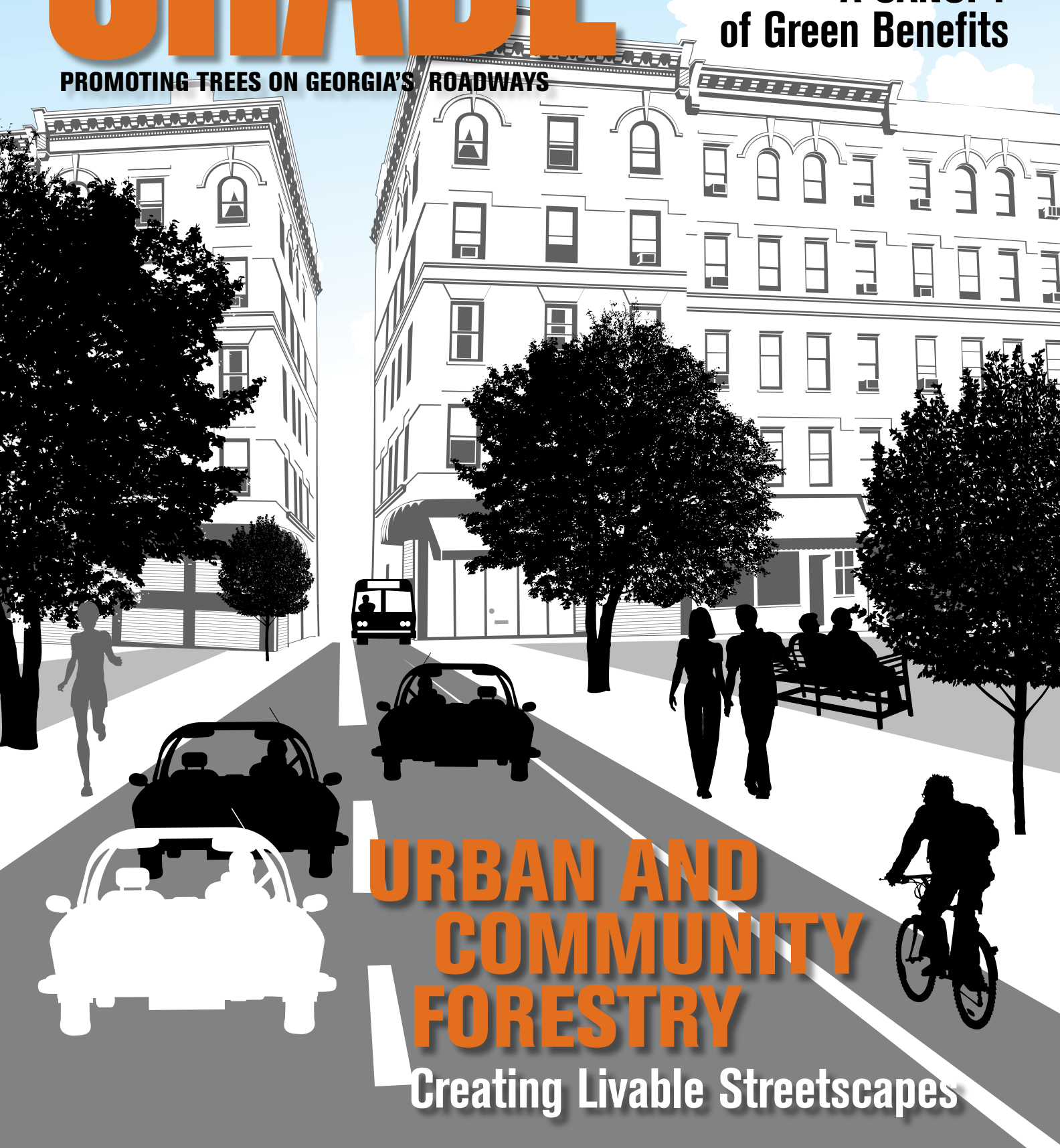


SHADE

PROMOTING TREES ON GEORGIA'S ROADWAYS

TREES and
TRAFFIC SAFETY

A CANOPY
of Green Benefits

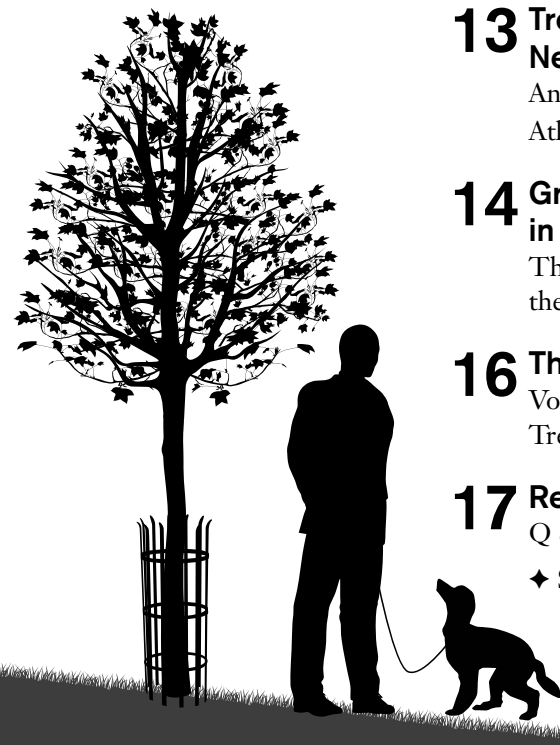


URBAN AND
COMMUNITY
FORESTRY

Creating Livable Streetscapes

SHADE

PROMOTING TREES ON GEORGIA'S ROADWAYS



1 Around the State

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Georgia Urban Forest Council (GUFC)

MISSION

To sustain Georgia's green legacy by helping communities grow healthy trees.

VISION

To be a broad-based leadership resource in promoting the importance of trees throughout Georgia by leveraging user-friendly technology, influencing the policy-making process and providing cutting-edge programming.

Acknowledgments

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Roundtable Explores Tree Projects



Oxford Roundtable participants discuss local tree programs.

The City of Oxford hosted a lively and informative Community Forestry Roundtable last July at historic Old Church in Oxford. Area tree board members and leaders gathered for presentations and discussions of topics such as successful tree board

projects, tree program funding sources and how to gain local tree program support in our communities. Connie Head and Beryl Budd made presentations on Georgia cities' current trends in urban forestry. The meeting also included a 30-minute walking tour on the City of Oxford's recreation trails.

Dr. Walker Honored For Commitment to Trees

PHOTO COURTESY OF JACQUIE RIVES



The urban canopy of Griffin, Georgia, has its own medicine man — a protector and healer whose life work has centered on his love of trees.

