



# Phase 6 E3 and NoAction Model Scenarios

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Agriculture Workgroup July Meeting  
Conference Call  
July 20, 2017



## Initial Set of Phase 6 Model Scenarios

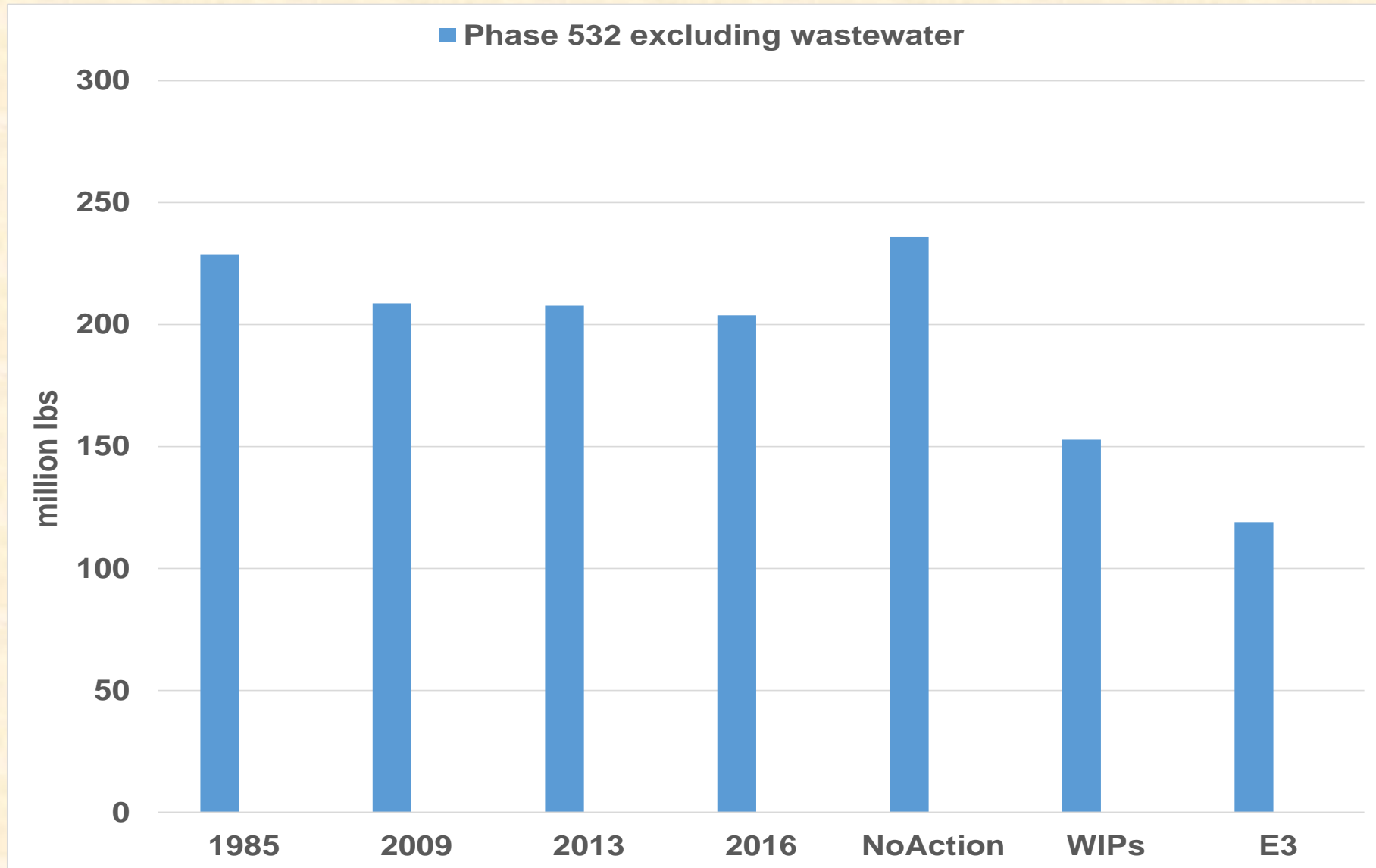
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- 1985 – 2013 Progress, inclusive
  - BMP and wastewater data from jurisdictions for Phase 6 2014 Progress – 2016 Progress are due 9/1/17
- Phase II WIPs
- No-Action
- E3
  - No-Action and E3 are one component of the Planning Target calculations
  - Equity rule = Major river basins that contribute the most to the Bay water quality problems must do the most to resolve those problems (on a pound-per-pound basis)



