



BY STEPHANIE VOZZA

FUEL ENGAGED

Chattanooga pursues a different kind of “alternative” lifestyle

Months before Thomas Edison installed Pearl Street Power Station in Manhattan and started selling electricity to New York City, the city of Chattanooga was lit up by the “Dynamo in Dixie.”

“In May of 1882, five members of the Brush Electric Light Company of Chattanooga installed carbon arc lights in downtown Chattanooga,” says Terry Boston, executive vice president of power systems operation at Tennessee Valley Authority (TVA). “Chattanooga had electric power long before most areas.”



The Brush dynamo—“dynamo” is an early term for a generator of electricity—was capable of lighting up to 39 arc lamps; 25 were installed in downtown Chattanooga. Since these early lamps used high voltage and generated intense light and heat, they were impractical for homes, and therefore used only for street lighting.

According to Boston, these five innovative men, who were prominent citizens and Civil War veterans, installed the system because they wanted to do something that would boost economic activity in the Chattanooga area.

More than a century later, Chattanooga sits on the edge of another technology certain to boost economic activity but also with the potential to revolutionize the transportation industry.

In June, TVA gave its elec-

PHOTOS COURTESY OF THE TENNESSEE VALLEY AUTHORITY



“Chattanooga had electric power long before most areas.”

—Terry Boston, executive vice president of power systems operation at Tennessee Valley Authority (TVA)

tric vehicle test track to the University of Tennessee-Chattanooga (UTC) and Advanced Transportation Technology Institute (ATTI), a nonprofit organization that advances clean transportation technology. The two entities have formed a partnership where engineers, professors and students will research and develop alternative-fuel vehicles including electric, hybrid and clean fuel vehicles such as those powered by the hydrogen fuel cell.

The test track was built during the first energy crisis 25

years ago to develop electric cars. In the '80s, fuel was plentiful and cheap, and interest in alternative fuel cars dropped. The one-mile test track has sat dormant since 1988.

“We will work in a strategic partnership to develop alternative fuels,” Boston says. Hydrogen fuel cell-powered vehicles as well as plug-in electric vehicles are two of the types of transportation that will be tested on the track.

“Given the high price of oil—up to \$70 a barrel—this is an excellent time to look into energy independence,” Boston says.

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“We need to reduce our dependence on foreign oil.”

Jim Frierson, ATTI's director of strategic projects, expects the track to become one of the country's premier proving grounds for developing the next generation of vehicles. But being on the cutting edge isn't new for this city.

“Chattanooga is a living laboratory of research-oriented thinking,” Frierson says.

In 1992, the Chattanooga Area Regional Transportation Authority (CARTA) became one of the nation's first transit systems to convert to electric vehicles. Today, CARTA has one of the nation's largest fleets of alternative-fuel vehicles, with 12 electric buses and five hybrids.

Chattanooga is a living laboratory of research-oriented thinking.”

-Jim Frierson,
director of strategic projects, ATTI

“Santa Barbara, Calif., was a few months ahead of Chattanooga, but we are the largest and certainly the most successful,” says Ron Sweeney, general manager of CARTA.

Sweeney says the switch was made when then Mayor Gene Roberts challenged CARTA to provide a shuttle route downtown and mandated “no smelly old diesel buses.”

“One of the most pioneering things Chattanooga has done was to make the move to replace its downtown bus shuttles with battery-powered and hybrid shuttles,” Frierson says. “The battery vehicles improve air quality, give a quiet experience for riders and move close to one million people a year.”

“A comparison was done by CARTA a few years ago when diesel fuel was approximately \$1.25 per gallon, and the electric buses were saving us roughly \$30,000 per year,” Sweeney says. “That number would be higher with today's pricing on diesel fuel.”

“People from all over the world have come to see how the city has done it,” Frierson says.



Chickamauga Track

UTC engineering professors are currently working on a hydrogen fuel cell, which works like a car battery, converting chemical energy into electricity. A CARTA shuttle bus powered by electricity from a hydrogen fuel cell could be on the streets by the end of the year.

"We are waiting on grant approval from the Federal Transit Administration to fund the project," says Sweeney of the \$1 million project. "The team players are CARTA, General Hydrogen (a Gallatin, Tenn.-based company that manufactures hydrogen fuel cells), the Center for Transportation and the Environment, ATTI and UTC."

The system, which has already been designed, offers advantages over battery-powered vehicles with a better range, performance and the ability to climb steeper hills. Researchers predict that hydrogen fuel-cell vehicles will be more popular than gas-powered automobiles by 2030, and will be the most produced vehicle by 2050.

Once built, it will be tested at the ATTI Test Track.

