Tree Canopy, Neighborhood Planting and Its Impact

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2016 Neighborhood Summit
Strong Leaders, Strong Community

Today's Workshop Goals:

- Learn from community experts and leaders

- Connect with each other on issues that matter to us

- Come away with viable action steps

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Erin Thompson

Urban Forester

Division of Community Forestry

Importance of Trees and the Louisville Tree Canopy Assessment

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WHY TREES?

Impacts:

Environmentally

Economically

Socially

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WHY TREES?

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Environmentally

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A CALL TO ACTION

A Changing Louisville

Pest

June 2006

August 2009

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A CALL TO ACTION
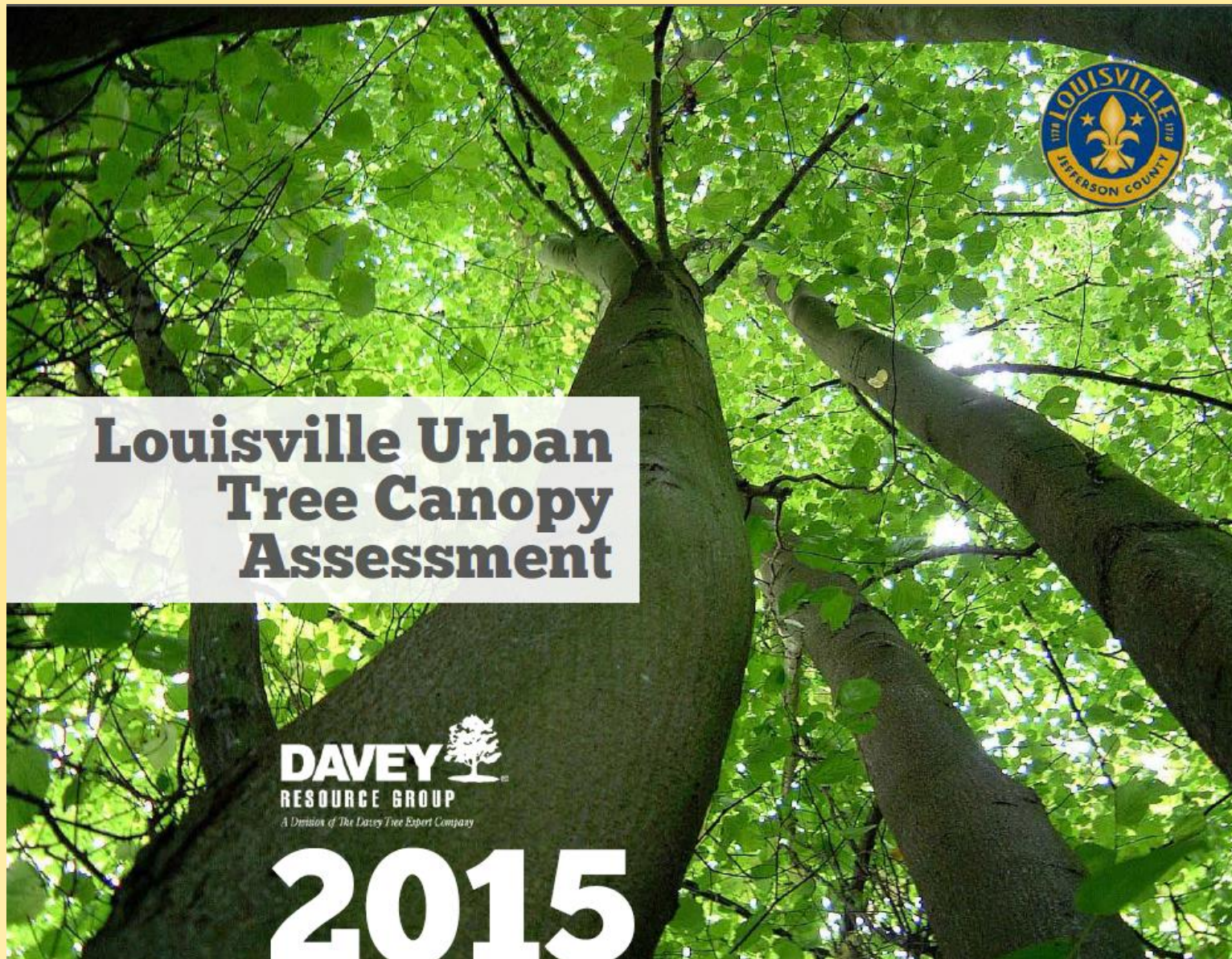
Provides:

Canopy Change

Landcover Classification

Canopy by:
- Louisville/Jefferson County
- Suburban City's
- Council Districts
- Neighborhoods
- Land Use

