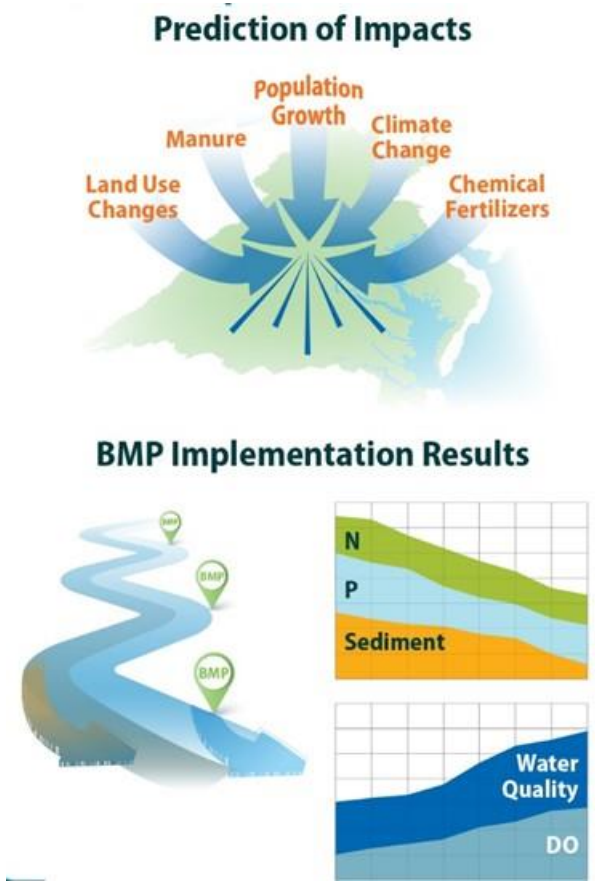
WWTWG data on “non-significant” WWTPs

Wastewater Treatment Workgroup

4/24/2025



TMDL summary

What management practices…

…. will reduce nitrogen and phosphorus to levels …

…. that will achieve appropriate dissolved oxygen, clarity, and chlorophyll in the Bay?

Guidelines for WIP Planning Targets

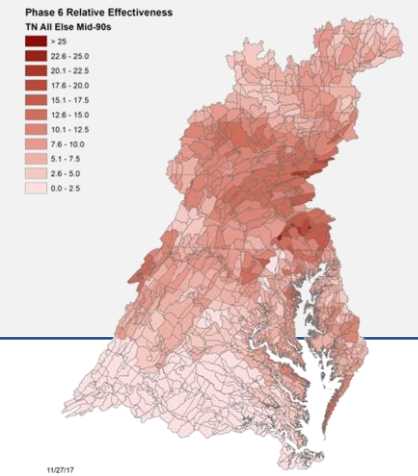
Everything
Everywhere
Everyone

Effort

No BMPs

Effectiveness

Increasing relationship between
Relative Effectiveness and Effort



Nutrient Targets

Major	State		2018 Planning Targets approved by PSC	
Major	State	StateBasin	Nitrogen	Phosphorus
Potomac	DC	DC Potomac	2.42	0.130
Eastern Shore	DE	DE Eastern Shore	4.55	0.108
Eastern Shore	MD	MD Eastern Shore	15.21	1.286
Patuxent	MD	MD Patuxent	3.21	0.301
Potomac	MD	MD Potomac	15.30	1.092
Susquehanna	MD	MD Susquehanna	1.18	0.053
Western Shore	MD	MD Western Shore	10.89	0.948
Susquehanna	NY	NY Susquehanna	11.53	0.587
Eastern Shore	PA	PA Eastern Shore	0.45	0.025
Potomac	PA	PA Potomac	6.11	0.357
Susquehanna	PA	PA Susquehanna	66.59	2.661
Western Shore	PA	PA Western Shore	0.02	0.001
Eastern Shore	VA	VA Eastern Shore	1.43	0.164
James	VA	VA James	25.92	2.731
Potomac	VA	VA Potomac	16.00	1.892
Rappahannock	VA	VA Rappahannock	6.85	0.849
York	VA	VA York	5.52	0.556
James	WV	WV James	0.04	0.005
Potomac	WV	WV Potomac	8.18	0.427

- Nutrient loads in million lbs/year
- Long-term hydrology
  - When the targets are reached, these are the annual average loads
  - **These are NOT** the cap for the wettest year or the 90th percentile year
- Will be reevaluated with new models and climate change through 2035 in 2027/2028

Primary use of the CBP Watershed Model

- Represent anthropogenic changes in load
- Set and track reduction goals

- Ideally:
  - Include all load sources
  - Treat all jurisdictions equally
  - Track actions that change loads
  - Factor out the temporal variability of weather

