Review of P5.3 Watershed Model Scenarios

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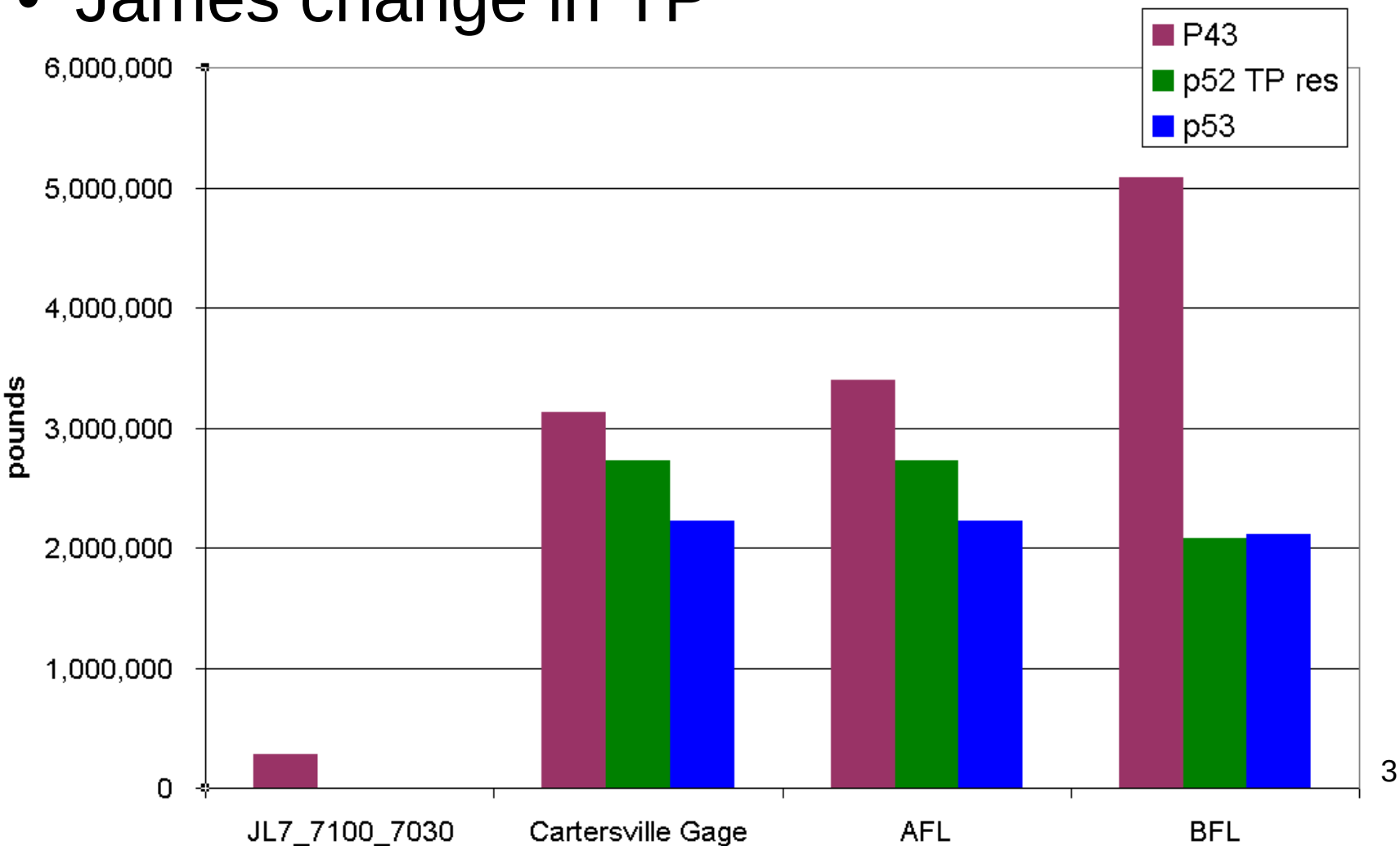
Issues in p5.2 / p5.3 comparison

- DC point sources lower
  - Error in phase 5.2
- Rappahannock higher in Estuarine presentation
  - Error in presentation
- WV and NY load changes
  - High N applications in p5.2 hay
  - Erroneous high P concentrations in WWTP in p5.2

