



E3 Model Scenarios

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Chesapeake Bay Program Office

Agriculture Workgroup Meeting

August 24, 2017



Phase 6 E3 Model Scenario Status and Decision Request

- 11:00 – 11:30; Jeff Sweeney, EPA-CBPO, and Mark Dubin, UM, will review refinements to the revised DRAFT Phase 6 agricultural E3 and No-Action Scenario based upon the August 17th meeting.
- Comments to the cover crops and manure incorporation/injection BMPs in the E3 scenario were due to Sweeney and Dubin, cc Loretta Collins by noon Tuesday August 22nd.
- Per request of the July 24th WQGIT, the Workgroup has been asked to provide a final Phase 6 agricultural E3 and No-Action Scenario for presentation to the WQGIT on August 28th.
- The WQGIT request included a Workgroup review of the implementation levels for BMPs and possible geographic limitations of Phase 6 E3/No-Action BMPs.
- Refinements for the following will be specifically discussed: manure incorporation, manure injection, and cover crops.
- Decision: The AgWG will be asked to approve a FINAL version of the Phase 6 agricultural No-Action and E3 scenarios to be presented at the WQGIT August 28th Conference Call for approval.



Phase 6 E3 Model Scenario

Tillage Practices Versus Incorporation

- Tillage Management
 1. High-Residue/Minimal Soil Disturbance
 - 100% of row crops (excluding corn silage and soybeans), and low input specialty crops
 2. Conservation-Tillage
 - 100% of select row crops including corn silage and soybeans, and high input specialty crops
 3. Low-Residue Tillage
 - 100% of select high input specialty crops including potatoes, peanuts, tobacco



Phase 6 E3 Model Scenario

Tillage Practices Versus Incorporation

- Manure Incorporation and Injection

1. 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 versus incorporation is the proportion of liquid-to-dry manure nutrients applied to crops, e.g., dairy+swine versus poultry+beef+horses+etc.

2. Injection

- All liquid manure from dairy & swine on crops that receive manure, excluding crops w/ manure incorporation
- Split between acres with injection versus incorporation is the proportion of liquid-to-dry manure nutrients applied to crops, e.g., dairy+swine versus poultry+beef+horses+etc.



Phase 6 E3 Model Scenario

Tillage Practices Versus Incorporation

- Manure Incorporation and Injection
 1. Incorporation, Low-Disturbance
 - This practice is combined with low-residue tillage and conservation-tillage, but may not be combined with high residue tillage management due to residue retention that likely does not equal or surpass 60 percent
 2. Injection
 - Combined with high-residue tillage management



Phase 6 E3 Model Scenario

Sector Equity

- For the urban sector, the drainage area of ALL households, businesses, roads, etc. is:
 - retrofitted to meet a 1.5" performance standard, or
 - the sewer system of hardened cities is separated so there are no overflows
- \$ = 100's million, trillions?
- E3 does not consider feasibility = implementation at 100% unless physically/technically impossible



Phase 6 E3 Model Scenario

Cover Crops – Current

1. E3 traditional Cover Crops at 81% of row crops
 - Not associated with small-grain production and high input specialty; early, drilled, rye
2. E3 Commodity Cover Crops at 19% of row crops
 - small-grain production; early, drilled, wheat
- Cover Crop composite = 100% of row crops and high input specialty crops



Phase 6 E3 Model Scenario

Cover Crops – Proposed

1. E3 traditional Cover Crops at 61% of row crops
 2. E3 Commodity Cover Crops at 19% of row crops
 3. + Cover Crop = 20% or row crops early aerial-seeded rye
 4. Exception is NY and upper PA at 81% early aerial-seeded traditional and 19% Commodity
- Composite = 100% of row crops and high input specialty crops



Phase 6 E3 Model Scenario

Tutorials/Discussions on E3 and Planning Targets

Water Quality GIT

- Dec 15, 2015
- June 27, 2016
- **Oct 24, 2016**
- Nov 14, 2016
- Jan 9, 2017
- Jan 23, 2017
- June 26, 2017
- July 24, 2017
- Aug 14, 2017

Agriculture WG

- Sep 15, 2016
- Oct 5, 2016
- April 20, 2017
- June 29, 2017
- July 20, 2017
- August 17, 2017

Urban Stormwater WG

- May 17, 2016
- June 21, 2016
- July 26, 2016
- Sept 20, 2016
- Oct 6, 2016
- Nov 15, 2016
- June 27, 2017

Waste Water Technical WG

- Aug 2, 2016
- Sep 13, 2016
- Oct 4, 2016

Forestry WG

- Nov 2, 2016
- May 3, 2017



Phase 5 Planning Target Methodology

"Hockey Stick"

