

City of Virginia Beach

# Urban Tree Canopy Implementation Plan



Susan French, City Arborist  
Barbara Duke, Senior Planner



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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

# Assessment of Urban Tree Canopy

**2008:** 1st accurate measurement/analysis of Virginia Beach Urban Tree Canopy (UTC)

- Comprehensive analysis utilized LIDAR, aerial, and infrared imagery
- City-wide tree canopy is 36% with similar coverage in urban, transition, and rural planning zone areas



# UTC Goals



- Develop realistic, research-based plan to increase canopy coverage
- Tree Planting, Tree Maintenance, Tree preservation
- Set priorities by public ownership, land use, zoning
- Ambitious vs. Achievable
- Grant helped our team to focus on goals and to complete the UFMP

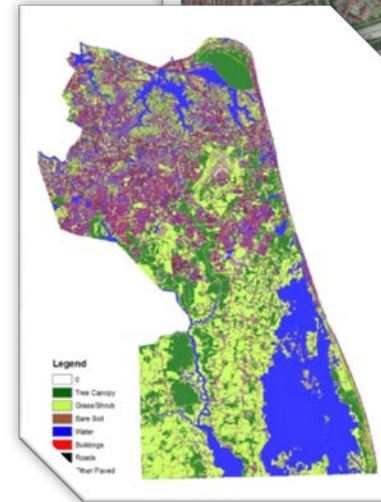
# UTC Focal Points

## At Risk Areas:

- Redevelopment areas that clear wooded lots
- Forested areas within areas slated for development
- Future road corridors

## Important areas to improve

- Developed commercial areas
- City parcels: schools/parks/r-o-w
- Industrial areas
- Established residential with low UTC
- Areas adjacent to watershed buffers



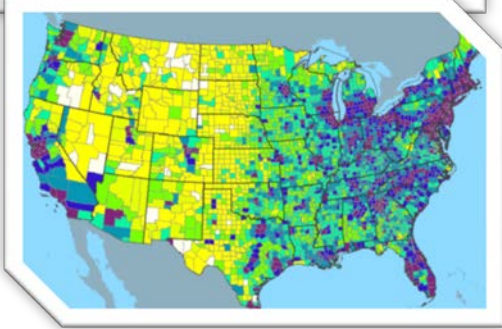
# UTC Focal Points

## Important areas to preserve & enhance:

- Chesapeake Bay buffer
- Southern Watershed buffer
- Any remaining green infrastructure corridors
- Wildlife habitat corridors
- Significant tree stands along farm field ditches (future green infrastructure corridors)
- Areas surrounding public water reservoirs
- Mature residential areas
- Critical/sensitive forested areas