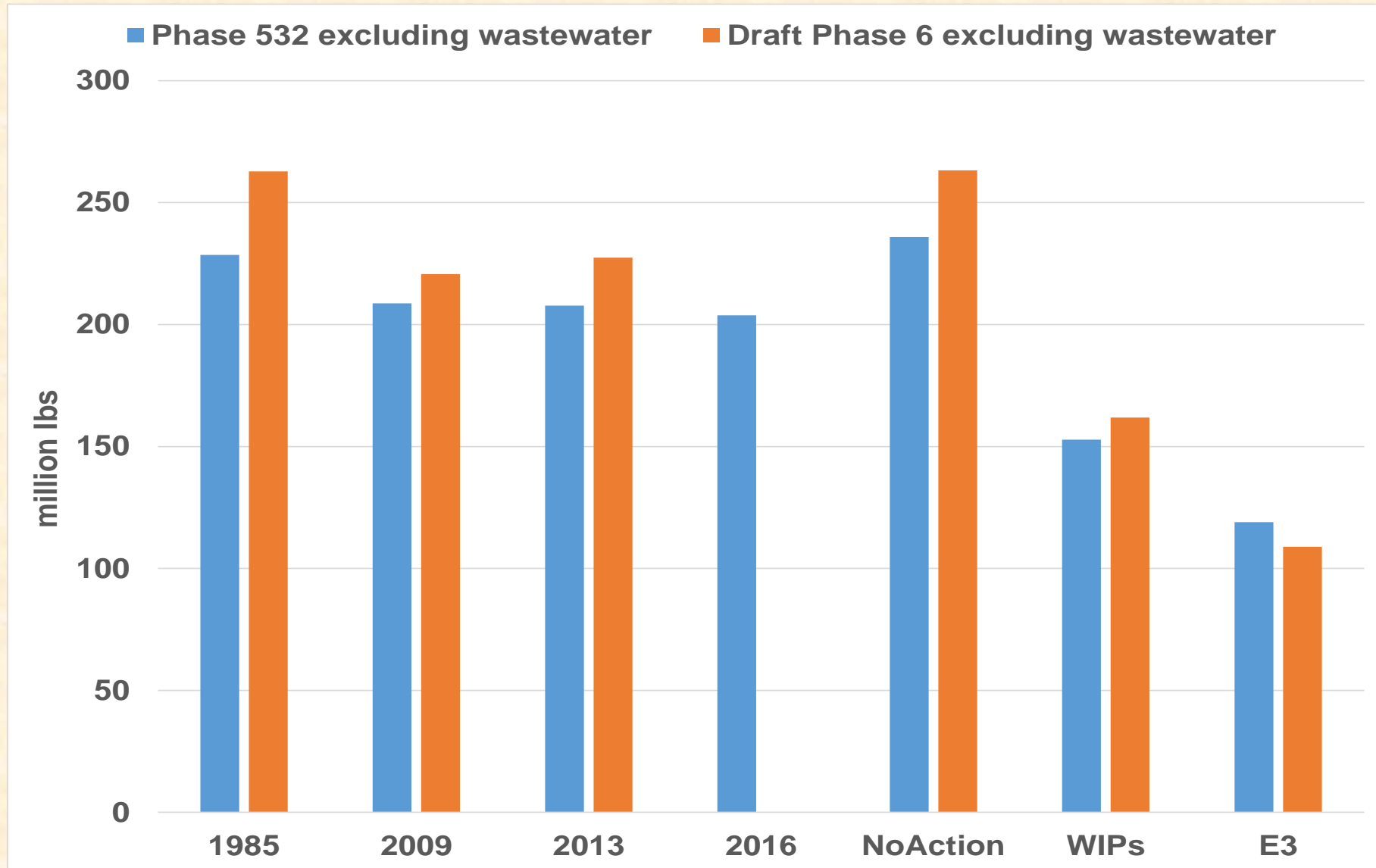
## Phase 5

### Nitrogen Loads, CB Watershed-wide (excludes wastewater)





## Phase 5 and Phase 6 Nitrogen Loads, CB Watershed-wide (excludes wastewater)





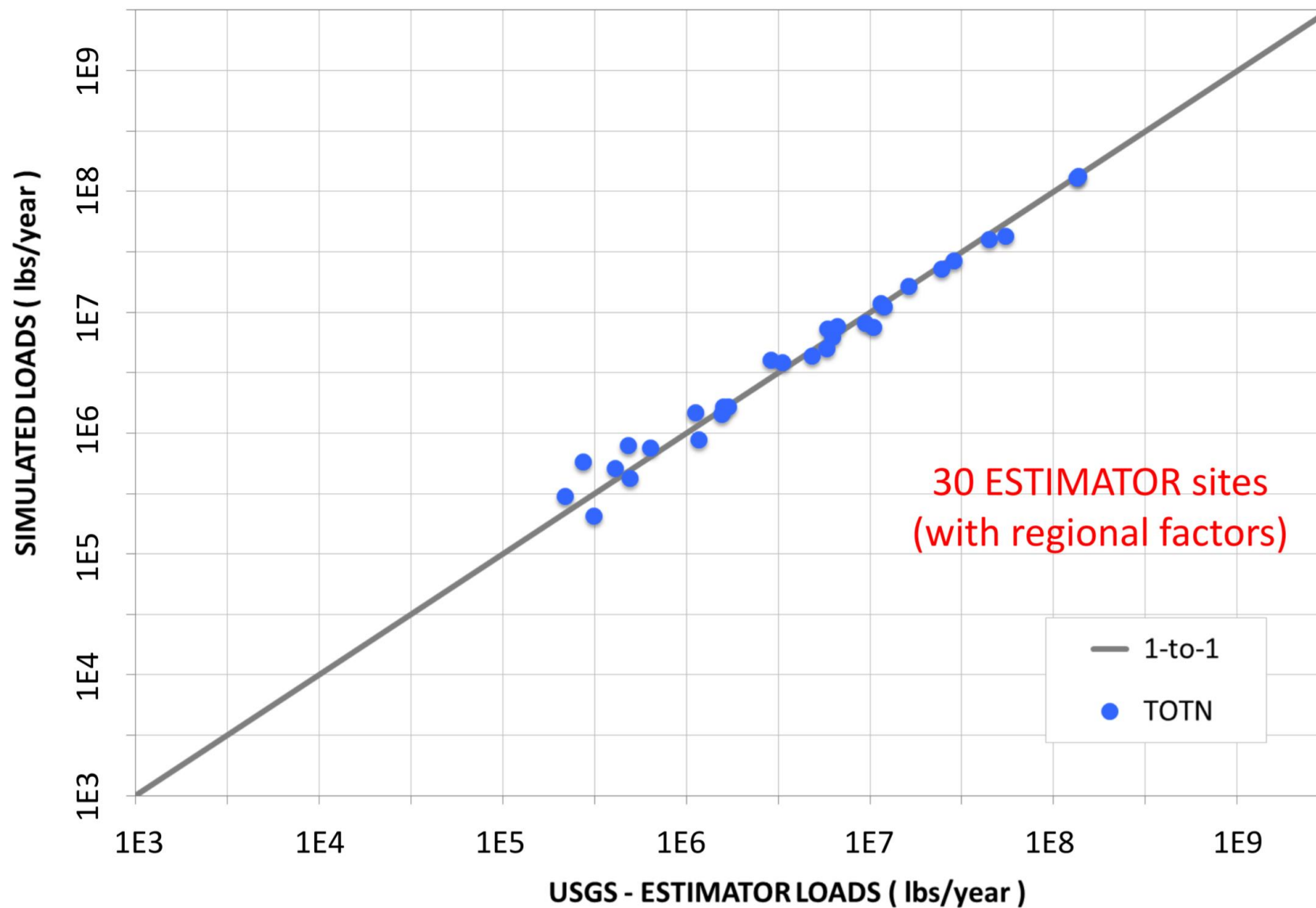


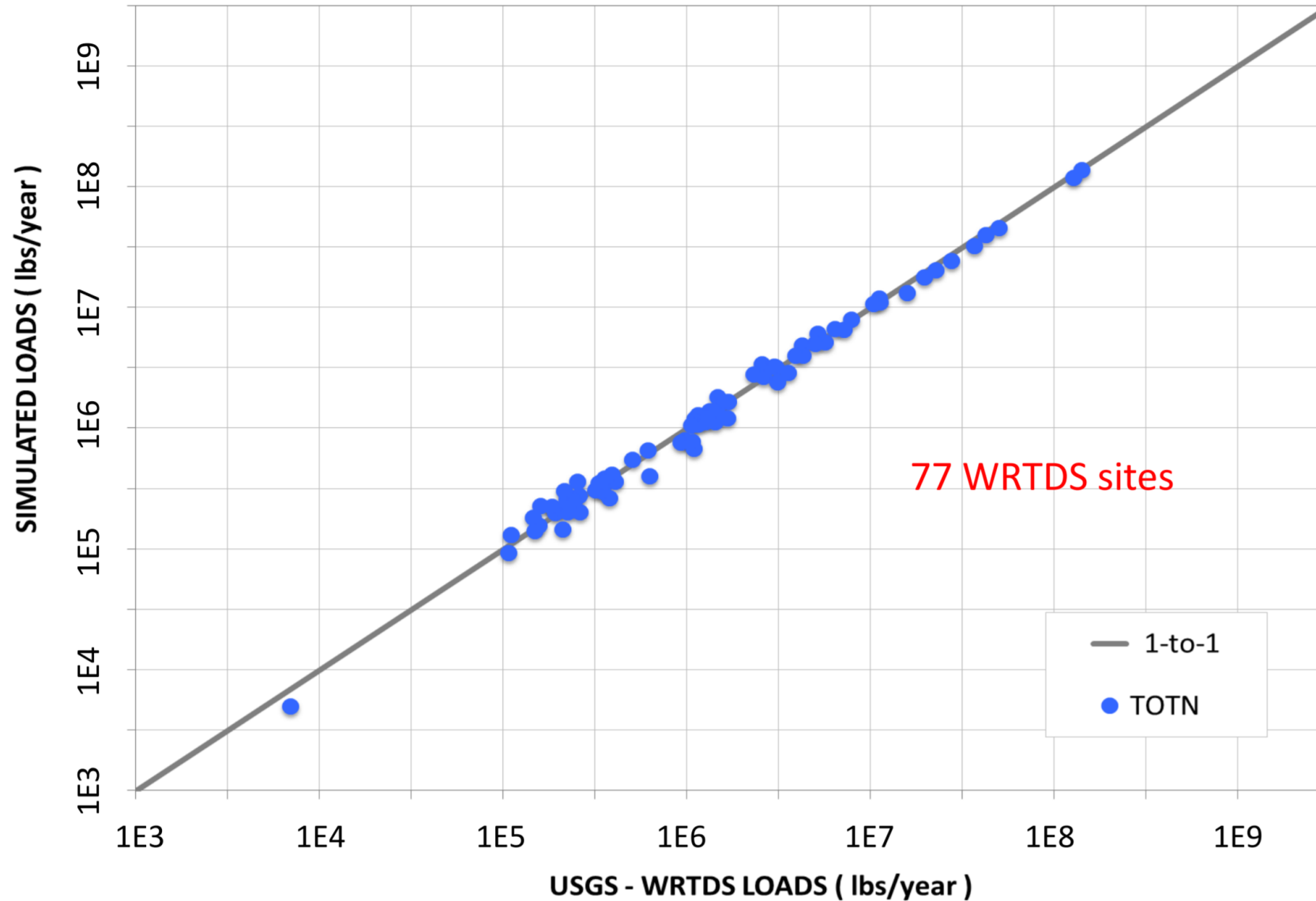
## Initial Set of Phase 6 Model Scenarios

### Big Changes from Phase 5 to Phase 6

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- Inputs, inputs, inputs matter!
- High resolution land use
- Nitrogen simulation simplified using multiple model approach
- Phosphorus simulation tied to soil P
- Sediment simulation enhanced using NRCS RUSLE2 model
- Regional factors removed
- Calibration improved!