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Data Ideals

WIP Indicator

Indicator of implementation

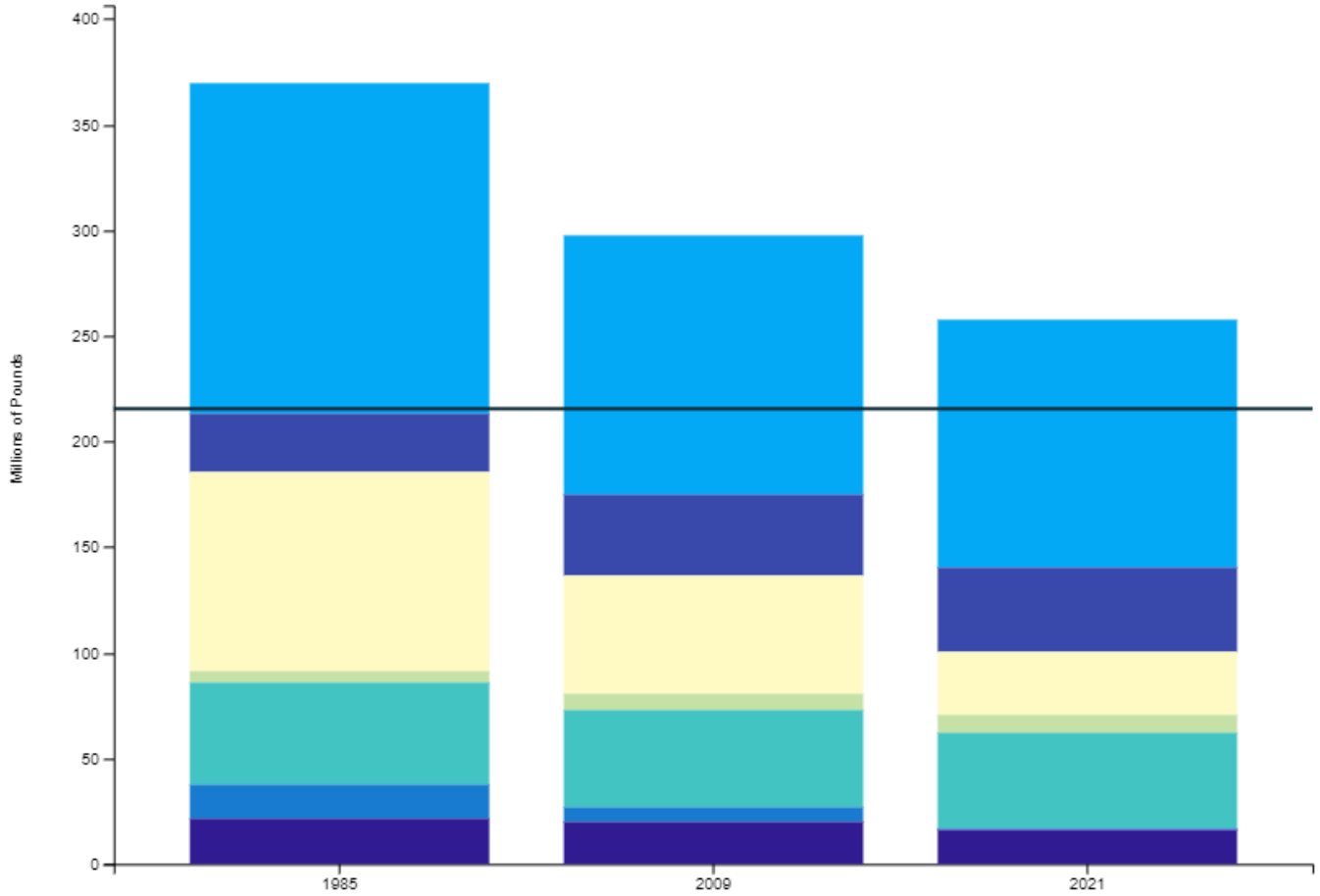
- Agriculture
- Developed
- Wastewater
- Septic
- Natural
- Atmospheric Deposition to Watershed
- Atmospheric Deposition to Tidal Water

Modeled Nitrogen Loads to the Chesapeake Bay (1985-2021)

Loads simulated using CAST19 and jurisdiction-reported data on wastewater discharges. *The natural sector wetlands which are preferable land use types with the lowest loading rates among sources.

