Phase 5.2 Initial Scenarios

WQGIT

9/14/09

Phase 5.2

- Better data and more accurate scenario response than phase 5.1
- Still some known problems to be fixed in phase 5.3
- Scenarios are recently run and still draft.

Phase 5.2 Scenarios run

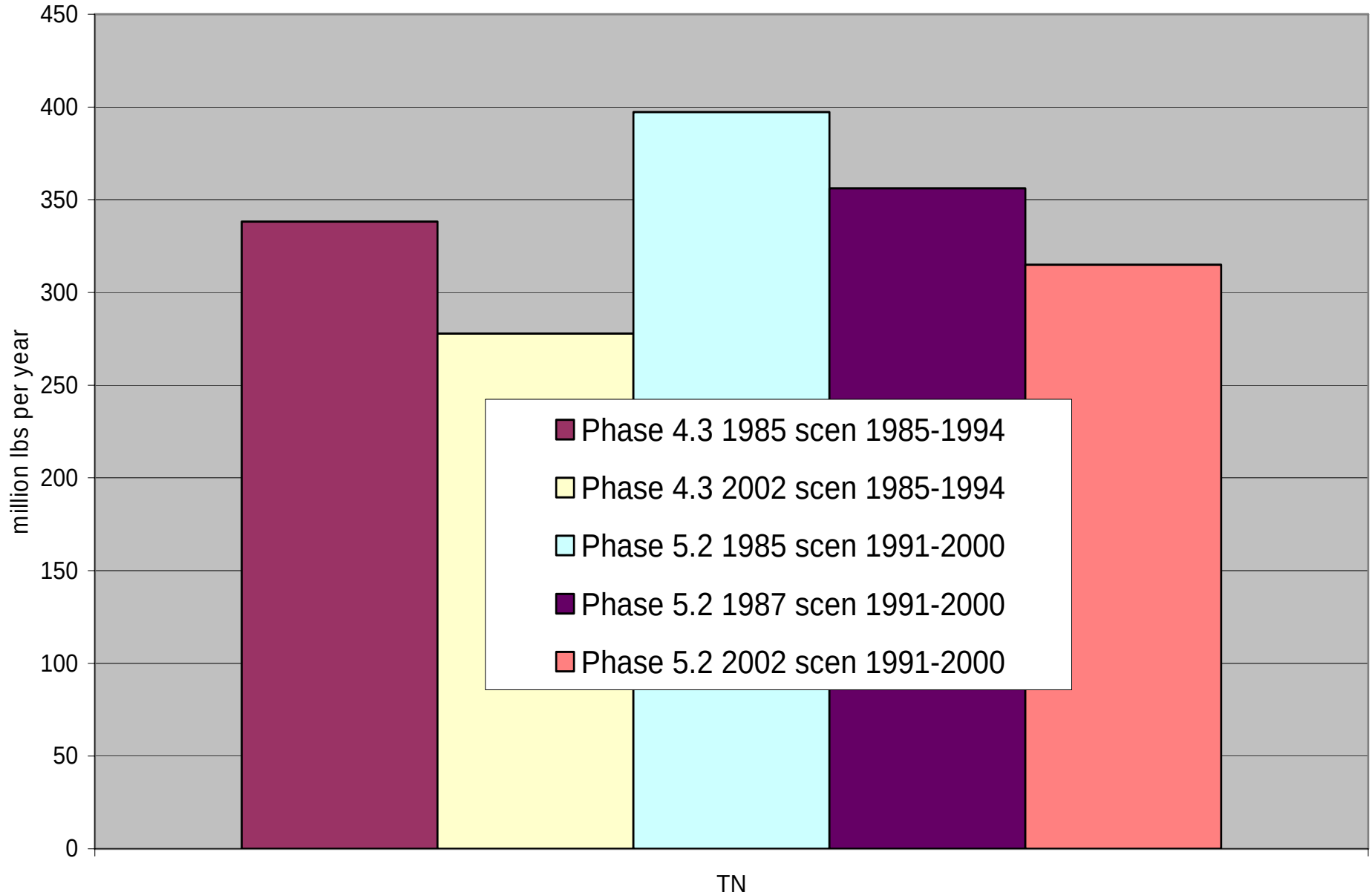
- 1985
- 2002
- No Action
  - Years 2010, 2002, 1985
  - WWTP flows design, current, 1985
- E3
  - Years 2010, 2002, 1985
  - WWTP flows design, current, 1985
- https://archive.chesapeakebay.net/modeling/phase5/scenario_output/p52An/

