Chesapeake Bay Program
Science. Restoration. Partnership.

Tree Canopy Update

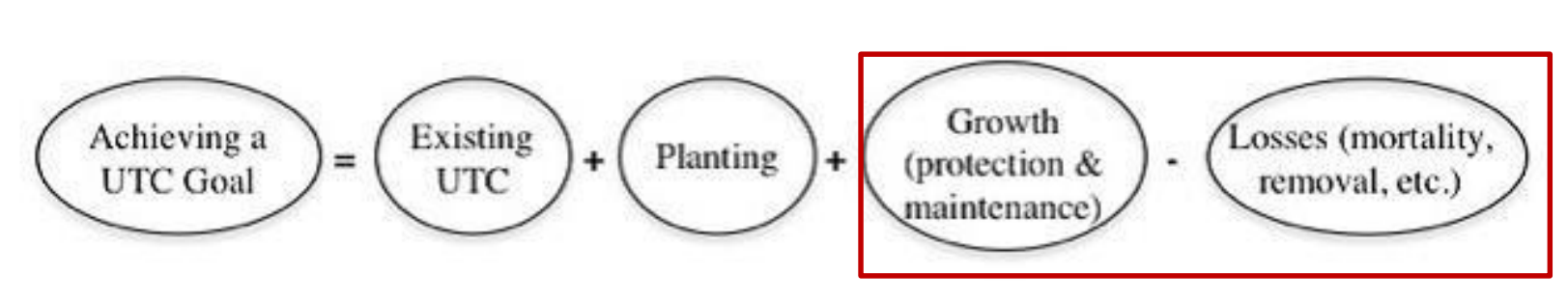
Urban Stormwater Workgroup 3/19/18
Sally Claggett, Forestry Workgroup Coordinator

Through the Chesapeake Bay Watershed Agreement*, the Chesapeake Bay Program has committed to…*

Vital Habitats Goal

Tree Canopy Outcome*:* Continually increase urban tree canopy capacity to provide air quality, water quality and habitat benefits throughout the watershed. **Expand urban tree canopy by 2,400 acres by 2025.**

It's not just about planting…



Tree Canopy Indicator, Progress & Tracking

Tree Canopy Indicator has 2 components*:

1) States report three urban tree BMPs annually to track progress towards meeting the Bay TMDL

2) Long term progress analyzed through remote sensing in CBP Land Cover updates

What Has Been Done to Support the Outcome?

Tree Canopy Data

- Tree Canopy Land Cover/Land Use Data for entire watershed
- Can do analysis of data in i-Tree Landscape
  - ✓ Tree canopy/pervious/impervious stats from watershed down to census block
  - ✓ Air pollution reduction
  - ✓ Stormwater reduction
  - ✓ Carbon sequestration, and more…

Links to CB Land Cover Data; CB Land Use Data; and i-Tree Landscape

What the land cover data shows us today (2013 Baseline)

Jurisdictions	Total Tree Canopy (acres)	Forest in Urban Areas & Clusters (acres)	Tree Canopy + Urban Forest
Delaware	6,320	3,414	9,734
District of Columbia	8,073	4,477	12,550
Maryland	317,076	331,308	648,384
New York	50,840	22,058	72,898
Pennsylvania	293,821	148,724	442,545
Virginia	407,940	303,375	711,315
West Virginia	46,069	15,481	61,549
Watershed	1,130,139	828,837	**1,958,976**

Tree Canopy = Tree Canopy over Turf Grass and Tree Canopy over Impervious (both from Phase 6 land use)
Forest = Forest as defined in Phase 6 model land use, exclusive of tree canopy;
filtered to only 2010 Census Urban Areas and Urban Clusters