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# Phase 5

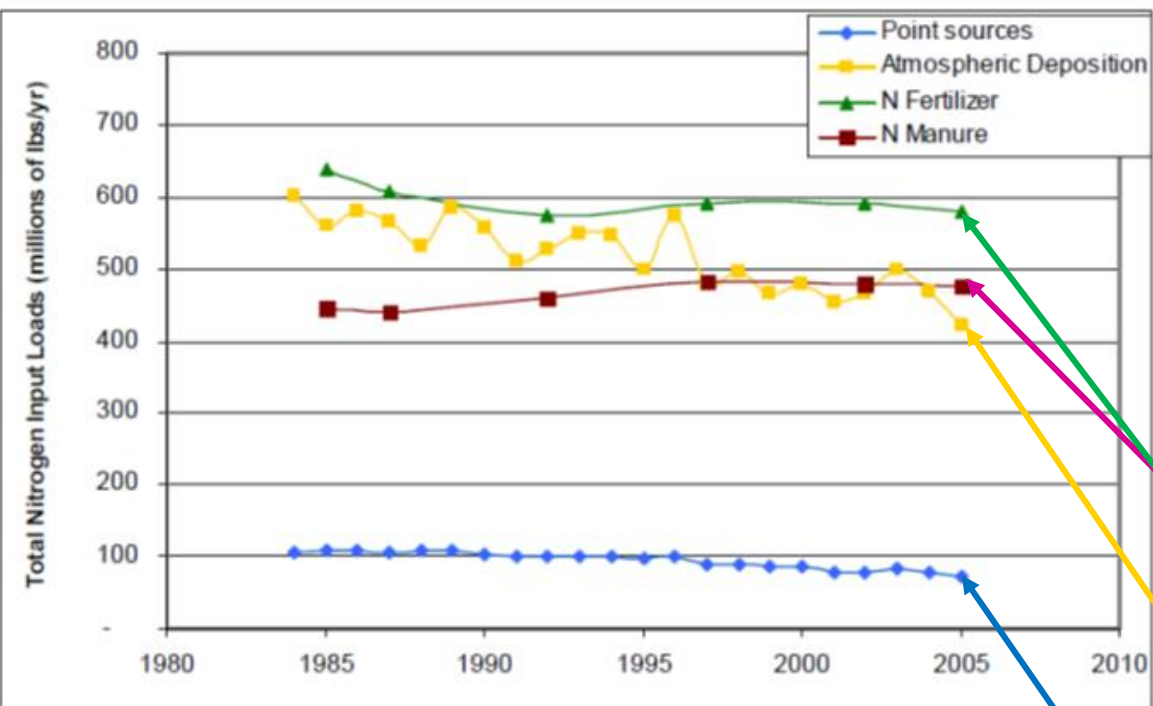
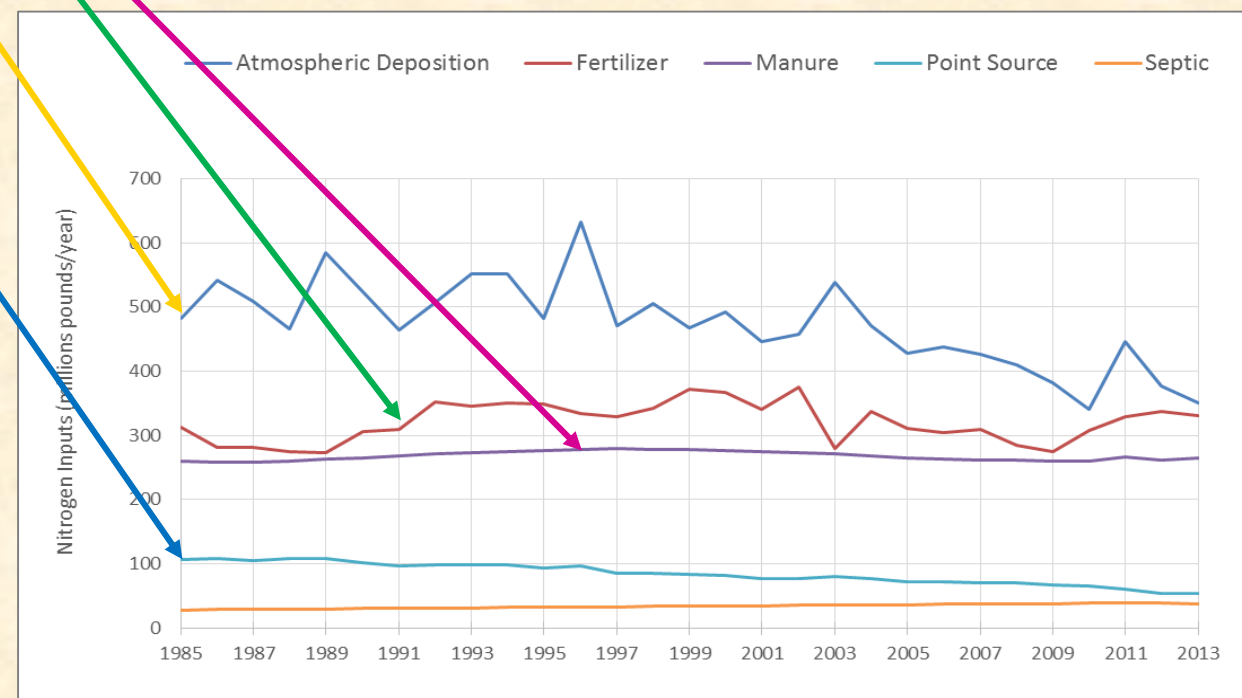


Figure 5-1. Time series of atmospheric, fertilizer, manure, and point source total nitrogen input loads to the Chesapeake Bay Watershed Model (Phase 5.3 calibration).

