

ExChange Update

Potomac – Shenandoah Performance

2014



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Consultant to the ExChange
April 10, 2015

Today's Agenda

- The ExChange Overview
- Potomac Point Source performance 2011-2014
- ExChange Compliance Plan 2015 to 2019
- Planning Window 2020 to 2022
- Regulatory Update: General Nutrient Permit Renewal
- Future Issues



ExChange Overview

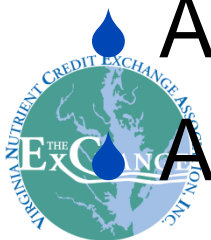


Legislative Background

- 💧 Virginia Legislature amended State Water Control Law (S1275, March 2005)
- 💧 Mandated Watershed General Permit
 - ~ Wasteload allocation for significant dischargers
 - ~ Basin-wide compliance schedules (2011)
 - ~ Provisions for non-significant & new facilities
 - ~ Requirements for compliance plans

💧 Authorized Nutrient Credit Exchange

Authorized trading



Exchange Responsibilities

- 💧 Identify buyers and sellers of credits
- 💧 Coordinate planning and encourage participation
- 💧 Develop credit market and trading policies
- 💧 Submit compliance plan on behalf of members
- 💧 Craft standard form of agreement for trading program



Guiding Principles

- # 1 – Trading is voluntary
- # 2 – Benefits for all
- # 3 – Compliance first (“safety first”)
- # 4 – Never forget the CWA “base case”



“Base Case”

- VA Tributary Strategy – Bay TMDL
 - Require all 127 Significant Facilities to Upgrade to meet new Waste Load Allocations – 2006 to 2011
 - 2006 Environment
 - ~ Growth Boom in all sectors
 - ~ Large Projects in MD and DC
 - ~ New Orleans recovery taking resources
- WWTP Bids coming in Very HIGH