Issues in p5.2 / p5.3 comparison

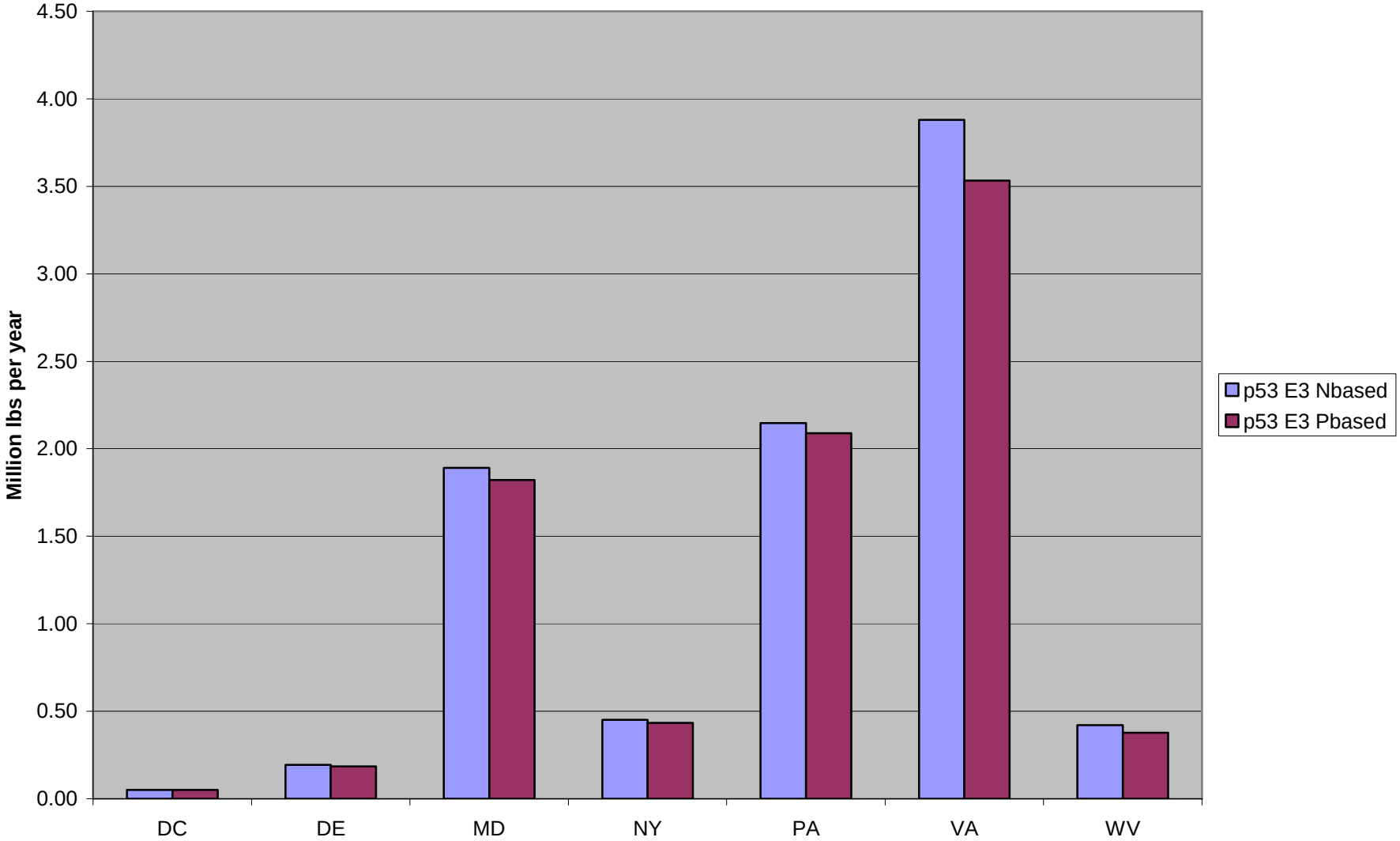
- James change in TP

