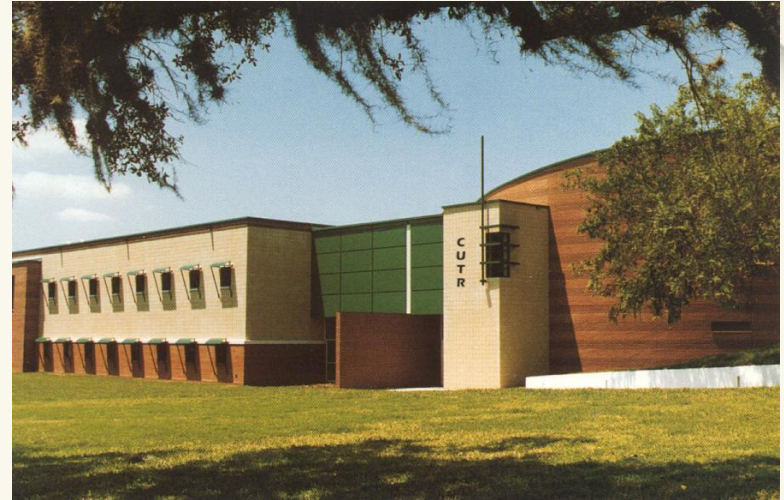


Center for Urban Transportation Research

**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.**



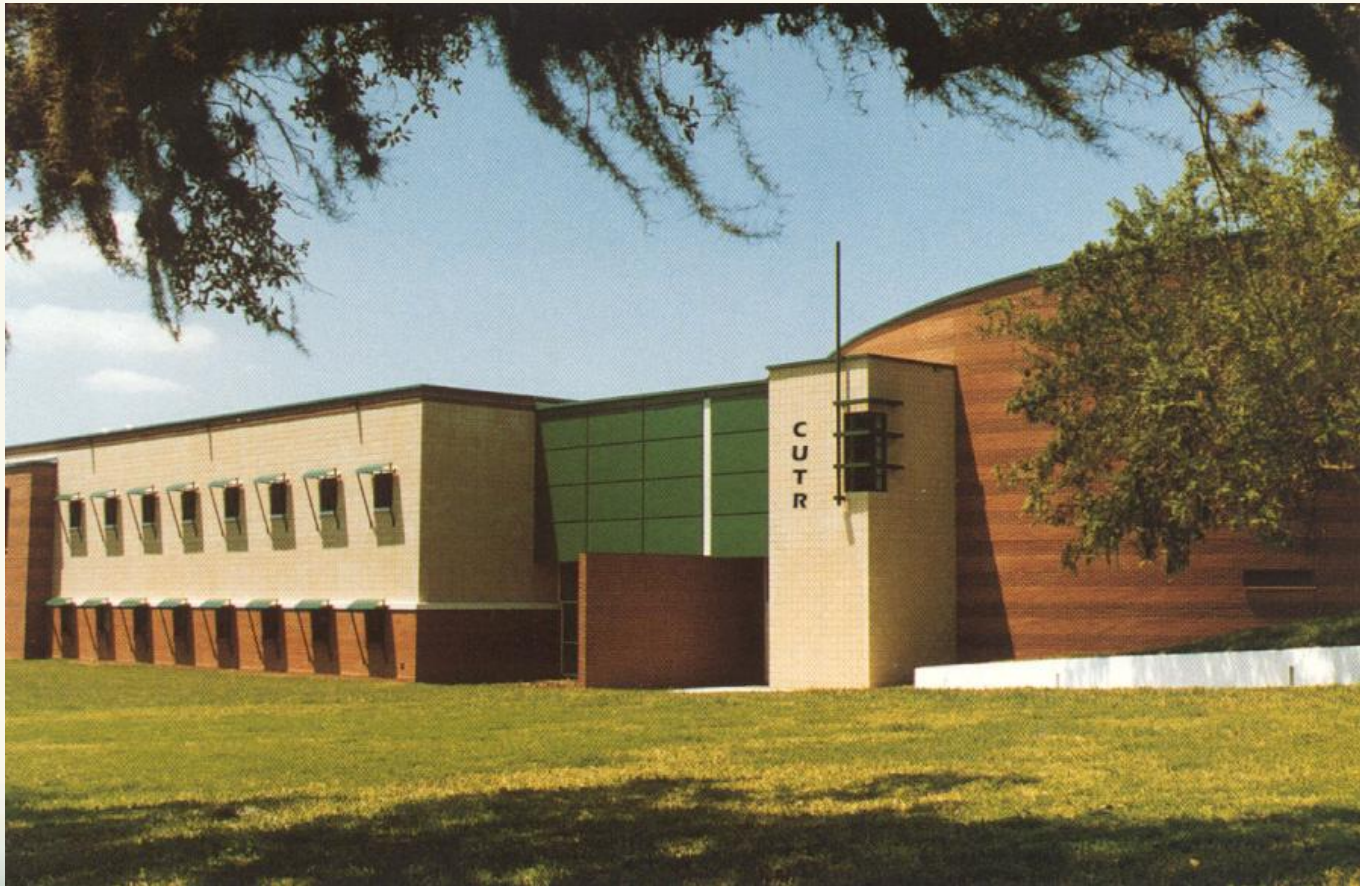
**In 1988, we were a very small group
of dedicated researchers
who built their own
office walls . . .**



