Attachment B – Phase 5.2 Initial Scenarios

WQGIT

9/21/09

Changes Since 9.9 Presentation

- Confirmed WWTP flow assumptions
  - Clarified impact of delivery factors
- Reran 1985 and 2002 E3 Scenarios
- Added acres for No Action scenarios
- Added regional practices for base year
- Added 2010 Base Year Scenario
- Added TP Results

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

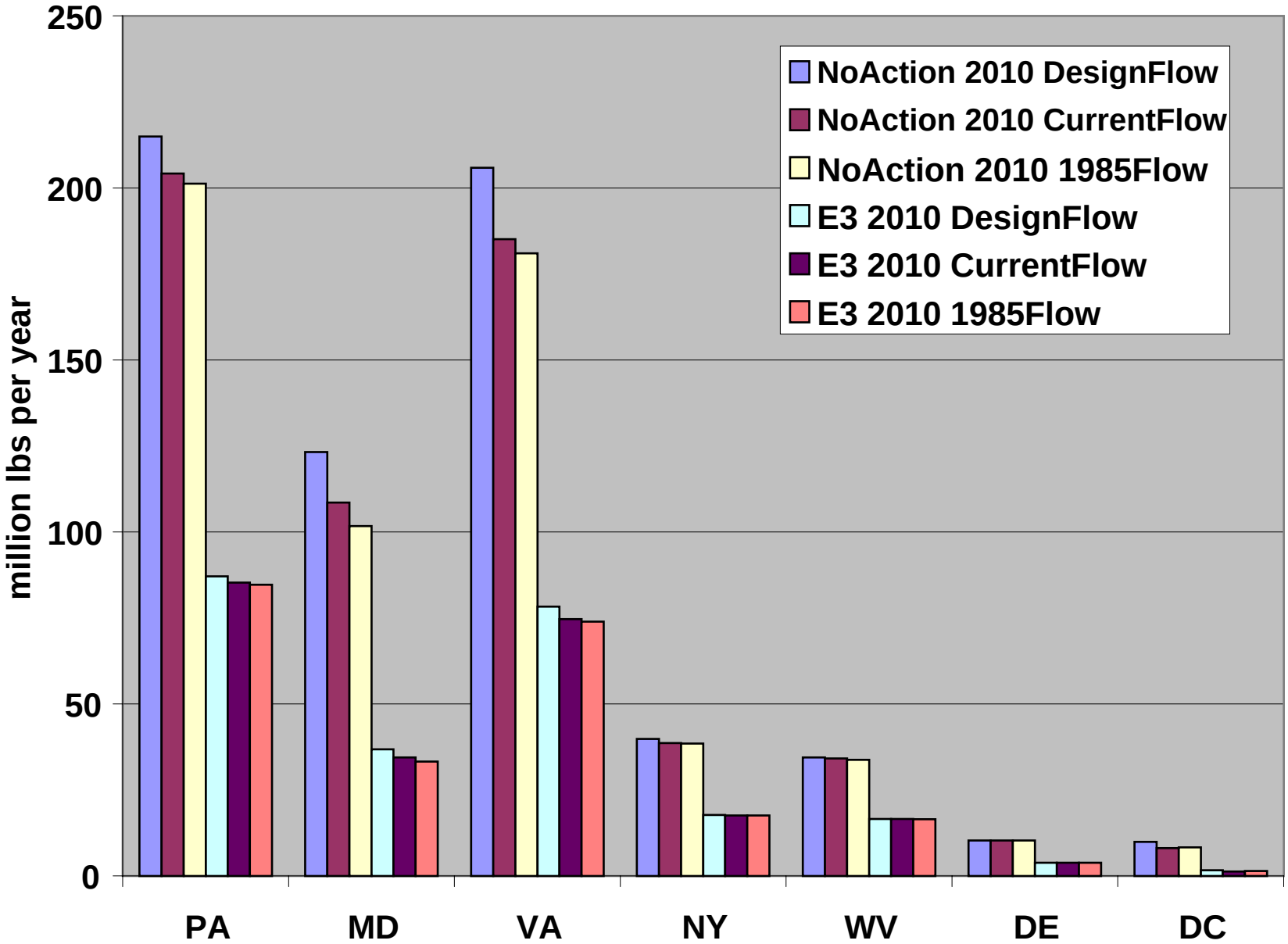
- Tributary Strategy
- 2008
- Enhanced Program Implementation Levels