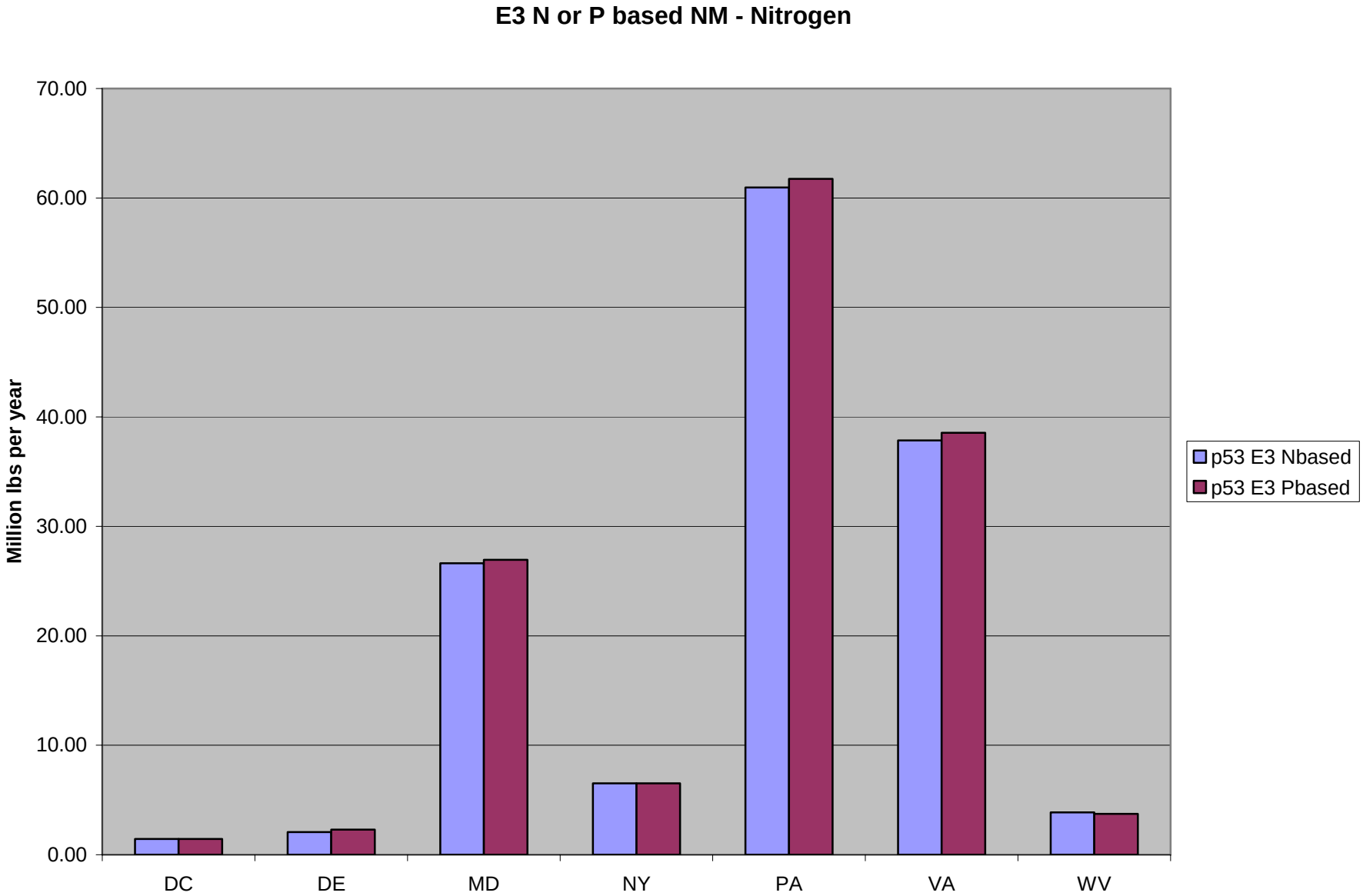


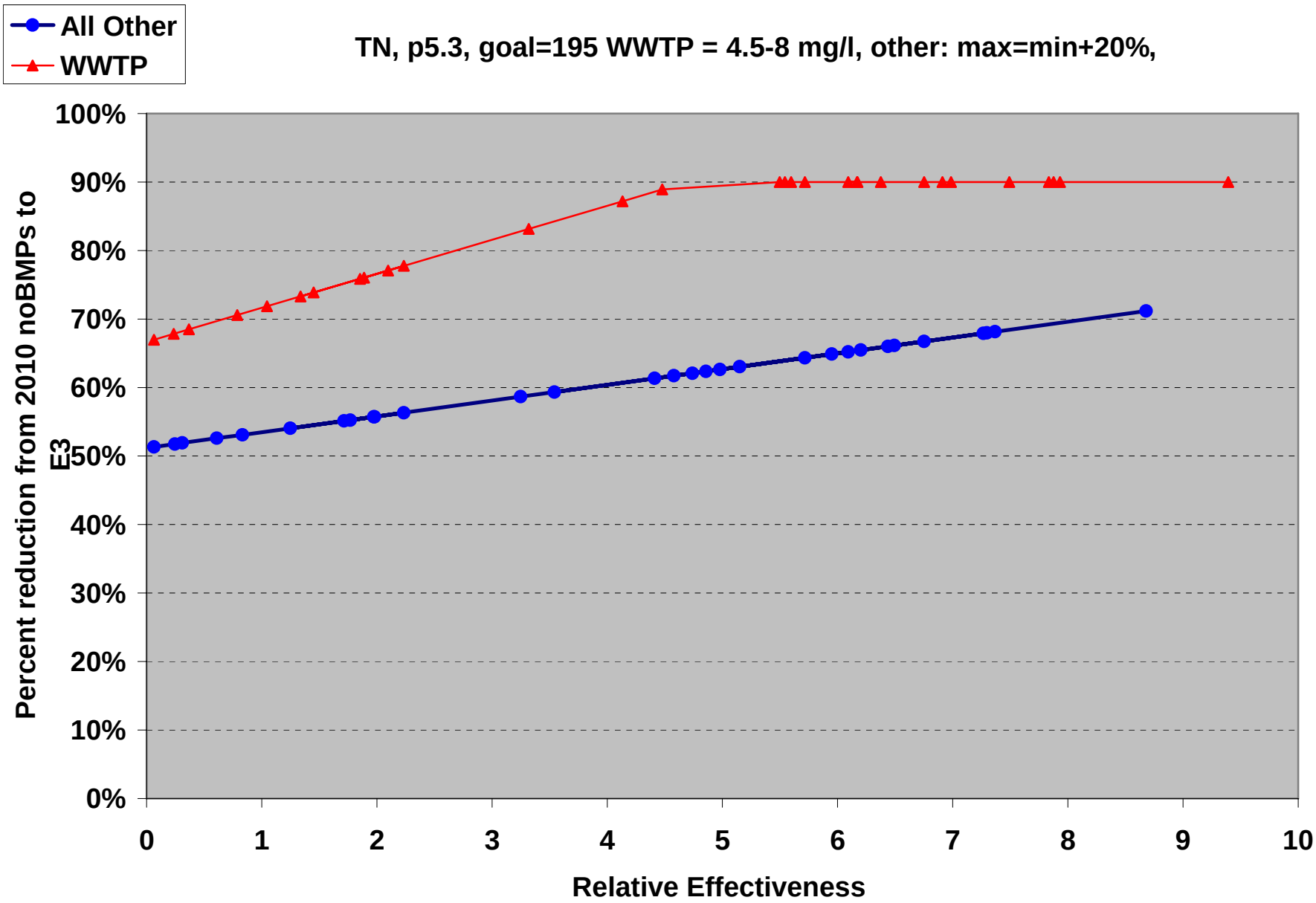
Scenarios Since 4/5

