

# DRAFT

**TO: CHARLOTTESVILLE TREE COMMISSION**  
**FROM: METRICS COMMITTEE** (Roxanne White, Ineke Dickman , Bill Downs, Peter Russell)  
**DATE: MAY 3, 2016**  
**RE: REPORT ON URBAN FOREST PERFORMANCE MEASURES**

## **SUMMARY:**

At the Tree Commission's February meeting, an ad hoc committee, the Metrics Committee, was formed to develop performance indicators that would measure the Commission's success or progress in carrying out the City's charge to the Commission: "Advocate for trees before City Council and the Planning Commission. The Commission will also advise on protection of trees and tree canopy on private properties as appropriate. The Commission will work toward enhancing the diversity and health of the tree canopy."

To this end, the Tree Commission must know how it is doing and whether it is getting the results for which it is charged, i.e. Trees planted, canopy expanded, diversity increased, etc. It needs to know how it is doing in order to initiate plans for improvement, i.e. How many trees should be planted each year, what is a realistic goal, what is a stretch goal? To plan for the future and be able to report back to City Council, the Commission must know and understand the current status of Charlottesville's Urban Forest.

The Metrics Committee met on March 7th to discuss the overall need for performance measures and what might be the most relevant and helpful measures to recommend to the Tree Commission.

## **REPORT:**

The committee discussed a number of performance measures, many of which are used by other localities and non-profit organizations to measure tree program results. We determined that the following thirteen (13) performance measures would be the most helpful and relevant to the Tree Commission's work, as well as to the City's vision and goals for the Urban Tree Forest.

Each measure is fairly self-explanatory in its description and also includes two sections: City Goal Reference and Data Collection. The first links the measure to one of the City's urban forest goals or priorities found in the 2013 City Comprehensive Plan, the 2009 Urban Forest Management Plan and/or Tree Commission By-Laws. These are draft measures that will be the subject of discussion and approval at the May 3rd meeting. If approved, the data for these performance measures will start to be collected July 1.

## **RECOMMENDED MEASURES**

1. Total Tree Canopy
2. Canopy Cover by Neighborhood
3. Ratio of Street Tree Planting to Removal
4. Number of Trees Planted on Public Land
5. Number of Trees Planted on Private land
6. Number of Trees Planted by Volunteers
7. Number of Trees planted in Low Canopy Neighborhoods
8. Size of Trees Planted
9. Diversity of Trees Planted
10. Location of Trees Planted
11. Number of Trees Planted with City Funds
12. Number of Trees Planted with non-city funds
13. Total Dollars Spent for Trees

## METRIC CATEGORIES

### Environmental Benefit

#### **MEASURE #1 : TOTAL TREE CANOPY COVER**

##### **City Goal Reference:**

*City of Charlottesville Comprehensive Plan: Goal 2 Urban Landscape and Habitat Environment: 2.2 Expand and protect the overall tree canopy of the City and increase the canopy neighborhoods in an effort to achieve American Forest canopy*

*2009 Urban Tree Forest Management Plan. Tactical Action # 4.4: Require leaf-on aerial or satellite photography and perform an urban tree canopy calculation every five years.*

**Data Collection:** *2015 Canopy Study* already completed. Data will show trend line of 2015 total canopy cover measured against past and future canopy studies (Year 2020 projected).

#### **MEASURE #2: CANOPY COVER BY NEIGHBORHOOD**

##### **City Goal Reference:**

*2009 Urban Forest Management Plan: Tactical Action #4.5. Compare 5 year data with canopy goals set for various sub areas in the Comprehensive Plan. "When the City is analyzed by neighborhood, it becomes clear that some areas are over this average and others are below. In order to bring more areas up to the minimum of desired coverage, it will be necessary to expand the forest and tree canopy by planting new trees"*

*Tree Commission By-Laws: The Commission will also advise on protection of trees and tree canopy on private properties as appropriate zones.*

**Data Collection:** 2015 Canopy Study, as well as prior and future canopy studies can provide data. Trend line will compare prior canopy study detail by neighborhoods to see trends. Canopy studies are done every 5 years.

### Tree Planting

#### **MEASURE #3: RATIO OF STREET TREE PLANTING TO REMOVAL**

**City Goal Reference** : *2009 Urban Forest Management Plan. Action #4.13: Maintain GIS layer to include new and remove cut trees to keep inventory up to date.*

**Data Collection:** Data should already have been collected according to *2009 Urban Forest Management Plan.*

"Tree removals are recorded and replacements are planted as close to the original location as possible".