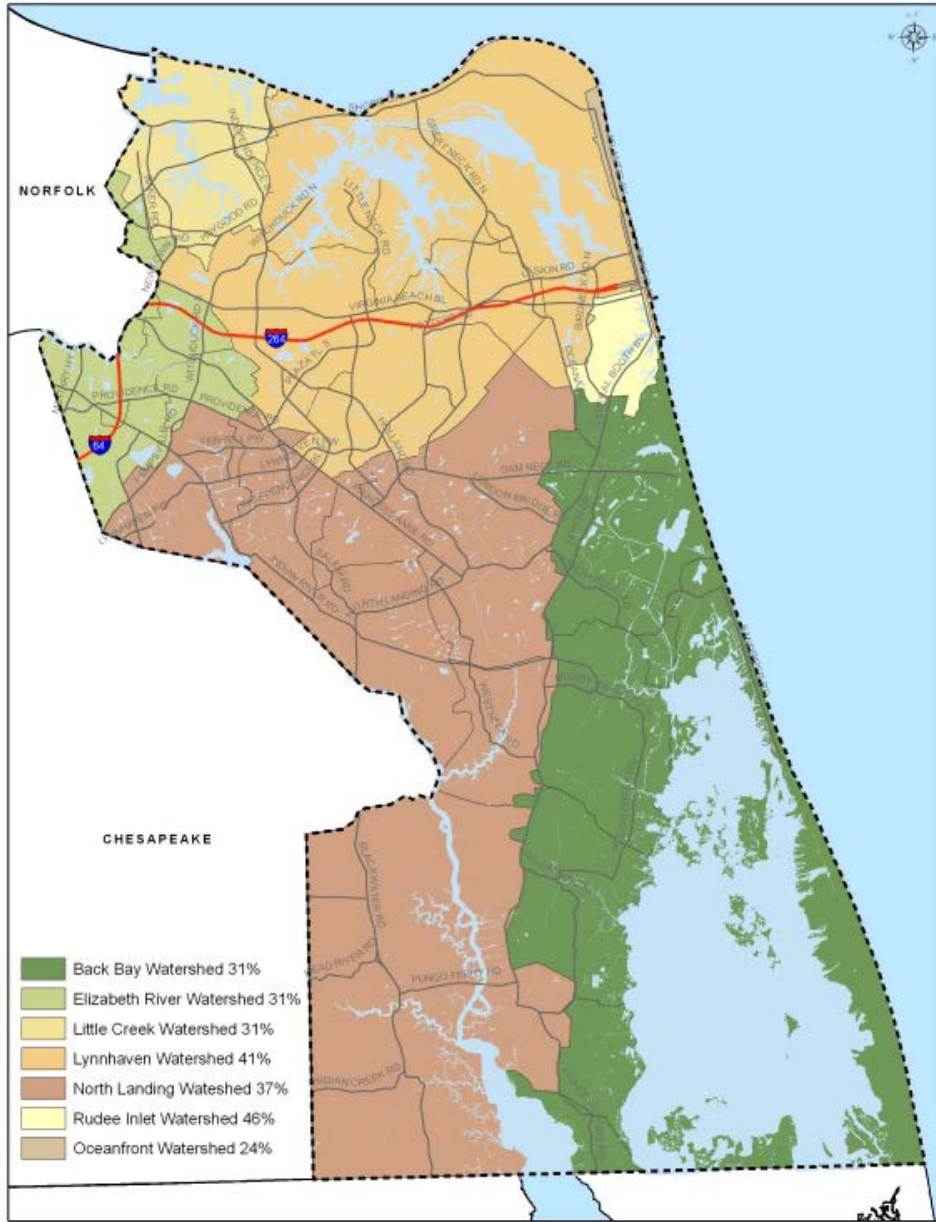


# Challenges for Virginia Beach



- 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

# Existing Conditions



Virginia Beach has a lot of water. Three rivers, three bays, several large lakes plus the bordering Chesapeake Bay and Atlantic Ocean.

Tree canopy in the seven major watersheds ranges from 24% for the oceanfront to 46 percent for Rudee Inlet.

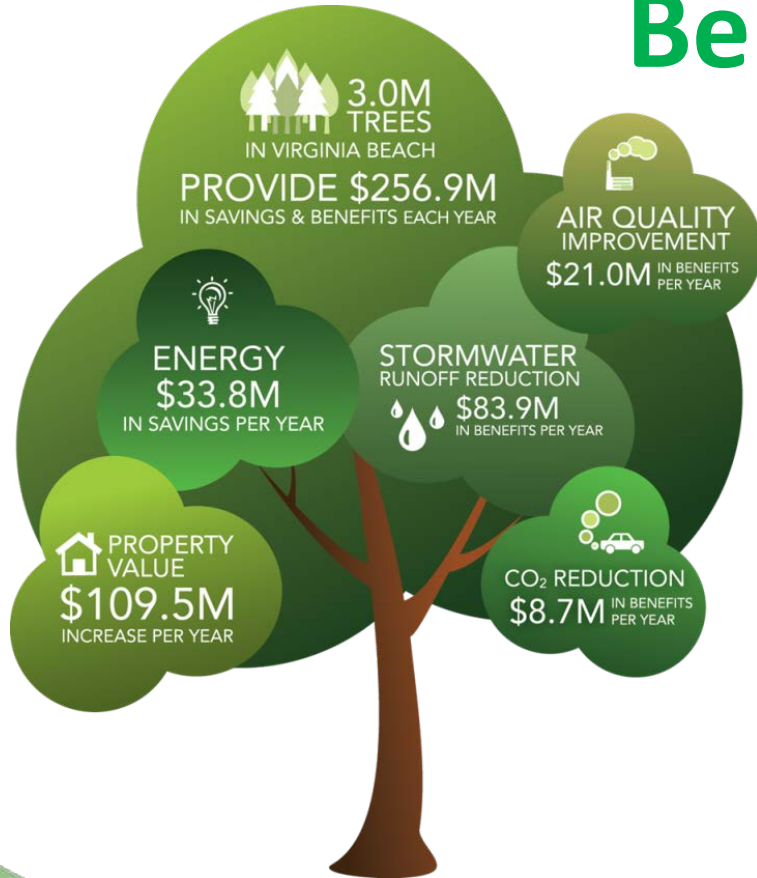
Tree Canopy city-wide is 36%

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# Virginia Beach Urban Forest Benefits