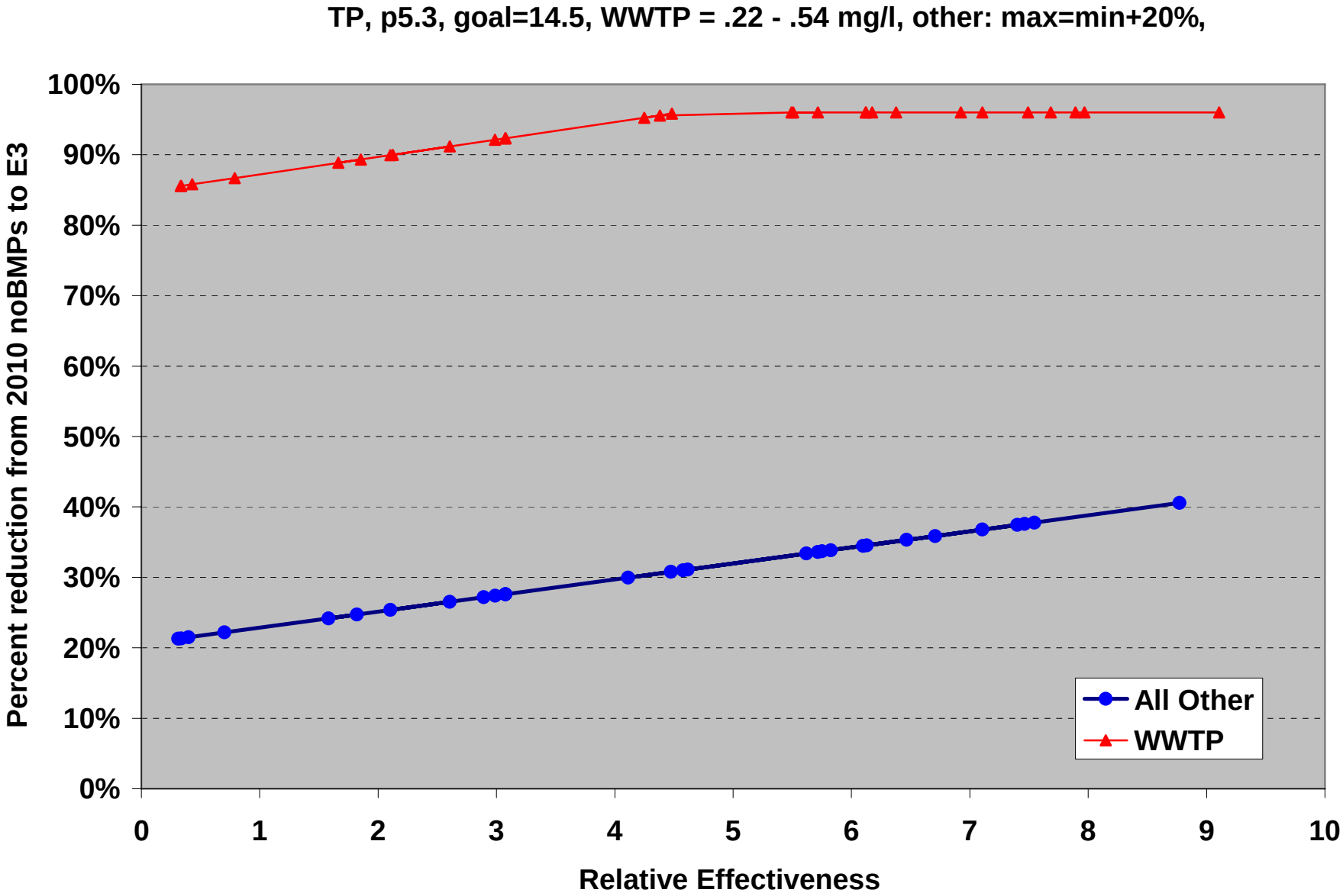
- New
  - E3 with P-Based NM
- Updated – mostly with 2020 CAIR
  - E3 with N-Based NM
  - 2010 No Action
  - 2007
  - 1985
- State Requests
  - 1985 No Action / E3
  - VA EPIL
  - 2002

