

# Strategies for determining a Tree's Monetary Value

- ~~Landscape Appraisal Method~~ – Not suitable for this application
- Environmental Mitigation
- Replacement Method

For comparison purposes over the next several slides we are using averages based on the value based on most common trees removed from private properties. These include:

Norway maple  
Red maple  
Cherry  
Red oak

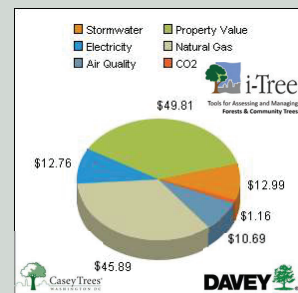
White oak  
Elm  
White pine  
Spruce

# Strategies for determining a Tree's Monetary Value

- Environmental Mitigation

USDA Forest Service developed a data set that places dollar value on key environmental measures.

- Atmospheric Carbon Avoided
- Stormwater Runoff Prevention
- Reduced Electric Consumption (kWh)
- Reduced Therms of energy (natural gas & oil)
- Air Quality Improvement



Values vary by species by size. The following slide are several examples:

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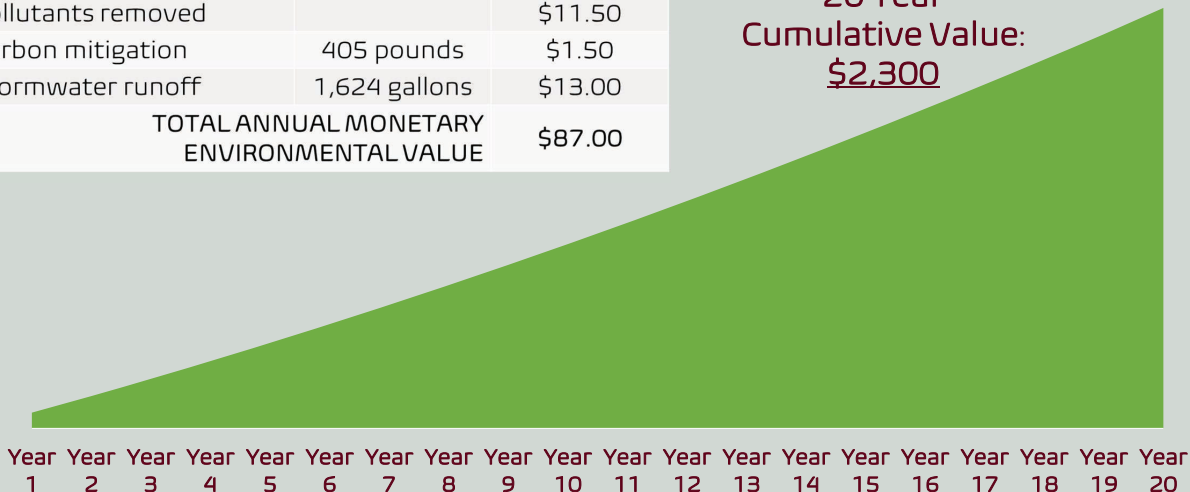
Average size tree removed from private property = 14" DBH

	Enviro Impact	Monetary Value
Electric savings (kWh)	92 hours	\$15.00
Therms (natural gas/oil)	33	\$46.00
Pollutants removed		\$11.50
Carbon mitigation	405 pounds	\$1.50
Stormwater runoff	1,624 gallons	\$13.00
<b>TOTAL ANNUAL MONETARY ENVIRONMENTAL VALUE</b>		<b>\$87.00</b>