Jerry Walker, Ph.D. — known as Griffin's Tree Doctor — is a man of vision and dedication. His

efforts on behalf of trees earned him the Lifetime Achievement Award at GUFCA's Fall Conference in Stockbridge.

In the 1970s he started working as an advisor to the City of Griffin, inspecting trees and making recommendations regarding tree condition, maintenance and removal.

In 1989, Dr. Walker and others created an organization called Plant the Future, which has planted thousands of trees in Griffin. At present, Dr. Walker serves as president of the group. Since his retirement in 2000, he has continued to work tirelessly on behalf of Griffin's urban forest.

Former Baseball Player Hits a Home Run for Trees

What do major league baseball players do when they retire? If your name is Ryan Klesko, you devote yourself to educating people about trees. The former Atlanta Braves right fielder, along with teammate John Smoltz, owns Big K Farm, a 1,560-acre educational "forest" near Macon. The hub of these educational

facilities is an outdoor classroom — fittingly called "The Right Field Outdoor Class." Over the years, many urban groups have trekked through Big K, including students from elementary schools and area high school environmental science classes. Students have learned



Students learn about trees in outdoor classroom at Big K Farm.

about wise land use and the importance of trees and forest ecosystems. Big K has also hosted educators from around the state, as well as freshmen legislators from Georgia's General Assembly.

Replanting Will Restore Macon Gardens

For five years, Macon State College had been home to the beautiful Waddell Barnes Botanical Gardens, when a massive storm system hit Georgia's mid-state on May 11, 2008. By the time the storm passed through the area, the College had lost 90% of its campus canopy, along with its magnificent Gardens.



PHOTO COURTESY OF ROGER IDENIEN

Macon State College President Dr. David A. Bell proudly displays flag.

Help is on the way: A new master replanting plan promises a landscape that is innovative, eco-friendly and more beautiful than ever before. Recognizing Macon State's commitment to environmental campus stewardship, the National Arbor Day Foundation last year designated the school a Tree Campus USA.

CSX Plants in Historic Neighborhood

Trees Atlanta teamed up with CSX to replace trees lost in the March 2008 tornado in the historic Cabbagetown neighborhood of Atlanta. In November, some 50 CSX volunteers planted 65 trees, including spruce, loblolly pine, black gum and southern red oak, along Boulevard Drive.

The tree planting was part of CSX Trees for Tracks, a program that promises to plant one new tree for every mile of the railroad's 21,000 miles of track. "We had been wanting to plant the Cabbagetown area for a long time," says Blake Watkins, forest restoration coordinator for Trees Atlanta. "So the CSX project was a perfect opportunity for us."

“Trees and Transportation: The Urban Forest’s Role in the Safety, Health and Quality of Life along Georgia’s Roadways” was the theme at the 19th Annual GUFC Conference and Awards Luncheon, held Nov. 4–5, 2009, in Stockbridge. The topic generated plenty of discussion and idea-swapping.

AT THE Conference



1. Kathy Evans, Atlanta Tree Conservation Commission and Trees Atlanta’s Cheryl Kortemeier with photographer Kathryn Kolb; **2.** Miranda Roberts, director of the Merle Manders Conference Center, reads a proclamation that November 4 is Georgia Urban Forestry Day in Stockbridge; **3.** Bill Wright, Georgia Department of Transportation; **4.** Timothy Gay of Thomas & Hutton Engineering Company, Savannah — winner of Outstanding Streetscape Revitalization Grand Award for Bryan Square, waterSmart Demonstration Garden — with Larry Morris, Georgia Forestry Commission; and Eric King, GUFC President; **5.** Susan Reisch, Georgia Forestry Commission; talks with Dale Higdon, retired, Georgia Forestry Commission; **6.** The Merle Manders Conference Center.



7. G UFC President Eric King welcomes attendees; **8.** The CEU sign-up table is always a popular spot; **9.** India Woodson, arborist, DeKalb County, and G UFC Board Member; **10.** Columbus forestry administrator and G UFC board member Eric Gansauer and Albany arborist Ili Si Malone; **11.** The Gwinnett County Tree Advisory Committee receives the Outstanding Community Grand Award for Buffer, Landscape & Tree Ordinance Enhancements. Pictured are Larry Morris, Georgia Forestry Commission; Alicia McElheney, Gwinnett County planner; Nancy Lovingood, manager of long-range planning, Gwinnett County; Dale Higdon; and Eric King; **12.** Doni Jones, Don's Tree Service; and G UFC board member Kris Thomas, Dalton; **13.** Bartlett Tree Experts — one of many valued sponsors of this conference; **14.** James White, Columbus; and Tim Thoms of Thoms Trees and Plants; **15.** Smyrna Tree Board's Gretchen Musser talks with Connie Head of Technical Forestry Services; **16.** Janell Bazile, arborist, Atlanta.





Trees & Traffic

BUSTING THE

Kathy Wolf wanted to grab a quick dinner from the restaurant across the street from her hotel. It seemed like a simple task, yet proved anything but. After carefully winding her way down the wide, curved asphalt drive of the hotel (there was no sidewalk), she waited at length on a street corner for the light to change. When the walk sign finally glowed, Wolf started across. But she had barely made it halfway across the five lanes of traffic, when the sign blinked its warning that it was about to change, and Wolf had to dash the rest of the way. To reach the restaurant, she navigated the uneven terrain of a roadside that, again, lacked a sidewalk — while being buffeted by the wind and exhaust of cars as they zoomed past her at autobahn speeds.

And that was just half her journey; she still needed to retrace her steps back to the hotel.

Wolf, a research social scientist at the College of the Environment at the University of Washington, happened to be attending the Georgia Urban Forest Council annual conference in Stockbridge, Georgia, but she could have been in almost any community in the country. That's because the city road she was on, like city roads throughout the nation, was designed for cars, period. Forget pedestrians and bicyclists; these roads are made to move a lot of traffic quickly. While that design works wonderfully for our freeways, it does not work well in our urban and suburban areas.

"We have forgotten as a society how to design streets that do more than move traffic," says Eric Dumbaugh, program coordinator with the Transportation Planning Department at Texas A&M University. "We need to recognize that they need to do much more than that, at least if they're done well. Streets are what make the city work. They are where you interact with other people and where you experience the city."