VIEW CHART VIEW TABLE

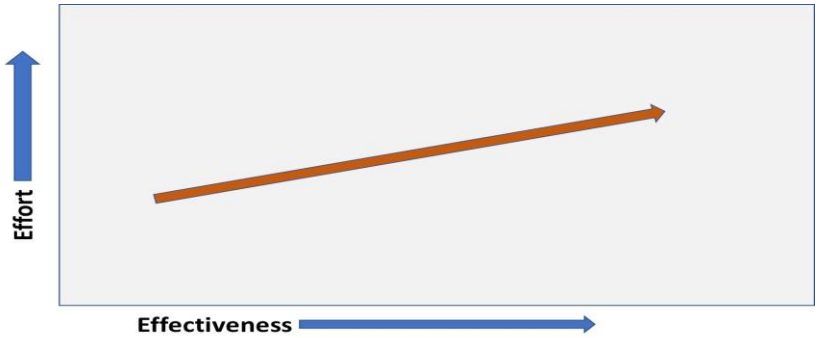
Loads by Source Loads by Jurisdiction



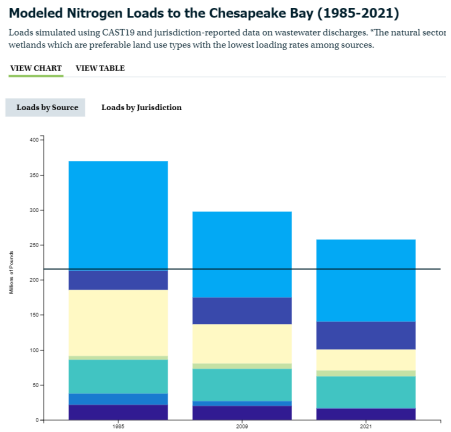
Watershed Model Background

Consistency > Accuracy

Spatial and temporal trends are more important that the absolute value