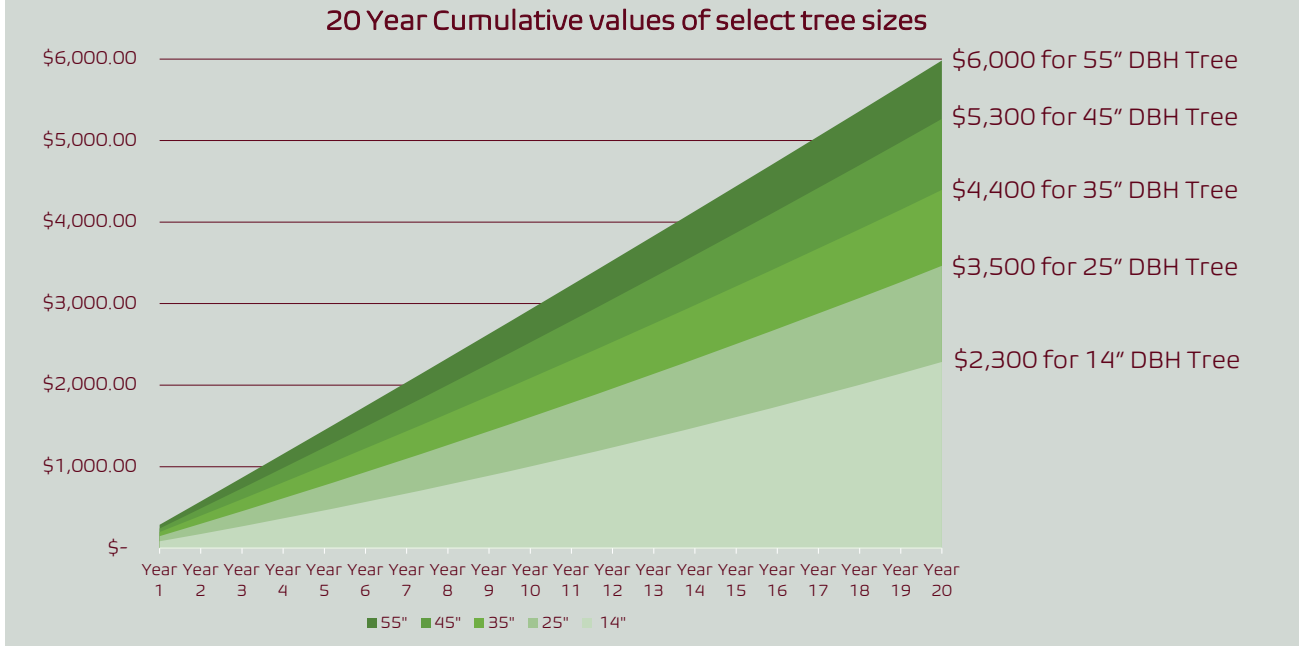
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**14" DBH Tree  
20 Year  
Cumulative Value:  
\$2,300**



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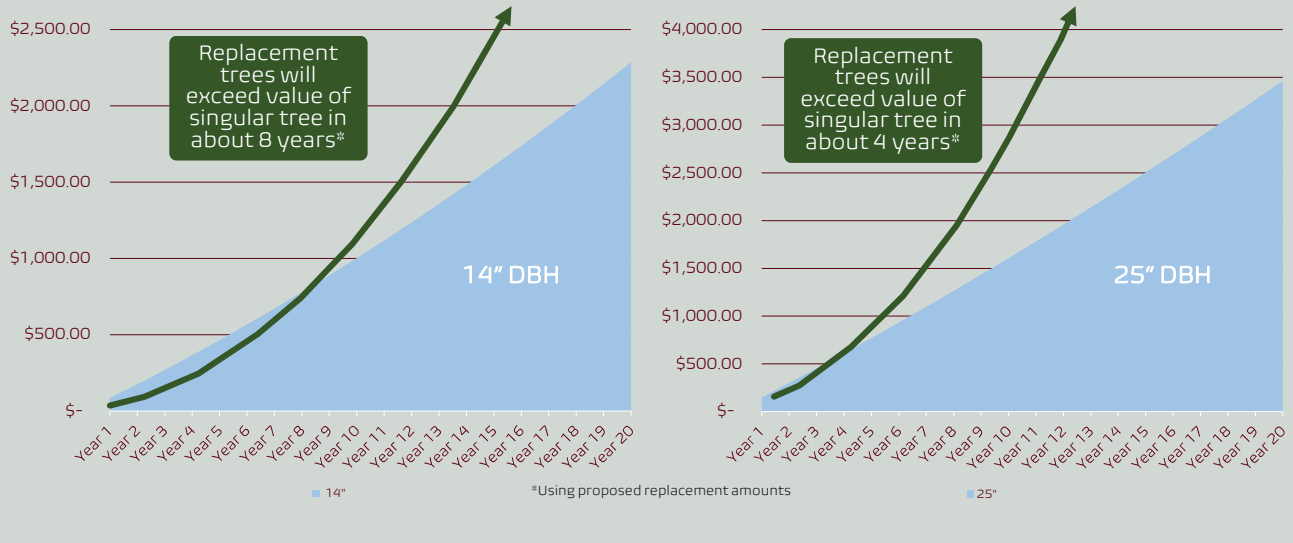


