



EPA Region 1 Perspective

CT Phosphorus Reduction Strategy

Ellen Weitzler, Water Quality Standards

David Pincumbe, NPDES Program

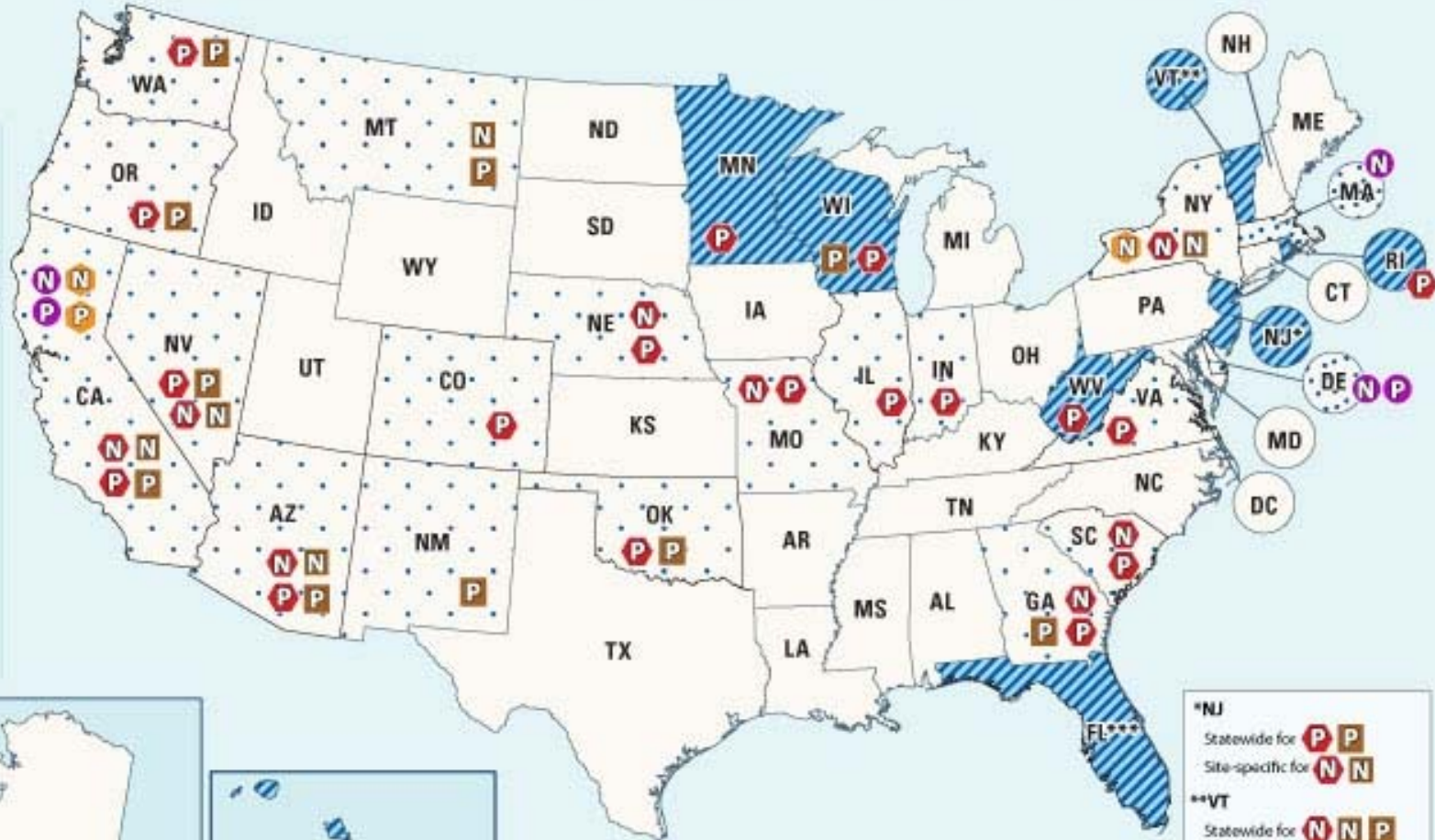
Clean Water Act Requires Water Quality Standards (WQS) and Permits

