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AgWG

E3 and Scenario Base Year

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E3 and No-Action: TMDL Appendix J

This appendix to the Chesapeake Bay TMDL offers definitions for the different modeling scenarios initially used for the development of controllable loads and partner allocations.

Examples of scenarios used in the past to help produce planning targets:

- 1985 No-Action
- 2010 No-Action
- All Forests
- Tributary Strategy
- E3
- Etc.

American avocets can be found living in open areas with little vegetation and shallow waters. (Photo by Marielle Scott/Chesapeake Bay Program)

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E3 and No-Action: Controllable Loads

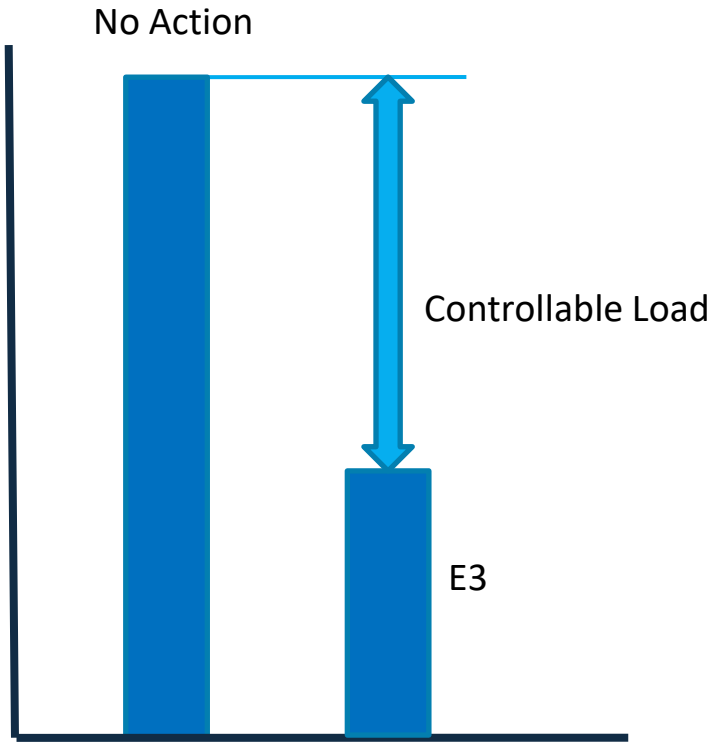
[Chesapeake Bay TMDL Section 6: Establishing the Allocations For The Basin-Jurisdictions]

Section 6.3.2: Determining Controllable Loads

Two theoretical scenarios are created to determine the appropriate context for controllable loads (the difference between these two scenarios' loads).

1. **The No-Action scenario** is indicative of a theoretical worst case loading situation in which no controls exist to mitigate nitrogen, phosphorus, and sediment loads from any sources.

2. **The E3 scenario** represents everything by everyone everywhere—represents a best-case possible situation, where a certain set of possible BMPs and available control technologies are applied to land, given the human and animal populations, and wastewater treatment facilities are represented at highest technologically achievable levels of treatment regardless of costs.



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CWGT and Sector Workgroup Decisions:

- Scenario (E3) Inputs- where can practices go, at what % of that land use, and how does that conflict (if at all) with other proposed inputs?

- Scenario Base Year –what base year should be utilized for the scenarios. 2010 was used in the past in both 2010 and 2017. 2022 is the most current year of land use now.

- Phase III WIP – review these planning efforts and does anything else need to be done to achieve WQS?

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Scenario Base Year Overview

What is a Scenario Base Year?

- The year that trend analyses are based on for use to produce base conditions for other years.
- When data is not available, program must backcast and forecast by use of trend analysis to apportion where things are on the landscape in other years.
- Forecast is automatically through 2075 – for changing environmental conditions work, but when should that begin?