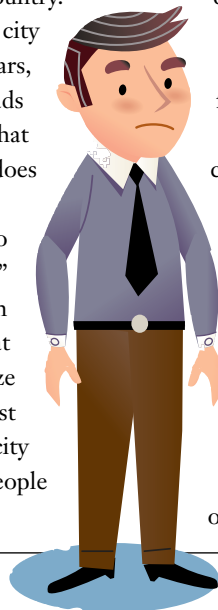
Increasingly, people are calling for planners and engineers to rethink their road design policies to make streets safer and more usable for all users — not just cars. "All across the country, people are trying to take their streets back," says Wolf. "No longer do they want the car to be the dominant — and perhaps the only factor — in transportation design. They want their kids to be able to walk to school. They want a variety of travel choices, including biking, walking and taking public transit. They want streets that embrace and encourage all lifestyles. And trees play an integral role in this. Trees seem to be the essential element that makes it all gel."

This last statement is akin to heresy in transportation planning circles. After all, trees allegedly kill. If you have them on the roadside, so the thinking goes, drivers will inevitably drive right into them, usually at high speeds, hurting or even killing themselves. Indeed, crashes with trees have decidedly worse outcomes. Of total accidents, 1% result in fatality and 12% in incapacitating injury, compared to accidents involving trees, of which 6% result in fatality and 40% in incapacitating injury. With this mindset, planners have designed roads for the past half century featuring wide shoulders and wider setbacks.

However, when you look at the data more closely, you discover that the majority of crashes involving trees take place in rural areas, and they involve high speeds with averages of 52 mph.

When you look at urban areas, the picture changes. In 2002, 37% of all accidents were urban accidents, and just 0.7% of those involved trees. In fact, recent studies have shown that not only do trees not increase risk, they actually reduce the incidence of crashes in urban settings.

"So if you are at a hearing or meeting and someone says that trees result in more crashes and make



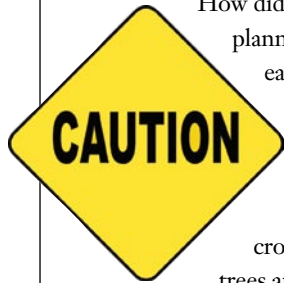
SAFETY MYTH





roads less safe, ask to see the numbers,” says Wolf. “Because the numbers just don’t support those conclusions. Trees on urban streets can increase safety.”

Caution! Trees ahead



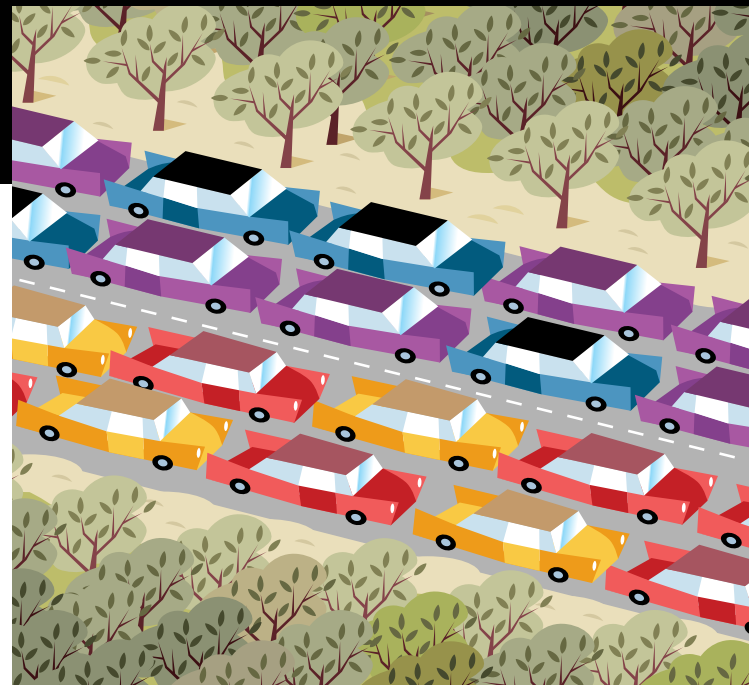
How did trees get such a bad reputation with street planners? It wasn’t always that way. Up until the early 1960s, planners pretty much designed streets according to their intended uses. So a downtown shopping district, for example, likely would accommodate shoppers with on-street parking, sidewalks, crosswalks, lights and, if only for aesthetics, trees and landscaping. The planners put the onus of safely navigating such streets on the drivers.

“In 1940, the earliest edition of AASHTO’s Green Book — which is the bible for engineers on how to design streets — cautioned that wider lanes and shoulders may invite higher speeds,” says Dumbaugh. “It promoted designing urban streets with urban features, including very narrow geometrics, sidewalks and landscape features.” (AASHTO stands for the American Association of Highway and Transportation Officials.)

However, the 1960 publication of Ralph Nader’s “Unsafe at Any Speed” changed the way engineers and planners thought about street design, according to Dumbaugh. Nader cited an epidemic of traffic injuries and fatalities, and urged planners to approach the problem just as medical epidemiologists would. He contended that drivers were going to make mistakes and run off the road — that was a given — so we needed to design the roads to make them forgiving of such mistakes — a sort of immunization for crashes.

The solution came from a surprising source — the nation’s freeways. These high-speed thoroughfares were never designed with safety in mind — they were made to move as many vehicles as quickly as possible. Nevertheless, researchers found that interstates reported fewer crashes than other roadway types. Designers concluded that this impressive safety record stemmed from the design features of the interstates, including wider lanes, wider shoulders and wider clear zones — meaning trees and other obstacles were pushed well back from the roadway.

Since these “safety” features worked so well for our interstates, why not apply them to all types of roadways? And by the mid-1960s, that is just the policy AASHTO adopted. Thus, the streets running through the downtown shopping districts and other urban areas came to look more



like interstates than main streets — with one exception. Designers posted lower speed limits.

Yield to speed conflicts



What we were left with in urban areas was a speed-limit sign that said one thing and a street design that implied something radically different. In such situations, drivers naturally let road design, rather than posted limits, determine their speed. Roads looked like interstates, and so people drove accordingly.

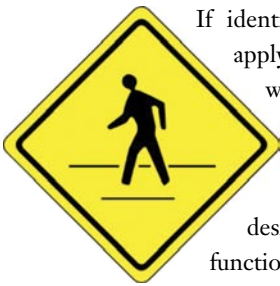
“In one study, researchers tried to get drivers to drive slower than the designed speed of the roadway,” says Dumbaugh. “They could do it if they were constantly looking at the speedometer. But if you gave them a task that took their mind off watching the speedometer, they naturally accelerated to the design speed of the road.”

That’s fine if you’re on an interstate. It doesn’t work very well if you’re on a minor suburban or urban arterial. That’s because unlike freeways, our suburban and urban streets are lined with shops, businesses, driveways, parking lots and corners. Cars constantly either pull on or off. Pedestrians dash across. Bikes swerve in and out of traffic. These interstate-styled streets aren’t designed to accommodate such elements of urban living.