Still to run

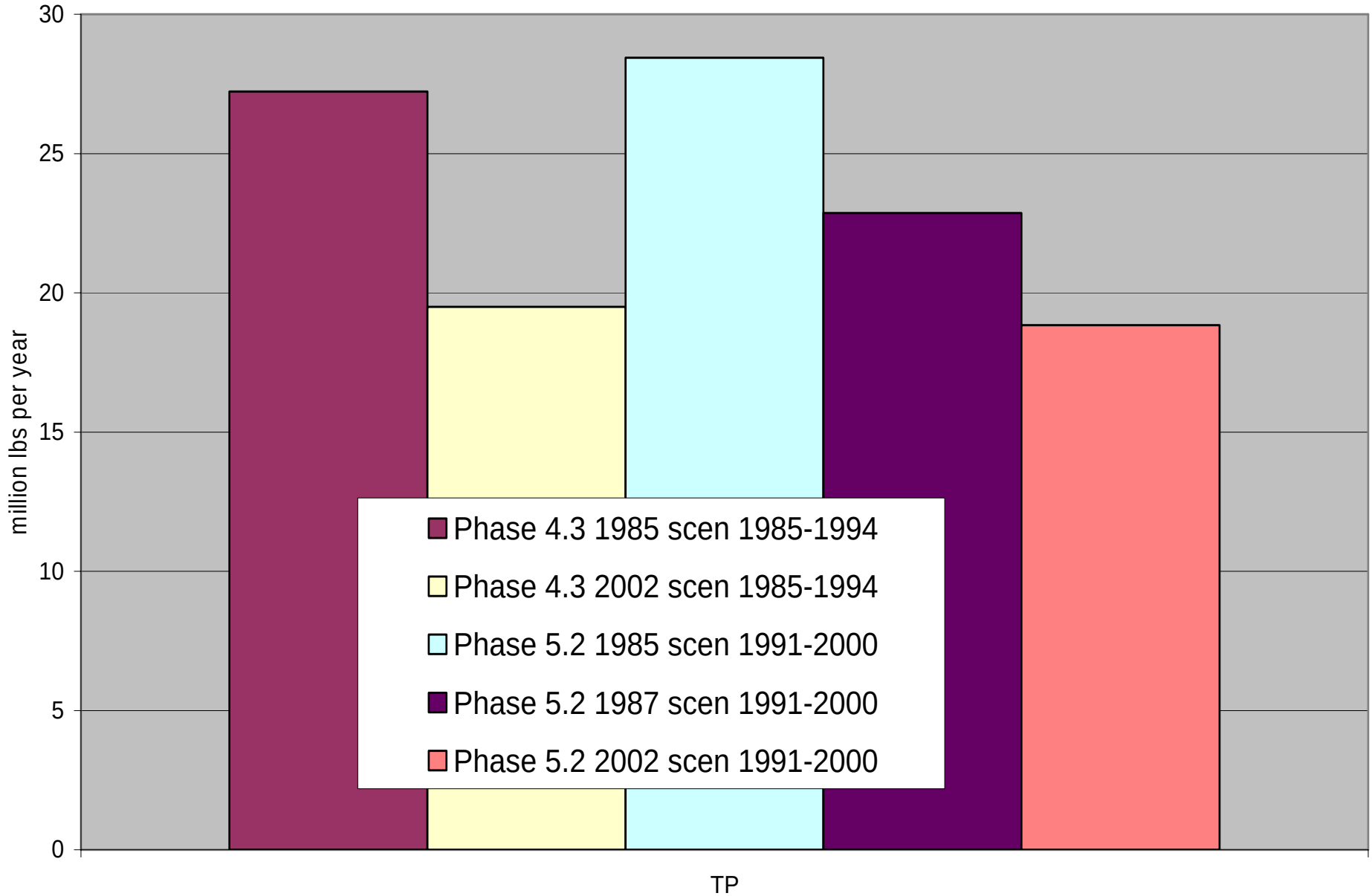
- Tributary Strategy
- 2008
- Enhanced Program Implementation Levels