- Plan to have these available by 9/29

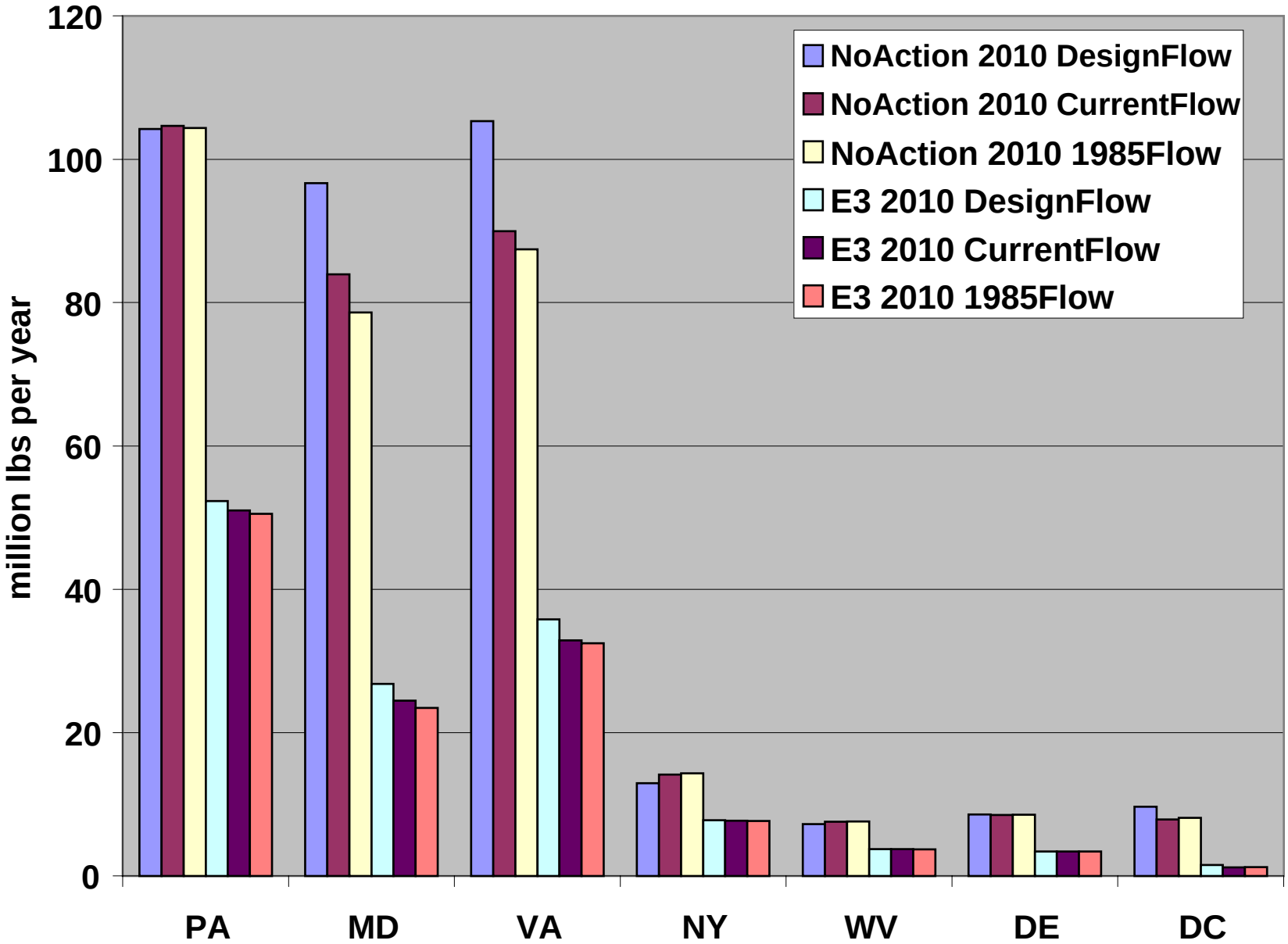
Evaluate WWTP flow assumption

- 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