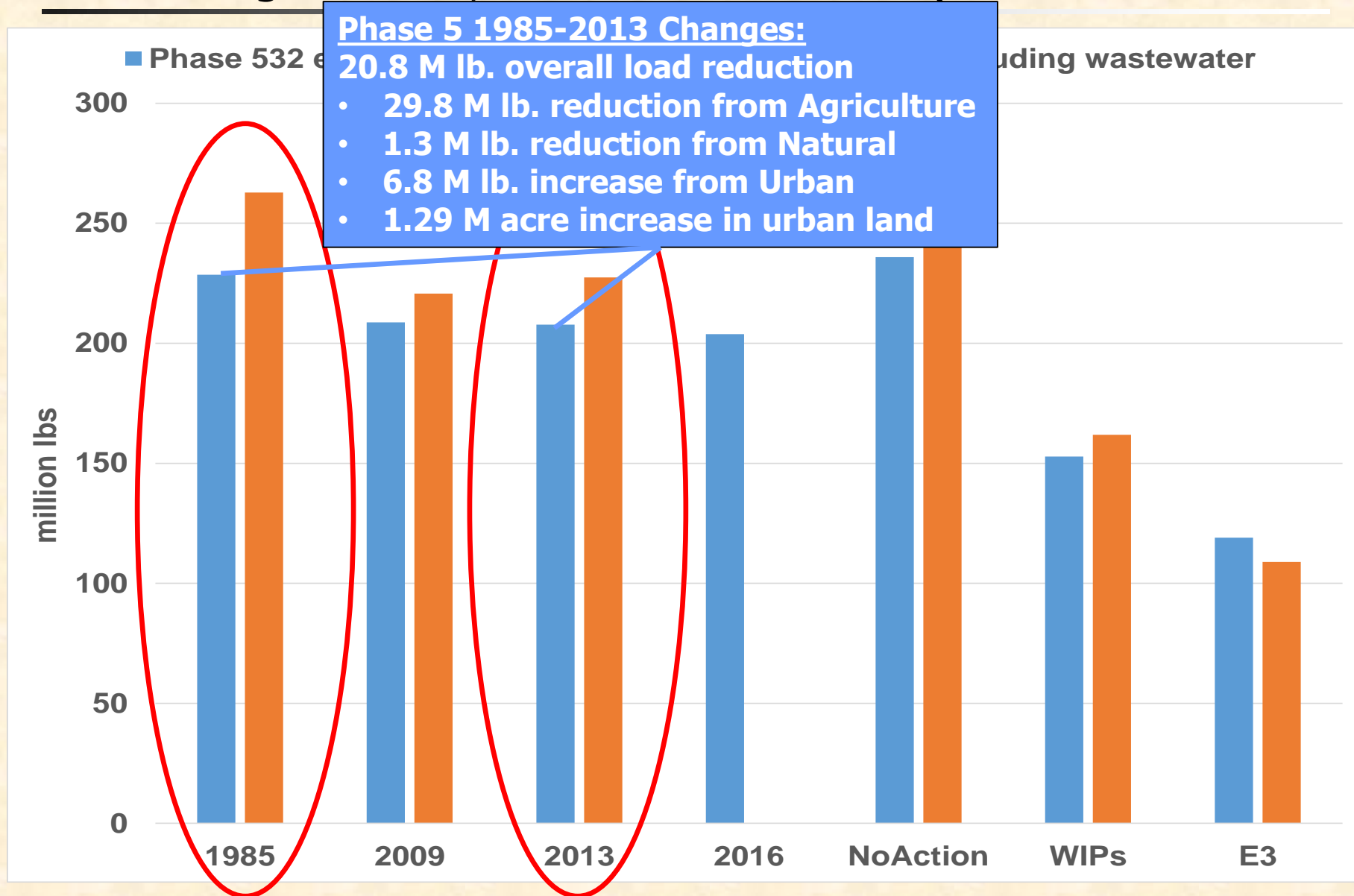
# Phase 6





## Phase 5 and Phase 6

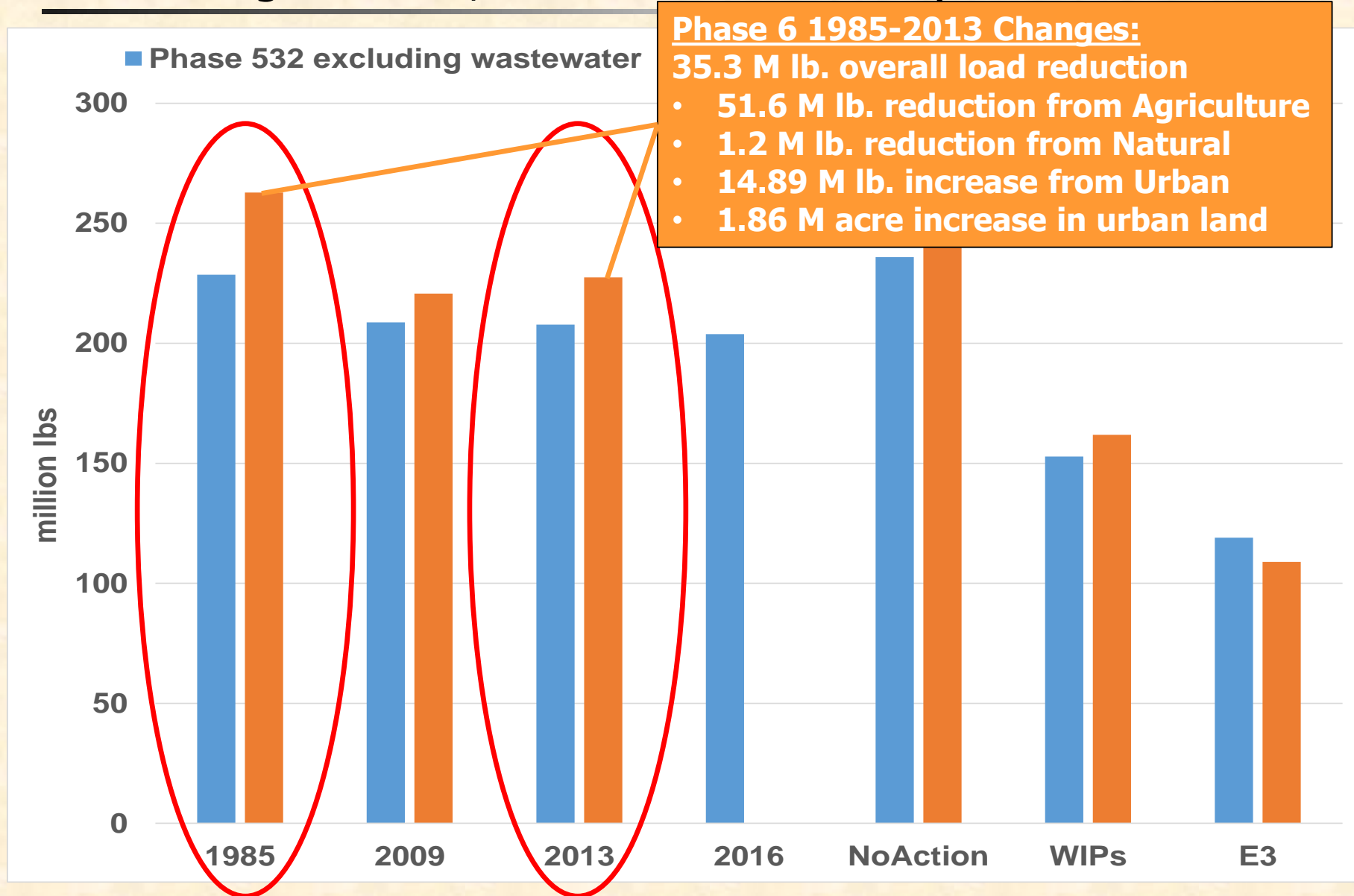
### Nitrogen Loads, CB Watershed-wide (excludes wastewater)





## Phase 5 and Phase 6

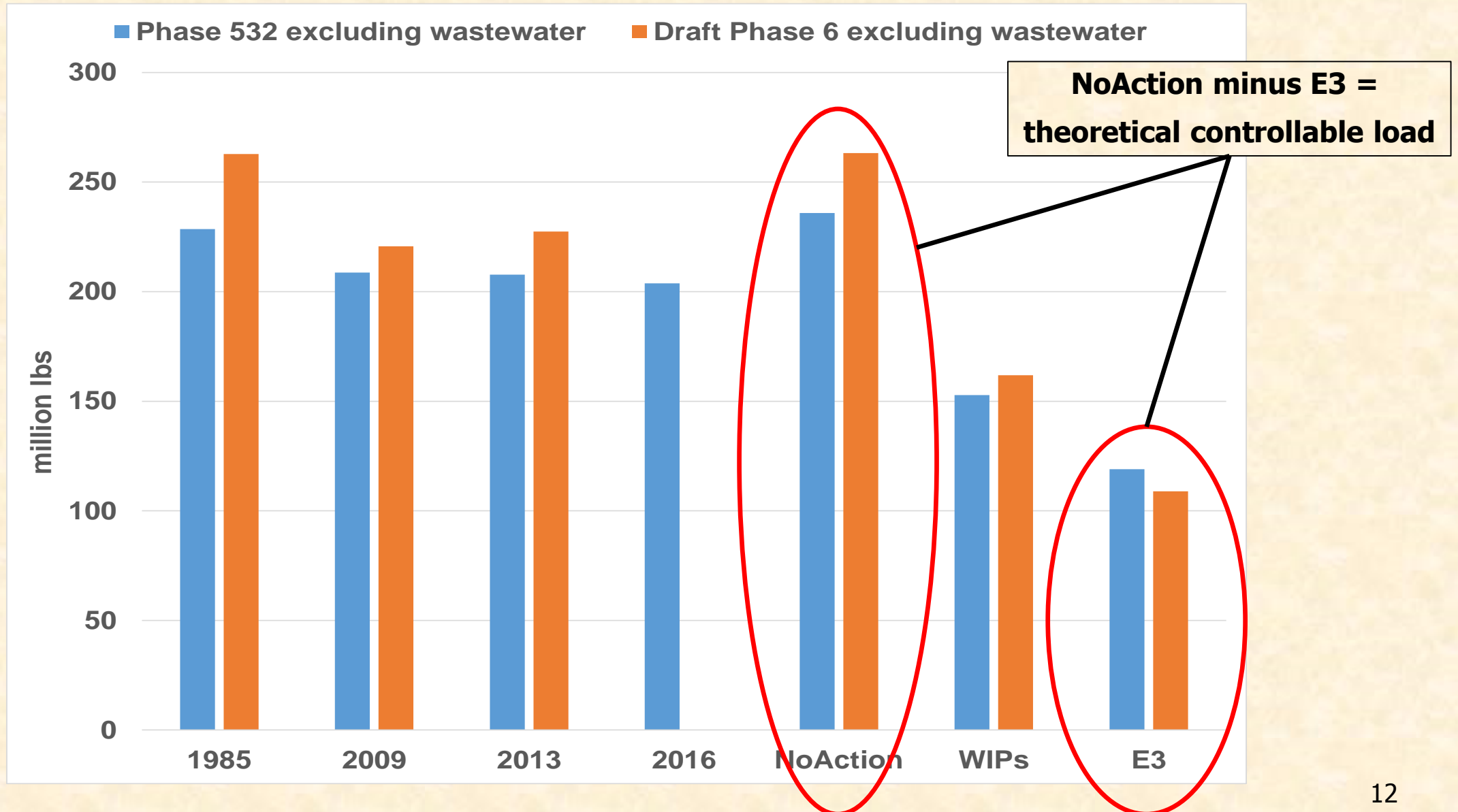
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# Phase 5 and Phase 6