**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**

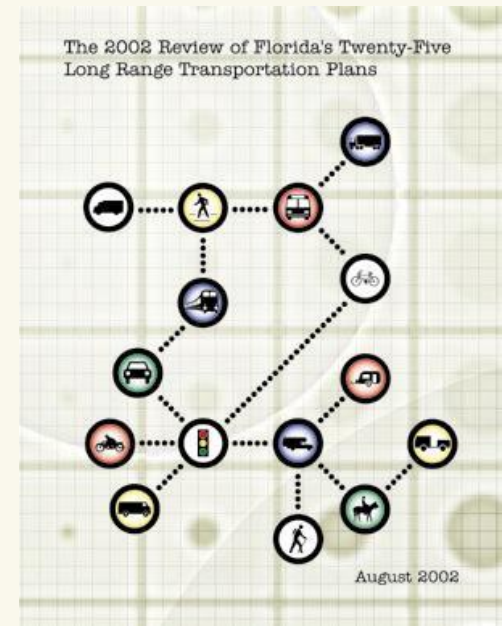
Florida Transportation Commission Growth Management

- **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:
 - 1997 – \$22.3 billion (*1995 \$*)
 - 2002 – \$37.7 billion (*2000 \$*)



MPOAC Institute

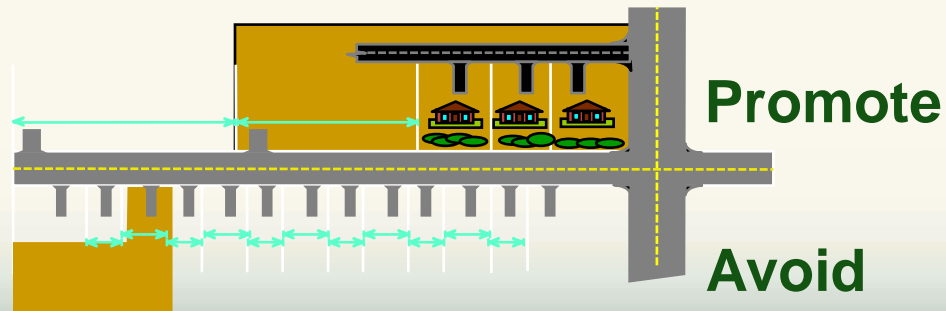
Develop and deliver an on-going training program for MPOs

- **Phase I: Identify training needs**
- **Phase II: Develop/pilot test training**
- **Phase III: Deliver training**

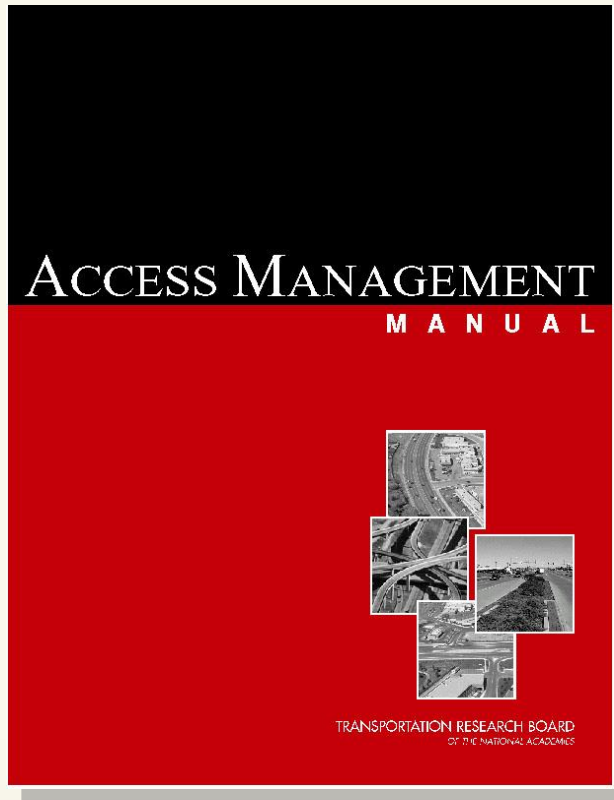


Access Management and Corridor Preservation

- 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
- TRB – National Access Management Manual



