

Crediting Conservation: Frequently Asked Questions

1) How and who developed the Conservation Plus family of land use scenarios, also known as Land Policy Best Management Practices (BMPs)?

The Conservation Plus family of land use scenarios were initially developed during a day-long joint meeting of the Chesapeake Bay Program's (CBP) Land Use Workgroup (LUWG) and Local Government Advisory Committee (LGAC) in June 2017. During this meeting, an ideal conservation and policy scenario was drafted that included elements of forest and farmland conservation, and growth management. Over the following six months, the LUWG agreed to divide elements of this scenario into three distinct thematic scenarios: Forest Conservation, Agricultural and Soil Conservation, and Growth Management. These three scenarios were then renamed "Conservation Plus" scenarios and are referred to as "Land Policy BMPs" by the CBP Partners. The elements that compose each of these scenarios (e.g., conserving all large forest patches, increasing infill and redevelopment by 10%) originated from the joint LUWG/LGAC meeting and subsequent LUWG monthly meetings.

For more information, see:

https://www.chesapeakebay.net/what/event/local_government_advisory_committee_june_2017

2) How are the nutrient and sediment pollution load reductions associated with each of the Conservation Plus scenarios computed?

The Chesapeake Bay Program's online Watershed Model, the Chesapeake Assessment Scenario Tool (CAST), is designed to help jurisdictions develop their Phase III Watershed Implementation Plans and estimate pollution loads from BMPs including Land Policy BMPs. Within CAST, the effects of these BMPs on land use changes and the resultant changes in pollutant loads can be simulated on one of two base conditions: Historic Trends or Current Zoning. To estimate pollutant load reductions, users will need to compute loads from two scenarios, e.g., a Land Policy BMP scenario with a baseline scenario, and difference the results. Note that "Current Zoning" has been accepted as the official baseline scenario used by the CBP Partners to evaluate the effects of Land Policy BMPs on 2025 conditions. The CAST tool is available for use by the public following registration on the site and it has excellent documentation and help screens.

For more information, see:

<https://cast.chesapeakebay.net/>

3) Do the Land Policy BMPs (e.g., conservation and planning actions) only apply to areas projected to experience growth and development by 2025 and beyond?

The Land Policy BMPs apply everywhere- to all Bay watershed counties. They will have minimal near-term impact on pollutant loads in counties that are not expected to experience significant development through the year 2025. However, the effects of Land Policy BMPs on pollutant loads will increase through time beyond 2025 as human and some farm animal populations continue to grow. The population of the Bay watershed is expected to increase by ~ 1 million persons per decade through the year 2050.

4) How do reductions computed for Land Policy BMPs compare to values for engineered BMPs? Are there variable reductions depending on growth rates?

Land Policy BMPs affect pollutant loads by changing the spatial patterns of land use and extent of future greenfield development (see response to FAQ #5 below for more details). They are most effective in high-growth counties but their impact varies by scenario, depending on the extent to which scenario elements are present in a county. For example, the Forest Conservation scenario may have little impact in a county dominated by farms and urban land. The effectiveness of both land policy and engineered BMPs can vary considerably depending on the extent, type, and location of the BMPs, and the type of land to which BMPs are applied. Land Policy BMPs can be more effective than engineered BMPs at reducing nutrients and sediment – and vice versa. Over extended timeframes, however, as populations continue to grow, the effectiveness of Land Policy BMPs continues to increase.

5) Are the Land Policy BMPs trying to stop growth and development?

No. For all scenarios, county-level population, housing, and employment projections must be accommodated within their respective counties. These projections are produced independently by each state and provided to the Chesapeake Bay Program Office. This approach is taken by design because states and counties depend on their demographic and employment projections for a variety of fiscal and infrastructure planning purposes. Therefore, it makes sense to use them as the basis for envisioning potential alternative futures. This design decision also means that leapfrog development is not currently simulated in any of the future land use scenarios. “Leapfrogging” is a real phenomenon where demand for growth accompanied by new development seemingly leaps across county or state boundaries to take advantage of amenities, lower costs of living, tax differentials, or other relative economic advantages. Leapfrogging can create bedroom communities which are sometimes separated from work destinations by substantial commuting distances.

Future population and employment can be accommodated within a county in a variety of ways that have differential impacts on the environment. Simulating these ways and their impacts is the purpose of the Land Policy BMPs. For example, one county might accommodate future growth mostly through infill and redevelopment resulting in minimal greenfield development, i.e., the conversion of forests and farms. Another county could accommodate the same amount of growth as a mix of moderate and low-density development in rural areas resulting in relatively high amounts of land conversion. The pollution impacts of future development are largely dependent on design, engineering, wastewater treatment technologies, and pre-development land use conditions.