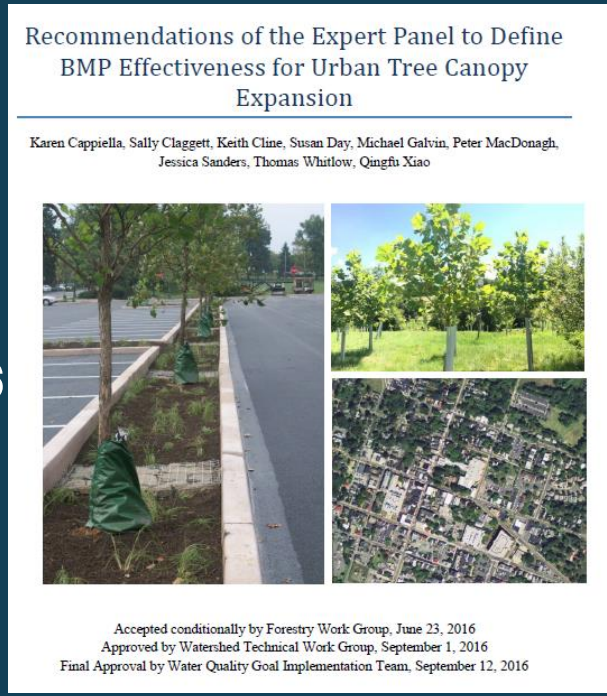
What Has Been Done to Support the Outcome?

BMP Credits

- Crediting Tree Canopy in TMDL/WIP efforts

✓ New Tree Canopy land uses/loading rates in Phase 6
✓ BMP Expert Panel – approved urban tree canopy credit
✓ 3 BMP credits now count towards our outcome:

1) urban tree planting
2) urban forest planting
3) urban forest buffers


Recommendations of the Expert Panel to Define BMP Effectiveness for Urban Tree Canopy Expansion

Karen Cappiella, Sally Claggett, Keith Cline, Susan Day, Michael Galvin, Peter MacDonagh, Jessica Sanders, Thomas Whitlow, Qingfu Xiao

Accepted conditionally by Forestry Work Group, June 23, 2016
Approved by Watershed Technical Work Group, September 1, 2016
Final Approval by Water Quality Goal Implementation Team, September 12, 2016

See https://chesapeakestormwater.net/urban-tree-canopy-expansion/

3 Urban Tree BMPs

1. Urban Tree Planting (aka Urban Tree Canopy Expansion)

Urban Tree Planting	
Definition:	Tree plantings on developed land (turf grass or impervious) that result in an increase in tree canopy but are not intended to result in forest-like conditions.
Efficiency Credited	Land use change to Tree Canopy land uses
Credit Expiration	10 years and then it is picked up as land use
Total Annual Cost per Acre (Watershed-wide Avg.)	$66.75
Reference	Expert Panel Report

See https://chesapeakestormwater.net/urban-tree-canopy-expansion/

3 Urban Tree BMPs

2. Urban Forest Planting

Urban Forest Planting	
Definition:	Urban forest planting includes trees planted in a contiguous area to establish forest-like conditions, with no fertilization and minimal mowing as needed to aid tree and understory establishment. Required planting and maintenance plan that meets State or District standards for forest establishment
Efficiency Credited	Land use change to Forest
Credit Expiration	10 years and then it is picked up as land use
Total Annual Cost per Acre (Watershed-wide Avg.)	$82.57
Reference	Expert Panel Report