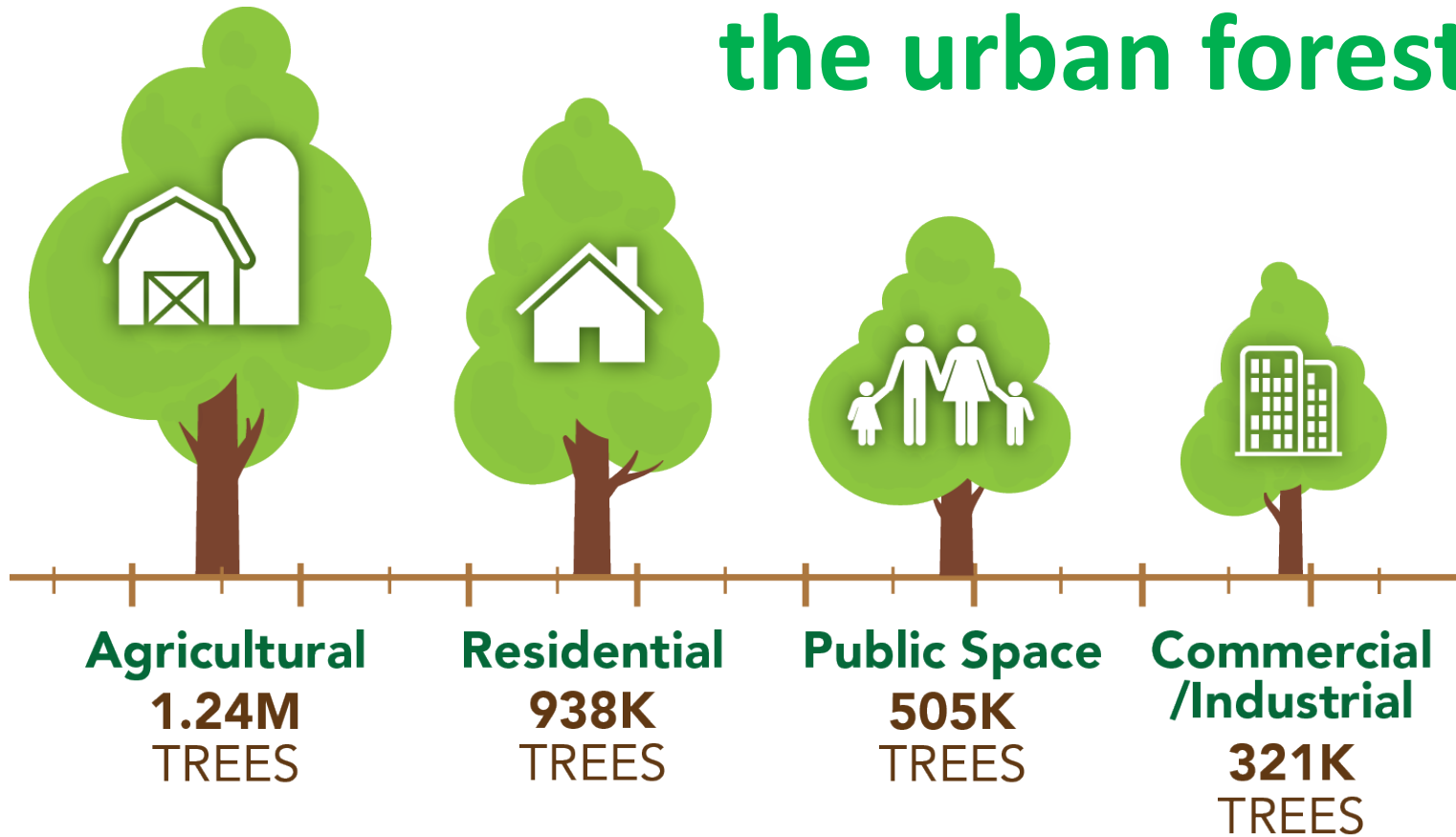


Storm water Runoff Reduction and Property Value Increase are the most important benefits that trees provide to the City of Virginia Beach

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# What land use categories make up the urban forest?