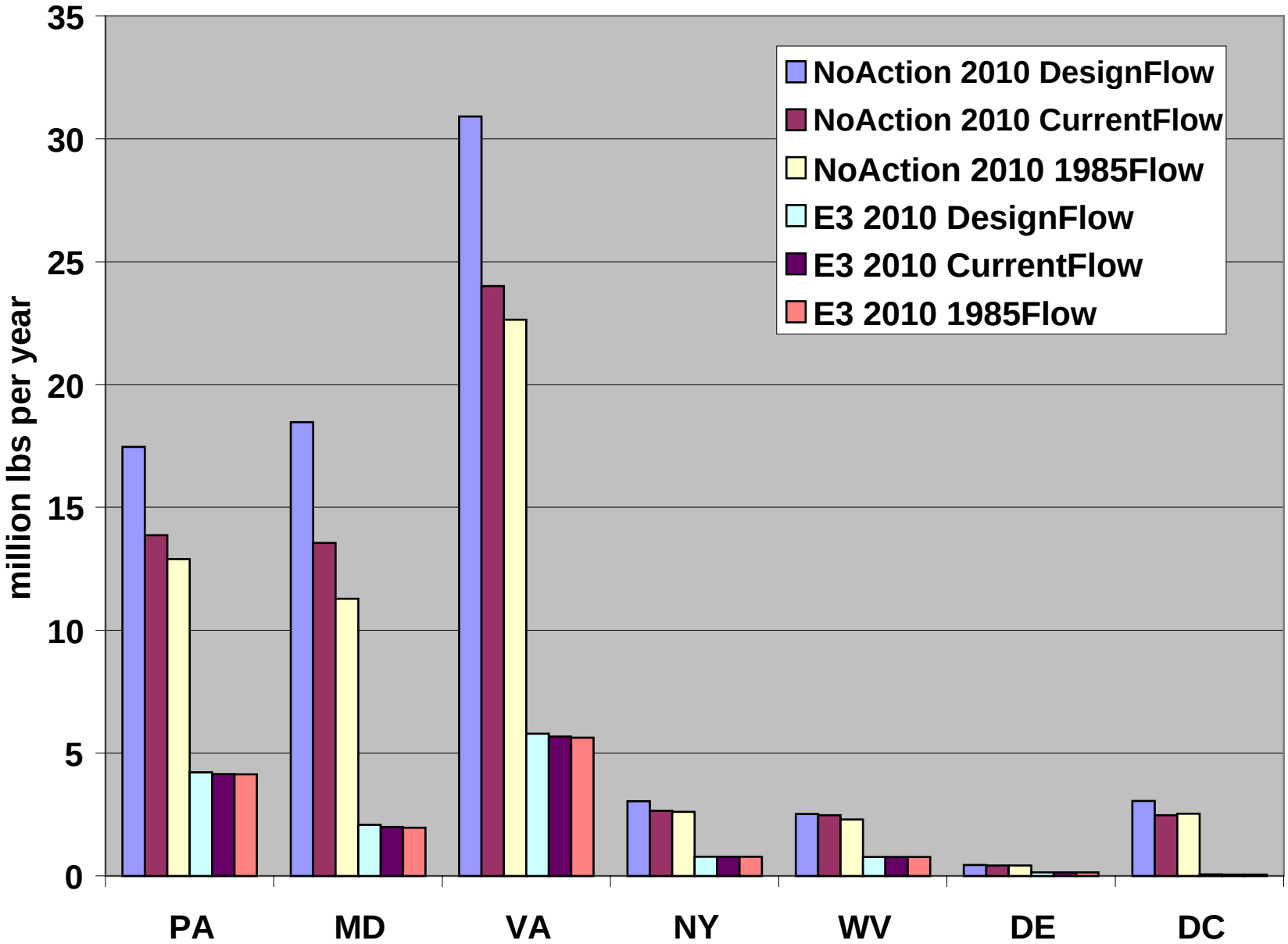
No Action and E3 Total Edge of Stream TN loads for different WWTP Flow Assumptions