See https://chesapeakestormwater.net/urban-tree-canopy-expansion/

3 Urban Tree BMPs

3. Urban Forest Buffer

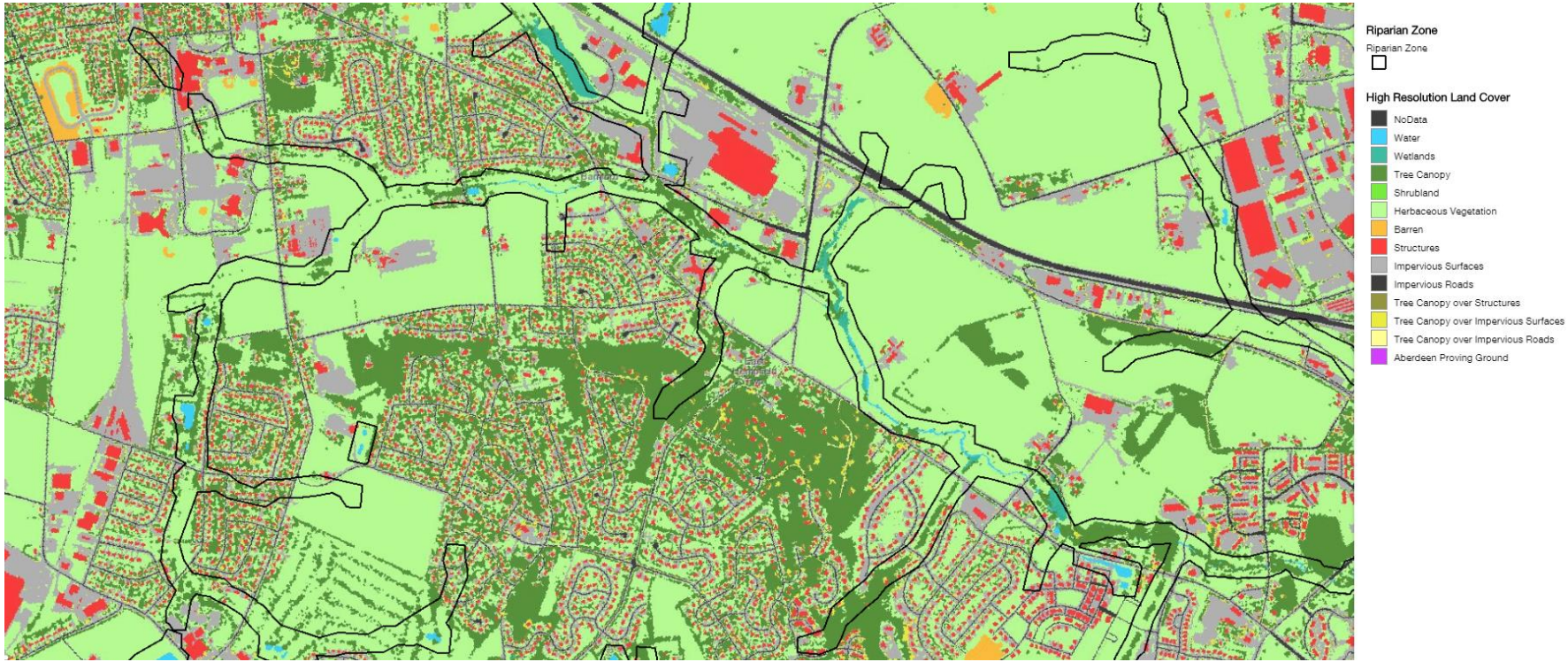
Urban Forest Buffer	
Definition:	Forest buffers are linear wooded areas that help filter nutrients, sediments and other pollutants from runoff as well as remove nutrients from groundwater. The recommended buffer width is 100 feet, with a 35 feet minimum width.
Efficiency Credited	Land conversion to forest, and 1:1 load reduction (every acre of urban forest buffer converted, receives an efficiency credit on one upland acre): TN: 25%, TP: 50%. TSS: 50%
Credit Expiration	10 years
Total Annual Cost per Acre (Watershed-wide Avg.)	$86.17
Narrow Buffers Only (Urban)	Linear strips of wooded areas 10 to 35ft. width

See https://chesapeakestormwater.net/urban-tree-canopy-expansion/

Where is the opportunity for this work? Urban Forest Buffer example

	County	Acres of **Turf Grass**	Tree Canopy Over Turf
PA	Lancaster	9,203	2,132
PA	York	7,342	1,401
VA	Rockingham	6,488	990
PA	Bedford	6,173	781
PA	Franklin	5,952	1,249
PA	Lycoming	5,851	810
PA	Tioga	5,552	409
VA	Augusta	5,359	652
PA	Cumberland	5,211	1,832
PA	Centre	5,059	1,421
NY	Steuben	4,664	500
MD	Washington	4,487	481
VA	Loudoun	4,465	1,662
MD	Baltimore	4,260	2,045