- Plan to have these available by 9/29

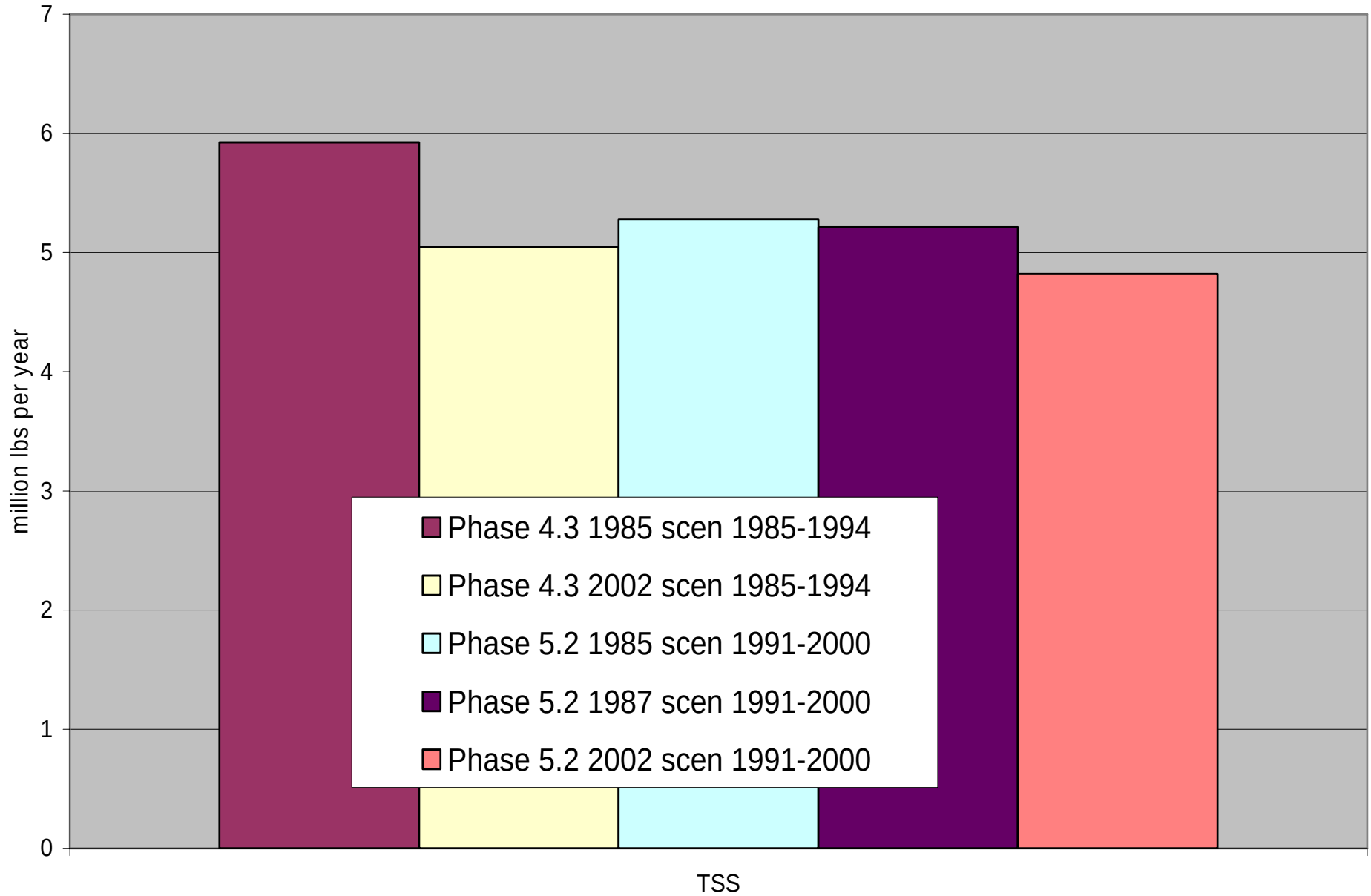
TN Scenario Load Changes



TP Scenario Load Changes



TSS Scenario Load Changes

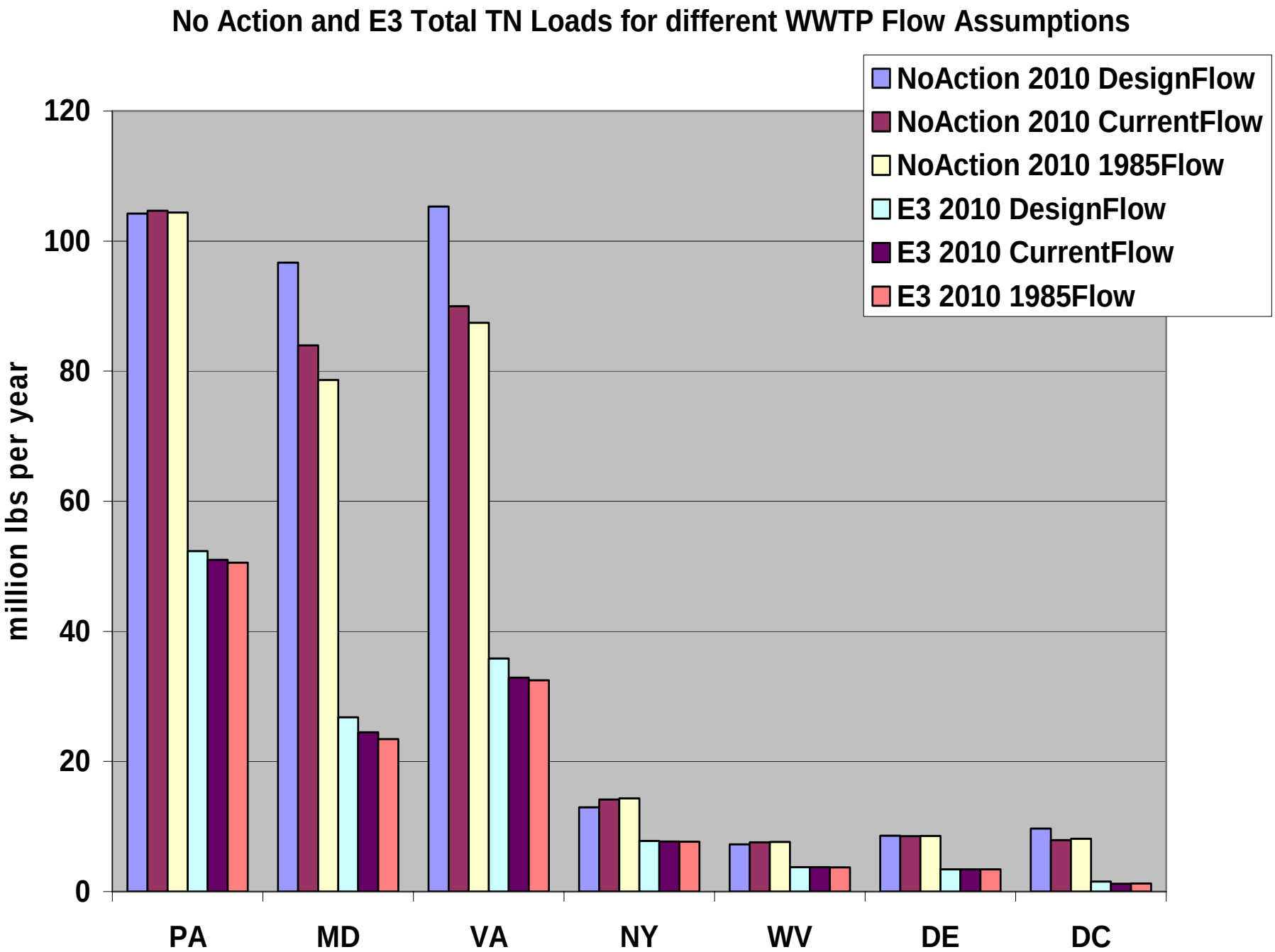