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# 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

# Commercial Area Analysis

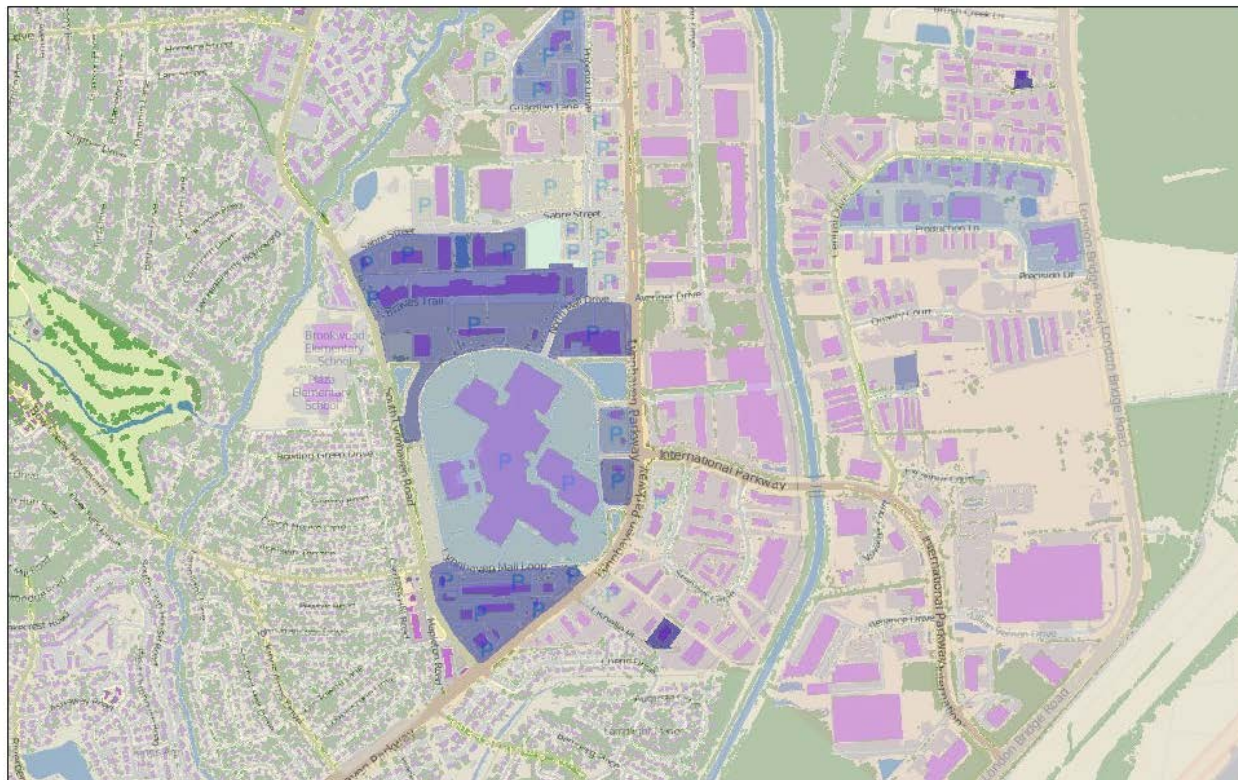
- Commercial areas were identified as lands zoned for business, hotel, office and resort.
- Average city-wide UTC for commercial areas is 22%
- Many of the older commercial areas in the city have UTC of 3-5%.
- We will be using the urban canopy tools to investigate planting opportunities on the older commercial sites and to analyze redevelopment proposals in these areas.

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# Lynnhaven Mall Analysis

Virginia Beach, VA : Urban Forest Cloud - Canopy Planner



October 12, 2013

- 200+ acre commercial area developed during 1970-1985.
- The map shows priority planting areas in darker blues.
- These priority planting areas were based on 3 factors

