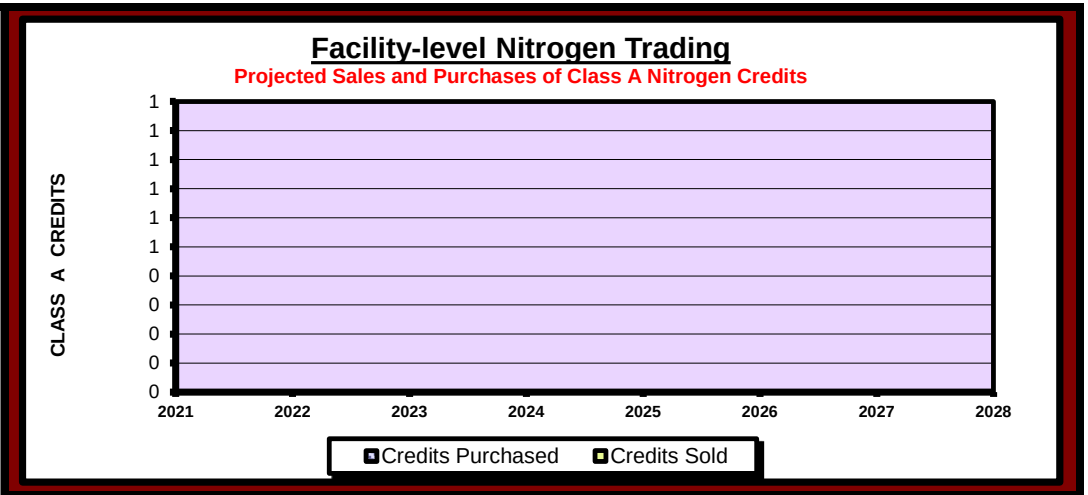


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	1.85	1.38	1.40	1.50	1.52	1.55	1.57	1.59
Projected Avg. Annual Concentration (mg/L)	11.28	11.28	11.28	11.28	11.28	11.28	11.28	11.28
Discharged Load (end of pipe)	63,555	47,277	47,987	51,531	52,287	53,077	53,936	54,623
Delivery Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Expected Load	34,955	26,003	26,393	28,342	28,758	29,192	29,665	30,043
Delivered WLA	20,101	20,101	20,101	20,101	20,101	20,101	20,101	20,101
Expected Credits (delivered)	(14,854)	(5,902)	(6,292)	(8,241)	(8,657)	(9,091)	(9,564)	(9,942)
Transfers In (Out) within Owner Bubble	14,854	5,902	6,292	8,241	8,657	9,091	9,564	9,942
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**

NITROGEN FACILITY SUMMARY

Hanover Co-Doswell

YORK Trading Basin

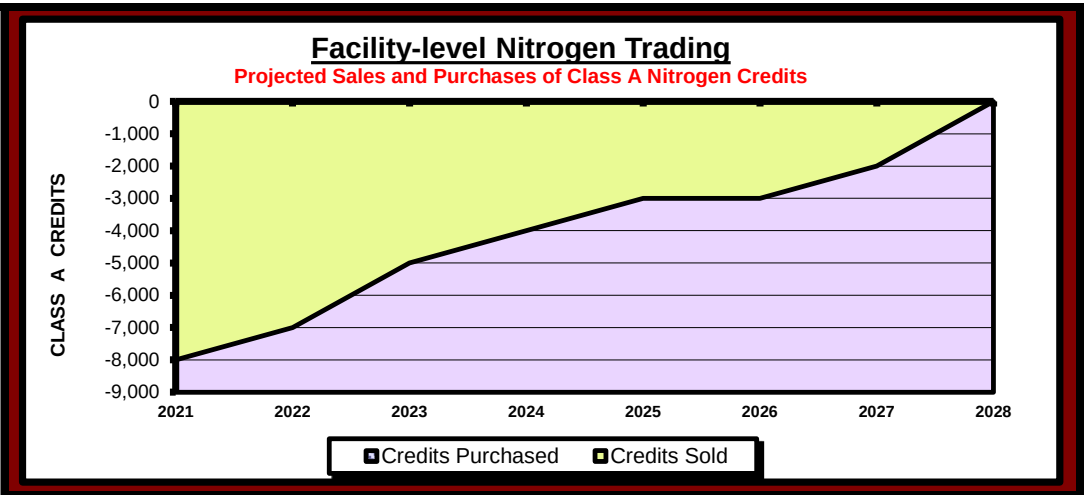


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.60	0.31	0.32	0.32	0.33	0.33	0.34	0.34
Projected Avg. Annual Concentration (mg/L)	20.50	20.50	20.50	20.50	20.50	20.50	20.50	20.50
Discharged Load (end of pipe)	37,460	19,607	19,901	20,199	20,502	20,810	21,122	21,439
Delivery Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Expected Load	18,730	9,803	9,950	10,100	10,251	10,405	10,561	10,719
Delivered WLA	9,137	9,137	9,137	9,137	9,137	9,137	9,137	9,137
Expected Credits (delivered)	(9,593)	(666)	(813)	(963)	(1,114)	(1,268)	(1,424)	(1,582)
Transfers In (Out) within Owner Bubble	9,593	666	813	963	1,114	1,268	1,424	1,582
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**

NITROGEN FACILITY SUMMARY

Hanover Co-Totopotomoy

YORK Trading Basin



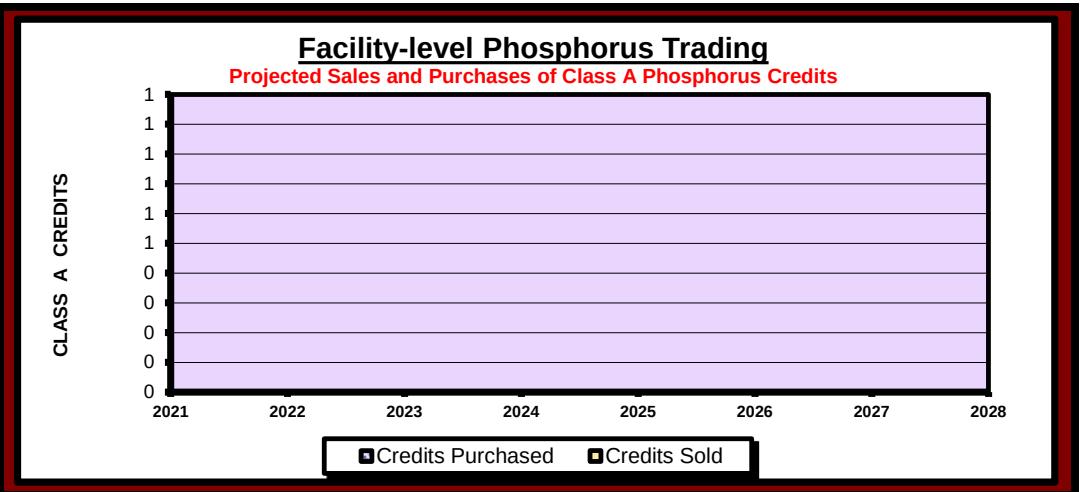
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Projected Flow (mgd)	2.90	3.35	4.20	4.40	4.45	4.50	4.55	4.60
Projected Avg. Annual Concentration (mg/L)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Discharged Load (end of pipe)	70,657	81,621	102,331	107,204	108,422	109,640	110,858	112,077
Delivery Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Expected Load	60,765	70,194	88,005	92,195	93,243	94,291	95,338	96,386
Delivered WLA	157,151	157,151	157,151	157,151	157,151	157,151	157,151	157,151
Expected Credits (delivered)	96,386	86,957	69,146	64,956	63,908	62,860	61,813	60,765
Transfers In (Out) within Owner Bubble	(24,447)	(6,568)	(7,105)	(9,204)	(9,771)	(10,359)	(10,988)	(11,524)
Transfers In (Out) from Private Exchange*	0	(90)	(90)	(90)	(90)	(90)	(587)	(587)
WQIF-Held Credits	(47,145)	(47,145)	(47,145)	(47,145)	(47,145)	(47,145)	(47,145)	(47,145)
Expected Net Credits	**24,794**	**33,154**	**14,806**	**8,517**	**6,902**	**5,266**	**3,093**	**1,509**
Class A Credit Sales (Purchases)	**8,000**	**7,000**	**5,000**	**4,000**	**3,000**	**3,000**	**2,000**	**0**
Expected Class B Credits	**16,794**	**26,154**	**9,806**	**4,517**	**3,902**	**2,266**	**1,093**	**1,509**

** Represents private trade with Hanover County to meet MS4 requirements*

PHOSPHORUS FACILITY SUMMARY

Hanover Co-Ashland

YORK Trading Basin

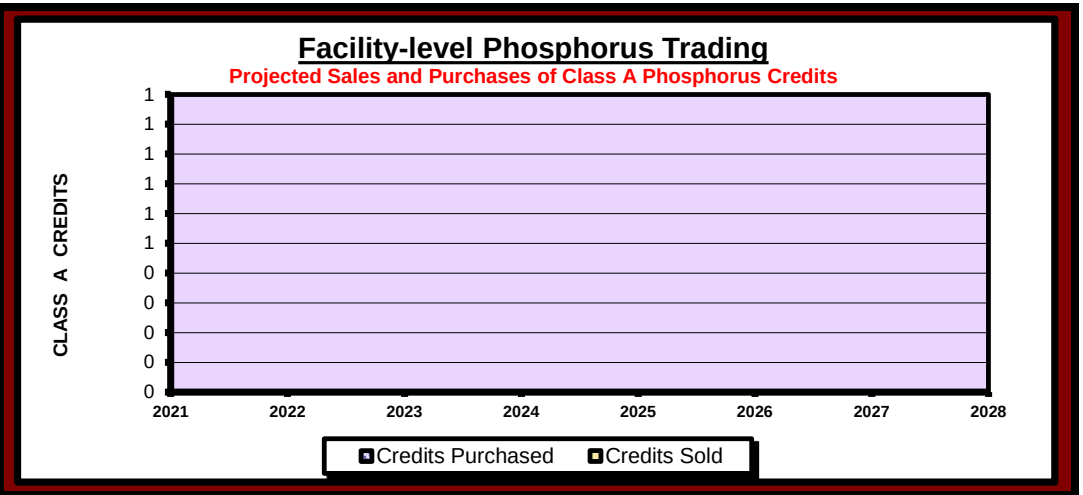


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	1.85	1.38	1.40	1.50	1.52	1.55	1.57	1.59
Projected Avg. Annual Concentration (mg/L)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Discharged Load (end of pipe)	8,451	6,287	6,381	6,853	6,953	7,058	7,172	7,264
Delivery Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Expected Load	5,493	4,086	4,148	4,454	4,519	4,588	4,662	4,721
Delivered WLA	1,583	1,583	1,583	1,583	1,583	1,583	1,583	1,583
Expected Credits (delivered)	(3,910)	(2,503)	(2,565)	(2,871)	(2,936)	(3,005)	(3,079)	(3,138)
Transfers In (Out) within Owner Bubble	3,910	2,503	2,565	2,871	2,936	3,005	3,079	3,138
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

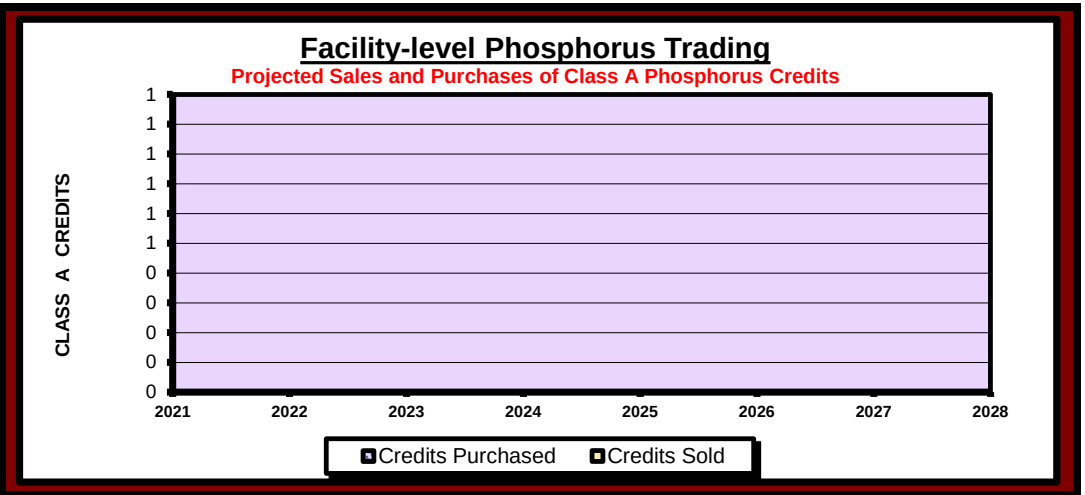


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.60	0.31	0.32	0.32	0.33	0.33	0.34	0.34
Projected Avg. Annual Concentration (mg/L)	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
Discharged Load (end of pipe)	3,106	1,626	1,650	1,675	1,700	1,726	1,752	1,778
Delivery Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Expected Load	2,019	1,057	1,073	1,089	1,105	1,122	1,139	1,156
Delivered WLA	792	792	792	792	792	792	792	792
Expected Credits (delivered)	(1,227)	(265)	(281)	(297)	(313)	(330)	(347)	(364)
Transfers In (Out) within Owner Bubble	1,227	265	281	297	313	330	347	364
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	2021	2022	2023	2024	2025	2026	2027	2028
	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)	2.90	3.35	4.20	4.40	4.45	4.50	4.55	4.60
Projected Avg. Annual Concentration (mg/L)	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.50
Discharged Load (end of pipe)	4,858	5,611	7,035	7,370	7,454	7,538	7,622	7,005
Delivery Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Expected Load	3,789	4,377	5,487	5,749	5,814	5,879	5,945	5,464
Delivered WLA	9,502	9,502	9,502	9,502	9,502	9,502	9,502	9,502
Expected Credits (delivered)	5,713	5,125	4,015	3,753	3,688	3,623	3,557	4,038
Transfers In (Out) within Owner Bubble	(5,137)	(2,768)	(2,846)	(3,168)	(3,249)	(3,335)	(3,426)	(3,502)
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	(576)	(2,357)	(1,169)	(585)	(439)	(288)	(131)	(536)
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		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
King William	(825)	(773)	(763)	(600)	(560)	(520)	(479)	(439)
West Point	12,691	13,368	12,854	13,987	13,576	13,791	14,009	14,229
York	(11,866)	(12,595)	(12,091)	(13,387)	(13,016)	(13,271)	(13,530)	(13,790)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
King William	-	-	-	-	-	-	-	-
West Point	-	-	-	-	-	-	-	-
York	23,602	23,537	25,028	21,585	24,496	23,434	22,366	21,294
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	**23,602**	**23,537**	**25,028**	**21,585**	**24,496**	**23,434**	**22,366**	**21,294**
Private Exchanges *	5	5	(598)	(598)	(598)	(2,924)	(2,924)	(4,097)
Expected Net Credits	**23,607**	**23,542**	**24,430**	**20,987**	**23,898**	**20,510**	**19,442**	**17,197**
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	*23,607*	*23,542*	*24,430*	*20,987*	*23,898*	*20,510*	*19,442*	*17,197*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

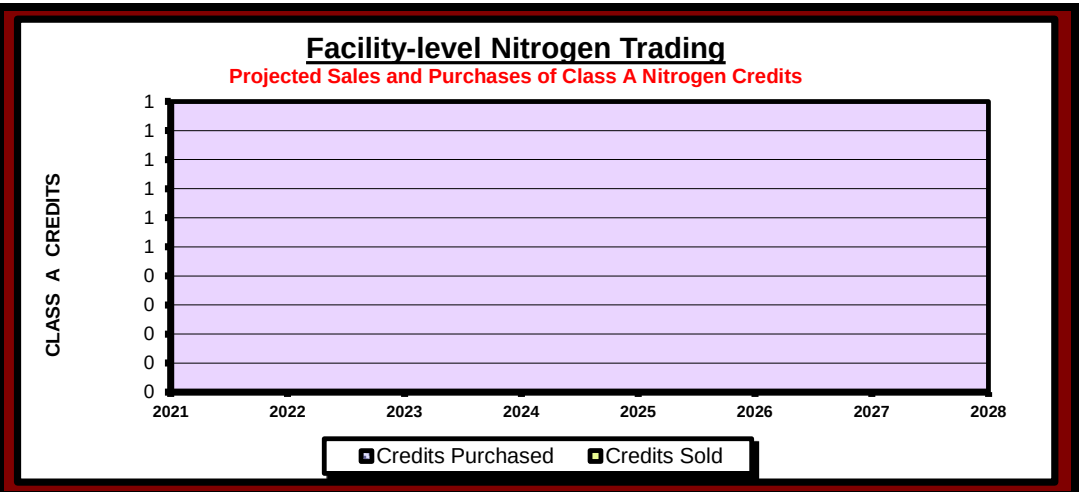
PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
King William	(145)	(141)	(140)	(128)	(125)	(122)	(119)	(116)
West Point	3,324	3,440	3,352	3,546	3,476	3,513	3,550	3,588
York	(3,179)	(3,299)	(3,212)	(3,418)	(3,351)	(3,391)	(3,431)	(3,472)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
King William	-	-	-	-	-	-	-	-
West Point	-	-	-	-	-	-	-	-
York	1,189	1,108	1,253	921	1,136	1,049	962	1,677
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	**1,189**	**1,108**	**1,253**	**921**	**1,136**	**1,049**	**962**	**1,677**
Private Exchanges *	-	-	(209)	(209)	(209)	(762)	(762)	(1,551)
Expected Net Credits	**1,189**	**1,108**	**1,044**	**712**	**927**	**287**	**200**	**126**
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	*1,189*	*1,108*	*1,044*	*712*	*927*	*287*	*200*	*126*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

* *Reflects private trade with the Department of Energy - Jefferson Lab and other private trades to offset MS4 requirements*

NITROGEN FACILITY SUMMARY

HRSD-King William

YORK Trading Basin

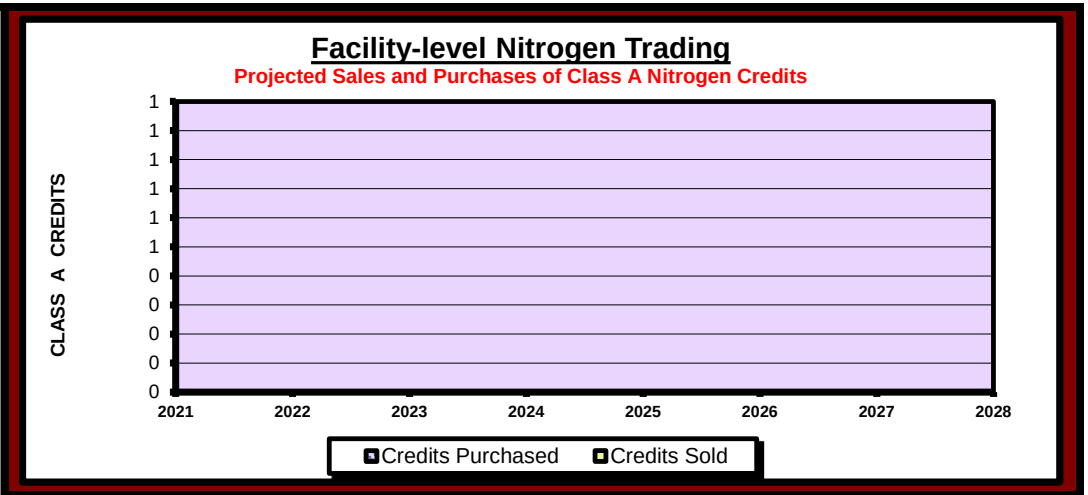


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.05	0.05	0.05	0.07	0.07	0.07	0.08	0.08
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	599	651	661	824	864	904	945	985
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	599	651	661	824	864	904	945	985
Delivered WLA	1,424	1,424	1,424	1,424	1,424	1,424	1,424	1,424
Expected Credits (delivered)	825	773	763	600	560	520	479	439
Transfers In (Out) within Owner Bubble	(825)	(773)	(763)	(600)	(560)	(520)	(479)	(439)
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**

NITROGEN FACILITY SUMMARY

HRSD-West Point

YORK Trading Basin

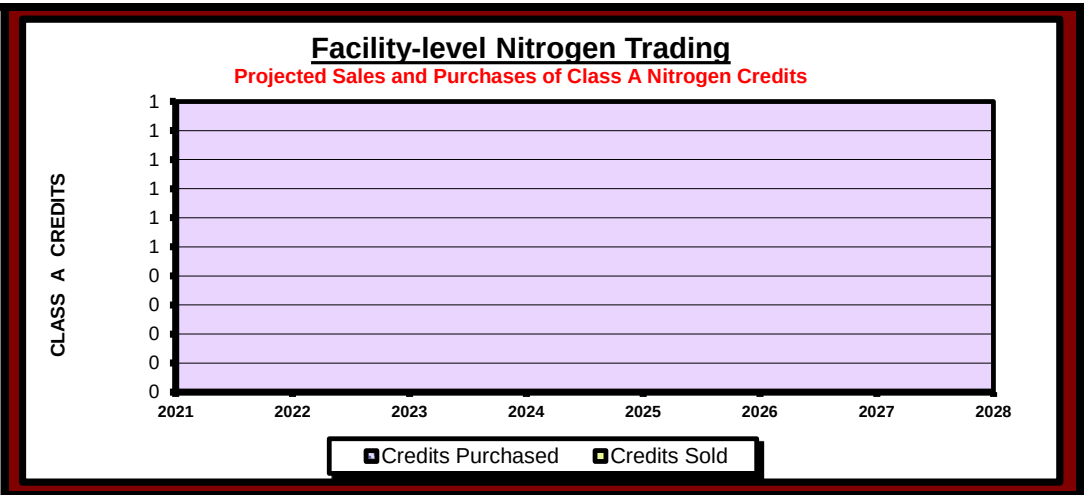


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.44	0.46	0.45	0.47	0.46	0.46	0.47	0.47
Projected Avg. Annual Concentration (mg/L)	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50
Discharged Load (end of pipe)	23,655	24,332	23,818	24,951	24,540	24,755	24,973	25,193
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	23,655	24,332	23,818	24,951	24,540	24,755	24,973	25,193
Delivered WLA	10,964	10,964	10,964	10,964	10,964	10,964	10,964	10,964
Expected Credits (delivered)	(12,691)	(13,368)	(12,854)	(13,987)	(13,576)	(13,791)	(14,009)	(14,229)
Transfers In (Out) within Owner Bubble	12,691	13,368	12,854	13,987	13,576	13,791	14,009	14,229
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**

NITROGEN FACILITY SUMMARY

HRSD-York

YORK Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	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)	13.16	13.12	13.07	13.19	13.05	13.09	13.14	13.18
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)	240,459	239,795	238,808	240,955	238,415	239,222	240,031	240,843
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	240,459	239,795	238,808	240,955	238,415	239,222	240,031	240,843
Delivered WLA*	275,927	275,927	275,927	275,927	275,927	275,927	275,927	275,927
Expected Credits (delivered)	35,468	36,132	37,119	34,972	37,512	36,705	35,896	35,084
Transfers In (Out) within Owner Bubble	(11,866)	(12,595)	(12,091)	(13,387)	(13,016)	(13,271)	(13,530)	(13,790)
Transfers In (Out) from Private Exchange**	5	5	(598)	(598)	(598)	(2,924)	(2,924)	(4,097)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**23,607**	**23,542**	**24,430**	**20,987**	**23,898**	**20,510**	**19,442**	**17,197**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**23,607**	**23,542**	**24,430**	**20,987**	**23,898**	**20,510**	**19,442**	**17,197**

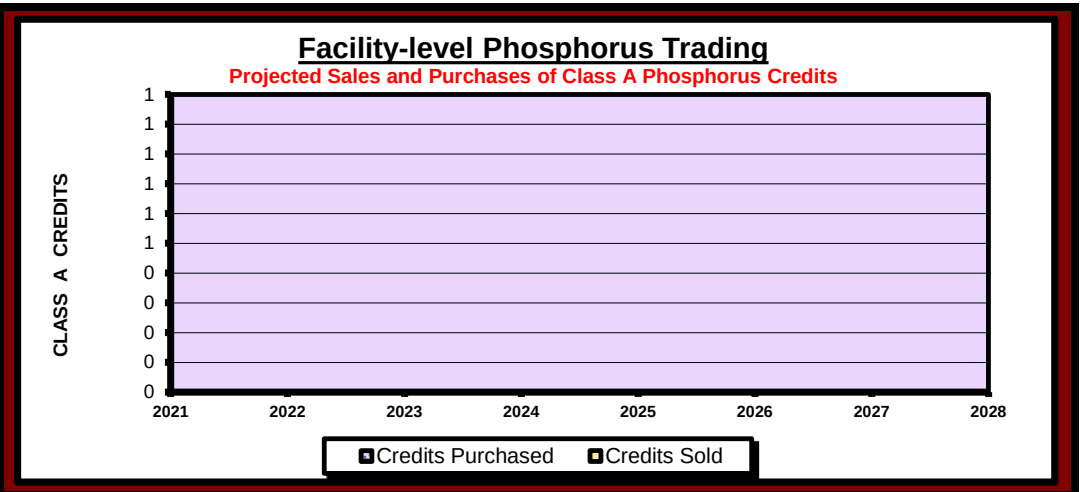
** Reflects consolidation of the HRSD-Mathews WLA*

*** Represents credits received via private trade with the Department of Energy-Jefferson Lab and credits used to meet MS4 requirements*

PHOSPHORUS FACILITY SUMMARY

HRSD-King William

YORK Trading Basin

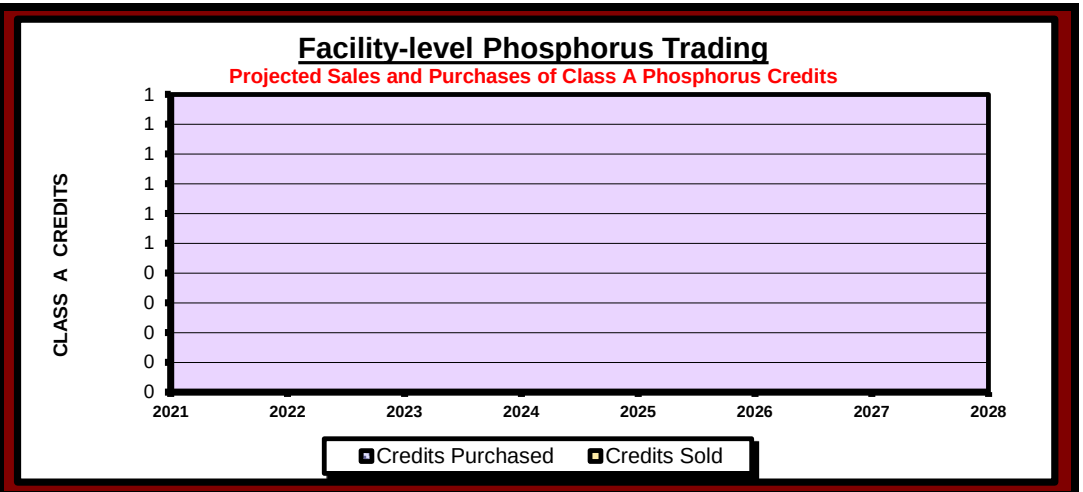


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.05	0.05	0.05	0.07	0.07	0.07	0.08	0.08
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	45	49	50	62	65	68	71	74
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	45	49	50	62	65	68	71	74
Delivered WLA	190	190	190	190	190	190	190	190
Expected Credits (delivered)	145	141	140	128	125	122	119	116
Transfers In (Out) within Owner Bubble	(145)	(141)	(140)	(128)	(125)	(122)	(119)	(116)
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

HRSD-West Point

YORK Trading Basin

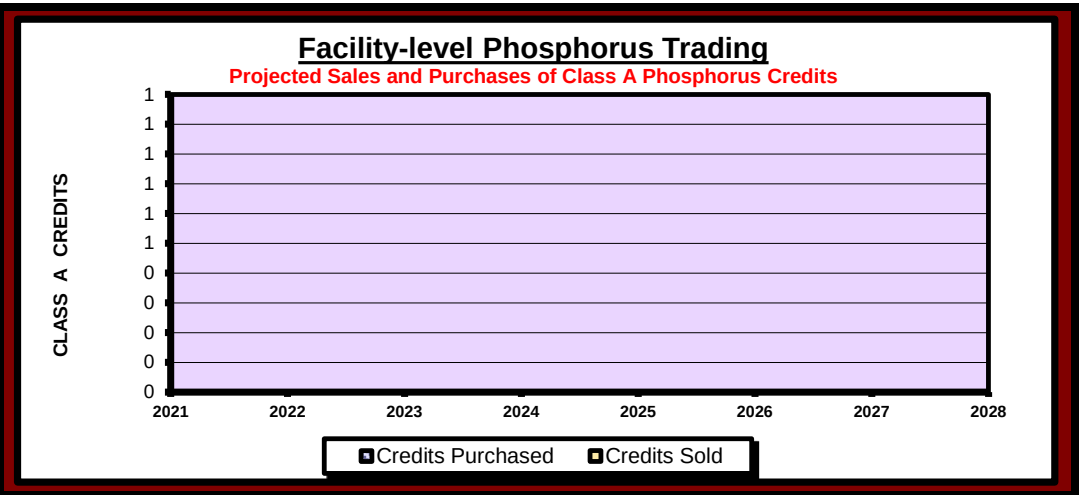


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.44	0.46	0.45	0.47	0.46	0.46	0.47	0.47
Projected Avg. Annual Concentration (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	4,055	4,171	4,083	4,277	4,207	4,244	4,281	4,319
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	4,055	4,171	4,083	4,277	4,207	4,244	4,281	4,319
Delivered WLA	731	731	731	731	731	731	731	731
Expected Credits (delivered)	(3,324)	(3,440)	(3,352)	(3,546)	(3,476)	(3,513)	(3,550)	(3,588)
Transfers In (Out) within Owner Bubble	3,324	3,440	3,352	3,546	3,476	3,513	3,550	3,588
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

HRSD-York

YORK Trading Basin



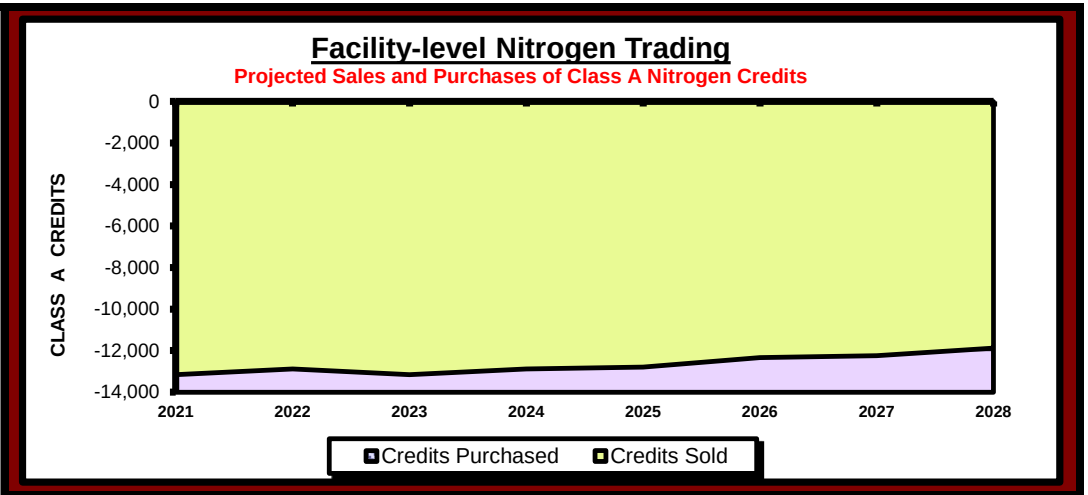
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Projected Flow (mgd)	13.16	13.12	13.07	13.19	13.05	13.09	13.14	13.18
Projected Avg. Annual Concentration (mg/L)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.33
Discharged Load (end of pipe)	14,027	13,988	13,930	14,056	13,908	13,955	14,002	13,246
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	14,027	13,988	13,930	14,056	13,908	13,955	14,002	13,246
Delivered WLA*	18,395	18,395	18,395	18,395	18,395	18,395	18,395	18,395
Expected Credits (delivered)	4,368	4,407	4,465	4,339	4,487	4,440	4,393	5,149
Transfers In (Out) within Owner Bubble	(3,179)	(3,299)	(3,212)	(3,418)	(3,351)	(3,391)	(3,431)	(3,472)
Transfers In (Out) from Private Exchange**	0	0	(209)	(209)	(209)	(762)	(762)	(1,551)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**1,189**	**1,108**	**1,044**	**712**	**927**	**287**	**200**	**126**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**1,189**	**1,108**	**1,044**	**712**	**927**	**287**	**200**	**126**

** Reflects consolidation of the HRSD-Mathews WLA*
*** Represents private trade to meet MS4 requirements*

NITROGEN FACILITY SUMMARY

New Kent Co-Parham

YORK Trading Basin

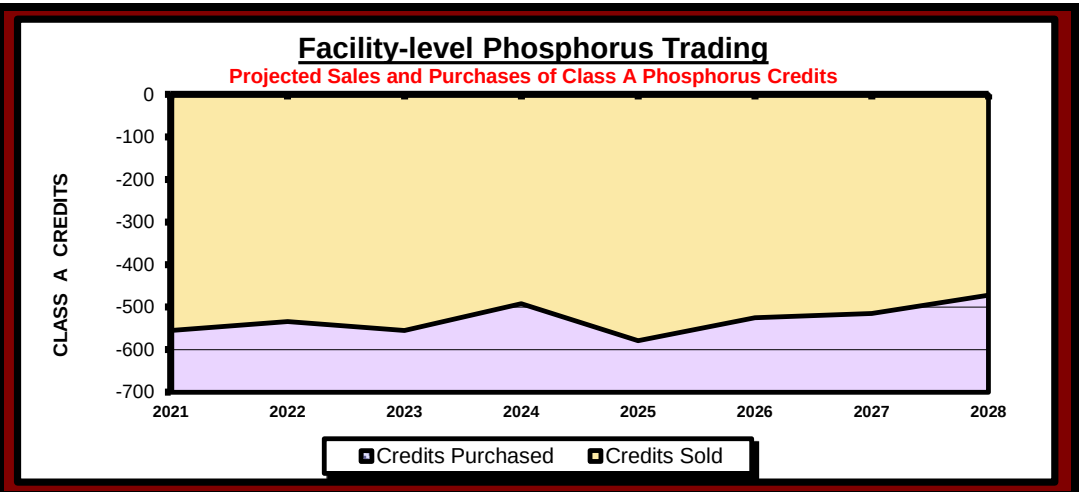


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	0.48	0.50	0.50	0.55	0.60	0.65	0.68	0.70
Projected Avg. Annual Concentration (mg/L)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Discharged Load (end of pipe)	8,771	9,137	9,137	10,050	10,964	11,878	12,426	12,791
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	8,771	9,137	9,137	10,050	10,964	11,878	12,426	12,791
Delivered WLA	36,547	36,547	36,547	36,547	36,547	36,547	36,547	36,547
Expected Credits (delivered)	27,776	27,410	27,410	26,497	25,583	24,669	24,121	23,756
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	**27,776**	**27,410**	**27,410**	**26,497**	**25,583**	**24,669**	**24,121**	**23,756**
Class A Credit Sales (Purchases)	**13,157**	**12,882**	**13,157**	**12,882**	**12,792**	**12,335**	**12,243**	**11,878**
Expected Class B Credits	**14,619**	**14,528**	**14,253**	**13,615**	**12,791**	**12,334**	**11,878**	**11,878**