Mock-up of high-resolution land cover MapTool



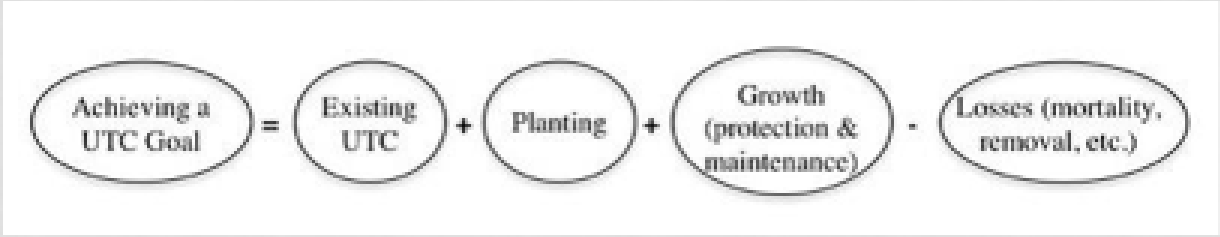
State Targets

Jurisdiction	Outcome Annual Target (New Acres)	Outcome 2025 Target (New Acres)
Delaware	5	60
DC	40	480
Maryland	45	540
New York	5	60
Pennsylvania	60	720
Virginia	40	480
West Virginia	10	120
TOTAL	**205**	**2460**

Note: Will be looking at 2018 BMP Progress Data to gauge progress and gaps in both reporting and implementation

These Tree Canopy targets were set by states in 2014 to develop the Agreement Outcome

FACTORS INFLUENCING ABILITY TO REACH URBAN TREE CANOPY GOALS



Funding & Partnerships

Policies & Ordinances

Technical Knowledge & Capacity

Community Education & Outreach

Drivers of Loss:
-Development
-Storms
-Pests/Disease
-Natural Mortality
-Utility Clearing
-Deer Browse
-Improper Maintenance

What We Want

Build state and local capacity through new funding and policy strategies

Promote tree canopy through state and local stormwater programs and WIP efforts

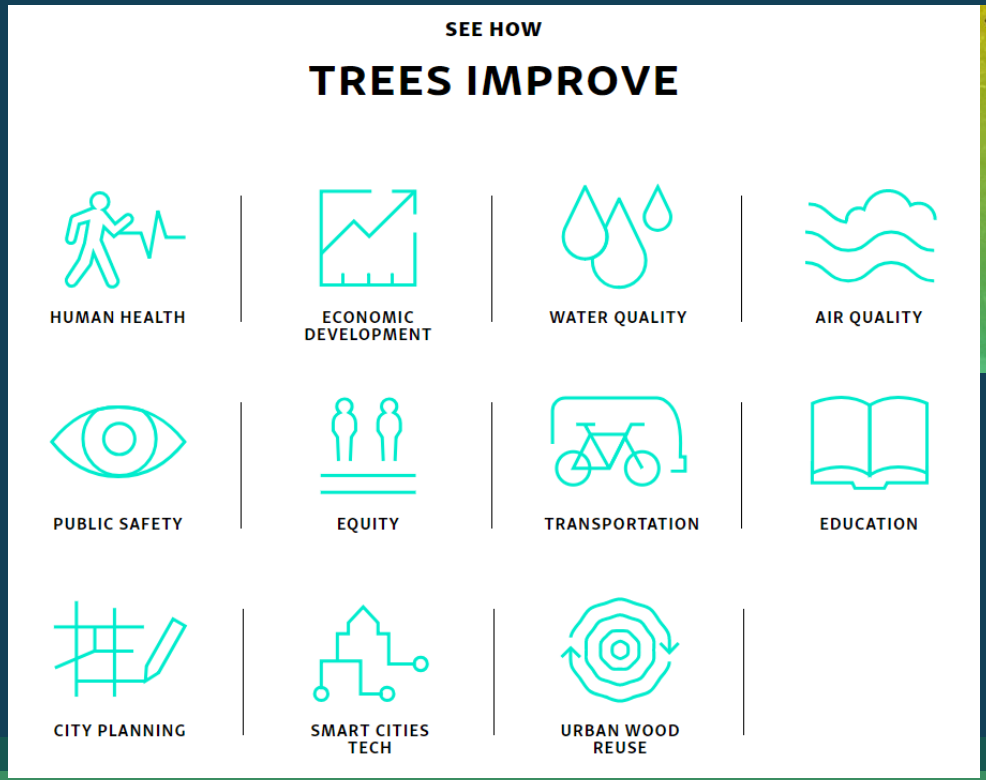
Increase local engagement in tree canopy strategies and tracking