## Nitrogen Loads, CB Watershed-wide (excludes wastewater)





## E3 Scenario

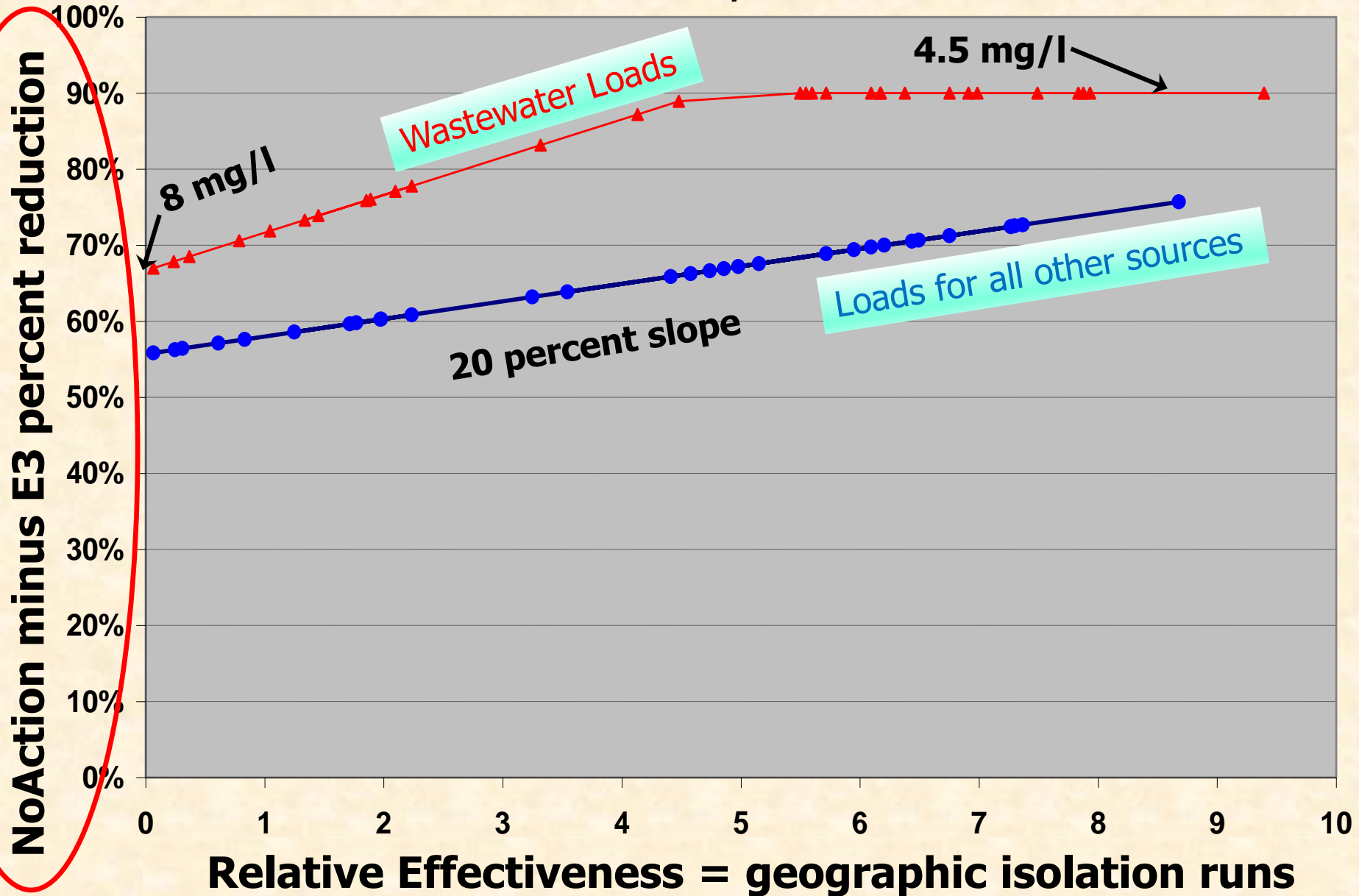
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- Differences between No-Action and E3 scenario loads provide equity among regions of the CB watershed in that assumptions of point source controls and nonpoint source practice and program implementation levels for both scenarios are spatially universal.
  - Differences among regions occur because of more “inherent” differences in, for example:
    - animal and human populations,
    - number and types of wastewater facilities,
    - agricultural land types (crops and pasture) and areas,
    - urban land areas,
    - atmospheric deposition,
    - etc.



# Phase 5 Planning Target Methodology

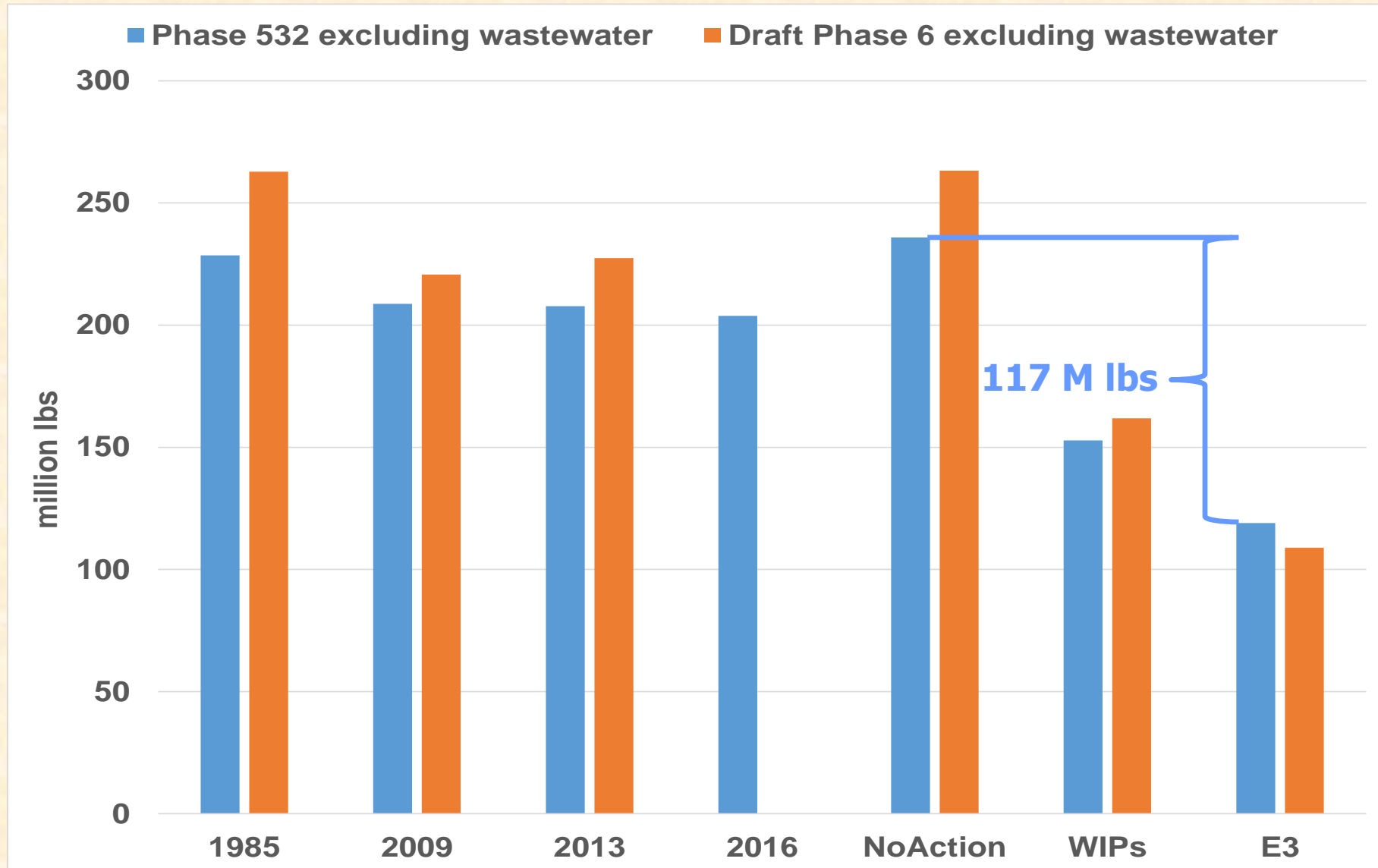
## "Hockey Stick"