PHOSPHORUS FACILITY SUMMARY

New Kent Co-Parham

YORK Trading Basin

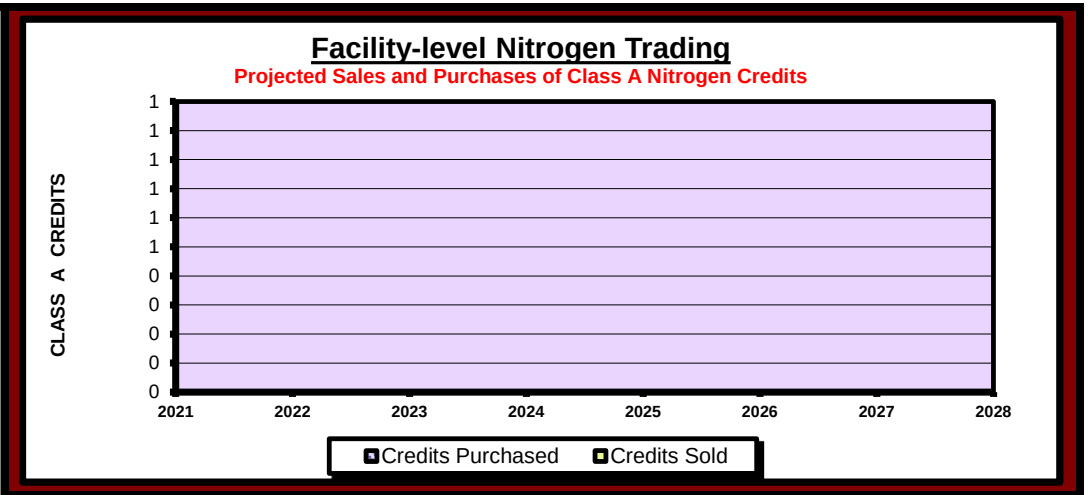


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Projected Flow (mgd)	0.48	0.50	0.50	0.55	0.60	0.65	0.68	0.70
Projected Avg. Annual Concentration (mg/L)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Discharged Load (end of pipe)	1,023	1,066	1,066	1,173	1,279	1,386	1,450	1,492
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,023	1,066	1,066	1,173	1,279	1,386	1,450	1,492
Delivered WLA	2,436	2,436	2,436	2,436	2,436	2,436	2,436	2,436
Expected Credits (delivered)	1,413	1,370	1,370	1,263	1,157	1,050	986	944
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	**1,413**	**1,370**	**1,370**	**1,263**	**1,157**	**1,050**	**986**	**944**
Class A Credit Sales (Purchases)	**555**	**534**	**555**	**492**	**579**	**525**	**515**	**472**
Expected Class B Credits	**858**	**836**	**815**	**771**	**578**	**525**	**471**	**472**

NITROGEN FACILITY SUMMARY

RSA-Gordonsville

YORK Trading Basin

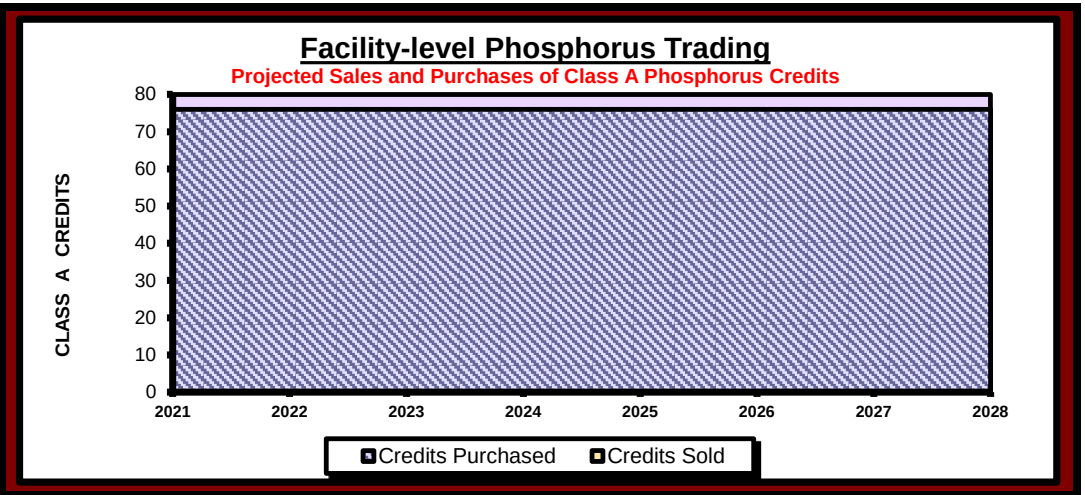


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Projected Flow (mgd)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Projected Avg. Annual Concentration (mg/L)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Discharged Load (end of pipe)	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588
Delivery Factor	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Expected Load	515	515	515	515	515	515	515	515
Delivered WLA	1,031	1,031	1,031	1,031	1,031	1,031	1,031	1,031
Expected Credits (delivered)	516	516	516	516	516	516	516	516
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	(296)	(296)	(296)	(296)	(296)	(296)	(296)	(296)
Expected Net Credits	**220**	**220**	**220**	**220**	**220**	**220**	**220**	**220**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**220**	**220**	**220**	**220**	**220**	**220**	**220**	**220**

PHOSPHORUS FACILITY SUMMARY

RSA-Gordonsville

YORK Trading Basin

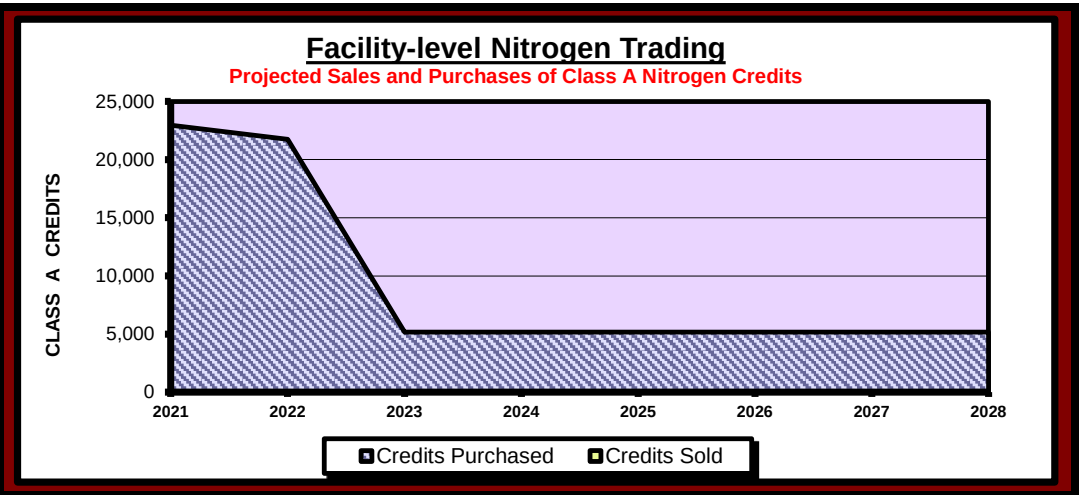


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Projected Flow (mgd)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Projected Avg. Annual Concentration (mg/L)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Discharged Load (end of pipe)	1,288	1,288	1,288	1,288	1,288	1,288	1,288	1,288
Delivery Factor	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Expected Load	683	683	683	683	683	683	683	683
Delivered WLA	607	607	607	607	607	607	607	607
Expected Credits (delivered)	(76)	(76)	(76)	(76)	(76)	(76)	(76)	(76)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**(76)**	**(76)**	**(76)**	**(76)**	**(76)**	**(76)**	**(76)**	**(76)**
Class A Credit Sales (Purchases)	**(76)**	**(76)**	**(76)**	**(76)**	**(76)**	**(76)**	**(76)**	**(76)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

WestRock-West Point Mill

YORK Trading Basin

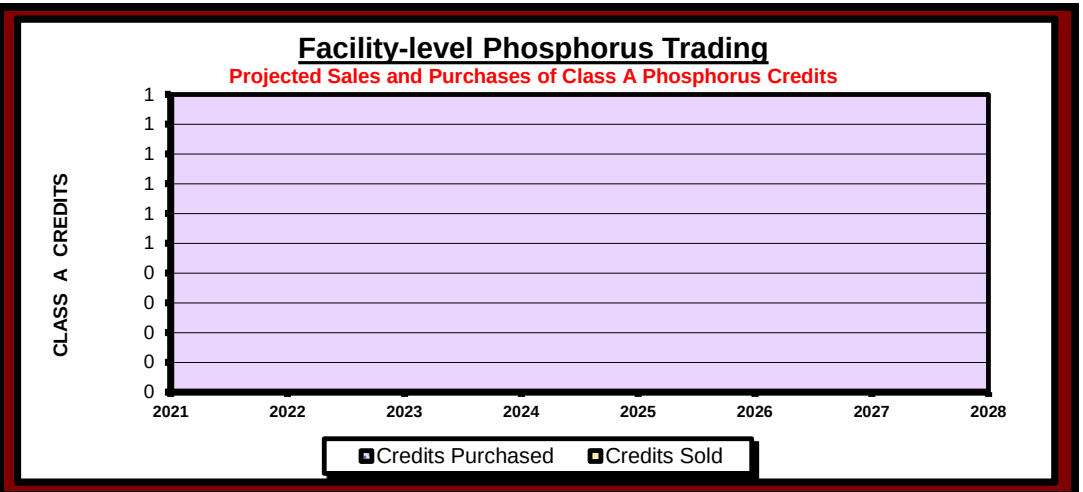


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Projected Flow (mgd)	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50
Projected Avg. Annual Concentration (mg/L)	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60
Discharged Load (end of pipe)	264,345	264,345	264,345	264,345	264,345	264,345	264,345	264,345
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	264,345	264,345	264,345	264,345	264,345	264,345	264,345	264,345
Delivered WLA	259,177	259,177	259,177	259,177	259,177	259,177	259,177	259,177
Expected Credits (delivered)	(5,168)	(5,168)	(5,168)	(5,168)	(5,168)	(5,168)	(5,168)	(5,168)
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	**(5,168)**	**(5,168)**	**(5,168)**	**(5,168)**	**(5,168)**	**(5,168)**	**(5,168)**	**(5,168)**
Class A Credit Sales (Purchases)	**(22,970)**	**(21,744)**	**(5,168)**	**(5,168)**	**(5,168)**	**(5,168)**	**(5,168)**	**(5,168)**
Expected Class B Credits	**17,802**	**16,576**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

WestRock-West Point Mill

YORK Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Projected Flow (mgd)	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50
Projected Avg. Annual Concentration (mg/L)	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Discharged Load (end of pipe)	53,211	53,211	53,211	53,211	53,211	53,211	53,211	53,211
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	53,211	53,211	53,211	53,211	53,211	53,211	53,211	53,211
Delivered WLA	56,038	56,038	56,038	56,038	56,038	56,038	56,038	56,038
Expected Credits (delivered)	2,827	2,827	2,827	2,827	2,827	2,827	2,827	2,827
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	**2,827**	**2,827**	**2,827**	**2,827**	**2,827**	**2,827**	**2,827**	**2,827**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**2,827**	**2,827**	**2,827**	**2,827**	**2,827**	**2,827**	**2,827**	**2,827**

SECTION 5

James River Basin Exchange Compliance Plan

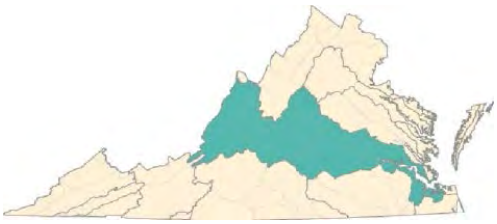


EXHIBIT 5-1
Nitrogen Plan Summary: James River Basin

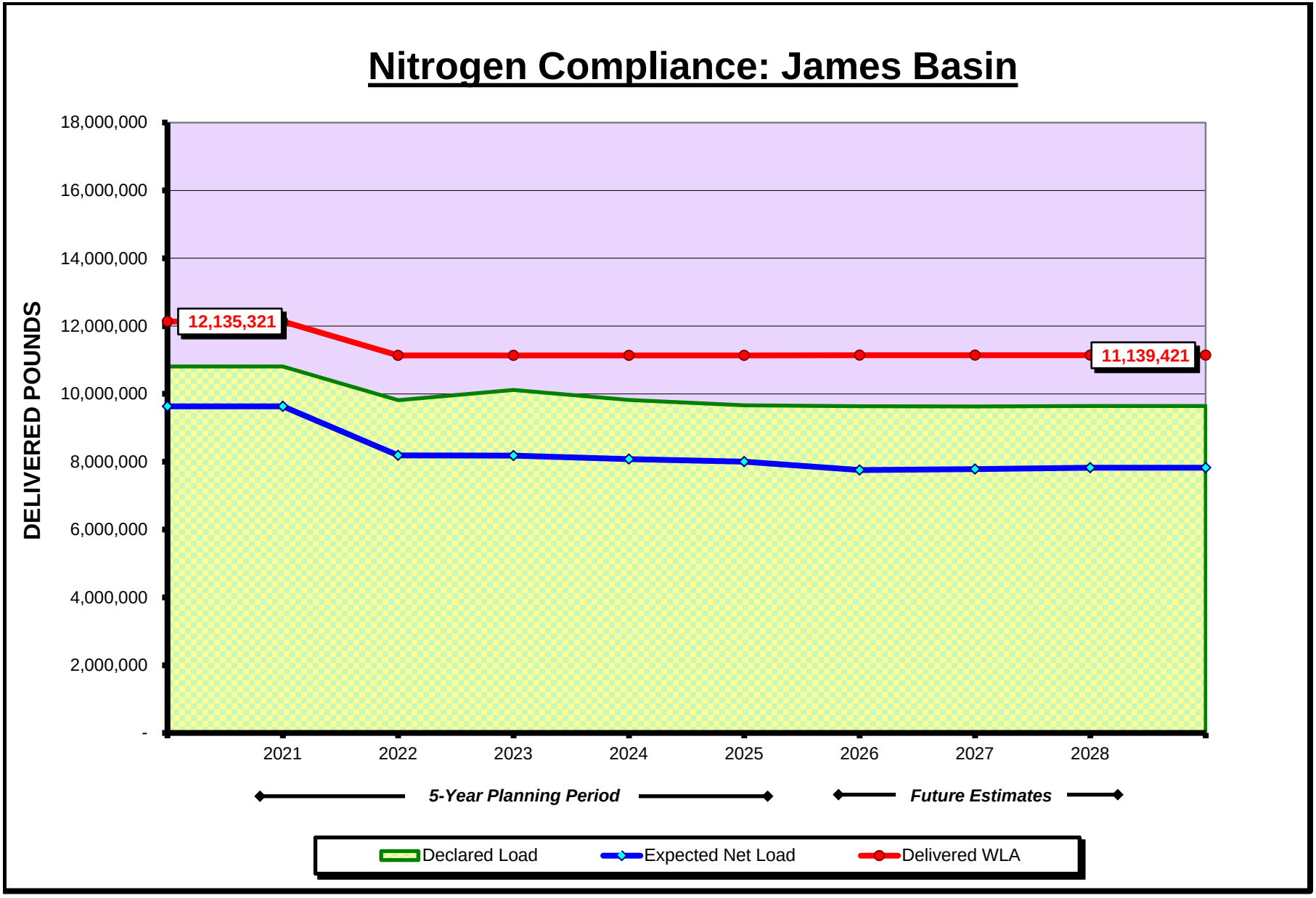


EXHIBIT 5-2
Nitrogen Plan Summary: Upper James River Basin

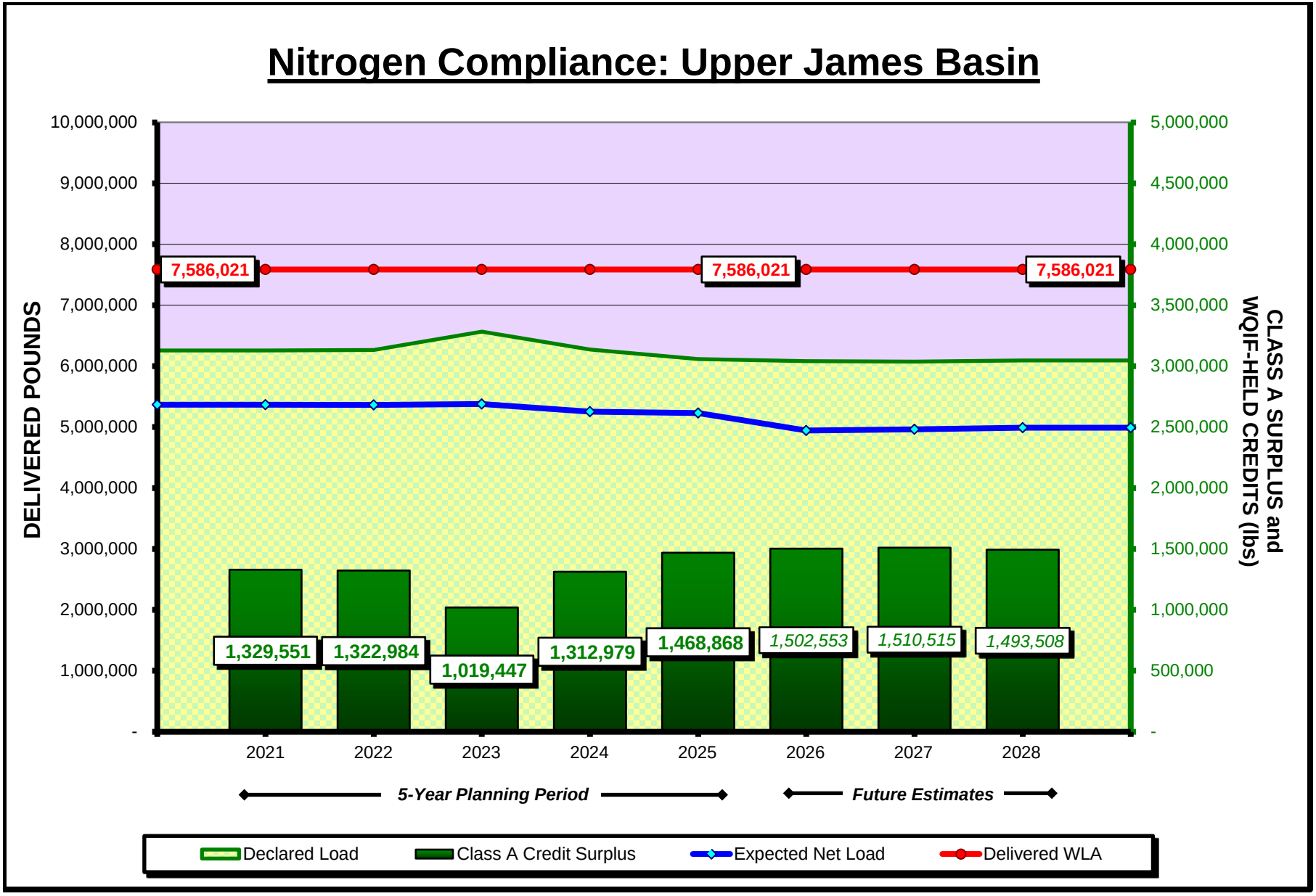


EXHIBIT 5-3
Nitrogen Plan Summary: Lower James River Basin

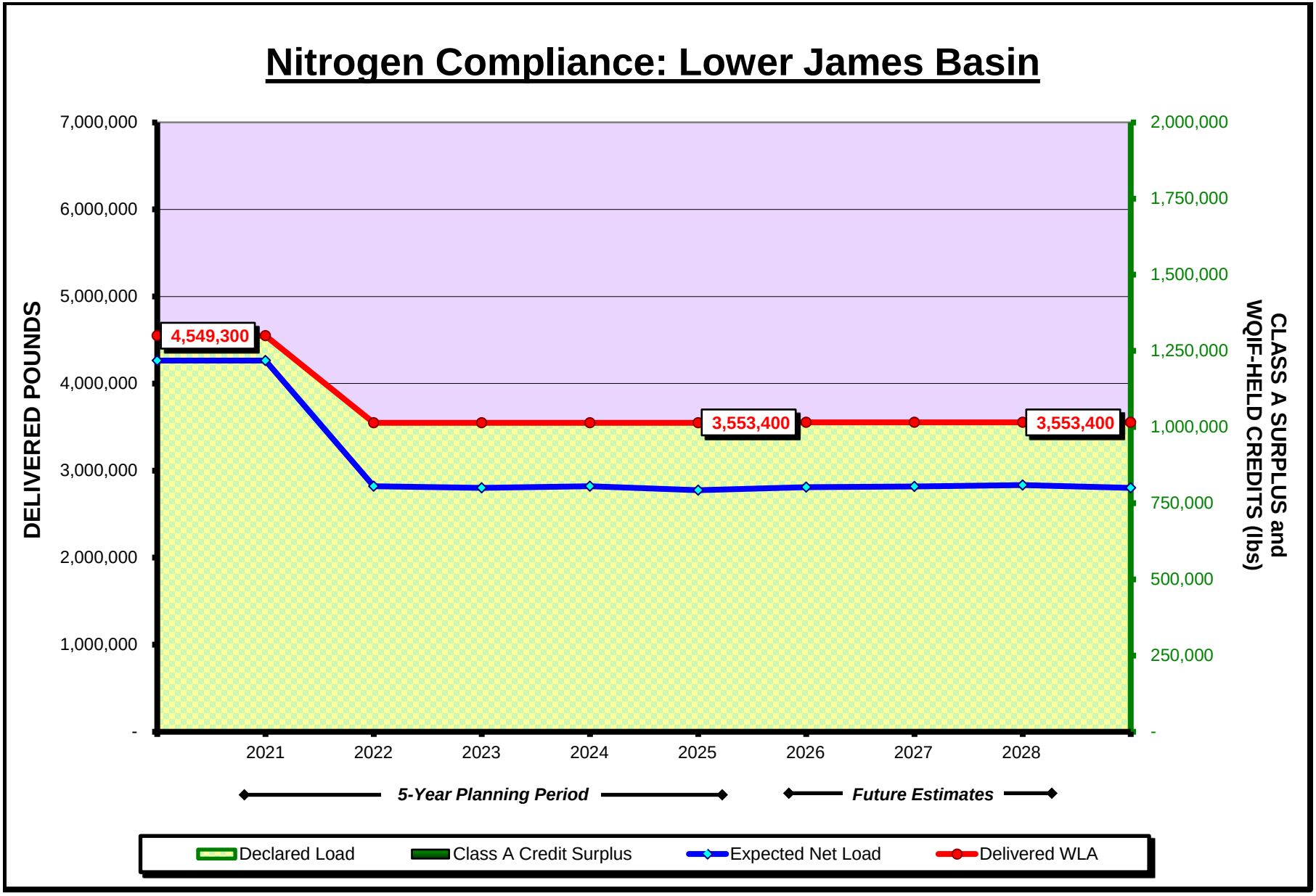


EXHIBIT 5-4
2021 Nitrogen Trading Ledger: James River Basin

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**	**5,363,115**	**2,222,906**	**-**	**(530)**	**(4,440)**	**2,217,936**	**1,405,992**	**(76,441)**	**888,385**
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	1,710	757	-	-	-	757	-	-	757
Amherst (Town)	4,715	3,279	1,436	-	-	-	1,436	718	-	718
Aqua Virginia-L. Monticello	11,636	12,642	(1,006)	1,006	-	-	-	-	-	-
Aqua Virginia-Manakin Farms	3,509	1,973	1,536	(1,006)	(530)	-	-	-	-	-
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	215,121	127,931	-	-	-	127,931	95,000	-	32,931
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	-	-	-	112,506	112,342	-	164
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	**4,549,300**	**4,262,688**	**286,612**	**-**	**(1)**	**-**	**286,611**	**-**	**-**	**286,611**
HRSD (Bubble)	4,549,300	4,262,688	286,612	-	(1)	-	286,611	-	-	286,611

**** 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.*

EXHIBIT 5-5
2022 Nitrogen Trading Ledger: James River Basin

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**	**5,359,824**	**2,226,197**	**-**	**-**	**(4,440)**	**2,221,757**	**1,401,988**	**(79,004)**	**898,773**
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	1,316	1,151	-	-	-	1,151	-	-	1,151
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	215,430	127,622	-	-	-	127,622	95,000	-	32,622
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	-	-	-	111,258	111,094	-	164
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	**3,549,300**	**2,819,663**	**729,637**	**-**	**(1)**	**-**	**729,636**	**-**	**-**	**729,636**
HRSD (Bubble)	3,549,300	2,819,663	729,637	-	(1)	-	729,636	-	-	729,636

**** 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.*

EXHIBIT 5-6
2023 Nitrogen Trading Ledger: James River Basin

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**	**5,375,425**	**2,210,596**	**-**	**-**	**(4,440)**	**2,206,156**	**1,093,446**	**(73,999)**	**1,186,709**
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	1,316	1,151	-	-	-	1,151	600	-	551
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	214,653	128,399	-	-	-	128,399	97,000	-	31,399
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	-	-	-	110,634	110,470	-	164
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	**3,549,400**	**2,798,088**	**751,312**	**-**	**(2,678)**	**-**	**748,634**	**-**	**-**	**748,634**
HRSD (Bubble)	3,549,400	2,798,088	751,312	-	(2,678)	-	748,634	-	-	748,634

**** 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.*

EXHIBIT 5-7
2024 Nitrogen Trading Ledger: James River Basin

JAMES Basin: Nitrogen 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: $ 0.18	$ 4.13	$ 0.02
UPPER JAMES BASIN	**7,586,021**	**5,249,521**	**2,336,500**	**-**	**(5)**	**(4,440)**	**2,332,055**	**1,381,340**	**(68,361)**	**1,019,076**
AdvanSix-Hopewell	1,090,798	624,949	465,849	-	-	-	465,849	100,000	-	365,849
Alleghany Co-L. Jackson	17,268	6,513	10,755	-	-	(4,440)	6,315	5,500	-	815
Alleghany Co-Low Moor	2,467	1,316	1,151	-	-	-	1,151	600	-	551
Amherst (Town)	4,715	1,986	2,729	-	-	-	2,729	1,365	-	1,364
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	28,494	(5,881)	-	-	-	(5,881)	-	(5,881)	-
BWX Technologies, Inc	119,680	102,916	16,764	-	-	-	16,764	15,000	-	1,764
Chesterfield-Falling Cr.	182,738	159,892	22,846	-	-	-	22,846	-	-	22,846
Chesterfield-Proctors Cr.	411,151	245,320	165,831	-	(50,000)	-	115,831	-	-	115,831
Covington	11,512	18,292	(6,780)	-	-	-	(6,780)	-	(6,780)	-
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	256,780	(55,700)	-	-	-	(55,700)	-	(55,700)	-
Georgia-Pacific	73,493	50,709	22,784	-	-	-	22,784	17,000	-	5,784
Greif Packaging	46,877	46,877	-	-	-	-	-	-	-	-
Henrico Co	1,142,085	938,224	203,861	-	-	-	203,861	183,475	-	20,386
Hopewell Water Renewal	1,827,336	1,269,999	557,337	-	-	-	557,337	278,669	-	278,668
Lynchburg	343,052	214,961	128,091	-	-	-	128,091	100,000	-	28,091
MSA-Lexington	16,994	4,721	12,273	-	-	-	12,273	800	-	11,473
Philip Morris	139,724	45,683	94,041	-	-	-	94,041	65,000	-	29,041
Richmond	1,093,652	513,938	579,714	-	(5)	-	579,709	500,000	-	79,709
RWSA-Moores Creek	181,116	76,095	105,021	-	-	-	105,021	104,858	-	163
South Central WWA	350,239	400,239	(50,000)	-	50,000	-	-	-	-	-
Tyson Foods-Glen Allen	3,519	2,436	1,083	-	-	-	1,083	-	-	1,083
WestRock-Covington	43,384	35,930	7,454	-	-	-	7,454	7,454	-	-
								PRICE: No Sale	No Sale	No Sale
LOWER JAMES BASIN	**3,549,400**	**2,817,769**	**731,631**	**-**	**(2,678)**	**-**	**728,953**	**-**	**-**	**728,953**
HRSD (Bubble)	3,549,400	2,817,769	731,631	-	(2,678)	-	728,953	-	-	728,953

**** 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.*

EXHIBIT 5-8
2025 Nitrogen Trading Ledger: James River Basin

JAMES Basin: Nitrogen Credit Ledger

Compliance Year:	2025	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: $ 0.20	$ 4.21	$ 0.03
UPPER JAMES BASIN	**7,586,021**	**5,224,140**	**2,361,881**	**-**	**(5)**	**(4,440)**	**2,357,436**	**1,552,546**	**(83,678)**	**888,568**
AdvanSix-Hopewell	1,090,798	690,733	400,065	-	-	-	400,065	100,000	-	300,065
Alleghany Co-L. Jackson	17,268	6,513	10,755	-	-	(4,440)	6,315	5,500	-	815
Alleghany Co-Low Moor	2,467	1,316	1,151	-	-	-	1,151	600	-	551
Amherst (Town)	4,715	1,914	2,801	-	-	-	2,801	1,400	-	1,401
Aqua Virginia-L. Monticello	11,636	11,631	5	-	-	-	5	-	-	5
Aqua Virginia-Manakin Farms	3,509	1,973	1,536	-	-	-	1,536	-	-	1,536
Buena Vista	22,613	30,924	(8,311)	-	-	-	(8,311)	-	(8,311)	-
BWX Technologies, Inc	119,680	102,916	16,764	-	-	-	16,764	15,000	-	1,764
Chesterfield-Falling Cr.	182,738	159,892	22,846	-	-	-	22,846	-	-	22,846
Chesterfield-Proctors Cr.	411,151	245,320	165,831	-	(50,000)	-	115,831	-	-	115,831
Covington	11,512	18,292	(6,780)	-	-	-	(6,780)	-	(6,780)	-
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	269,667	(68,587)	-	-	-	(68,587)	-	(68,587)	-
Georgia-Pacific	73,493	50,709	22,784	-	-	-	22,784	17,000	-	5,784
Greif Packaging	46,877	46,877	-	-	-	-	-	-	-	-
Henrico Co	1,142,085	862,564	279,521	-	-	-	279,521	251,569	-	27,952
Hopewell Water Renewal	1,827,336	1,269,999	557,337	-	-	-	557,337	278,669	-	278,668
Lynchburg	343,052	215,269	127,783	-	-	-	127,783	105,000	-	22,783
MSA-Lexington	16,994	4,721	12,273	-	-	-	12,273	800	-	11,473
Philip Morris	139,724	45,683	94,041	-	-	-	94,041	65,000	-	29,041
Richmond	1,093,652	479,676	613,976	-	(5)	-	613,971	600,000	-	13,971
RWSA-Moores Creek	181,116	78,181	102,935	-	-	-	102,935	102,935	-	-
South Central WWA	350,239	400,238	(49,999)	-	50,000	-	1	-	-	1
Tyson Foods-Glen Allen	3,519	3,467	52	-	-	-	52	-	-	52
WestRock-Covington	43,384	35,930	7,454	-	-	-	7,454	7,454	-	-
								PRICE: No Sale	No Sale	No Sale
LOWER JAMES BASIN	**3,549,400**	**2,771,930**	**777,470**	**-**	**(2,678)**	**-**	**774,792**	**-**	**-**	**774,792**
HRSD (Bubble)	3,549,400	2,771,930	777,470	-	(2,678)	-	774,792	-	-	774,792