Based on what we've learned, we plan to…

Build state and local capacity through new funding and policy strategies

- Change our message?
- Build demand through compelling messaging/outreach materials that highlight latest research on tree canopy co-benefits and new partnership opportunities
- MB Ask: Provide CBP Communications and cross-outcome support for integrated messaging and outreach campaign

Why is Tree Canopy So Important?



www.vibrantcitieslab.com
for latest research on urban forest co-benefits

Based on what we've learned, we plan to…

Promote tree canopy more vigorously through state and local stormwater programs and WIP efforts

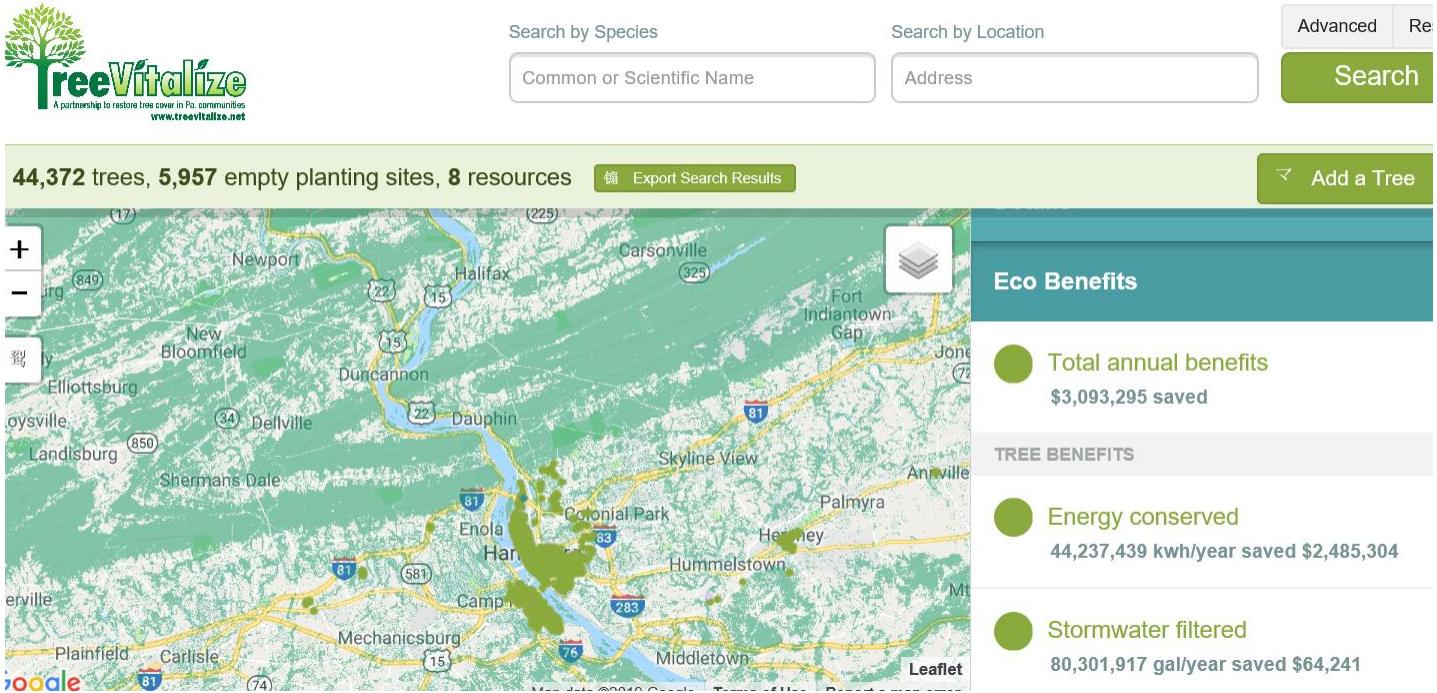
- Bolster urban tree BMPs in WIP III planning efforts
- Overcome barriers to tree protection and planting in urban stormwater programs
- MB Ask: Assure agency teamwork in integrating tree canopy goals in stormwater program delivery and WIP planning

