# Tree Canopy Indicator – Proposal for Forestry Workgroup

## Background

The Tree Canopy Indicator is currently being developed to capture baseline and progress in achieving the Tree Canopy Outcome adopted in the 2014 Chesapeake Bay (CB) Watershed Agreement:

**“Continually increase urban tree canopy to provide air quality, water quality and habitat benefits throughout the Chesapeake Bay watershed. Expand urban tree canopy by 2,400 acres by 2025”**

Our general plan for this indicator (per Forestry Workgroup meetings and CB Tree Canopy Management Strategy) has been that we will track baseline and progress in the long-term using the high-resolution land cover updates and in the short-term using tree planting BMP data that are reported by states annually to the Chesapeake Bay Model for the TMDL. We will report on both of these as data become available and help interpret differences between what the two data sources are telling us. Indicators and progress information for all the CB Agreement goals are communicated via the [Chesapeake Progress website](https://www.chesapeakeprogress.com/), and the current page for [Tree Canopy](http://www.chesapeakeprogress.com/abundant-life/tree-canopy) will be updated once we have our Indicator developed.

## Long-term Progress - Land Cover Data

Thanks to the CB partnership’s investment in high resolution land cover data with tree canopy coverage for the entire watershed, we have baseline tree canopy data for the time period centered on the year 2013. We will be able to assess changes in tree canopy data when the land cover data are updated every 5 years. We are ready now ready to define and document for Partnership review our data/methodology for this indicator.

In our Management Strategy for this outcome, we convey that “urban tree canopy” is broadly defined to include tree plantings in communities of any size – urban, suburban and rural – that are not on agricultural lands.

The main question we want to discuss and ultimately decide with the Forestry Workgroup is: how to define an “urban/community” GIS footprint for the Indicator in a way that is inclusive enough to capture smaller communities but still focuses on trees within communities and excludes rural forest cover. After discussions with those with expertise in this topic (Peter Claggett-USGS, and Morgan Grove-USFS), the leading proposal is to use 2010 Census Urban Areas and Urban Clusters to define the “universe” within which we are tracking tree canopy progress towards the outcome. The main advantage of defining this “urban/community area” (using Census definitions) and holding its boundaries constant over time is to focus attention on gains in tree canopy within already developed areas and exclude apparent increases in tree canopy associated with new development. For example, subdividing and developing a 500-acre forest parcel in the future might create new “tree canopy” by converting forests into smaller patches of trees surrounded by new development.

While we propose using the 2010 Census Urban Areas and Urban Clusters to delimit an area for tracking progress, we also plan to work with the Land Use Workgroup to track and report on the larger context of change outside of those boundaries. How much forest is being developed and converted to impervious, turf, or tree canopy cover? How much agricultural land is being developed and are we seeing any gains in tree canopy in these new residential areas. Thus, the proposal is to track tree canopy progress over time within a designated urban/community footprint but also include as context any available data on what is happening in land cover change outside that footprint and its implications for water quality and other watershed goals.

## Short-Term Progress – Annual Tree Planting BMP Data

In order to track short-term progress that jurisdictions and partners are making in planting trees to increase canopy, we will use annual BMP progress data that are reported for the Chesapeake Bay TMDL. We will use the reported acres of Urban Tree Canopy Expansion, Urban Forest Planting, and Urban Forest Buffer BMPs to summarize progress in each state. These new tree plantings are not anticipated to be picked up in the high resolution land cover data for approximately 10 years. Therefore, the annual BMP data provides our best “real time” summary of the efforts made in each jurisdiction to expand tree canopy. That said, the critical limitation of this measure is that it only captures gains, not the losses in tree canopy that we know are occurring across the landscape every day due to development, storms, rising sea levels, invasive pests such as Emerald Ash Borer, and other factors. Thus, the short-term progress data will be supplemented over time with land cover updates to provide a more comprehensive picture of what is happening with tree canopy cover, beyond the critical planting efforts of partners.

## Next Steps

We will solicit and compile Forestry Workgroup input on the proposed Indicator through July 15 and will bring final Indicator and baseline documentation for decision/approval at the September Forestry Workgroup meeting focused on the Tree Canopy Outcome. State tree canopy leads will have a chance to review and discuss this proposal in greater depth at a separate planning meeting to be held on June 28 in Annapolis. Over the summer, we will work with state tree canopy and BMP reporting leads in each jurisdiction to ensure that the annual BMP Progress data record for our tree canopy BMPs is as accurate as possible, for sharing progress to date in fall meetings on the Tree Canopy Outcome/Workplan/SRS Review and via the ChesapeakeProgress website.