Ecosystem Health/Benefits

Stormwater Management

Ownership

Prioritize Plantings

2015 Urban Tree Canopy Assessment

40% ➡ **38%** ➡ **37%**
2004　　　　**2008**　　　　**2012**

3% decrease of canopy over eight years =

Loss of 6,500 acres of tree canopy =

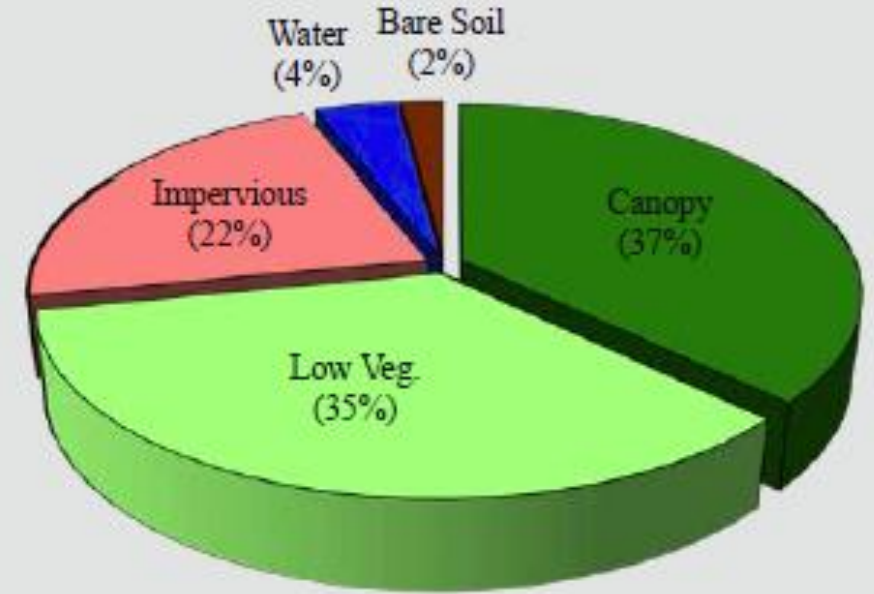Loss of 820 acres of tree per year
or
54,000 trees per year

Landcover

Figure 3. Louisville 2012 Land Cover

Tree Canopy – 37%
Trees' leaf-covered branches, as seen from above.

Grass/Low Vegetation– 35%
Parks, golf courses, fields, lawns.

Water – 4%
All bodies of water including lakes, ponds, rivers and streams.

Impervious Surfaces –22%
Roads, sidewalks, buildings, parking lots - all areas where water cannot soak into the ground.

Bare Soil – 2%
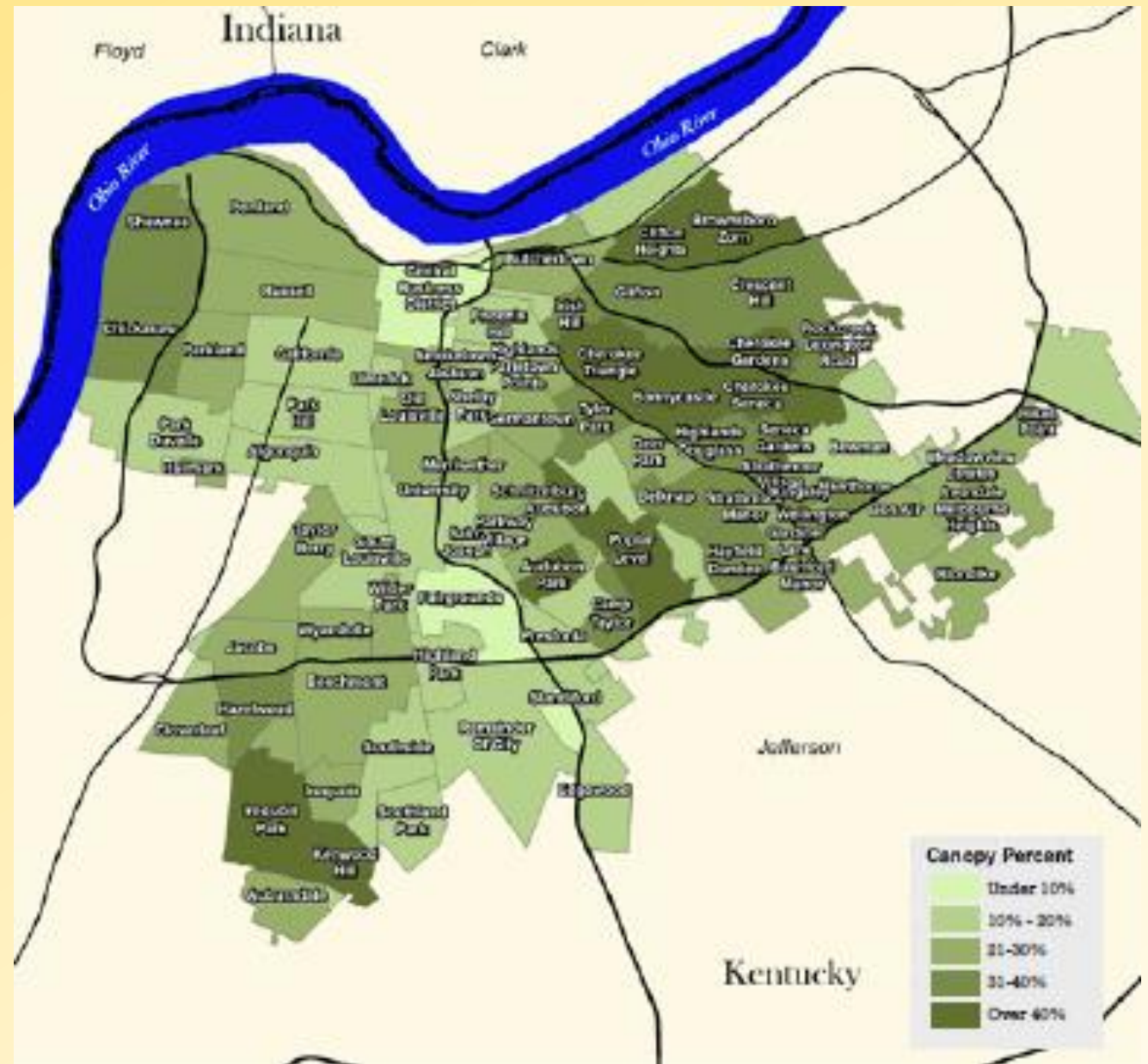All open areas like sports fields, vacant lots, and construction sites.