Indeed, Dumbaugh looked at crash data for a 26-mile stretch of urban roadway over a five-year span to plot where crashes occurred. He found the lion’s share of crashes involved a vehicle leaving a high-speed roadway and turning into a drive or side street — generally at high speeds. In fact, he discovered that 83% of all urban fixed-

object crashes (crashing into a tree or pole vs. another car) occurred behind a drive or side street on a high speed roadway. “In these cases, it’s not really going to help if you set the trees back farther from the road, because the car is on a set trajectory when it leaves the road,” says Dumbaugh. “If you move the tree back 30 feet, that just means the car is going to hit it after traveling 30 feet rather than 5 feet.”

Promoting Ped Xing



If identifying one “safe” road design and applying it to all types of streets doesn’t work, what does? The answer, say a growing number of forward-thinking planners — is livable street design. These are streets designed specifically for their intended function — urban business core, urban shopping district, suburban mixed-use corridor, etc. Further, they accommodate all types of users, not just cars.

But are they safe? Yes, according to a growing body of research. Livable streets are consistently associated with decreases in both fixed-object and midblock (running into another car) crashes. According to Dumbaugh, the livable streets reported 40% fewer midblock crashes per vehicle mile traveled than roadway averages and 67% fewer crashes involving fixed objects than roadway averages.

Even more compelling, during the five years for which Dumbaugh collected data on the livable streets, there was not a single injury related to a fixed object crash nor a single traffic fatality involving either a motorist or a pedestrian. “These roadways were safer no matter how you slice it,” says Dumbaugh.

True, these street designs are not forgiving. They are chock full of obstacles such as trees, lights, pedestrians and parked cars. But when drivers see these conditions, they read the body language of the street and slow down. “When you put people in an environment that makes sense, they do amazing things,” says Dumbaugh. “They modify their behavior to accommodate the environment.”

As research continues to confirm that trees — at least in urban areas — are not the hazard they are commonly believed to be, and may even be beneficial to urban safety, transportation planners and road designers are having to rethink their design assumptions. This bodes well for urban trees.

“This is an exciting time to be doing what we do,” says Dumbaugh. 🌳

Working with the DOT

Urban foresters sometimes view Department of Transportation (DOT) officials as adversaries who have to be dealt with. That doesn’t have to be the case. Just ask Kris Thomas.

The landscape director for the city of Dalton, Thomas has worked closely with the Georgia DOT for well over a decade, making it a partner in a city-wide beautification project that began before the 1996 Olympics. “We’ve enjoyed a very successful relationship with GDOT, and our city is better off for it,” says Thomas.

Indeed, local urban forestry organizations can benefit from getting to know GDOT’s programs and policies. For example, GDOT maintains a list of research and planning studies that may impact local communities. “By going to our Web site, you can find out about public hearings and become involved,” says William “Bill” Wright, a landscape architect manager for GDOT. “It’s a great opportunity for you to step in and say, ‘I want more than just the basics.’”

“Normally when you see improvements beyond the norm — enhanced landscaping or bike lanes, for example — a community has come into play and said, ‘I am going to be here at the meetings; I am going to get what I want; and I’m going to bring something to the table, too.’”

Local communities are most likely to deal with

GDOT through encroachment permits. That’s because anything you want to do on a state right-of-way — including grading, putting in a driveway or planting, pruning or cutting down a tree — requires such a permit.

“Many communities aren’t aware of this requirement,” says Wright. “But it’s critical. The last thing you want to do is go out trying to do some good and end up doing harm. Atlanta has a lot of fiberoptic cables buried beside the roadways, for example. You don’t want to cut a cable when you’re planting a tree.”

You can save some time if you can connect with the right person at GDOT. The agency is divided into seven districts. “The district personnel should be your first point of contact,” says Wright.

To find the contacts in your district, go to www.dot.ga.gov and click on your county. It will bring up a list of your area offices, your district offices, your local construction office, maintenance office, right of way and utilities.

Once you find out who your local GDOT engineers are, get to know them. “The number one piece of advice I would give anyone trying to get in the door at GDOT is get to know your local engineers,” says Thomas. “Make them your friends. Put them on your call list and call them out to every event. They are essential, and they get the job done.”



A CANOPY OF B

For many years, urban forestry proponents relied on the soft sell when advancing the argument for street trees. Trees are beautiful. They break up the gray concrete with refreshing patches of green. Who doesn't love a good tree?

But the value of trees along urban transportation corridors goes far beyond their aesthetic appeal. They provide a range of valuable health, economic and environmental services — and that's not just tree huggers talking. Researchers have backed these claims with scientific studies, so the soft sell can step aside for cold, hard facts.

“As far back as Greeks and Romans, people have spoken of the value of having green in their urban environment,” says Kathy Wolf, a research social scientist at the College of the Environment at the University of Washington. “But what we have not had in our society is the analytics and economic evaluations, which are the coins of the land in terms of influencing policy. Now we have a critical mass of that sort of information.”

Physical health

Forget the couch — we have become a nation of car potatoes. The average American drives about 15,000 miles a year. Much of that mileage is logged traveling ever greater distances to work, shopping and entertainment as urban sprawl continues to put more miles between our homes and

everything else. But we also drive around the corner to pick up the dry cleaning or to drop the kids off at school.

Indeed, half of all the trips we take are three miles or less, according to “Active Transportation for America,” a report by the Rails-to-Trails Conservancy. These short trips could easily be made on bike or on foot, but we drive. Are we just lazy?

Actually, Americans would prefer to drive less. More than 50% of Americans said they would like to bike more and 55% said they would like to walk more, according to a national poll by Surface Transportation Policy Project (STPP). The problem is that our street design — which often lacks sidewalks, bike lanes, convenient crosswalks and/or bus shelters — discourages us from walking, biking or taking public transportation. Adding such features is an important step toward promoting active transportation. Adding trees and other landscaping features is another.

“It's not just about putting in a sidewalk or a bike lane, although those are important,” says Wolf. “It's about the environment and the landscaping along those sidewalks and bike lanes. That can play a big role in inducing people to actually use them.”

Published studies suggest that attractive, tree-lined streetscapes can lead to an increase in physical activity. In a study of European urban adults, residents of areas with the



ENEFITS

highest levels of greenery were three times as likely to be physically active and 40% less likely to be overweight or obese than those living in the least green settings. A graduate student at the University of Washington found that people who live in greener neighborhoods judge the distance to a service center to be less than those who live in a more barren setting, even though the distance is the same.

