

MARYLAND WATER QUALITY TRADING ADVISORY COMMITTEE
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MS4 TRADING

Mechanisms for Annual Trading & Crediting with WWTPs

presented by

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Representing MAMWA & MAMSA

Very Beneficial, Very Doable

- **Annual Trading Among NPDES Permittees Is “Ultra-Safe”**
 - Temporary (5-year permits, annual trades)
 - Trading can be “unwound” or adjusted over time
- **Offset Management Issues Don’t Really Apply**
 - With MS4, it’s a remedial focus
 - Reducing load over time, not adding new loads
- **MS4 Benefits Are Compelling**
 - Cost-Effectiveness: Tool to mitigate harshest financial impacts
 - Scheduling: Tool to make retrofit schedules manageable

***Unique Opportunity for Positive Thinking,
Collaboration, and Moving Forward***

Keys to Success

- **Set Clear Basic Rules Up Front**
 - Ex: Environmental: Baseline, Local WQS Recognition
 - Ex: Operational: Credit Calculation, Timing, Reporting
- **Give Owners Flexibility Within the Rules**
 - WWTP permit modifications unnecessary, unworkable
 - Need Advance authorization to trade within the rules

WWTP Example (See Notes)

County A WWTP								
NPDES Identification		MD0021XXX						
Facility Type		Municipal						
Significant / Non-significant		SIG						
Nitrogen Credit Summary		2015	2016	2017	2018	2019	2020	2021
		ACTUAL	FACILITY FORECAST					
WLA Design Flow (mgd)		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Actual Flow (mgd)		0.70	0.72	0.75	0.78	0.81	0.84	0.87
Concentration (mg/L)		3.00	3.00	3.00	3.00	3.00	3.00	3.00
Discharged Load (end of pipe)		6,396	6,578	6,853	7,127	7,401	7,675	7,949
Chesapeake Bay Delivery Factor		0.70	0.70	0.70	0.70	0.70	0.70	0.70
Delivered Load		4,477	4,605	4,797	4,989	5,180	5,372	5,564
Delivered WLA		8,528	8,528	8,528	8,528	8,528	8,528	8,528
Flow Fraction Credits		2,558	2,388	2,132	1,876	1,620	1,364	1,109
Performance Fraction Credits		1,492	1,535	1,599	1,663	1,727	1,791	1,855
Total Credits Generated		4,051	3,923	3,731	3,539	3,348	3,156	2,964
Transfers In (Out) within Owner Bubble		0	0	0	0	0	0	0
Transfers In (Out) from Private Trades		0	0	0	0	0	0	0
Expected Net Credits		4,051	3,923	3,731	3,539	3,348	3,156	2,964

MS4 Example (See Notes)

1	Town B MS4							
2	NPDES Identification	MD0021XXX						
3	Facility Type	MS4						
4	Phase 1 or Phase 2	Phase 1						
5	Nitrogen Credit Summary	2015	2016	2017	2018	2019	2020	2021
6		ACTUAL	FACILITY FORECAST					
7	Total Impervious Area (acres)	1,000	1,000	1,000	1,000	1,000	1,000	1,000
8	Permit Restoration Target (%)	0%	0%	0%	0%	20%	20%	20%
9	Permit Restoration Target (acres)	-	-	-	-	200	200	200
10	Maximum Restoration by Credit Use (acres)	0	0	0	0	100	100	100
11	Owner's Specified Level of Credit Use (%)	80%	80%	80%	80%	80%	80%	80%
12	Restoration by Credit Use (acres)	-	-	-	-	80	80	80
13	Nitrogen Conversion Factor (acres to pounds)	12.26	12.26	12.26	12.26	12.26	12.26	12.26
14	Chesapeake Bay Delivery Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70
15	Expected Gross Credit Demand	0	0	0	0	(687)	(687)	(687)
16	Transfers In (Out) within Owner Bubble	0	0	0	0	0	0	0
17	Transfers In (Out) from Private Trades	0	0	0	0	0	0	0
18	Expected Net Credit Demand	0	0	0	0	(687)	(687)	(687)

Trading Region Example (See Notes)

A B C D E F G H I J K L

Region: ABC Parameter: Nitrogen											
Facility Name	Forecasted Credit Supply or Demand				Preliminary Transfers			Exchange Trades for Year:			2021
	Delivered WLA	Delivered Load	WWTP Credits	MS4 Credit Demand	In-Bubble Transfers	Private Trades	Expected Net Credits	Buy (credits)	Sell (credits)	Revenues	
	<i>Wastewater</i>			<i>MS4</i>				PRICE:	\$ 100.00	\$ 73.94	
Aggregate Data:	537,228	428,564	108,664	(89,287)	-	-	19,377	54,987	74,364	\$ -	
County A WWTP	8,528	5,564	2,964		-	-	2,964	-	2,964	\$ 219,167	
Town B MS4			-	(687)	-	-	(687)	687	-	\$ (68,700)	
City C WWTP	170,500	132,900	37,600	-	(25,700)	-	11,900	-	11,900	\$ 879,922	
City C MS4			-	(25,700)	25,700	-	-	-	-	\$ -	
County D MS4			-	(17,200)	-	-	(17,200)	17,200	-	\$ (1,720,000)	
County E MS4			-	(12,900)	-	-	(12,900)	12,900	-	\$ (1,290,000)	
Commission F WWTP #1	127,900	106,300	21,600		-	-	21,600	-	21,600	\$ 1,597,170	
Commission F WWTP #2	85,300	70,900	14,400		-	-	14,400	-	14,400	\$ 1,064,780	
Commission F WWTP #3	17,100	13,300	3,800		-	-	3,800	-	3,800	\$ 280,984	
Town G MS4			-	(13,700)	-	-	(13,700)	13,700	-	\$ (1,370,000)	
Industry H WWTP	42,600	40,000	2,600		-	-	2,600	-	2,600	\$ 192,252	
City I MS4			-	(5,100)	-	-	(5,100)	5,100	-	\$ (510,000)	
County J WWTP #1	85,300	53,200	32,100		(15,000)	-	17,100	-	17,100	\$ 1,264,426	
County J WWTP #2	-	6,400	(6,400)		6,400	-	-	-	-	\$ -	
County J MS4			-	(8,600)	8,600	-	-	-	-	\$ -	
Town K MS4			-	(5,400)	-	-	(5,400)	5,400	-	\$ (540,000)	
			-		-	-	-	-	-	\$ -	
			-		-	-	-	-	-	\$ -	
			-		-	-	-	-	-	\$ -	