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# Nutrient Trading Workshop

State College, PA January 25, 2010

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## Point Source Perspectives

# Nitrogen Loading Trends

## Total and Point Source



(Total Load Chart Courtesy of the Chesapeake Bay Foundation)

# Some Things Considered When Evaluating Trading

- Treatment plant loading
  - Near Capacity (with and without growth)
  - Underloaded (with and without growth)
- Are more stringent effluent limits anticipated?
- Does the WWTP need an upgrade for other reasons?
- Room for expansion or upgrade?
- Treatment Process NRT friendly?
- What are the costs, rent or buy?

# Some Real Decisions to Build, Trade or Both

WWTP	Compliance Phase	Current Flow (mgd)	Design Flow (mgd)	Cost of Compliance (\$/lb.TN)		Decision Build or Trade?
				@ Current Flow	@ Design Flow	
A	1	2.8	3.7	\$ 8.97	\$ 4.67	Build
B	1	1.53	2.2	\$ 7.59	\$ 4.12	Build
C	1	3	3.7	\$ 8.90	\$ 6.00	Build
D	1	1.03	1.8	\$ 10.77	\$ 3.73	Build
E	2	0.26	0.65	\$ 7.86	\$ 2.70	Build
F	2	0.4	0.6	\$ 4.96	\$ 2.47	Build
G	3	0.3	0.45	\$ 8.79	\$ 4.60	Build
H	3	0.97	2.25	\$ 13.33	\$ 2.91	Build
I	3	0.38	0.5	\$ 8.57	\$ 5.26	Build
J	1	1.91	4.2	\$ 22.08	\$ 2.88	Build Some & Trade Some
<i>Cost of Removal at Current Flow</i>				\$ 5.33		
K	1	0.75	1.53	\$ 17.92	\$ 2.91	Build Some & Trade Some
<i>Cost of Removal at Current Flow</i>				\$ 5.81		

# Most Likely Point Source Trading Situations

- Substantially Lower Costs for Credits
- Cost Advantage for Build Some & Buy Some (e.g. Harrisburg)
- Near-Capacity Phase II and III WWTPs
- Delay upgrade until future scheduled expansion (e.g. Fairview Township)
- Delay upgrade until TMDL for local limits
- Expanding Phase IV and V plants