- Surface water quality be must be maintained and protected.
- States are required to adopt water quality standards including:
 - Designated uses
 - Criteria to protect uses (narrative or numeric)
- Criteria must contain sufficient parameters to protect the designated uses
- Permit effluent limits may not cause or contribute to violation of WQS

Progress Toward Clean Water Act Adopted Numeric Nutrient Criteria

Legend

-  Statewide numeric nutrient criteria for one or more class of water bodies
-  Some site-specific numeric nutrient criteria
-  No numeric nutrient criteria
-  N for rivers/streams
-  P for rivers/streams
-  N for lakes/reservoirs
-  P for lakes/reservoirs
-  N for wetlands
-  P for wetlands
-  N for estuaries
-  P for estuaries



American Samoa	Puerto Rico
Guam	U.S. Virgin Islands
Commonwealth of Northern Mariana	

***NJ**
 Statewide for  
 Site-specific for  

****VT**
 Statewide for   
 Site-specific for 

*****FL**
 Statewide for    
 Site-specific for 

EPA Recommended TP Criteria

- 1986 Gold Book
 - Acute level: 0.1 mg/L (apply at low flow)
- Ecoregion 14 Criteria (most of CT)
 - Rivers & Streams: 0.031 mg/L (apply at average summer or August flow)
 - Lakes: 0.008 mg/L
- Ecoregion 8 Criteria (northwestern CT)
 - Rivers & Streams: 0.01 mg/L (apply at average summer or August flow)
 - Lakes: 0.008 µg/L

State Derived TP Targets in Other Region 1 States

- Rhode Island (criteria)
 - Lakes: 0.025 mg/L
- Maine (draft criteria)
 - Rivers and Streams: 0.018 to 0.033 mg/L
 - Lakes: 0.015 mg/L
- Vermont (Criteria)
 - Criteria for High Altitude Streams (>2500 ft): 0.010 mg/L (apply at low flow)
 - Lake Champlain: 0.010 to 0.054 mg/L
 - Lake Memphremagog: 0.014 to 0.025 mg/L

Massachusetts Phosphorus Controls

- Began establishing water quality based phosphorus limits - 1997
 - Belchertown – 0.25 mg/l total phosphorus limit
 - Marlborough East – 0.1 mg/l total phosphorus limit
 - Charles River Permits – 0.2 mg/l total phosphorus limits
- Limits of 0.2 mg/ or less:
 - 25 POTWs at 0.2 mg/l
 - 15 POTWs at 0.1 mg/l

Low Level Phosphorus Treatment

(2011 -2012 effluent range and average)

Municipality	Effluent TP (mg/l)	Treatment	Filter
Milford	0.05 – 0.24 (0.07)	TF/RBC	sand
Belchertown	0.04 – 0.20 (0.13)	SBR	cloth
Middleborough	0.08 – 0.19 (0.13)	activated sludge	sand
Templeton	0.01 – 0.19 (0.11)	SBR	cloth
Gardner	0.03 – 0.12 (0.07)	TF/activated sludge	No
Hudson	0.07 – 0.14 (0.10)	Dissolved Air Flot.	No
Westborough*	0.05 – 0.07 (0.06)	Actiflo	No
Marlborough*	0.06 – 0.12 (0.08)	Bluepro	No
Maynard	0.04 – 0.07 (0.06)	Comag	No

Sewer use fees (2010)

MUNICIPALITY	ANNUAL HOUSEHOLD FEE
Milford	\$256
Belchertown	\$419
Middleborough	\$181
Templeton	\$383
Gardner	\$292
Hudson	\$321
Westborough	\$331 (2012)
Marlborough	\$376 (2012)
Maynard	\$640

- statewide average (2010) = \$383