City of Virginia Beach
Urban Tree Canopy Implementation Plan

Susan French, City Arborist
Assessment of Urban Tree Canopy

- **2008**: 1st measurement/analysis of Virginia Beach Urban Tree Canopy (UTC)
- Comprehensive analysis contracted: utilized LIDAR, aerial, and infrared imagery
- City-wide tree canopy was 36% with similar coverage in urban, transition, and rural planning zones
- **2012**: 2nd measurement/analysis UTC shows increase to 38%
UTC Goals

• Develop realistic, research-based plan to increase canopy cover
• Tree Planting, Tree Maintenance, Tree preservation
• Set priorities: public ownership, land use, zoning
• VA UTC Implementation Grant (VDOF) - became component of UF Management Plan
UTC Focal Points

At Risk Areas:
• Redevelopment areas clearing wooded lots
• Forested areas slated for development
• Future road corridors

Improvement Areas:
• Commercial zones
• City parcels: schools/parks/r-o-w
• Industrial parks
• Residential with low UTC
• Areas adjacent to watershed buffers
Priorities for Preservation

• Chesapeake Bay buffer
• Southern Watershed buffer
• Green infrastructure corridors
• Wildlife habitat corridors
• Tree stands along farm ditches (future green infrastructure corridors)
• Water reservoirs
• Mature residential areas
• Sensitive forested areas
Challenges for Virginia Beach

- 20% population increase by 2040
- Loss of tree canopy due to land development
- Limited resources to address City tree priorities
- 1.5’ to 5.5’ sea level rise over next 90 years
What land use categories make up the urban forest?

- **Agricultural:** 1.24M TREES
- **Residential:** 938K TREES
- **Public Space:** 505K TREES
- **Commercial/Industrial:** 321K TREES
Commercial Area Analysis

- Commercial areas: zoned for business, hotel, office & resort
- Average city-wide UTC for commercial areas = 22%
- Many of the older commercial areas = 3-5%
- Utilize urban canopy tools to find planting opportunities on older commercial sites
Strategic Growth Area Analysis

- In new urban areas ensure that space for tree planting and preservation is accommodated
- Allow adequate planting areas for street trees along new streets
- Existing wooded lots within these areas should be considered for conversion to public open space
- Utilize structural soil/flexible pavement when tree plantings are desired within hardscape areas
Residential Area Analysis

- Most VB residential neighborhoods have adequate tree canopy
- Preserving and enhancing the tree canopy main focus for neighborhoods
- Need street tree maintenance program & sample tree inventories
Publicly Owned Lands Analysis

• Road rights of way; Public Facilities and Parks; Schools
• Public park sites seem to be the obvious choice to increase tree canopy by planting new trees or reforesting areas, however imagery can be deceiving

<table>
<thead>
<tr>
<th>Land Area Type</th>
<th>Existing Tree Canopy</th>
<th>Possible UTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mount Trashmore Park</td>
<td>10%</td>
<td>70% Vegetated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15% Impervious</td>
</tr>
</tbody>
</table>

• Is 95% of the site available for tree planting? Site was community landfill - a large portion has compacted soil due to previous use
Urban Tree Canopy Implementation Plan

Objective:
Achieve long-term commitment from city departments, leadership, citizens and developers by increasing level of engagement and education.

20-year goal adopted in 2014:
Increase city-wide UTC to 45%
Urban Forest Management Plan

Overall Objective:  
*Multi-faceted management program*

- UTC Implementation Plan was incorporated into the UFMP
- Initiated proactive cyclical neighborhood tree maintenance
- Increased tree plantings and preservation on public properties
- Public education in Urban Forestry
Virginia Beach UTC outreach message:

Storm water Runoff Reduction & Property Value Increase are the most important benefits that trees provide to the City of Virginia Beach (2008 data).
Thank You

For more information contact:
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Urban Tree Canopy Implementation Plan

Motivation

• In 2012: PAR began active development of UFMP for Virginia Beach
• Issued a State of the Urban Forest report on current status of the UF
• Started holding monthly stakeholder meetings
• Began research on UTC goals & implementation as key component of UFMP
• Learned to quantify benefits through i-Tree & Tree Benefit Calculator
• Applied for assistance through Virginia UTC Implementation Grant
Urban Tree Canopy Analysis

- Watersheds for Lynnhaven River and North Landing River
- Waterway buffer areas
- Commercial areas
- Strategic Growth areas
- Residential areas
- Publicly owned lands
Lynnhaven Mall Analysis

Virginia Beach, VA: Urban Forest Cloud - Canopy Planner

- The map shows priority planting areas in darker blues.
- These priority planting areas were based on 3 factors:
  - % planting area Impervious
  - % planting area vegetated
  - % Overlap with major road corridors
Strategic Growth Area Analysis

• The City has identified several strategic growth areas for future growth.

• These areas are envisioned to transform from suburban shopping centers to vibrant urban centers.

• These areas contain most of the older developed commercial areas along the Virginia Beach Boulevard corridor.

• These areas present unique challenges and opportunities to preserve and enhance the urban forest.
## Residential Area Analysis

<table>
<thead>
<tr>
<th>Land Area Type</th>
<th>Land Area Type (Acres)</th>
<th>Existing Tree Canopy (Acres)</th>
<th>Existing Tree Canopy Percentage</th>
<th>Possible UTC Vegetation / Impervious</th>
<th>Factors Affecting UTC Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family Residential</td>
<td>36,831</td>
<td>15,924</td>
<td>43%</td>
<td>31% / 13%</td>
<td>UTC percentages across single family residential lots vary widely. Those with lower than desired UTC cover are made up of newer developments in which the trees have not reached through full growth potential and some older smaller lot subdivisions in which limited tree planting occurred.</td>
</tr>
<tr>
<td>Multi-Family Residential (Apartment)</td>
<td>4,856</td>
<td>1,301</td>
<td>27%</td>
<td>27% / 26%</td>
<td>UTC percentages for multi-family residential areas are good. The city’s open space requirements for multi-family developments have encouraged the preservation and planting of trees.</td>
</tr>
</tbody>
</table>

Note: Land area acreage identified does not include water.
Advice for UTC Plan & UFMP

• Facilitate interdepartmental collaboration & communication

• Utilize statewide resources
  Virginia Dept. of Forestry,
  Virginia Tech, Virginia State University,
  Virginia Cooperative Extension, etc.

• Consider contracting a professional for UFMP plan writing
UTC Analysis

7 watersheds & waterway buffer areas variable:
Ranges from 24% for oceanfront to 46% for Rudee Inlet

Commercial areas/Strategic Growth areas

Residential areas

Publicly owned lands
Example: Lynnhaven Mall

- The large mall area was redeveloped in 2008 and many new trees were added at that time (16% tree cover)

- The map shows that some of the older shopping centers around the mall are good opportunities to plant trees when these areas are renovated or redeveloped