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Phase 6 E3 Agricultural Practices:

Phase 6 BMP	E3 Implementation Level
Nutrient Management Core N, Nutrient Management Core P	100% of all available agricultural landuses
NM Supplemental: N and P Placement, N and P Rate, N and P Timing	100% of all available agricultural landuses
Tillage Management-High Residue/Minimal Soil Disturbance	100% of row crops (excluding corn silage and soybeans), and low input specialty crops
Tillage Management-Conservation Tillage	100% of select row crops including corn silage and soybeans, and high input specialty crops; excludes mushrooms, greenhouse and container nursery
Tillage Management-Low Residue Tillage	100% of select high input specialty crops including potatoes, peanuts, tobacco; excludes mushrooms, greenhouse and container nursery
Manure Injection	All liquid manure from dairy & swine on crops that receive manure, excluding crops w/ manure incorporation Split between acres with injection vs incorporation is the proportion of liquid-to-dry manure nutrients applied to crops, e.g., dairy+swine vs poultry+beef+horses+etc Combined with high-residue tillage management
Manure Incorporation; Low Disturbance	All dry manure from poultry, beef, horses, sheep, and goats on crops that receive manure, excluding crops w/ manure injection Split between acres with injection vs incorporation is the proportion of liquid-to-dry manure nutrients applied to crops, e.g., dairy+swine vs poultry+beef+horses+etc Combined with low-residue tillage and conservation-tillage, not high-residue tillage
Cover Crop (draft)	61% of row crops; not associated with small-grain production and high input specialty (excludes mushroom, greenhouse and container nursery; early, drilled, rye 20% or row crops; early, aerial-seeded, rye Exception for NY and upper PA = 81% early, aerial-seeded, rye + 19% Commodity
Commodity Cover Crop (draft)	19% of row crops; associated with small-grain production; early, drilled, wheat
Cover Crop Composite (draft)	100% of row crops and high input specialty crops; excludes mushroom, greenhouse, and container nursery
Off Stream Watering Without Fencing	100% of all available livestock pasture
Prescribed Grazing	100%; includes PIRG acres
Forest Buffer-Streamside with Exclusion Fencing	Pasture land within 30m of all streams and rivers that's unbuffered - from high-resolution land cover (originally 5% of pasture for Phase6, 10% for Phase5)
Pasture Management Composite	100%
Forest Buffers	Crop land within 30m of all streams and rivers that's unbuffered - from high-resolution land cover (originally 6% of cropland for Phase6, 15% for Phase5)
Wetland Restoration	1% of available crops and pasture
Land Retirement to Ag Open Space and to Pasture	7% of available crops and pasture
Tree Planting	1% of available crops and pasture
Composite of Buffers, Wetland Restoration and REL	Total land use change not to exceed 15%

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Phase 6 E3 Agricultural Practices (Continued)

Phase 6 BMP	E3 Implementation Level
Alternative Crops	1% of row crop
Soil Conservation and Water Quality Plans	100% over all available agricultural land uses
Manure Transport	Will be added based on excess of crop goal; Includes benefits of Manure Treatment Technologies
Livestock Waste Management Systems	100% of all livestock production areas
Poultry Waste Management Systems	100% of all poultry production areas
Animal Waste Management Systems	100% of all animal production areas
Barnyard Runoff Control	100% of beef and dairy facilities
Loafing Lot Management	100% of beef and dairy facilities
Animal Feed Operations	100% of beef and dairy facilities
Dairy Precision Feeding and/or Forage Management N	100% of Dairy @ TN = 24% reduction
Dairy Precision Feeding and/or Forage Management P	100% of Dairy @ TP = 28% reduction
Biofilters and Lagoon Covers	100% of Dairy and Swine, excludes manure storage for dry manure/stackable manure
Non-Urban Stream Restoration	15% of low-order agriculture stream miles are restored @ twice the default Stream Restoration value Stream miles from Chesapeake Conservancy synthetic data layer at lower order than National Hydrography Dataset (NHD)
Shoreline Erosion Control	Any practice along agriculturally-dominated tidal shorelines that prevents and/or reduces tidal sediments to the Bay Shoreline practices can include living shorelines, revetments and/or breakwater systems and bulkheads and seawalls Using new buffer data set of buffered:unbuffered shoreline to define domain

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No-Action and E3 Discussions Schedule:

Timeline for E3 Discussions:

- January 2026 – September 2026

Workgroup Collaborations:

- TBD; What topics need to be discussed alongside the bmps that maybe affect multiple sectors (ex. forest buffers)?

Thank you!

Questions?

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