Canopy by Neighborhood

	Neighborhood	Canopy %
Highest	Iroquois Park	68%
	Cherokee Seneca	55%
	Cherokee Gardens	53%
	Brownsboro Zorn	51%
	Audubon Park	48%

	Neighborhood	Canopy %
Lowest	University	11%
	Phoenix Hill	11%
	Central Bus. District	8%
	Fairgrounds	6%
	Standiford	3%

Ecosystem Benefits

Louisville's Tree Benefits (from 2012 Canopy)			
	Quantity	**Unit**	**Value**
STORMWATER: Runoff Reduction	18,835,266,390	gallons	$62,909,790
ENERGY: Savings from Avoided Cooling	67,649,325	kWhs	$5,463,356
PROPERTY: Increases in Property Values	-	$	$239,969,791
AIR: Carbon Monoxide (CO) Removed	149,120	lbs.	$99,078
AIR: Nitrogen Dioxide (NO_2) Removed	517,780	lbs.	$219,678
AIR: Ozone (O_3) Removed	4,366,940	lbs.	$7,932,540
AIR: Sulfur Dioxide (SO_2) Removed	622,280	lbs.	$78,727
AIR: Dust, Soot, Other Particles Removed (Particulate Matter, PM_{10})	1,242,280	lbs.	$3,879,821
Carbon Sequestered	444,112	tons	$8,599,490
		Total Annual Benefits	**$329,152,271**
Carbon Storage over Canopy's Lifetime (not an annual benefit)	11,941,333	tons	$231,224,066
		Total Benefits Overall	**$560,376,337**

