Maryland's WIP Process and the Role for Agriculture

Resource Conservation Operations

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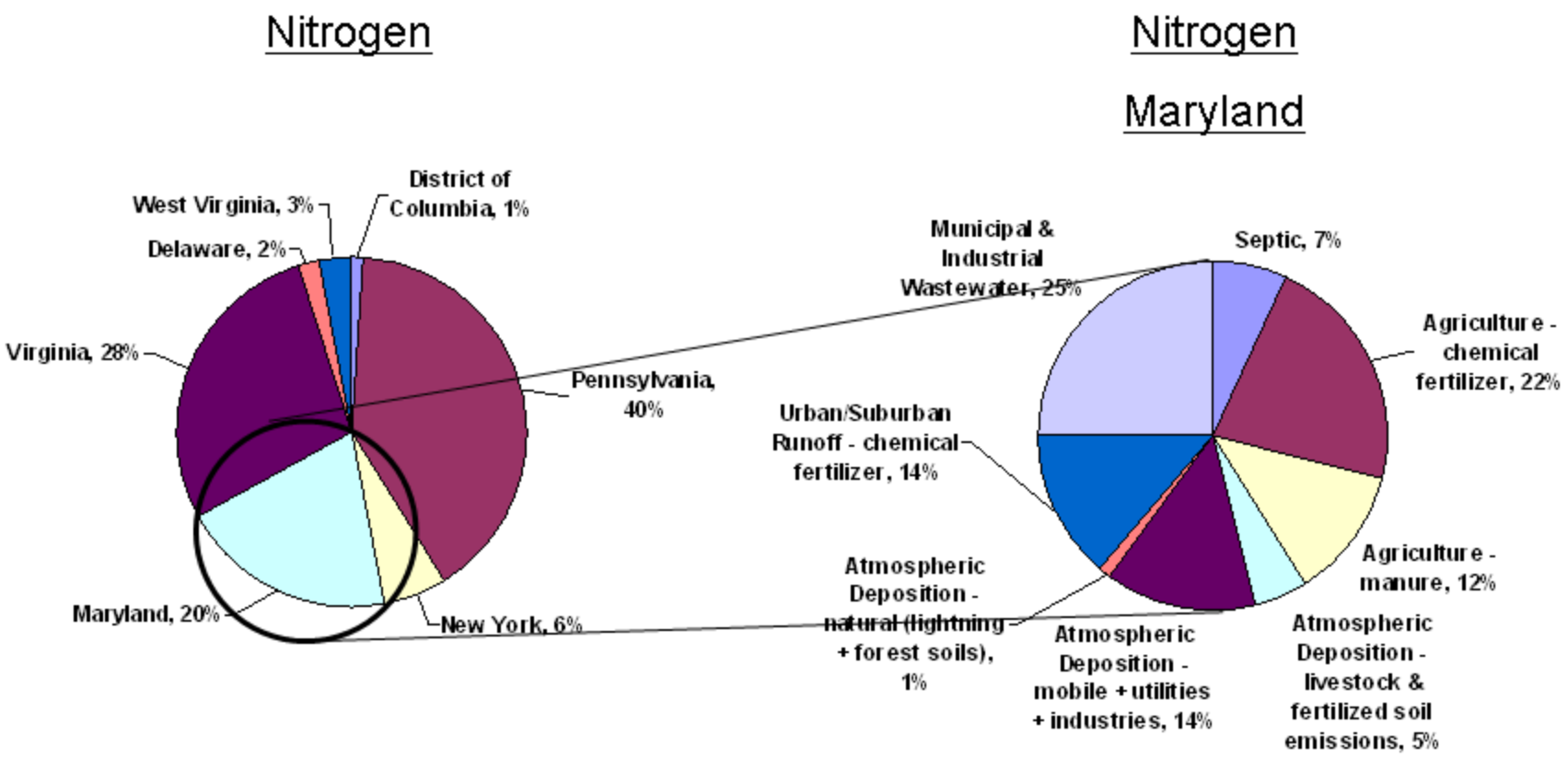
Maryland's Watershed Implementation Plan - Phase I (draft)

