Why Are Trees Important?

water.epa.gov

LMU Center for Urban Resilience

Questions I'll Try to Answer Today:

1. What Are the Goals of a "Sustainable City"?

2. How Do Forests and Green Spaces Make a City More Sustainable?

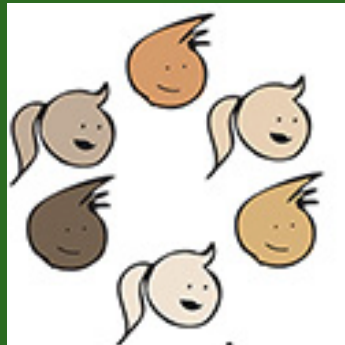3. How Can We Increase and Support Urban Vegetation?

1. What Are the Goals of a "Sustainable City"?

A Sustainable City Will Have Long-Term, *Sustained* Benefits For:

planet.

nature: water, air, wildlife, soil

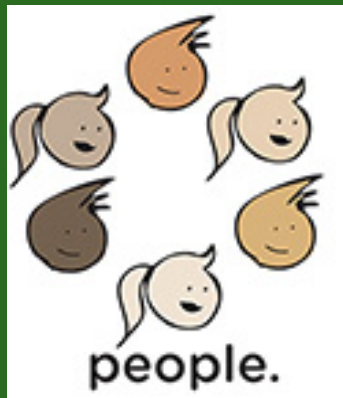people.

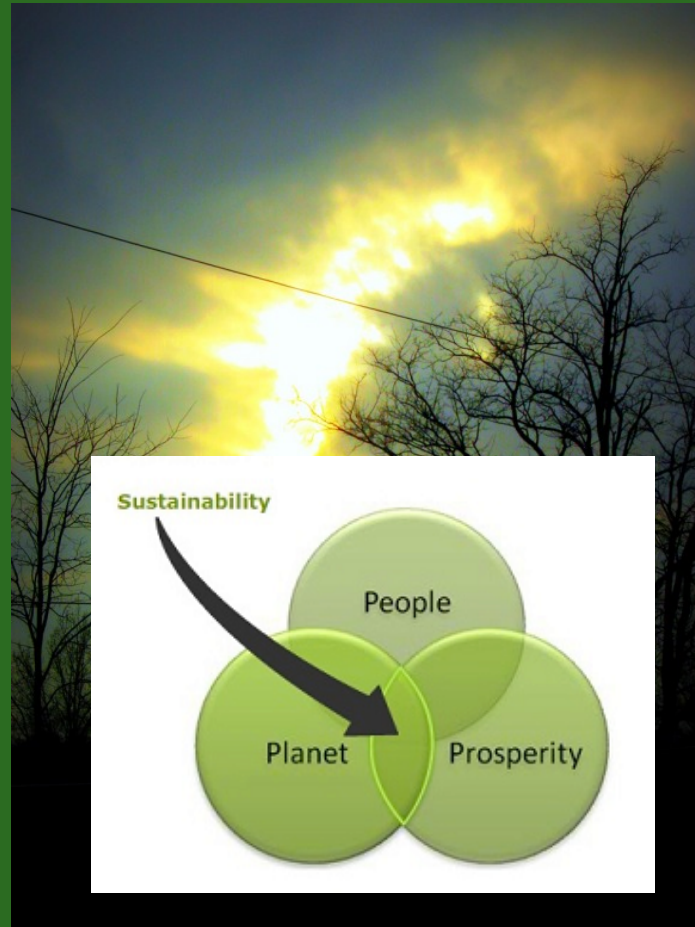individuals, households, communities

prosperity.

jobs, material goods & services

Sustainability

People

Planet

Prosperity

2. How Do Forests and Green Places Make a City More Sustainable?

planet.

people.

prosperity.

The Greatest Multi-taskers

Trees & Water Benefits.

Trees planted alongside streets can decrease the amount of pollutants found in the water supply.

Trees prevent millions of gallons of water from running off into rivers and oceans.

Trees & Water Benefits.

Matteo et al. (2006) measured the impact of a 10 foot roadside forest buffers on pollutants in an urban area.

Variable	Decrease from baseline
Sediment	4%
Nitrogen	7%
Phosphorus	7%
Runoff	9%
Groundwater recharge	34%

Trees & Water Benefits.

Several studies have examined the ability of trees to intercept stormwater.

| City	Avg. annual rainfall	Interception per Tree	Citation
Santa Monica, CA	22 in	1743 gal/yr	Xiao & McPherson 2003
Bismark, ND	15-16 in	2,985 gal/yr	McPherson et al. 2005
Glendale, AZ	6 in	362 gal/yr	McPherson et al. 2005
Cheyenne, WY	15-16 in	2,501 gal/yr	McPherson et al. 2005
New York, NY	41 in	1525 gal/yr	Peper et al. 2007

Trees & Air Benefits.

Nowak et al. (2002) found that trees in Baltimore intercept about 700 tons of air pollution per year.

Those same trees were found to take up about 10,800 tons of carbon a year and store about 527,300 tons of carbon.
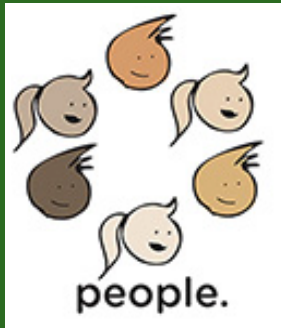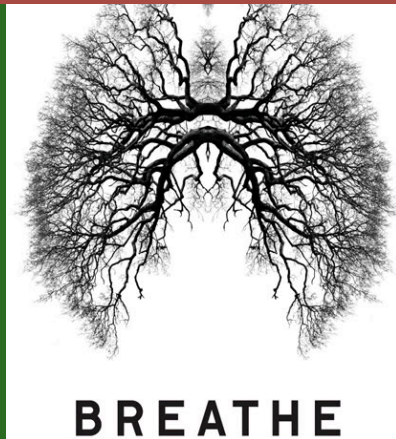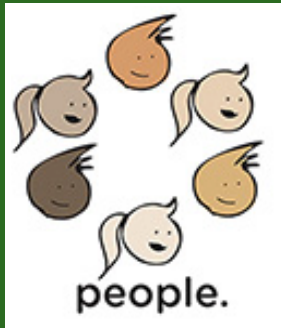
Trees & Health Benefits.

New York City researchers (Lovasi at al. 2008) found that higher street tree density was associated with a lower prevalence of childhood asthma.

In Chicago, researchers found that children living in areas with increased trees and other vegetation can have lower levels of attention deficit disorder (Kuo & Sullivan 2001).
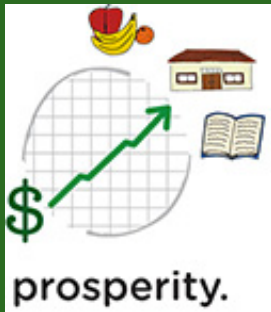
people.

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Trees & Community Benefits.

Another study of Baltimore City found that a 10% increase in tree canopy was associated with a roughly 12% decrease in crime (Troy et al. 2012).

A Chicago study in urban public housing found that the presence of well managed vegetation was very important in promoting the development of social ties (Kuo et al. 1998).

prosperity.

Trees & Economic Benefits.

Houses with trees planted in front of them have higher real estate values.

Trees are direct sources of goods such as food and wood products, and also generate jobs.

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