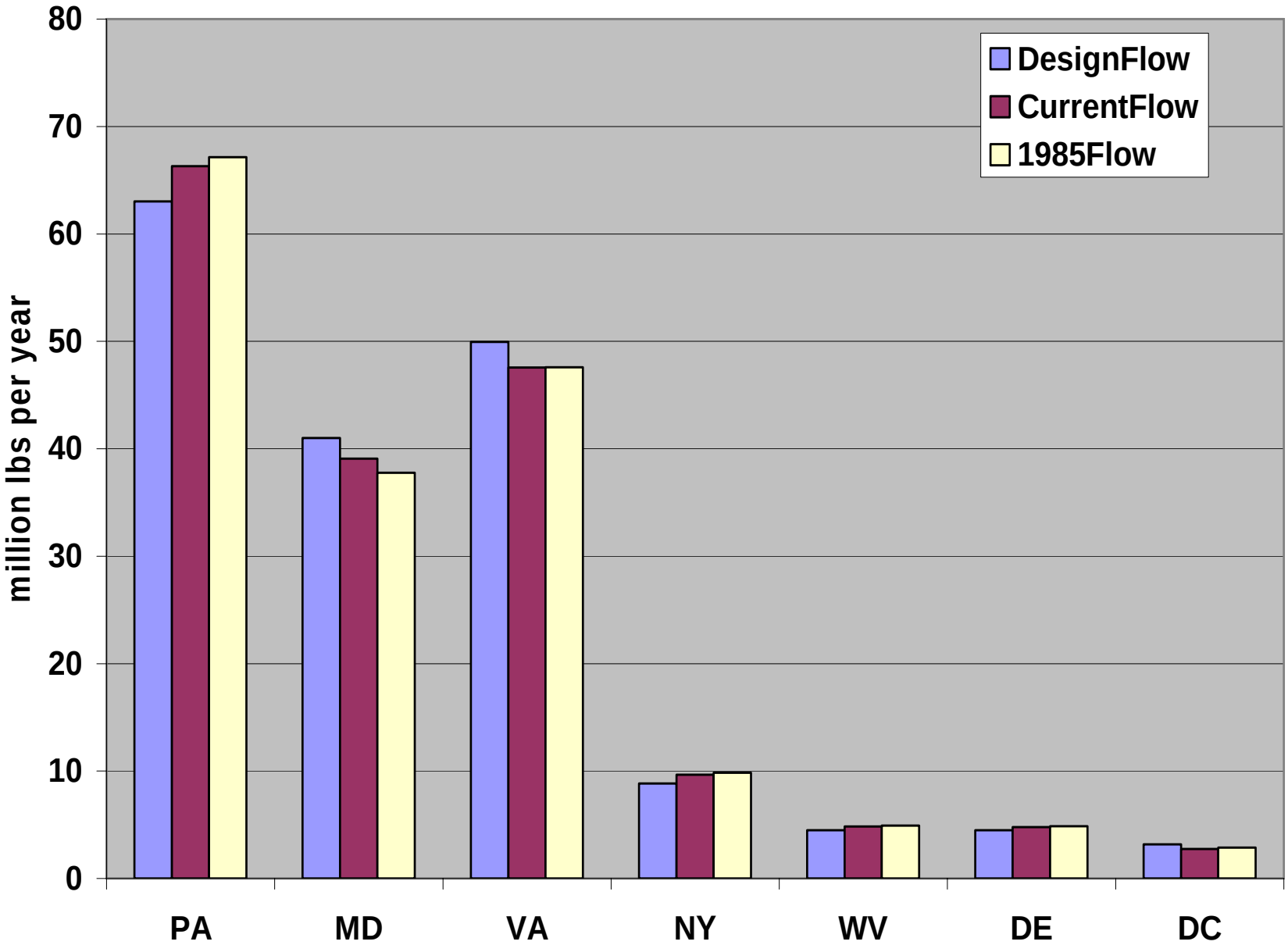
No Action and E3 Total Delivered TN Loads for different WWTP Flow Assumptions