Coordination of data between NDS, Public Works and Parks and Recreation will need to occur.

#### **MEASURE #4 : NUMBER OF TREES PLANTED ON PUBLIC LAND**

**Sub-Measures:** Number trees planted by Parks and Recreation, by outside contractors, by VDOT, by public works, by NDS, etc.

##### **City Goal Reference:**

*2009 Urban Forest Management Plan. Element 3 Expansion: "Planting new trees, especially in areas below targeted canopy levels, is the only way to expand the forest in urban areas. New trees can be used to add shade to hot areas, buffer differing land uses, create wind breaks, and to improve the appearance of properties...." "In those areas that are below the target canopy coverage levels, there are locations where new trees can be planted. For example, there is a high public desire for more street trees."*

**Data Collection:** Parks and Recreation already collects annual data on the number of trees planted on public land. The data is recorded on the City's Performance Plan site. Additional work would need to be done to separate out the number of trees planted by Parks and Recreation or contracted out to another agency. Public Works would need to track the number of trees planted or replanted by their department and NDS would need to track trees planted in new developments.

## **MEASURE #5: NUMBER OF TREES PLANTED BY VOLUNTEERS**

### **City Goal Reference:**

*2009 Urban Forest Management Plan. Action #5.7 "Enhance partnership with local advocates, e.g. Tree Stewards, Neighborhood Associations, Master Naturalists & Gardeners, Native Plant Society. " Volunteers and non-profits are also involved in managing the urban forest. Groups including Charlottesville Area Tree Stewards, Master Naturalists, Rivanna Trails Foundation, The Nature Conservancy, Rivanna Conservation Society, Boy Scouts, and others are all involved in various efforts to protect, enhance, and restore the forests, and are of tremendous value...."*

*Tree Commission By-Laws. "Develop a relationship with civic and stewardship organizations about the importance of preserving trees and maintaining the urban forest. Organize tree planting activities, walking tours or workshops that allow the public and youth to gain a hands on approach towards tree conservation and identification..... Encourage new planting and maintenance by citizens with a focus on educating home owners about tree standards suitable for Charlottesville."*

**Data Collection:** Data on volunteer efforts is not collected now. The Tree Commission would need to work with volunteer groups to put a reporting mechanism in place when and if they plant new trees

## **MEASURE #6. NUMBER OF TREES PLANTED ON PRIVATE PROPERTY**

### **City Goal Reference:**

*Charlottesville Comprehensive Plan, Goal 2 Urban Landscape and Habitat Enhancement P2.3. Develop methods, including financial incentives, to support retaining and increasing healthy tree canopy on private lands*

*Urban Forest Management Plan. Tactical Action #5.9 Encourage plantings of new trees on private property through educational efforts and programs. Identify potential planting locations using City GIS and other data.*

*5.9 ...Pursue programs for the planting of new trees on private property*

*Tree Commission By-Laws: The Commission will advise on protection of trees and tree canopy on private properties as appropriate.*

**Data Collection:** This data is not currently being collected. This new data would need to come from Parks and Recreation, Public Works and NDS when they know about major neighborhood development or redevelopment projects and/or neighborhood tree planting efforts. Other than major projects, it would be difficult to track trees planted by individual property owners unless it was through some type of "tree planting" program available to homeowners.

## **MEASURE #7 :NUMBER OF TREES PLANTED IN LOW CANOPY NEIGHBORHOODS**

**City Goal Reference:***2009 Urban Forest Management Plan: Tactical Action #4.5. Compare 5 year data with canopy goals set for various sub areas in the Comprehensive Plan. "When the City is analyzed by neighborhood, it becomes clear that some areas are over this average and others are below. In order to bring more areas up to the minimum of desired coverage, it will be necessary to expand the forest and tree canopy by planting new trees"*

*Tree Commission By-Laws: The Commission will also advise on protection of trees and tree canopy on private properties as appropriate zones.*

**Data Collection:** Annual data on the location of trees planted on public property is already collected by the Urban Forester. Additional data would need to be collected for trees planted on private property in low-canopy neighborhoods, which realistically would only include neighborhood specific tree planting projects, not random planting by individual property owners.

