

HIGHLIGHTS and INITIATIVES



EERC

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The EERC conducts unbiased,
analytical, and multidisciplinary
research designed to promote real-
world solutions to problems in the
fields of energy, environment, tech-
nology, and economic development.

AWARDS. Senior Research Associate **Greg Harrell** is a principle member of ALCOA's Energy Efficiency Network Lead Team, serving as primary industrial assessor of compressed air systems, steam systems, and cogeneration systems. Through 30 assessments over the past 24 months, the five-member team has identified more than \$50 million/year in energy savings in ALCOA plants throughout the United States and five foreign countries. The team received ALCOA's 2003 Environment, Health, and Safety Excellence Award for its achievements.


Jack Barkenbus, executive director of EERC and director of policy for the Waste Management Research and Education Institute (WMREI), recently announced several research policy grants. Awards to UT faculty included: **Gregory Reed** (head, **civil and environmental engineering**), who is leading a project that focuses on relationships between emissions and health problems; **Michael McKee** (**economics**), who is surveying citizen preferences in response to air-quality issues in East Tennessee; and **Kevin Robinson** (**civil and environmental engineering**), who is evaluating how exposure and risk perception affect attitudes regarding the land application of biosolids.

PROJECTS. The Tennessee Department of Transportation (TDOT) Senior Review Team recently announced preliminary results of a project review conducted through UT's Center for Transportation Research (CTR) for TDOT Commissioner Gerald Nicely. EERC Research Leader **Mary English** served as one of eight members of the Senior Review Team. The team, led by CTR Director **Steve Richards**, assessed the decision processes behind 15 controversial TDOT road projects. Other UT faculty members serving on the team were **Greg Reed**, **Tom Urbanik**, **Fred Wegmann**, and **Arun Chatterjee** (all of **civil and environmental engineering**).

PRESENTATIONS. The U.S. Environmental Protection Agency's Clean Air Act Advisory Committee met in October in Asheville, NC, to discuss initiatives to clear the nation's air. Research Associate **Jonathan Overly**, one of three presenters to the subcommittee on "Linking Energy, Land Use, Transportation, and Air Quality," discussed the East Tennessee Clean Fuels Coalition, its goals, and how alternative fuels could improve air quality.

EERC recently teamed with Tennessee-based Dale Supply Company to institute a quarterly series of "lunch-and-learn" sessions. **David Doane**, certified energy manager and EERC's director of energy research, organizes sessions and serves as moderator. Representatives from Bard Manufacturing, Roy C. Martin & Company, and Mitsubishi Electric Corporation made presentations at the inaugural luncheon held in August at UT's Conference Center Building.

Collaborative Planning

 Each *Highlights and Initiatives* back page presents a closer look at one of our current projects or activities. This edition focuses on a report aimed at improving communication and coordination between land-use planners and transportation planners.

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Collaborative Planning

UT researchers help planners in Tennessee envision alternative scenarios to traditional growth patterns. • BY ELISE LEQUIRE

“Planners need to develop a common language and use common metrics when planning for transportation and land use.”

IN HOPES OF IMPROVING communication and coordination between land-use and transportation planners, researchers at the University of Tennessee’s (UT) Energy, Environment and Resources Center (EERC) recently submitted a report to state and regional agencies responsible for long-term planning.

The two-part report, “Linking Transportation Planning and Land Use Planning,” focuses on a five-county pilot area in the Nashville metropolitan region. Concerns about air quality were a driving force behind the report, says Mary English, EERC research leader and lead author of one part of the report on evaluating and improving links between transportation and land-use planning.

“Planners need to develop a common language and use common metrics when planning for transportation and land use,” English says.

Likewise, transportation and land-use planners need to synchronize the time frames they use in long-range planning, use similar population and employment forecasts, and utilize the same base data to generate forecasts and determine plans of action. To that end, the report recommends that planners adopt a comprehensive, integrated computer modeling tool to forecast land-use and transportation patterns and assist planners in the decision-making process.

Most metropolitan planning organizations of significant size do try to predict future transportation trends, says Jerry Everett, research director of UT’s Center for Transportation Research and co-author with Fred Wegmann (civil and environmental engineering) of the companion part of the report on transportation/land-use models. “Travel-demand forecast modeling

uses a series of mathematical relationships to predict the amount of travel on a highway in future years,” Everett says.

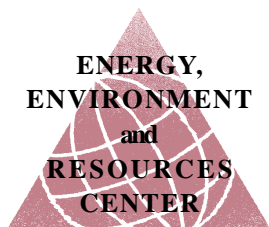
The team’s research led them to the Urban Landuse Allocation Model (ULAM) developed by Mike Brown, president of Transportation Planning Services, Inc. and a professor of Urban and Transportation Planning at the University of Florida in Gainesville. Florida has adopted ULAM throughout the state to help predict how changes in transportation affect land-use patterns—and vice versa. “Land-use planners can review the impacts of large-scale development, for example a regional mall, in one area and see how that will change patterns elsewhere,” Brown says.

ULAM can also model the effects of siting new schools, installing water and sewer lines, or developing a new subdivision on vacant land. “ULAM can help planners alleviate congestion, reduce the number of vehicle miles traveled, and as a result, improve air quality,” Brown says.

Vehicle miles traveled in Tennessee increased more than 30 percent between 1992 and 2000, and traffic is predicted to grow steadily for the foreseeable future. A mix of local, state, and federal initiatives, voluntary or regulatory, will be needed to counter the rise in vehicle emissions.

According to a July 2003 report, during the past decade Tennessee has used little more than 60 percent of federal funds available for congestion mitigation and transportation enhancement while spending nearly all available National Highway System funds for road building.

Those figures could change, however, as TDOT develops the state’s comprehensive 25-year transportation plan and considers alternatives to the traditional road-building paradigm. •



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