Based on what we've learned, we plan to…

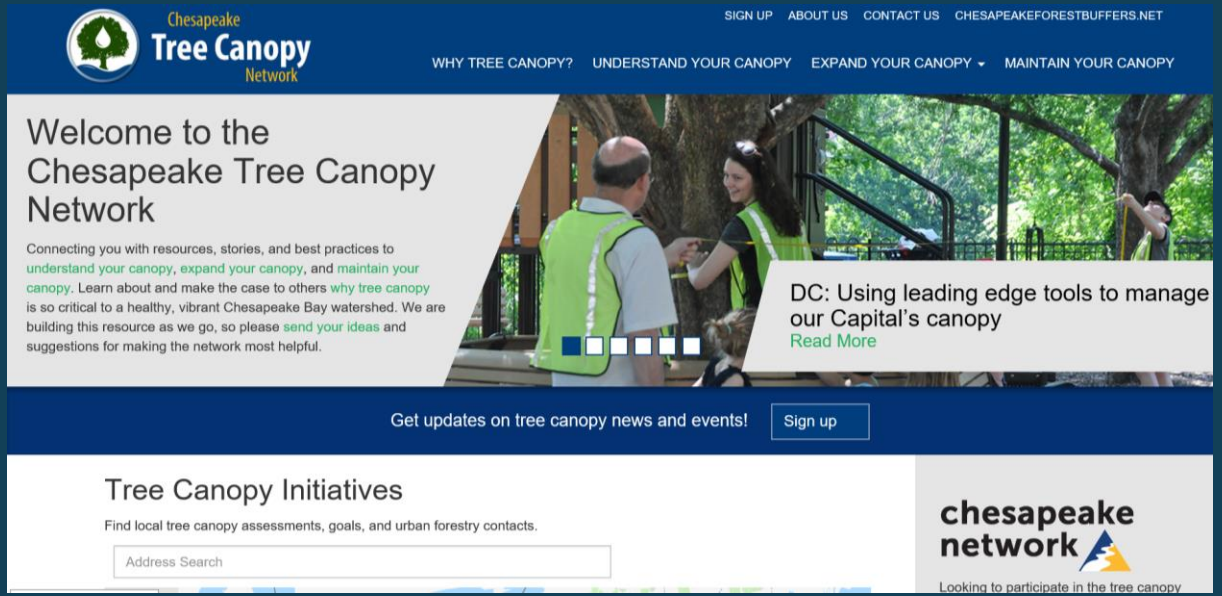
Increase local and partner engagement in tree canopy strategies and tracking progress

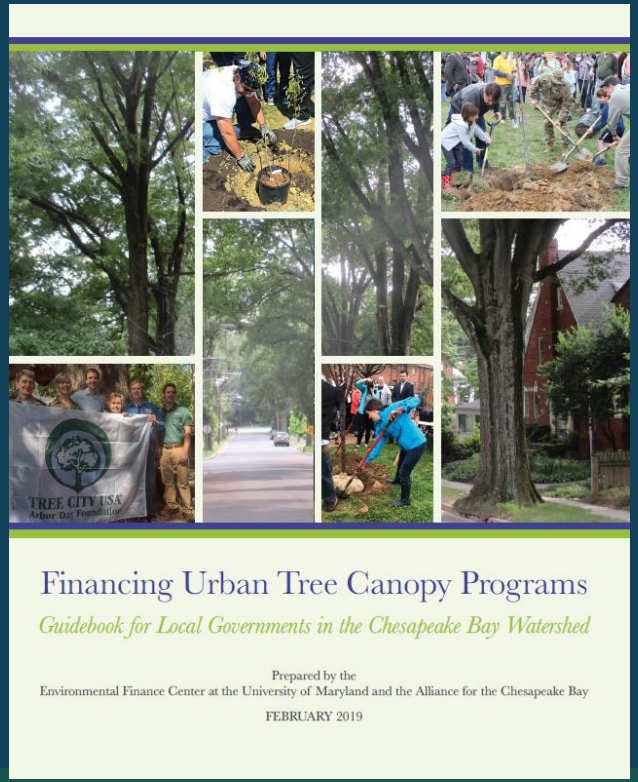
- Develop user-friendly BMP Tree Tracking tool to capture local/partner efforts not currently reported
- With LGAC help, engage local partners in latest tools, data, and strategies through Chesapeake Tree Canopy Summit 2.0
- MB Ask: Come to the summit! Help your local partners participate and identify funding for support