**% planting area Impervious**

**% planting area vegetated**

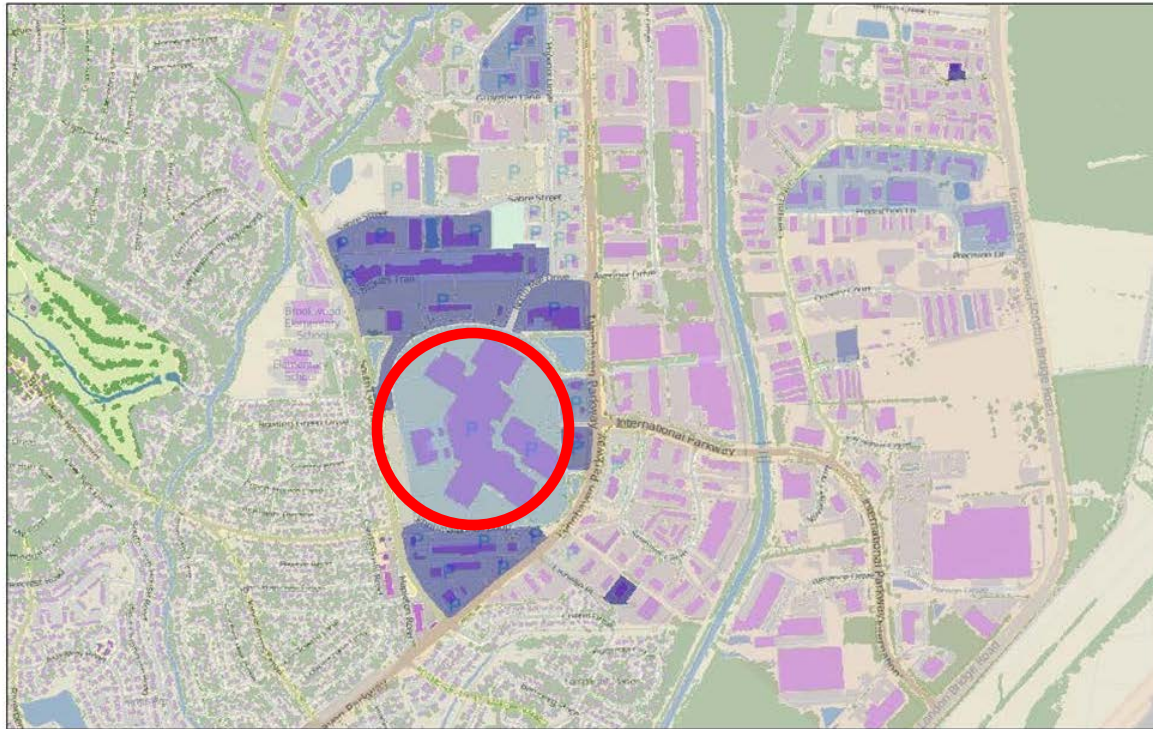
**% Overlap with major road corridors**

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# Lynnhaven Mall Analyis

Virginia Beach, VA : Urban Forest Cloud - Canopy Planner



October 12, 2013

- 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

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# 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.



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# Strategic Growth Area Analysis

- When revisions to ordinances are required to accommodate the urban form, ensure that space for tree planting and preservation is also accommodated.
- When large impervious parking areas are converted to a grid street network, adequate space for street tree plantings should be provided along the new grid streets.
- Existing wooded lots within these areas should be considered for conversion to public open space
- Utilize structural soil when tree plantings are desired within hardscape areas.

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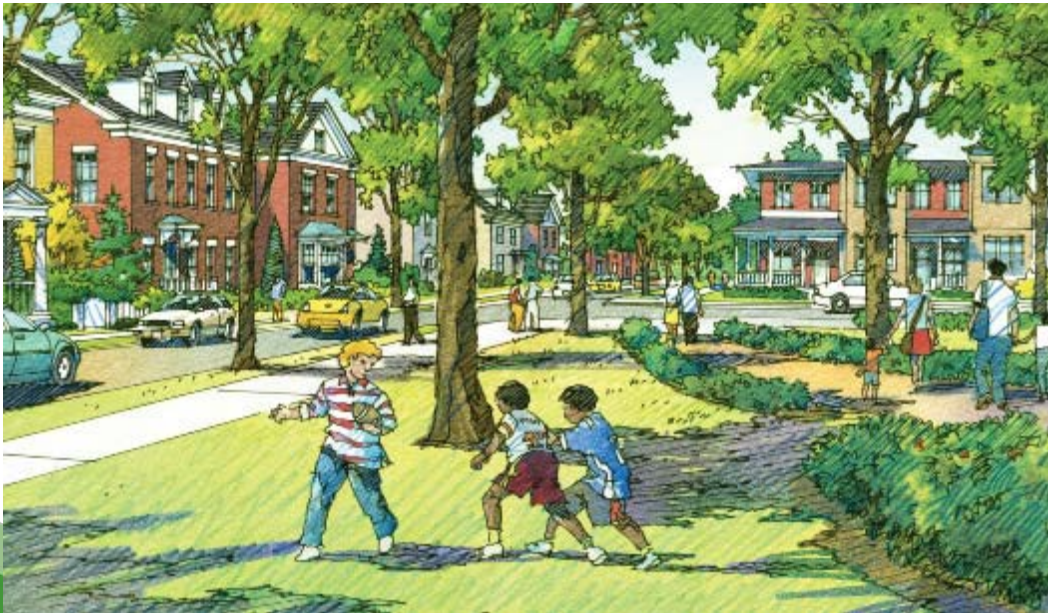
# Residential Area Analysis

