

# Louisville Urban Tree Canopy Assessment

**Louisville Metro Office of Sustainability**

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# Importance of Trees

- Economically
- Environment
- Social



# UTC Assessment Provides:

- Canopy % for 2004, 2008, 2012
- Planting timetables---45%
- Prioritize planting locations by environmental need
- Value based on ecosystem service



# Percent Canopy

## Louisville

2004 = 40%

2008 = 38%

2012 = 37%

\*Louisville covers ~ 398 mi<sup>2</sup>

**Table 1. City Comparisons**

*CITY COMPARISONS: How does Louisville's overall urban tree canopy coverage compare regionally?*

	Canopy Cover	Study Area	Date Reported
Charlotte, NC *	49%	298 mi <sup>2</sup>	2012
Nashville, TN *	47%	475 mi <sup>2</sup>	2010
Pittsburgh, PA	42%	58 mi <sup>2</sup>	2011
Knoxville, TN	40%	103 mi <sup>2</sup>	2014
<i>Recommended**</i>	40%	-	-
Cincinnati, OH	38%	78 mi <sup>2</sup>	2011
<b>Louisville, KY*</b>	<b>37%</b>	<b>398 mi<sup>2</sup></b>	<b>2014</b>
Evansville, IN	26%	44 mi <sup>2</sup>	2011
St. Louis, MO	26%	96 mi <sup>2</sup>	2010
Lexington, KY	25%	85 mi <sup>2</sup>	2014

\* Study area spans city & surrounding county.

\*\* Recommended canopy by American Forests

# Percent Canopy

7% decrease in canopy over 8 years

6,500 acres of canopy lost (820 ac/year)

or

54,000 trees/year



# Canopy Ecosystems Services

<b>Benefit</b>	<b>Quantity</b>	<b>Unit</b>	<b>Value</b>
STORMWATER: Reduction of Runoff	18,835,266,390	<i>gallons</i>	\$62,909,790
ENERGY: Savings from Avoided Cooling	67,649,325	<i>kWhs</i>	\$5,463,356
PROPERTY: Increases in Property Values	-	\$	\$239,969,791
AIR: Carbon Monoxide (CO) Removed	149,120	<i>lbs.</i>	\$99,078
AIR: Nitrogen Dioxide (NO <sub>2</sub> ) Removed	517,780	<i>lbs.</i>	\$219,678
AIR: Ozone (O <sub>3</sub> ) Removed	4,366,940	<i>lbs.</i>	\$7,932,540
AIR: Sulfur Dioxide (SO <sub>2</sub> ) Removed	622,280	<i>lbs.</i>	\$78,727
AIR: Dust, Soot, Other Particles Removed (Particulate Matter, PM10)	1,242,280	<i>lbs.</i>	\$3,879,821
Carbon Sequestered	444,112	<i>tons</i>	\$8,599,490
<b>Total Annual Benefits</b>			<b>\$329,152,271</b>
Carbon Storage Over Canopy's Lifetime (not an annual benefit)	11,941,333	<i>tons</i>	\$231,224,066
<b>Total Benefits Overall</b>			<b>\$560,376,337</b>

# Canopy High and Lows

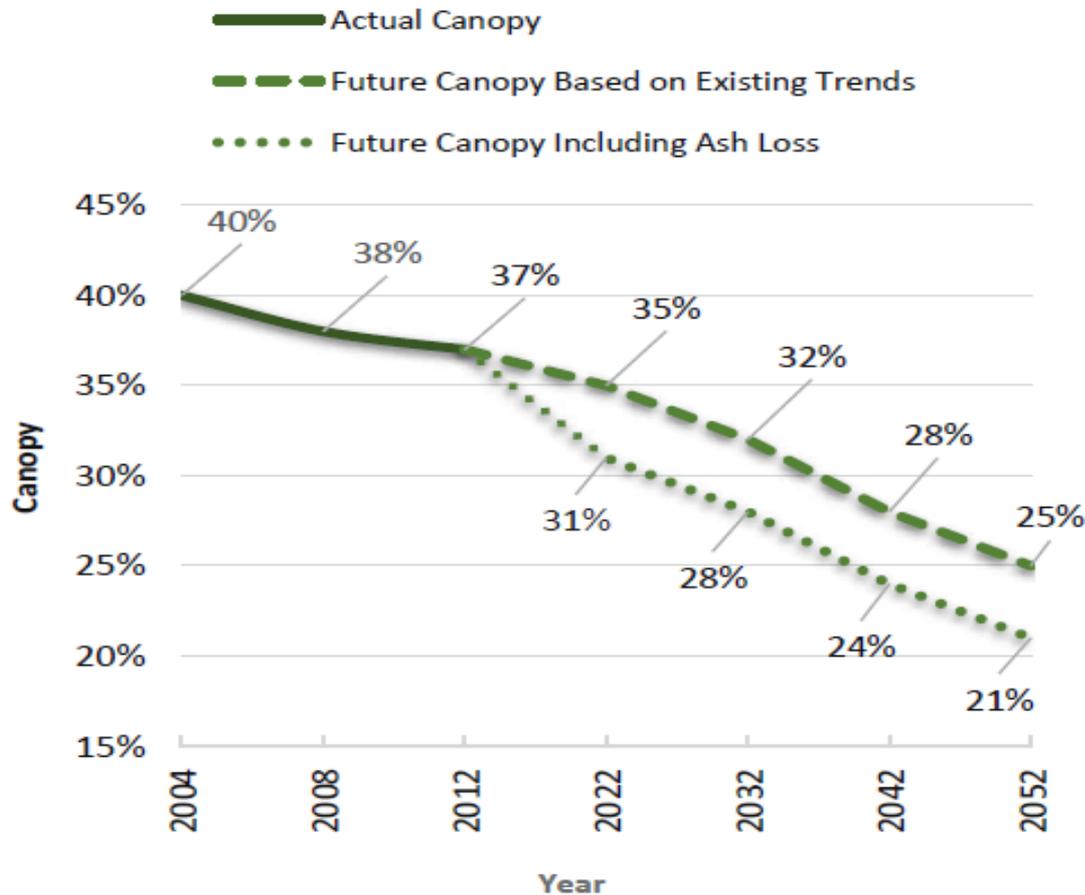
- Council Districts
- Suburban Cities
- Neighborhoods
- Private vs. Public



*RPA = Reasonable Planting Area*

# Future Canopy: No Change

Figure 2. Louisville's Estimated Future Canopy (No Action Taken)



Louisville's urban tree canopy could decrease to 21-25%



# Future Canopy: 45%

- No loss occurs
- Maintain and replenish current canopy
- Plant and maintain 20,041 acres
  - 1.322 million trees (~33,000 trees/year)
- 40 years, 2052



*He that plants trees loves others  
besides himself.*

Dr. Thomas Fuller, 1732

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