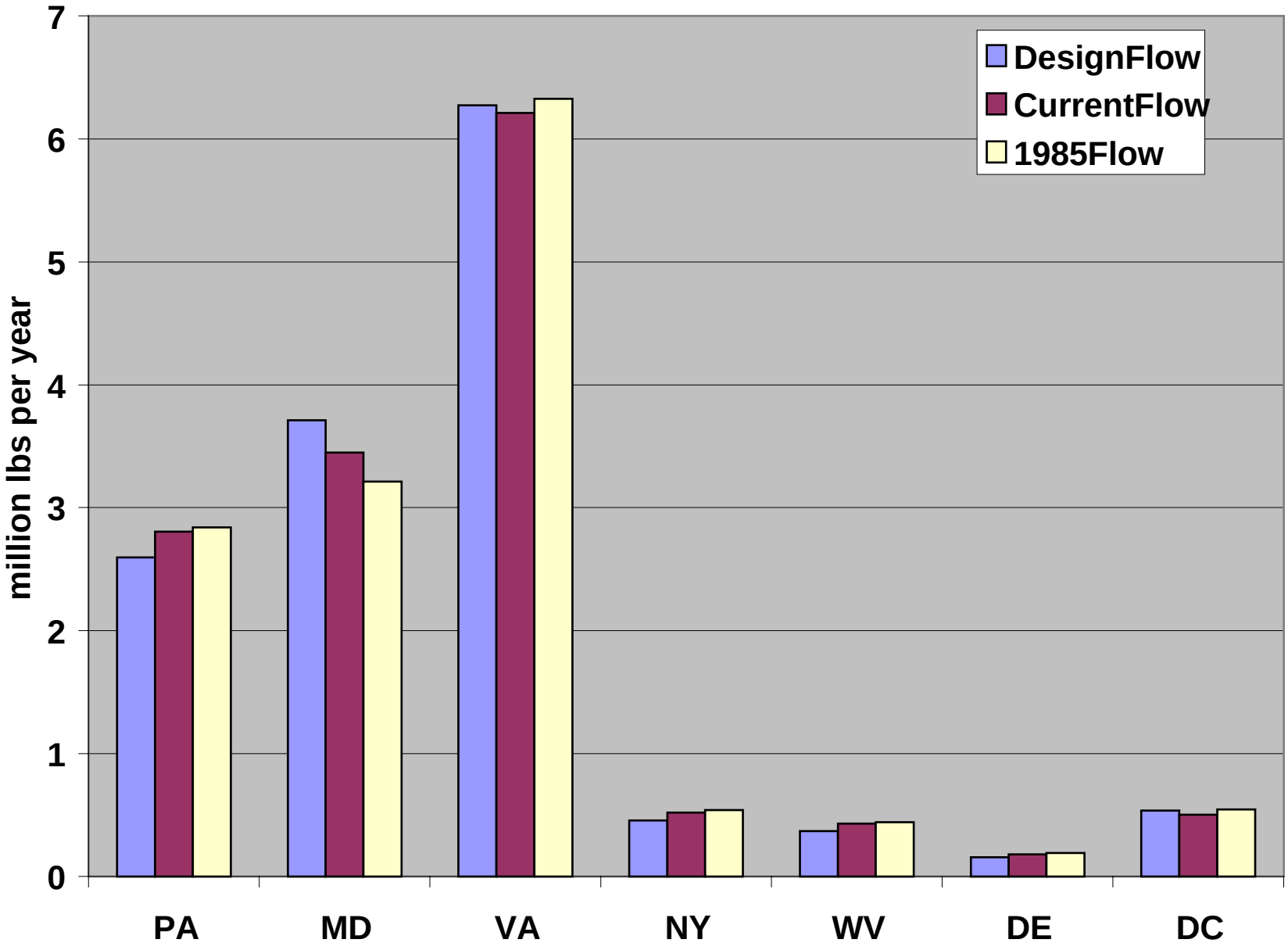
No Action and E3 Total Edge of Stream TP loads for different WWTP Flow Assumptions