Spatial - Model used to allocate responsibility between jurisdictions

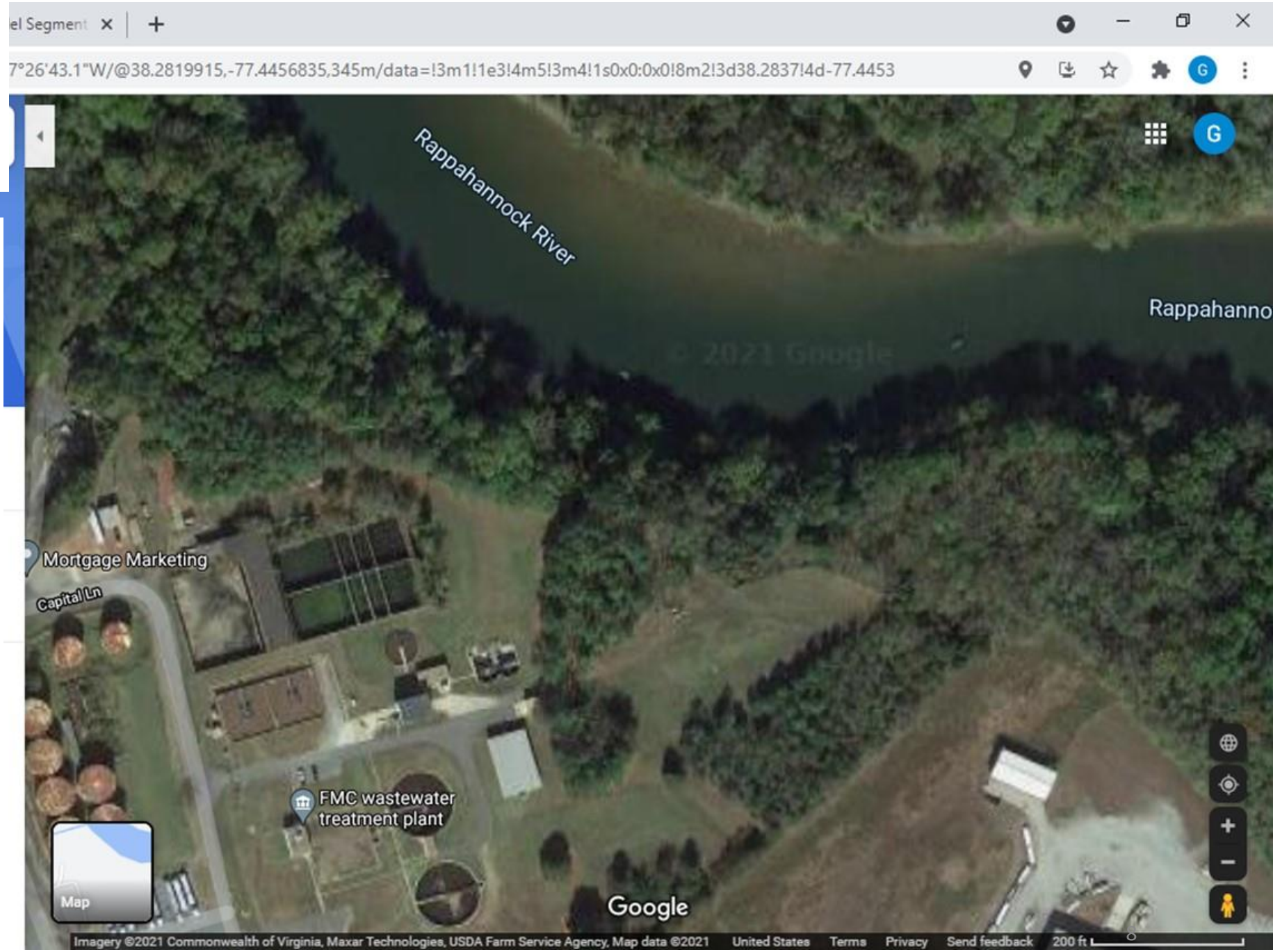


Temporal - Model used to track TMDL, based on changes since 1995

Data Ideals

Example

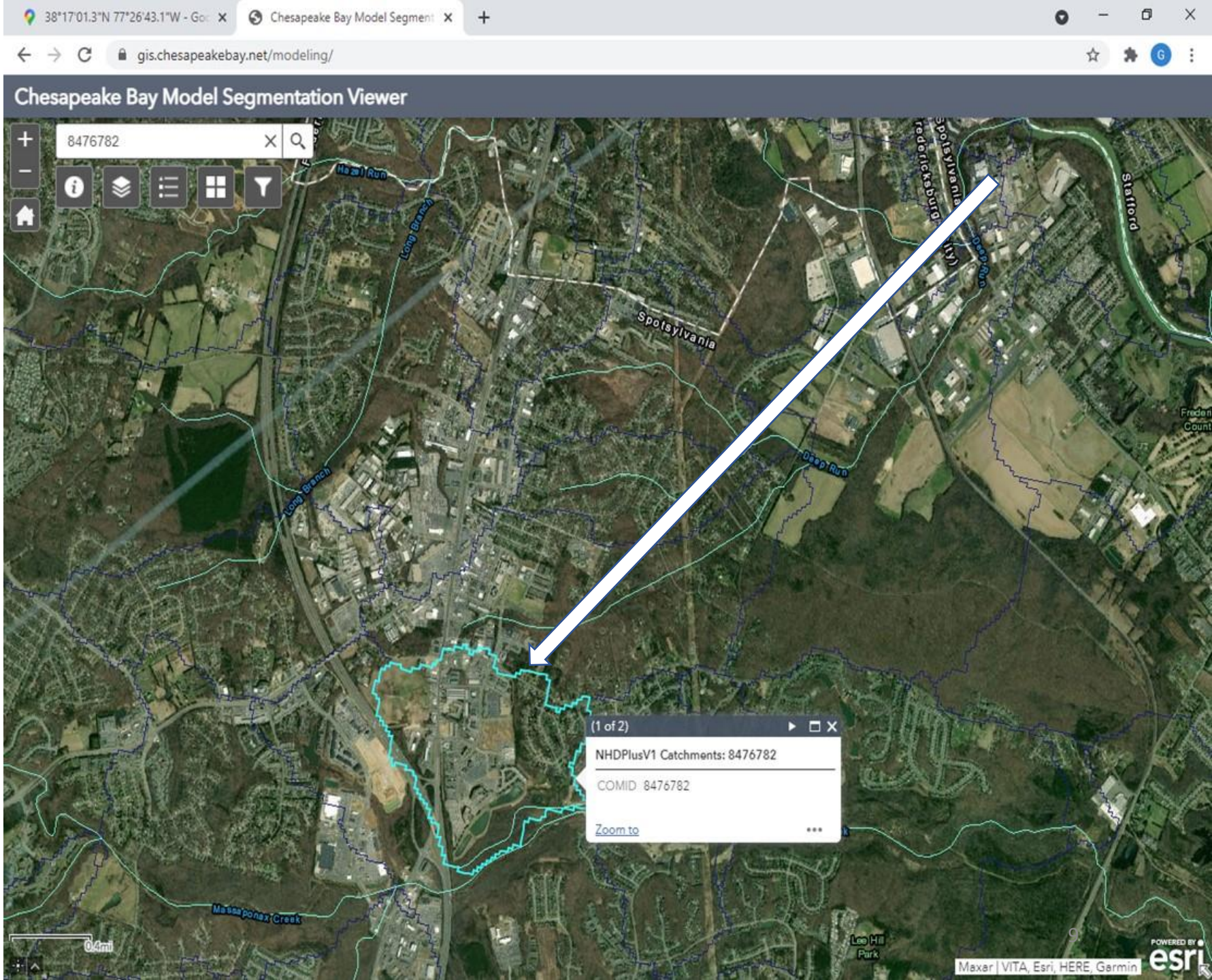
- FMC wastewater treatment plant clearly discharges to tidal Rappahannock