The health benefits of incorporating a green network of sidewalks, bike lanes and trails could be vast. Just modest increases in biking or walking for short trips would provide enough exercise for 50 million inactive Americans to meet the Centers for Disease Control's recommended activity levels, according to the Rails-to-Trails report.

Mental health

The term "road rage" wasn't coined until the late 1980s, yet just two decades later you'd be hard pressed to drive anywhere without seeing signs of it. Little wonder. Longer commutes and increasing congestion mean drivers spend ever more frustrating hours behind the wheel. In fact, the average traveler now wastes the equivalent of a full workweek stuck in traffic every year, according to the Rails-to-Trails report.

Driving in any condition is relatively stressful, and commuting on crowded, noisy streets may be one of the

most stressful experiences of urban life. Can trees help?

Scientists have long known that contact with nature is calming and restorative. Hospital patients who can see trees and greenery from their windows recover more quickly and need fewer pain medications than those who look out onto a wall or parking lot. Children with Attention Deficit Hyperactivity Disorder are better able to concentrate, complete tasks and follow directions after spending time in a green outdoor setting versus an indoor one. And a Cornell University study found that children who lived in greener settings suffered less distress from the traumas of childhood than those who live in more sterile surroundings.

Building on these findings, scientists have looked at the effect of roadside trees and vegetation on the stress levels of drivers. One such study, conducted by a team of social scientists at Texas A&M University, measured physiological stress indicators, such as heart rate, blood pressure and skin conductance of drivers in a lab study who were shown simulated videos. The drivers who viewed only a built-up, strip mall-style roadside environment were slower to recover from stressful situations. Drivers who encountered roadside natural scenes, such as forests or golf courses, returned to "normal" baseline measures faster with a greater ability to cope with other introduced stressors. "This suggests trees and nature have an immunizing effect," says Wolf. "A green commute can not only lessen a driver's stress, it can protect him against subsequent stressors."

Commercial health

It's been said before and can't be said enough — trees are good for business. Trees increase property values (a single large tree can add \$1,000 to \$2,000 to the value of a home or business.). Trees boost occupancy rates. And trees entice shoppers to come to a commercial district more often, stay longer and spend more.

Wolf was involved in a series of studies spanning three settings: neighborhood business districts in large cities, central business districts in medium-sized cities and main streets in small cities. In all venues, people not only responded more favorably to areas with trees, they attributed more favorable characteristics to the businesses located there and judged the product quality to be higher.

"People were attributing positive characteristics to businesses and their wares simply because of the presence of trees," says Wolf. "They reported that they'd be willing to pay between 9% to 12% more for identical products in these stores, compared to stores without trees."

If trees are part of a pedestrian/bicyclist infrastructure that encourages active transportation, they can help stimu-

PARKING SOLUTIONS

We're a nation of drivers, so it follows that we are also a nation of parkers. Indeed, a staggering 10% of all urban land cover is taken up by parking lots. That's because our parking codes are based on the highest possible use.

"Basically, that means the parking lots of malls are designed to meet the demand on the weekend after Thanksgiving," says Kathy Wolf, a research social scientist at the College of the Environment at the University of Washington. "So these lots are full a couple of days a year, but other than that, they are largely empty."

Empty, but contributing to the urban heat island effect, increasing storm water runoff and taking up land that could be put to other, perhaps more beneficial uses.

Our parking requirements are killing our cities, says Eric Dumbaugh, program coordinator with the Transportation Planning Department at Texas A&M University. We need to change the way we design our parking lots. Wolf offers these suggestions:

- **Shared parking.** There are many opportunities for sharing parking facilities. For example, an office complex can efficiently share its parking with restaurants and theaters since the office workers typically use the spaces during the day and the restaurant and theater patrons use them in the evening.

- **Narrower aisles and angled slots.** You can compress aisle width without compromising safety. One-way aisles with 45 degree or 60 degree angled parking slots take up significantly less space, yet are suitable for low-volume, light use.

- **Multiple surfaces.** You don't need to have the same surface throughout the entire parking lot. "In high traffic areas, sturdy concrete or asphalt makes sense. But in lower traffic areas, gravel or other pervious surfaces could be used."

- **Plant more trees.** Trees provide many benefits for parking areas. Here in the sunny south, trees reduce surface asphalt temperatures by 36 degrees and vehicle interior temperatures by 47 degrees. By absorbing carbon, they reduce the hydrocarbon emissions of parked cars. And they help absorb rain, reducing storm water runoff.

"You need to include these benefits in your purpose statement when designing parking code," says Wolf. "Incorporate scientific findings about the performance and function of trees. Parking lots, while just a small part of a community, are a very important opportunity for urban forestry."

late the movement of businesses back into the areas where people live. As compact, multi-use developments arise on local levels, travel distances for all types of transportation are shortened, encouraging even more active transportation.

Municipal health

If not gold, trees are worth their weight in municipal water-treatment facilities. And pollution abatement programs. And repaving projects.

That's because trees provide enormous value in lowering expenses through the public utility work they provide. Just consider their potential contribution in mitigating storm water runoff. By reducing the amount of water runoff and improving the quality of water that does run off, trees can save communities money in the construction of storm water control structures and water treatment facilities.

Proponents point to Portland, Oregon, as the poster child for using street trees to manage storm water. In its award-winning SW 12th Avenue Green Street project, the city retrofitted a downtown corridor to incorporate storm water planters. During a rain, water now flows downhill along the curb until it reaches the first of four storm water planters. Once that planter is saturated, the water flows downhill to the second planter and so on, until it reaches the last planter. With this innovative configuration, nearly all of SW 12th Avenue's annual street runoff, estimated at 180,000 gallons, is managed by its landscape system.

Besides filtering a city's water, trees filter its air, removing carbon, ozone and other pollutants. That's a service our cities desperately need. American Forests found that each person in the United States generates more than one ton of carbon dioxide per year by driving a car. One acre of trees can absorb approximately 2.6 tons of carbon per year — enough to offset the emissions of two drivers.

Not only do trees filter pollutants through their leaves, they also improve air quality by a cooling effect resulting from shade and from the evaporation of moisture from their leaves. This provides relief from the urban heat island effect, reduces nearby buildings' heating and cooling costs and reduces the frequency of repaving hard surfaces.

While all this hard data on urban forestry benefits undoubtedly plays a critical role in swaying street designers, it can't capture the transcendent benefit of trees. "These numbers, while they are very good in conveying quantifiable benefits, don't tell the whole story," says Wolf. "They don't convey the depth with which people respond to trees and green spaces. We are healthier beings when we live amidst nature and trees. That is the bigger picture." ❁

PHOTO OF CHARLOTTE, NORTH CAROLINA COURTESY OF WWW.COMPLETESTREETS.ORG



Why Complete Streets **MAKE SENSE**

If you drive a car, chances are you are pretty satisfied with our country's road system. It may get a little congested at times, true, but it can definitely get you where you want to go in an efficient manner.