TN Target Loads by State Using 2010 base year and three WWTP Flows
Assuming a flat Allocation line and a total load of 175



TP Target Loads by State Using 2010 base year and three WWTP Flows Assuming a flat Allocation line and a total load of 14.1



Regional Practices – Base Year

- Under allocation scenarios, what land uses do States employ?
  - All states typically use the most recent land use data from 2002 or 2007 depending upon state information
  - WV has employed more recent land use modification information for certain transient land uses (i.e., mining)
  - For PCBs, NY considers historical sources (including NPS data) in their approach to baseline year
    - NY does not assess land use as a way of determining load

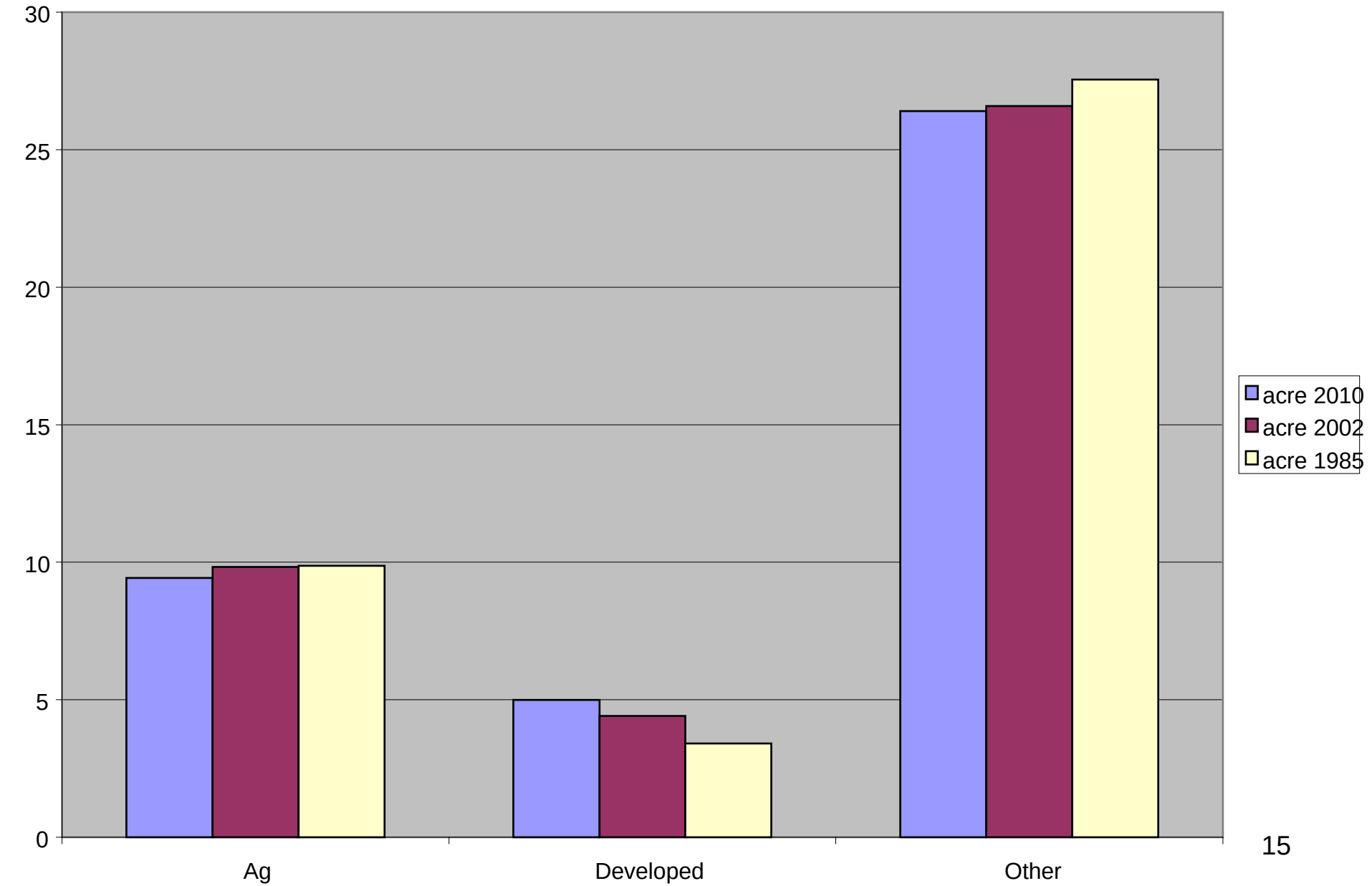
Regional Practices – Base Year

- What point source flows do States use?
  - Different approaches for different sources
  - Measured data for calibration and baseline (PA, MD, DE, and DC)
  - Design flow/concentrations for allocations (PA, MD, DE, VA, WV, and DC)
    - DC uses modeled design flow/concentrations for allocations
  - Precipitation induced sources get allocations based on modeled flow (WV, VA)
  - Industrial Wastewater get allocations based on production based maximum flow and permit concentrations (MD, VA, and PA)
  - NY starts with measured data (may go to level of technology). Design flow is used as a backstop