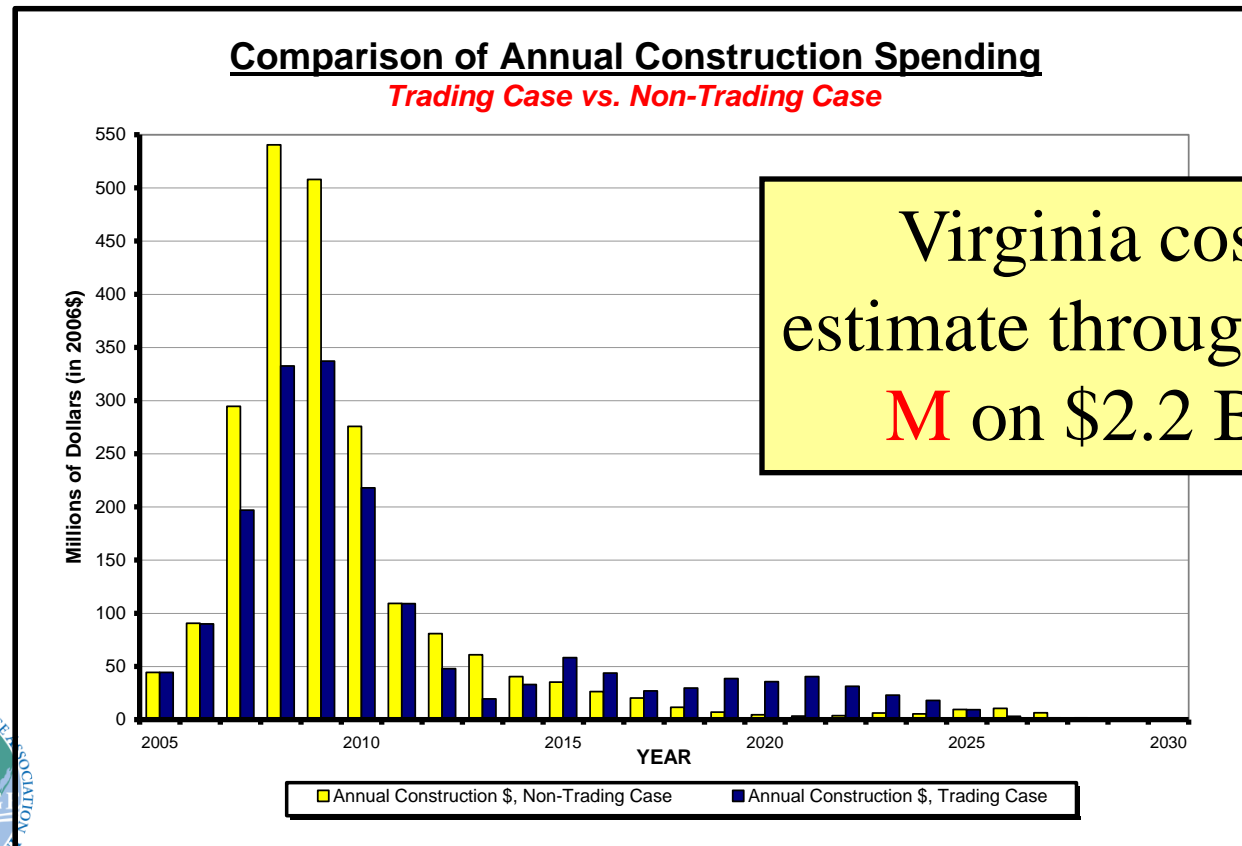






Saves Ratepayer \$\$\$

- Lower taxes/rates, same pollutant control



Virginia cost savings estimate through 2030: **\$410 M** on \$2.2 B program



Fine Print

Nutrient Credit Services Agreement

- Entered among Participants & Exchange
- Based directly on the Compliance Plan & Credit Exchange Policy below

Compliance Plan

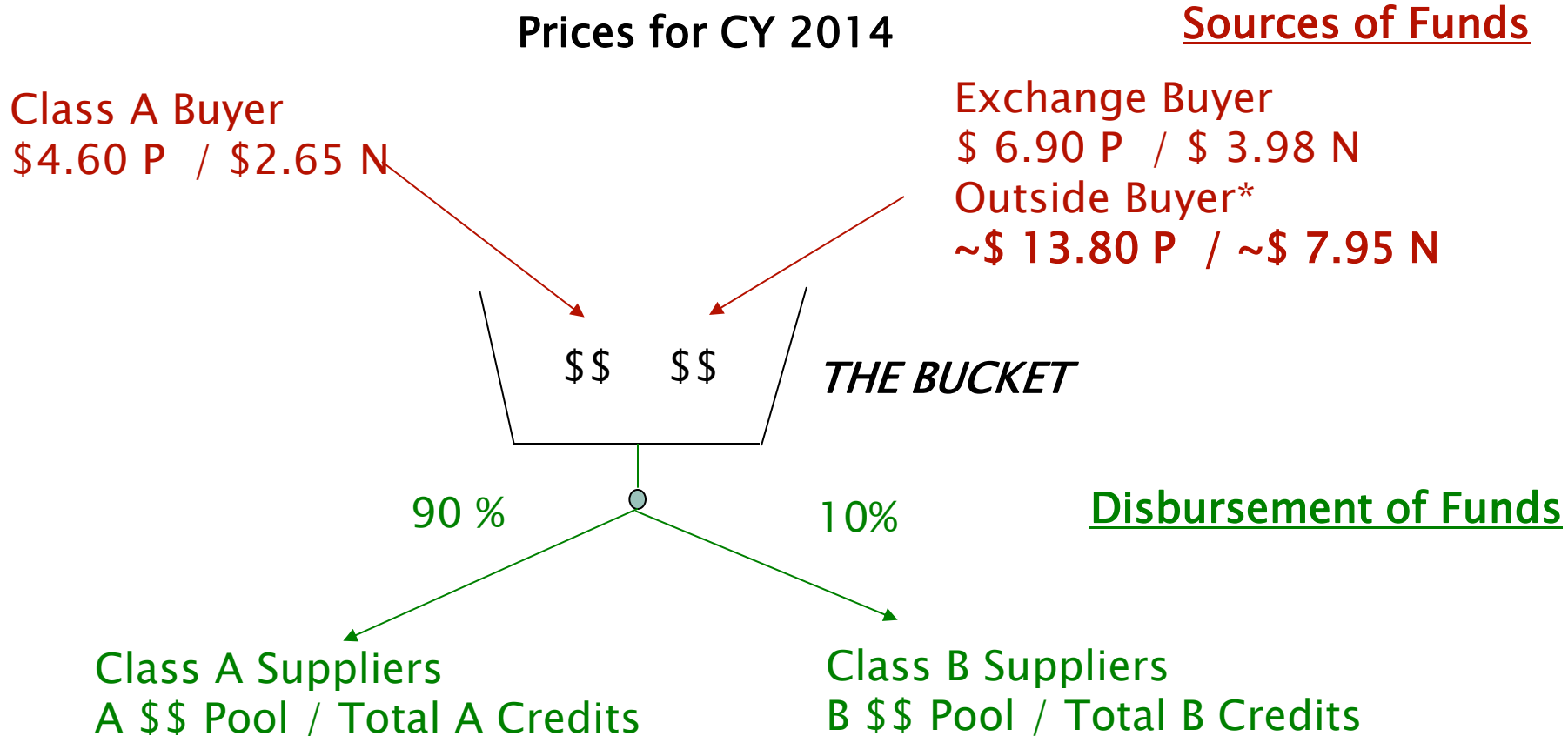
- One for each basin
- Covers all participants
- Developed together
- Approved by DEQ

Credit Exchange Policy

- Sets trading procedures
- Developed together
- Issued by Exch Board



Cash Flow & The Bucket



* Illustration Only; Outside Price TBD by Board.