# Initial Set of Phase 6 Model Scenarios

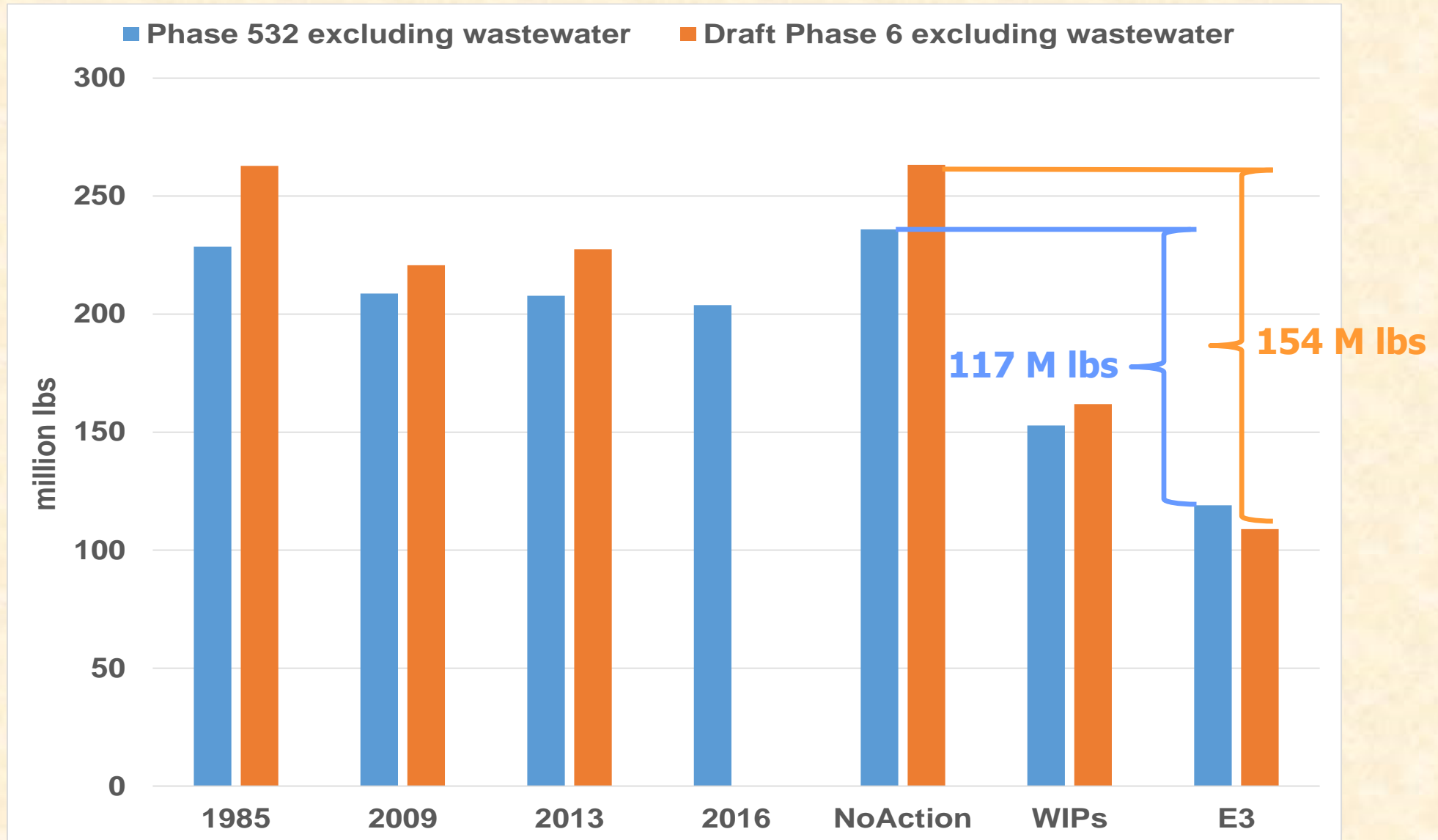
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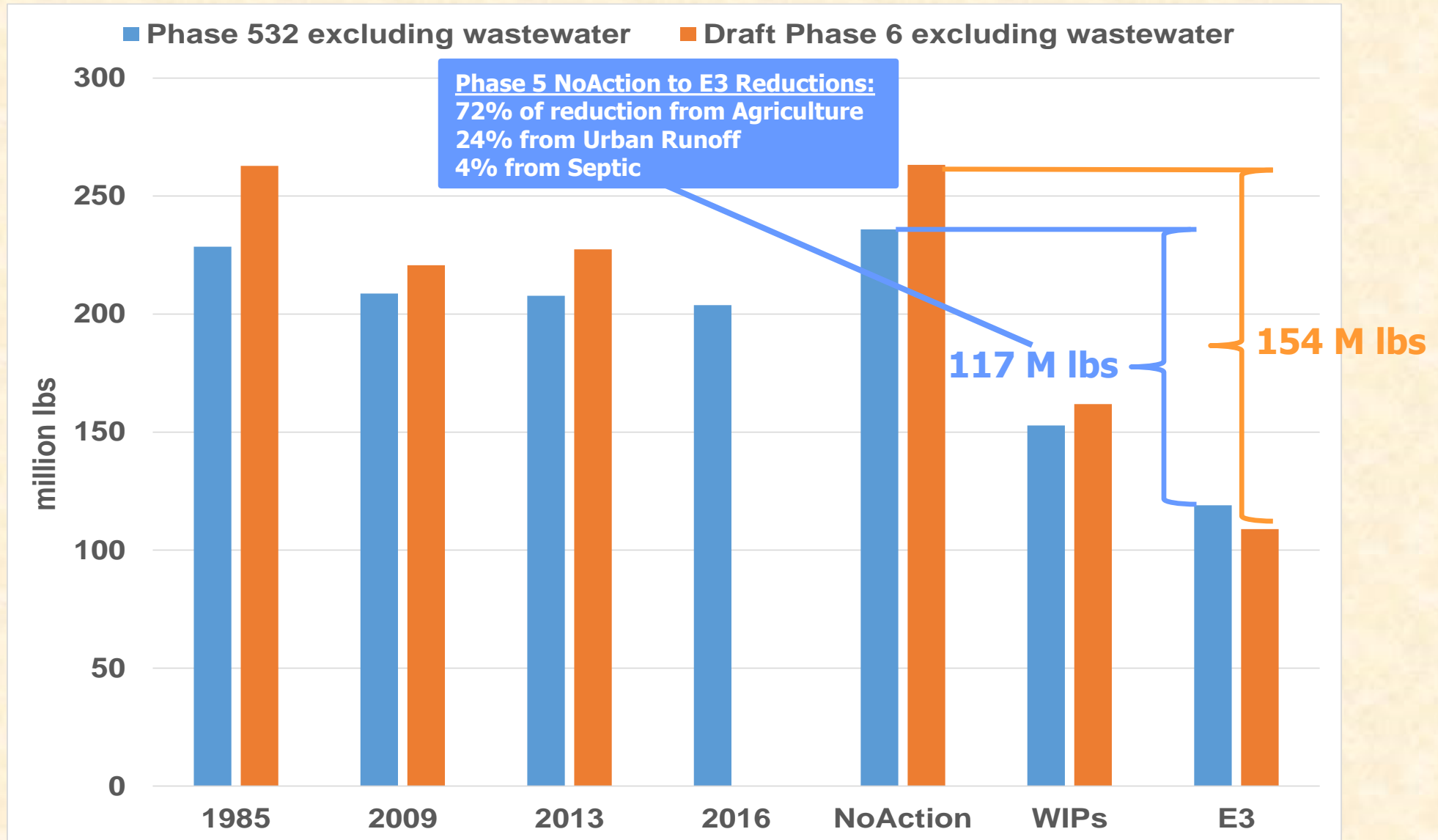
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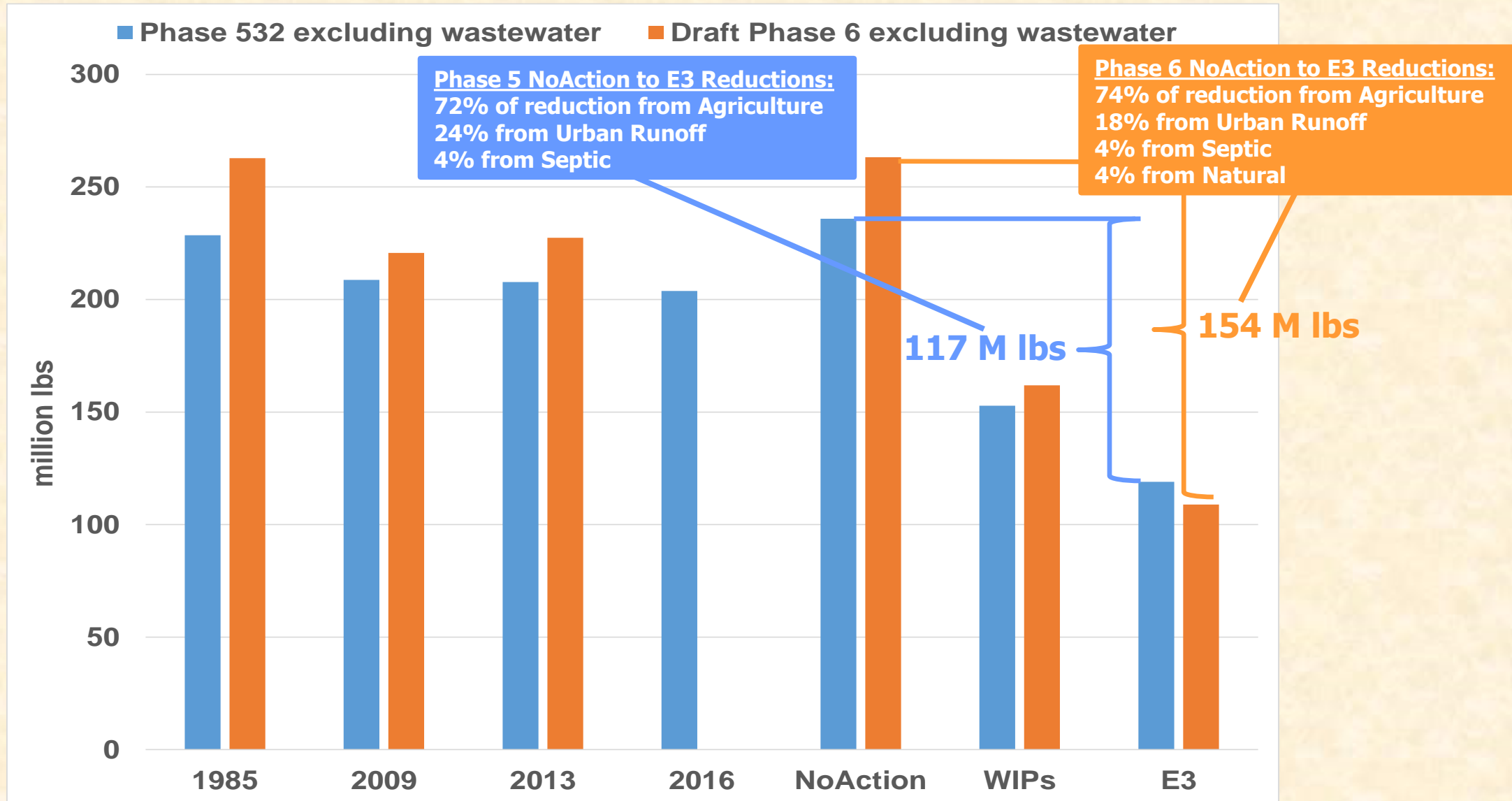