TREE TRACKING TOOL – IN SCOPING PHASE (PA has one)



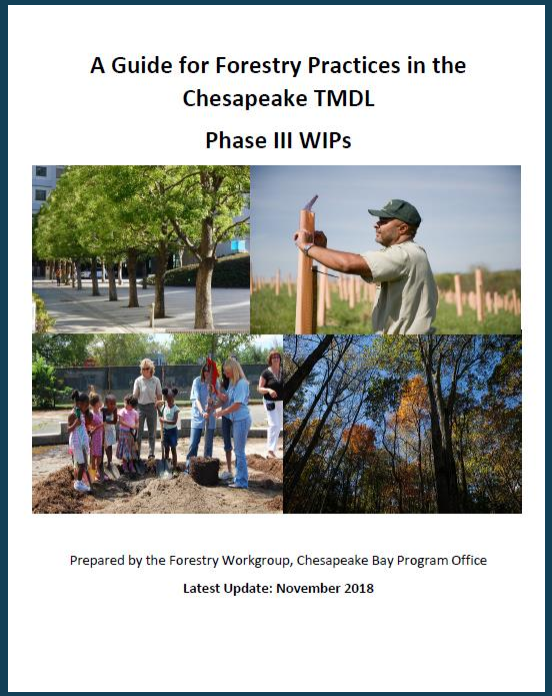
RESOURCES

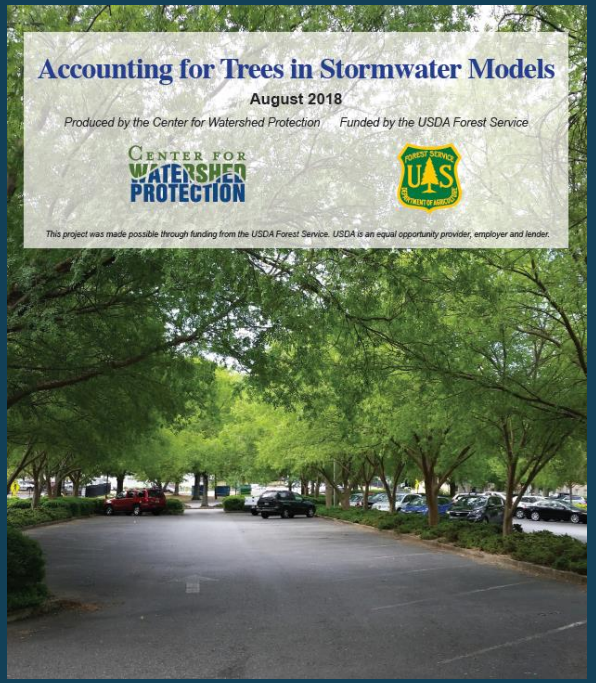




1. http://chesapeaketrees.net/
2. Will be released April 2019

RESOURCES





1. https://www.chesapeakebay.net/channel_files/31568/wip_forestry_bmp_packet_november_2018_update.pdf
2&3 https://www.cwp.org/new-resources-trees-stormwater/

Discussion

- Ideas on how we can build momentum around tree BMPs in stormwater programs/WIPs?
- Observations from your state – key opportunities or issues to address?
- Any stormwater-tree champions we should highlight? (individuals or jurisdictions)

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