Center for Urban Transportation Research

College of Engineering
University of South Florida
Tampa
CUTR

- Established 1988 by Florida Legislature
- Applied research
- Technology transfer / training
- Education
- Multi-disciplinary
- “Real world” experience
CUTR Advisory Board

- John Beck, *Esq., Chair*
- William McDaniel, *URS Corp., Vice Chair*
- Denver Stutler, *Secretary, FDOT*
- Thaddeus Cohen, *Secretary, FDCA*
- Colleen Castille, *Secretary, FDEP*
- James Holton, *Florida Transportation Commission*
- Arthur Kennedy, *U.S. Congressional Staff*
- Kimberlee DeBosier, *Bayside Engineering*
- Roosevelt Bradley, *Miami-Dade Transit*
- William Sheppard, *Transportation Consultant*
- Robert Skinner, *National Academy of Sciences*
- Norman Mansour, *Commercial Real Estate*
Vision

To earn a national reputation through excellence and innovation in transportation research.
In 1988, we were a very small group of dedicated researchers who built their own office walls...
to today’s large organization of dedicated faculty, staff & students . . .
in a new building with classrooms, conference rooms, and offices!
CUTR’s Research Program

- 140+ active research projects
- $8 million in annual research
- 50 full-time research faculty
- 25+ student researchers
CUTR Research Program Areas

- Program Evaluation and Economic Analysis
- Planning and Corridor Management
- ITS, Traffic Operations, and Safety
CUTR Research Program Areas

- Public Transportation
  - Transit Operations
  - Transportation Demand Management
  - Transportation Management and APTS
  - Technical Assistance and Training
  - Mobility Policy Research
Transportation and Growth Management

- Florida Transportation Commission Evaluation of Regional Planning
- FDOT Implementation of SB 360
- FDCA Transportation Concurrency and Impact Assessment
- Florida Transportation Commission Assessment of Growth Management
Florida Transportation Commission
Growth Management

- Evaluate and monitor new legislation
- Evaluate
  - White paper on policy implications
  - Assess and comment on legislation
- Monitor
  - Work Program analysis
  - Comparison new vs. adopted
Comprehensive Assessment of 25 MPO Plans

- Evaluated all aspects of long-range plan documents
- Recommendations resulted in significant improvements to MPO planning process
- Estimated 20-year statewide financial shortfall:
MPOAC Institute

Develop and deliver an on-going training program for MPOs

- Phase I: Identify training needs
- Phase II: Develop/pilot test training
- Phase III: Deliver training
Access Management and Corridor Preservation

- Strong partnership with FDOT
- Equitable methods to preserve rights-of-way, protect private property rights
- Interchange areas
- US 19 / US 27 / others
- Tallahassee Blueprint 2000
Access Management Manual

- First national manual for practitioners
- FHWA funding and TRB oversight
- Published by TRB in 2002
Interchange Access Management

- Land development and access management strategies for interchange areas
- Benefit/cost analysis of extending access control lines near interchanges
Access Management Training and Outreach

- Florida
- Kansas
- Indiana
- Iowa
- Arkansas
- New York
- Kentucky

Speaker stresses need for thorough road planning and land development

By CHRISTINA ESCUDERO

Minors of 100 University of Arkansas engineering students and faculty gathered at the Bell Engineering Center yesterday to hear Kristine Williams, a nationally recognized expert in land development, talk about the importance of access management and the planning of roadways.

Williams, a senior research associate with the Center for Urban Transportation Research at the University of South Florida in Tampa, emphasized that road and highway planning is so new that it should be important to all students who wish to work in land management. The increase of highways brings up land values, she said, and higher land values prompt development, which must be well thought out.

"If we don't watch how we manage land, we'll create traffic conflicts," Williams said to students. "This is a process that is interdisciplinary. It involves engineers, planners and elected officials."

Frequently suffers from typical road problems, such as inadequate design in driveways, too many driveways and too many access points, Williams said. More that are directly connected to the street or highly accident-prone. Excessive access points can increase a roads crash rate by as much as 40 percent, she said.

"We don't want cars backing blindly into 40 mph traffic — it's unsafe," Williams said.

The key to good land and road development is to eliminate traffic conflict points such as areas that merge, divide, cross or meet, Williams said. Even though less driveways are typically better, unnecessary, well-placed medians can make for safe road conditions and accommodate more drivers at the same time, she said.

"What we're learning is that medians can enable us to have more access points," Williams said. Williams also stressed that major roads and highways should have no more than an average of two traffic lights per mile.

The numbers and locations of our signals is important to the efficiency of our entire road system, she said.

Williams said legislation should be introduced that requires planners to get a permit for such access points they intend to make on a road, as well as restrictions on how close driveways can be.

While engineers and planners may be required to create intricate

200 officials grapple with traffic congestion

Conference suggests ways to improve flow

By BENNETT J. LOUDON

"One of the reasons why you see so much congestion is because of access problems. It just hasn't been adequately looked at as an area grows," said Kristine W. Williams, a senior research associate in the Center for Urban Transportation Research at the Univeristy of South Florida in Tampa.

Not only do congested roads mean longer travel times, they also can lead to more accidents, more danger for pedestrians and less attractive landscaping.