August 2010

Relative Responsibility for Loads to the Bay

by Jurisdiction

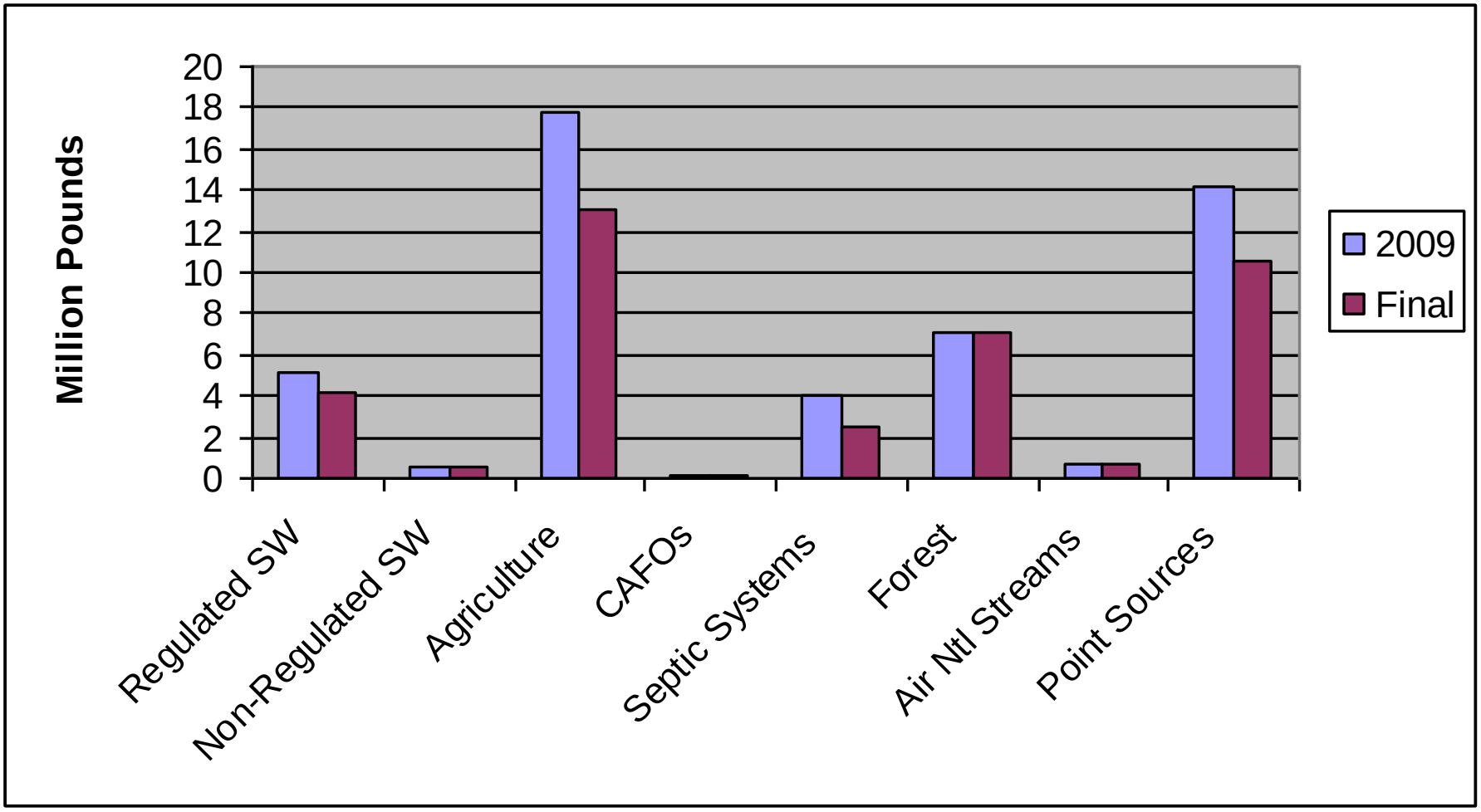


Total Nitrogen - By Sector			
Sector	**2009 Progress**	**Final Target Load**	**% Reduction from 2009 Progress**
Urban Regulated	5.098	4.099	20%
Urban Non Regulated	0.551	0.459	17%
Agriculture	17.713	13.603	23%
CAFO	0.080	0.079	0%
Septic	4.007	2.479	38%
Forest	7.133	7.133	0%
Air	0.691	0.686	1%
WWTP & CSO	14.148	10.547	25%
Total	**49.421**	**39.086**	**21%**