But what if you walk? Ride a bike? Take public transportation? Use a wheelchair? It's likely you're not so satisfied with Main St. USA. And that's because our streets and roads, whether they are in rural, suburban or urban areas, were designed for cars and cars alone.

There is a growing nationwide movement to make our nation's streets safe and accessible for all users. Within the past three or four years, this movement has been codified under the Complete Streets Coalition banner, which

promotes policy for retrofitting existing roads and planning and designing new ones so they can safely accommodate all users, including the aged, children, people with disabilities and people who prefer active transportation.

Indeed, 30% of Americans don't drive a car. "Over 60 million Americans are too young to drive," says Philip Pugliese, bicycle coordinator for Outdoor Chattanooga and a member of the Complete Streets Coalition. "Another 30 million or so don't drive due to choice, economics, disability or other factors. If we want to create a truly multimodal transportation system, we have to provide opportunities for everyone."

What would a complete street look like? It would depend on where it was located and

the needs of its users. There is no one-size-fits-all. However, a complete street likely would incorporate sidewalks, bike lanes, convenient crosswalks, bus pull-in lanes with transit shelters and traffic signaling accessible by the disabled.



Pugliese points to Orlando's Edgewater Drive as a textbook example of a street retrofit. "This was a four-lane street with sidewalks, but we put it on a 'road diet,'" he says. "By taking out one of the travel lanes, we were able to accommodate bicycle lanes, make an additional buffer zone between pedestrians on the sidewalk and moving traffic and create a safer left-turn environment. It's existing at a higher capacity than what it was originally, since by having a single lane with a turn lane, you can actually carry the same amount of traffic."

The key to achieving a true complete street system, according to Pugliese, is adopting a thorough and effective policy the first time around. Keys to such a policy include:

VISION: "You must have a cohesive vision that brings focus to your vision," says Pugliese. "Decatur (Georgia) is a good example. They used their Health Impact Assessment program to look at the health impact of their transportation choices in the community, and promoting healthier transportation choices was a key vision for their formal complete streets policy."

CONNECTIVITY: "Complete streets is not about a single street — it's about creating a connected network that has transportation choice," says Pugliese. "A single street may not have all the elements of a complete street, but if it's part of a network, it still can be a successful implementation."

TRIGGERS: When do you trigger complete street policy? "You want to have a policy that applies to all transportation projects and phases," says Pugliese. "So if you are looking at a simple resurfacing of a roadway, that can provide an opportunity to restripe for a bicycle lane. If you are doing curb and gutter and adding a sidewalk, that's an opportunity to add a green buffer. Look at all the options, not just the very large new capital projects."

EXCEPTIONS: Many communities run into problems with their exception policy. Adopting a very specific exception process can cut down on such troubles. "As one key example, we want to shift the burden of proof," says Pugliese. "Right now, transportation engineers typically start from the center line when they are building roadways. Then they start marking off 12-foot travel lanes, and when they get to the edge or right-of-way, they are either out of space or they say, 'I guess we'll put in a sidewalk or maybe not.' We want to shift that burden of proof to look at the context for all users and start from the

edge of the roadway and work in. Look at the neighboring land use, look at the transportation context, and start with pedestrian and bike facilities. And require high-level approval if there is an exception."

FLEXIBILITY: Complete streets policy should also be flexible and use latest design standards. It is definitely an opportunity to use innovative techniques to reduce costs, and it is not a prescribed plan. "Not every street will look the same and not every street requires the same elements," says Pugliese.

PERFORMANCE STANDARDS: "Right now traffic engineers are very good at the performance standards they've been given for the last 50 years, which is automobile throughput," says Pugliese. "But we're not so good at getting other data, particularly bicycle and pedestrian data. Integrating that data into regular performance measures, so we can then further our policy in the future is very important."

So what is all this going to cost? Not a lot more than traditional road projects, according to Complete Streets. In Florida, which has adopted a complete streets policy, planners found that it added 3% to 4% at most to accommodate all road users up front. The figure loses some of its significance when you consider the potential for expensive retrofits in the future.

Yet the potential benefits of Complete Streets design are vast. Encouraging active transportation can help fight the epidemic of obesity, especially among children. "Just over a generation ago, more than 60% of our kids walked to school," says Pugliese. "Now it's about 13%. We have engineered activity out of our lifestyle."

Active transportation can also improve our air quality. Poor air quality in our urban areas is linked to increases in asthma and other illnesses. Yet if each resident of an American community of 100,000 replaced one car trip with one bike trip just once a month, it would cut carbon dioxide (CO₂) emissions by 3,764 tons per year in the community, according to Complete Streets.

And by 2020, more than 20% of Americans will be over 65 years of age. Many of them will be looking for transportation options beyond their car. According to Complete Streets, more than half (54%) of older adults who reported an inhospitable walking, bicycling and transit environment outside their homes said they would walk, bicycle and take transit more if their streets were improved.

"The streets of our cities and towns are an important part of the livability of our communities," says Pugliese. "They need to be accessible and safe for everyone." 🌱

Trees Link Atlanta's Neighborhoods

A green canopy of leaves and shade connecting one neighborhood to the next, all around Atlanta. That's the vision of Trees Atlanta and its partners who are busy developing and creating Atlanta's first arboretum. This arboretum will be an integral part of the highly-anticipated Atlanta BeltLine — a loop of greenspace, transit, trails, bike paths and new development along 22 miles of historic rail segments that will encircle the metro area.

Greg Levine, program director, Trees Atlanta, serves as spokesperson for the project. "It's a unique opportunity for Atlanta" he says. "This is a chance to connect neighborhoods to, as well as through, trees while becoming a regional asset for urban forestry."

The concept of an arboretum is new to many people. Quite simply, it is a collection of trees that is designed and planted for demonstration, education and display — an outdoor, living "tree museum."

Atlanta, known as a city in a forest, has not had an official arboretum, unlike many other large cities throughout the U.S. The Atlanta BeltLine provides a way to bring one to the city. "An arboretum shows off trees," says Levine. "It's a way to get people excited about trees and to appreciate their wonderful diversity."

Another benefit: It gets children outdoors and into the woods, and educates them about trees.

The original idea for the BeltLine developed in the mid-90s, but finally took off three years ago. Design of all the BeltLine Corridor components is expected to begin in early 2010.