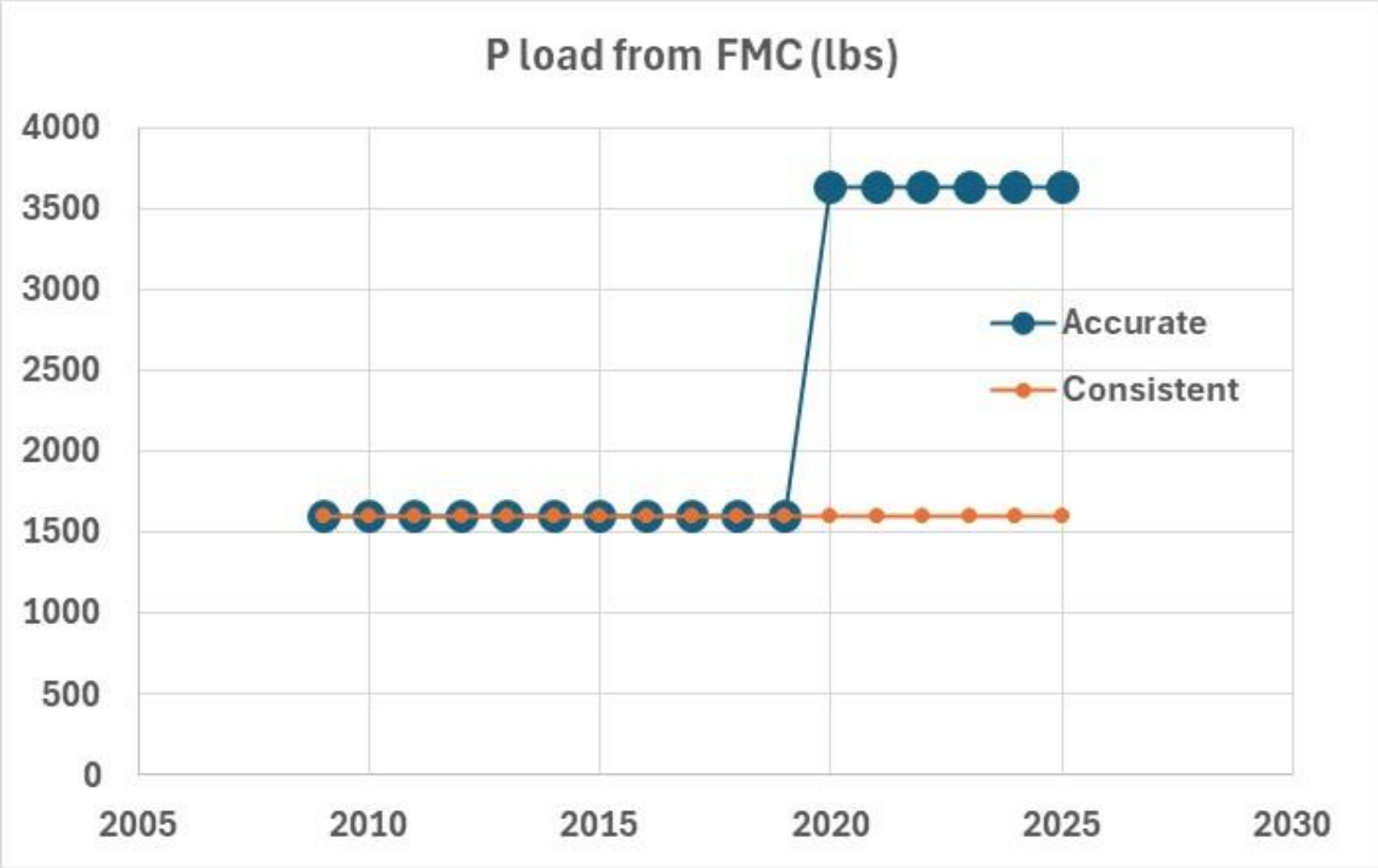
Example

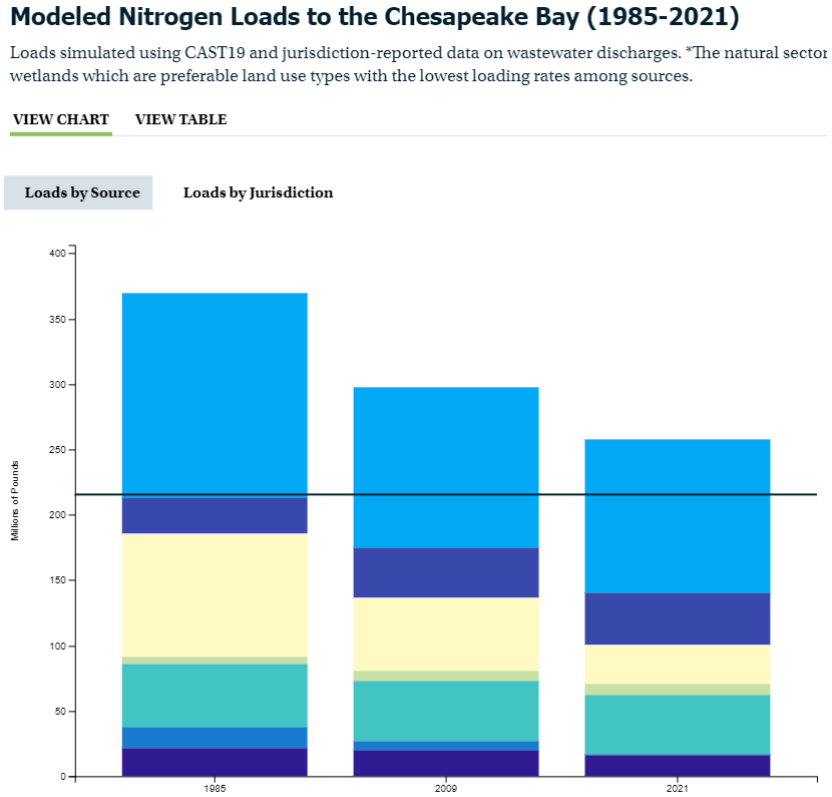
- Lat/Long from database places outfall in business park which flows though multiple reservoirs