6) Why did the CBP Partners agree to credit land use policies and land conservation actions for reducing pollution to the Bay?

Maintaining forests has always been implicitly “credited in the CBP Partner models because forests have the lowest per-acre pollutant loads compared to any other land use. Converting forests to a non-forest use results in an increase in loads. For the Phase 6 model, however, the CBP Partners have decided to explicitly credit conservation for its role in avoiding future land conversion. This is uniquely possible for

the Bay TMDL due to the broad spatial and long temporal scale of the restoration effort. When faced with the decision to establish restoration plans on 2010, 2017, or 2025 land use conditions, the CBP Partners decided in 2017 to establish them on 2025 land use conditions because: 1) Bay TMDL mandates that jurisdictions must “account for growth” in pollutant loads in their Phase III Watershed Implementation Plans; 2) Jurisdictions are planning to implement BMPs through the year 2025; 3) the population of the Bay watershed will increase by another 1 million people from 2017 to 2025 (an increase of 2 million over 2010 levels); and 4) the long-term trend of increasing poultry populations is expected to continue through 2025. Moreover, the pollutant load reductions achieved by the year 2025 must be maintained into the future and the CBP Partners appreciate that the value of land conservation and land use planning increase over time.

7) How can conservation organizations qualify for credit under the TMDL for the lands that they conserve?

Land conservation and land use policies such as zoning do not result in instantaneous reductions of nutrient and sediment pollution from a parcel land unless accompanied by changes to land cover, use, or management. Rarely do they individually result in quantifiable avoidance of land conversion. This is because conserving a single parcel of land in its current state through easement or policies may only shift development pressure to other equally attractive and eligible parcels. This concept is termed “leakage” in conservation literature. Changing future land use patterns or reducing the extent of future greenfield development is more likely to occur through the collective conservation efforts of multiple organizations combined with land-use policies and other actions.

As with engineered BMPs, “credit” for Land Policy BMPs in the TMDL context has two phases. Initially, “credit” means formal and quantitative recognition in a jurisdiction’s Phase III WIPs of the contributions towards reducing nutrient and sediment loads to the Bay attributable to collective land use planning and land conservation actions. Phase III WIPs include planned actions to be implemented from 2019 – 2025 to achieve each jurisdictions’ pollution load reduction targets. Each Bay State and the District of Columbia have the option of including Land Policy BMPs in their Phase III WIPs which will be developed through 2018 and finalized in 2019. If the Land Policy BMP used in a jurisdiction’s Phase III WIP results in lower pollutant loads than the Current Zoning baseline scenario, the conservation actions and land use policies included in their Land Policy BMP will be credited towards achieving the pollutant reductions. Final “credit” for all BMPs is obtained when the planned load reductions documented in the Phase III WIPs are observed in environmental monitoring data.

The verification process for Land Policy BMPs has not yet been finalized by the CBP Partners. As of May 2018, it is anticipated to be different than the verification approach used for engineered BMPs. This is because engineered BMPs are assumed to have individual effects on reducing pollution. In contrast, land use policies and land conservation actions are assumed to not have individual effects due to the possibility of leakage and other factors beyond the control of planning and conservation organizations. For these reasons, the role of land use planning and land conservation actions in achieving pollutant reductions will be verified through monitoring land use change rather than by tracking individual conservation actions or verifying the implementation of land use policies. The CBP Partners will monitor land change every two years through hot-spot analyses and every 4-5 years through repeat high-

resolution land cover mapping. If observed changes in land cover/use show patterns and rates of change that are highly inconsistent with the Land Policy BMP used in a jurisdiction's Phase III WIPs, jurisdictions will have an opportunity every two years to modify their Land Policy BMP and/or modify their land use planning and conservation efforts in their 2-year milestones. If water quality monitoring data affirms that load reduction targets have not been met, jurisdictions will be expected to implement additional BMPs to further reduce loads, possibly including more aggressive land use policies and conservation to prevent loads from further increasing.

8) Can any permanently conserved land qualify for credit under these BMPs, not just forest and farmlands?

Yes. Land use types are simplified in the CBP models such that any lands that are not already developed are represented as either forest/wetlands or grass/herbaceous lands. Therefore, if newly protected areas are undeveloped, they will qualify for credit.