Original planners were not thinking "green." As such, an arboretum was not included in the original plan, Levine says. But designers quickly took this concept and made it a basic component. "The beauty of the project now is that trees are a major component....any landscape architect



A beltline running through 45 neighborhoods in Atlanta will incorporate the longest arboretum in the country. The shaded areas, above, represent the arboretum.

fortunate enough to be working on the BeltLine will be including the longest arboretum in the country as a major part of their design."

As a result, the arboretum has become "the icing on the cake. It goes between all the layers of the project and all around it, connecting the entire beltline."

The BeltLine arboretum is based on the geography of neighborhoods encircling Atlanta. Landscape architects with The Portico Group developed a concept creating 14 "Natural Neighborhoods," which will connect the 45 existing Atlanta neighborhoods along the BeltLine. They are the foundation of the arboretum's path. "The plant collections for the arboretum will define and be defined by the surrounding neighborhoods and communities," Levine explains. "Each of the Natural Neighborhoods will have its own unique and carefully selected collections."

The goals for the collections in each neighborhood include utilizing native and regionally adapted plants, creating a distinctive and ordered planting design, identifying and protecting significant existing trees and removing invasive species. Every collection will have a theme that is in harmony with the particular neighborhood.

From its inception, it's been clear that an arboretum will enrich the project in many important ways; it will connect all aspects of the BeltLine, from transit to trails; provide educational opportunities for children and adults; encourage wildlife; promote volunteerism; boost tourism; and support art. "The cost is small for a big return," says Levine.

"Our mission is to plant and to advocate for trees. With the arboretum running through 45 neighborhoods, there's a great opportunity to do just that — to reach lots of people and to bring them something new and exciting."

GREENER ROADWAYS

In Three Towns

A love of trees and pride in community go hand-in-hand all throughout Georgia. Three towns — Savannah, Columbus and Thomaston — are among the many communities that work to improve their roadways through tree planting, protection and advocacy.

Representatives of these communities gathered at the recent GUFCA Conference to talk about positive changes in their towns as a result of street trees. Here are highlights of those comments.

Bob Hydrick, Trees Columbus

Long-time Columbus residents remember a time when trees grew over streets in graceful arches — when driving down the city's streets was like "driving through a tunnel of trees." Those tunnels disappeared over the decades — in fact, between 1950 and 1995 Columbus had lost half its urban forest. Trees Columbus came into being in 2001 with a mission to protect, preserve and plant trees wherever possible. Since then, the group has grown to 2,200 members and contributors who have planted more than 3,500 trees citywide.

Currently on their radar screen is the Veterans Parkway Streetscape. This major thoroughfare is the north-south corridor through Columbus's business district; it carries 20,000-plus vehicles a day. Plans call for installing new raised medians to connect with existing medians; run-



BOB HYDRICK



DALE THORPE



JODY NELSON

THREE TOWNS — SAVANNAH, COLUMBUS AND THOMASTON — are among the many communities that work to improve their roadways through tree planting, protection and advocacy.

ning electrical lines underground; moving telephone poles back from curbside; and removing over-the-street wires. Mast-arm signals will be installed and plazas will be built at each intersection with better crosswalks and improved handicap mobility. Street lighting will be enhanced, with pedestrian lighting behind the trees.

Landscaping will include five-inch oaks along both sides of the Parkway and crepe myrtles in the medians, which will be sodded. Cost of the \$4-million project will be covered by DOT stimulus fund grants, Trees Columbus funds and a grant from the Mildred Miller Fort Foundation. The entire project will be completed in 2011.

“The purpose of the project is to turn Veterans Parkway into a true parkway. It will be a signature street — something the people of our community can be proud of,” concluded Hydrick. “And visitors will feel as if they are some place special.”

Dale Thorpe, Savannah Tree Foundation

Savannah is all about history — even when it comes to tree protection. Some 30 years ago, it took three determined women, who were indignant about the rampant destruction of trees, to found the Savannah Tree Foundation. The women were appalled by plans to cut the trees along historic White Bluff Road on the south side of Savannah. They persuaded the contractor to delay the operation, while they lobbied the county to change the design of the road to include a median and four lanes that allowed for the preservation of the old trees. Their fight was successful, and the old trees were preserved.

Since then, the Foundation has not slowed down. “Trees are a part of Savannah,” said Thorpe, describing the 24 tree-filled squares that dot the city as “outdoor living rooms. Our tradition and heritage is living with trees.”

As early as 1895, a Savannah Parks & Trees Commission was authorized by the state legislature to have total control over the planting and upkeep of trees. However, the 1970s and '80s saw developers moving in the city — “and no one told them they had to put in trees.”

In stepping up its efforts for better roadways, the Tree Foundation has used a three-prong approach: education, advocacy and tree planting. They have brought in lecturers to educate the community — particularly about the importance of roads as a public space, not just a vehicular passageway. Their goal is for trees to be an integral part of the design infrastructure of the roadway.

The group also produced a state-of-the-trees report, which discussed preferred tree design with dedicated central medians. It called for redesign of existing roadways to

provide for good protection of existing canopies and plans for new trees.

Advocacy efforts have met with both success and failure, Thorpe acknowledged. Their latest victory was in the town of Tybee, where they fought to protect existing trees. “We are finally being listened to; things are finally happening.”

Volunteer planting efforts have involved reforestation of targeted roadways and access ramps.

With so many coals in the fire, the Foundation is optimistic about its role in preserving Savannah’s street canopies, said Thorpe. “For 26 years, we’ve been advocating for trees. We’re finally hearing our own words come back to us.”

Jody Nelson, Thomaston Tree Board

A small mill town in west-central Georgia is showing off greener roadways, thanks to its forward-thinking tree board. The Thomaston Tree Board, which oversees the development and implementation of tree ordinances in Thomaston, Georgia, is carefully stepping back into history to bring its community’s trees into the future.

The textile industry has long been a key part of Thomaston’s history. “The companies came in and built their mills, and they built their communities around the mills,” explained board member Jody Nelson. “Then they planted the trees. So all these old trees were planted at the same time.”

The board has been focusing for the last 10-15 years on these historic mill town areas. “It was time for some of those trees to come out and to be replaced with new trees,” Nelson said. “We’ve gone in and removed dangerous, hazardous or diseased trees and have planted a healthier mix. We’ve added diversity while creating an uneven-aged stand.”

The group has removed about 40-50 old trees per year from the roadways while planting 80-90 new balled and burlapped, 2-inch caliper trees.

Parking lots in Thomaston are also getting a greener look, thanks to a parking-lot ordinance that is being developed which will apply to new commercial or rebuilt areas. “Thomaston hasn’t had any ordinance at all,” said Nelson. “We are trying to establish larger trees around the perimeter of the lots, with small and medium-growing trees in the interior. We will also create islands in the lots.”

