Response to the Urban Tree Canopy BMP Expert Panel Report:
Forestry Workgroup proposal to add Urban Forest Planting BMP

Prepared by Justin Hynicka for the CBP Forestry Workgroup, edited by Marian Honeczy and Anne Hairston-Strang, MD DNR Forest Service

Version: July 13August 3, 2016, approved by Forestry Workgroup

Background

Buildings, impervious surfaces, and overhead and underground utility lines often restrict tree planting opportunities in urban areas. Due to these physical restrictions, tree plantings in urban areas routinely feature isolated trees (e.g. street trees) that have high air quality and aesthetic value among other benefits, but lower water quality function compared to more extensive forests. The recommendations by the CBP Urban Tree Canopy Expert Panel advance the accuracy of CBP nutrient load estimates, particularly within the first ten years after planting, by defining and creating a new BMP for tree planting activities in developed areas with lower nutrient reduction credit than forested lands. However, this new BMP does not accurately reflect the wide range of tree planting activities in developed areas. Sas some tree planting programs have and will continue to be designed to restore forest-like conditions or forest-like conditions. For example, in Maryland, the state's Lawn to Woodland program, as well as similar county-level programs, is designed to convert larger turf grass areas back to forest.

The Phase 6 Urban Tree Planting BMP, as recommended by the Expert Panel, relies on the nutrient loading rates of the Tree Canopy Land Use. Yet, the scale and common maintenance practices of reforestation-focused programs in developed areas distinguish them from this BMP. Tree Canopy loading rates are intended to be used for areas with trees where the land-management activities are unknown and therefore assumed to be managed in a manicured fashion similar to turf grass. Turf grass management includes weekly mowing and a moderate probability of fertilization, whereas maintenance of a reforestation-focused planting site typically includes infrequent mowing (e.g., often three times or fewer times per year at most) and typically no fertilization. Therefore, the opportunity to achieve a higher level of nutrient reduction credit is reasonable and justified given specific more rigorous standards for forest-planting without fertilization, and maintenance to enhance tree survival and mimic meadow like conditions early in the establishment period. Moreover, a two-tiered

credit system matches the Chesapeake Bay Program's Phase 6 land use mapping scenarios expected every five years (both forest and tree canopy areas exist in developed areas), and helps harmonize tree cover and water quality goals at the local level.

The Forestry Work Group recommends crediting the urban forest planting with the credit of a conversion to Mixed OpenForest. land use, a category that includes a variety of land uses, from scrub/shrub to barren and extractive. Young rReforestation sites plantings in rural areas are also considered to be Forest in the Bay Model. But because it can be more difficult to re-establish forests in the developed sector, these plantings must adhere to certain criteria to ensure the likelihood that they will survive and function as a forest. These criteria, developed by foresters and approved by the Forestry Workgroup, are listed below. Furthermore, these forest-plantings are likely to qualify as Forests when the Land Use model is updated because they adhere more closely to the definition of Forest Land Use and less similar to the definition of Tree Canopy Land Use in Phase 6.0. without managed understories would be most similar to scrub/shrub early successional habitat. In the Mixed Open category, fertilizer is not generally used so nitrogen loading rates are still low, but disturbance levels are higher than in most forested conditions, reflecting the likelihood of recent past disturbance in developed areas. Mixed Open nutrient loading rates are higher than forest and lower than the urban tree canopy loading rate that assumes some fertilization, although reforestation sites may have less sediment production than some Mixed Open land uses. The choice of Mixed Open rather than Forest for crediting reflects the fact that some areas that could receive the urban forest planting credit may not end up qualifying as forest cover in the future because if they are not adjacent to other forest they may not meet the land cover classification standards, such as 1-acre minimum, distance from impervious surfaces, and shape.

<u>Summary of existing and proposed urban tree planting BMPs:</u>
Note: *Please refer to Urban Tree Canopy Expert Panel Report for a complete explanation of recommended changes to the Urban Tree Planting BMP credit for Phase 6 of the Chesapeake Bay Watershed Model. (latest report documents posted here: http://www.chesapeakebay.net/calendar/event/24041/)*

Existing credit system (Phase 5.3.2): Urban Tree Planting BMP

- 100 trees planted = 1 acre of land use change to *forest*

Proposed credit systems:

1. Expert Panel recommended credit (Phase 6): Urban Tree Planting BMP

    - 300 trees planted = 1 acre of land use change to *tree canopy*
    - equal to ~10% of existing credit
    - replaces existing credit system

2. Forestry Workgroup's recommended two-tiered system (Phase 6):

    - Tier 1: Urban Tree Planting BMP - 1 acre of land use change to *tree canopy* (default) *[same as Expert Panel recommendation]*
        - 300 trees planted = 1 acre of land use change to *tree canopy*
        - ~10% of existing Phase 5 credit
        - Report: trees planted (to convert to acres for the model)
        - BMP name: Urban Tree Planting
        - BMP credit duration: 10-years (after which, credit is assumed to be captured in high resolution land cover data)

    - Tier 2: Urban Forest Planting BMP - 1:1 acres of land use change to *mixed openForest* (see eligibility below)
        - Credited as land use conversion from urban turf land use to mixed openForest
        - Report: acres planted
        - BMP name: Urban Forest Planting
        - BMP credit duration: 15-years (after which, credit is assumed to be captured in high resolution land cover data)

The Urban Forest Planting BMP is reserved for projects in urban or suburban areas designed to re-establish forest ecosystem processes (e.g., nutrient cycling), which require a contiguous community of native trees, shrubs, herbaceous plants, and other organisms. We define these types of projects as: tree planting projects in urban or suburban areas of at least ¼ acre in size and minimum width of 50 ft and having little to no disturbance of the understory except to aid tree establishment, manage for conditions that improve forest health, and natural causes that may impact understory conditions. This management does not include the occasional maintaining or mowing of grass lawn or turf.

To be eligible for the higher tier of credit, an urban forest planting project must be

documented in a PLANTING PLAN containing the following information:

- A contiguous planting area of 1/4 acre or greater AND minimum width of 50 ft (this prevents the planting from being picked-up as Tree Canopy in the next iteration of the Land Use Model).
- A map of the planting area and a vicinity map or other means of locating the planting area
- A nursery order form, list or receipt of the number and species of trees to be planted
    - The majority of trees must be native trees that are medium or large overstory species (e.g. oaks, elms, willows, sycamore)
    - Planting standards, including stocking density and survival rates, should follow state recommendations.. Standards should identify approaches likely to provide forested conditions and tree canopy crown closure within 15 years, when the credit would be expected to convert to forest or tree canopy land use.
- A post-planting maintenance schedule, plan, or program including elements such as:
    - Years 1-5: identify methods to suppress weed competition, protect from deer and other herbivores, control invasive species, and re-plant as necessary
    - Years 7-10: evaluate survival and the need for thinning or re-planting of trees
    - Years 10+: thin forest stand as necessary and seed for understory species if not present

Pending approval of this recommended crediting approach, a planting plan template and guidelines for BMP review/reporting process will be developed by the Forestry Workgroup for inclusion inconsideration by the jurisdictions' in their Vverification/Quality Assurance Project Plan (QAPP) procedures. Replanting to achieve adequate stocking/survival on the reported Urban Forest Planting BMP acreage is important for maintaining the BMP credit and may not be reported as new acres or trees for additional credit (avoids double counting).