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

Staff Writer

More than 100 University of Arkansas engineering students and faculty gathered in 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 at Tampa, emphasized that road and highway planning is an issue that should be important to all students who intend to work in land management. The existence of highways brings up land values, she said, and higher land values promote 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."

Fayetteville suffers from typical road problems, such as inadequate depths to driveways, too many driveways and too many access points, Williams said. More

that are directly connected to the street are highly accident-prone. Excessive access points can increase a road's 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 minimize traffic conflict points such as lanes that merge, diverge, cross or weave, Williams said. Even though less driveways are typically better, numerous, well-planned medians can make for safe road conditions and accommodate many driveways 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 separations 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 each access point they intend to make on a road, as well as restrictions on how close driveways can be.

While engineers and planners may be tempted to create intricate



200 officials grapple with traffic congestion

Conference suggests ways to improve flow

Kristine Williams
University of
Importance c
how they sho

By BENNETT J. LOUDON
STAFF WRITER

Reducing the number of entrances to malls, fast-food restaurants and other businesses could make driving safer and keep motorists moving on busy highways.

That was one of the messages at a transportation conference yesterday at the Lodge at Woodcliff in Perinton

"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 M. Williams, a senior research associate in the Center for Urban Transportation Research at the University 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 planned without cooperation between different agencies

Best Practices for Incident Management in Florida



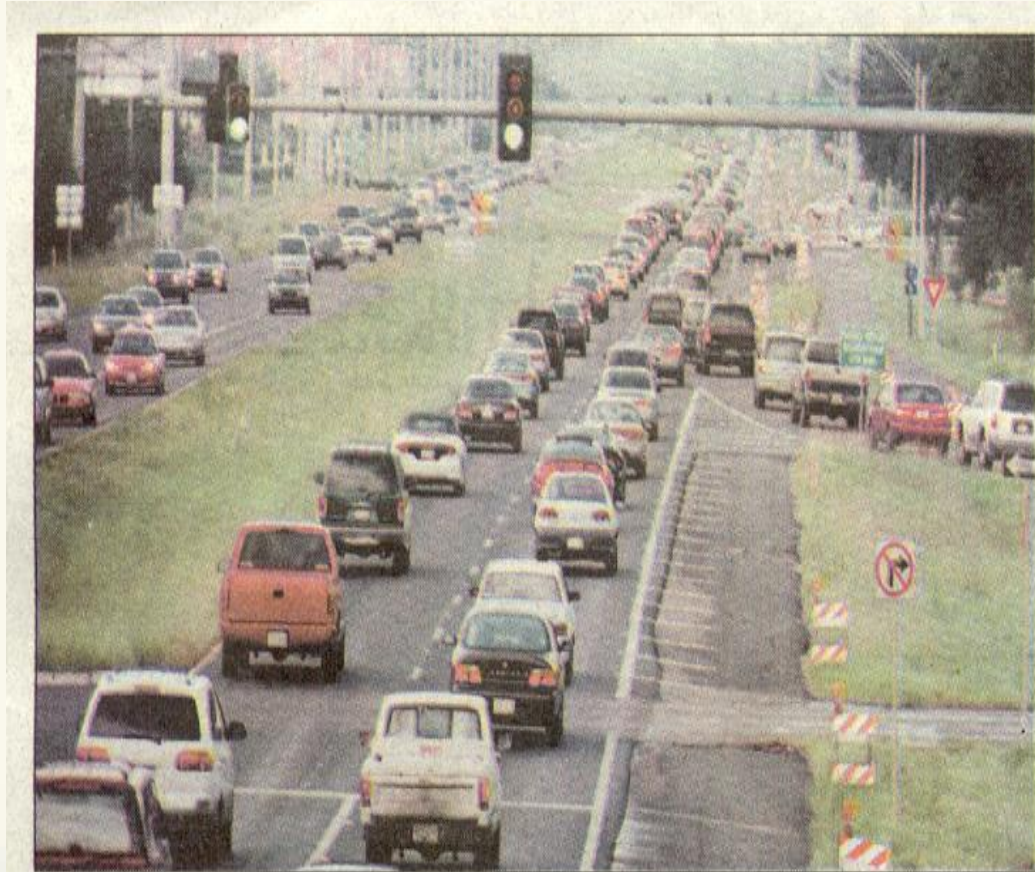


FIGURE 22 Crash resulting in spilled cargo obstructing all travel lanes. (Courtesy: New Jersey DOT.)