Total Phosphorus - By Sector			
Sector	**2009 Progress**	**Final Target Load**	**% Reduction from 2009 Progress**
Urban Regulated	0.581	0.386	34%
Urban Non Regulated	0.091	0.056	38%
Agriculture	1.364	1.200	12%
CAFO	0.007	0.005	29%
Forest	0.349	0.349	0%
Air	0.041	0.040	2%
WWTP & CSO	0.871	0.679	22%
Total	**3.304**	**2.715**	**18%**

Total Suspended Solids - By Sector			
Sector	**2009 Progress**	**Final Target Load**	**% Reduction from 2009 Progress**
Urban Regulated	382	242	37%
Urban Non Regulated	18	9	48%
Agriculture	787	703	11%
CAFO	0.11	0.04	65%
Forest	191	191	0%
WWTP & CSO	8	77	-879%
Total	**1,387**	**1,222**	**12%**

2009 vs Final Target for **Nitrogen** by Sector:



2009 vs Final Target for **Phosphorus** by Sector:

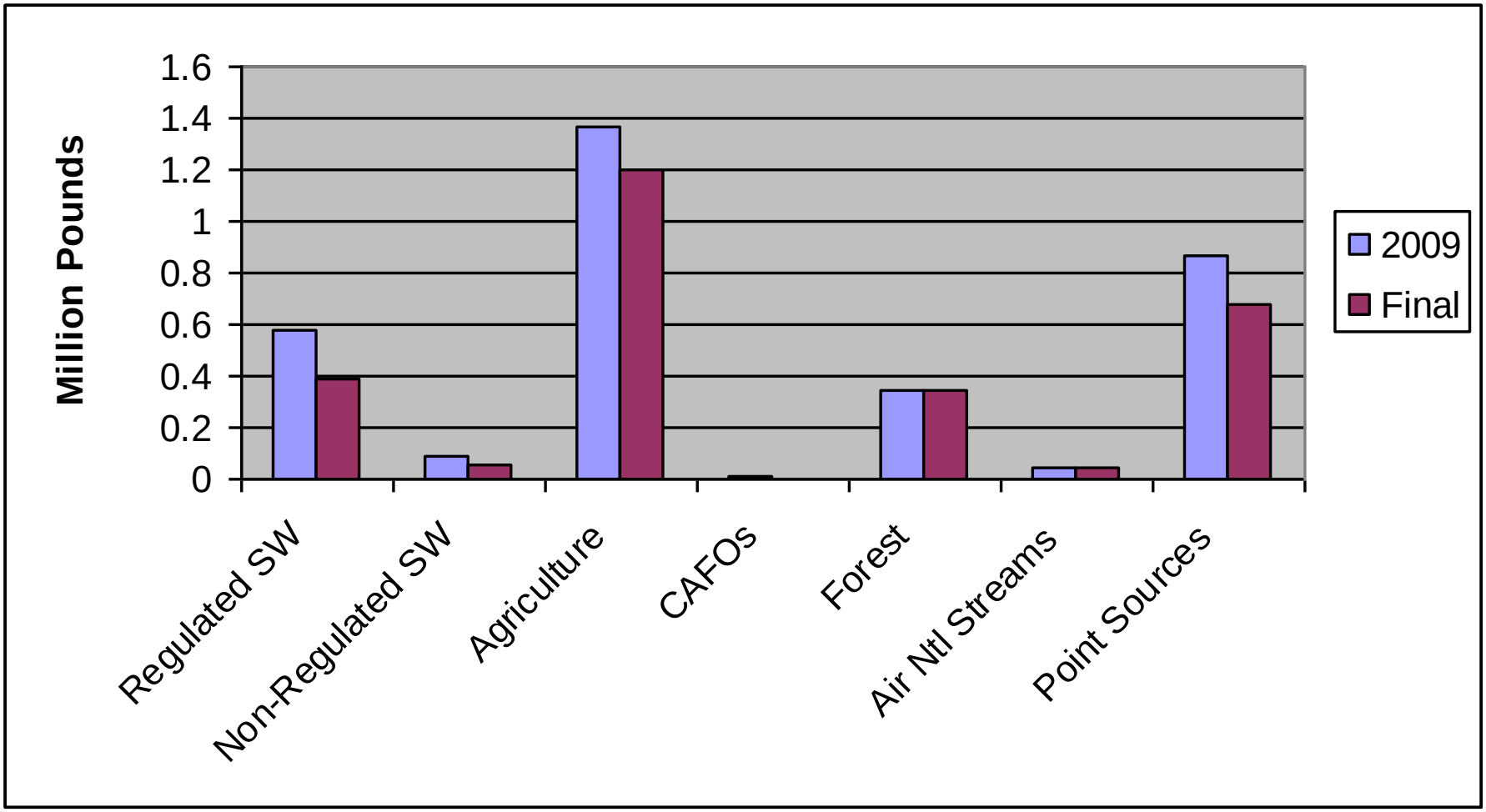


Table 2.1 Maryland's 2009 Baseline Compared to Draft Allocations

	Nitrogen			Phosphorus		
	2009 Progress	Draft Allocation	% Reduction	2009 Progress	Draft Allocation	% Reduction
Eastern Shore	12.38	9.71	22%	1.17	1.09	7%
Potomac	18.51	15.70	15%	1.01	0.90	11%
Susquehanna	1.52	1.08	29%	0.06	0.05	22%
Western Shore	13.94	9.74	30%	0.77	0.46	40%
Patuxent	3.05	2.85	7%	0.29	0.21	27%
MD Total	49.42	39.09	21%	3.30	2.72	18%

Table 4.6
Total Nitrogen Gap Analysis Summary for
Initial Default Allocations Relative to
2017 Interim Target Loads (lbs/yr)
(Delivered Loads)

(A) Source Sector	(B) Current Baseline 2009 Loads* (lbs/year)	(C) 2017 Loads with Current Program Capacity**	(D) 2017 Interim Target Loads***	(E) 2017 Gap (C) – (D)	Final Target Loads
Agriculture	17,829,000	16,470,000	15,285,000	1,185,000	13,590,000
Urban Runoff	5,652,000	5,428,000	5,000,000	428,000	4,420,000
Point Sources	14,362,000	11,132,699	12,044,000	-911,301	10,497,967
Septic	4,006,000	4,215,000	3,080,000	1,135,000	2,460,000
Forest	7,128,000	7,337,000	7,128,000	209,000	7,000,000
Non-tidal air deposition	736,000	709,000	709,000	0	822,000