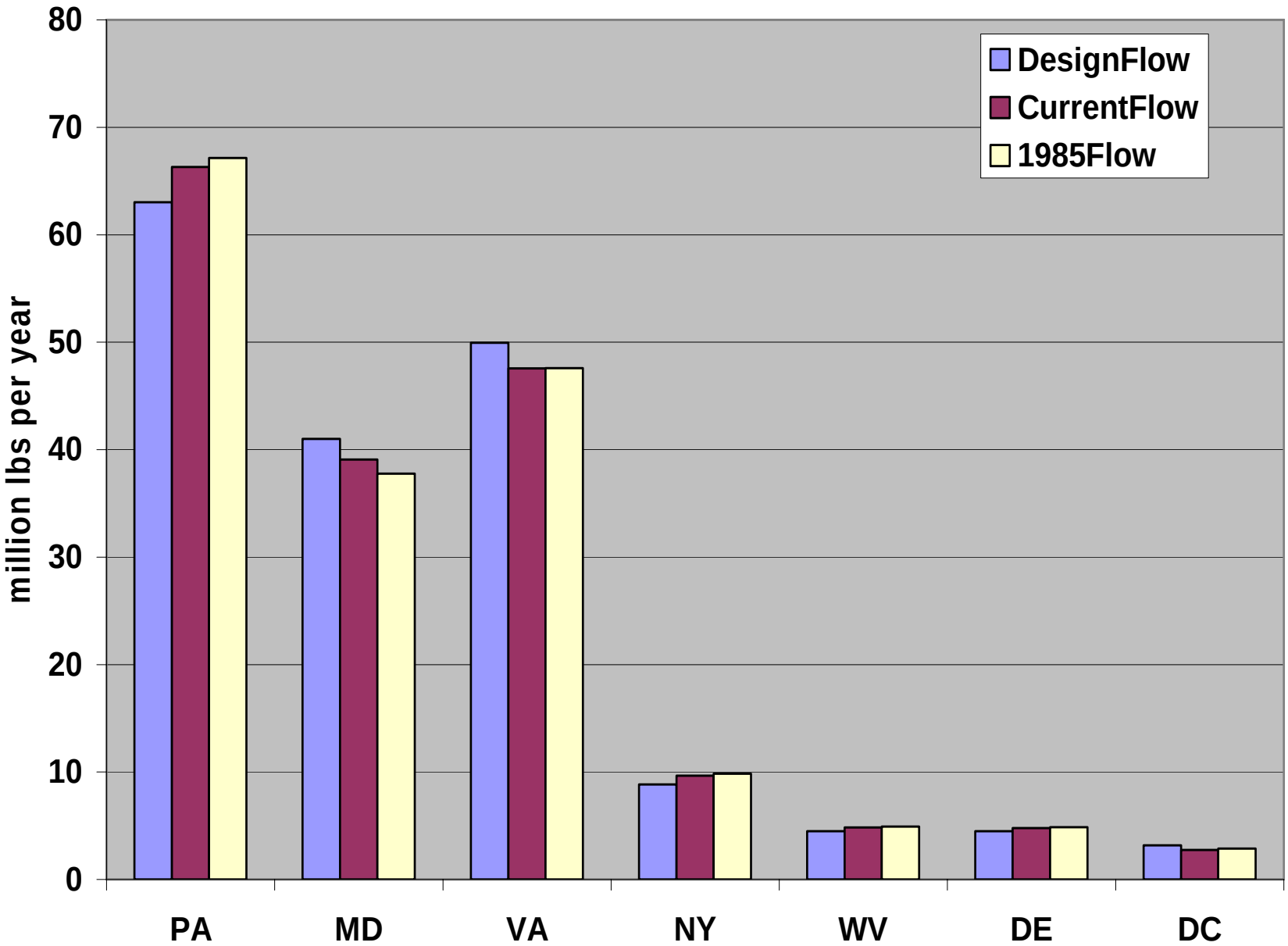
No action and E3 Atmospheric Deposition

- Both No Action and E3 have 2020 “maximum feasible” atmospheric deposition.
- Consistent with plans in the executive order
- Takes the atmospheric portion ‘off the top’ when calculating target loads
- E3 has additional 25% reduction in ammonia attributable to agricultural BMPs