Stormwater Management
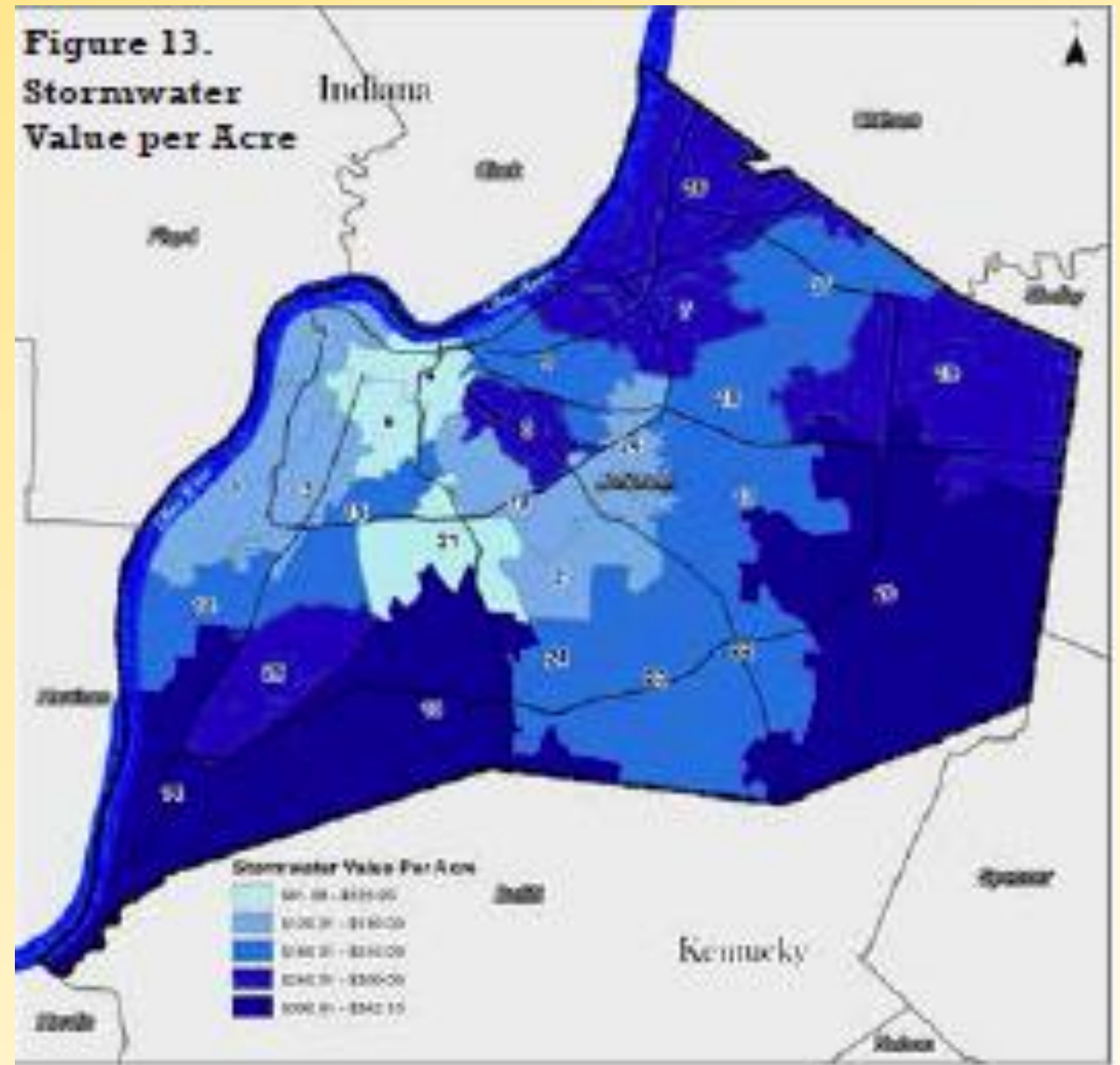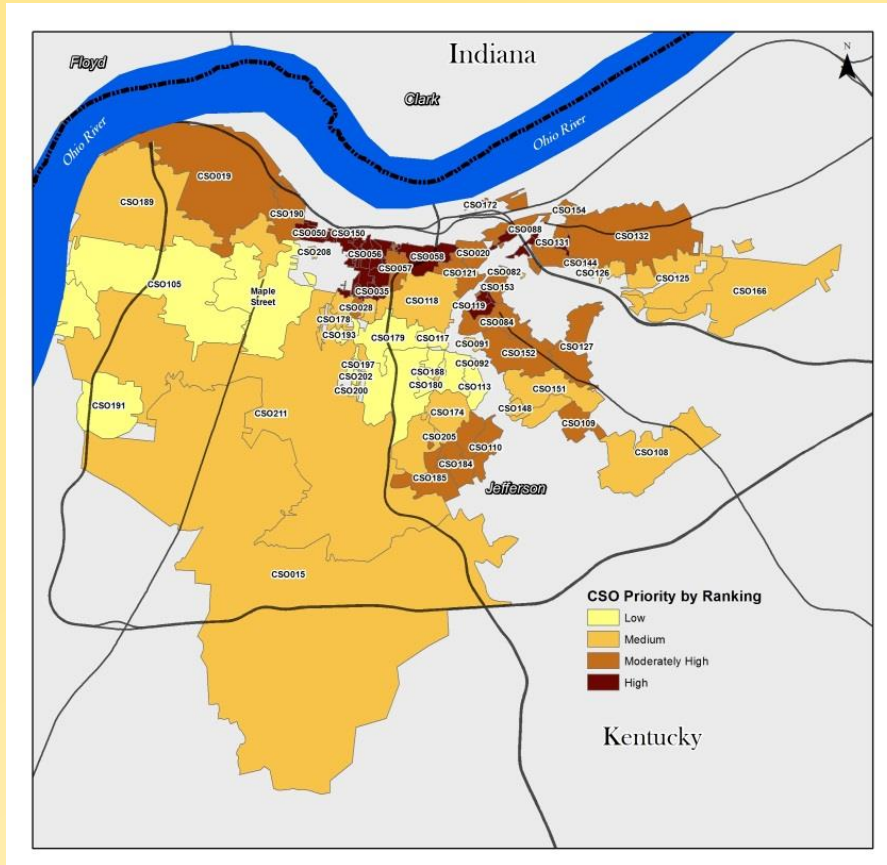
Ownership