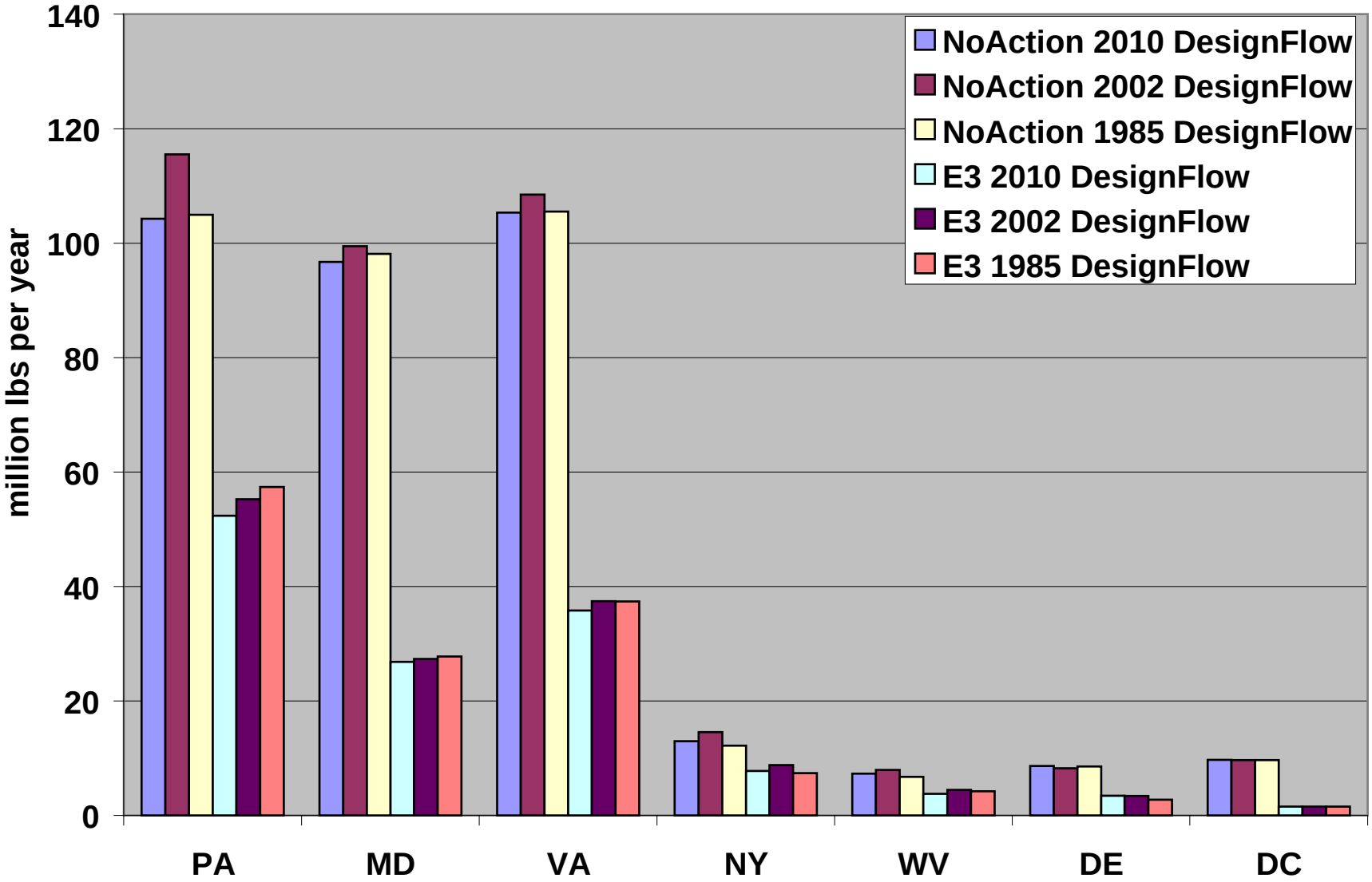
Evaluate Base Year

- 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

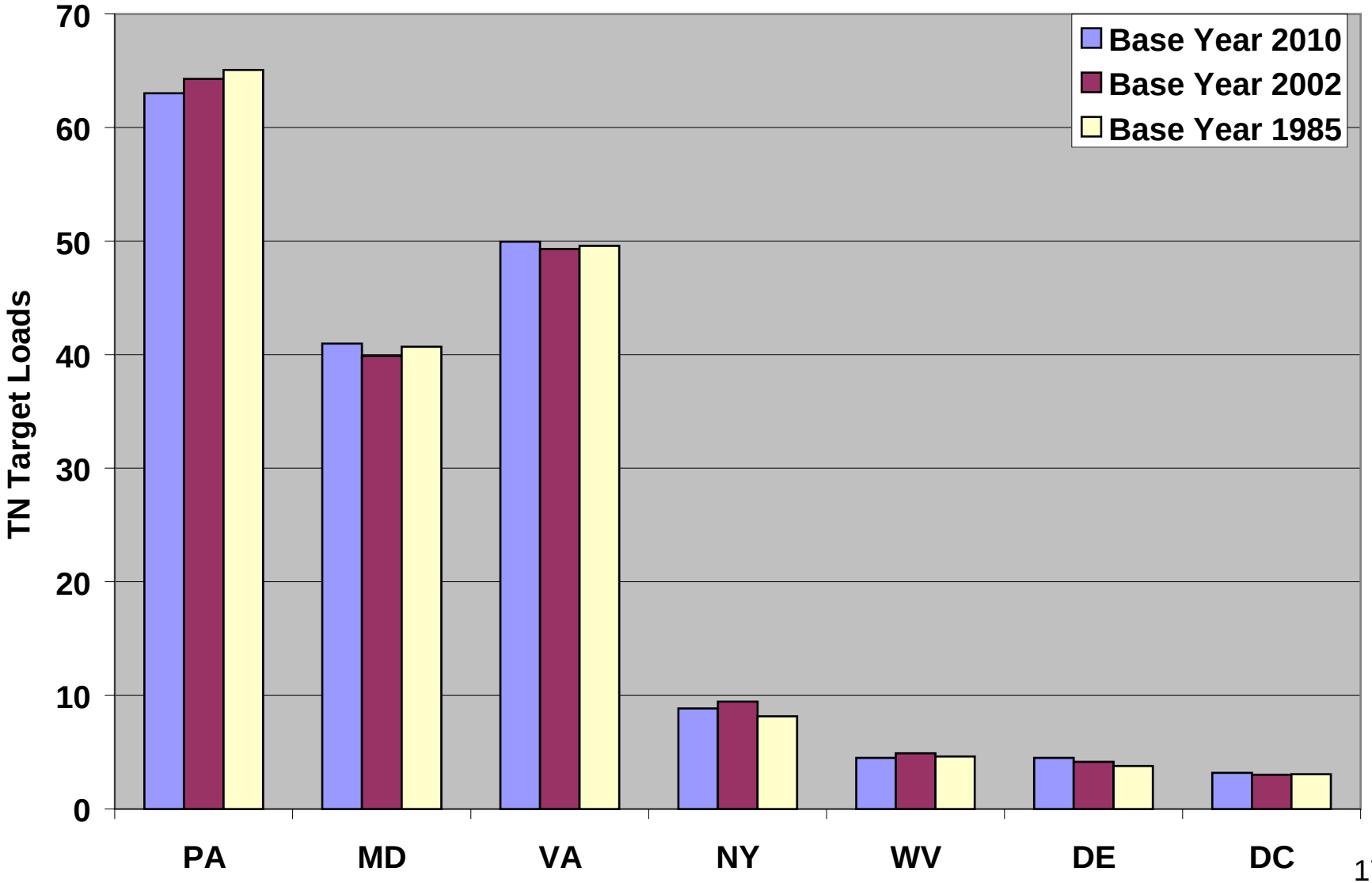
Acres for Various No Action Year Scenarios