Unmanned Aerial Vehicles for Traffic Management, Monitoring and Emergency Response



A Toolbox for Reducing Queues at Interchange Off-Ramps



Times photo (2000) — MIKE PEASE

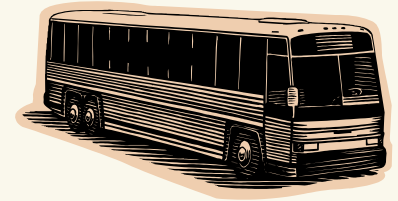
National Center for Transit Research (NCTR)

- **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**



Volume 2, No. 4

Volume 2, No. 4

1999

Journal of Public Transportation

Public JOURNAL OF Transportation

■ Brian L. Smith, Priya K. Durvasula, &
Stephen C. Brich

GIS-Based Support System for On-
Demand Flexroute Transit Service

■ Markus Friedrich, Thomas Haupt, &
Klaus Noekel

Planning and Analyzing Transit Networks:
An Integrated Approach Regarding
Requirements of Passengers and Operators

■ Wenyu Jia & Brendan Ford

Transit GIS Applications in
Fairfax County, Virginia

■ Thomas W. Sanchez

A Transit Access Analysis of TANF
Recipients in Portland, Oregon

■ Srinivas S. Pulugurtha,
Shashi S. Nambisan, &
Nanda Srinivasan

Evaluating Transit Market Potential and
Selecting Locations of
Transit Service Facilities Using GIS

1999



National Center for Transit Research



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**



**Florida SAFE Council
2005 Master Plan**

January 2005

Prepared by:

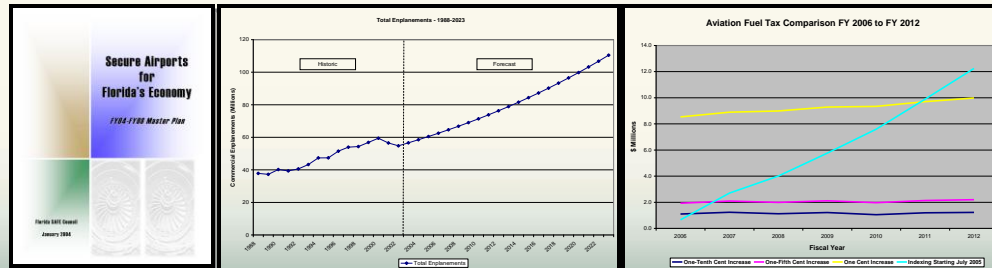
The Secure Airports for Florida's Economy Council - SAFE Council

with assistance from:
Center for Urban Transportation Research,
Florida Aerospace Finance Corporation, and
Raymond James & Associates



SAFE Council

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



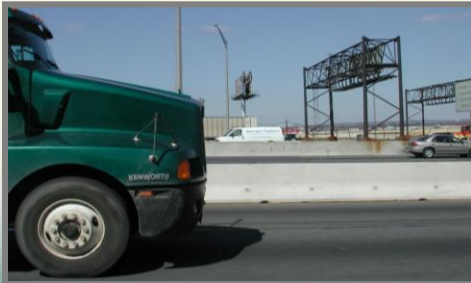
Tampa International Airport Economic Impact Study