	Total Acreage	Privately-Owned		Publically-Owned	
		Size (Acres)	% of Total	Size (Acres)	% of Total
Louisville Land	246,416	172,081	70%	74,335	30%
Existing Canopy	94,106	67,684	72%	26,422	28%
RPAs	65,848	47,811	73%	18,036	27%

Heat Island
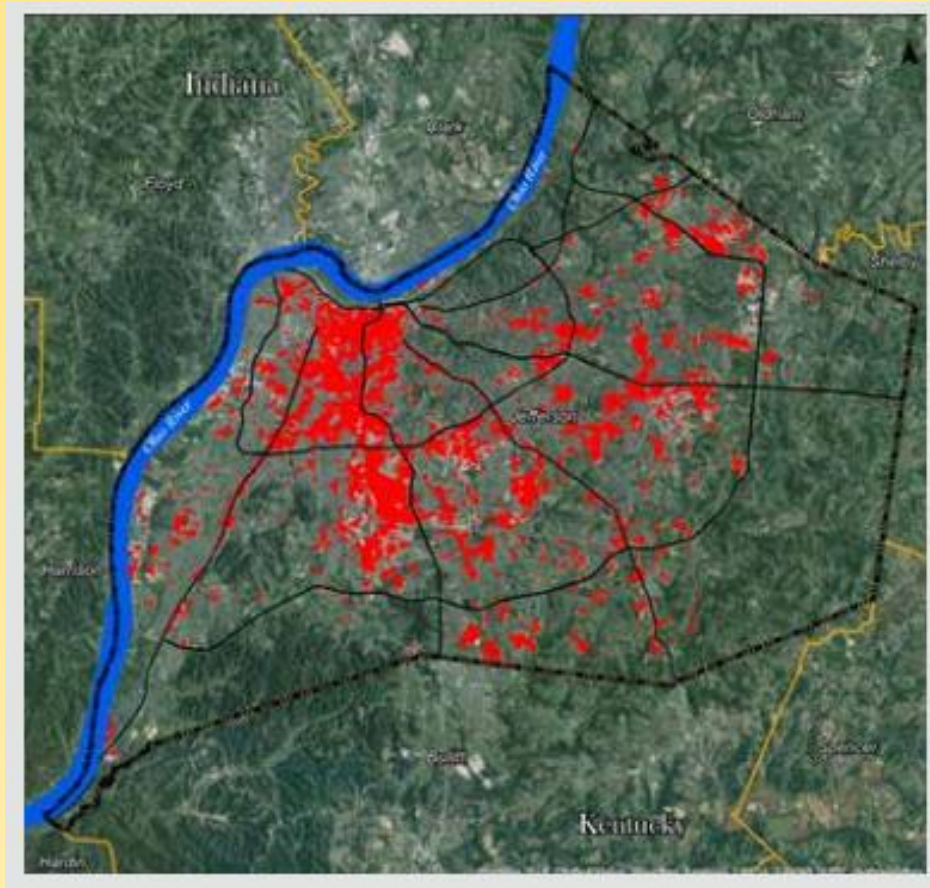
2015 UTC—Surface Temperature
By Davey Resource Group
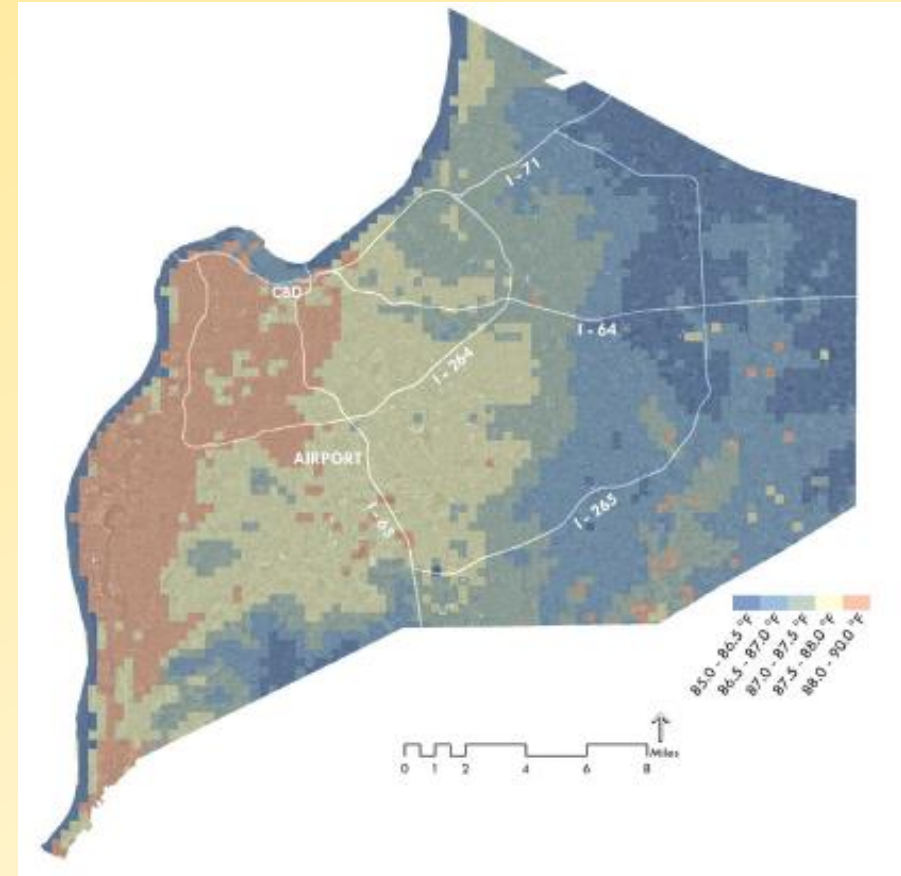
2016 UHMS---Highest Ambient Temperatures
By Urban Climate Lab at GA Institute of Technology