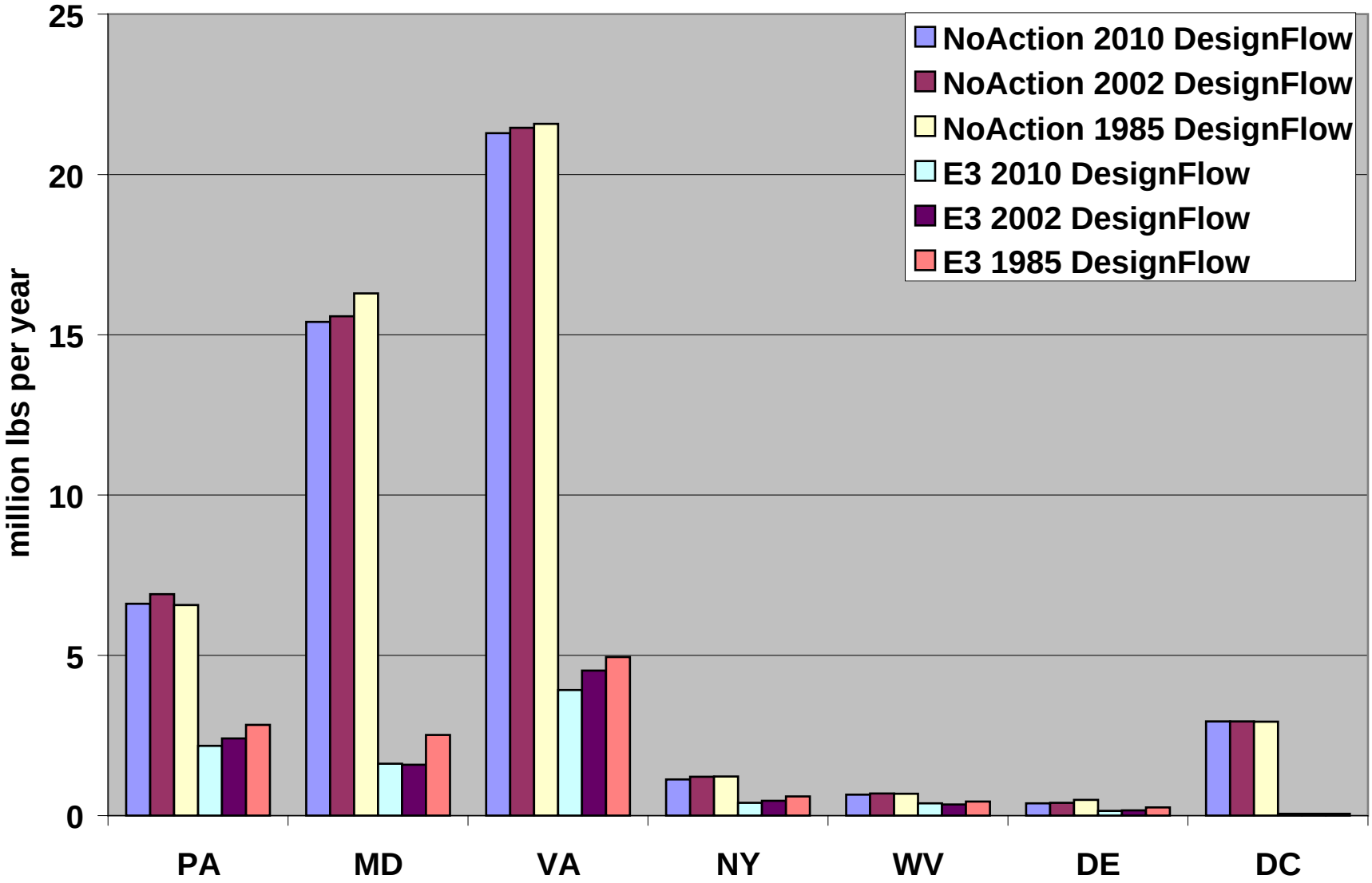
No Action and E3 Total TN Loads for Various Year Assumptions



TN Target Loads by State Using a Base Year of 2010, 2002, or 1985
Assuming a flat Allocation line and a total load of 175



No Action and E3 Total TP Loads for Various Year Assumptions



TP Target Loads by State Using a Base Year of 2010, 2002, or 1985
Assuming a flat Allocation line and a total load of 14.1