**** 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.*

EXHIBIT 5-9
Phosphorus Plan Summary: James River Basin

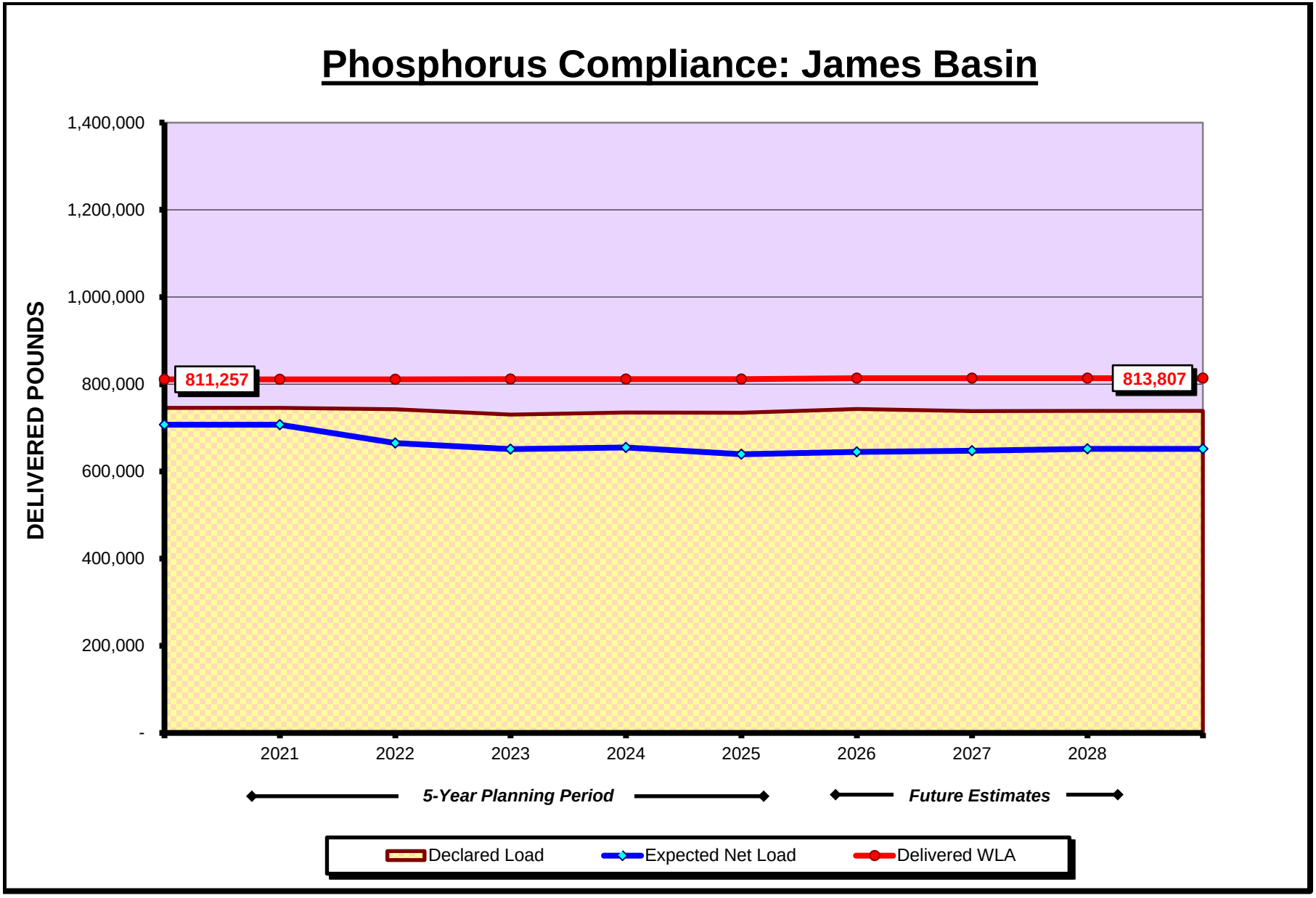


EXHIBIT 5-10
Phosphorus Plan Summary: Upper James River Basin

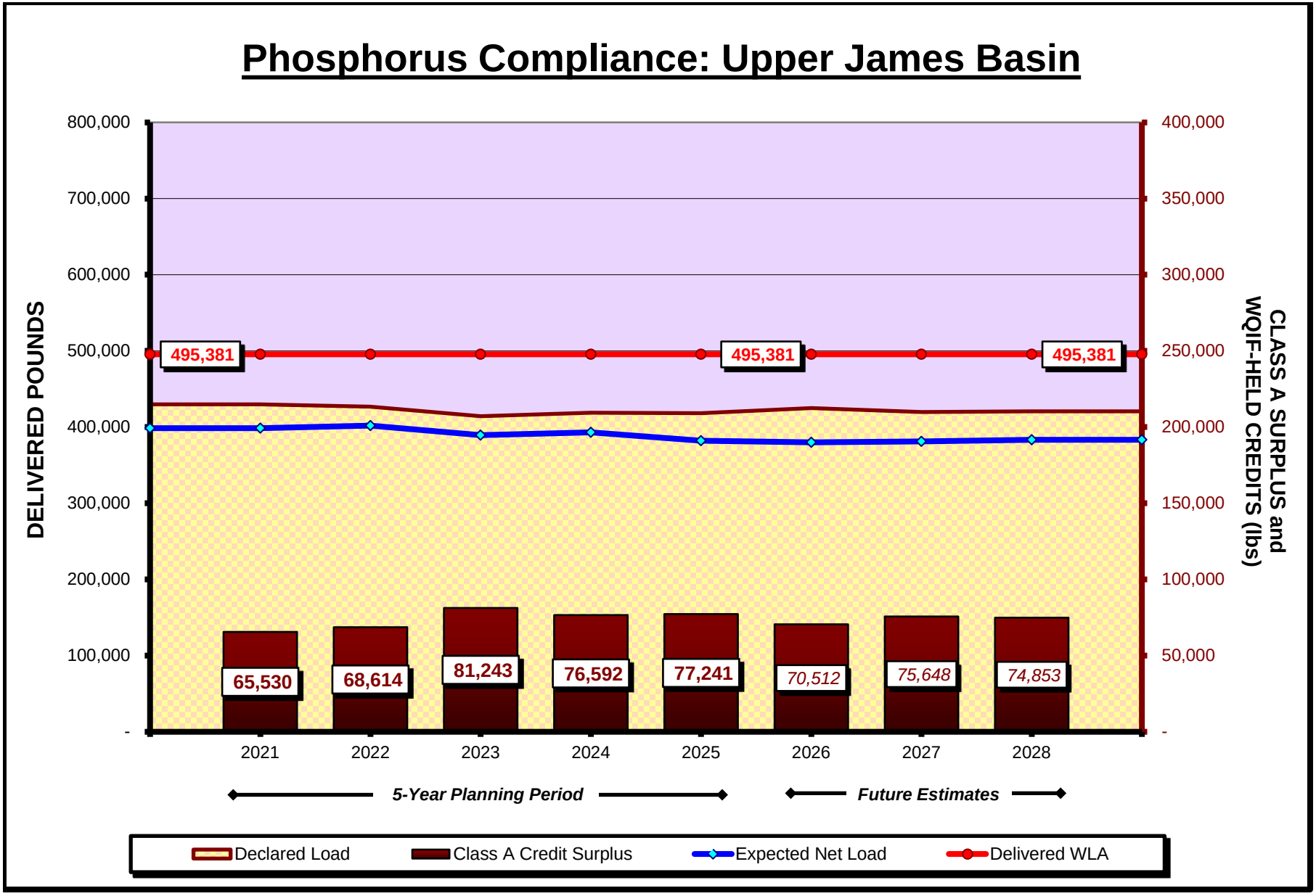


EXHIBIT 5-11
Phosphorus Plan Summary: Lower James River Basin

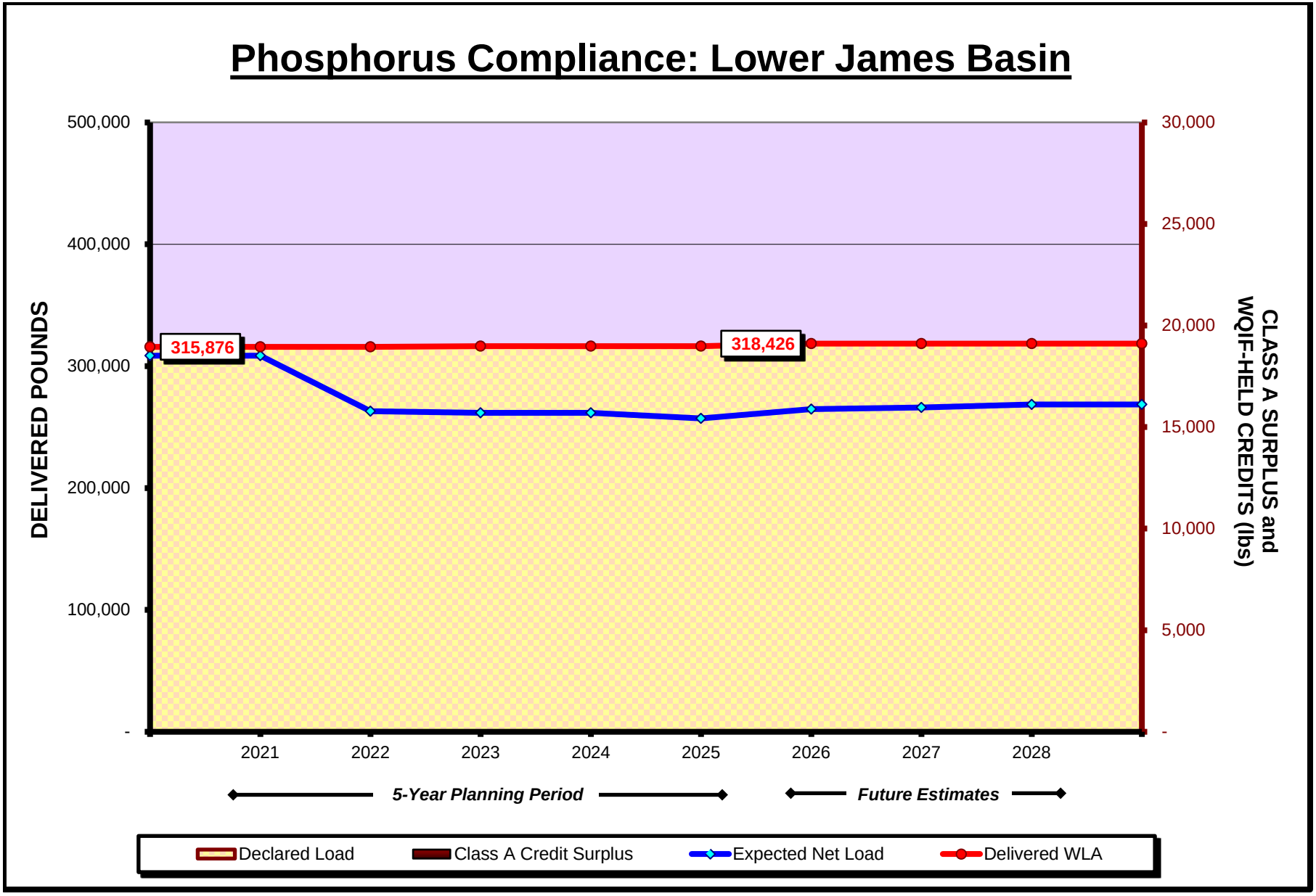


EXHIBIT 5-12
2021 Phosphorus Trading Ledger: James River Basin

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: $ 1.10	$ 5.82	$ 0.32
UPPER JAMES BASIN	**495,381**	**397,679**	**97,702**	**-**	**-**	**(789)**	**96,913**	**83,106**	**(17,576)**	**31,383**
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	2,238	(1,361)	309	-	-	(1,052)	-	(1,052)	-
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	23,144	(3,854)	-	-	-	(3,854)	-	(3,854)	-
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	-	-	-	6,017	5,957	-	60
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	**315,876**	**308,570**	**7,306**	**-**	**(1)**	**-**	**7,305**	**-**	**-**	**7,377**
HRSD (Bubble)	315,876	308,570	7,306	-	(1)	-	7,305	-	-	7,377

**** 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.*

EXHIBIT 5-13
2022 Phosphorus Trading Ledger: James River Basin

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: $ 0.91	$ 5.93	$ 0.33
UPPER JAMES BASIN	**495,381**	**400,976**	**94,405**	**-**	**-**	**(789)**	**93,616**	**82,860**	**(14,246)**	**25,002**
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	23,177	(3,887)	-	-	-	(3,887)	-	(3,887)	-
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	-	-	-	5,888	5,828	-	60
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	**315,876**	**263,087**	**52,789**	**-**	**(1)**	**-**	**52,788**	**-**	**-**	**52,788**
HRSD (Bubble)	315,876	263,087	52,789	-	(1)	-	52,788	-	-	52,788

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

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EXHIBIT 5-14
2023 Phosphorus Trading Ledger: James River Basin

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: $ 0.77	$ 6.08	$ 0.32
UPPER JAMES BASIN	**495,381**	**388,740**	**106,641**	**-**	**-**	**(789)**	**105,852**	**94,579**	**(13,336)**	**24,609**
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	23,210	(3,920)	-	-	-	(3,920)	-	(3,920)	-
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	-	-	-	5,823	5,763	-	60
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	**316,426**	**261,041**	**55,385**	**-**	**(620)**	**-**	**54,765**	**-**	**-**	**54,765**
HRSD (Bubble)	316,426	261,041	55,385	-	(620)	-	54,765	-	-	54,765

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

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EXHIBIT 5-15
2024 Phosphorus Trading Ledger: James River Basin

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: $ 1.06	$ 6.22	$ 0.43
UPPER JAMES BASIN	**495,381**	**392,345**	**103,036**	**-**	**(1)**	**(789)**	**102,246**	**94,628**	**(18,036)**	**25,654**
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	23,244	(3,954)	-	-	-	(3,954)	-	(3,954)	-
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	-	(1)	-	21,310	20,000	-	1,310
RWSA-Moores Creek	13,153	7,914	5,239	-	-	-	5,239	5,180	-	59
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	**316,426**	**261,095**	**55,331**	**-**	**(620)**	**-**	**54,711**	**-**	**-**	**54,711**
HRSD (Bubble)	316,426	261,095	55,331	-	(620)	-	54,711	-	-	54,711

**** 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.*

EXHIBIT 5-16
2025 Phosphorus Trading Ledger: James River Basin

JAMES Basin: Phosphorus Credit Ledger

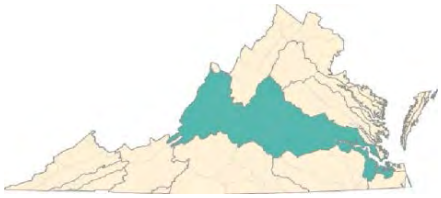
Compliance Year:	2025	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)		
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits		Class A Sales	Class A* Purchases	Class B Sales**
								PRICE:	$ 1.11	$ 6.34	$ 0.33
UPPER JAMES BASIN	**495,381**	**381,300**	**114,081**	**-**	**(1)**	**(789)**	**113,291**		**96,031**	**(18,790)**	**36,050**
AdvanSix-Hopewell	41,841	36,181	5,660	-	-	-	5,660		-	-	5,660
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	790	(264)	-	-	-	(264)		-	(264)	-
Aqua Virginia-L. Monticello	877	871	6	-	-	-	6		-	-	6
Aqua Virginia-Manakin Farms	378	121	257	-	-	-	257		-	-	257
Buena Vista	1,972	6,122	(4,150)	-	-	-	(4,150)		-	(4,150)	-
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	24,532	8,812	(3,516)	(40)	-	5,256		-	-	5,256
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	16,426	(10,087)	-	-	-	(10,087)		-	(10,087)	-
Georgia-Pacific	28,594	14,001	14,593	-	-	-	14,593		12,000	-	2,593
Greif Packaging	17,098	15,461	1,637	-	-	-	1,637		1,000	-	637
Henrico Co	92,623	61,612	31,011	-	-	-	31,011		27,910	-	3,101
Hopewell Water Renewal	61,749	59,267	2,482	-	-	-	2,482		-	-	2,482
Lynchburg	19,290	23,579	(4,289)	-	-	-	(4,289)		-	(4,289)	-
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	-	(1)	-	21,310		20,000	-	1,310
RWSA-Moores Creek	13,153	7,434	5,719	-	-	-	5,719		5,719	-	-
South Central WWA	28,404	15,654	12,750	-	-	-	12,750		-	-	12,750
Tyson Foods-Glen Allen	147	60	87	-	-	-	87		-	-	87
WestRock-Covington	68,707	42,166	26,541	-	-	-	26,541		26,541	-	-
								PRICE:	No Sale	No Sale	No Sale
LOWER JAMES BASIN	**316,426**	**256,557**	**59,869**	**-**	**(620)**	**-**	**59,249**		**-**	**-**	**59,249**
HRSD (Bubble)	316,426	256,557	59,869	-	(620)	-	59,249		-	-	59,249

**** 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

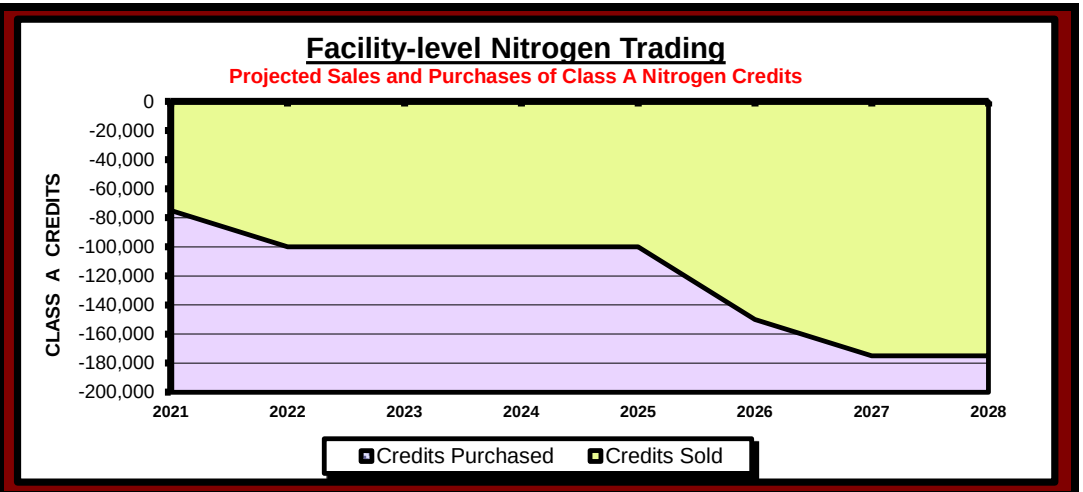
Supplemental Information for Individual Facilities



NITROGEN FACILITY SUMMARY

AdvanSix-Hopewell

UPPER JAMES Trading Basin

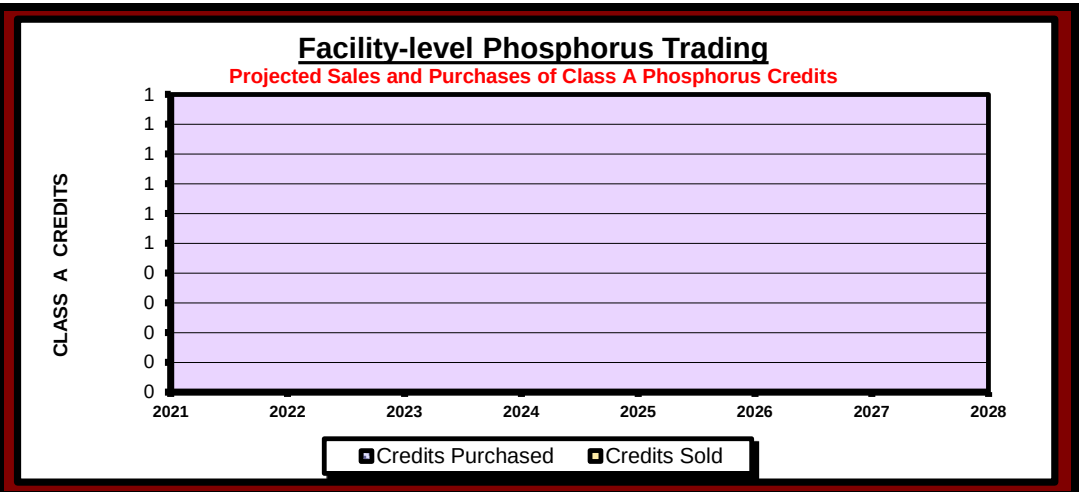


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	121.00	121.00	121.00	121.00	121.00	121.00	121.00	121.00
Projected Flow (mgd)	106.00	109.00	108.00	108.00	108.00	108.00	106.00	106.00
Projected Avg. Annual Concentration (mg/L)	2.40	2.20	2.20	1.90	2.10	2.10	2.10	2.10
Discharged Load (end of pipe)	774,790	730,325	723,625	624,949	690,733	690,733	677,942	677,942
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	774,790	730,325	723,625	624,949	690,733	690,733	677,942	677,942
Delivered WLA	1,090,798	1,090,798	1,090,798	1,090,798	1,090,798	1,090,798	1,090,798	1,090,798
Expected Credits (delivered)	316,008	360,473	367,173	465,849	400,065	400,065	412,856	412,856
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	**316,008**	**360,473**	**367,173**	**465,849**	**400,065**	**400,065**	**412,856**	**412,856**
Class A Credit Sales (Purchases)	**75,000**	**100,000**	**100,000**	**100,000**	**100,000**	**150,000**	**175,000**	**175,000**
Expected Class B Credits	**241,008**	**260,473**	**267,173**	**365,849**	**300,065**	**250,065**	**237,856**	**237,856**

PHOSPHORUS FACILITY SUMMARY

AdvanSix-Hopewell

UPPER JAMES Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	121.00	121.00	121.00	121.00	121.00	121.00	121.00	121.00
Projected Flow (mgd)	106.00	109.00	108.00	108.00	108.00	108.00	106.00	106.00
Projected Avg. Annual Concentration (mg/L)	0.10	0.11	0.11	0.10	0.11	0.11	0.11	0.11
Discharged Load (end of pipe)	32,283	36,516	36,181	32,892	36,181	36,181	35,511	35,511
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	32,283	36,516	36,181	32,892	36,181	36,181	35,511	35,511
Delivered WLA	41,841	41,841	41,841	41,841	41,841	41,841	41,841	41,841
Expected Credits (delivered)	9,558	5,325	5,660	8,949	5,660	5,660	6,330	6,330
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	**9,558**	**5,325**	**5,660**	**8,949**	**5,660**	**5,660**	**6,330**	**6,330**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**9,558**	**5,325**	**5,660**	**8,949**	**5,660**	**5,660**	**6,330**	**6,330**

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.

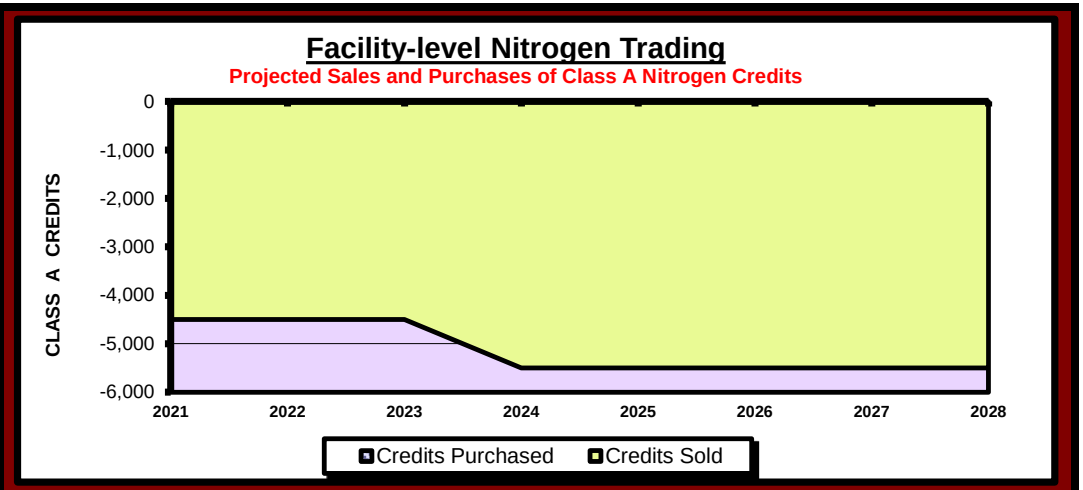
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Lower Jackson	-	-	-	-	-	-	-	-
Low Moor	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Lower Jackson	6,315	6,315	6,315	6,315	6,315	6,315	6,315	6,315
Low Moor	757	1,151	1,151	1,151	1,151	1,151	1,151	1,151
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**7,072**	**7,466**	**7,466**	**7,466**	**7,466**	**7,466**	**7,466**	**7,466**
Class A Sales (Purchases)	**4,500**	**4,500**	**5,100**	**6,100**	**6,100**	**6,100**	**6,100**	**6,100**
Expected Class B Credits	*2,572*	*2,966*	*2,366*	*1,366*	*1,366*	*1,366*	*1,366*	*1,366*
WQIF-Held Credits	*4,440*	*4,440*	*4,440*	*4,440*	*4,440*	*4,440*	*4,440*	*4,440*

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Lower Jackson	(968)	(427)	(427)	(427)	(427)	(427)	(427)	(427)
Low Moor	968	427	427	427	427	427	427	427
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Lower Jackson	456	997	997	997	997	997	997	997
Low Moor	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**456**	**997**	**997**	**997**	**997**	**997**	**997**	**997**
Class A Sales (Purchases)	**300**	**300**	**450**	**750**	**750**	**750**	**750**	**750**
Expected Class B Credits	*156*	*697*	*547*	*247*	*247*	*247*	*247*	*247*
WQIF-Held Credits	*789*	*789*	*789*	*789*	*789*	*789*	*789*	*789*

NITROGEN FACILITY SUMMARY

Alleghany Co-L. Jackson

UPPER JAMES Trading Basin

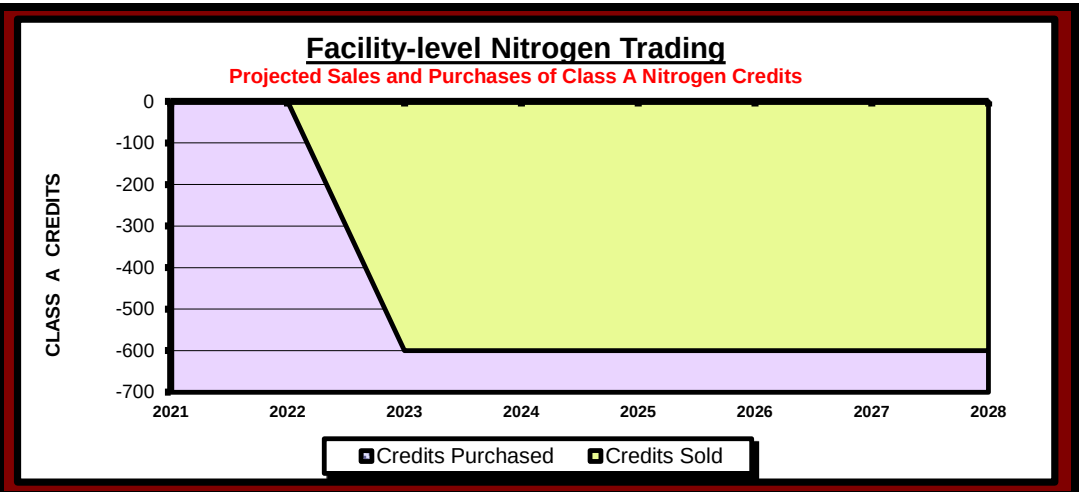


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Projected Flow (mgd)	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32
Projected Avg. Annual Concentration (mg/L)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Discharged Load (end of pipe)	24,121	24,121	24,121	24,121	24,121	24,121	24,121	24,121
Delivery Factor	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Expected Load	6,513	6,513	6,513	6,513	6,513	6,513	6,513	6,513
Delivered WLA	17,268	17,268	17,268	17,268	17,268	17,268	17,268	17,268
Expected Credits (delivered)	10,755	10,755	10,755	10,755	10,755	10,755	10,755	10,755
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	(4,440)	(4,440)	(4,440)	(4,440)	(4,440)	(4,440)	(4,440)	(4,440)
Expected Net Credits	**6,315**	**6,315**	**6,315**	**6,315**	**6,315**	**6,315**	**6,315**	**6,315**
Class A Credit Sales (Purchases)	**4,500**	**4,500**	**4,500**	**5,500**	**5,500**	**5,500**	**5,500**	**5,500**
Expected Class B Credits	**1,815**	**1,815**	**1,815**	**815**	**815**	**815**	**815**	**815**

NITROGEN FACILITY SUMMARY

Alleghany Co-Low Moor

UPPER JAMES Trading Basin

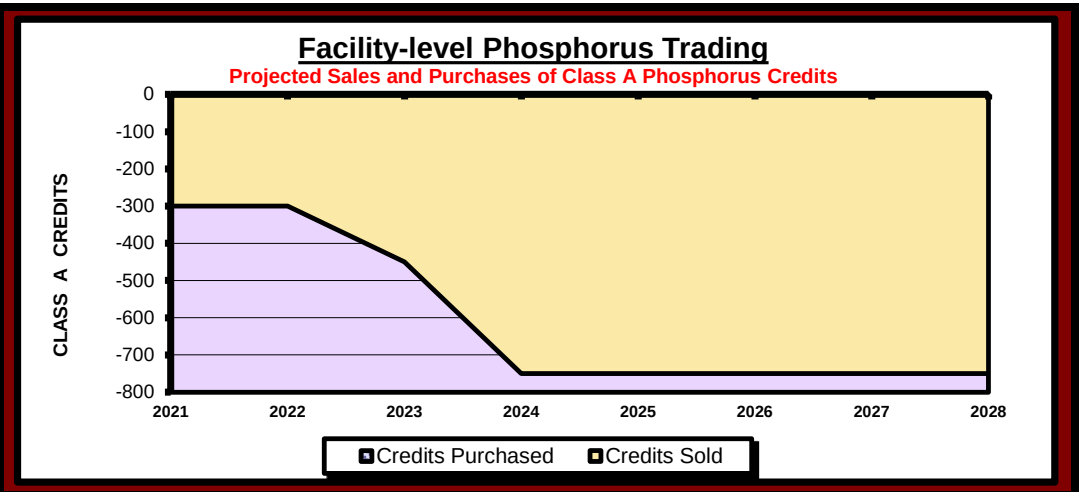


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Projected Flow (mgd)	0.26	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Projected Avg. Annual Concentration (mg/L)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Discharged Load (end of pipe)	6,335	4,873	4,873	4,873	4,873	4,873	4,873	4,873
Delivery Factor	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Expected Load	1,710	1,316	1,316	1,316	1,316	1,316	1,316	1,316
Delivered WLA	2,467	2,467	2,467	2,467	2,467	2,467	2,467	2,467
Expected Credits (delivered)	757	1,151	1,151	1,151	1,151	1,151	1,151	1,151
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	**757**	**1,151**	**1,151**	**1,151**	**1,151**	**1,151**	**1,151**	**1,151**
Class A Credit Sales (Purchases)	**0**	**0**	**600**	**600**	**600**	**600**	**600**	**600**
Expected Class B Credits	**757**	**1,151**	**551**	**551**	**551**	**551**	**551**	**551**

PHOSPHORUS FACILITY SUMMARY

Alleghany Co-L. Jackson

UPPER JAMES Trading Basin

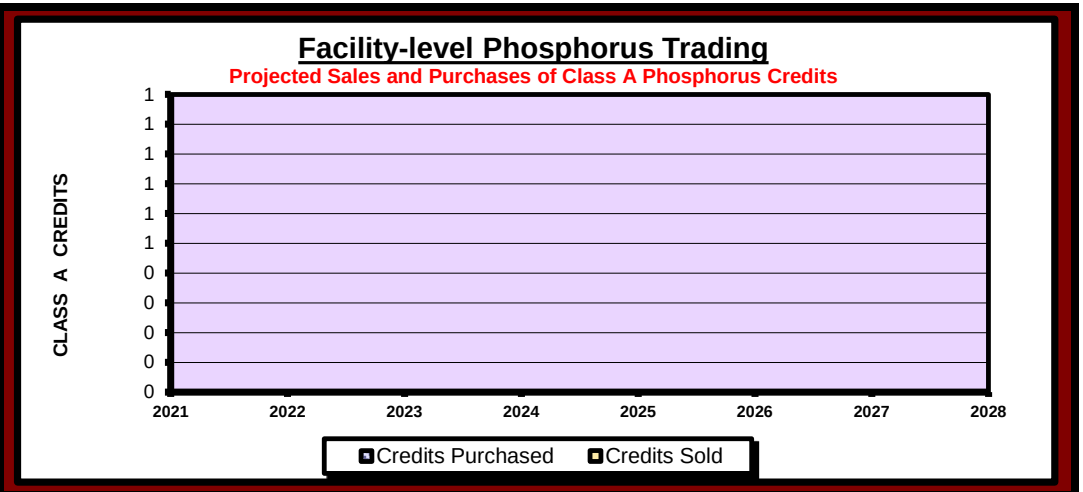


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Projected Flow (mgd)	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	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	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	856	856	856	856	856	856	856	856
Delivered WLA	3,069	3,069	3,069	3,069	3,069	3,069	3,069	3,069
Expected Credits (delivered)	2,213	2,213	2,213	2,213	2,213	2,213	2,213	2,213
Transfers In (Out) within Owner Bubble	(968)	(427)	(427)	(427)	(427)	(427)	(427)	(427)
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	(789)	(789)	(789)	(789)	(789)	(789)	(789)	(789)
Expected Net Credits	**456**	**997**	**997**	**997**	**997**	**997**	**997**	**997**
Class A Credit Sales (Purchases)	**300**	**300**	**450**	**750**	**750**	**750**	**750**	**750**
Expected Class B Credits	**156**	**697**	**547**	**247**	**247**	**247**	**247**	**247**

PHOSPHORUS FACILITY SUMMARY

Alleghany Co-Low Moor

UPPER JAMES Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	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)	0.26	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Projected Avg. Annual Concentration (mg/L)	2.50	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Discharged Load (end of pipe)	1,980	1,218	1,218	1,218	1,218	1,218	1,218	1,218
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	1,406	865	865	865	865	865	865	865
Delivered WLA	438	438	438	438	438	438	438	438
Expected Credits (delivered)	(968)	(427)	(427)	(427)	(427)	(427)	(427)	(427)
Transfers In (Out) within Owner Bubble	968	427	427	427	427	427	427	427
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**

Alleghany 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 Alleghany 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

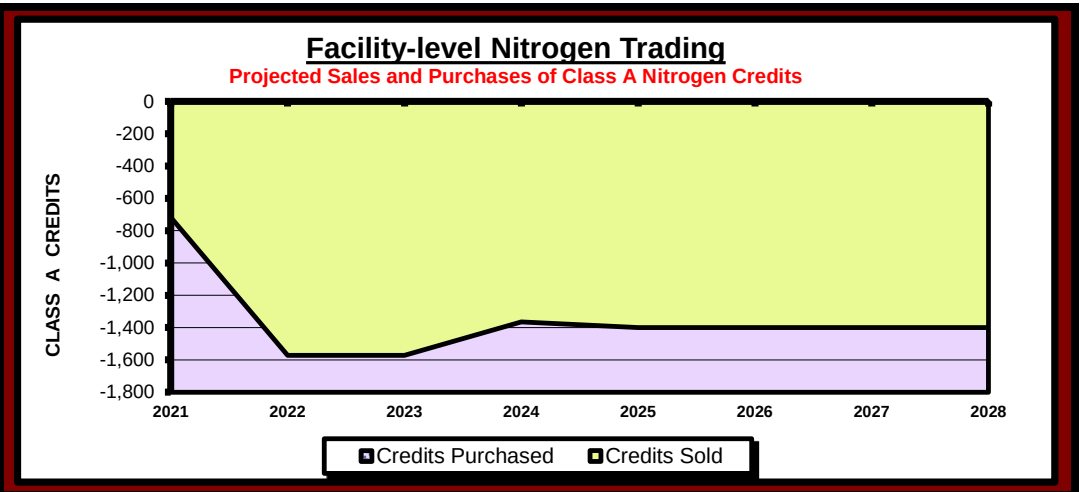
These consolidated wasteload allocations are based on a combined design flow of 3.5 mgd. The regional Lower Jackson Plant has been constructed and received a CTO for a design flow of 2.6 mgd. Accordingly, the following nitrogen and phosphorus Credits generated from 0.9 mgd of the facility's capacity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

- 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

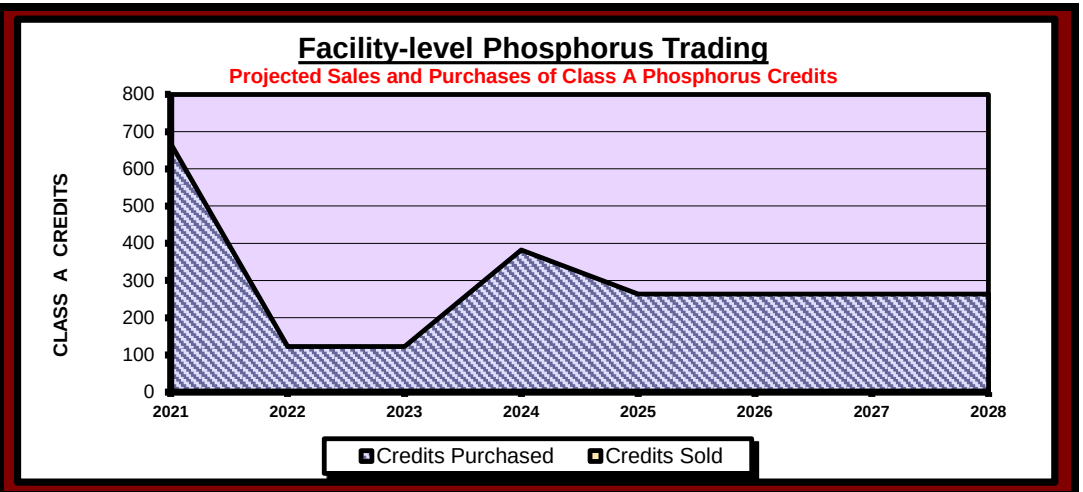


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.40	0.30	0.30	0.42	0.42	0.42	0.42	0.42
Projected Avg. Annual Concentration (mg/L)	6.26	4.00	4.00	3.61	3.48	3.48	3.48	3.48
Discharged Load (end of pipe)	7,626	3,655	3,655	4,618	4,451	4,451	4,451	4,451
Delivery Factor	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Expected Load	3,279	1,572	1,572	1,986	1,914	1,914	1,914	1,914
Delivered WLA	4,715	4,715	4,715	4,715	4,715	4,715	4,715	4,715
Expected Credits (delivered)	1,436	3,143	3,143	2,729	2,801	2,801	2,801	2,801
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	**1,436**	**3,143**	**3,143**	**2,729**	**2,801**	**2,801**	**2,801**	**2,801**
Class A Credit Sales (Purchases)	**718**	**1,572**	**1,572**	**1,365**	**1,400**	**1,400**	**1,400**	**1,400**
Expected Class B Credits	**718**	**1,571**	**1,571**	**1,364**	**1,401**	**1,401**	**1,401**	**1,401**

PHOSPHORUS FACILITY SUMMARY

Amherst (Town)

UPPER JAMES Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Projected Flow (mgd)	0.40	0.30	0.30	0.42	0.42	0.42	0.42	0.42
Projected Avg. Annual Concentration (mg/L)	1.38	1.00	1.00	1.00	0.87	0.87	0.87	0.87
Discharged Load (end of pipe)	1,681	914	914	1,279	1,113	1,113	1,113	1,113
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	1,194	649	649	908	790	790	790	790
Delivered WLA	526	526	526	526	526	526	526	526
Expected Credits (delivered)	(668)	(123)	(123)	(382)	(264)	(264)	(264)	(264)
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	**(668)**	**(123)**	**(123)**	**(382)**	**(264)**	**(264)**	**(264)**	**(264)**
Class A Credit Sales (Purchases)	**(668)**	**(123)**	**(123)**	**(382)**	**(264)**	**(264)**	**(264)**	**(264)**
Expected Class B Credits	**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.