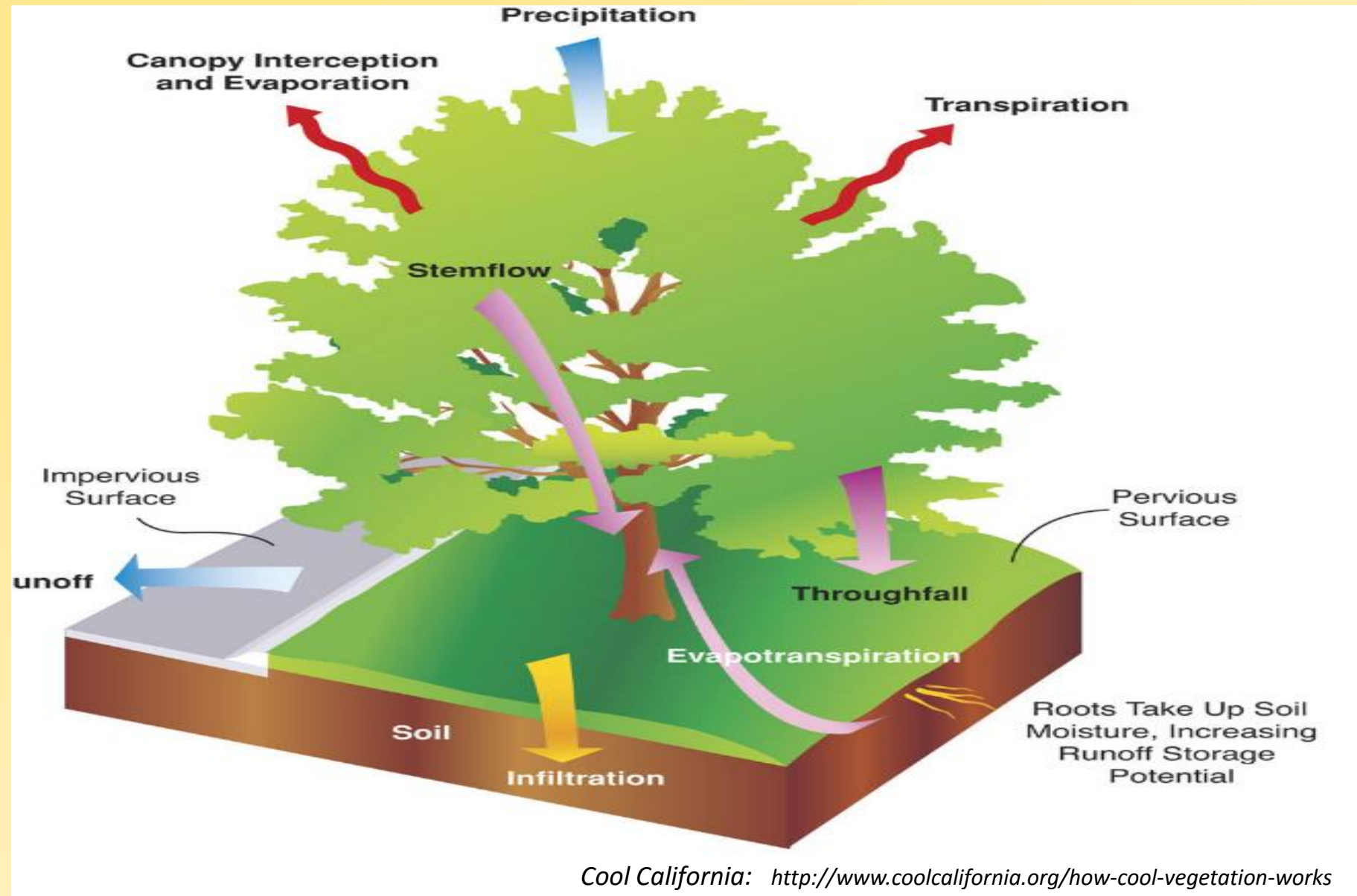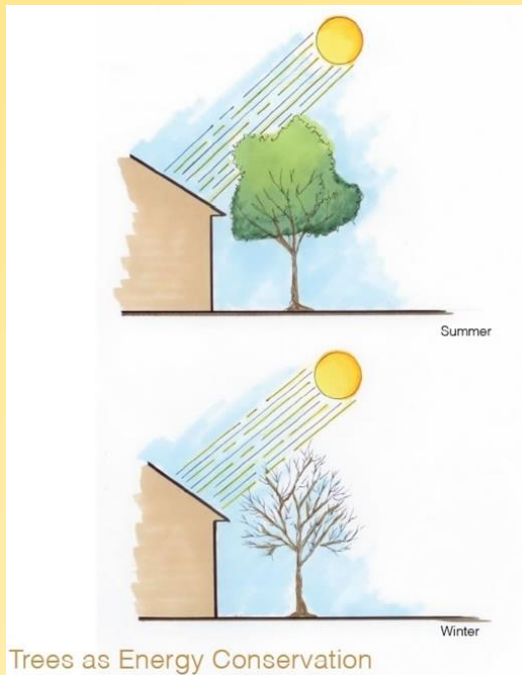Center For Neighborhoods
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Heat Island

