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NEWS RELEASE

USDA Forest Service

FOR IMMEDIATE RELEASE
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Recent Study Confirms that Trees are a Smart Choice for Albuquerque

Albuquerque, NM, October 6, 2006 – Albuquerque was recently named the third smartest place to live in America, and according to a new study by the USDA Forest Service, Center for Urban Forest Research, it is also a smart place for trees.

The City’s Open Space Division of the Parks and Recreation Department manages more than 20,000 trees, and a recent initiative by Albuquerque Mayor Chavez funds the planting of 2000 more each year. Dr. Greg McPherson, Director of the Center for Urban Forest Research says “I am particularly impressed with Mayor Chavez’s initiative. He is committed to trees in Albuquerque and rightly so. We found in our study that the city’s trees are dramatically improving urban life and making Albuquerque a more enjoyable place to live, work, shop, and play. Over the years, the people of Albuquerque have invested millions of dollars in the municipal forest. Citizens are now receiving a return on that investment.”

The study found that for every \$1 spent on care and maintenance, trees are paying back \$1.31 in benefits for stormwater reduction, energy conservation, and cleaner air. This is a 31% return on the investment. Not bad in today’s market.

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Albuquerque is home to 21,519 publicly managed trees, the majority of which are found in parks. “An interesting finding was that the age structure of Albuquerque’s municipal tree population appears fairly close to the desired distribution. We don’t find this very often,” said Dr. McPherson, Center Director. “And Mayor Chavez’s initiative to plant 2000 trees per year will help to maintain this distribution by replacing the older trees as they die off. The larger size classes are represented almost entirely by Siberian elms, which were heavily planted in the first half of the 20th Century and are nearing the end of their natural life span.”

The research in Albuquerque shows that the municipal street trees provide \$561,000 in annual benefits, about \$26 per tree, and only cost the city \$428,000 per year to maintain. “That is a significant return on your investment”, says Dr. McPherson.

The Center’s research clearly shows that healthy city trees improve air quality, lower summer temperatures, decrease the need for air conditioning, and reduce stormwater runoff. “These environmental benefits are important to the human health and well-being of Albuquerque residents, says Dr. McPherson. We also know that healthy street trees increase real estate values, provide neighborhoods with a unique identity, and increase business income.”

Albuquerque trees are also associated with some intangibles such as increased community attractiveness, stress reduction, reduced crime, and recreational opportunities that make Albuquerque a more enjoyable place to live, play, work, shop, and do business. “If we could put a dollar value on these kinds of tree benefits, Albuquerque’s return on investment would be a lot higher. Right now we can’t, but we are working on it,” says Dr. McPherson.

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The details of the study clearly show how municipal trees benefit residents. Like many cities in the southwest, Albuquerque is faced with hot temperatures for much of the year, requiring the use of air conditioners to cool homes and buildings. The study found that Albuquerque's trees have a great ability to moderate climate, thereby reducing energy use. Electricity saved annually in Albuquerque from both shading and climate effects of trees totals 1,482 MWh (\$116,847), and annual natural gas saved totals 48,708 therms (\$53,579) for a total energy cost savings of \$170,426 or \$8 per tree.

Human health is also dramatically affected by trees in Albuquerque. Citywide, annual carbon dioxide (CO₂) sequestration and emission reductions due to energy savings by public trees are 735 tons and 1,725 tons, respectively. CO₂ released during decomposition and tree-care activities is 128 tons. Net CO₂ reduction is 2,332 tons, valued at \$15,576 or \$0.72 per tree. Net annual air pollutants removed, released, and avoided average 1.04 lb per tree and are valued at \$23,862 or \$1.11 per tree. Ozone is the most significant pollutant intercepted by trees, with 7,929 lbs per year removed from the air (\$4,837), while sulfur dioxide is the most economically significant air pollutant whose production is avoided at the power plant, due to reduced energy needs (6,818 lbs per year; \$9,682).

The federal Clean Water Act requires municipalities to obtain a permit for managing their stormwater discharges into water bodies and identify the Best Management Practices (BMPs) it will implement to reduce its pollutant discharge. According to Dr. McPherson, "The good news for Albuquerque is that its street trees intercept 11.1 million gallons of stormwater annually, or 518 gal per tree on average. The total value of this benefit to the city is \$55,833 or \$2.59 per tree. We like to think of trees

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as mini-reservoirs, controlling runoff at the source. And Albuquerque's trees do that very well."

"The largest benefit to the residents of Albuquerque is the property value increase", according to Dr. McPherson. The value is just over \$295,000 per year to the community, or \$14 per tree on average. "Each homeowner can expect the resale value of their home to increase by 1% for each large front yard tree", says Dr. McPherson.

"Size is definitely a factor" says Dr. McPherson. The city's 1,436 Siberian elms produce the highest total level of benefits (\$98 per tree annually, 25% of total benefits). On a per tree basis, mountain cottonwoods (*Populus angustifolia*) are the next most valuable species, with benefits of \$75 per tree.

Albuquerque spends approximately \$428,500 in a typical year maintaining its public trees (\$20/tree). The highest single cost in the tree care budget is for administration (\$175,000), followed by pruning (\$103,500).

Dr. McPherson also points out that "Another way of describing the worth of trees is their replacement value, which assumes that the value of a tree is equal to the cost of replacing it in its current condition. Replacement value is a function of the number, stature, placement and condition of the cities' trees and reflects their value over a lifetime. As a central component of Albuquerque's green infrastructure, the 21,519 trees are estimated to have a replacement value of \$40.6 million or \$1,889 per tree.

"Like all cities, Albuquerque has room for improvement." Dr. McPherson points out. The report's recommendations include:

- Develop a strong young-tree care program that emphasizes reducing mortality. Irrigation, inspection and pruning on a two-year cycle will provide a good

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foundation for the many new trees being planted.

- Sustain benefits by investing in intensive maintenance of mature trees to prolong the functional life spans of these heritage trees. Develop a plan to replace the aging Siberian elms with trees of similar stature gradually before they must be removed.
- Conduct a canopy cover study of the city to identify and prioritize future planting. Streets, parking lots and schools may provide good opportunities for maximizing air quality, energy savings, and aesthetic benefits.
- Track the success of the newly planted trees to determine those most adaptable to the difficult conditions. Maintain a diverse mix of tree species to guard against catastrophic losses due to storms, pests or disease while concentrating on those that have proven most successful.
- Plant large species where conditions are suitable to maximize benefits.

“The city’s continued investment in the care and management of its trees is critical to ensuring that the community maintains or increases its return on investment into the future, says Dr. McPherson. “Cut back on the planting, watering and pruning of City trees and residents will ultimately experience a pinch in their wallets. The citizens of Albuquerque can rest assured that their trees are vastly improving their quality of life and that the money they are spending annually is a wise investment of municipal dollars. Continued management will ensure that the community increases its return into the future.”

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Note: The full report can be downloaded at:

http://www.fs.fed.us/psw/programs/cufr/products/cufr_674_ABQ_MFRA_for_web.pdf