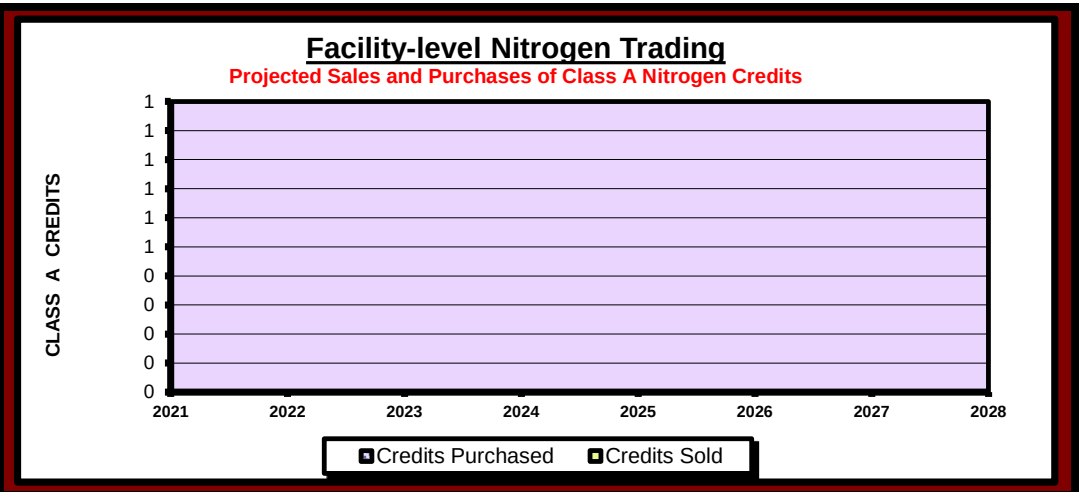
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Lake Monticello	1,006	-	-	-	-	-	-	-
Manakin Farms Lagoon	(1,006)	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Lake Monticello	-	93	93	93	5	7	-	12
Manakin Farms Lagoon	530	1,536	1,536	1,536	1,536	1,536	1,536	1,536
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	**530**	**1,629**	**1,629**	**1,629**	**1,541**	**1,543**	**1,536**	**1,548**
Private Exchanges	(530)	-	-	-	-	-	-	-
Expected Net Credits	**-**	**1,629**	**1,629**	**1,629**	**1,541**	**1,543**	**1,536**	**1,548**
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	*0*	*1,629*	*1,629*	*1,629*	*1,541*	*1,543*	*1,536*	*1,548*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Lake Monticello	309	-	-	-	-	-	-	-
Manakin Farms Lagoon	(309)	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Lake Monticello	(1,052)	5	5	5	6	6	8	9
Manakin Farms Lagoon	-	309	309	309	257	257	257	257
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Net Credits	**(1,052)**	**314**	**314**	**314**	**263**	**263**	**265**	**266**
Class A Sales (Purchases)	**(1,052)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	*0*	*314*	*314*	*314*	*263*	*263*	*265*	*266*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NITROGEN FACILITY SUMMARY

Aqua Virginia-L. Monticello

UPPER JAMES Trading Basin

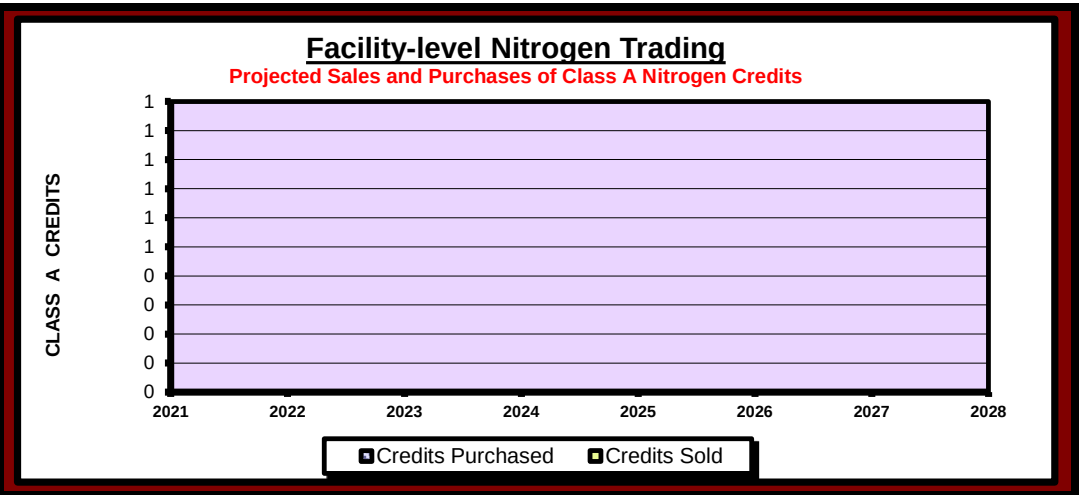


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.69	0.63	0.63	0.63	0.65	0.66	0.67	0.68
Projected Avg. Annual Concentration (mg/L)	9.40	9.40	9.40	9.40	9.18	9.04	8.91	8.77
Discharged Load (end of pipe)	19,754	18,036	18,036	18,036	18,173	18,171	18,181	18,163
Delivery Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Expected Load	12,642	11,543	11,543	11,543	11,631	11,629	11,636	11,624
Delivered WLA	11,636	11,636	11,636	11,636	11,636	11,636	11,636	11,636
Expected Credits (delivered)	(1,006)	93	93	93	5	7	0	12
Transfers In (Out) within Owner Bubble	1,006	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**0**	**93**	**93**	**93**	**5**	**7**	**0**	**12**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**93**	**93**	**93**	**5**	**7**	**0**	**12**

NITROGEN FACILITY SUMMARY

Aqua Virginia-Manakin Farm

UPPER JAMES Trading Basin



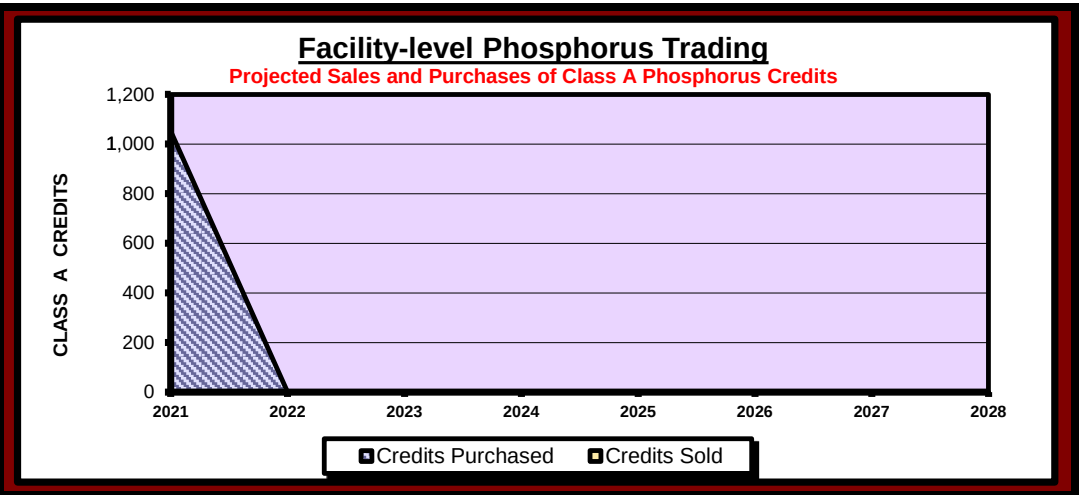
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Projected Avg. Annual Concentration (mg/L)	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.20
Discharged Load (end of pipe)	2,242	2,242	2,242	2,242	2,242	2,242	2,242	2,242
Delivery Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Expected Load	1,973	1,973	1,973	1,973	1,973	1,973	1,973	1,973
Delivered WLA	3,509	3,509	3,509	3,509	3,509	3,509	3,509	3,509
Expected Credits (delivered)	1,536	1,536	1,536	1,536	1,536	1,536	1,536	1,536
Transfers In (Out) within Owner Bubble	(1,006)	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(530)	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**0**	**1,536**	**1,536**	**1,536**	**1,536**	**1,536**	**1,536**	**1,536**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**1,536**	**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

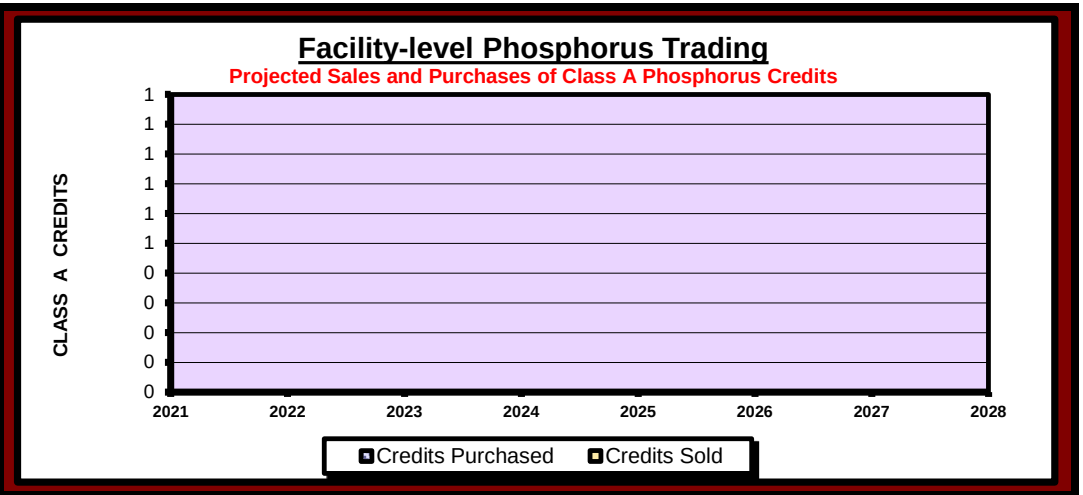


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.69	0.63	0.63	0.63	0.65	0.66	0.67	0.68
Projected Avg. Annual Concentration (mg/L)	1.50	0.64	0.64	0.64	0.62	0.61	0.60	0.59
Discharged Load (end of pipe)	3,152	1,228	1,228	1,228	1,227	1,226	1,224	1,222
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	2,238	872	872	872	871	871	869	868
Delivered WLA	877	877	877	877	877	877	877	877
Expected Credits (delivered)	(1,361)	5	5	5	6	6	8	9
Transfers In (Out) within Owner Bubble	309	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	**(1,052)**	**5**	**5**	**5**	**6**	**6**	**8**	**9**
Class A Credit Sales (Purchases)	**(1,052)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**5**	**5**	**5**	**6**	**6**	**8**	**9**

PHOSPHORUS FACILITY SUMMARY

Aqua Virginia-Manakin Farm

UPPER JAMES Trading Basin

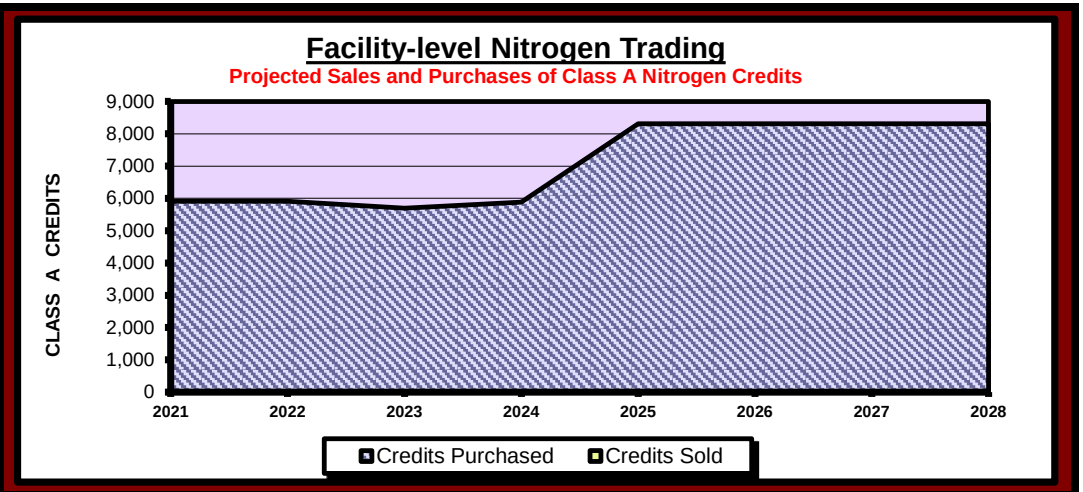


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Projected Avg. Annual Concentration (mg/L)	0.40	0.40	0.40	0.40	0.70	0.70	0.70	0.70
Discharged Load (end of pipe)	97	97	97	97	171	171	171	171
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	69	69	69	69	121	121	121	121
Delivered WLA	378	378	378	378	378	378	378	378
Expected Credits (delivered)	309	309	309	309	257	257	257	257
Transfers In (Out) within Owner Bubble	(309)	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**0**	**309**	**309**	**309**	**257**	**257**	**257**	**257**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**309**	**309**	**309**	**257**	**257**	**257**	**257**

NITROGEN FACILITY SUMMARY

Buena Vista

UPPER JAMES Trading Basin

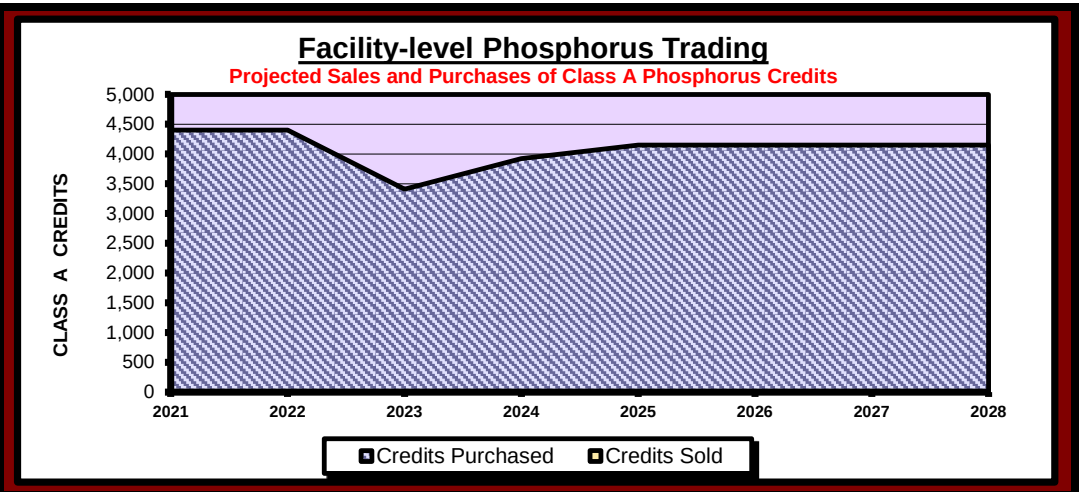


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Projected Flow (mgd)	1.31	1.31	1.31	1.33	1.43	1.43	1.43	1.43
Projected Avg. Annual Concentration (mg/L)	13.00	13.00	12.90	12.79	12.91	12.91	12.91	12.91
Discharged Load (end of pipe)	51,866	51,866	51,467	51,807	56,225	56,225	56,225	56,225
Delivery Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Expected Load	28,526	28,526	28,307	28,494	30,924	30,924	30,924	30,924
Delivered WLA	22,613	22,613	22,613	22,613	22,613	22,613	22,613	22,613
Expected Credits (delivered)	(5,913)	(5,913)	(5,694)	(5,881)	(8,311)	(8,311)	(8,311)	(8,311)
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	**(5,913)**	**(5,913)**	**(5,694)**	**(5,881)**	**(8,311)**	**(8,311)**	**(8,311)**	**(8,311)**
Class A Credit Sales (Purchases)	**(5,913)**	**(5,913)**	**(5,694)**	**(5,881)**	**(8,311)**	**(8,311)**	**(8,311)**	**(8,311)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Buena Vista

UPPER JAMES Trading Basin

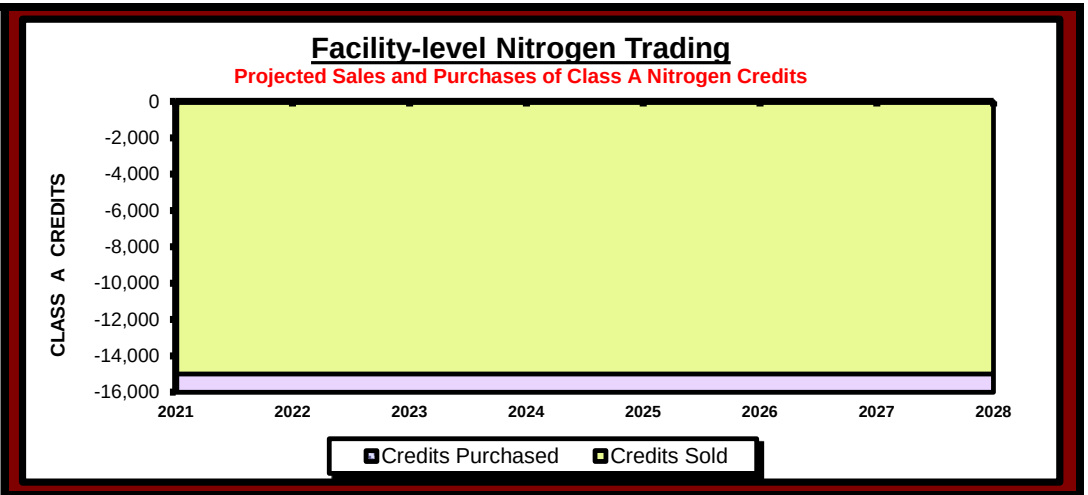


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Projected Flow (mgd)	1.31	1.31	1.31	1.33	1.43	1.43	1.43	1.43
Projected Avg. Annual Concentration (mg/L)	2.25	2.25	1.90	2.05	1.98	1.98	1.98	1.98
Discharged Load (end of pipe)	8,977	8,977	7,580	8,304	8,623	8,623	8,623	8,623
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	6,374	6,374	5,382	5,896	6,122	6,122	6,122	6,122
Delivered WLA	1,972	1,972	1,972	1,972	1,972	1,972	1,972	1,972
Expected Credits (delivered)	(4,402)	(4,402)	(3,410)	(3,924)	(4,150)	(4,150)	(4,150)	(4,150)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**(4,402)**	**(4,402)**	**(3,410)**	**(3,924)**	**(4,150)**	**(4,150)**	**(4,150)**	**(4,150)**
Class A Credit Sales (Purchases)	**(4,402)**	**(4,402)**	**(3,410)**	**(3,924)**	**(4,150)**	**(4,150)**	**(4,150)**	**(4,150)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

BWX Technologies, Inc

UPPER JAMES Trading Basin

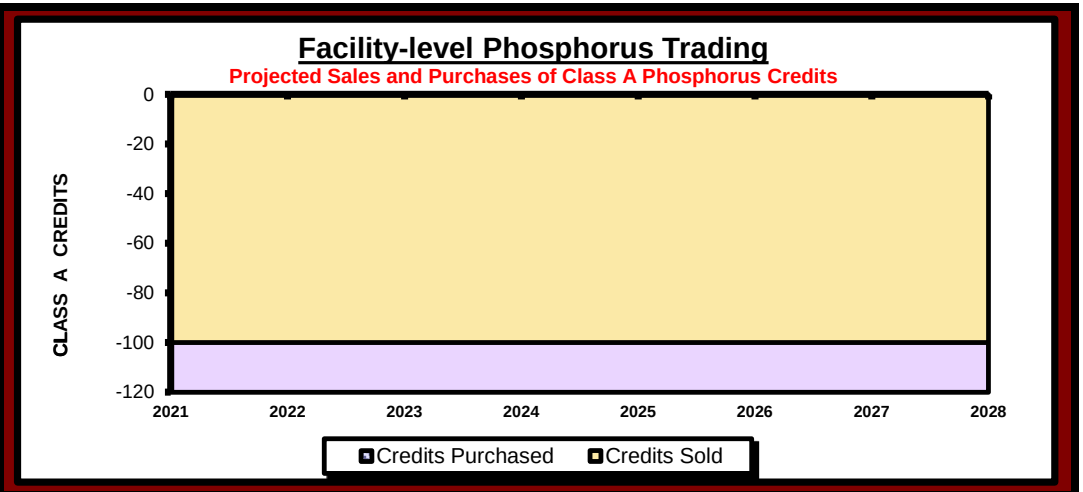


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Flow (mgd)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Projected Avg. Annual Concentration (mg/L)	110.00	110.00	110.00	110.00	110.00	110.00	110.00	110.00
Discharged Load (end of pipe)	160,806	160,806	160,806	160,806	160,806	160,806	160,806	160,806
Delivery Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Expected Load	102,916	102,916	102,916	102,916	102,916	102,916	102,916	102,916
Delivered WLA	119,680	119,680	119,680	119,680	119,680	119,680	119,680	119,680
Expected Credits (delivered)	16,764	16,764	16,764	16,764	16,764	16,764	16,764	16,764
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	**16,764**	**16,764**	**16,764**	**16,764**	**16,764**	**16,764**	**16,764**	**16,764**
Class A Credit Sales (Purchases)	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**
Expected Class B Credits	**1,764**	**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	2021	2022	2023	2024	2025	2026	2027	2028
	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)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Discharged Load (end of pipe)	731	731	731	731	731	731	731	731
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	519	519	519	519	519	519	519	519
Delivered WLA	877	877	877	877	877	877	877	877
Expected Credits (delivered)	358	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	**358**	**358**	**358**	**358**	**358**	**358**	**358**	**358**
Class A Credit Sales (Purchases)	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Expected Class B Credits	**258**	**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.

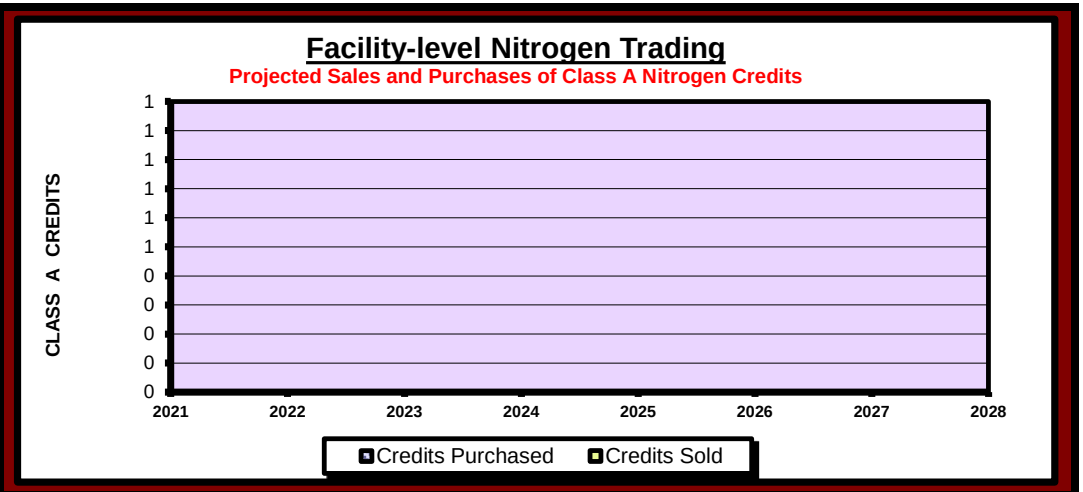
NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Falling Creek	-	-	-	-	-	-	-	-
Proctors Creek	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Falling Creek	28,100	25,435	25,435	22,846	22,846	20,105	17,364	14,623
Proctors Creek	171,237	168,572	168,572	165,831	165,831	163,242	160,654	158,065
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	**199,337**	**194,007**	**194,007**	**188,677**	**188,677**	**183,347**	**178,018**	**172,688**
Private Exchanges	(50,000)	(50,000)	(50,000)	(50,000)	(50,000)	-	-	-
Expected Net Credits	**149,337**	**144,007**	**144,007**	**138,677**	**138,677**	**183,347**	**178,018**	**172,688**
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	*149,337*	*144,007*	*144,007*	*138,677*	*138,677*	*183,347*	*178,018*	*172,688*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Credits Transferred within Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Falling Creek	2,991	3,257	3,257	3,516	3,516	3,790	4,064	4,338
Proctors Creek	(2,991)	(3,257)	(3,257)	(3,516)	(3,516)	(3,790)	(4,064)	(4,338)
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL (must sum to 0)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Credits Available outside Bubble	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Falling Creek	-	-	-	-	-	-	-	-
Proctors Creek	3,962	3,403	3,403	2,843	5,296	4,763	4,230	3,697
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Expected Credits	**3,962**	**3,403**	**3,403**	**2,843**	**5,296**	**4,763**	**4,230**	**3,697**
Private Exchanges	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)
Expected Net Credits	**3,922**	**3,363**	**3,363**	**2,803**	**5,256**	**4,723**	**4,190**	**3,657**
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	*3,922*	*3,363*	*3,363*	*2,803*	*5,256*	*4,723*	*4,190*	*3,657*
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NITROGEN FACILITY SUMMARY

Chesterfield-Falling Cr.

UPPER JAMES Trading Basin

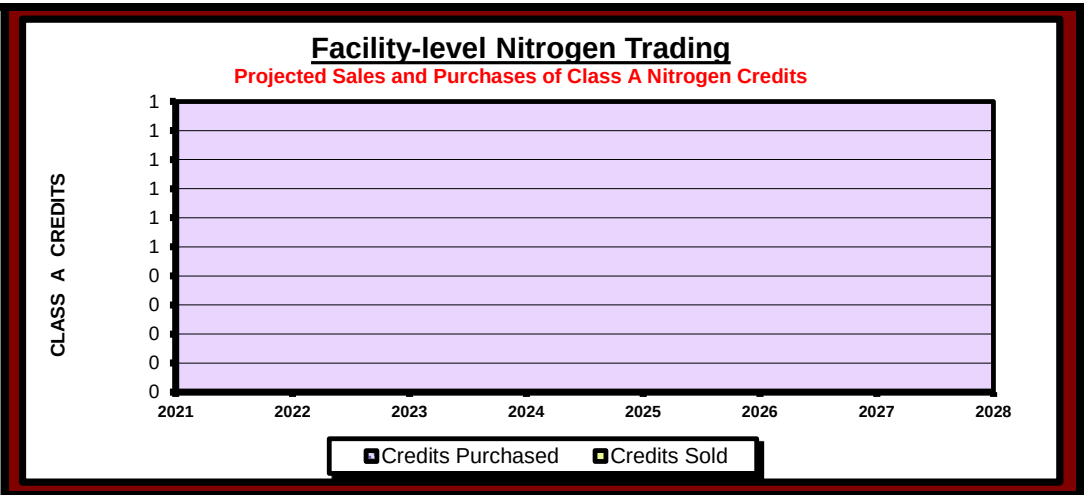


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Projected Flow (mgd)	10.16	10.33	10.33	10.50	10.50	10.68	10.86	11.04
Projected Avg. Annual Concentration (mg/L)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Discharged Load (end of pipe)	154,638	157,303	157,303	159,892	159,892	162,633	165,374	168,115
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	154,638	157,303	157,303	159,892	159,892	162,633	165,374	168,115
Delivered WLA	182,738	182,738	182,738	182,738	182,738	182,738	182,738	182,738
Expected Credits (delivered)	28,100	25,435	25,435	22,846	22,846	20,105	17,364	14,623
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	**28,100**	**25,435**	**25,435**	**22,846**	**22,846**	**20,105**	**17,364**	**14,623**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**28,100**	**25,435**	**25,435**	**22,846**	**22,846**	**20,105**	**17,364**	**14,623**

NITROGEN FACILITY SUMMARY

Chesterfield-Proctors Cr.