Part of the problem with many roads is that they often are not planned without cooperation between different agencies.
Best Practices for Incident Management in Florida
FIGURE 22  Crash resulting in spilled cargo obstructing all travel lanes. (Courtesy: New Jersey DOT.)
Unmanned Aerial Vehicles for Traffic Management, Monitoring and Emergency Response
A Toolbox for Reducing Queues at Interchange Off-Ramps
National Center for Transit Research (NCTR)

- Congressional designation in 1991
- $2 million annual funding
- Partnership with FDOT
- Mission: “To enhance the relevance and performance of public transportation and alternative forms of transportation in urban areas”
- Largest concentration of public transportation researchers in a single university in the U.S.
Activities of NCTR

- Completed 75+ research projects, made 280+ presentations at professional conferences
- Provide funding/work experience to student research assistants to help develop the next generation of transportation professionals
- Conduct extensive information sharing
- Leverage skills and knowledge gained to expand CUTR program
Selected NCTR Projects

- Journal of Public Transportation
- Lessons Learned in Transit Efficiencies and Revenue Generation
- National TDM and Telework Clearinghouse
- Benchmark Rankings for Transit Systems
- Design Elements of Effective Transit Information Materials
- A ROI Analysis of Bikes-on-Buses
Miami-Dade Transit Facilities & Equipment Plan

- New FTA requirement
- Document and demonstrate adequate maintenance of buildings & equipment
- CUTR/ MDT plan will be used as national model
SAFE Council

- Legislatively created to recommend airport security enhancements
- Annual Master Plan required
- CUTR has prepared 1st two plans
- Recently approved for Year 3

Aviation Fuel Tax Comparison FY 2006 to FY 2012

Total Enplanements - 1988-2023

Commercial Enplanements (Millions)

Historic
Forecast
Tampa International Airport Economic Impact Study

- Part of Airport Master Plan update
- Collaboration across CUTR
- Conservative approach
- $2.54 billion/yr. to Hillsborough, Pasco & Pinellas Counties
Potential for Reserved Truck Lanes in Florida

- Determine Potential for Exclusive Truck Lanes or Truckways in Florida
  - Develop Methodology for Florida Site Selection
    - GIS used to identify priority locations
  - Detailed Evaluation of Selected Florida Sites for Potential Application

- Sponsor - Florida DOT
Toll Agency Performance Metrics

- Working with Turnpike Enterprise last several years
- Now assisting TEAM FL with measures of a group of toll authorities
- Researched best practices, applying those principles
National Bus Rapid Transit Institute

- Established by FTA
- USF/CUTR and UC-Berkeley
- BRT typically 1/3 cost of light rail
- 1.75 million/year next 4 years
Bus Rapid Transit (BRT)
NBRTI Activities

- 2004 TRB National BRT Conference, Denver
- Miami-Dade MPO BRT Sketch Plan
- Conference presentations, BRT technical committees
- “Characteristics of BRT” (FTA)
- BRT workshops throughout U.S. with ITE/ASCE
- TCRP project, panel
- BRT system tours: Ottawa, Los Angeles, Vancouver, Europe
- BRT service evaluations: Orlando, Oakland (CA)

BRT Quarterly newsletter, website
Transportation Demand Management (TDM)

A set of specific strategies that foster increased efficiency of the transportation system by influencing travel behavior by mode, time, frequency, trip length, cost, or route.
Selected TDM Research

Past:
- Worksite Trip Reduction Model and Manual
- Analyzing the Effectiveness of Commuter Benefit Programs
- Commuter Choice Program Case Study Development and Analysis

Present:
- Traveling Smart: Increasing Transit Ridership by Automatic Collection of Individual Travel Behavior Data and Personalized Feedback (TRAC-IT)
- Return on Investment Analysis of Bikes-on-Bus Programs
- Incorporating TDM into the Land Development Process
- Wireless Video for Instant Access (Wi-VIA) Security System
Intellectual Property Efforts

- **Current Patents Pending**
  - Technology to Assist Transit Riders with Special Needs

- **Two Major Awards by ACT – TDM Institute**
  - TCRP Project “Analyzing the Effectiveness of Commuter Benefits Progress”
  - Young Researcher Award to Sasha dos Santos “The On-Line Travel Options System”
Florida Maintenance Training and Technical Assistance Program

- Trained 2,000+ technicians
- Developed state curriculum and contracted training
- Conducted study on Repair Time Standards for Transit Vehicles
- Received National Transit Institute’s “Achievements in Transit Training – Innovation in Training” Award
Florida Vehicle Procurement Program

- Organization and administration of statewide transit vehicle procurement contracts
- In-state FVPP Inspection Facility – Tallahassee
- Purchased 1,941 vehicles to date
- FTA 5310 Program Administration
- Florida Department of Transportation—Davis Productivity Award
Trends and Conditions Research

Pocket Guide to Florida Transportation Trends & Conditions

Florida Department of Transportation

FLORDA TRANSPORTATION INDICATORS

FATALITIES ON FLORIDA'S PUBLIC ROADS

Office of Policy Planning
Summer 2004

2003 2004

Sept Oct Nov

0 50 100 150 200 250

Fatalities
T-BEST Model Development

T-BEST Arc
Transit Boardings Estimation and Simulation Tool

2004

Florida Department of Transportation Public Transit Office

v 1.1

USF
Expert Evaluation and Review

Corridor One Travel Demand Forecast Peer Panel Chair, Harrisburg, PA.

Dulles Corridor Major Investment Analysis, DEIS Evaluation

Florida High Speed Rail Ridership Forecasting Peer Panel Chair
CUTR Education Program
Education Program Activities

- Oversight of STC Student Program
- Support of student research assistants
- Teaching
- ITE student chapter
- Oversight of Graduate Interdisciplinary Transportation and Transportation Systems Analysis Certificate Programs
- Thesis and dissertation opportunities
What about the future?
Strengths

- Talented, dedicated employees
- Strong partnerships
- Relevance
- Responsiveness
- Multidisciplinary approach
- Clear motivations – “making a difference”
Vision

- To earn a national reputation through excellence and innovation in transportation research

- To help USF become a truly prominent national research university