- 24% TN and 56% TP is removed in the model

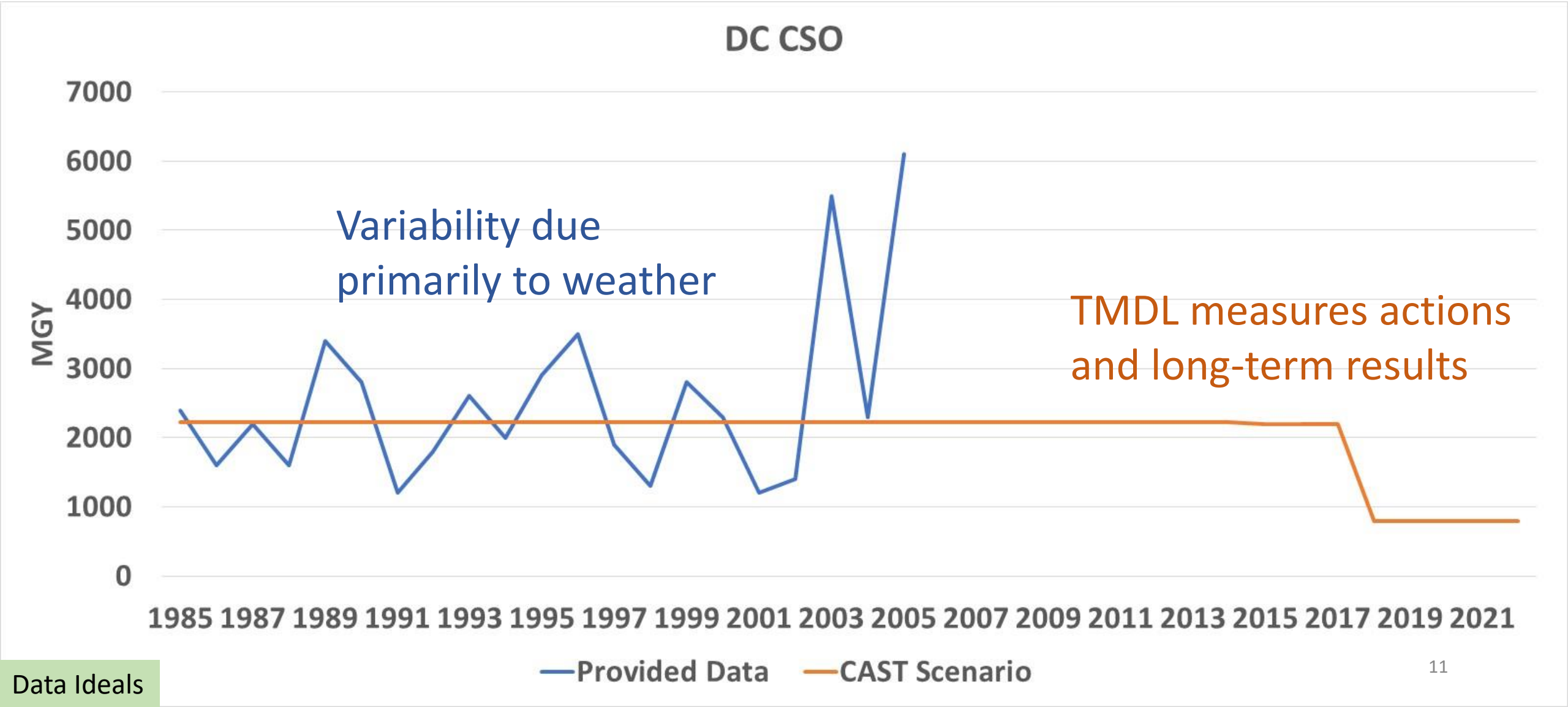


Which is the better measure of WIP implementation?