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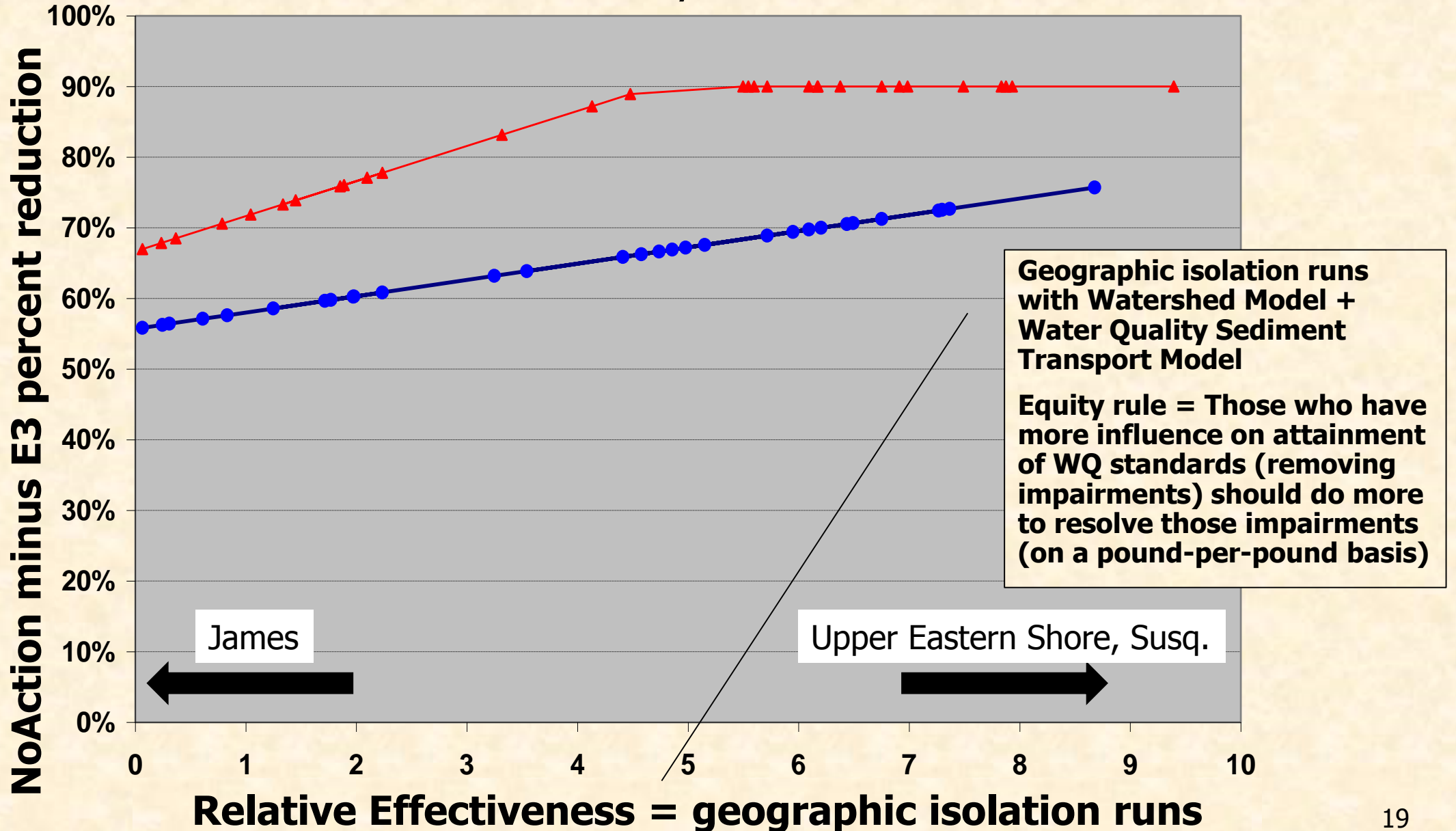
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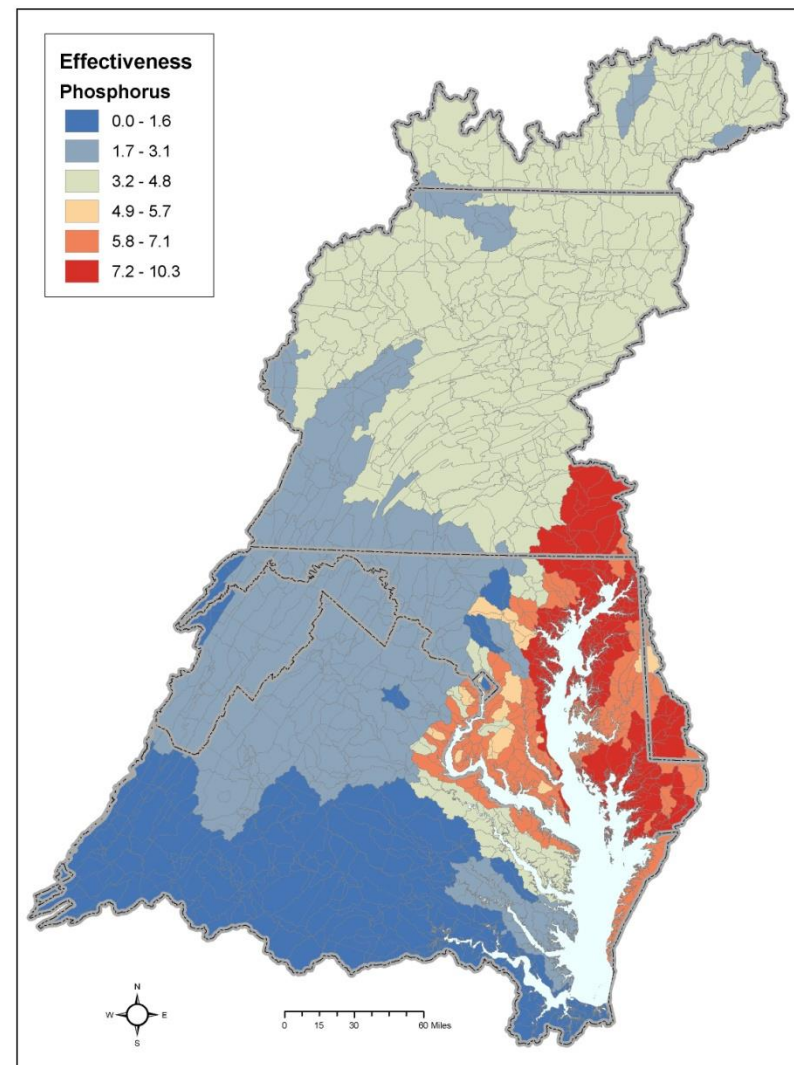
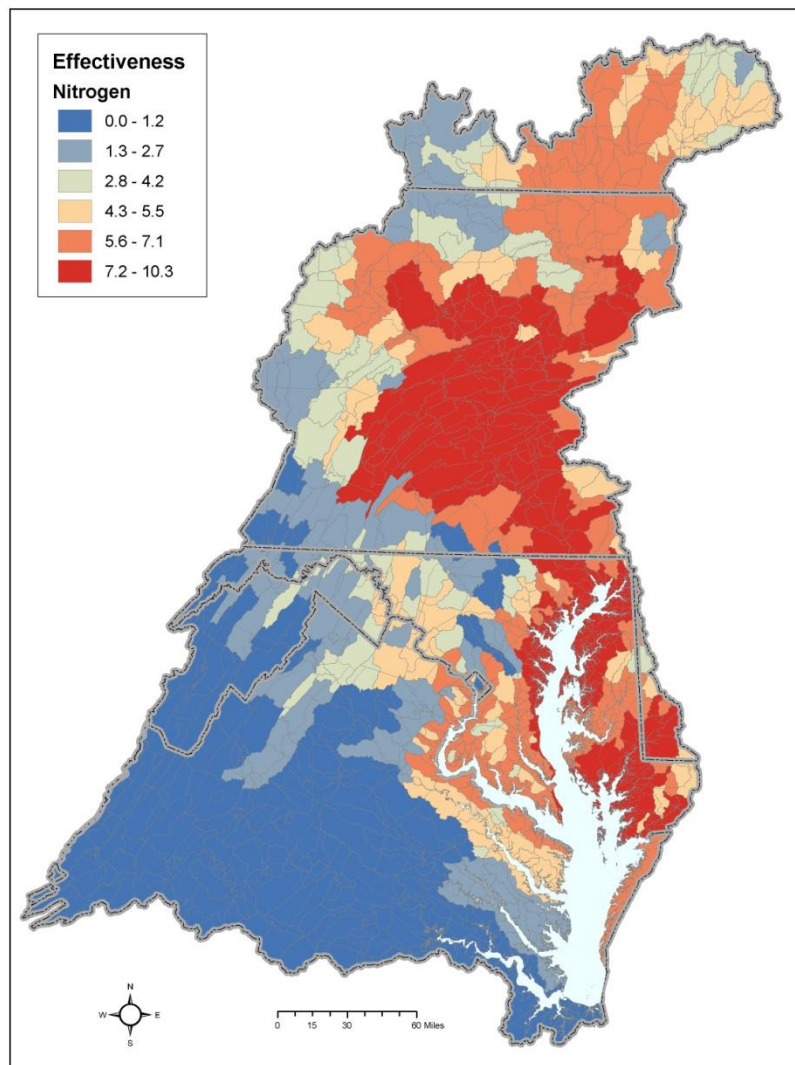
# Phase 5 Planning Target Methodology