UPPER JAMES Trading Basin



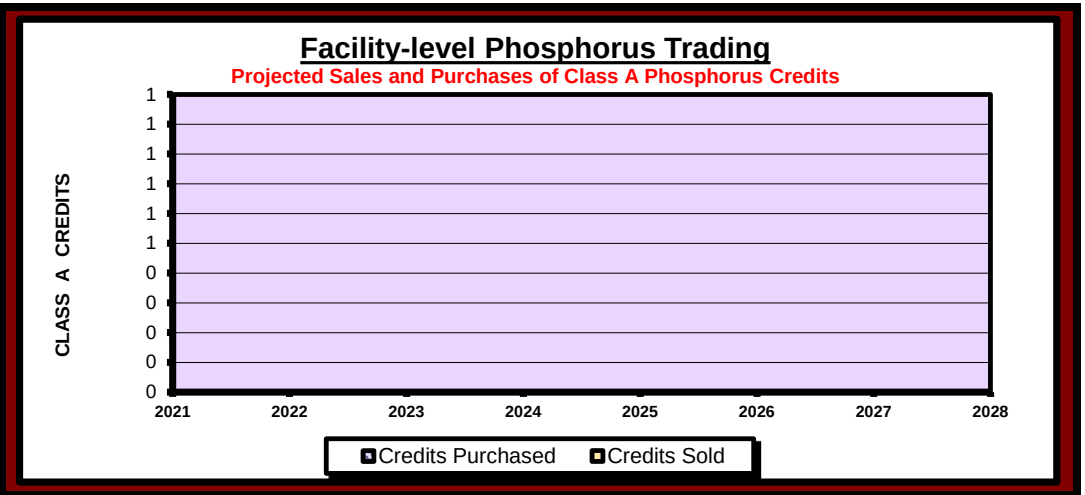
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
Projected Flow (mgd)	15.76	15.93	15.93	16.11	16.11	16.28	16.45	16.62
Projected Avg. Annual Concentration (mg/L)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Discharged Load (end of pipe)	239,914	242,579	242,579	245,320	245,320	247,909	250,497	253,086
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	239,914	242,579	242,579	245,320	245,320	247,909	250,497	253,086
Delivered WLA	411,151	411,151	411,151	411,151	411,151	411,151	411,151	411,151
Expected Credits (delivered)	171,237	168,572	168,572	165,831	165,831	163,242	160,654	158,065
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(50,000)	(50,000)	(50,000)	(50,000)	(50,000)	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**121,237**	**118,572**	**118,572**	**115,831**	**115,831**	**163,242**	**160,654**	**158,065**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**121,237**	**118,572**	**118,572**	**115,831**	**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

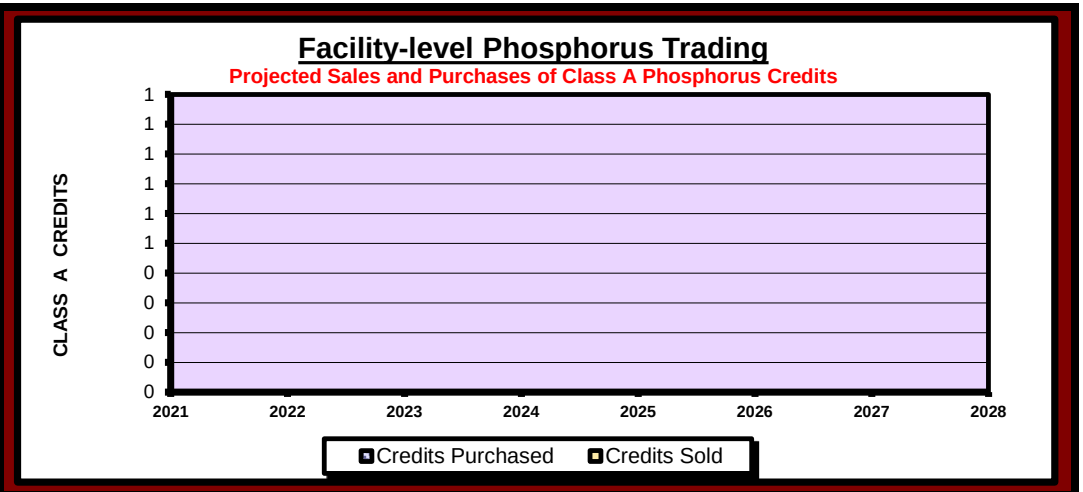


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Projected Flow (mgd)	10.16	10.33	10.33	10.50	10.50	10.68	10.86	11.04
Projected Avg. Annual Concentration (mg/L)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Discharged Load (end of pipe)	15,464	15,730	15,730	15,989	15,989	16,263	16,537	16,811
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	15,464	15,730	15,730	15,989	15,989	16,263	16,537	16,811
Delivered WLA	12,473	12,473	12,473	12,473	12,473	12,473	12,473	12,473
Expected Credits (delivered)	(2,991)	(3,257)	(3,257)	(3,516)	(3,516)	(3,790)	(4,064)	(4,338)
Transfers In (Out) within Owner Bubble	2,991	3,257	3,257	3,516	3,516	3,790	4,064	4,338
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

Chesterfield-Proctors Cr.

UPPER JAMES Trading Basin



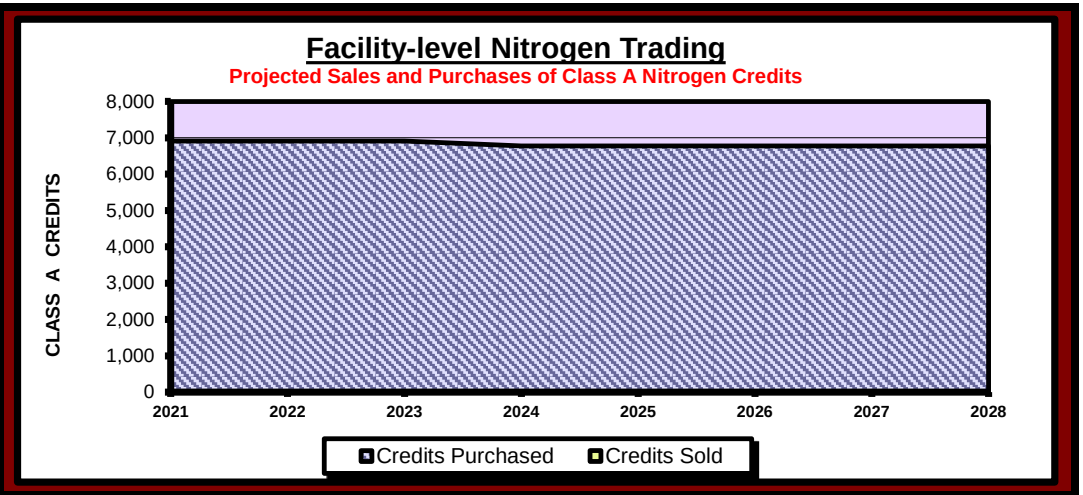
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
Projected Flow (mgd)	15.76	15.93	15.93	16.11	16.11	16.28	16.45	16.62
Projected Avg. Annual Concentration (mg/L)	0.55	0.55	0.55	0.55	0.50	0.50	0.50	0.50
Discharged Load (end of pipe)	26,391	26,684	26,684	26,985	24,532	24,791	25,050	25,309
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	26,391	26,684	26,684	26,985	24,532	24,791	25,050	25,309
Delivered WLA	33,344	33,344	33,344	33,344	33,344	33,344	33,344	33,344
Expected Credits (delivered)	6,953	6,660	6,660	6,359	8,812	8,553	8,294	8,035
Transfers In (Out) within Owner Bubble	(2,991)	(3,257)	(3,257)	(3,516)	(3,516)	(3,790)	(4,064)	(4,338)
Transfers In (Out) from Private Exchange*	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**3,922**	**3,363**	**3,363**	**2,803**	**5,256**	**4,723**	**4,190**	**3,657**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**3,922**	**3,363**	**3,363**	**2,803**	**5,256**	**4,723**	**4,190**	**3,657**

** Represents a Private Exchange of Credits with Dominion-Chesterfield*

NITROGEN FACILITY SUMMARY

Covington

UPPER JAMES Trading Basin

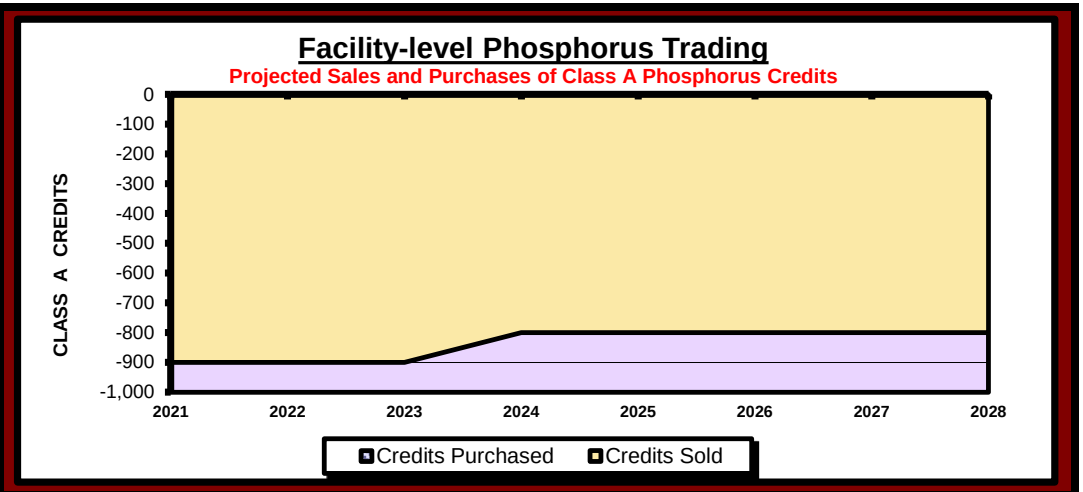


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Projected Flow (mgd)	2.10	2.10	2.10	2.20	2.20	2.20	2.20	2.20
Projected Avg. Annual Concentration (mg/L)	13.72	13.72	13.72	13.00	13.00	13.00	13.00	13.00
Discharged Load (end of pipe)	87,749	87,749	87,749	87,103	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	18,292	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)	(6,780)	(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)**	**(6,780)**	**(6,780)**	**(6,780)**	**(6,780)**	**(6,780)**
Class A Credit Sales (Purchases)	**(6,915)**	**(6,915)**	**(6,915)**	**(6,780)**	**(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

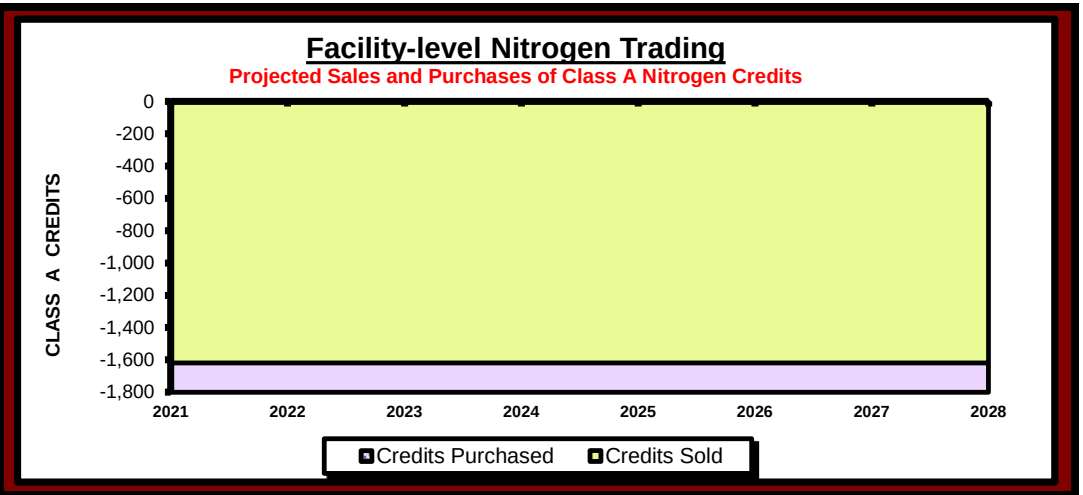


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Projected Flow (mgd)	2.10	2.10	2.10	2.20	2.20	2.20	2.20	2.20
Projected Avg. Annual Concentration (mg/L)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Discharged Load (end of pipe)	2,430	2,430	2,430	2,546	2,546	2,546	2,546	2,546
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	1,726	1,726	1,726	1,808	1,808	1,808	1,808	1,808
Delivered WLA	2,631	2,631	2,631	2,631	2,631	2,631	2,631	2,631
Expected Credits (delivered)	905	905	905	823	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	**905**	**905**	**905**	**823**	**823**	**823**	**823**	**823**
Class A Credit Sales (Purchases)	**900**	**900**	**900**	**800**	**800**	**800**	**800**	**800**
Expected Class B Credits	**5**	**5**	**5**	**23**	**23**	**23**	**23**	**23**

NITROGEN FACILITY SUMMARY

Crewe

UPPER JAMES Trading Basin

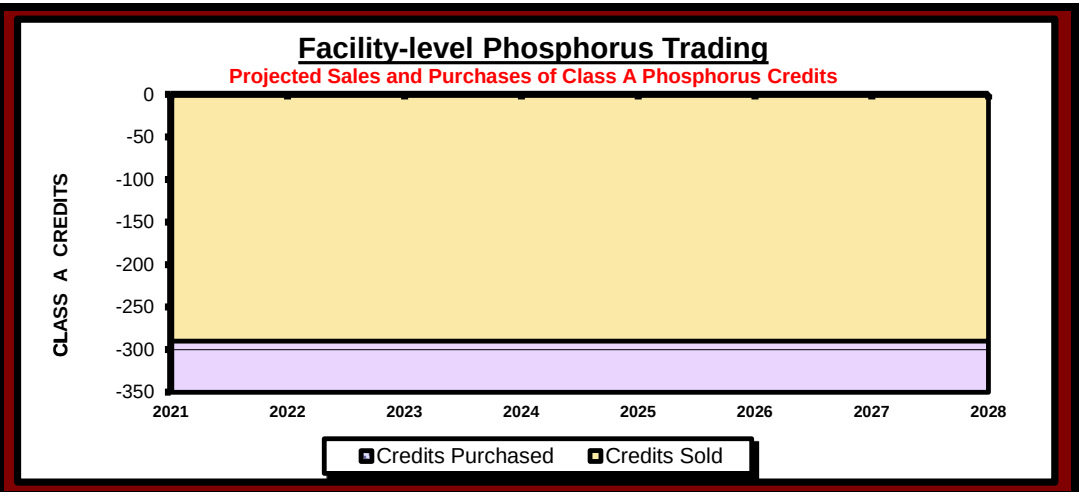


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Projected Flow (mgd)	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Projected Avg. Annual Concentration (mg/L)	3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80
Discharged Load (end of pipe)	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662
Delivery Factor	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Expected Load	665	665	665	665	665	665	665	665
Delivered WLA	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284
Expected Credits (delivered)	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619
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	**1,619**	**1,619**	**1,619**	**1,619**	**1,619**	**1,619**	**1,619**	**1,619**
Class A Credit Sales (Purchases)	**1,619**	**1,619**	**1,619**	**1,619**	**1,619**	**1,619**	**1,619**	**1,619**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

Crewe

UPPER JAMES Trading Basin

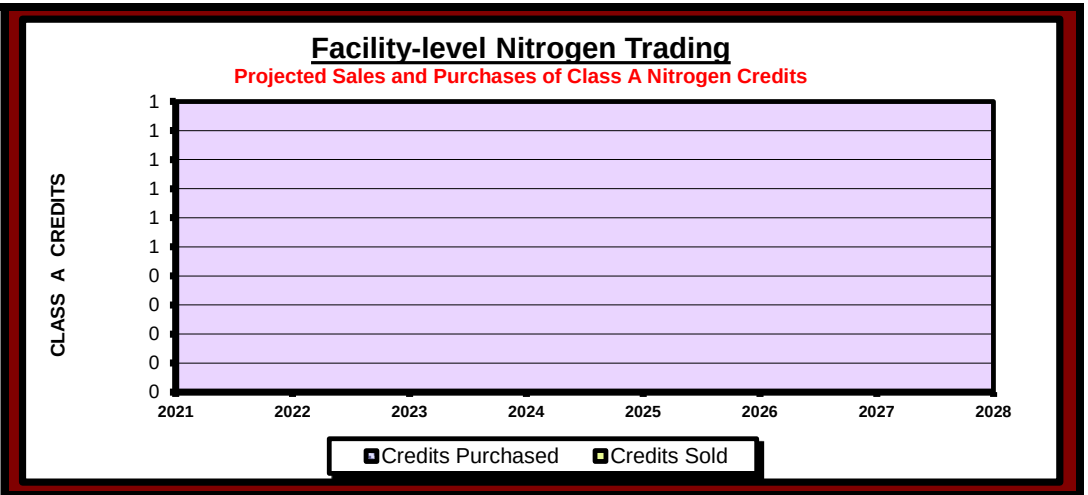


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Projected Flow (mgd)	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Projected Avg. Annual Concentration (mg/L)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Discharged Load (end of pipe)	70	70	70	70	70	70	70	70
Delivery Factor	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Expected Load	37	37	37	37	37	37	37	37
Delivered WLA	327	327	327	327	327	327	327	327
Expected Credits (delivered)	290	290	290	290	290	290	290	290
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	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**
Class A Credit Sales (Purchases)	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

Dominion-Chesterfield

UPPER JAMES Trading Basin



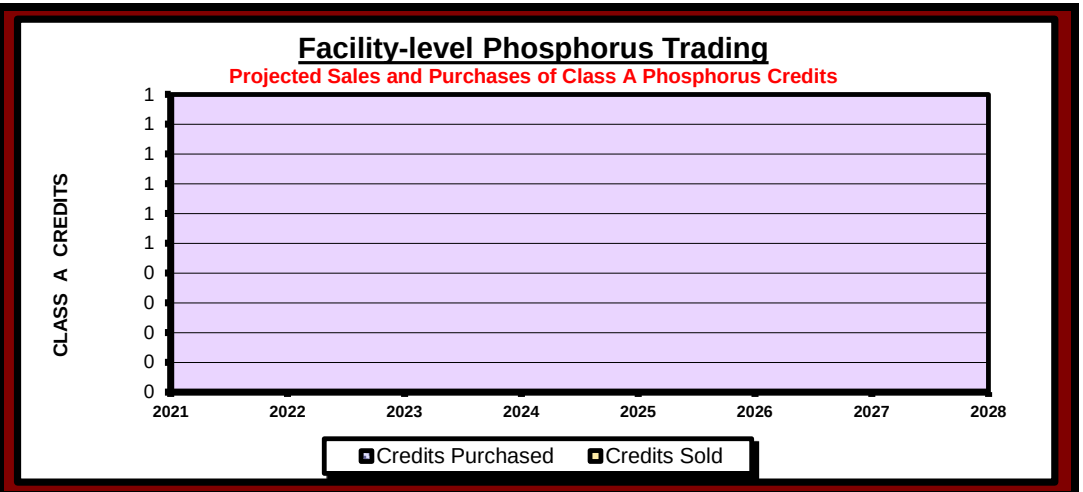
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
Projected Flow (mgd)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Projected Avg. Annual Concentration (mg/L)	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35
Discharged Load (end of pipe)	189,070	189,070	189,070	189,070	189,070	189,070	189,070	189,070
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	189,070	189,070	189,070	189,070	189,070	189,070	189,070	189,070
Delivered WLA*	243,099	243,099	243,099	243,099	243,099	243,099	243,099	243,099
Expected Credits (delivered)	54,029	54,029	54,029	54,029	54,029	54,029	54,029	54,029
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	**54,029**	**54,029**	**54,029**	**54,029**	**54,029**	**54,029**	**54,029**	**54,029**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**54,029**	**54,029**	**54,029**	**54,029**	**54,029**	**54,029**	**54,029**	**54,029**

** Reflects completed allocation transfer to Vastly/Tranlin (80,000 pounds) and expected transfer to Chesterfield County's Falling Creek facility (28,937 pounds)*

PHOSPHORUS FACILITY SUMMARY

Dominion-Chesterfield

UPPER JAMES Trading Basin



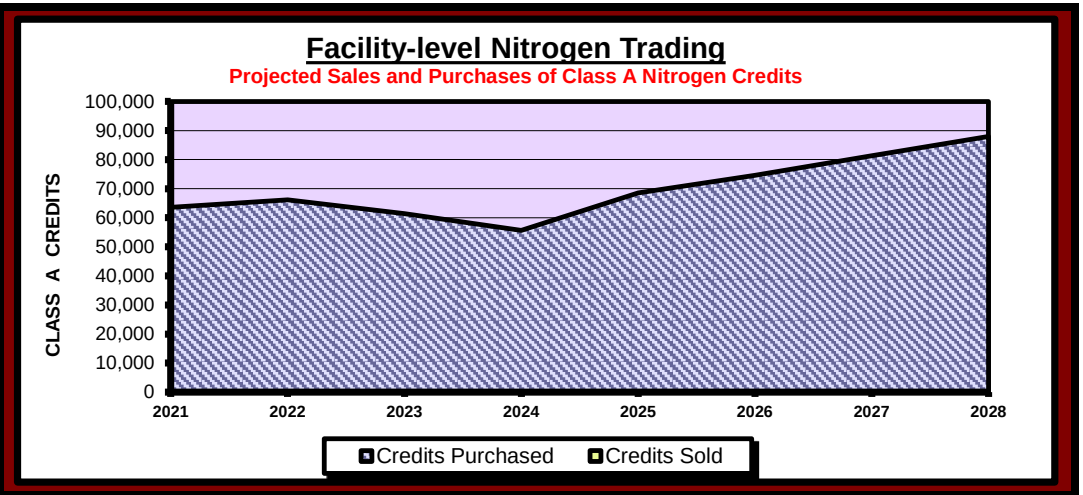
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
Projected Flow (mgd)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Projected Avg. Annual Concentration (mg/L)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Discharged Load (end of pipe)	210	210	210	210	210	210	210	210
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	210	210	210	210	210	210	210	210
Delivered WLA	170	170	170	170	170	170	170	170
Expected Credits (delivered)	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	40	40	40	40	40	40	40	40
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**

** Represents a Private Exchange of Credits with Chesterfield County*

NITROGEN FACILITY SUMMARY

DuPont-Spruance

UPPER JAMES Trading Basin

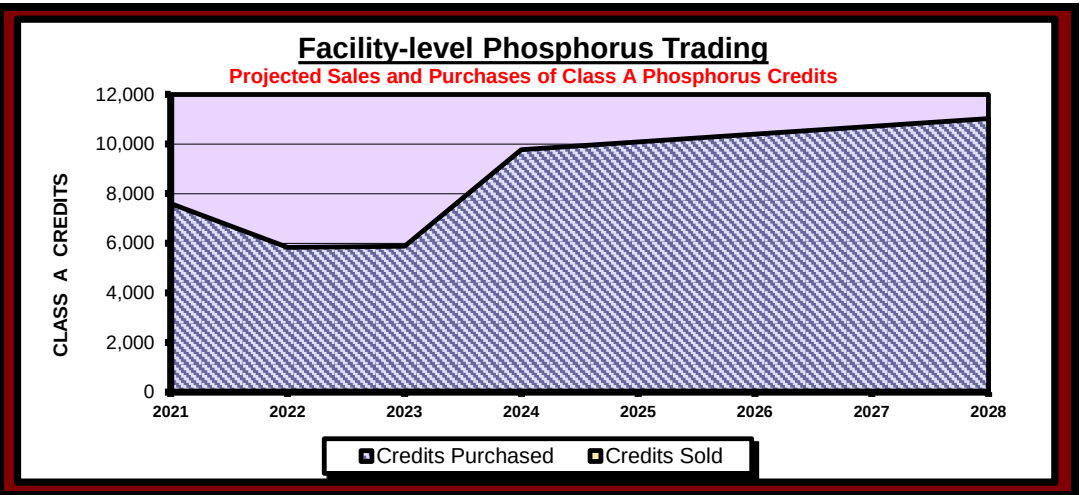


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33
Projected Flow (mgd)	33.07	33.56	34.01	32.64	27.10	26.93	26.76	26.59
Projected Avg. Annual Concentration (mg/L)	2.63	2.61	2.53	2.58	3.27	3.36	3.47	3.57
Discharged Load (end of pipe)	264,693	267,256	262,470	256,780	269,667	275,681	282,414	289,119
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	264,693	267,256	262,470	256,780	269,667	275,681	282,414	289,119
Delivered WLA	201,080	201,080	201,080	201,080	201,080	201,080	201,080	201,080
Expected Credits (delivered)	(63,613)	(66,176)	(61,390)	(55,700)	(68,587)	(74,601)	(81,334)	(88,039)
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	**(63,613)**	**(66,176)**	**(61,390)**	**(55,700)**	**(68,587)**	**(74,601)**	**(81,334)**	**(88,039)**
Class A Credit Sales (Purchases)	**(63,613)**	**(66,176)**	**(61,390)**	**(55,700)**	**(68,587)**	**(74,601)**	**(81,334)**	**(88,039)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

DuPont-Spruance

UPPER JAMES Trading Basin

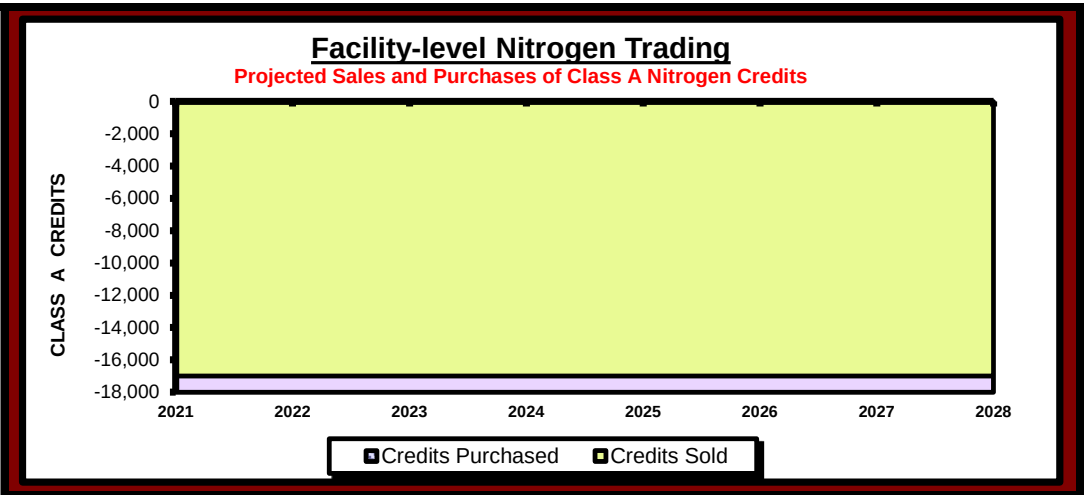


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33
Projected Flow (mgd)	33.07	33.56	34.01	32.64	27.10	26.93	26.76	26.59
Projected Avg. Annual Concentration (mg/L)	0.14	0.12	0.12	0.16	0.20	0.20	0.21	0.21
Discharged Load (end of pipe)	13,939	12,173	12,222	16,115	16,426	16,741	17,051	17,363
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	13,939	12,173	12,222	16,115	16,426	16,741	17,051	17,363
Delivered WLA	6,339	6,339	6,339	6,339	6,339	6,339	6,339	6,339
Expected Credits (delivered)	(7,600)	(5,834)	(5,883)	(9,776)	(10,087)	(10,402)	(10,712)	(11,024)
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	**(7,600)**	**(5,834)**	**(5,883)**	**(9,776)**	**(10,087)**	**(10,402)**	**(10,712)**	**(11,024)**
Class A Credit Sales (Purchases)	**(7,600)**	**(5,834)**	**(5,883)**	**(9,776)**	**(10,087)**	**(10,402)**	**(10,712)**	**(11,024)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

Georgia-Pacific

UPPER JAMES Trading Basin

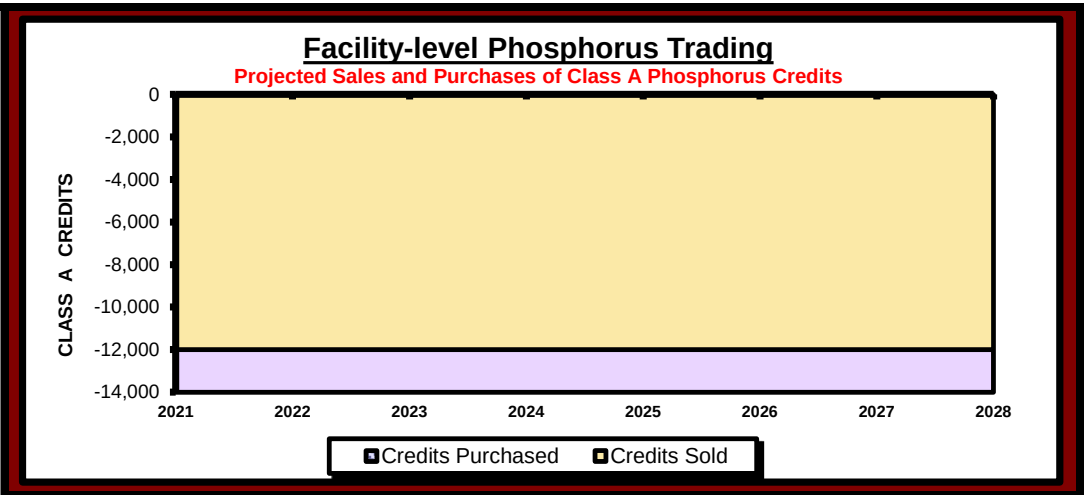


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	10.87	10.87	10.87	10.87	10.87	10.87	10.87	10.87
Projected Flow (mgd)	8.75	8.75	8.75	9.25	9.25	9.25	9.25	9.25
Projected Avg. Annual Concentration (mg/L)	3.25	3.25	3.25	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)	86,608	86,608	86,608	84,514	84,514	84,514	84,514	84,514
Delivery Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Expected Load	51,965	51,965	51,965	50,709	50,709	50,709	50,709	50,709
Delivered WLA	73,493	73,493	73,493	73,493	73,493	73,493	73,493	73,493
Expected Credits (delivered)	21,528	21,528	21,528	22,784	22,784	22,784	22,784	22,784
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	**21,528**	**21,528**	**21,528**	**22,784**	**22,784**	**22,784**	**22,784**	**22,784**
Class A Credit Sales (Purchases)	**17,000**	**17,000**	**17,000**	**17,000**	**17,000**	**17,000**	**17,000**	**17,000**
Expected Class B Credits	**4,528**	**4,528**	**4,528**	**5,784**	**5,784**	**5,784**	**5,784**	**5,784**

PHOSPHORUS FACILITY SUMMARY

Georgia-Pacific

UPPER JAMES Trading Basin

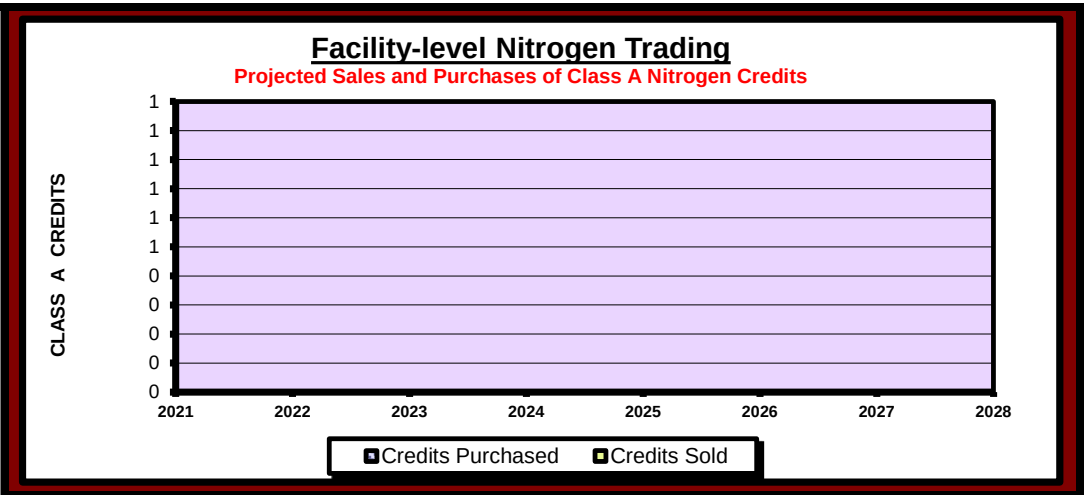


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	10.87	10.87	10.87	10.87	10.87	10.87	10.87	10.87
Projected Flow (mgd)	8.75	8.75	8.75	9.25	9.25	9.25	9.25	9.25
Projected Avg. Annual Concentration (mg/L)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Discharged Load (end of pipe)	18,654	18,654	18,654	19,720	19,720	19,720	19,720	19,720
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	13,244	13,244	13,244	14,001	14,001	14,001	14,001	14,001
Delivered WLA	28,594	28,594	28,594	28,594	28,594	28,594	28,594	28,594
Expected Credits (delivered)	15,350	15,350	15,350	14,593	14,593	14,593	14,593	14,593
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	**15,350**	**15,350**	**15,350**	**14,593**	**14,593**	**14,593**	**14,593**	**14,593**
Class A Credit Sales (Purchases)	**12,000**	**12,000**	**12,000**	**12,000**	**12,000**	**12,000**	**12,000**	**12,000**
Expected Class B Credits	**3,350**	**3,350**	**3,350**	**2,593**	**2,593**	**2,593**	**2,593**	**2,593**

NITROGEN FACILITY SUMMARY

Greif Packaging

UPPER JAMES Trading Basin

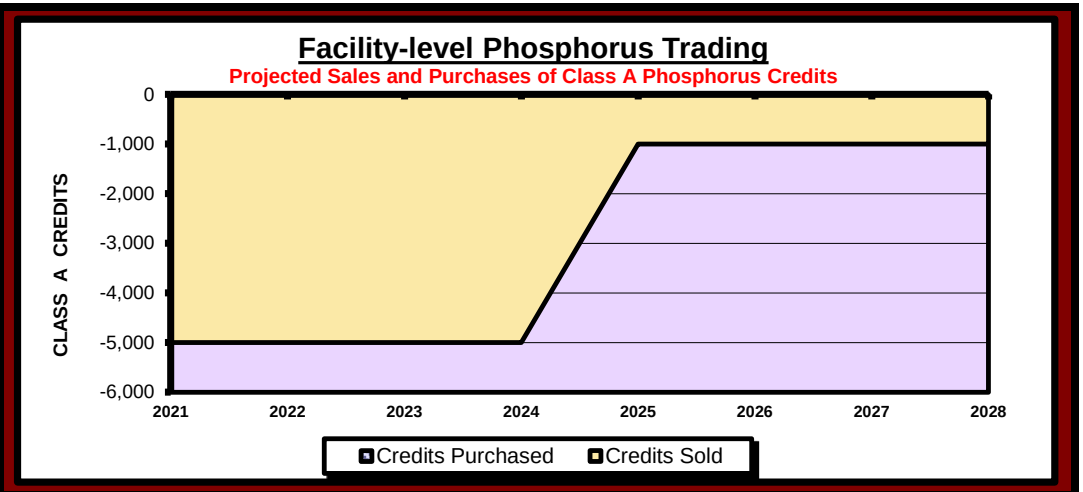


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Projected Flow (mgd)	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Projected Avg. Annual Concentration (mg/L)	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70
Discharged Load (end of pipe)	73,246	73,246	73,246	73,246	73,246	73,246	73,246	73,246
Delivery Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Expected Load	46,877	46,877	46,877	46,877	46,877	46,877	46,877	46,877
Delivered WLA	46,877	46,877	46,877	46,877	46,877	46,877	46,877	46,877
Expected Credits (delivered)	0	0	0	0	0	0	0	0
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**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