## **MEASURE #8: SIZE OF TREES PLANTED - CANOPY, SUB-CANOPY,**

### **City Goal Reference :**

Although much discussion has centered around the need to plant larger trees, I found nothing in the City's material about the preferable size of trees to be planted except the language in the Urban Forest Management Plan that addresses the Design Standards for new development: a'Add a section detailing street shading trees as larger specimens."

**Data Collection:** Species data is already collected by the Urban Forester in the annual report, so the size of the trees planted can be taken from that data.

## **MEASURE #9: SPECIES OF TREES PLANTED**

### **City Goal Reference**

*Urban Forest Management Plan. Tactical Action #6.12 Promote urban forest tree species diversity through planting recommended site adaptable trees and encouraging (but not limiting to) use of native tree species.*

*Tactical Action 2.6 Encourage forest species diversity to increase resistance to disease and pests, especially in development and redevelopment scenarios..... Planning for tree plantings should always consider species diversity as a critical component."*

*Tree Commission By-Laws: The Commission will work toward enhancing the diversity and health of the tree canopy in Charlottesville.*

**Data Collection:** The Urban Forester's annual tree planting report already includes the species planted by Parks and Recreation, but additional data collection on the type of trees planted would need to be coordinated with Public Works and NDS, as well as data from any Commission sponsored private tree planting efforts.

## **MEASURE #10: LOCATION OF TREES PLANTED ANNUALLY**

Sub-Measures: parks, street trees, schools, entrance corridors, Neighborhoods

### **City Goal Reference:**

*Urban Forest Management Plan. 1.17. "Analyze City by entry corridor, parks and schools, zoning categories, and sub-watersheds to determine existing canopy coverage to compare with target canopy coverage goals."*

*Tree Commission By-Laws: "Assist with the implementation of the Urban Forest Management Plan."*

### **Data Collection:**

The Urban Forester's annual tree planting report already includes the location of the trees planted by Parks and Recreation. Additional data collection would need to be coordinated with Public Works and NDS, as well as data from any Commission sponsored private tree planting efforts.

## **Resources Committed to Trees**

## **MEASURE #11: NUMBER OF TREES PLANTED WITH CITY FUNDS**

### **City Goal Reference:**

*Urban Forest Management Plan, Action 6.14: "Determine sustainable funding sources for urban forest activities including: Annual Operating Budget, the CIP, development proffers, non-profits, private contributions – “ Funds for the Forest”, grants, and the use of volunteers.*

### **Data Collection:**

Budget data for prior and current years is available from Parks and Recreation and/or the City's Office of Budget and Management. CIP dollars would be tracked to the number of trees planted by Parks and Recreation. Additional budget information would need to be collected from NDS and/or Public Works if they spent City funds on any special tree planting projects.

## **MEASURE #12: NUMBER OF TREES PLANTED WITH NON-CITY FUNDS**

### **City Goal Reference:**

*Urban Forest Management Plan*, Action 6.14: "Determine sustainable funding sources for urban forest activities including: Annual Operating Budget, the CIP, development proffers, non-profits, private contributions – “Funds for the Forest”, grants, and the use of volunteers

### **Data Collection:**

Data for this measure would need to come from Parks and Recreation, Public Works, NDS to account for trees that are planted with grant funds, state funds, private funds, non-profit agency funds.

## **MEASURE #13: TOTAL BUDGET FOR TREES**

Sub-categories: Preservation, Planting, Maintenance

### **City Goal Reference:**

*Urban Forest Management Plan*, Action 6.14: "Determine sustainable funding sources for urban forest activities including: Annual Operating Budget, the CIP, development proffers, non-profits, private contributions – “Funds for the Forest”, grants, and the use of volunteers

### **Data Collection:**

Budget data should be available from either Parks and Recreation or the Office of Budget and Management. For this measure, dollars allocated to tree preservation, tree planting and maintenance in both the operating budget and the CIP would be combined to see City's total resources dedicated to trees.

## **RECOMMENDATION**

The Metrics Committee recommends that the Tree Commission consider these 12 measures as the first step in beginning to document the City's efforts toward the protection and enhancement of the urban forest. Approval at this time means the Tree Commission believes these measures are important and would like to see them used to document results.

The next step after your approval will be to work with staff to determine how these measures can actually be implemented and reported. Sometimes certain data can be too difficult to collect without enormous amounts of staff time that outweigh the usefulness of the data. However, for many measures, the data is already being collected and just needs to be put into a meaningful format so it can be tracked, reported and understood.

The Metrics Committee will work with staff and report back to the Tree Commission at the July meeting.