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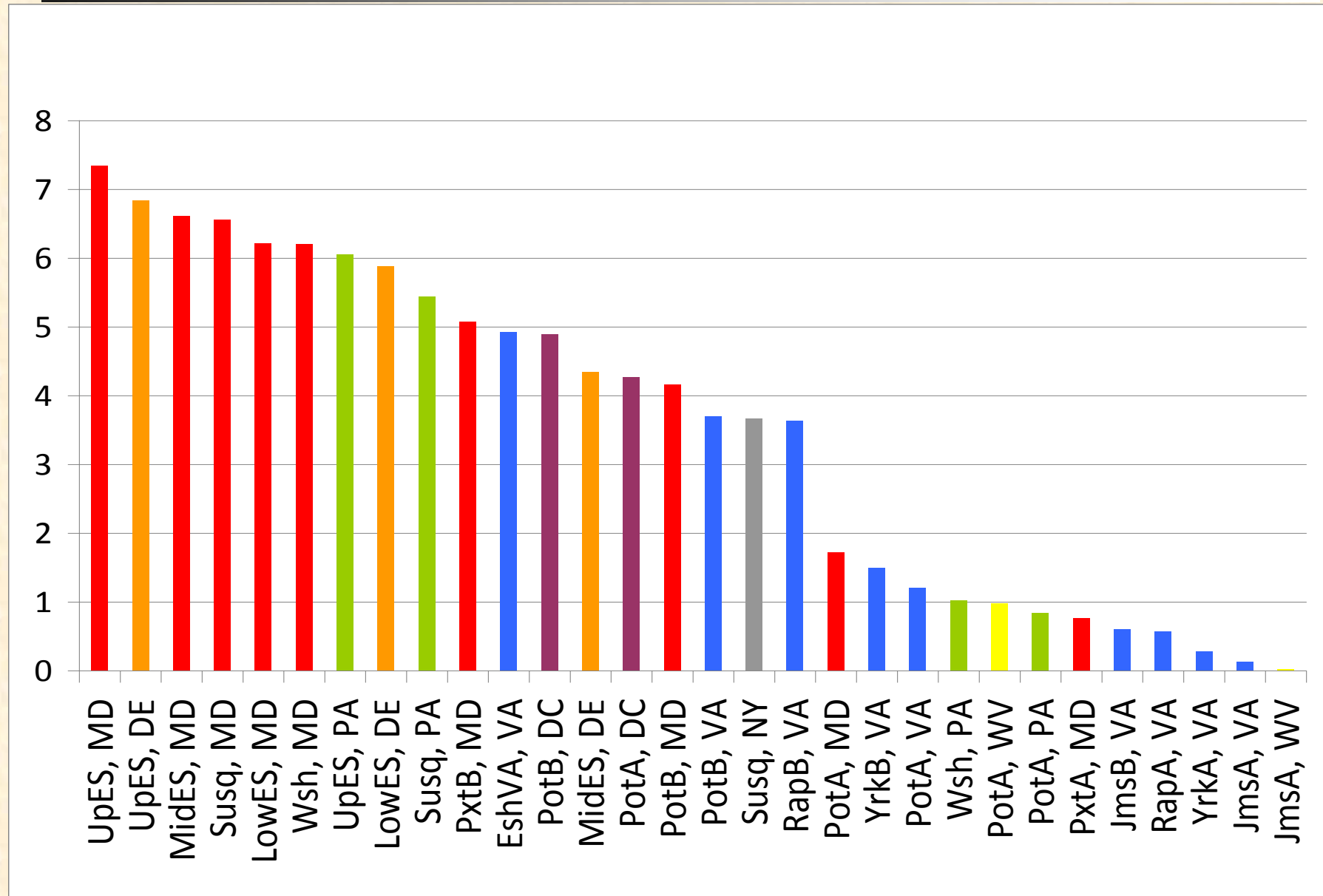


# Relative Effect of a Pound of Pollution on Bay Water Quality





# Major River Basin by Jurisdiction Relative Impact on Bay Water Quality



## Phase 6 Model Scenarios

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For final versions of Phase 6 scenarios and development of Planning Targets, we need:

- Decision on what year to use for No-Action and E3 scenarios – after assessing options
  - Initial scenarios are 2010 background conditions
- Workgroups can review model results of No-Action, E3, Phase II WIPs with Phase 6 model, etc.
- Geographic isolation runs
- Approved model – after fatal flaw review by partnership; September, 2017



## Phase 6 Model Scenarios and Planning Target Development

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### Schedule

- Partnership's fatal flaw review of the Beta 6 modeling tools; through July 31, 2017





## Phase 6 Model Scenarios and Planning Target Development

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### Schedule

- Partnership's fatal flaw review of the Beta 6 modeling tools; through July 31, 2017
- Fatal flaw issue resolution occurs in August, 2017
- WQGIT revisits midpoint assessment schedule based on Beta 6 fatal flaw review period; August 14, 2017 WQGIT call
- Partnership approval of Phase 6 modeling tools; September, 2017



## Phase 6 Model Scenarios and Planning Target Development

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### Schedule

- Draft Phase III WIP planning target development;  
August 1 – September 30, 2017
  - No-Action, E3 + geo-isolation runs, etc.
- Release of draft Phase III WIP planning targets;  
October 31, 2017 - February 28, 2018 partnership  
review
- PSC approval of final Phase III WIP planning  
targets with special cases and release; March,  
2018