Evaluate WWTP flow assumption

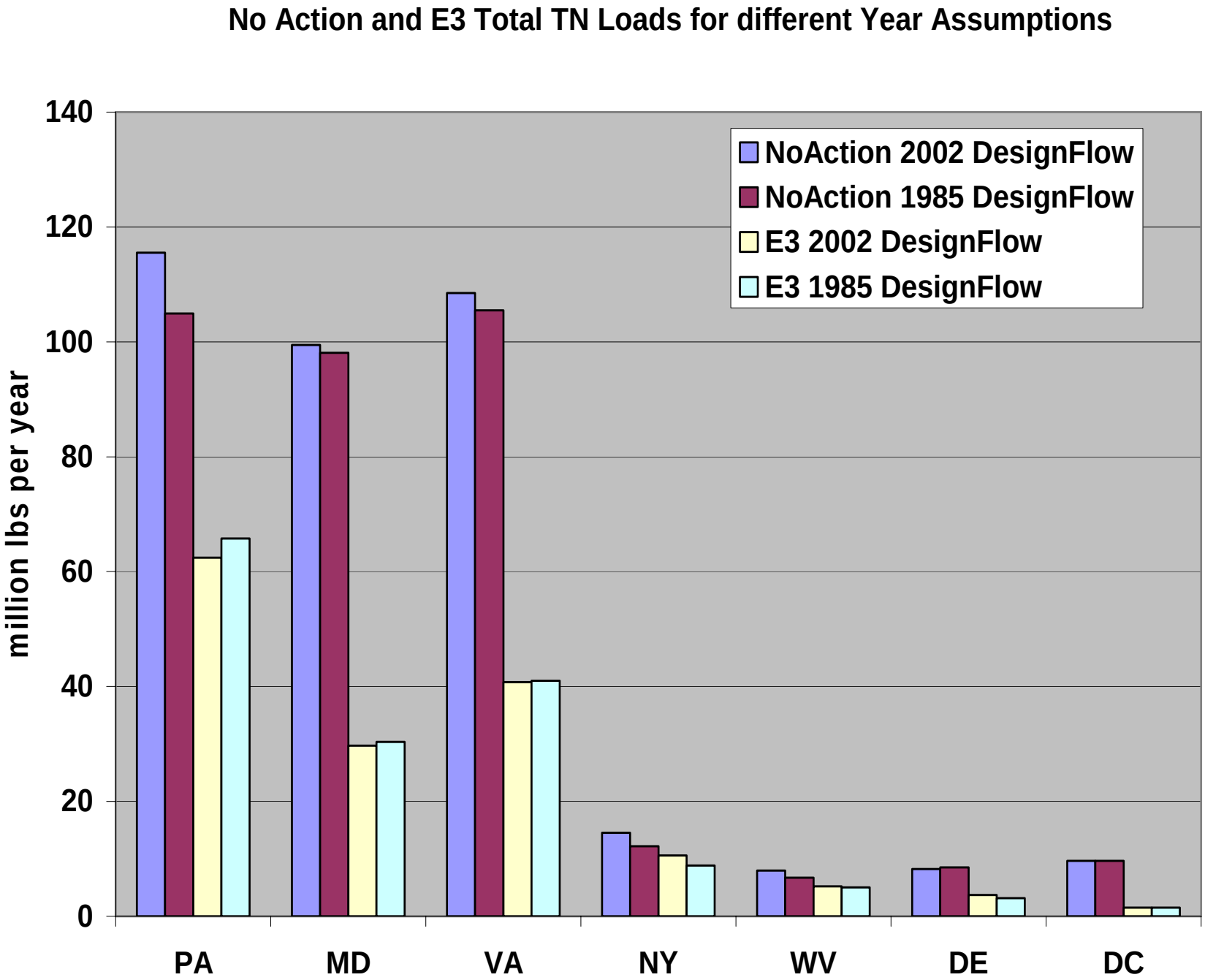
- Ran 2010 no action and 2010 E3 with three flow assumptions
  - Design
  - Current
  - 1985
- Calculate a set of state-wide target loads based on a flat line equal to 175 million lbs TN for each flow assumption