Greif Packaging

UPPER JAMES Trading Basin

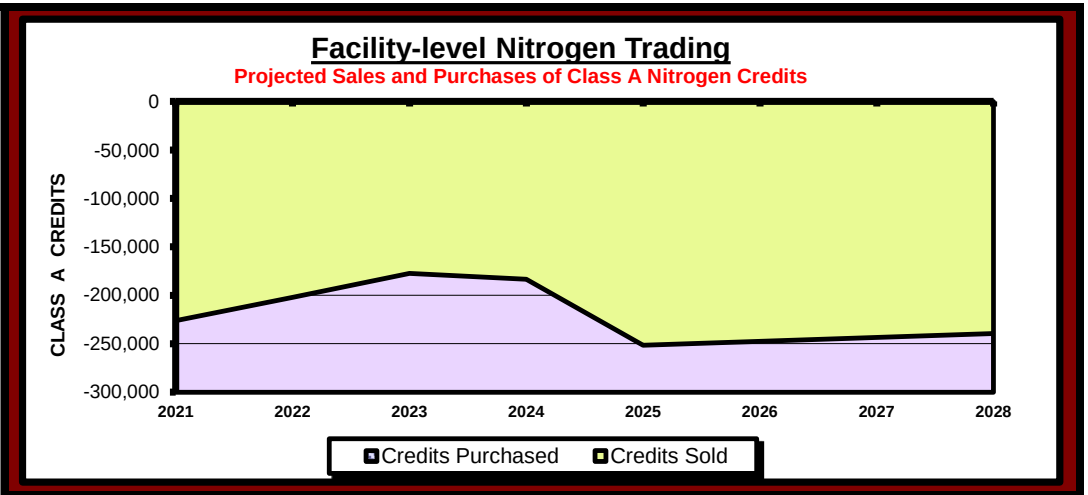


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Projected Flow (mgd)	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Projected Avg. Annual Concentration (mg/L)	0.80	0.80	0.80	0.80	1.10	1.10	1.10	1.10
Discharged Load (end of pipe)	15,837	15,837	15,837	15,837	21,776	21,776	21,776	21,776
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	11,244	11,244	11,244	11,244	15,461	15,461	15,461	15,461
Delivered WLA	17,098	17,098	17,098	17,098	17,098	17,098	17,098	17,098
Expected Credits (delivered)	5,854	5,854	5,854	5,854	1,637	1,637	1,637	1,637
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	**5,854**	**5,854**	**5,854**	**5,854**	**1,637**	**1,637**	**1,637**	**1,637**
Class A Credit Sales (Purchases)	**5,000**	**5,000**	**5,000**	**5,000**	**1,000**	**1,000**	**1,000**	**1,000**
Expected Class B Credits	**854**	**854**	**854**	**854**	**637**	**637**	**637**	**637**

NITROGEN FACILITY SUMMARY

Henrico Co

UPPER JAMES Trading Basin

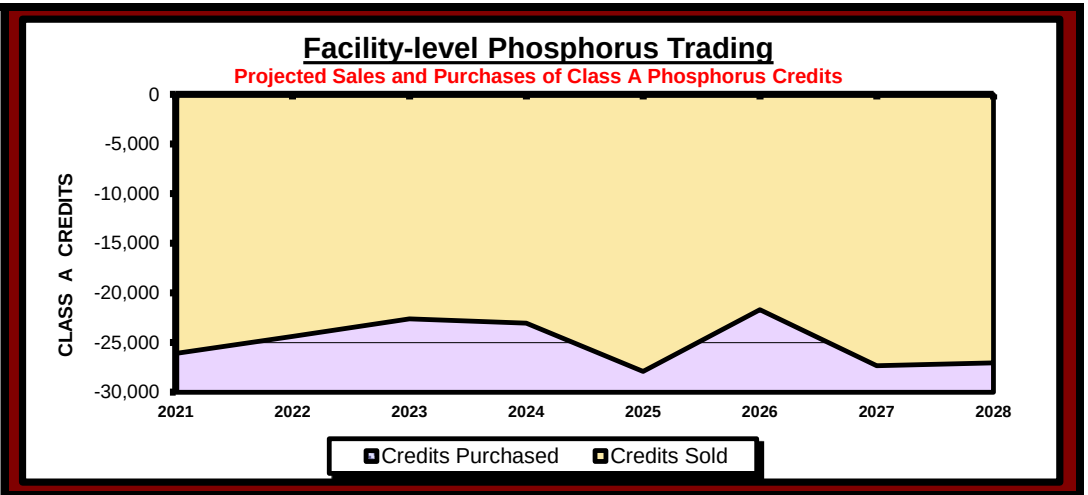


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
Projected Flow (mgd)	59.69	61.48	63.32	62.87	57.80	58.10	58.40	58.70
Projected Avg. Annual Concentration (mg/L)	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90
Discharged Load (end of pipe)	890,768	917,481	944,940	938,224	862,564	867,040	871,517	875,994
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	890,768	917,481	944,940	938,224	862,564	867,040	871,517	875,994
Delivered WLA	1,142,085	1,142,085	1,142,085	1,142,085	1,142,085	1,142,085	1,142,085	1,142,085
Expected Credits (delivered)	251,317	224,604	197,145	203,861	279,521	275,045	270,568	266,091
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	**251,317**	**224,604**	**197,145**	**203,861**	**279,521**	**275,045**	**270,568**	**266,091**
Class A Credit Sales (Purchases)	**226,185**	**202,144**	**177,431**	**183,475**	**251,569**	**247,541**	**243,511**	**239,482**
Expected Class B Credits	**25,132**	**22,460**	**19,714**	**20,386**	**27,952**	**27,504**	**27,057**	**26,609**

PHOSPHORUS FACILITY SUMMARY

Henrico Co

UPPER JAMES Trading Basin

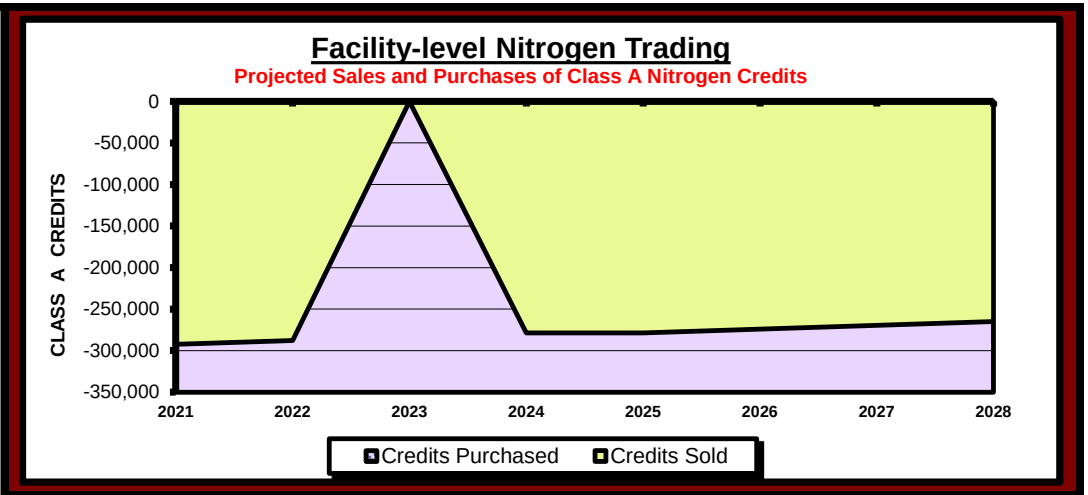


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
Projected Flow (mgd)	59.69	61.48	63.32	62.87	57.80	58.10	58.40	58.70
Projected Avg. Annual Concentration (mg/L)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Discharged Load (end of pipe)	63,626	65,534	67,496	67,016	61,612	61,931	62,251	62,571
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	63,626	65,534	67,496	67,016	61,612	61,931	62,251	62,571
Delivered WLA	92,623	92,623	92,623	92,623	92,623	92,623	92,623	92,623
Expected Credits (delivered)	28,997	27,089	25,127	25,607	31,011	30,692	30,372	30,052
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	**28,997**	**27,089**	**25,127**	**25,607**	**31,011**	**30,692**	**30,372**	**30,052**
Class A Credit Sales (Purchases)	**26,097**	**24,380**	**22,614**	**23,046**	**27,910**	**21,692**	**27,335**	**27,047**
Expected Class B Credits	**2,900**	**2,709**	**2,513**	**2,561**	**3,101**	**9,000**	**3,037**	**3,005**

NITROGEN FACILITY SUMMARY

Hopewell Water Renewal

UPPER JAMES Trading Basin

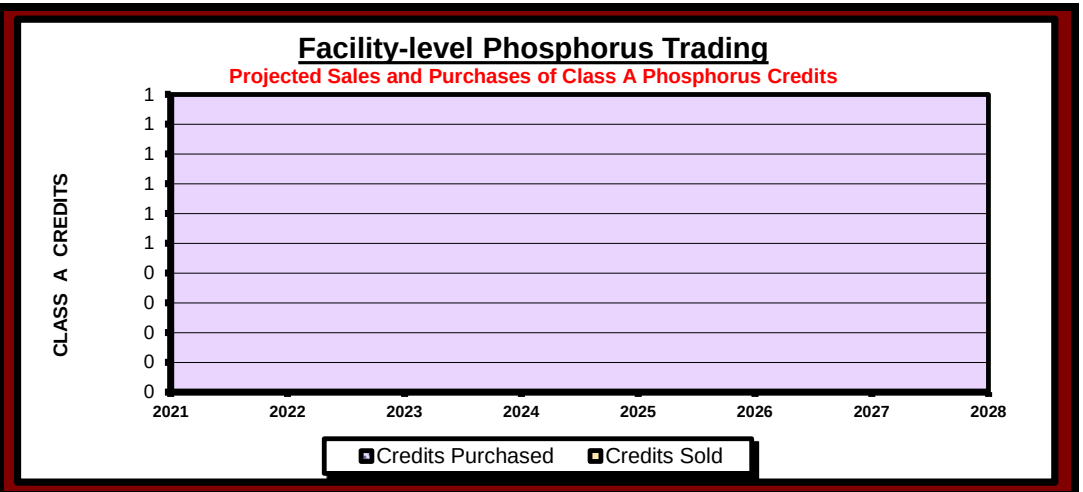


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Projected Flow (mgd)	27.20	27.40	27.60	27.80	27.80	28.00	28.20	28.40
Projected Avg. Annual Concentration (mg/L)	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Discharged Load (end of pipe)	1,242,588	1,251,725	1,260,862	1,269,999	1,269,999	1,279,135	1,288,272	1,297,409
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,242,588	1,251,725	1,260,862	1,269,999	1,269,999	1,279,135	1,288,272	1,297,409
Delivered WLA	1,827,336	1,827,336	1,827,336	1,827,336	1,827,336	1,827,336	1,827,336	1,827,336
Expected Credits (delivered)	584,748	575,611	566,474	557,337	557,337	548,201	539,064	529,927
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	**584,748**	**575,611**	**566,474**	**557,337**	**557,337**	**548,201**	**539,064**	**529,927**
Class A Credit Sales (Purchases)	**292,374**	**287,805**	**0**	**278,669**	**278,669**	**274,101**	**269,532**	**264,964**
Expected Class B Credits	**292,374**	**287,806**	**566,474**	**278,668**	**278,668**	**274,100**	**269,532**	**264,963**

PHOSPHORUS FACILITY SUMMARY

Hopewell Water Renewal

UPPER JAMES Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Projected Flow (mgd)	27.20	27.40	27.60	27.80	27.80	28.00	28.20	28.40
Projected Avg. Annual Concentration (mg/L)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Discharged Load (end of pipe)	57,987	58,414	58,840	59,267	59,267	59,693	60,119	60,546
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	57,987	58,414	58,840	59,267	59,267	59,693	60,119	60,546
Delivered WLA	61,749	61,749	61,749	61,749	61,749	61,749	61,749	61,749
Expected Credits (delivered)	3,762	3,335	2,909	2,482	2,482	2,056	1,630	1,203
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	**3,762**	**3,335**	**2,909**	**2,482**	**2,482**	**2,056**	**1,630**	**1,203**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**3,762**	**3,335**	**2,909**	**2,482**	**2,482**	**2,056**	**1,630**	**1,203**

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); (5) an offset allocation provided to the Chesapeake Tunnel Joint Venture from 2019 through 2023 (100 lbs/yr TN and 550 lbs/yr TP); and (6) an offset allocation provided to the Hampton Roads Connector Partnership from 2020 through 2025 (4,000 lbs/yr TN and 2,000 lbs/yr TP). Beginning in 2020, HRSD further reduced its WLA by 100 lbs/yr TN and 10 lbs/yr TP, on a permanent basis, to provide an off-site credit reserve for HRSD's land disturbance projects.

NITROGEN Credits	Exchange 5-year Planning Period					Future Projections		
Aggregate WLA	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Delivered WLA (Bubble)	**4,549,300**	**3,549,300**	**3,549,400**	**3,549,400**	**3,549,400**			
Projected Delivered Loads	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Army Base	142,927	140,033	140,274	143,196	142,839			
Boat Harbor	1,167,414	1,313,407	1,305,253	1,323,973	1,300,639			
Ches/Eliz*	1,463,063	-	-	-	-			
James River	360,580	362,100	361,496	366,075	361,377			
Lawnes Point	-	-	-	-	-			
Nansemond	421,584	294,975	296,245	292,735	284,378			
VIP	424,199	432,080	422,161	419,066	412,100			
Williamsburg	282,921	277,068	272,659	272,724	270,597			
TOTAL Delivered Loads	**4,262,688**	**2,819,663**	**2,798,088**	**2,817,769**	**2,771,930**			
Net Credits Available	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Expected Credits	**286,612**	**729,637**	**751,312**	**731,631**	**777,470**			
Private Exchanges **	(1)	(1)	(2,678)	(2,678)	(2,678)			
Expected Net Credits	**286,611**	**729,636**	**748,634**	**728,953**	**774,792**			
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**			
Expected Class B Credits	*286,611*	*729,636*	*748,634*	*728,953*	*774,792*			
WQIF-Held Credits	*0*	*0*	*0*	*0*	*0*			

PHOSPHORUS Credits	Exchange 5-year Planning Period					Future Projections		
Aggregate WLA	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Delivered WLA (Bubble)	**315,876**	**315,876**	**316,426**	**316,426**	**316,426**			
Projected Delivered Loads	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Army Base	25,409	24,895	24,938	25,457	25,394			
Boat Harbor	35,920	36,232	36,007	36,523	35,880			
Ches/Eliz*	49,689	-	-	-	-			
James River	32,052	32,187	32,133	32,540	32,122			
Lawnes Point	-	-	-	-	-			
Nansemond	67,453	70,794	71,099	70,256	68,251			
VIP	75,413	76,814	75,051	74,501	73,262			
Williamsburg	22,634	22,165	21,813	21,818	21,648			
TOTAL Delivered Loads	**308,570**	**263,087**	**261,041**	**261,095**	**256,557**			
Net Credits Available	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Expected Credits	**7,306**	**52,789**	**55,385**	**55,331**	**59,869**			
Private Exchanges **	(1)	(1)	(620)	(620)	(620)			
Expected Net Credits	**7,305**	**52,788**	**54,765**	**54,711**	**59,249**			
Class A Sales (Purchases)	**0**	**0**	**0**	**0**	**0**			
Expected Class B Credits	*7,305*	*52,788*	*54,765*	*54,711*	*59,249*			
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 and other private trades to offset MS4 requirements*

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:
__X__ 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.

_X__ 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?
__X__ NO _____ YES

2. Is permittee implementing a capital project to comply?
_____ NO __X__ 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.)

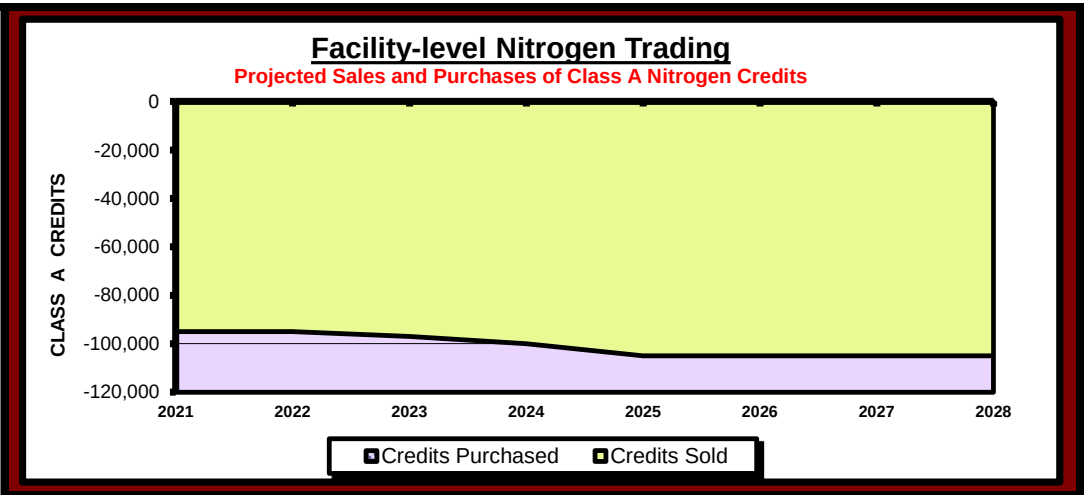
COMPLETE FLOW DIVERSIONS TO OTHER HRSD REGIONAL FACILITIES: June 30, 2022

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

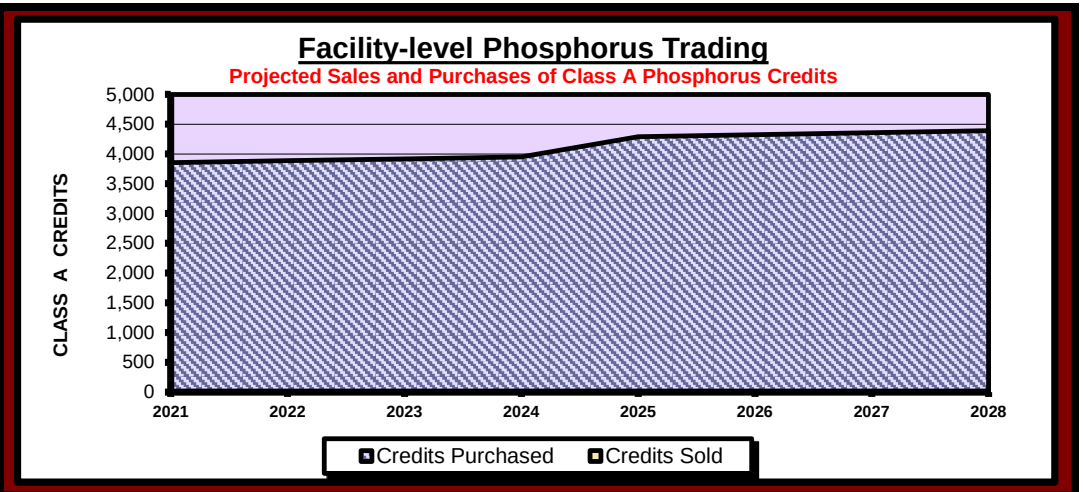


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
Projected Flow (mgd)	13.90	13.92	13.94	13.96	13.98	14.00	14.02	14.04
Projected Avg. Annual Concentration (mg/L)	7.94	7.94	7.90	7.90	7.90	7.90	7.90	7.90
Discharged Load (end of pipe)	336,126	336,610	335,395	335,877	336,358	336,839	337,320	337,801
Delivery Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Expected Load	215,121	215,430	214,653	214,961	215,269	215,577	215,885	216,193
Delivered WLA	343,052	343,052	343,052	343,052	343,052	343,052	343,052	343,052
Expected Credits (delivered)	127,931	127,622	128,399	128,091	127,783	127,475	127,167	126,859
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	**127,931**	**127,622**	**128,399**	**128,091**	**127,783**	**127,475**	**127,167**	**126,859**
Class A Credit Sales (Purchases)	**95,000**	**95,000**	**97,000**	**100,000**	**105,000**	**105,000**	**105,000**	**105,000**
Expected Class B Credits	**32,931**	**32,622**	**31,399**	**28,091**	**22,783**	**22,475**	**22,167**	**21,859**

PHOSPHORUS FACILITY SUMMARY

Lynchburg

UPPER JAMES Trading Basin

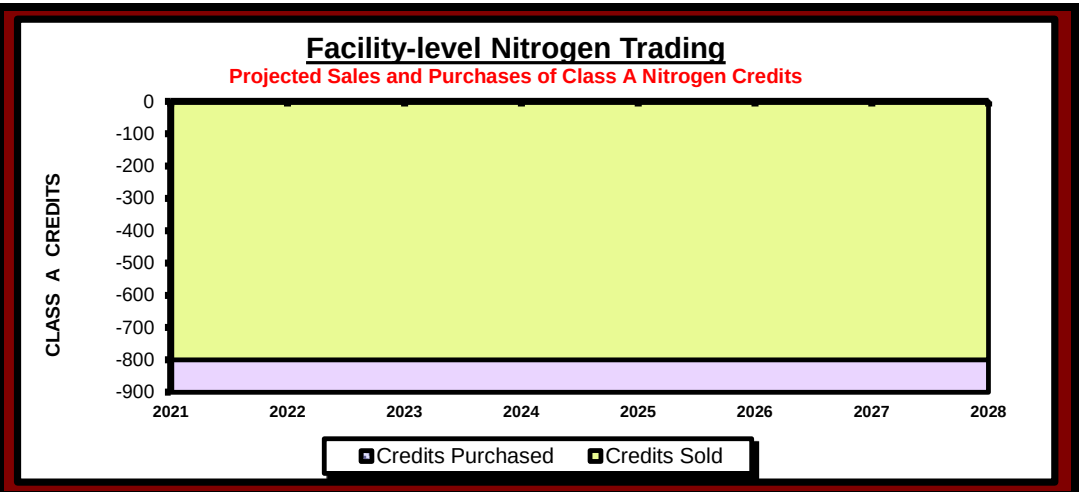


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
Projected Flow (mgd)	13.90	13.92	13.94	13.96	13.98	14.00	14.02	14.04
Projected Avg. Annual Concentration (mg/L)	0.77	0.77	0.77	0.77	0.78	0.78	0.78	0.78
Discharged Load (end of pipe)	32,597	32,644	32,690	32,737	33,210	33,258	33,305	33,353
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	23,144	23,177	23,210	23,244	23,579	23,613	23,647	23,680
Delivered WLA	19,290	19,290	19,290	19,290	19,290	19,290	19,290	19,290
Expected Credits (delivered)	(3,854)	(3,887)	(3,920)	(3,954)	(4,289)	(4,323)	(4,357)	(4,390)
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	**(3,854)**	**(3,887)**	**(3,920)**	**(3,954)**	**(4,289)**	**(4,323)**	**(4,357)**	**(4,390)**
Class A Credit Sales (Purchases)	**(3,854)**	**(3,887)**	**(3,920)**	**(3,954)**	**(4,289)**	**(4,323)**	**(4,357)**	**(4,390)**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NITROGEN FACILITY SUMMARY

MSA-Lexington

UPPER JAMES Trading Basin

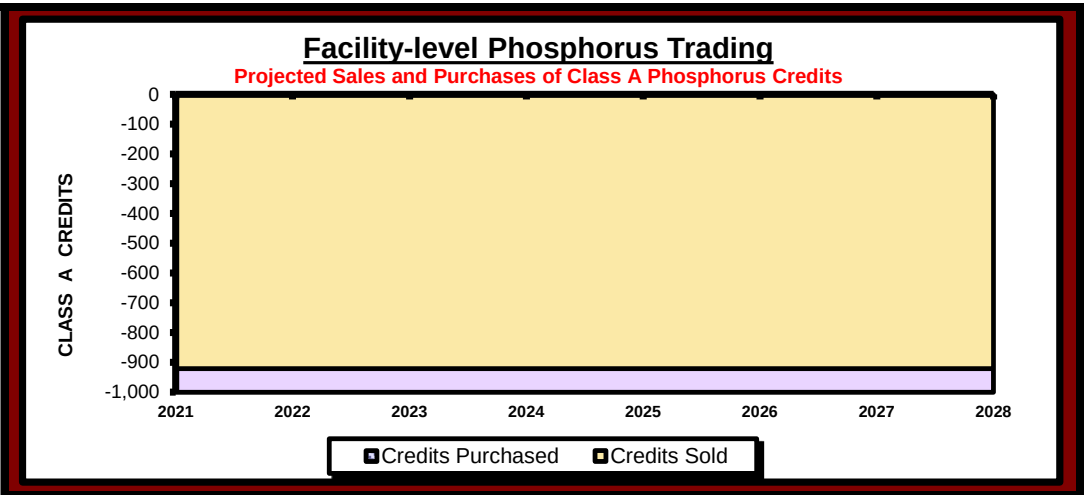


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Projected Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Avg. Annual Concentration (mg/L)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Discharged Load (end of pipe)	15,228	15,228	15,228	15,228	15,228	15,228	15,228	15,228
Delivery Factor	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Expected Load	4,721	4,721	4,721	4,721	4,721	4,721	4,721	4,721
Delivered WLA	16,994	16,994	16,994	16,994	16,994	16,994	16,994	16,994
Expected Credits (delivered)	12,273	12,273	12,273	12,273	12,273	12,273	12,273	12,273
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	**12,273**	**12,273**	**12,273**	**12,273**	**12,273**	**12,273**	**12,273**	**12,273**
Class A Credit Sales (Purchases)	**800**	**800**	**800**	**800**	**800**	**800**	**800**	**800**
Expected Class B Credits	**11,473**	**11,473**	**11,473**	**11,473**	**11,473**	**11,473**	**11,473**	**11,473**

PHOSPHORUS FACILITY SUMMARY

MSA-Lexington

UPPER JAMES Trading Basin

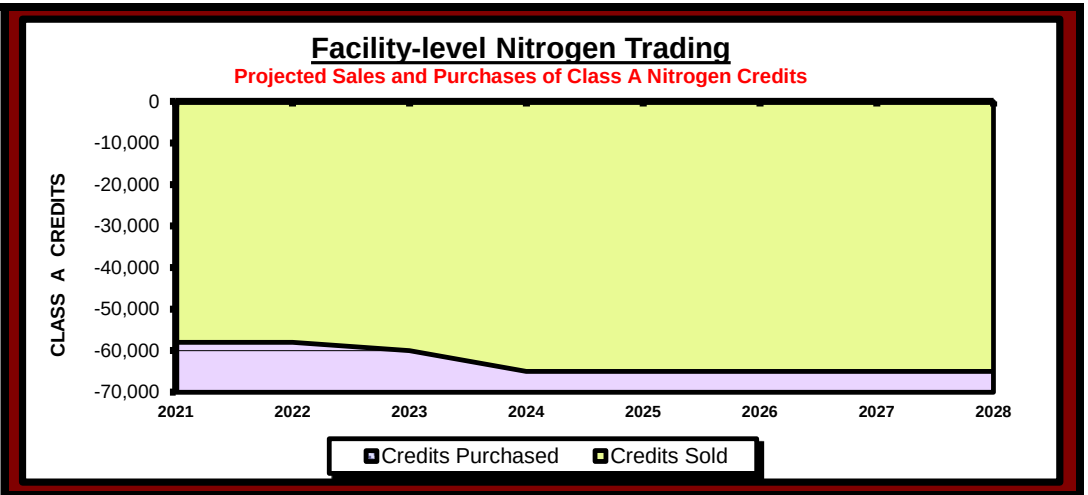


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Projected Flow (mgd)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	914	914	914	914	914	914	914	914
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	649	649	649	649	649	649	649	649
Delivered WLA	2,631	2,631	2,631	2,631	2,631	2,631	2,631	2,631
Expected Credits (delivered)	1,982	1,982	1,982	1,982	1,982	1,982	1,982	1,982
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	**1,982**	**1,982**	**1,982**	**1,982**	**1,982**	**1,982**	**1,982**	**1,982**
Class A Credit Sales (Purchases)	**921**	**921**	**921**	**921**	**921**	**921**	**921**	**921**
Expected Class B Credits	**1,061**	**1,061**	**1,061**	**1,061**	**1,061**	**1,061**	**1,061**	**1,061**

NITROGEN FACILITY SUMMARY

Philip Morris

UPPER JAMES Trading Basin

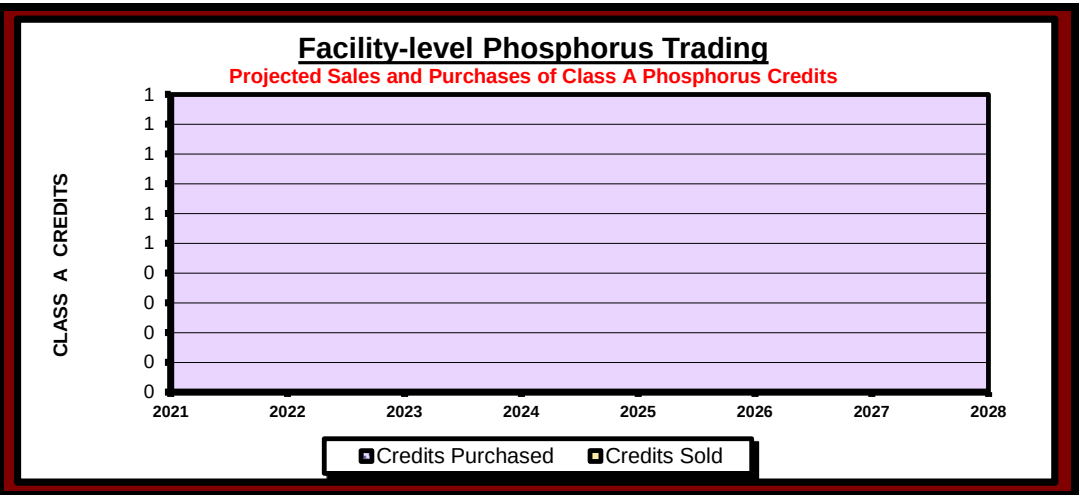


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
Projected Flow (mgd)	1.20	1.20	1.00	1.00	1.00	1.00	1.00	1.00
Projected Avg. Annual Concentration (mg/L)	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Discharged Load (end of pipe)	54,820	54,820	45,683	45,683	45,683	45,683	45,683	45,683
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	54,820	54,820	45,683	45,683	45,683	45,683	45,683	45,683
Delivered WLA	139,724	139,724	139,724	139,724	139,724	139,724	139,724	139,724
Expected Credits (delivered)	84,904	84,904	94,041	94,041	94,041	94,041	94,041	94,041
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	**84,904**	**84,904**	**94,041**	**94,041**	**94,041**	**94,041**	**94,041**	**94,041**
Class A Credit Sales (Purchases)	**58,000**	**58,000**	**60,000**	**65,000**	**65,000**	**65,000**	**65,000**	**65,000**
Expected Class B Credits	**26,904**	**26,904**	**34,041**	**29,041**	**29,041**	**29,041**	**29,041**	**29,041**

PHOSPHORUS FACILITY SUMMARY

Philip Morris

UPPER JAMES Trading Basin

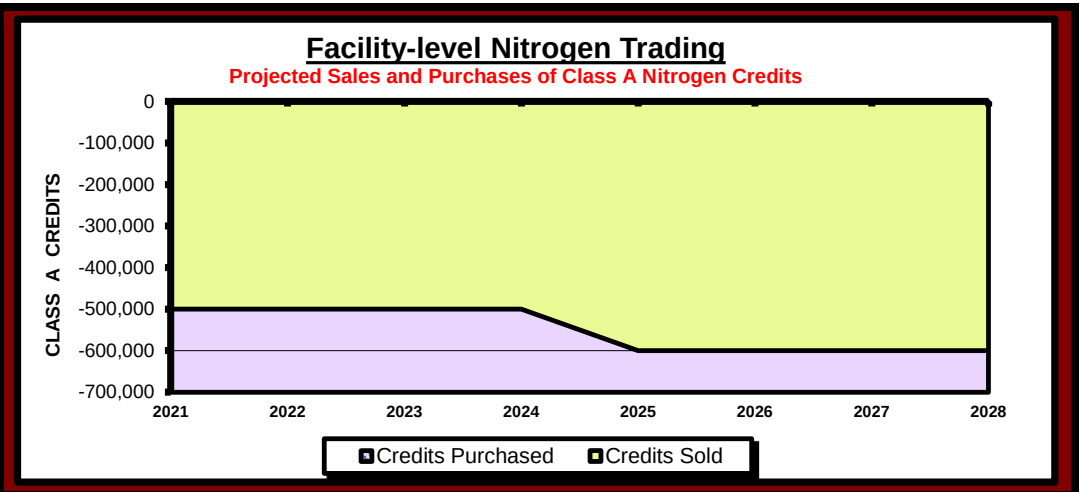


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
Projected Flow (mgd)	1.20	1.20	1.00	1.00	1.00	1.00	1.00	1.00
Projected Avg. Annual Concentration (mg/L)	0.50	0.50	0.60	0.60	0.60	0.60	0.60	0.60
Discharged Load (end of pipe)	1,827	1,827	1,827	1,827	1,827	1,827	1,827	1,827
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,827	1,827	1,827	1,827	1,827	1,827	1,827	1,827
Delivered WLA	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149
Expected Credits (delivered)	322	322	322	322	322	322	322	322
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	**322**	**322**	**322**	**322**	**322**	**322**	**322**	**322**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**322**	**322**	**322**	**322**	**322**	**322**	**322**	**322**

NITROGEN FACILITY SUMMARY

Richmond

UPPER JAMES Trading Basin



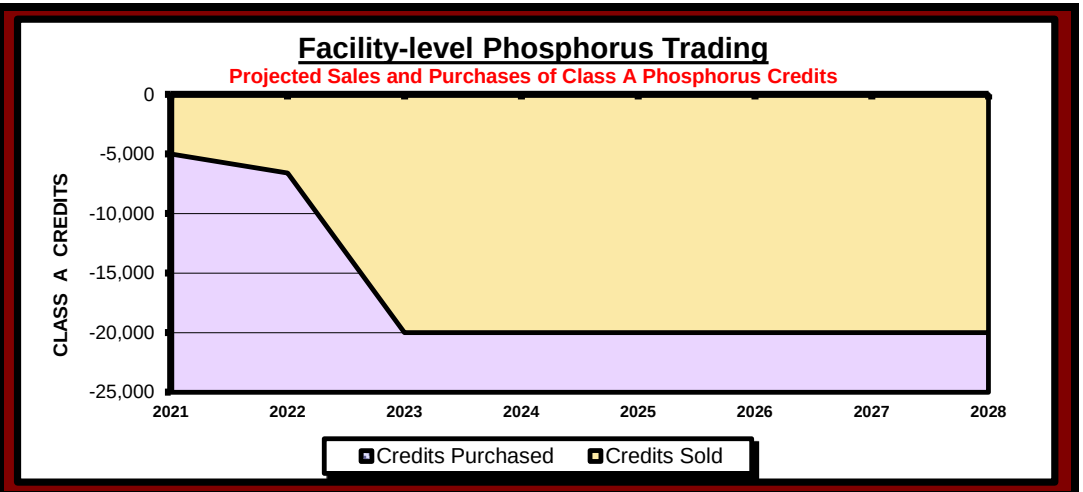
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Projected Flow (mgd)	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	3.75	3.50	3.00	3.00	3.00
Discharged Load (end of pipe)	548,201	548,201	548,201	513,938	479,676	411,151	411,151	411,151
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	548,201	548,201	548,201	513,938	479,676	411,151	411,151	411,151
Delivered WLA*	1,093,652	1,093,652	1,093,652	1,093,652	1,093,652	1,093,652	1,093,652	1,093,652
Expected Credits (delivered)	545,451	545,451	545,451	579,714	613,976	682,501	682,501	682,501
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange**	0	0	0	(5)	(5)	(5)	(5)	(5)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**545,451**	**545,451**	**545,451**	**579,709**	**613,971**	**682,496**	**682,496**	**682,496**
Class A Credit Sales (Purchases)	**500,000**	**500,000**	**500,000**	**500,000**	**600,000**	**600,000**	**600,000**	**600,000**
Expected Class B Credits	**45,451**	**45,451**	**45,451**	**79,709**	**13,971**	**82,496**	**82,496**	**82,496**