Residential Land Use Analysis					
Land Area Type	Land Area Type (Acres)	Existing Tree Canopy (Acres)	Existing Tree Canopy Percentage	Possible UTC Vegetation / Impervious	Factors Affecting UTC Percentages
Single Family Residential	36,831	15,924	43%	31% / 13%	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.
Multi-Family Residential (Apartment)	4,856	1,301	27%	27% / 26%	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.

Note: Land area acreage identified does not include water.

# Residential Area Analysis

- Most of our residential neighborhoods have adequate tree canopy.
- Preserving and enhancing the tree canopy in our residential neighborhoods is our focus.
- As part of our plan, the City will establish a street tree inventory and maintenance program.



# Publicly Owned Lands Analysis

- Road rights of way; Public Facilities and Parks; Schools
- Opportunities exist to plant new trees and preserve existing trees and forest areas for each of these categories and initial planting projects under the Urban Forestry program will focus on public lands.
- Public park sites seem to be the obvious choice to increase tree canopy by planting new trees or reforesting areas. The example below shows why this is not always the case.

Land Area Type	Existing Tree Canopy	Possible UTC
Mount Trashmore Park	10%	70% Vegetated 15% Impervious

- Based on the above chart, it appears that 95% of the site is available for tree planting. However, the previous use of the site as a community landfill prohibits tree planting over a large portion of the site. Additionally, the site suffers from compacted soils in many areas due to the previous landfill use, so trees planted are not always able to reach full maturity.

# Urban Tree Canopy Implementation Plan



## 20-year Goal

Increase city-wide UTC  
**to 45%**

## Outcome:

Achieve long-term commitment from city departments, leadership, citizens and developers through increasing level of engagement and education

# Urban Forest Management Plan

## Overall Objective:

*Establish multi-faceted urban forest management program*

- Integrate UTC Implementation Plan into the UFMP
- Begin proactive cyclical neighborhood tree maintenance
- Increase tree plantings and preservation on public properties
- Initiate Integrated Pest Management program
- Educate citizens in Urban Forestry



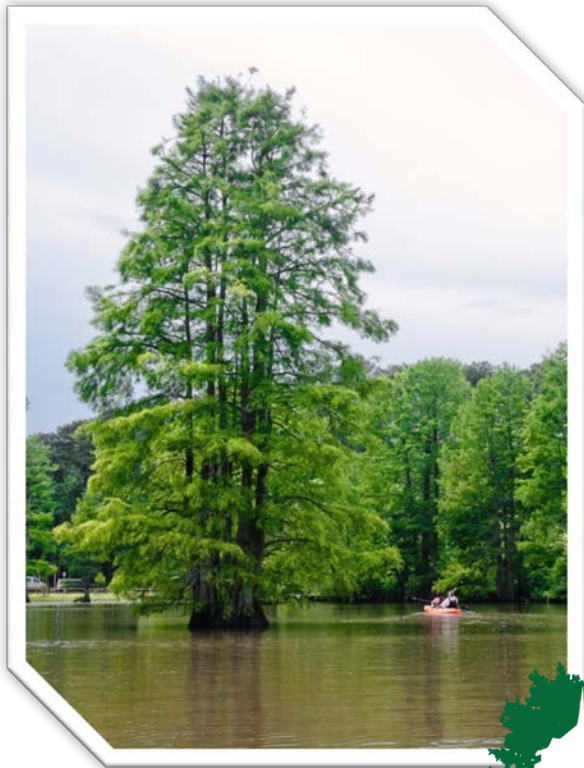
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# Advice for UTC Plan & UFMP

- **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**





# Thank You

For more information contact:

Susan French: [sfrench@vbgov.com](mailto:sfrench@vbgov.com)

Barbara Duke: [bduke@vbgov.com](mailto:bduke@vbgov.com)



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