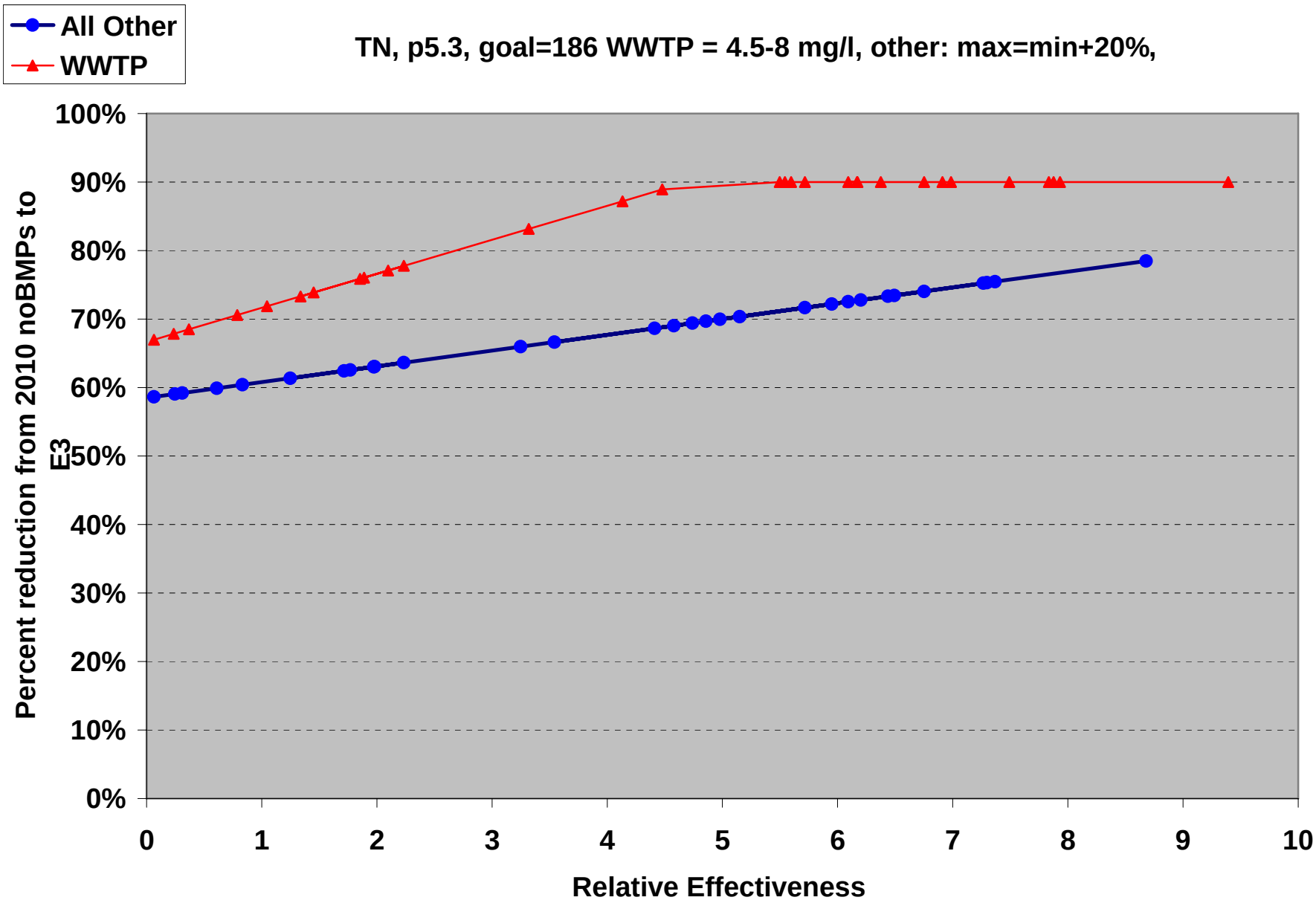
E3 N or P based NM - Phosphorus

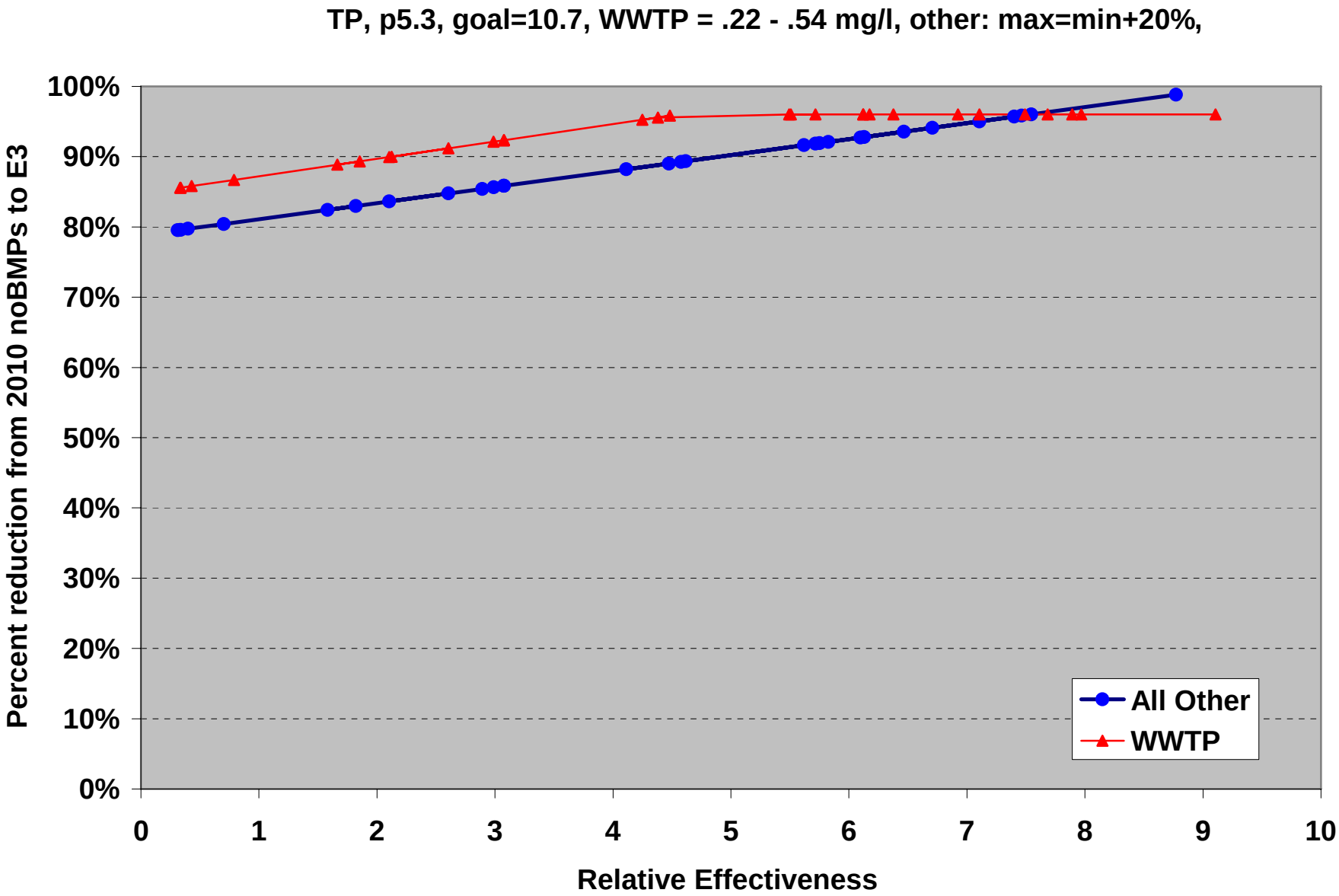



E3 N or P based NM - Nitrogen
Million lbs per year
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
DC
DE
MD
NY
PA
VA
WV
p53 E3 Nbased
p53 E3 Pbased


All Other
WWTP
TN, p5.3, goal=195 WWTP = 4.5-8 mg/l, other: max=min+20%,
Percent reduction from 2010 noBMPs to E3
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
1
2
3
4
5
6
7
8
9
10
Relative Effectiveness


TP, p5.3, goal=14.5, WWTP = .22 - .54 mg/l, other: max=min+20%,
Percent reduction from 2010 noBMPs to E3
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
1
2
3
4
5
6
7
8
9
10
Relative Effectiveness
All Other
WWTP


All Other
WWTP
TN, p5.3, goal=186 WWTP = 4.5-8 mg/l, other: max=min+20%,
Percent reduction from 2010 noBMPs to E3
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
1
2
3
4
5
6
7
8
9
10
Relative Effectiveness


TP, p5.3, goal=10.7, WWTP = .22 - .54 mg/l, other: max=min+20%,
Percent reduction from 2010 noBMPs to E3
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
1
2
3
4
5
6
7
8
9
10
Relative Effectiveness
All Other
WWTP