"This is one of the few places that is not a captive of an automotive company or the Environmental Protection Agency," Frierson says. "Anyone in the nation—or the world—can use it for developing new forms of transportation."

The 52-acre facility includes a 10,000-square-foot building with offices and bays for vehicles. The track is a banked oval that helps measure vehicle variables.

"Small companies are very aware that this is a facility that they can use one day at a time," Frierson says.

One of those companies is EVamerica, which announced in March its decision to locate an opera-

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A Kinsey Report

BY ALEXEI SMIRNOV

Every time he talks, it seems, Jon Kinsey finds a perfect segue to bring up the importance of building things downtown and enticing more people to populate them. He has a right to his mantra—Kinsey has been a downtown booster long before it became fashionable among his peers.

In 1984, Kinsey finished a one-year stint as treasurer of Johnston Southern, a Chattanooga holding company for bottling franchises that later merged into Coca-Cola Enterprises. He left to return to real estate development, a field in which he had been involved in one form or another since the age of 15, first under the tutelage of John Foy, one of the executives of legendary shopping-mall builder CBL, and later under supervision of equally illustrious developer and political financier, Franklin Haney.

Upon leaving Johnston Southern, Kinsey set up his own firm, which since 1984 has had a hand in many a hallmark development across the state. For instance, take his involvement with the first-ever project on Mud Island in Memphis. “People thought he was crazy to do something like that,” recalls Ann Coulter, a professional city planner who last year ran unsuccessfully for Chattanooga mayor. Kinsey approached Mud Island when it was an eyesore and helped shape it into one of the most attractive living spaces in Memphis. And he did it, says Coulter, without asking for incentives or looking for short-term gain. Kinsey’s firm has since participated in projects as distant as Washington, D.C., and as close to the home turf as Georgia. Kinsey was co-developer on four convention hotels in Atlanta, Chattanooga, Memphis and Nashville. (He arranged the UDAG grant financing in 1983 for what is now the Renaissance Hotel in downtown Music City.)

Kinsey brought his business savvy to the public sector when he was Chattanooga mayor between 1997 and 2001. During his tenure, the city built the Chattanooga Conference Center, a 200-room hotel, expanded the Chattanooga Trade Center and bought the first 1,000 acres of the old weapons plant for industrial park Enterprise South, which is now considered one of the best industrial sites in the state. (During the last couple of years, Enterprise South has been trying to entice, with the help of many Tennessee politicians, a major auto



River Pier Landing in Chattanooga, TN.



The Candy Factory in Knoxville, TN.

RENDERING COURTESY OF KINSEY PROBASCO HAYS

maker onto its grounds, but to no avail as of yet.) Kinsey defends that project by saying that it will take time, and once there is growth, "it will spill over everywhere." He adds that he does not have a financial interest in Enterprise South, nor with any other project he oversaw when he was mayor.

Some of Kinsey's projects, however, took "some pretty interesting partnerships" to get them going, concedes Coulter, who was head of the Chattanooga's city planning agency when Kinsey was mayor. One such partnership was questioned in 2004 over a potential conflict of interest by another Chattanooga mayor candidate, Dan Johnson. After Kinsey left the public sector, his firm bought the Smokestack Lot from the city to build a \$20 million mixed-use project, dubbed River Pier Landing. Johnson called on Kinsey's firm in 2004 to return the profits made from River Pier development because of the alleged conflict of interest it had upon hiring Ken Hays, the former president of Chattanooga's not-for-profit RiverCity Co., which facilitated the sale. But the Bob Corker administration and Hamilton County Mayor Claude Ramsey rallied behind Kinsey. The 18-condo tower is now one of most attractive residential buildings in town, Hays is still a partner at KPA, along with Ben Probasco, and Johnson's accusations never made it past newsprint.

A possible fallout from that episode may be that Kinsey now does more development work in Knoxville than Chattanooga. At press time, he was considering a lease of the SunSphere, the golden globe structure that is a landmark of downtown Knoxville's skyline, with possible plans to reopen the observation tower and eventually perhaps open a

restaurant. This spring, his firm closed on a \$1.6 million purchase of the Knoxville Candy Factory, which was part of the World's Fair. Kinsey plans to refurbish the seven-story building into a 47-condo tower by next summer. Also in Knoxville, he is working on 24 condos above retail space slated for completion next summer in the historic Market Square area, where his firm recently built a 675-car garage for the city. All this seems like a good investment given that Kinsey's River Pier condos in Chattanooga, which opened in April, are selling to the tune of \$1 million for roughly a 4,000-square-foot spread.