** Reflects allocation transfer to the Oilville WWTP of 2,750 delivered pounds of TN based on agreement with Goochland County*
*** Represents Credits used to meet City of Richmond stormwater requirements*

PHOSPHORUS FACILITY SUMMARY

Richmond

UPPER JAMES Trading Basin



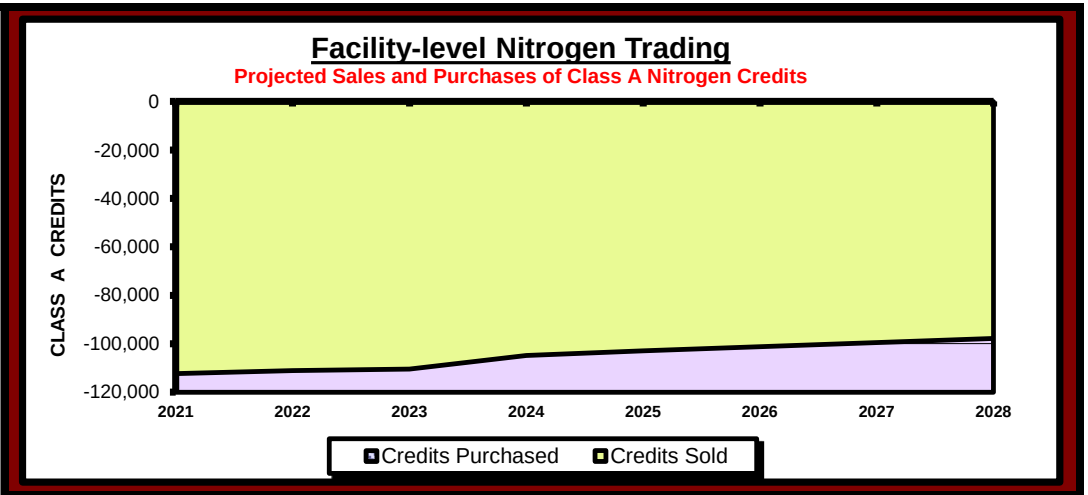
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Projected Flow (mgd)	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Projected Avg. Annual Concentration (mg/L)	0.35	0.35	0.25	0.25	0.25	0.25	0.25	0.25
Discharged Load (end of pipe)	47,968	47,968	34,263	34,263	34,263	34,263	34,263	34,263
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	47,968	47,968	34,263	34,263	34,263	34,263	34,263	34,263
Delivered WLA*	55,574	55,574	55,574	55,574	55,574	55,574	55,574	55,574
Expected Credits (delivered)	7,606	7,606	21,311	21,311	21,311	21,311	21,311	21,311
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange**	0	0	0	(1)	(1)	(1)	(1)	(1)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**7,606**	**7,606**	**21,311**	**21,310**	**21,310**	**21,310**	**21,310**	**21,310**
Class A Credit Sales (Purchases)	**5,000**	**6,600**	**20,000**	**20,000**	**20,000**	**20,000**	**20,000**	**20,000**
Expected Class B Credits	**2,606**	**1,006**	**1,311**	**1,310**	**1,310**	**1,310**	**1,310**	**1,310**

** Reflects allocation transfer to the Oilville WWTP of 275 delivered pounds of TP based on agreement with Goochland County*
*** Represents Credits used to meet City of Richmond stormwater requirements*

NITROGEN FACILITY SUMMARY

RWSA-Moores Creek

UPPER JAMES Trading Basin



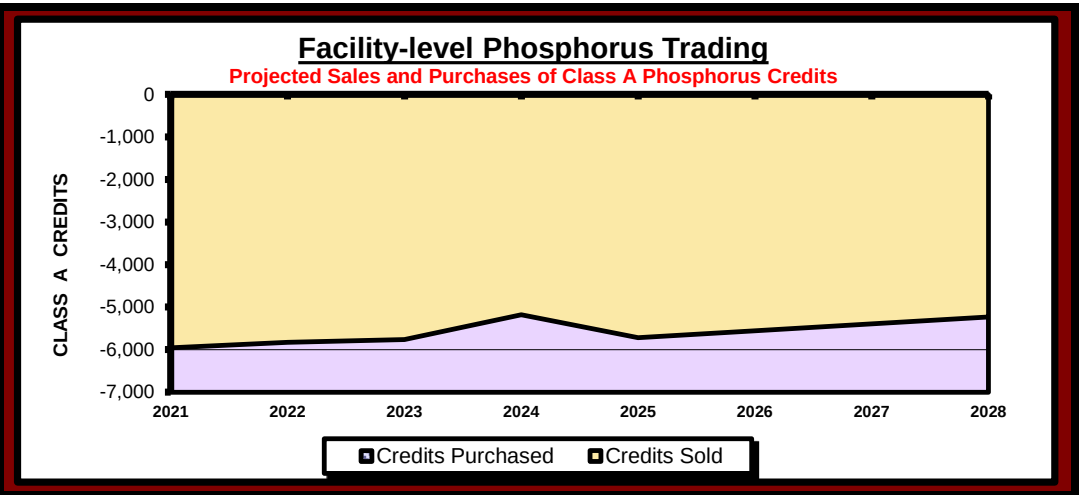
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Projected Flow (mgd)	11.00	11.20	11.30	12.20	11.46	11.71	11.96	12.21
Projected Avg. Annual Concentration (mg/L)	3.20	3.20	3.20	3.20	3.50	3.50	3.50	3.50
Discharged Load (end of pipe)	107,204	109,153	110,127	118,899	122,157	124,822	127,487	130,152
Delivery Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Expected Load	68,610	69,858	70,482	76,095	78,181	79,886	81,592	83,297
Delivered WLA*	181,116	181,116	181,116	181,116	181,116	181,116	181,116	181,116
Expected Credits (delivered)	112,506	111,258	110,634	105,021	102,935	101,230	99,524	97,819
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	**112,506**	**111,258**	**110,634**	**105,021**	**102,935**	**101,230**	**99,524**	**97,819**
Class A Credit Sales (Purchases)	**112,342**	**111,094**	**110,470**	**104,858**	**102,935**	**101,230**	**99,524**	**97,819**
Expected Class B Credits	**164**	**164**	**164**	**163**	**0**	**0**	**0**	**0**

** Wasteload allocation reflects the consolidation of the Camelot WWTP*

PHOSPHORUS FACILITY SUMMARY

RWSA-Moores Creek

UPPER JAMES Trading Basin



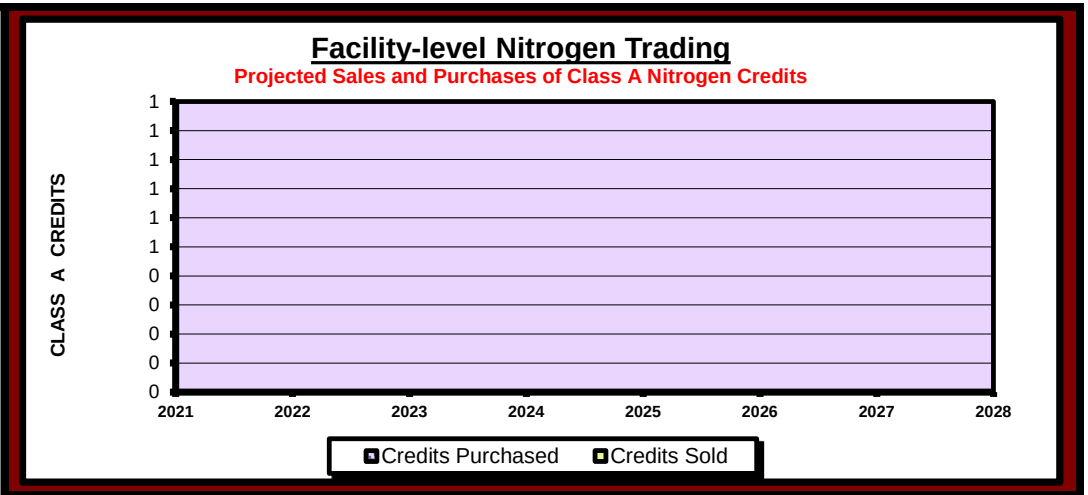
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Projected Flow (mgd)	11.00	11.20	11.30	12.20	11.46	11.71	11.96	12.21
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	10,050	10,233	10,324	11,147	10,471	10,699	10,927	11,156
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	7,136	7,265	7,330	7,914	7,434	7,596	7,759	7,921
Delivered WLA*	13,153	13,153	13,153	13,153	13,153	13,153	13,153	13,153
Expected Credits (delivered)	6,017	5,888	5,823	5,239	5,719	5,557	5,394	5,232
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	**6,017**	**5,888**	**5,823**	**5,239**	**5,719**	**5,557**	**5,394**	**5,232**
Class A Credit Sales (Purchases)	**5,957**	**5,828**	**5,763**	**5,180**	**5,719**	**5,557**	**5,394**	**5,232**
Expected Class B Credits	**60**	**60**	**60**	**59**	**0**	**0**	**0**	**0**

** Wasteload allocation reflects the consolidation of the Camelot WWTP*

NITROGEN FACILITY SUMMARY

South Central WWA

UPPER JAMES Trading Basin



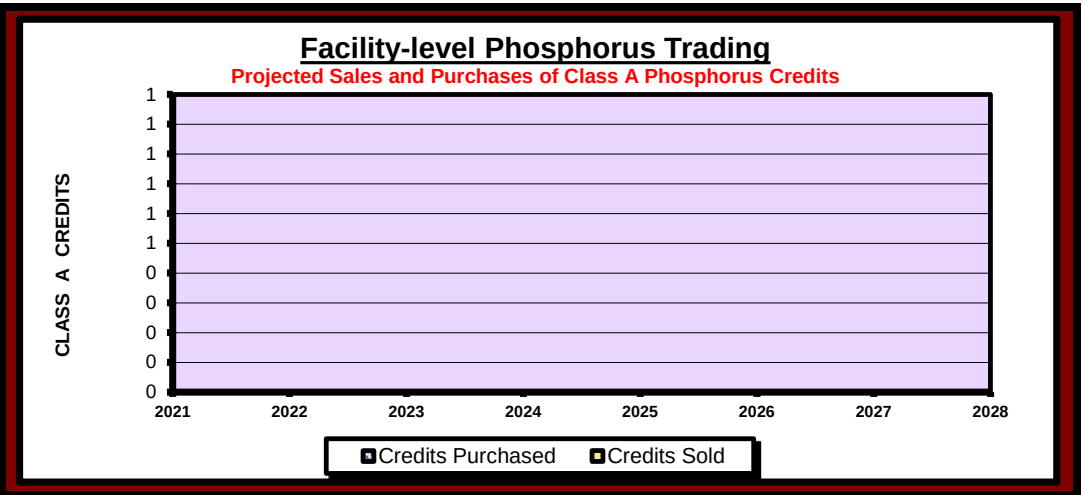
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Projected Flow (mgd)	12.13	12.25	12.38	12.50	12.85	12.98	13.10	13.20
Projected Avg. Annual Concentration (mg/L)	10.83	10.72	10.62	10.51	10.23	4.00	4.00	4.00
Discharged Load (end of pipe)	400,239	400,239	400,239	400,239	400,238	158,125	159,587	160,806
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	400,239	400,239	400,239	400,239	400,238	158,125	159,587	160,806
Delivered WLA	350,239	350,239	350,239	350,239	350,239	350,239	350,239	350,239
Expected Credits (delivered)	(50,000)	(50,000)	(50,000)	(50,000)	(49,999)	192,114	190,652	189,433
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	50,000	50,000	50,000	50,000	50,000	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**0**	**0**	**0**	**0**	**1**	**192,114**	**190,652**	**189,433**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**0**	**0**	**0**	**1**	**192,114**	**190,652**	**189,433**

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

PHOSPHORUS FACILITY SUMMARY

South Central WWA

UPPER JAMES Trading Basin

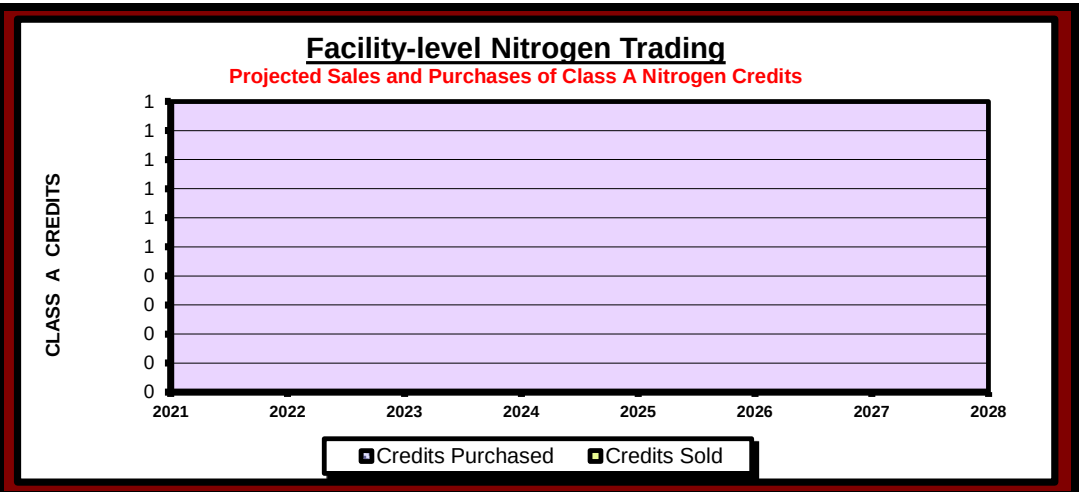


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Projected Flow (mgd)	12.13	12.25	12.38	12.50	12.85	12.98	13.10	13.20
Projected Avg. Annual Concentration (mg/L)	0.70	0.70	0.70	0.70	0.40	0.30	0.30	0.30
Discharged Load (end of pipe)	25,865	26,124	26,385	26,649	15,654	11,859	11,969	12,060
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	25,865	26,124	26,385	26,649	15,654	11,859	11,969	12,060
Delivered WLA	28,404	28,404	28,404	28,404	28,404	28,404	28,404	28,404
Expected Credits (delivered)	2,539	2,280	2,019	1,755	12,750	16,545	16,435	16,344
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	**2,539**	**2,280**	**2,019**	**1,755**	**12,750**	**16,545**	**16,435**	**16,344**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**2,539**	**2,280**	**2,019**	**1,755**	**12,750**	**16,545**	**16,435**	**16,344**

NITROGEN FACILITY SUMMARY

Tyson Foods-Glen Allen

UPPER JAMES Trading Basin

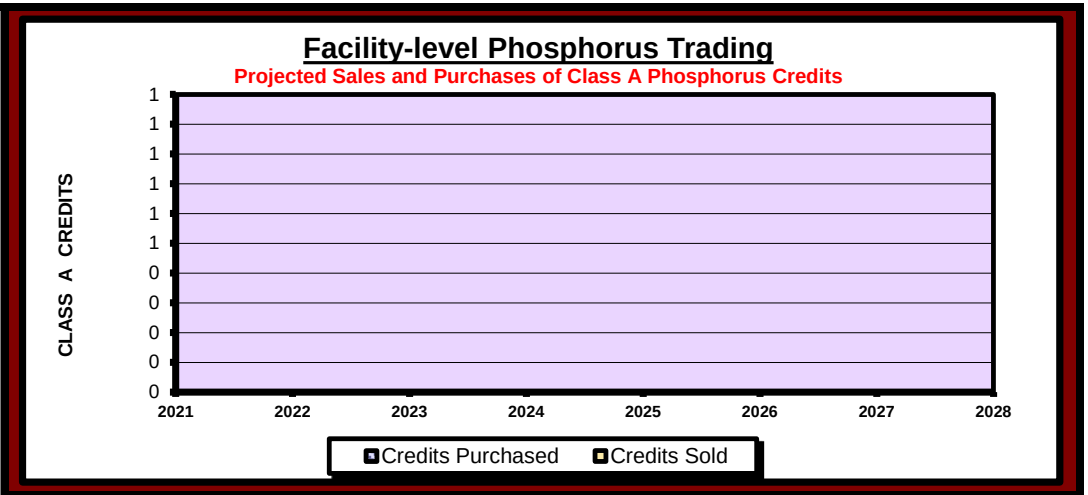


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Projected Flow (mgd)	1.07	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Projected Avg. Annual Concentration (mg/L)	6.00	4.30	4.30	4.04	5.75	5.75	5.75	5.75
Discharged Load (end of pipe)	19,552	14,405	14,405	13,534	19,263	19,263	19,263	19,263
Delivery Factor	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Expected Load	3,519	2,593	2,593	2,436	3,467	3,467	3,467	3,467
Delivered WLA	3,519	3,519	3,519	3,519	3,519	3,519	3,519	3,519
Expected Credits (delivered)	0	926	926	1,083	52	52	52	52
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**0**	**926**	**926**	**1,083**	**52**	**52**	**52**	**52**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**0**	**926**	**926**	**1,083**	**52**	**52**	**52**	**52**

PHOSPHORUS FACILITY SUMMARY

Tyson Foods-Glen Allen

UPPER JAMES Trading Basin

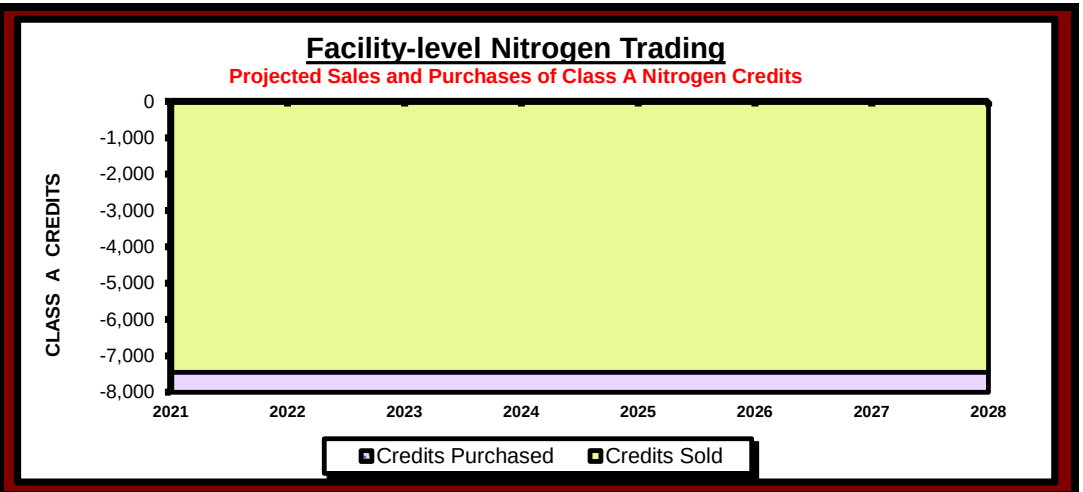


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Projected Flow (mgd)	1.07	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Projected Avg. Annual Concentration (mg/L)	0.10	0.07	0.07	0.07	0.05	0.05	0.05	0.05
Discharged Load (end of pipe)	326	235	235	235	168	168	168	168
Delivery Factor	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Expected Load	117	84	84	84	60	60	60	60
Delivered WLA	147	147	147	147	147	147	147	147
Expected Credits (delivered)	30	63	63	63	87	87	87	87
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	**30**	**63**	**63**	**63**	**87**	**87**	**87**	**87**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**30**	**63**	**63**	**63**	**87**	**87**	**87**	**87**

NITROGEN FACILITY SUMMARY

WestRock-Covington

UPPER JAMES Trading Basin

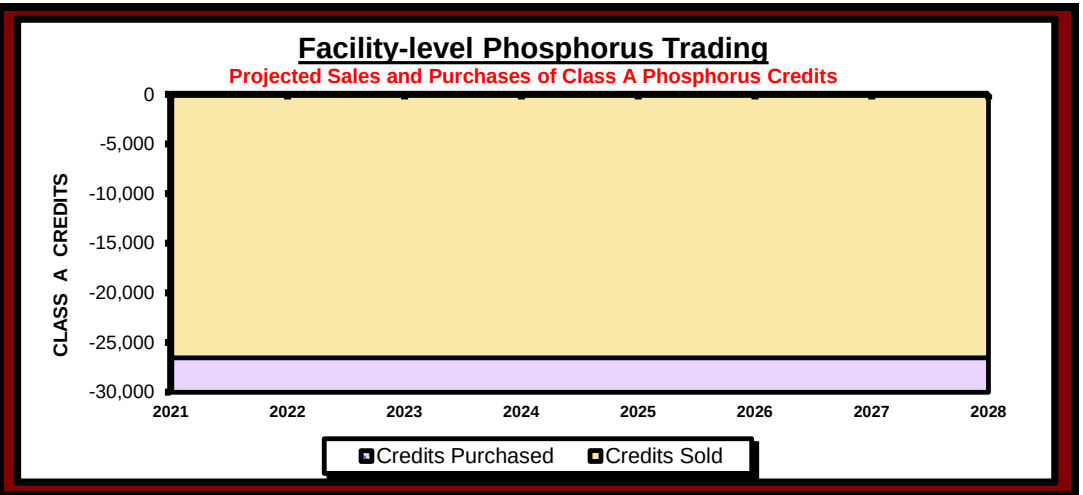


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Projected Flow (mgd)	32.50	32.50	32.50	32.50	32.50	32.50	32.50	32.50
Projected Avg. Annual Concentration (mg/L)	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30
Discharged Load (end of pipe)	326,636	326,636	326,636	326,636	326,636	326,636	326,636	326,636
Delivery Factor	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Expected Load	35,930	35,930	35,930	35,930	35,930	35,930	35,930	35,930
Delivered WLA	43,384	43,384	43,384	43,384	43,384	43,384	43,384	43,384
Expected Credits (delivered)	7,454	7,454	7,454	7,454	7,454	7,454	7,454	7,454
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	**7,454**	**7,454**	**7,454**	**7,454**	**7,454**	**7,454**	**7,454**	**7,454**
Class A Credit Sales (Purchases)	**7,454**	**7,454**	**7,454**	**7,454**	**7,454**	**7,454**	**7,454**	**7,454**
Expected Class B Credits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PHOSPHORUS FACILITY SUMMARY

WestRock-Covington

UPPER JAMES Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Projected Flow (mgd)	32.50	32.50	32.50	32.50	32.50	32.50	32.50	32.50
Projected Avg. Annual Concentration (mg/L)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Discharged Load (end of pipe)	59,388	59,388	59,388	59,388	59,388	59,388	59,388	59,388
Delivery Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Expected Load	42,166	42,166	42,166	42,166	42,166	42,166	42,166	42,166
Delivered WLA	68,707	68,707	68,707	68,707	68,707	68,707	68,707	68,707
Expected Credits (delivered)	26,541	26,541	26,541	26,541	26,541	26,541	26,541	26,541
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**26,541**	**26,541**	**26,541**	**26,541**	**26,541**	**26,541**	**26,541**	**26,541**
Class A Credit Sales (Purchases)	**26,541**	**26,541**	**26,541**	**26,541**	**26,541**	**26,541**	**26,541**	**26,541**
Expected Class B Credits	**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.

EXHIBIT 6-1
Nitrogen Plan Summary: Eastern Shore Basin

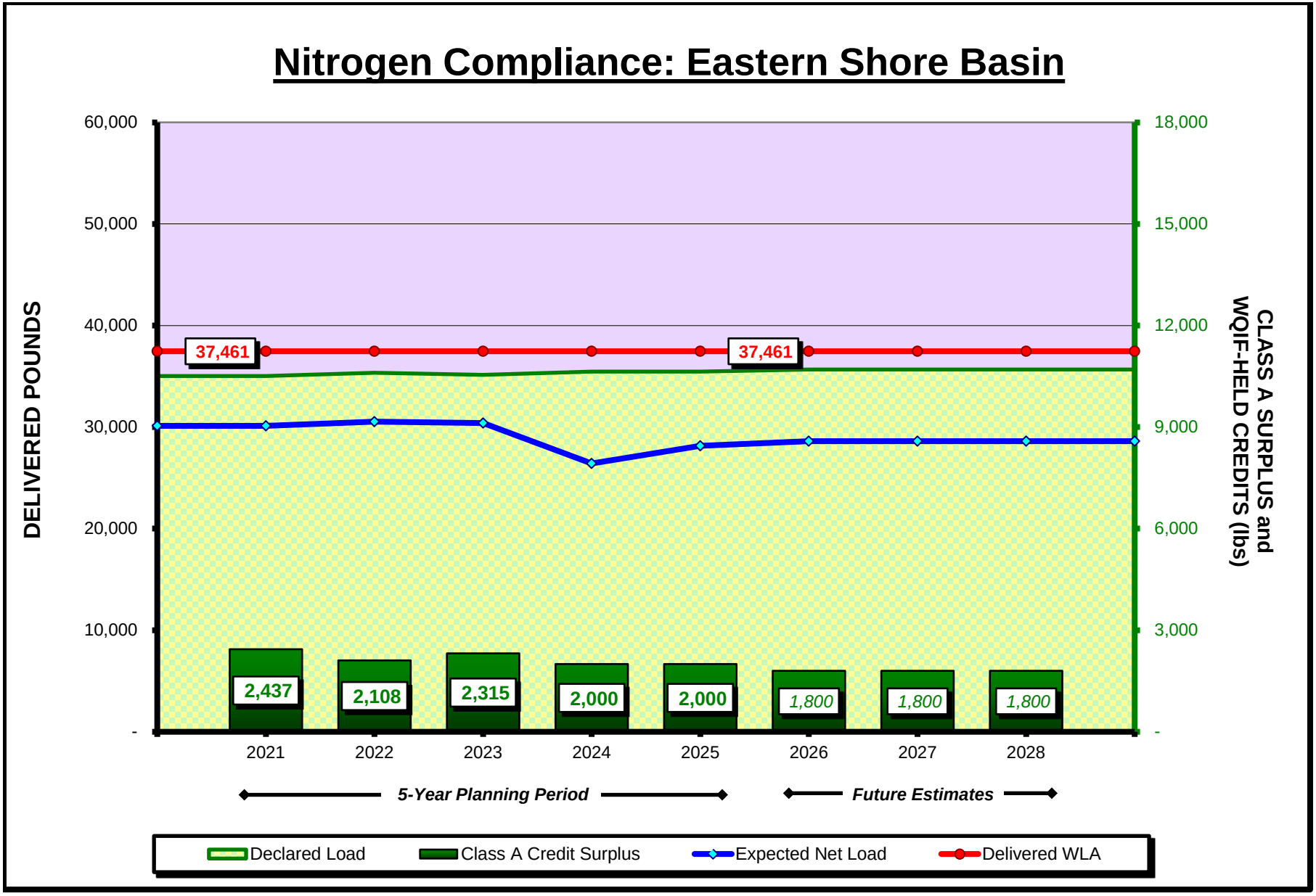


EXHIBIT 6-2
2021 Nitrogen Trading Ledger: Eastern Shore Basin

EASTERN SHORE 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:	No Sale	No Sale	No Sale
The Exchange (group)	**37,461**	**30,128**	**7,333**	**-**	**-**	**-**	**7,333**		**2,437**	**-**	**4,896**
Cape Charles	3,046	1,827	1,219	-	-	-	1,219		-	-	1,219
Onancock	9,137	6,700	2,437	-	-	-	2,437		2,437	-	-
Shore Health Services	1,218	1,135	83	-	-	-	83		-	-	83
Tangier Island	1,218	2,193	(975)	-	975	-	-		-	-	-
Tyson Foods-Temperanceville	22,842	18,273	4,569	-	(975)	-	3,594		-	-	3,594
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

EXHIBIT 6-3
2022 Nitrogen Trading Ledger: Eastern Shore Basin

EASTERN SHORE 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:	$ 0.31	$ 3.94	$ 0.01
The Exchange (group)	**37,461**	**30,540**	**6,921**	**-**	**-**	**-**	**6,921**		**2,315**	**(207)**	**4,813**
Cape Charles	3,046	1,827	1,219	-	-	-	1,219		-	-	1,219
Onancock	9,137	6,822	2,315	-	-	-	2,315		2,315	-	-
Shore Health Services	1,218	1,425	(207)	-	-	-	(207)		-	(207)	-
Tangier Island	1,218	2,193	(975)	-	975	-	-		-	-	-
Tyson Foods-Temperanceville	22,842	18,273	4,569	-	(975)	-	3,594		-	-	3,594
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

EXHIBIT 6-4
2023 Nitrogen Trading Ledger: Eastern Shore Basin

EASTERN SHORE 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:	No Sale	No Sale	No Sale
The Exchange (group)	**37,461**	**30,403**	**7,058**	**-**	**-**	**-**	**7,058**		**2,315**	**-**	**4,743**
Cape Charles	3,046	1,827	1,219	-	-	-	1,219		-	-	1,219
Onancock	9,137	6,822	2,315	-	-	-	2,315		2,315	-	-
Shore Health Services	1,218	1,135	83	-	-	-	83		-	-	83
Tangier Island	1,218	2,193	(975)	-	975	-	-		-	-	-
Tyson Foods-Temperanceville	22,842	18,426	4,416	-	(975)	-	3,441		-	-	3,441
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

EXHIBIT 6-5
2024 Nitrogen Trading Ledger: Eastern Shore Basin

EASTERN SHORE Basin: Nitrogen 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:	No Sale	No Sale	No Sale
The Exchange (group)	**37,461**	**26,413**	**11,048**	**-**	**-**	**-**	**11,048**		**2,000**	**-**	**9,048**
Cape Charles	3,046	1,827	1,219	-	-	-	1,219		-	-	1,219
Onancock	9,137	6,822	2,315	-	-	-	2,315		2,000	-	315
Shore Health Services	1,218	1,135	83	-	-	-	83		-	-	83
Tangier Island	1,218	2,010	(792)	-	792	-	-		-	-	-
Tyson Foods-Temperanceville	22,842	14,619	8,223	-	(792)	-	7,431		-	-	7,431
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

EXHIBIT 6-6
2025 Nitrogen Trading Ledger: Eastern Shore Basin

EASTERN SHORE Basin: Nitrogen Credit Ledger

Compliance Year:	*2025*	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)			
Facility Name	**Delivered WLA**	**Expected Load**	**Expected Credits**	**In-Bubble Exchange**	**Private Exchange**	**WQIF-Held Credits**	**Expected Net Credits**		**Class A Sales**	**Class A* Purchases**	**Class B Sales****
								PRICE:	No Sale	No Sale	No Sale
The Exchange (group)	**37,461**	**28,143**	**9,318**	**-**	**-**	**-**	**9,318**		**2,000**	**-**	**7,318**
Cape Charles	3,046	2,339	707	-	-	-	707		-	-	707
Onancock	9,137	6,822	2,315	-	-	-	2,315		2,000	-	315
Shore Health Services	1,218	1,135	83	-	-	-	83		-	-	83
Tangier Island	1,218	2,010	(792)	-	792	-	-		-	-	-
Tyson Foods-Temperanceville	22,842	15,837	7,005	-	(792)	-	6,213		-	-	6,213
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

EXHIBIT 6-7
Phosphorus Plan Summary: Eastern Shore Basin

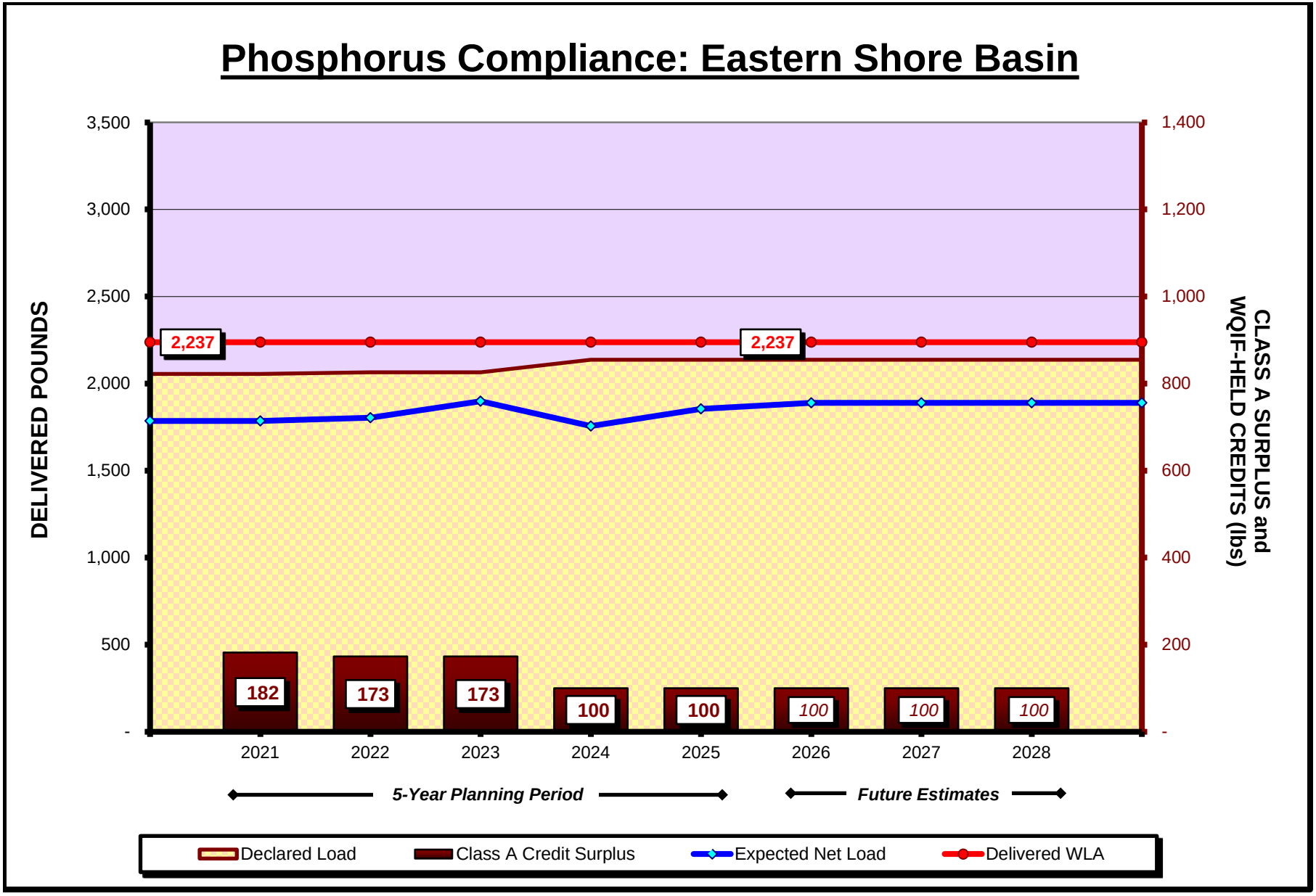


EXHIBIT 6-8
2021 Phosphorus Trading Ledger: Eastern Shore Basin

EASTERN SHORE Basin: Phosphorus Credit Ledger

Compliance Year:	*2021*	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)			
Facility Name	**Delivered WLA**	**Expected Load**	**Expected Credits**	**In-Bubble Exchange**	**Private Exchange**	**WQIF-Held Credits**	**Expected Net Credits**		**Class A Sales**	**Class A* Purchases**	**Class B Sales****
								PRICE:	No Sale	No Sale	No Sale
The Exchange (group)	**2,237**	**1,785**	**452**	**-**	**-**	**-**	**452**		**182**	**-**	**270**
Cape Charles	228	137	91	-	-	-	91		-	-	91
Onancock	685	503	182	-	-	-	182		182	-	-
Shore Health Services	91	55	36	-	-	-	36		-	-	36
Tangier Island	91	329	(238)	-	238	-	-		-	-	-
Tyson Foods-Temperanceville	1,142	761	381	-	(238)	-	143		-	-	143
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