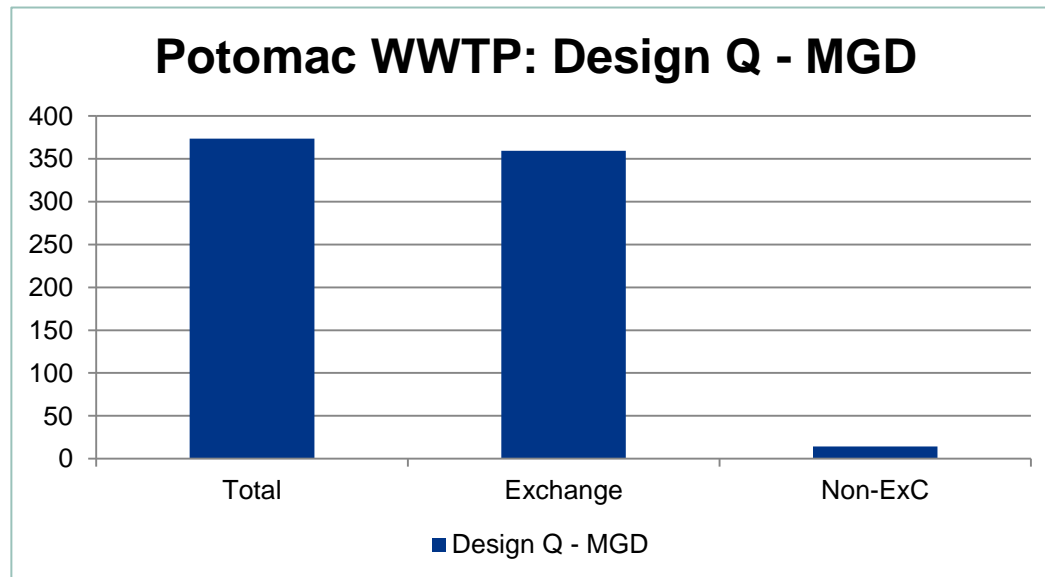


ExChange portion of Potomac- Shenandoah Flows

Potomac & Shenandoah Design Flows

Million Gallons per Day (MGD)