9) Do the scenario elements (e.g., preserving all large forest tracts or prime farmland) need to be fully implemented in a county to receive "credit" under the Bay TMDL towards offsetting future growth and development?

Credit for Land Policy BMPs is based primarily on comparing planned vs. monitored pollutant load reductions which reflect the integrated implementation of all BMPs. The role of the Land Policy BMPs in achieving measured reductions in pollutant loads is based on comparing monitored changes in land use with anticipated changes reflected in the Planning BMP used in a jurisdiction's Phase III WIP. For example, if the Planning BMP used includes conserving ALL forest tracts in a county, then verification of the effectiveness of Planning BMP will be partly based on whether any forests are developed- not on the extent of newly conserved lands.

10) Do working forest lands qualify for TMDL credit?

Working forests, e.g., forests designated for and subject to periodic harvest, qualify for unique BMPs that are designed to control sediment. If working forests are mapped and a jurisdiction agrees to include them in the Land Policy BMP used for developing their Phase III WIPs, then they could contribute to avoiding future land conversion if there are documented commitments to sustain them as "working forests" into the future. Currently, no working forest lands, as defined above, are included in Land Policy BMPs due to the lack data on their status and locations.

The Chesapeake Conservation Partnership has mapped potential working forests, defined as:

- Multiple Value Woodlots: These are blocks of contiguous forest ranging in size from 50 to 500 acres; and/or
- Forests Conducive to Timber Harvests: These are defined as areas of harvestable contiguous forest blocks 500 acres or larger with less than 30% slopes.

In the absence of mapped polygons of timber harvest areas, these CCP criteria could be adopted for use in a jurisdiction's Land Policy BMP to reflect the area of potential "working forests".

11) Who selects future scenarios/Land Policy BMPs used in the Phase III WIPs and how can land trusts engage in the process of designing and including them in a jurisdiction's Phase III WIPs?

State regulatory agencies such as MDE in Maryland, DEQ in Virginia, and DEP in Pennsylvania are the lead agencies in charge of Phase III WIP development. These agencies typically coordinate with other state agencies and local governments in developing their WIPs although each jurisdiction may handle the process a little differently. Interested land trusts should contact their jurisdiction's lead agencies for Phase III WIP development to find out how best to get involved. Such contacts should be initiated as soon as possible (i.e., May-June 2018) to ensure consideration of conservation actions. Information that may be useful to state agencies include historic rates of conservation activity (acres of conservation per year per county) and the average parcel/patch size of conserved lands per county.

Jurisdictional contacts for Phase III WIP development are listed here:

<https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-watershed-implementation-plans-wips>

12) Are there any other ways that the CBP recognizes or acknowledges the importance of permanently conserved lands?

If engineered BMPs such as riparian tree plantings are placed on permanently conserved lands and land trusts monitor and maintain the condition of those BMPs, their efforts can be recognized in the BMP verification process, e.g., through extending or eliminating the typical expiration date for those BMPs.

Finding suitable sites for restoration activities is sometimes difficult, particularly given access and ownership restrictions. Land trusts and other land conservation programs that have ongoing relationships with owners of conserved land can serve as important connections to landowners who may want to improve the stewardship of their lands by installing water quality BMPs. If easement conditions allow for the placement of engineered BMPs on conserved lands, such lands could serve as restoration banks for public and private entities involved in implementing BMPs. Land trusts are encouraged to work with their state and local agencies to promote this concept.

For more information on BMP verification, please see:

https://www.chesapeakebay.net/who/group/best_management_practices_bmp_verification_committee

13) What role do the Chesapeake Conservation Partnership (CCP) priority maps play in the crediting conservation process?

Forests and wetlands within the CCP priority composite map (values ≥ 13) are used as one of the elements in the Forest Conservation scenarios (with and without zoning) and farmlands within the CCP priority composite map (values ≥ 13) are used as one of the elements in the Agricultural and Soil Conservation scenario. Jurisdictions may choose to use these and other CCP datasets as elements in their customized Land Policy BMPs (aka future land use scenarios). The CCP datasets can also be used to help guide where conservation occurs on the landscape. Several states want to include county-level land conservation rates (acres per decade per county) in their Land Policy BMPs. For example, if 1000

acres of forest conservation are expected to occur in County X over the next decade, the CCP forest conservation priority map (with values rescaled between 0 and 1) can be used to represent pseudo-probabilities in the random spatial allocation process of the Chesapeake Bay Land Change Model. This will cause conservation to occur more frequently in areas identified by the CCP as high-valued landscapes compared to areas with relatively lower values.