

# Establishing Scenario Years for Planning Targets and Phase III Watershed Implementation Plans

Developed for the Water Quality GIT's September 11, 2017 Meeting

**Decision Point 1:** What scenario year should be used to establish the Phase III WIP planning targets?

**Decision Point 2:** What scenario year should be used to develop Phase III WIPs?

## Important Terms

*Planning Target* - Pounds of allowable nutrients or sediment delivered to the Chesapeake Bay from a state basin, based upon: 1) the assimilative capacity of the Bay as found through the Chesapeake Bay Water Quality Sediment Transport Model (Estuarine Model); 2) the amount of reduction possible from a no action to an E-3 scenario; and 3) a percent reduction of all possible reductions based upon the relative impact of the basin's loads on dissolved oxygen in the main-stem of the Chesapeake Bay as found through geographic isolation runs using the Estuarine Model.

*Scenario Year* – The year for which a scenario of management actions is applied against. Each year has unique estimated land uses, crops, animal and septic populations, etc. The scenario year, 2010, was used in the 2010 Chesapeake Bay TMDL for 1) establishing **planning targets**, and 2) applying **Watershed Implementation Plans (WIPs)** against.

*Accounting for Growth* – The 2010 Chesapeake Bay TMDL stated: “WIPs are expected to describe procedures for estimating additional loads due to growth and to provide EPA with information to inform additional pollutant load reductions that are at least sufficient to offset the growth and development that is anticipated in the watershed between 2011 and 2025.”

## Planning Target Discussion

*How would Scenario Year Impact Planning Targets?*

If a scenario year past 2010 is chosen for setting planning targets, then any increase or decrease in land uses, crops, animal and septic populations, etc. since the beginning of the 2010 Chesapeake Bay TMDL is “grandfathered” into those planning targets, and may increase the burden for jurisdictions with little growth. For example, growth of developed lands or animal populations in a jurisdiction may decrease its overall potential reductions between a no action and an E-3 scenario, yet the assimilative capacity of the Bay will remain the same. This will mean greater reductions will be expected from jurisdictions with less growth.

*Options for Planning Target Scenario Year*

### 2010

*Pros:*

- Consistent with original 2010 Chesapeake Bay TMDL planning target decision.
- Would not “grandfather” growth in any jurisdiction past the original 2010 Chesapeake Bay TMDL date.

*Cons:*

- Would represent an estimated set of land uses, crops and animals that was backcasted from the 2012 Census of Agriculture and 2013 high-resolution land use. Generally speaking, the 2012 land use now represents the best available agricultural and land use data.

**2012**

*Pros:*

- Would generally represent the best available agricultural and land use data.

*Cons:*

- Would be inconsistent with the original 2010 Chesapeake Bay TMDL planning target decision.
- Would “grandfather” in growth, albeit limited, past the original 2010 Chesapeake Bay TMDL date, which could negatively impact those jurisdictions that experienced little to no growth.

**2017**

*Pros:*

- Would be consistent with other mid-point assessment changes occurring during the calendar year of 2017.

*Cons:*

- Would represent a forecasted condition beyond the generally considered year of best agricultural and land use data – 2012.
- Would be inconsistent with the original 2010 Chesapeake Bay TMDL planning target decision.
- Would “grandfather” in growth past the original 2010 Chesapeake Bay TMDL date, which could negatively impact those jurisdictions that experienced little to no growth.

**2025**

*Pros:*

- Would be consistent with expectations to achieve reductions by the year 2025.

*Cons:*

- Would represent a forecasted condition significantly beyond the generally considered year of best agricultural and land use data – 2012.
- Would be inconsistent with the original 2010 Chesapeake Bay TMDL planning target decision.
- Would “grandfather” in growth past the original 2010 Chesapeake Bay TMDL date, which could negatively impact those jurisdictions that experienced little to no growth.

## **Watershed Implementation Plan Discussion**

### *How would Scenario Year Impact Development and Assessment of Watershed Implementation Plans (WIPs)?*

As stated in the 2010 Chesapeake Bay TMDL, WIPs must account for growth that is anticipated until 2025. Growth beyond 2010 will inevitably require more implementation to offset additional loads. Choosing a scenario year past 2010 for WIP development allows jurisdictions and EPA to account for estimated growth based upon partnership-approved projections in land uses, crops, animal and septic populations, etc. Choosing a scenario year prior to 2025 would ignore potential growth and could result in initial WIPs achieving planning target reductions, but missing the mark in the final assessment year of 2025 because of the unaccounted for growth.

It is also important to note that all progress and milestone achievements are currently, and will continue to be, developed and evaluated on projected year conditions in order to account for growth. For

example, 2016 progress implementation levels were not applied against a 2010 scenario year to estimate achievement towards the planning targets or milestones. Instead, they were applied against a 2016 projected scenario year to automatically account for estimated changes in land uses, crops, animal and septic populations, etc.

#### *Options for WIP Scenario Year*

##### **2010**

###### *Pros:*

- Consistent with original 2010 Chesapeake Bay TMDL WIP development decision.

###### *Cons:*

- Could result in initial WIP scenarios achieving planning target reductions, but significantly missing the mark in the final assessment year of 2025 because of 15 years of unaccounted growth.
- Would represent an estimated set of land uses, crops and animals that was backcasted from the 2012 Census of Agriculture and 2013 high-resolution land use. Generally speaking, the 2012 land use now represents the best available agricultural and land use data.

##### **2012**

###### *Pros:*

- Would generally represent the best available agricultural and land use data.
- Would account for some growth post-2010, albeit a small amount.

###### *Cons:*

- Could result in initial WIP scenarios achieving planning target reductions, but significantly missing the mark in the final assessment year of 2025 because of 13 years of unaccounted growth.
- Would be inconsistent with the original 2010 Chesapeake Bay TMDL WIP development decision.

##### **2017**

###### *Pros:*

- Would be consistent with other mid-point assessment changes occurring during the calendar year of 2017.
- Would account for some growth post-2010.

###### *Cons:*

- Could result in initial WIP scenarios achieving planning target reductions, but missing the mark in the final assessment year of 2025 because of 8 years of unaccounted growth.
- Would be inconsistent with the original 2010 Chesapeake Bay TMDL WIP development decision.
- Would represent a forecasted condition beyond the generally considered year of best agricultural and land use data – 2012. However, the 2025 growth projections will be updated on a two-year basis, to coincide with the development and submission of the jurisdictions' two-year milestones.

##### **2025**

###### *Pros:*

- Would be consistent with expectations to achieve reductions and account for growth by the year 2025.
- Would likely cause the least amount of changes to Phase III WIP scenarios because significant growth would already be taken into account.

- Would allow states to plan for land conservation actions to offset projected losses of land in any sector.

*Cons:*

- Would be inconsistent with the original 2010 Chesapeake Bay TMDL planning target decision.
- Would represent a forecasted condition significantly beyond the generally considered year of best agricultural and land use data – 2012. However, the 2025 growth projections will be updated on a two-year basis, to coincide with the development and submission of the jurisdictions' two-year milestones.