ExChange Members	359.18	96.1%
Non - Members	14.43	3.9%
Total	373.61	100.0%



Potomac – Shenandoah Performance

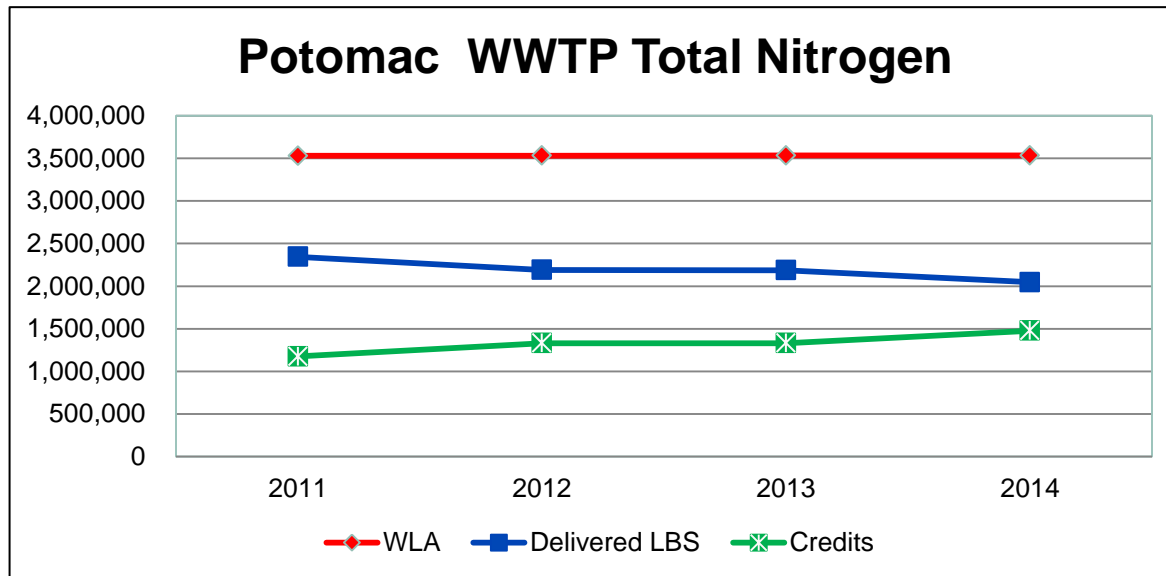


2011 to 2014
All Significant Facilities

Potomac & Shenandoah WWTP

Performance

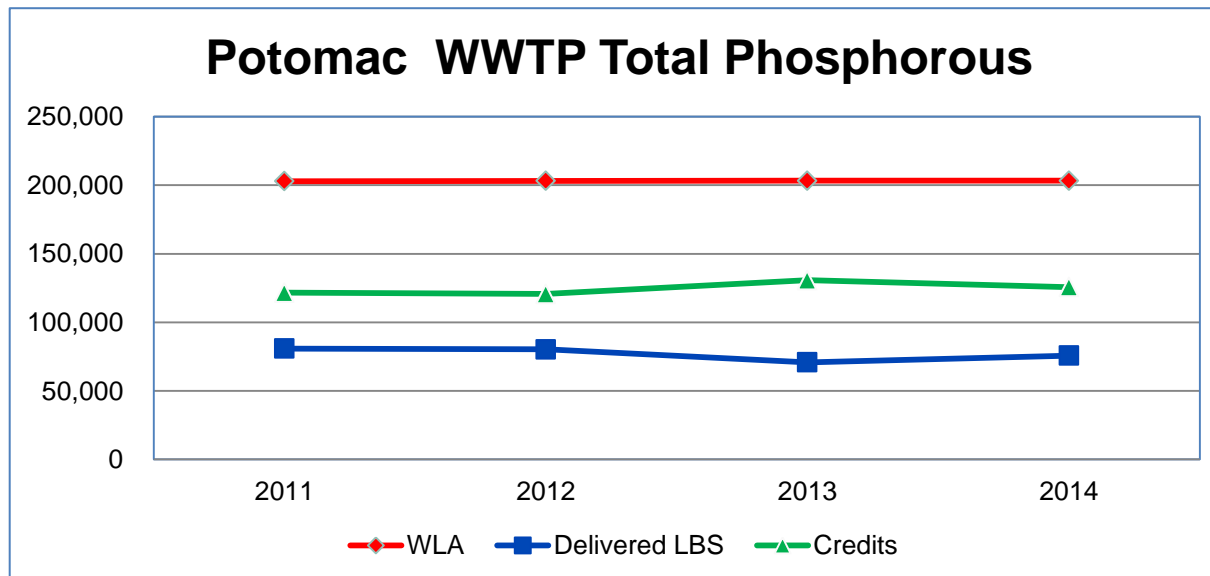
Year	WLA	Delivered	Credits
2011	3,529,439	2,344,022	1,175,307
2012	3,531,546	2,191,237	1,329,778
2013	3,533,515	2,186,900	1,331,289
2014	3,533,861	2,045,671	1,476,348



Potomac & Shenandoah WWTP

Performance

Year	WLA	TP	
		Delivered	Credits
2011	202,897	80,826	121,583
2012	203,190	80,319	120,678
2013	203,241	70,858	130,681
2014	203,282	75,683	125,670



Merck Footnote

^A In any year when credits are available after all other exchanges within the Potomac Basin are completed in accordance with § 62.1-44.19:18 of the Code of Virginia, Merck shall acquire credits for TN discharged in excess of 14,619 lbs/yr and TP discharged in excess of 1,096 lbs/yr. This equates to an acquisition of 2,324 delivered lbs of TN and 340 delivered lbs of TP for 2012.