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Per Inch Tree Value				
Size of tree	Annual Value		20 Year Value	
	Per tree	Per DBH inch	Per tree	Per DBH inch
14" DBH	\$87	\$6.21	\$2,300	\$164.29
25" DBH	\$150	\$6.00	\$3,500	\$140.00
35" DBH	\$200	\$5.71	\$4,400	\$125.71
45" DBH	\$243	\$5.40	\$5,300	\$117.78
55" DBH	\$287	\$5.22	\$6,000	\$109.09

# Strategies for determining a Tree's Monetary Value

## Challenge with using Environmental Monetary Value



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## Challenge with using Environmental Monetary Value

Arbor Day Foundation

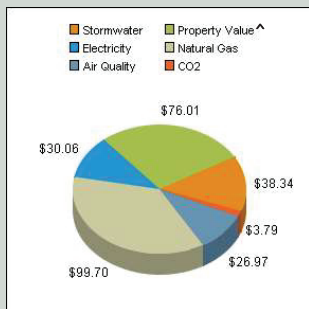
Overall Benefit | Stormwater | Property Value | Energy | Air Quality | CO2 | About

A 30 inch Northern red oak provides overall benefits of **\$275 every year**.

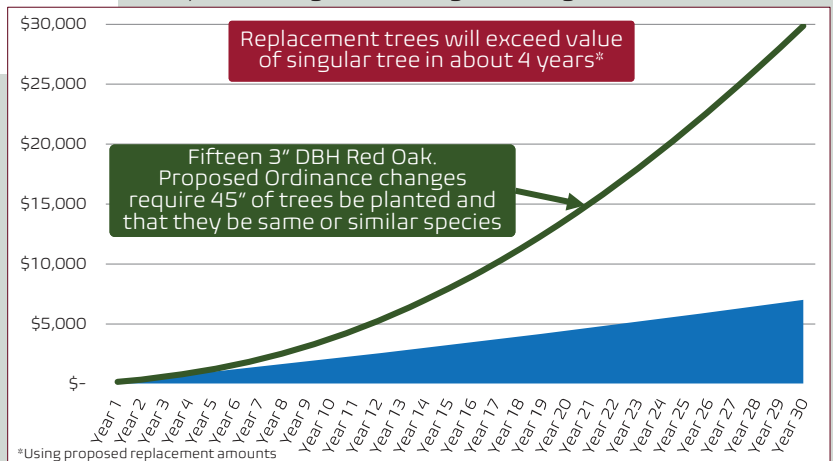
If this tree is cared for and grows to 35 inches, it will provide **\$308 in annual benefits**.

Northern red oak  
*Quercus rubra*

- The use of Environmental Monetary Value introduces variables.
- Looking years into the future requires assumption about growth and survivability.
- May introduce grounds of legal challenges.



^ Property Value not included in figures on this graph. It is not an Environmental Benefit figure. Also introduces concept of property value which can be highly variable when developing a site.



## Strategies for determining a Tree's Monetary Value

- Replacement Method

The cost to the City to purchase, install, water, and provide establishment care.

Tree Purchase (incl. supplies)	\$130
Installation	\$40
Weekly watering (2yrs)	\$185
Establishment care	\$65
<b>Total City Cost to Plant Tree</b>	<b>\$420</b>
<b>Per inch cost</b>	<b><u>\$280</u></b>

costs as of 10/1/2022

## Strategies for determining a Tree's Monetary Value

- Environmental Mitigation – Per inch value = \$165
- Replacement Method – Per inch value = \$280

Using these values what would a mitigation payment be?

Size of tree removed	Enviro value of \$165/ inch		Rep. value of \$280/inch		Current Ordinance Payment
	Required # of inches	Total Payment	Required # of inches	Total Payment	
14" DBH	14	\$2,300	14	\$3,920	\$2,800
25" DBH	37.5	\$6,167	37.5	\$10,500	\$5,000
35" DBH	70	\$11,550	70	\$19,600	\$7,000
45" DBH	90	\$14,580	90	\$25,200	\$9,000
55" DBH	165	\$27,225	165	\$46,200	\$11,000