TN Target Loads

StateBasin	2010 Noact	E3 load	p2007AA	E3 PS	E3 NPS	2007 PS	2007 PS	195" target	186" target
DC Potm	9.78	1.44	2.57	1.40	0.04	2.41	0.16	2.31	2.30
DE Esh	4.98	2.28	4.06	0.15	2.14	0.15	3.91	3.10	2.93
MD Esh	17.70	7.28	13.72	0.49	6.79	1.48	12.24	10.16	9.56
MD Patux	6.01	1.91	3.05	0.67	1.24	0.55	2.50	2.83	2.73
MD Potm	32.96	11.27	19.55	2.81	8.47	4.12	15.43	15.95	15.40
MD Susq	1.75	0.89	1.59	0.02	0.87	0.05	1.54	1.13	1.07
MD Wsh	36.64	5.57	14.26	3.35	2.22	8.82	5.44	9.62	9.37
NY Susq	11.03	6.52	10.77	0.49	6.03	1.77	9.00	7.68	7.50
PA Esh	0.49	0.20	0.47	0.01	0.19	0.03	0.44	0.30	0.28
PA Potm	6.69	3.65	6.05	0.09	3.56	0.19	5.86	4.94	4.74
PA Susq	119.29	57.89	100.46	4.47	53.42	12.81	87.66	74.41	71.25
PA Wsh	0.04	0.01	0.03	0.00	0.01	0.00	0.03	0.02	0.02
VA Esh	2.41	0.82	2.15	0.03	0.79	0.17	1.98	1.28	1.19
VA James	49.11	16.10	30.97	5.70	10.40	15.20	15.77	26.83	26.45
VA Potm	33.53	13.35	20.78	2.84	10.51	3.74	17.05	17.78	17.30
VA Rap	9.33	4.47	7.38	0.38	4.09	0.55	6.83	6.02	5.80
VA York	8.49	3.79	6.81	0.69	3.11	1.55	5.26	5.50	5.31
WV James	0.02	0.02	0.02	0.00	0.02	0.00	0.02	0.02	0.02
WV Potm	6.37	3.70	5.76	0.16	3.55	0.28	5.48	4.83	4.66
Total	**356.61**	**141.17**	**250.45**	**23.73**	**117.45**	**53.85**	**196.60**	**194.69**	**187.87**

TP Target Loads

StateBasin	2010 Noact	E3 load	p2007AA	E3 PS	E3 NPS	2007 PS	2007 PS	14.3 Target"	10.8" target
DC Potm	1.58	0.05	0.07	0.05	0.00	0.05	0.02	0.13	0.12
DE Esh	0.45	0.19	0.31	0.00	0.18	0.01	0.30	0.33	0.20
MD Esh	2.00	0.82	1.29	0.03	0.79	0.14	1.15	1.30	0.87
MD Patux	0.83	0.12	0.33	0.03	0.10	0.11	0.22	0.24	0.17
MD Potm	3.56	0.61	1.06	0.11	0.50	0.20	0.85	1.01	0.78
MD Susq	0.07	0.04	0.06	0.00	0.04	0.00	0.06	0.06	0.04
MD Wsh	3.63	0.23	0.79	0.12	0.11	0.45	0.34	0.52	0.37
NY Susq	0.97	0.43	0.78	0.02	0.42	0.20	0.58	0.58	0.47
PA Esh	0.02	0.01	0.02	0.00	0.01	0.00	0.01	0.02	0.01
PA Potm	0.61	0.33	0.50	0.01	0.31	0.06	0.44	0.48	0.36
PA Susq	5.25	1.75	3.36	0.17	1.58	1.12	2.24	2.63	1.98
PA Wsh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VA Esh	0.30	0.12	0.23	0.00	0.12	0.00	0.22	0.19	0.13
VA James	7.52	1.49	3.53	0.22	1.27	1.22	2.31	2.96	2.37
VA Potm	4.97	0.97	2.01	0.13	0.84	0.42	1.59	1.71	1.23
VA Rap	1.65	0.61	1.18	0.02	0.59	0.09	1.09	1.09	0.72
VA York	1.16	0.34	0.70	0.04	0.30	0.17	0.53	0.62	0.45
WV James	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01
WV Potm	0.92	0.37	0.85	0.01	0.36	0.18	0.68	0.64	0.44
Total	**35.51**	**8.49**	**17.08**	**0.96**	**7.53**	**4.43**	**12.65**	**14.52**	**10.73**