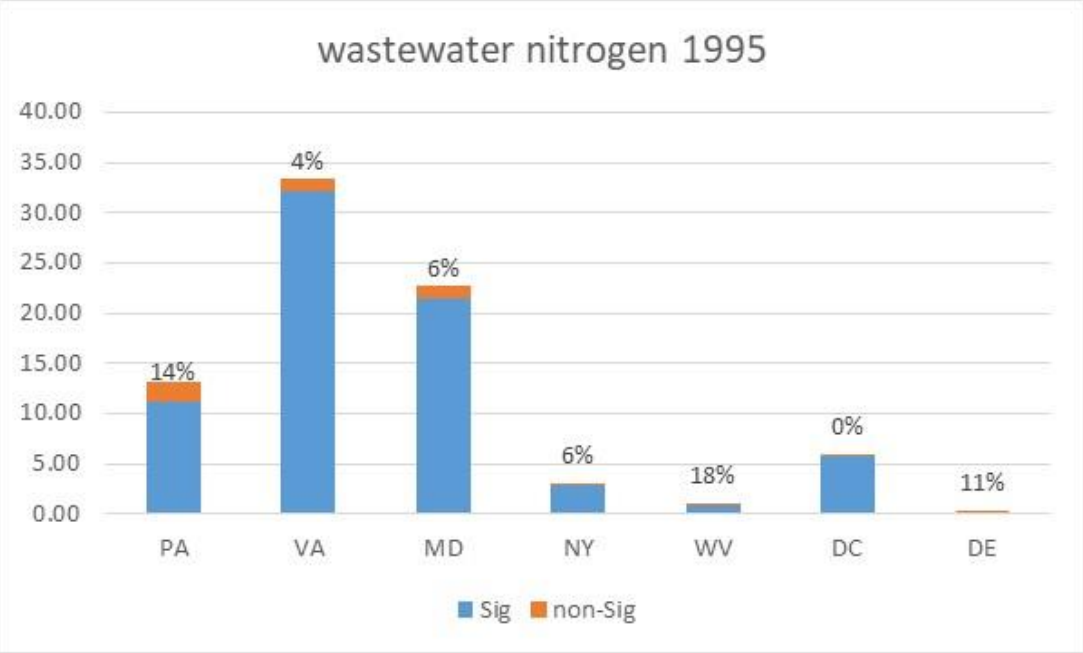


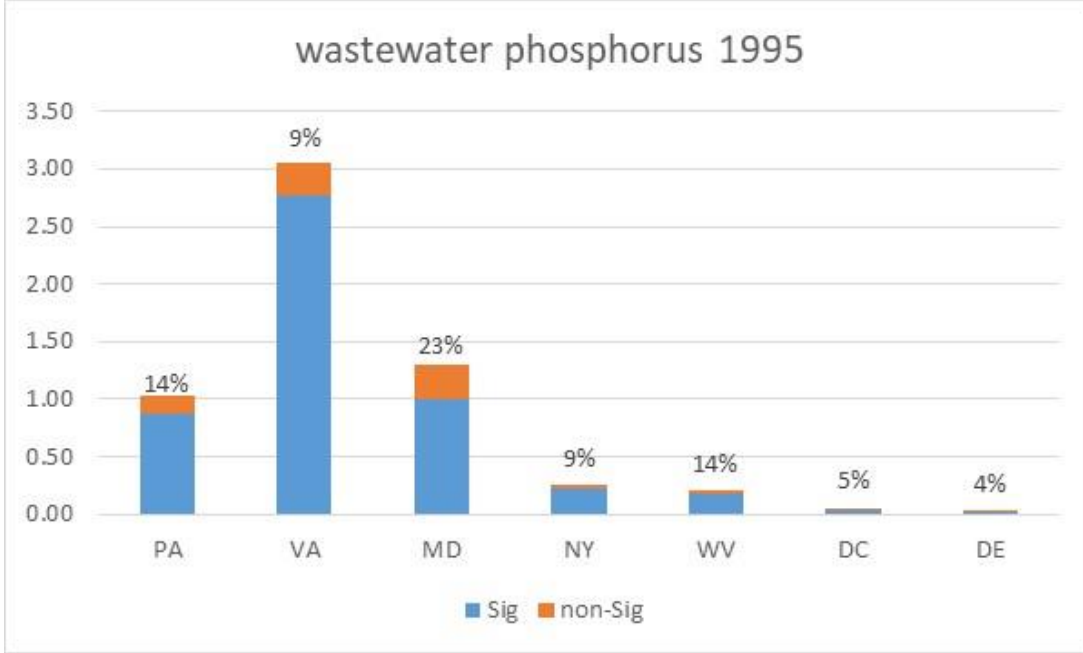
Weather independence > Actual Values



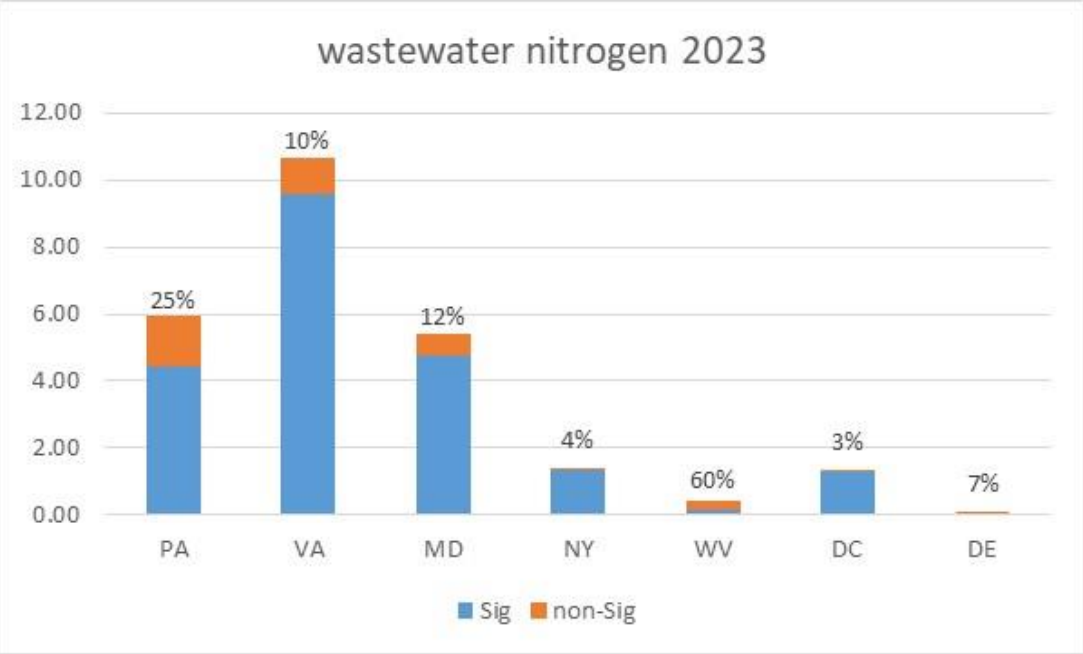
Data Ideals

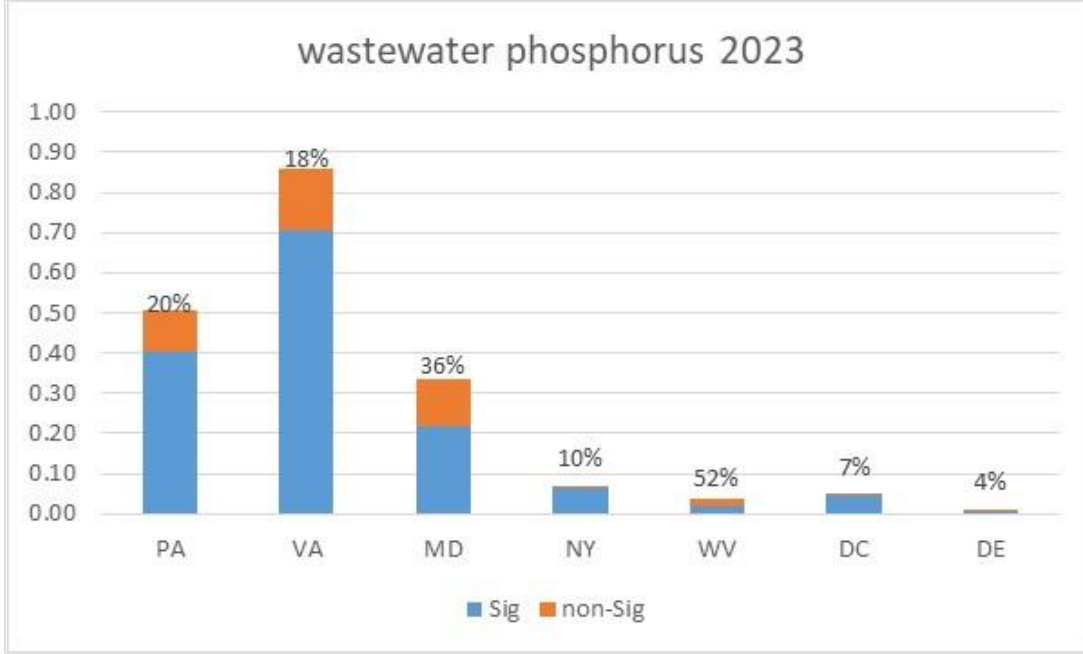
Non-significant facilities have always been significant





Non-significant facilities are now more significant





Draft decisions on the use of non-significant data – Phase 6

- *Principle: count everything that is a real change and nothing that isn't a real change*.
- Jurisdictions are encouraged to enter monitored values in the current progress year and historical years into the database for non-significant facilities in place of default values.
- CBPO will not use these data in phase 6 CAST unless the jurisdiction requests it.
- The data may be used to modify the trend of an existing time series to represent either:
  - an average flow change
  - a technology change
- CBPO will retain data for use in phase 7

Draft decisions on the use of non-significant data – Phase 7

- *Principles:*
  - *count everything that is a real change and nothing that isn't a real change.*
  - *use the best available data*
- Jurisdictions are encouraged to enter monitored values in the current progress year and historical years into the database for non-significant facilities in place of default values.
- CBPO will not use these data in phase 7 CAST unless the jurisdiction requests it.
- The data may be used to modify the entire time series to best represent:
  - The magnitude of load
  - The trend in load

If someone "objects" to a proposal, that equates to a "stop" or "hold" on the continuum. The objector will be asked to explain their position and state an alternative proposal.

CENTER FOR LEADERSHIP & ORGANIZATIONAL CHANGE
PARTNERING FOR RESULTS

Consensus Continuum

Stop	Hold	Stand Aside	Agreement with Reservations	Endorsement
"I do not agree and feel the need to stand in the way of this decision"	"I believe more work is needed before we make a decision"	"I trust the group and will not block this decision but need to register my disagreement"	"I can live with it"	"I like it"
1	2	3	4	5