What does Kinsey see himself doing in the future? More condos, he declares. A shrewd businessman, last year he decided against building a \$17 million apartment complex downtown, not far from the future headquarters of BlueCross BlueShield of Tennessee. It was simply not economical, Kinsey says. Instead, he proceeded elsewhere with more condo projects and some medical office construction. Building medical facilities is a new area for the firm, and a little diversification doesn't hurt. KPA recently completed the \$10 million Health Park in East Brainerd, the largest new non-corporate office building in Chattanooga since 1984, and is now working on a \$9 million medical office in Cleveland, Tenn.

With all this work behind him, Kinsey can say that he truly arrived as a developer. Having his 26-year-old son Adam fully entrenched in real estate development (working at his father's firm along with his sister Melissa), Kinsey may even one day leave to try his hand at something other than real estate. **tn**



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The June 1, 2006, ribbon-cutting event



The ATTI Test Track will help the city “attract companies with new, cleaner technology. It shows that Chattanooga is on the leading edge of the technology curve.”

—Jim Frierson, director of strategic projects, ATTI

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tion in Chattanooga with the plans of becoming the premier designer, developer and manufacturer/assembler of electric and hybrid-electric medium-to-heavy duty vehicles in the United States.

“It made sense to locate in Chattanooga,” says Chairman and CEO Albert E. Curtis. “First, there are a lot of bus manufacturing capabilities in the Southeast with suppliers. We are able to use off-the-shelf components to reduce costs.

“And Chattanooga has a great history. Its electric shuttle is a tremen-

dous example of how people who want to can have a successful system. We needed to be in a city that believed in what we do. And the Tennessee Valley Corridor offers great support; ATTI is a great resource, as is the UTC SimCenter, Georgia Tech and the Oak Ridge National Laboratory.”

Research and development has begun at the ATTI Test Track. Production will begin early in 2007 at a Chattanooga manufacturing site. With an initial investment of about \$3 million, Curtis plans to build between 10 and 20 vehicles in the first year, growing produc-

tion to about five vehicles a month. EVamerica will employ about 25 people, adding employees as business grows. Curtis says he’s finalizing the designs for his first vehicle, a 22-foot shuttle bus.

“We’ll be building a prototype within six months,” he says. “Then we’ll be able to take commercial orders.”

The company is integrating SK International into EVamerica. SK International, founded by T. Suang Khuwatsamrit, is a bus-making company in Athens, Ga. The business is becoming a division of EVamerica. SK International designs power propulsion systems, and EVamerica will sell hybrid systems to other vehicle manufacturers.

EVamerica will also work on research and development of other advanced technology vehicles.

EVamerica picks up where Advanced Vehicle Systems left off. AVS, the company that supplied battery-powered buses to CARTA as well as other transit systems since 1992, shut down in 2003 after filing bankruptcy.

“AVS pioneered the field,” Curtis says. “The technology has advanced. We are taking a different approach. We have learned from their experience. It’s a matter of timing.”

Curtis says alternative-fuel vehicles must be used in the proper way without a one-size-fits-all mentality.

“Vehicles need to be customized for each application,” he says. “Cities that are flat need one type of hybrid versus a city that is hilly. It involves using the proper ratio of stored power or onboard power.”

Frierson says the track is an asset for the area’s economic development.



ATTI's Test Track

PHOTOS COURTESY OF ATTI/UTC

"The track is one more complement in Chattanooga's campaign for an automotive manufacturer," Frierson says. "It will help it attract companies with new, cleaner technology. It shows that Chattanooga is on the leading edge of the technology curve."

For UTC, it represents a teaching opportunity for its college of engineering. "The track is a crown jewel asset; it's a gift to have something like this," Frierson says.

Chattanooga's downtown revitalization has become a model for public/private development. Delegations from cities across the country and the world come to see what the city did. Now Chattanooga may be a model city for another reason.

"CARTA and Chattanooga will definitely be on the leading edge regarding the new technologies," Sweeney says. "I personally believe fuel cells remain many years down the road and are going to require entities like CARTA and our other team players to get involved, do the projects and ultimately work out the bugs. I believe in the short term and to bridge the gap, gas-ahol, bio-diesel and hybrids, in general, will be utilized the most over the next 10-year span."

Henry McDonald is chair of excellence in computational engineering at UTC's SimCenter of Chattanooga, which was established in 2002 to create research and education programs that provide technological innovation through engineering. He agrees that hydrogen fuel cells are the way of the future. He and his peers are working on a stationary power plant that generates electricity for homes and businesses; hydrogen is its byproduct.

"We will be providing hydrogen for use in the new vehicles," says McDonald, who adds that the SimCenter's current projects have just scratched the surface of what is to come.

"There is much more to be seen and to be developed," he says. "We've just started. But Chattanooga will remain a major player in the energy field." **tn**

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