Why the urban heat island effect occurs

Green Dallas: http://greendallas.net/land/challenges/

Heat Island

Trees as Energy Conservation

Summer

Winter

Precipitation

Canopy Interception and Evaporation

Transpiration

Stemflow

Impervious Surface

Runoff

Throughfall

Pervious Surface

Evapotranspiration

Soil

Infiltration

Roots Take Up Soil Moisture, Increasing Runoff Storage Potential

Cool California: *http://www.coolcalifornia.org/how-cool-vegetation-works*

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Prioritized Plantings

Prioritization Results

=
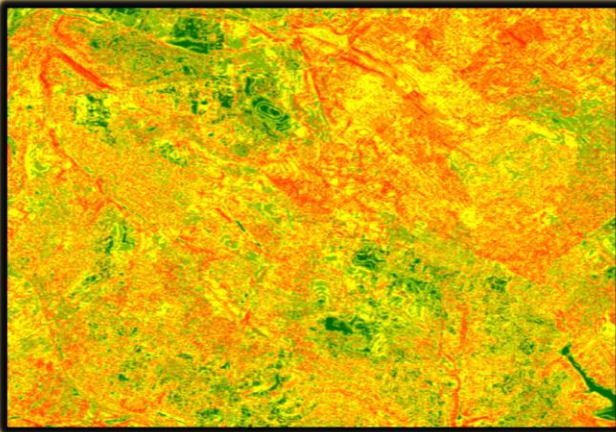
Preferred Planting Sites

Planting Site Priority Level
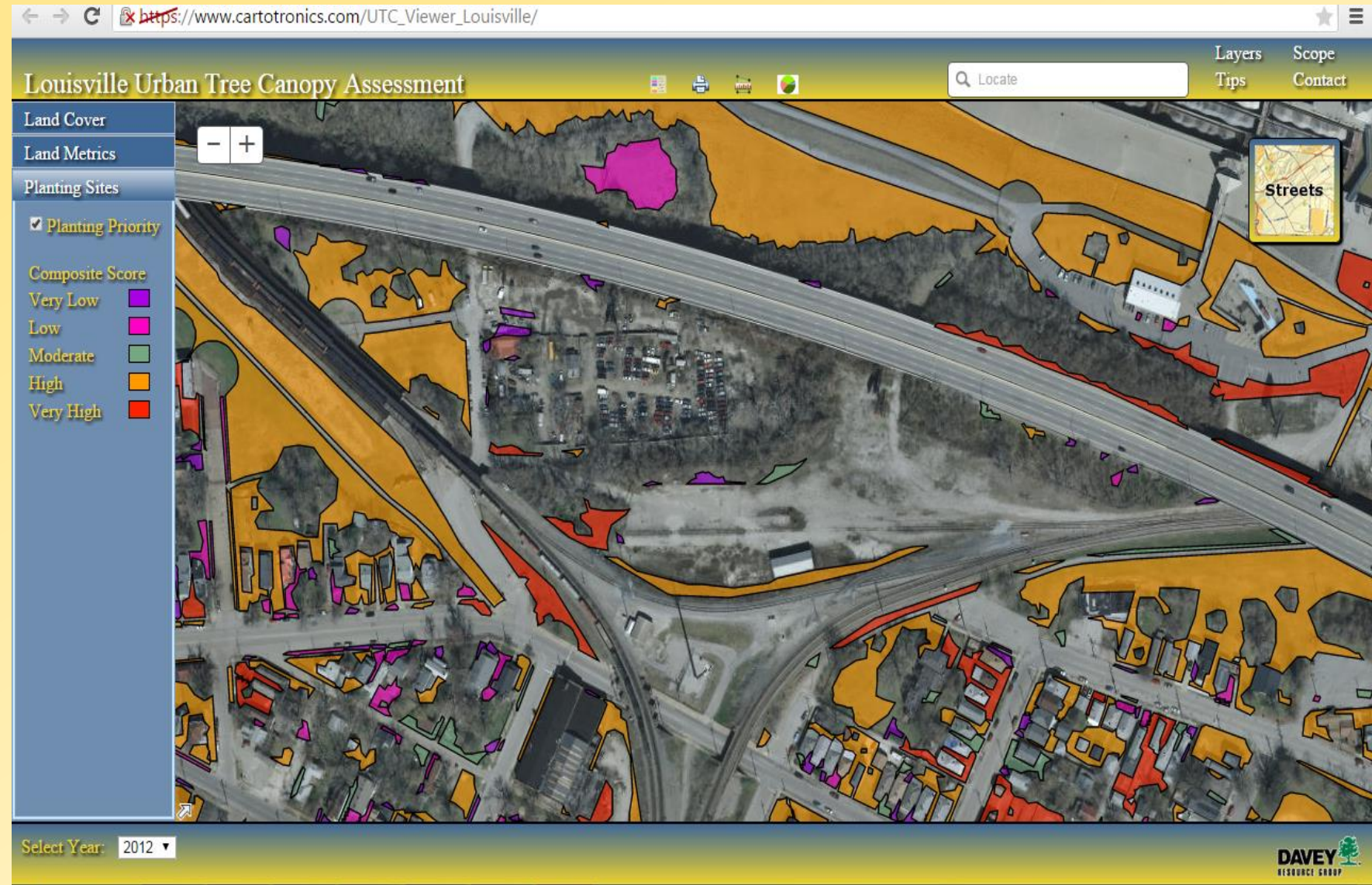
- Very Low
- Low
- Moderate
- High
- Very High

*Sites are ranked using the average risk value for each polygon.

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Webviewer

2015 Urban Tree Canopy Assessment

40% ➡ **38%** ➡ **37%** ➡ **45% +**
2004   2008   2012   Future

3% decrease of canopy over eight years =

Loss of 6,500 acres of tree canopy =

Loss of 820 acres of tree per year
or
54,000 trees per year

Increase by 8%

Need to plant =

2.5 to 3.5 million trees

Cindi Sullivan
Executive Director
TreesLouisville

Neighborhood Impact and Planning

Want more trees in your neighborhood?

- Get Organized!
- Form a Tree Committee
- Locate Resources
- Plant trees!

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Re-Tree Shively

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Re-tree Shively

Saint Regis Park

Saint Regis Park

- Set out to become a Tree City USA
- Created Ordinance
- Established Tree Board
- Created Budget
- Planted Trees!

Seneca Gardens- A Neighborhood Arboretum

Diversity

Fall color

Winter Interest

Conclusion

- Organization and teamwork is the key
  - Form committees
  - Locate resources
    - Other communities
    - Metro Council
    - MSD
    - Other Grant Opportunities
- Create Happier, Healthier Communities
- Get planting!

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Questions / Discussion

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