Another board project focuses on the Civic Center area and the roadway leading into Thomaston. “The road has been widened, so we have a clean slate to plant. We want to get a plan and do it in several stages,” said Nelson. “This is the main road coming into town, so we want to improve the look. We will create a gateway into town.” 🌳

The People Factor

Though only two years old, the Jefferson Heritage Tree Council has helped Jefferson earn Tree City USA designation, has earned two grants and planted hundreds of trees. Here's a look at three volunteers who have shaped the council.



Barbara Johnson, Harry Bryan and Mary Dugan discuss their favorite topic – Jefferson's trees.

"I'm one of those lifelong tree-huggers," says **BARBARA JOHNSON**. "I became an active environmentalist during the ecology movement of the '60s, and I've stayed involved as an environmental advocate since."

Today, as vice chair of the council, Johnson devotes her time to finding funding sources. It's been time well-spent. Despite having "absolutely no background in grant writing," Johnson helped secure two grants totaling \$25,000. "A council member who has experience writing grants worked closely with me, but it was strictly on-the-job training," she says.

While grant writing is her current mission, educating people is her passion. "I really love getting people to see beyond the individual tree and embrace the big picture," she says. "I mean, who doesn't like trees? But getting people to understand all the significant benefits trees provide, that gives me real satisfaction."

HARRY BRYAN knows trees.

After working for 36 years as an industrial forester for Bowater Inc., a paper products company, he certainly should. His focus these days, however, is a little different. "When you're working for a paper company, trees are a crop, just like corn or wheat," says Bryan. "You plant your trees each year, and 30 years later, you cut the trees you planted that first year and replant."

These days, Bryan helps people with any tree questions they might have. "I go out and identify trees, point out the dangers of falling on power lines, assess what kind of shape a tree is in, that kind of thing," he says.

When he is not answering questions about trees, Bryan is studying nature. "I keep a life list of everything I see — birds, trees, shrubs, wildflowers, vines," he says. "I have a notebook, and I write down the common name, the scientific name, where I saw it and when I saw it. I have quite a list."

During her long public relations career, **MARY DUGAN** has worked with a variety of tree-related organizations, including Georgia Pacific and the Georgia Forestry Commission. (She helped promote the GFC's 1997 successful attempt to break the world record in tree planting by planting 14,000 seedlings in under four hours.) But when she moved to Jefferson, she began to look at trees in a different way.

"There were gorgeous, tremendously large trees everywhere," says Dugan. "I got a 100-foot measure and I started measuring the trees around town. Then I started asking if there were any tree organizations in Jefferson, but there weren't."

So Dugan created one. "Mary is really the one who took the JHTC from an idea into a living, breathing organization," says fellow council member Barbara Johnson. "She was working with the Jefferson Historic Preservation Commission and she expanded the focus beyond historic structures to include the landscapes to which they were tied." 🌳

RECONNECT with FORESTS

The Georgia Urban Forest Council's mission is to "sustain Georgia's green legacy by helping communities grow healthy trees." 2009 GUFCC President **Eric King** examines the need to embrace the "wild side" of nature and the role that urban forests should play in our children's lives.

SHADE: What role does the urban forest play in our lives?

EK: Our urban forest serves a variety of roles that are essential to our well-being. Forests provide wildlife habitat and passive recreation opportunities, help with storm water control and filtration, and improve air quality. But another benefit of urban forests is just as important although more difficult to quantify: the role of urban forests as a model for children and adults to understand how nature works and why we should care about it. Our forests provide an opportunity to reconnect with, at the risk of sounding cliché, our "wild side."

SHADE: How have we become disconnected from nature, our wild side?

EK: The world we live in now is far removed from the one our great-grandparents knew. The natural rhythms and cycles that used to drive our existence – like knowing when to plant by judging the sun's shadow or when to gather hickory nuts for maximum flavor – are relegated to footnotes in the Farmer's

Almanac. As a consequence we have come to view nature, at best, as an accessory or, at worst, an inconvenience. By becoming separated from these natural rhythms, we are far removed from the consequences that our actions have on the world. Our trash magically disappears from the street, a garden hose left running shows up as a blip on the water bill and the carbon flowing from our exhaust slips into thin air. Yet all these actions are compounding to shred the environment as we know it.

SHADE: How can children benefit from urban forests?

EK: As we look at the range of challenges facing our children, a disturbing pattern of ailments is arising – from increasing cases of childhood obesity to a proliferation of ADD. While causality is difficult to pinpoint, one trend has become evident; children are spending less time outside engaged in unstructured free time within a natural environment. Richard Louv, author of *Last Child in the Woods*, used the term "nature-deficit disorder" to describe children who show marked signs of

behavioral issues caused in part by not spending enough time playing in nature.

SHADE: What can we do to help the forests?

EK: Our urban forests can provide the framework of what a healthy forest should look like. Once people see a real example, they will be better able to recreate one in their own yards, businesses or neighborhoods. What passes for nature surrounding most of us today is really just our attempt to keep nature bottled up – to stop change or ecological succession in its tracks. That is, we have imposed our own orderly structure on a process that is very different from nature's own ebb and flow. Ecological succession is a more or less orderly process of change within a natural community – for example, how a fallow field will go from bare ground, to grassland, then to scrub and eventually back to a mature hardwood forest. Our challenge is to understand that change in nature is good and to embrace the wild side of nature as a normal and healthy part of daily life. We need to understand not only what a healthy urban forest should look like, but also find every opportunity to restore damaged landscapes back to a healthy ecosystem. That means replacing manicured landscapes, such as high-maintenance lawns and shrub beds, with woodlands. We need to save the forest to save ourselves. 🌳

Smart Forestry Links

Alliance for Community Trees
www.actrees.org

American Forests
www.americanforests.org

Complete Streets Coalition
www.completestreets.org

Georgia Department of Transportation
www.dot.ga.gov

National Arbor Day Foundation
www.arborday.org

Rails-to-Trails Conservancy
www.railstotrails.org

Savannah Tree Foundation
www.savannahtreefoundation.com

Trees Atlanta
www.treesatlanta.org

Trees Columbus
www.treescolumbus.org

University of Washington College of the Environment
www.naturewithin.info/new.html

US Forest Service
www.fs.fed.us



www.gufcc.org

GEORGIA FORESTRY
COMMISSION



www.gatrees.org



www.urbanforestrysouth.org



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315 W. Ponce de Leon Avenue
Suite 554
Decatur, GA 30030
1-800-994-4832
www.gufc.org

Non-Profit Org.
U.S. Postage
PAID
Decatur, GA
Permit No. 300