Total	49,713,000	45,291,699	43,246,000	2,045,699	38,789,967

* Delivered Loads.

Table 4.8
Total Phosphorus Gap Analysis Summary for
2017 Interim Target Loads (lbs/yr)
(Delivered Loads)

(A) Source Sector	(B) Current Baseline 2009 Loads* (lbs/year)	(C) 2017 Loads with Current Program Capacity	(D) 2017 Interim Target Loads	(E) 2017 Gap (C) – (D)	Final Target Loads
Agriculture	1,367,000	1,228,000	1,250,000	-22,000	1,250,000
Urban Runoff	671,000	658,000	559,000	99,000	390,000
Point Sources	793,000	582,570	718,000	-135,430	700,000
Septic	N/A	N/A	N/A	N/A	N/A
Forest	348,000	358,000	345,000	13,000	340,000
Non-tidal air deposition	41,000	43,000	41,000	2,000	40,000
Total	3,538,000	3,235,000	2,963,000	272,000	2,720,000

* Delivered Loads. Chesapeake Bay Watershed Model version 5.3.1 (P5.3_Loads-Acres_06072010.xls)

Table D
Estimated Nitrogen Reductions from Strategy Options

Source Category	(millions of pounds per year)	Interim Target by 2017 (70% of Final)	% of Interim Target Achieved
All Sources	**9.48**	**7.22**	**131%**
Point Sources	5.47		
Urban	0.65		
Septic Systems	0.26		
Agriculture	3.10		

Air Deposition

Table 2.2 Total Loadings by Major Basin

Major River Basin	2009 Progress	
	Total nitrogen (lbs/year)	Total phosphorus (lbs/year)
Susquehanna River Basin	47,644	2,701
Western Shore	57,490	3,577
Patuxent River Basin	22,205	1,595
Potomac River Basin	151,637	8,337
Eastern Shore	412,007	24,805
Total	690,982	41,015

Maryland's Water Quality Trading Program

Phase II – Agricultural Nutrient Trading in Maryland

Buyer

Compensation ($)

Nutrient Credits

Seller


POULTRY LITTER
SUBSURFER

Evaluating Opportunities for Enhancing Agricultural Conservation

Implementation

- Practical
- Opportunity
- Economic Benefits
- Environmental Benefit
- Feasibility
- Product Availability
- Quantifiable Reductions
- Costs
- Education/Training