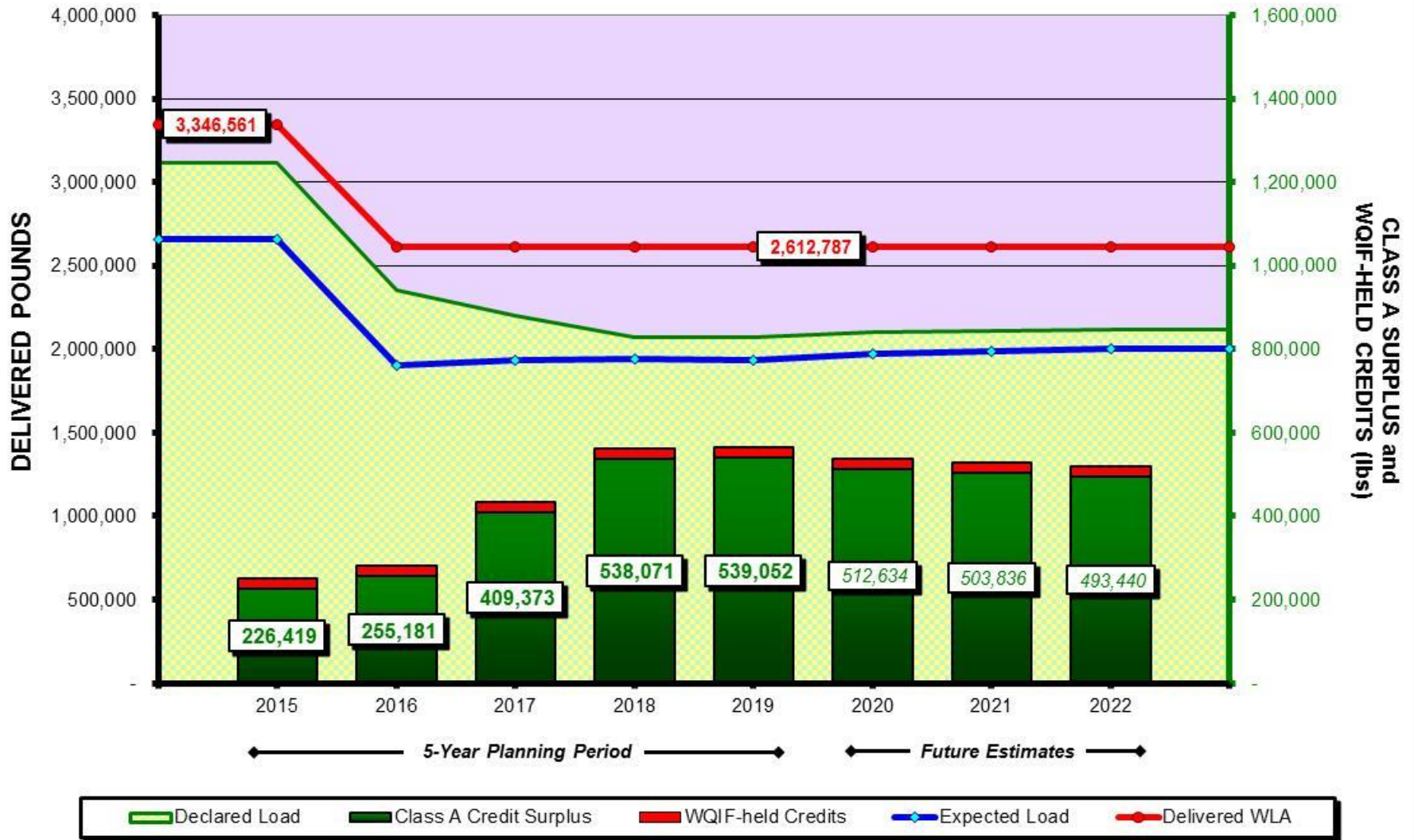


Potomac – Shenandoah ExChange Compliance Plan

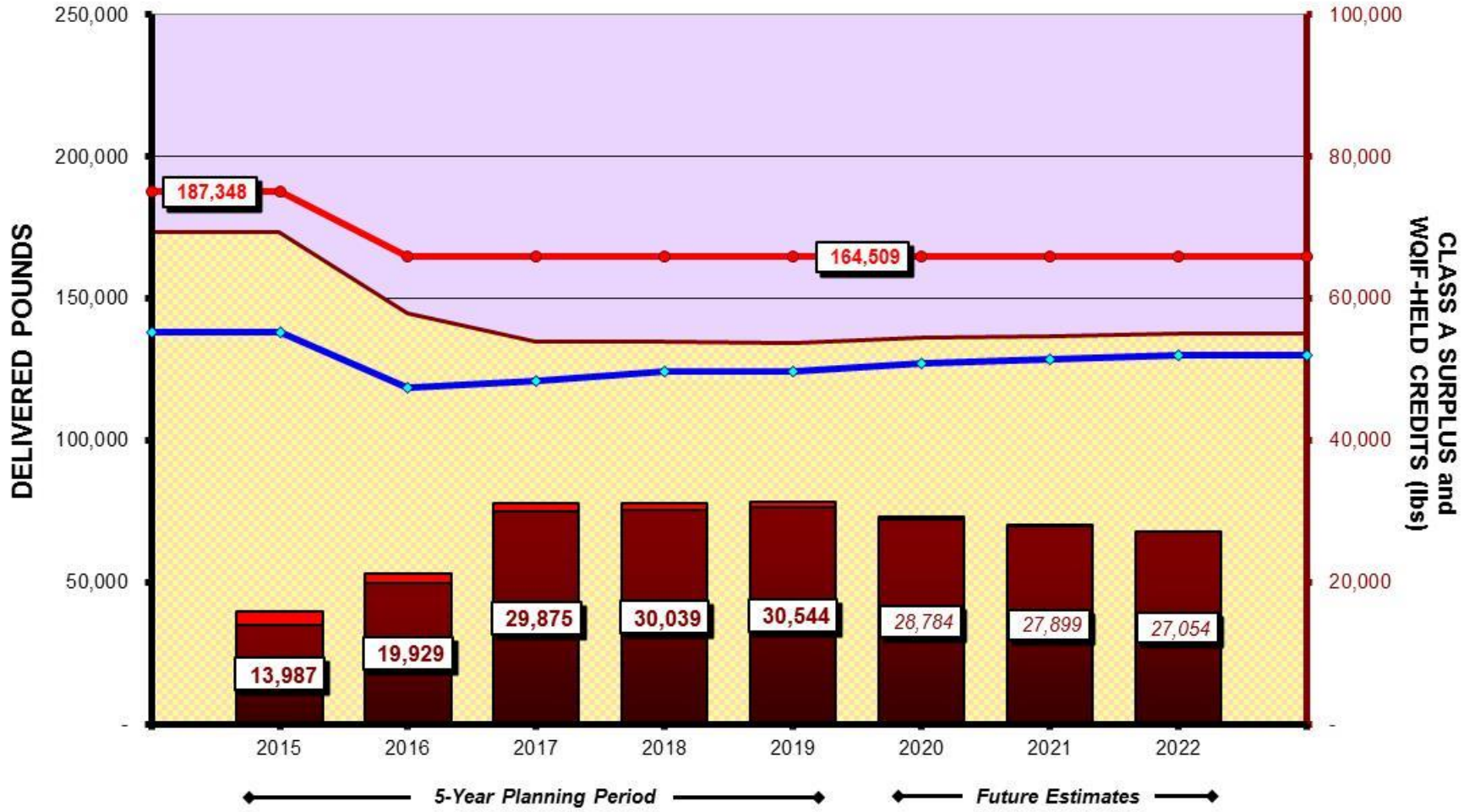


2015 to 2022
Only ExChange Facilities

Nitrogen Compliance: Potomac Basin

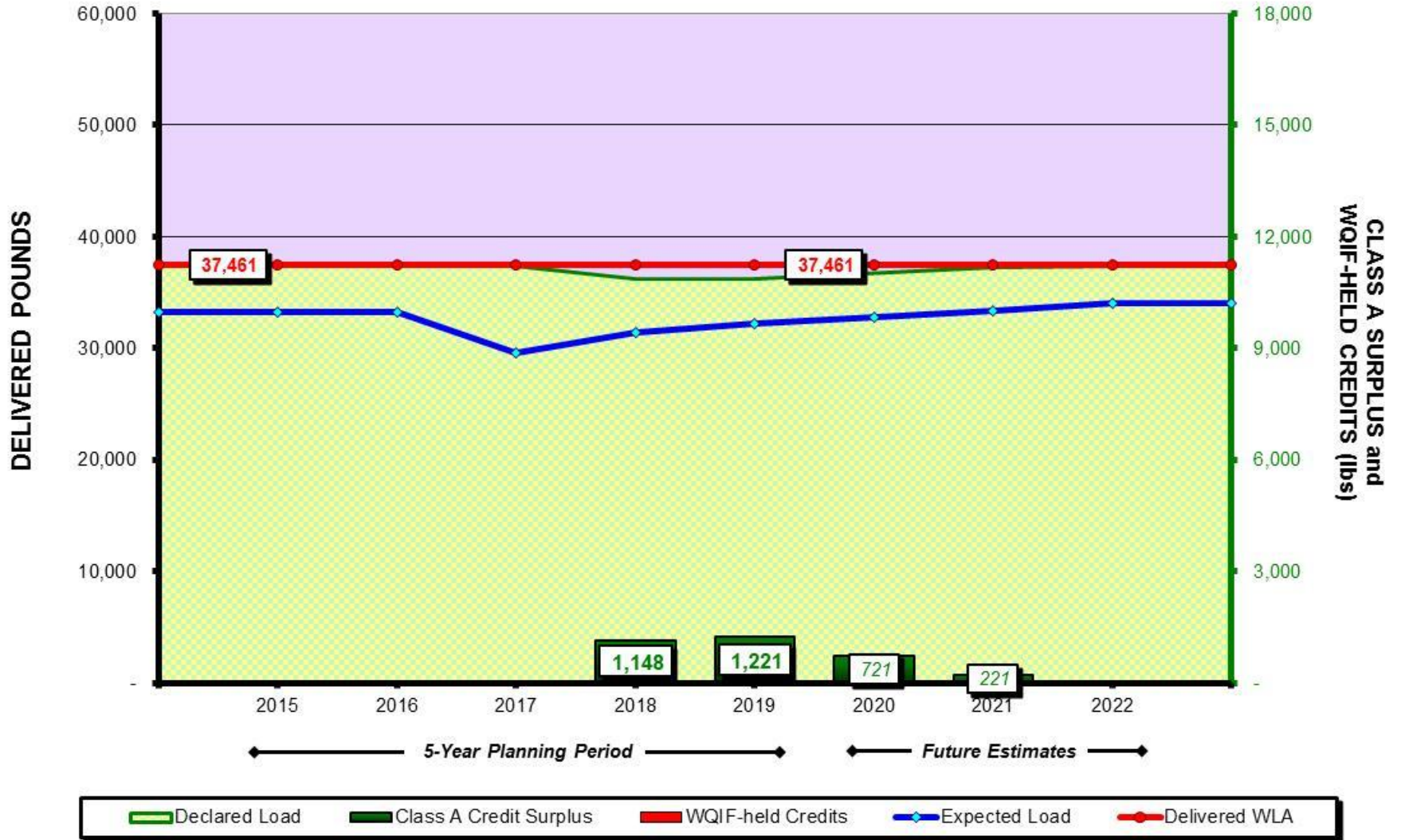


Phosphorus Compliance: Potomac Basin

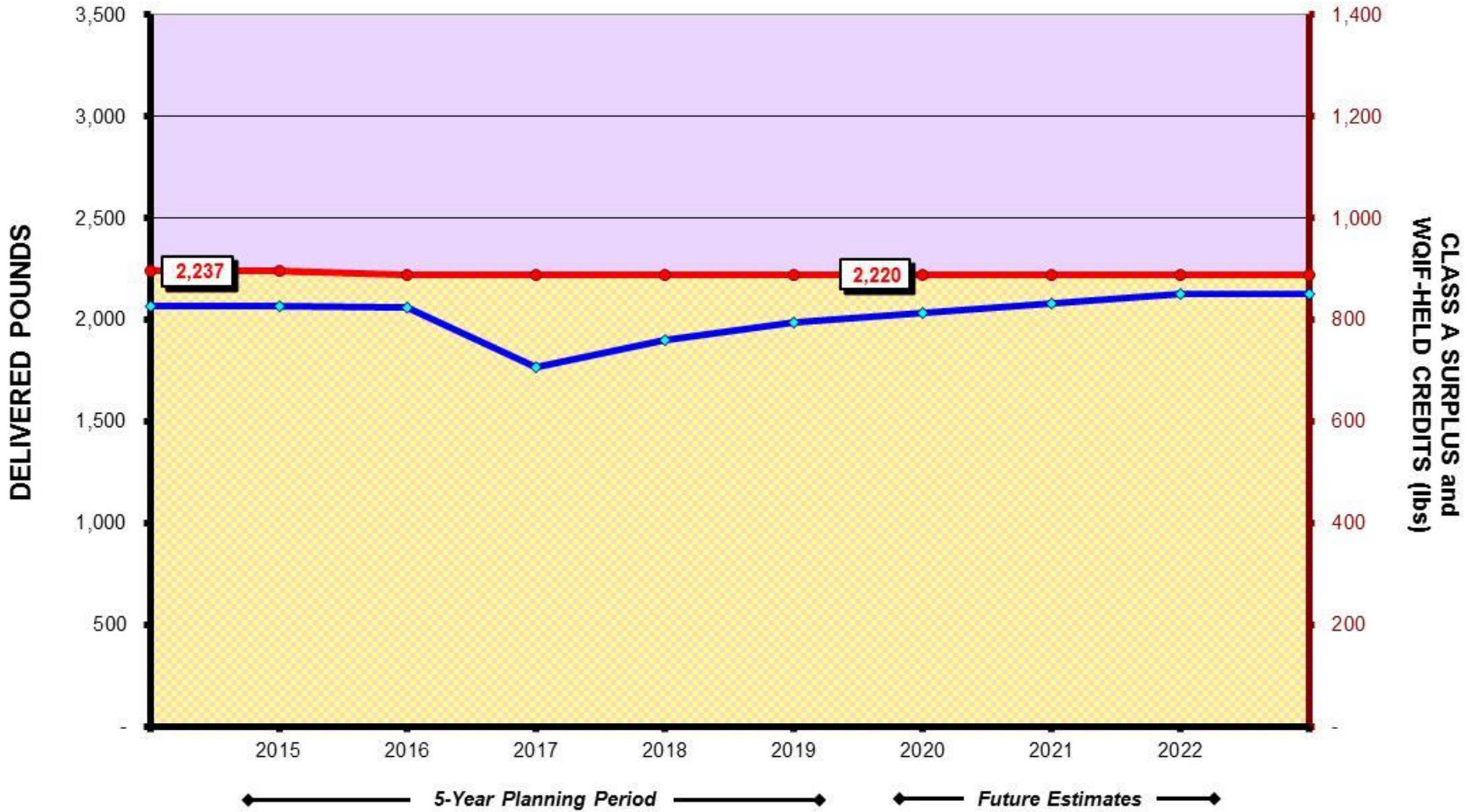


Declared Load
 Class A Credit Surplus
 WQIF-held Credits
 Expected Load
 Delivered WLA

Nitrogen Compliance: Eastern Shore Basin



Phosphorus Compliance: Eastern Shore Basin



Declared Load
 Class A Credit Surplus
 WQIF-held Credits
 Expected Load
 Delivered WLA

New Plan Year (2019) Nitrogen

	<i>Overall Credit Buffer</i>	<i>Class A Credit Buffer</i>	WLA	<i>Overall Buffer as %</i>	<i>Class A Buffer as %</i>
Potomac Basin	648,475	539,052	2,612,787	24.8%	20.6%
Rappahannock Basin	88,878	55,800	443,502	20.0%	12.6%