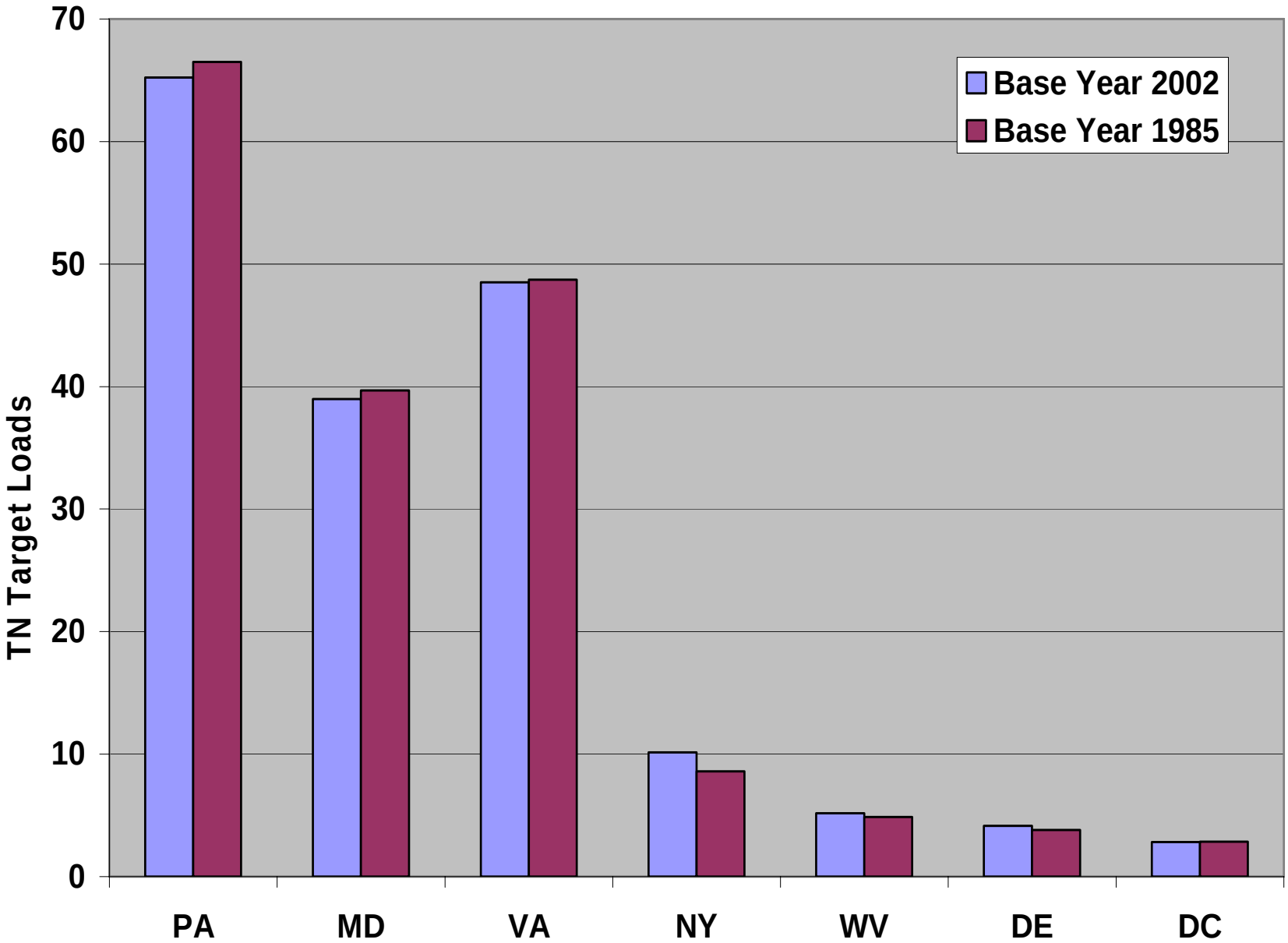

No Action and E3 Total TN Loads for different WWTP Flow Assumptions
NoAction 2010 DesignFlow
NoAction 2010 CurrentFlow
NoAction 2010 1985Flow
E3 2010 DesignFlow
E3 2010 CurrentFlow
E3 2010 1985Flow
million lbs per year
120
100
80
60
40
20
0
PA
MD
VA
NY
WV
DE
DC


TN Target Loads by State Using 2010 base year and three WWTP Flows
Assuming a flat Allocation line and a total load of 175
million lbs per year
80
70
60
50
40
30
20
10
0
DesignFlow
CurrentFlow
1985Flow
PA
MD
VA
NY
WV
DE
DC

Evaluate Base Year

- Ran 1985, 2002, and 2010 base years for No Action and E3 with design flow in WWTP
- Calculate a set of state-wide target loads based on a flat line equal to 175 million lbs TN for each year assumption
- Very Preliminary results – 2002 and 1985 were inconsistent with 2010 and can not be compared. Re-runs available for 9/29


No Action and E3 Total TN Loads for different Year Assumptions
140
120
100
80
60
40
20
0
million lbs per year
NoAction 2002 DesignFlow
NoAction 1985 DesignFlow
E3 2002 DesignFlow
E3 1985 DesignFlow
PA
MD
VA
NY
WV
DE
DC


TN Target Loads by State Using a Base Year of 2002 or 1985
Assuming a flat Allocation line and a total load of 175
TN Target Loads
70
60
50
40
30
20
10
0
Base Year 2002
Base Year 1985
PA
MD
VA
NY
WV
DE
DC

Observations

- Both year and flow assumptions have target load effects
  - More investigation necessary
    - Firm up scenario assumptions
    - Understand reasons for target load effects
- Phase 5 and phase 4 overall sensitivity is very similar