EXHIBIT 6-9
2022 Phosphorus Trading Ledger: Eastern Shore Basin

EASTERN SHORE Basin: Phosphorus Credit Ledger

Compliance Year:	*2022*	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)			
Facility Name	**Delivered WLA**	**Expected Load**	**Expected Credits**	**In-Bubble Exchange**	**Private Exchange**	**WQIF-Held Credits**	**Expected Net Credits**		**Class A Sales**	**Class A* Purchases**	**Class B Sales****
								PRICE:	No Sale	No Sale	No Sale
The Exchange (group)	**2,237**	**1,804**	**433**	**-**	**-**	**-**	**433**		**173**	**-**	**260**
Cape Charles	228	137	91	-	-	-	91		-	-	91
Onancock	685	512	173	-	-	-	173		173	-	-
Shore Health Services	91	65	26	-	-	-	26		-	-	26
Tangier Island	91	329	(238)	-	238	-	-		-	-	-
Tyson Foods-Temperanceville	1,142	761	381	-	(238)	-	143		-	-	143
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

EXHIBIT 6-10
2023 Phosphorus Trading Ledger: Eastern Shore Basin

EASTERN SHORE 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:	No Sale	No Sale	No Sale
The Exchange (group)	**2,237**	**1,899**	**338**	**-**	**-**	**-**	**338**		**173**	**-**	**165**
Cape Charles	228	137	91	-	-	-	91		-	-	91
Onancock	685	512	173	-	-	-	173		173	-	-
Shore Health Services	91	83	8	-	-	-	8		-	-	8
Tangier Island	91	329	(238)	-	238	-	-		-	-	-
Tyson Foods-Temperanceville	1,142	838	304	-	(238)	-	66		-	-	66
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

EXHIBIT 6-11
2024 Phosphorus Trading Ledger: Eastern Shore Basin

EASTERN SHORE 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:	No Sale	No Sale	No Sale
The Exchange (group)	**2,237**	**1,755**	**482**	**-**	**-**	**-**	**482**		**100**	**-**	**382**
Cape Charles	228	137	91	-	-	-	91		-	-	91
Onancock	685	512	173	-	-	-	173		100	-	73
Shore Health Services	91	83	8	-	-	-	8		-	-	8
Tangier Island	91	292	(201)	-	201	-	-		-	-	-
Tyson Foods-Temperanceville	1,142	731	411	-	(201)	-	210		-	-	210
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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There are no Class A Credit Purchases for this Compliance Year

*** 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.*

EXHIBIT 6-12
2025 Phosphorus Trading Ledger: Eastern Shore Basin

EASTERN SHORE Basin: Phosphorus Credit Ledger

Compliance Year:	*2025*	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)			
Facility Name	**Delivered WLA**	**Expected Load**	**Expected Credits**	**In-Bubble Exchange**	**Private Exchange**	**WQIF-Held Credits**	**Expected Net Credits**		**Class A Sales**	**Class A* Purchases**	**Class B Sales****
								PRICE:	No Sale	No Sale	No Sale
The Exchange (group)	**2,237**	**1,854**	**383**	**-**	**-**	**-**	**383**		**100**	**-**	**283**
Cape Charles	228	175	53	-	-	-	53		-	-	53
Onancock	685	512	173	-	-	-	173		100	-	73
Shore Health Services	91	83	8	-	-	-	8		-	-	8
Tangier Island	91	292	(201)	-	201	-	-		-	-	-
Tyson Foods-Temperanceville	1,142	792	350	-	(201)	-	149		-	-	149
Sale from Potomac Basin	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-
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	-	-	-	-	-	-	-		-	-	-
	-	-	-	-	-	-	-		-	-	-

There are no Class A Credit Purchases for this Compliance Year

*** 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.*

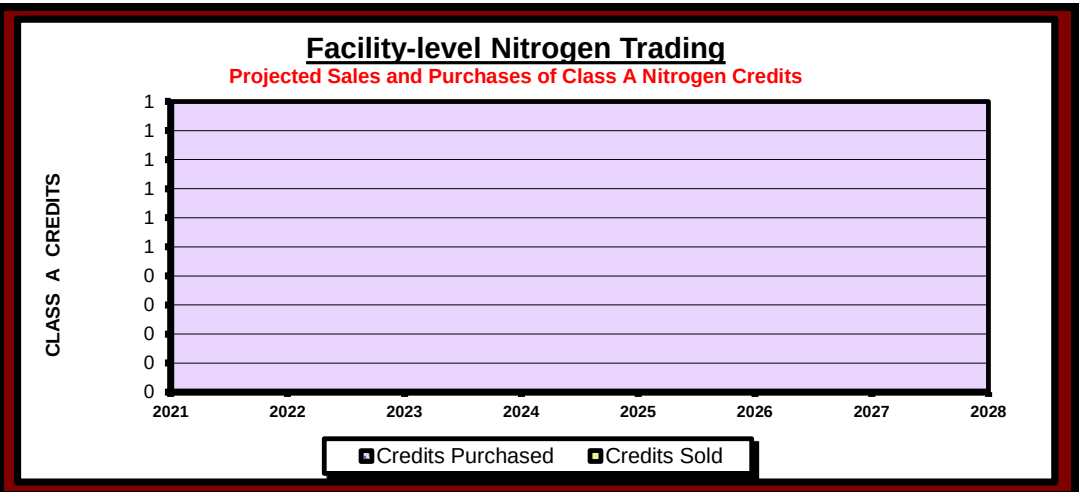
Eastern Shore Basin

Supplemental Information for Individual Facilities

NITROGEN FACILITY SUMMARY

Cape Charles

EASTERN SHORE Trading Basin

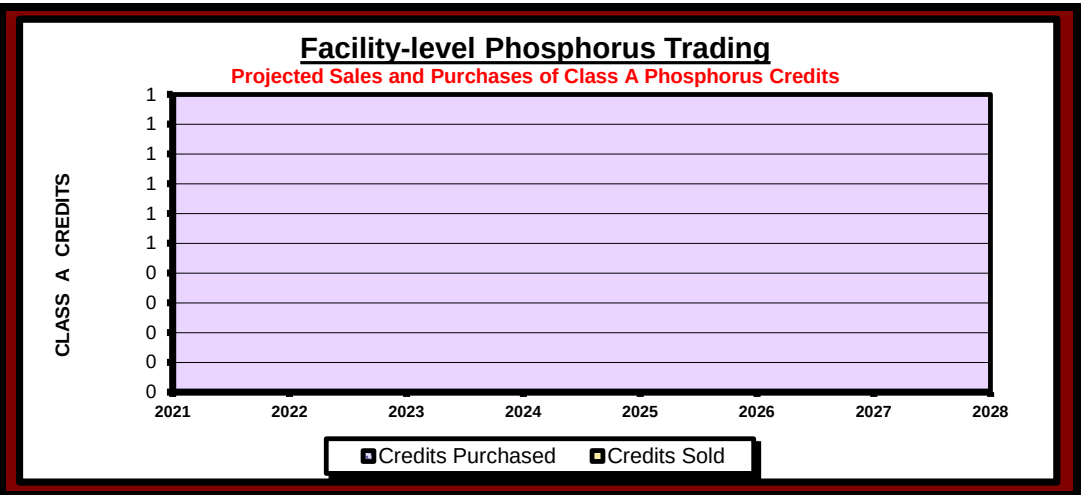


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Projected Flow (mgd)	0.15	0.15	0.15	0.15	0.19	0.19	0.19	0.19
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	1,827	1,827	1,827	1,827	2,339	2,315	2,315	2,315
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,827	1,827	1,827	1,827	2,339	2,315	2,315	2,315
Delivered WLA	3,046	3,046	3,046	3,046	3,046	3,046	3,046	3,046
Expected Credits (delivered)	1,219	1,219	1,219	1,219	707	731	731	731
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	**1,219**	**1,219**	**1,219**	**1,219**	**707**	**731**	**731**	**731**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**1,219**	**1,219**	**1,219**	**1,219**	**707**	**731**	**731**	**731**

PHOSPHORUS FACILITY SUMMARY

Cape Charles

EASTERN SHORE Trading Basin

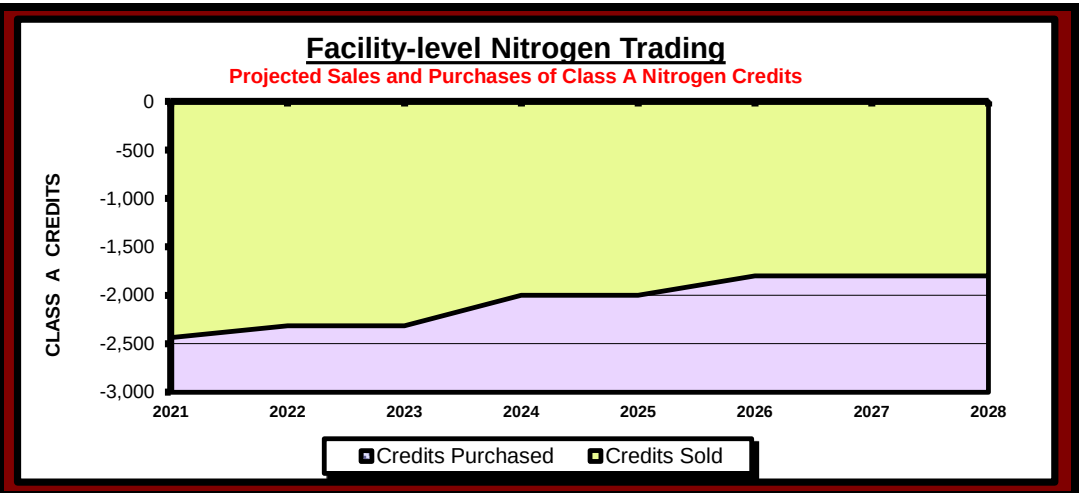


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Projected Flow (mgd)	0.15	0.15	0.15	0.15	0.19	0.19	0.19	0.19
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	137	137	137	137	175	174	174	174
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	137	137	137	137	175	174	174	174
Delivered WLA	228	228	228	228	228	228	228	228
Expected Credits (delivered)	91	91	91	91	53	54	54	54
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	**91**	**91**	**91**	**91**	**53**	**54**	**54**	**54**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**91**	**91**	**91**	**91**	**53**	**54**	**54**	**54**

NITROGEN FACILITY SUMMARY

Onancock

EASTERN SHORE Trading Basin

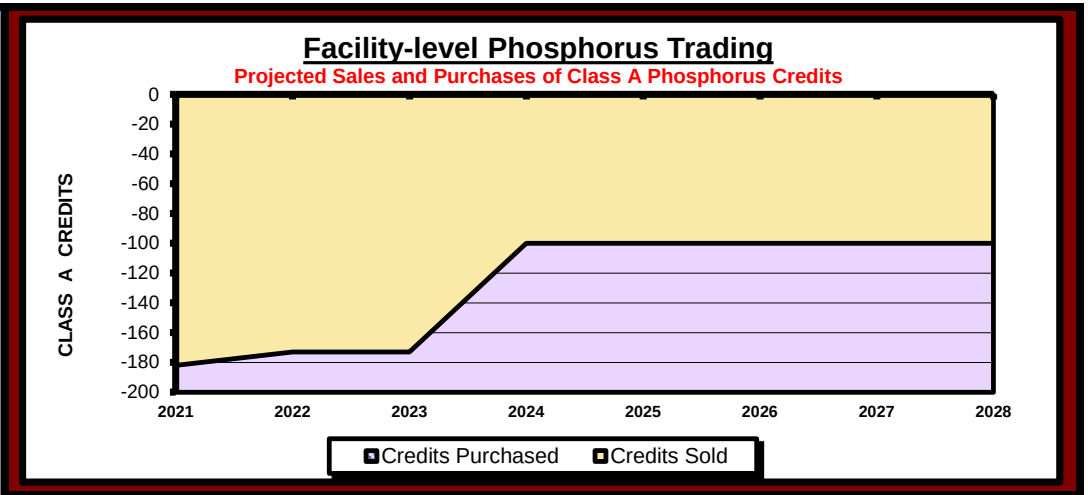


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Projected Flow (mgd)	0.55	0.56	0.56	0.56	0.56	0.60	0.60	0.60
Projected Avg. Annual Concentration (mg/L)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	6,700	6,822	6,822	6,822	6,822	7,309	7,309	7,309
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	6,700	6,822	6,822	6,822	6,822	7,309	7,309	7,309
Delivered WLA	9,137	9,137	9,137	9,137	9,137	9,137	9,137	9,137
Expected Credits (delivered)	2,437	2,315	2,315	2,315	2,315	1,828	1,828	1,828
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**2,437**	**2,315**	**2,315**	**2,315**	**2,315**	**1,828**	**1,828**	**1,828**
Class A Credit Sales (Purchases)	**2,437**	**2,315**	**2,315**	**2,000**	**2,000**	**1,800**	**1,800**	**1,800**
Expected Class B Credits	**0**	**0**	**0**	**315**	**315**	**28**	**28**	**28**

PHOSPHORUS FACILITY SUMMARY

Onancock

EASTERN SHORE Trading Basin

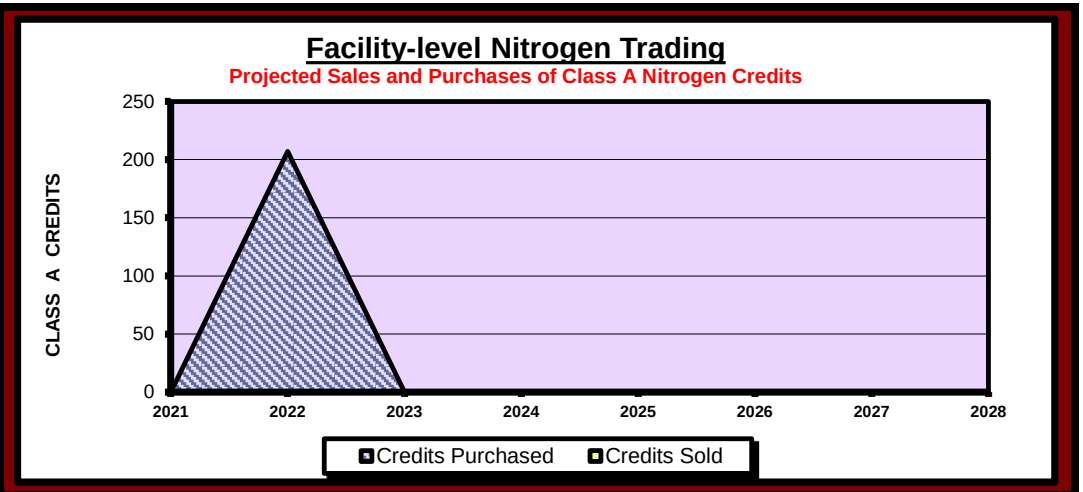


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Projected Flow (mgd)	0.55	0.56	0.56	0.56	0.56	0.60	0.60	0.60
Projected Avg. Annual Concentration (mg/L)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Discharged Load (end of pipe)	503	512	512	512	512	548	548	548
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	503	512	512	512	512	548	548	548
Delivered WLA	685	685	685	685	685	685	685	685
Expected Credits (delivered)	182	173	173	173	173	137	137	137
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	**182**	**173**	**173**	**173**	**173**	**137**	**137**	**137**
Class A Credit Sales (Purchases)	**182**	**173**	**173**	**100**	**100**	**100**	**100**	**100**
Expected Class B Credits	**0**	**0**	**0**	**73**	**73**	**37**	**37**	**37**

NITROGEN FACILITY SUMMARY

Shore Health Services

EASTERN SHORE Trading Basin

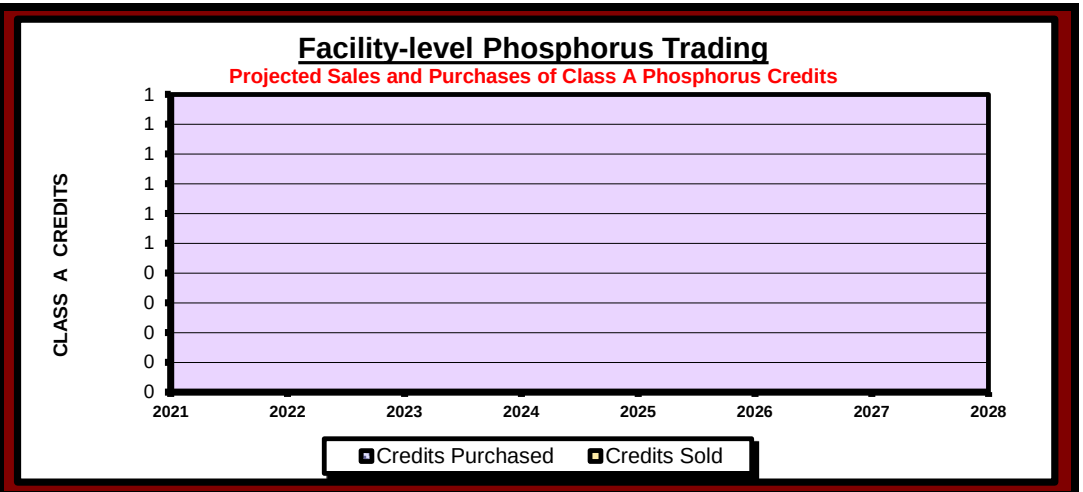


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Projected Avg. Annual Concentration (mg/L)	16.20	19.50	16.20	16.20	16.20	16.20	16.20	16.20
Discharged Load (end of pipe)	1,135	1,425	1,135	1,135	1,135	1,135	1,135	1,135
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	1,135	1,425	1,135	1,135	1,135	1,135	1,135	1,135
Delivered WLA	1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218
Expected Credits (delivered)	83	(207)	83	83	83	83	83	83
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**83**	**(207)**	**83**	**83**	**83**	**83**	**83**	**83**
Class A Credit Sales (Purchases)	**0**	**(207)**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**83**	**0**	**83**	**83**	**83**	**83**	**83**	**83**

PHOSPHORUS FACILITY SUMMARY

Shore Health Services

EASTERN SHORE Trading Basin

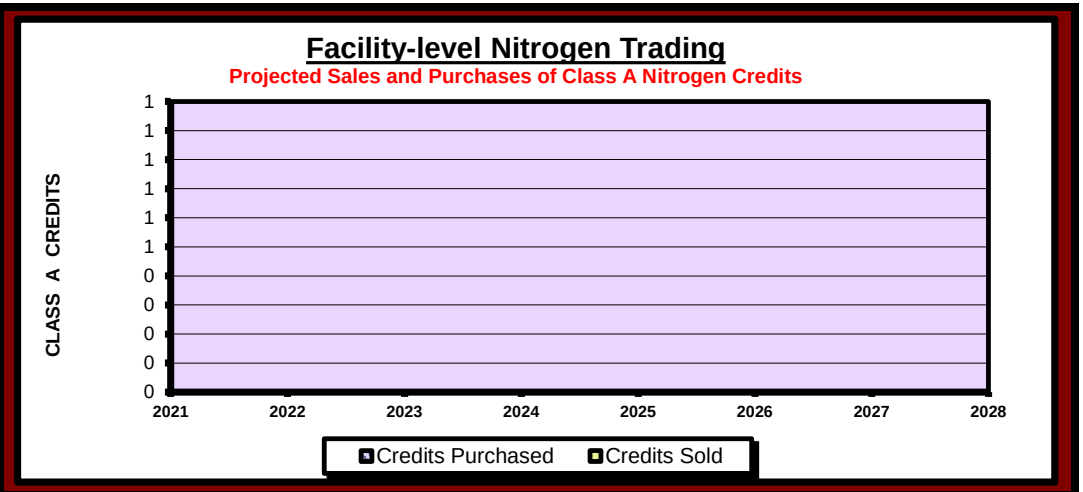


Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Projected Avg. Annual Concentration (mg/L)	0.78	0.89	1.18	1.18	1.18	1.18	1.18	1.18
Discharged Load (end of pipe)	55	65	83	83	83	83	83	83
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	55	65	83	83	83	83	83	83
Delivered WLA	91	91	91	91	91	91	91	91
Expected Credits (delivered)	36	26	8	8	8	8	8	8
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange	0	0	0	0	0	0	0	0
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**36**	**26**	**8**	**8**	**8**	**8**	**8**	**8**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**36**	**26**	**8**	**8**	**8**	**8**	**8**	**8**

NITROGEN FACILITY SUMMARY

Tangier Island

EASTERN SHORE Trading Basin



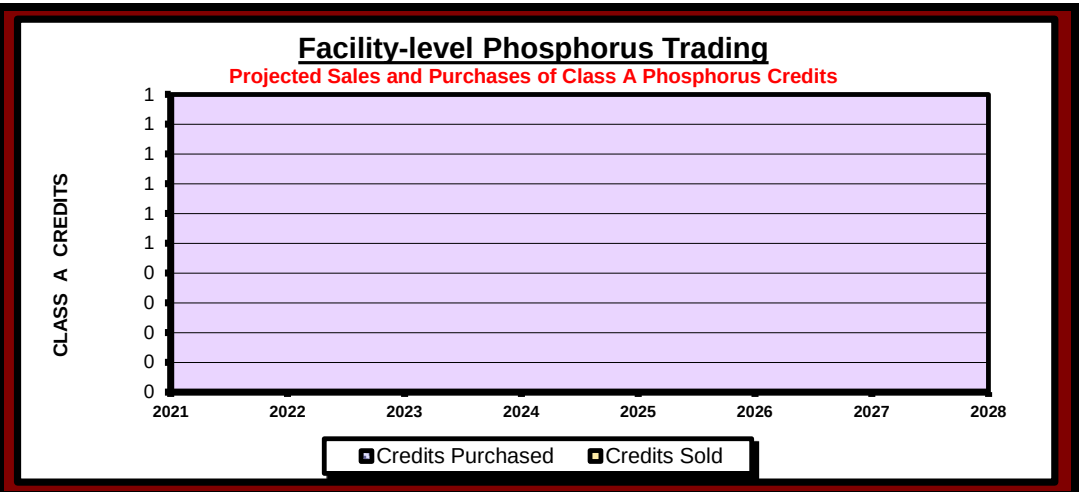
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	12.00	12.00	12.00	11.00	11.00	11.00	11.00	11.00
Discharged Load (end of pipe)	2,193	2,193	2,193	2,010	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	2,010	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)	(792)	(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	792	792	792	792	792
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**

** Represents private trade with Tyson Foods-Temperanceville*

PHOSPHORUS FACILITY SUMMARY

Tangier Island

EASTERN SHORE Trading Basin



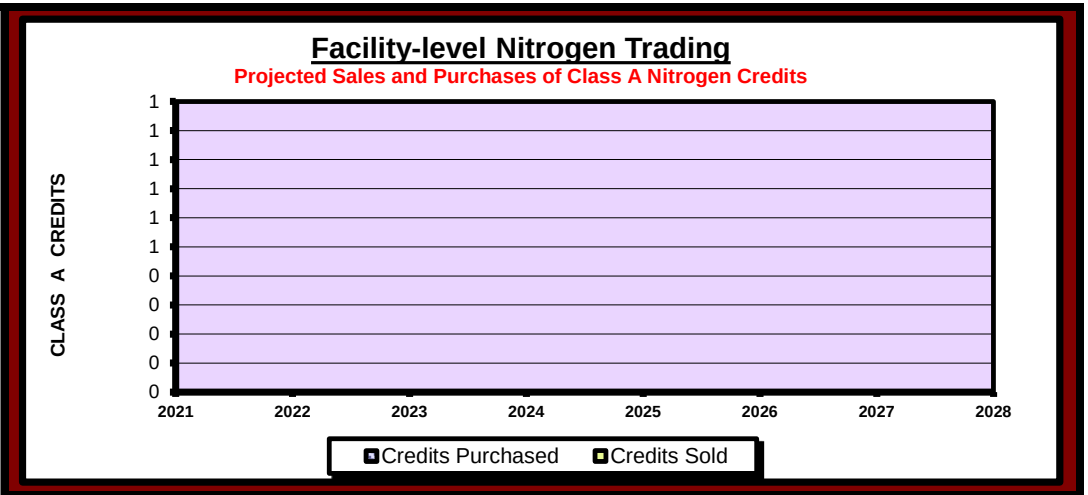
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Flow (mgd)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Projected Avg. Annual Concentration (mg/L)	1.80	1.80	1.80	1.60	1.60	1.60	1.60	1.60
Discharged Load (end of pipe)	329	329	329	292	292	292	292	292
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	329	329	329	292	292	292	292	292
Delivered WLA	91	91	91	91	91	91	91	91
Expected Credits (delivered)	(238)	(238)	(238)	(201)	(201)	(201)	(201)	(201)
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	238	238	238	201	201	201	201	201
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**

** Represents private trade with Tyson Foods-Temperanceville*

NITROGEN FACILITY SUMMARY

Tyson Foods-Temperancevil

EASTERN SHORE Trading Basin



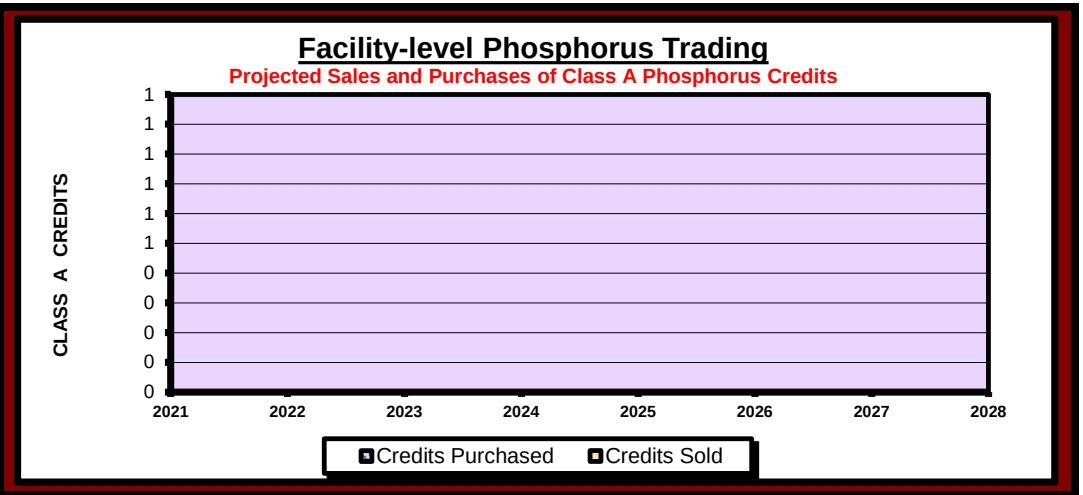
Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Projected Flow (mgd)	1.00	1.00	1.10	1.20	1.30	1.30	1.30	1.30
Projected Avg. Annual Concentration (mg/L)	6.00	6.00	5.50	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	18,273	18,273	18,426	14,619	15,837	15,837	15,837	15,837
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	18,273	18,273	18,426	14,619	15,837	15,837	15,837	15,837
Delivered WLA	22,842	22,842	22,842	22,842	22,842	22,842	22,842	22,842
Expected Credits (delivered)	4,569	4,569	4,416	8,223	7,005	7,005	7,005	7,005
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(975)	(975)	(975)	(792)	(792)	(792)	(792)	(792)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**3,594**	**3,594**	**3,441**	**7,431**	**6,213**	**6,213**	**6,213**	**6,213**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**3,594**	**3,594**	**3,441**	**7,431**	**6,213**	**6,213**	**6,213**	**6,213**

** Represents private trade with Tangier Island*

PHOSPHORUS FACILITY SUMMARY

Tyson Foods-Temperancevil

EASTERN SHORE Trading Basin



Loading & Credit Summary	2021	2022	2023	2024	2025	2026	2027	2028
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Projected Flow (mgd)	1.00	1.00	1.10	1.20	1.30	1.30	1.30	1.30
Projected Avg. Annual Concentration (mg/L)	0.25	0.25	0.25	0.20	0.20	0.20	0.20	0.20
Discharged Load (end of pipe)	761	761	838	731	792	792	792	792
Delivery Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Expected Load	761	761	838	731	792	792	792	792
Delivered WLA	1,142	1,142	1,142	1,142	1,142	1,142	1,142	1,142
Expected Credits (delivered)	381	381	304	411	350	350	350	350
Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange*	(238)	(238)	(238)	(201)	(201)	(201)	(201)	(201)
WQIF-Held Credits	0	0	0	0	0	0	0	0
Expected Net Credits	**143**	**143**	**66**	**210**	**149**	**149**	**149**	**149**
Class A Credit Sales (Purchases)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected Class B Credits	**143**	**143**	**66**	**210**	**149**	**149**	**149**	**149**

** 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 2020 Annual Update.

7.1 Schedule of Compliance

This Section 7.1 is based on DEQ's approval letter dated September 7, 2007 from E. Gilinksy, 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

Action	Deadline	Party Responsible	Policy Section(s)
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)
		Nitrogen	*Phosphorus*	
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
2025	2026	$4.21	$6.34	Firm

Revision: July 13, 2020

ATTACHMENT C

FACILITY DATA CHECKLIST FOR EXCHANGE COMPLIANCE PLAN 2021 ANNUAL 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		
	2025	2026	2027	2028
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 Factor[1]	0.00	0.00	0.00	0.00
Delivered Pounds	0	0	0	0
Delivered WLA[1]	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)	$ 4.21			
Facility Class A Purchase Cost[5]	**$ -**			

PHOSPHORUS Data Checklist	New 5th Year	Estimates Beyond 5-year Planning Period		
	2025	2026	2027	2028
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 Factor[1]	0.00	0.00	0.00	0.00
Delivered Pounds	0	0	0	0
Delivered WLA[1]	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)	$ 6.34			
Facility Class A Purchase Cost[5]	**$ -**			

1 - Remember to use facility-specific Delivery Factors and Delivered WLAs as shown on DEQ's Registration List for 2021 and beyond (linked page below, only reference sheets with 1/1/2021 effectiv

https://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/NutrientTrading.aspx

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 cre

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

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

February 6, 2020

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

RE: Exchange Compliance Plan 2020 Annual Update

Dear Mr. Harksen:

We have reviewed the Virginia Nutrient Credit Exchange Association's *Exchange Compliance Plan 2020 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,

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

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,

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

CC: Mr. Chris Pomeroy, Esq. - AquaLaw

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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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,

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

CC: Mr. Chris Pomeroy, Esq. - AquaLaw

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
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 2017Annual 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,

Allan Brockenbrough II

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

CC: Mr. Chris Pomeroy, Esq. - AquaLaw

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

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,

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

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
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

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

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 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,

Frederick K. Cunningham

Frederick K. Cunningham, Manager
Office of Water Permitting

cc: Mr. Chris Pomeroy, Esq. – AquaLaw

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www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

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

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,

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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Mailing address: P.O. Box 1105, Richmond, Virginia 23218
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Douglas W. Domenech
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David K. Paylor
Director

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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,

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.

COMMONWEALTH of VIRGINIA

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Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

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

November 2, 2010

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

Re: Exchange Compliance Plan 2010 Annual Update

Dear Mr. Haley:

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

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

Sincerely,

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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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,

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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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.

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,

Ellen Gilinsky

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

Cc: Mr. Chris Pomeroy, Esq. - AquaLaw

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
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

Mark

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,

Ellen Gilinsky

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

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

Class	Participant's Total TN WLA (lbs/yr)	Mar. 2008	Nov. 2008
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)

Class	Participant's Total TN WLA (discharge lbs/yr)	Annual Fee
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.

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 WQIF Needs Assessment Report in report in 2019. That report demonstrated the need for an additional appropriation to the Point Source portion of the WQIF. The General Assembly subsequently appropriated $50 million in additional Point Source WQIF funding in 2020, which was the first major appropriation since 2016.

DEQ released the results of the most recent WQIF Needs Assessment in July 2020. The report indicated a critical need for additional WQIF appropriations in coming years in conjunction with the Watershed Implementation Plan Phase III. Legislation and regulations addressing how the plan will be implemented are now pending, and substantial additional WQIF funding on the order of $300 million or more are expected to be needed to implement the plan.

APPENDIX D

DEQ Director Letter

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
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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,

David K. Paylor

DKP:dlm