

Benefits and Costs of Urban Forests				
Costs	Reason	Concern	Notes	Stakeholders
Planting	Cost depends on species and size, site location, site preparation, and labor. Costs include purchasing the tree, paying for the site, preparation, installation, and initial care (1).	Many costs can be avoided by tree selection, site preparation, and planting techniques (1).	Cities spend about \$6.40 annually per tree for street and park tree management in prairie and mountain regions (2).	City municipalities, nurseries, home owners, business owners
Maintenance and removal	Costs vary by species and site locations. Regular maintenance can reduce future costs. Pruning cost depends on frequency, species, age, and location (1).	Important to know what funds and personnel are available for maintenance work (1).	Choosing a species that is compatible with the site can help reduce maintenance costs. Tree pruning is the largest expenditure, followed by removal, then planting costs (2).	City municipalities, nurseries, home owners, business owners
Irrigation	Cost of supplying irrigation system and water supply.	Soil needs constant measuring to avoid over-watering (1). As trees mature, they may require more water, but native trees may require less (2).	Selecting a drought-tolerant species can help reduce costs. Trees typically require 200-400 gallons per year during the establishment period (2). Newly planted trees require irrigation for 3-5 years (2).	Water organizations, city municipalities, residents, business owners
Insect and disease control	Cost of insect and disease control can be reduced by selecting a species that is resistant to local insects and diseases (1).		Planting a variety of species can help reduce this cost.	City municipalities, nurseries, home owners, business owners
Tree removal	Trees may need to be removed for a variety of reasons, such as storms, disease, and tree interference with local utility lines (1).	Trees have a potential to fall and can cause injury or death and damage to personal property. A tree may need to be removed if it interferes with water and sewage pipes or utilities (1).	Matching a tree's growth habits to its site may reduce the need for early removal. It may be less expensive to move the utility line than to remove the tree. The larger the tree, the more costly removal is (1). Trees in new residential areas are not keeping pace with those removed.	City municipalities, nurseries, home owners, business owners, tree removal services

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Fire protection	Homes built in wooded areas close to urban centers can increase wildfire damage (1)	Fire prevention, fire management, and fire suppression all cost money.	Local ordinances can help ensure protection. Green space can also reduce the hazards of wildfires.	Fire Service, Forest Service
Infrastructure and repair	Tree growth can damage utilities, sidewalks, curbs, and sewer and water pipes.	Matching growth characteristics to planting site conditions is important. Residents forced to pay for sidewalk repair may be less likely to opt for replacement trees (2).	Proper site and tree selection can minimize future infrastructure conflict. Sidewalk damage is the second most common reason why trees are removed (2). Many cities are using smaller trees to avoid power line and sewage pipe problems. While these trees create fewer problems, they are also less likely to reduce pollution and create shade (2). Public trees cost \$1.12/tree/yr; private trees cost \$0.11/tree/yr.	Local government, city municipalities
Wood salvage, recycling, and disposal	Cities recycle green waste from urban trees (2). Hauling waste wood and grinding are the primary costs. The cost of grinding the wood can exceed the cost of hauling and burning (2).		The net cost of waste wood disposal is less than 1% of total tree care. Colorado Springs trades firewood from removed trees to a local nursery for new trees (2 & 3).	Nursery, city municipalities
Litigation and liability	Legal costs can arise from tree damage to private property, if trees die after utility lines are installed or from damage caused by storms (1).		Careful planning can eliminate many of these costs. Public trees cost \$.05/tree/yr (2).	Local government, city municipalities
Storms	Hurricanes, ice storms, and tornadoes can cause major damage to trees.		Routine maintenance can prevent damage from storms. Street sweeping can prevent debris and reduce surface runoff pollution from entering the waterways (2).	Local government, city municipalities

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Program administration	Managing the urban forest requires planning and training of a workforce (1).		Fort Collins spends 12% of program costs on administration. Other cities spend \$5/tree/yr (2).	Non-profit organizations, local governments, education agencies
Allergies	Trees produce pollen that causes allergies (1).	Some cities have ordinances making it illegal to plant certain types of trees that increase allergies (1).	Controlling or regulating trees for this problem can increase costs.	Health care providers

Sources: 1. http://www.urbanforestrysouth.org/Resources/Library/Citation.2004-07-20.1358/file_name 2. http://cufr.ucdavis.edu/products/cufr_258.pdf 3. McGannon, 2002

The Tree Project: Phase 1 Report

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APPENDIX F

Trees Cost/Benefits

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