York Basin	68,017	26,376	806,388	8.4%	3.3%
Upper James Basin	1,365,700	726,955	7,678,564	17.8%	9.5%
Lower James Basin ¹	43,512	NA	4,400,000	1.0%	NA
Eastern Shore ²	5,309	1,221	37,461	14.2%	3.3%

1 - There is no Class A market as HRSD is the only owner within the Lower James Basin

2 - Does not include Class A Credits provided by the Potomac Basin



New Plan Year (2019) Phosphorus

	<i>Overall Credit Buffer</i>	<i>Class A Credit Buffer</i>	WLA	<i>Overall Buffer as %</i>	<i>Class A Buffer as %</i>
Potomac Basin	39,007	30,544	164,509	23.7%	18.6%
Rappahannock Basin	10,647	6,622	37,547	28.4%	17.6%
York Basin	5,166	629	95,428	5.4%	0.7%
Upper James Basin	206,124	165,460	623,605	33.1%	26.5%
Lower James Basin ¹	9,089	NA	373,247	2.4%	NA
Eastern Shore ²	233	(55)	2,220	10.5%	-2.5%

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2 - Does not include Class A Credits provided by the Potomac Basin



Regulatory Update



General Permit Reissuance

- 💧 DEQ Issued Notice of Intended Regulatory Action
- 💧 Current Permit Expires 12/31/16
- 💧 New Permit 1/1/17 to 12/31/21
- 💧 Little change expected on Potomac ***except:***
- 💧 New Delivery Factors from EPA Bay Model



New Ammonia Criteria

- New Science: Freshwater mussel species impacted by low ammonia concentrations
- VA DEQ in midst of triennial review of water quality standards
- Ammonia standards may drop ~50%
- Will not affect annual TN loads in GP
- Weekly / Monthly permit limits will be a compliance issue



Potomac – Shenandoah ExChange Future Issues



Decrease in Credits

💧 WLA set at Concentration X Design Q

- ~ TN 4 mg/l & TP 0.3 mg/l above fall line
- ~ TN 3 mg/l & TP 0.3 mg/l below fall line
- ~ TP 0.18 at Potomac Estuary plants
- ~ TP 0.10 at UOSA and Broad Run

💧 Population and Industrial Growth over time

- ~ Plants will approach Design Q

💧 MS4 draw on WWTP credits

- ~ Only Arlington – so far

Small Offsets



Increase in Credits

- 💧 Reclaimed water reuse
 - ~ Loudoun Water and Fairfax
- 💧 Conservation and Reduced water demand
 - ~ Per capita use dropping
 - ~ Traditional rule of thumb 100 gpd per person
 - ~ Current trend toward 85 gpd per person
- 💧 Inflow and Infiltration Control



New Technology

- 💧 *May* Lower Concentrations +/- or costs in future
- 💧 VWEA Education Committee Seminar
April 30, Westin Hotel in Richmond
- 💧 REGISTER ONLINE:
- 💧 regonline.com/2015EducationConf
- 💧 www.vwea.org



Bottom Line

- Expect Credit Buffers to shrink in the future

Questions?

www.TheExchangeAssociation.org

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