- 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

Goal	Objective	Maintaining Florida's Turnpike - The Enterprise Model, July 2002	Florida's Turnpike Enterprise Performance Measures - CUTR, Oct. 2003	Florida's Turnpike Enterprise Annual Performance Report, Nov. 2003
1. Outstanding service for our customers	1.1 Maintain premium service on the road	1.1.1 Rating for roadway conditions in the annual customer satisfaction survey	1.1.1 Rating for roadway conditions in the annual customer satisfaction survey	1.1.1 Rating for roadway conditions in the annual customer satisfaction survey
		1.1.2 Average time to clear accidents and incidents	1.1.2 Average time to clear accidents and incidents	1.1.2 Average time to clear accidents and incidents
		1.1.3 Maintenance Condition Rating of Turnpike segments	1.1.3 Maintenance Condition Rating of Turnpike segments	1.1.3 Maintenance Condition Rating of Turnpike segments
		1.1.4 Average peak-hour travel speed between toll plazas	1.1.4 Average peak-hour travel speed between toll plazas	1.1.4 Average peak-hour travel speed between toll plazas
1.2 Offer convenience and service at service plazas	1.2.1 Rating for service plaza operations in the annual customer satisfaction survey	1.2.1 Rating for service plaza operations in the annual customer satisfaction survey	1.2.1 Rating for service plaza operations in the annual customer satisfaction survey	1.2.1 Rating for service plaza operations in the annual customer satisfaction survey
		1.2.2 Independent assessment of performance at each service plaza by nationally recognized firm	1.2.2 Annual independent service plaza rating	1.2.2 Annual independent service plaza rating
		1.2.3 Average response time to assist disabled vehicles	1.2.3 Timely response to assist disabled motorists	1.2.3 Percent of disabled vehicles responded to within standard (150), within 45 minutes
		1.2.4 Average peak-hour wait time for service at service plazas	1.2.4 Rating for wait time at service plazas	1.2.4 Rating for wait time at service plazas
1.3 Provide outstanding toll collection service that are customer focused, cost efficient and state-of-the-art	1.3.1 Rating for toll operations in the annual customer satisfaction survey	1.3.1 Rating for toll operations in the annual customer satisfaction survey	1.3.1 Rating for toll operations in the annual customer satisfaction survey	1.3.1 Rating for toll operations in the annual customer satisfaction survey
		1.3.2 Accuracy assessment of SunPass Systems	1.3.2 Accuracy assessment of SunPass Systems	1.3.2 Accuracy assessment of SunPass Systems
		1.3.3 Average peak-hour delay at toll plazas	1.3.3 Average peak-hour delay at toll plazas	1.3.3 Average peak-hour delay at toll plazas
		1.3.4 Independent assessment of the SunPass service center by a nationally recognized firm	1.3.4 SunPass service center score of service	1.3.4 SunPass service center score of service
		1.3.5 Reliability of toll collection systems	1.3.5 Reliability of SunPass	1.3.5 Reliability of SunPass

Performance Measure 1.1.1
Rating for roadway conditions in the annual customer satisfaction survey
Performance Measure 1.1.2
Average time to clear accidents and incidents
Performance Measure 1.1.3
Maintenance Condition Rating of the Turnpike system
Enterprise adopted the CUTR recommendation that an overall rating, rather than roadway segment ratings, be used
Performance Measure 1.1.4
Average peak-hour travel speed between toll plazas
Performance Measure 1.2.1
Rating for service plaza operations in the annual customer satisfaction survey
Performance Measure 1.2.2
Annual independent service plaza rating
ELIMINATED
CUTR recommended using the annual independent service plaza survey. The Enterprise decided not to use another customer survey and to rely on the Customer Satisfaction Survey results for service plaza performance. Subsequently, the performance measures published in the November 2003 document as 1.2.2 and 1.2.3 are the "old" measures 1.2.3 and 1.2.4 used in the CUTR report and Enterprise July 2002 document.

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.



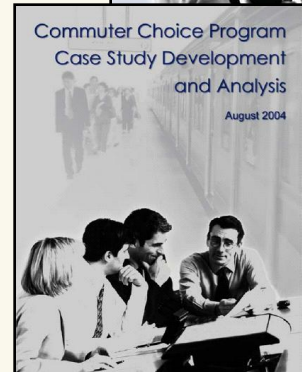
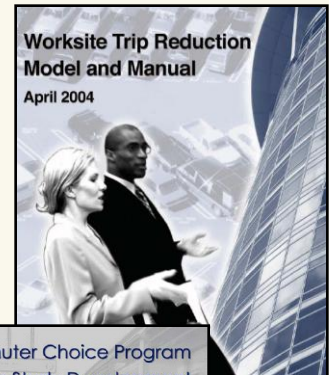
Selected TDM Research

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**

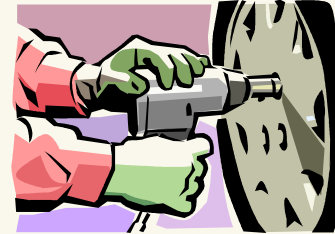


TRAC-IT

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

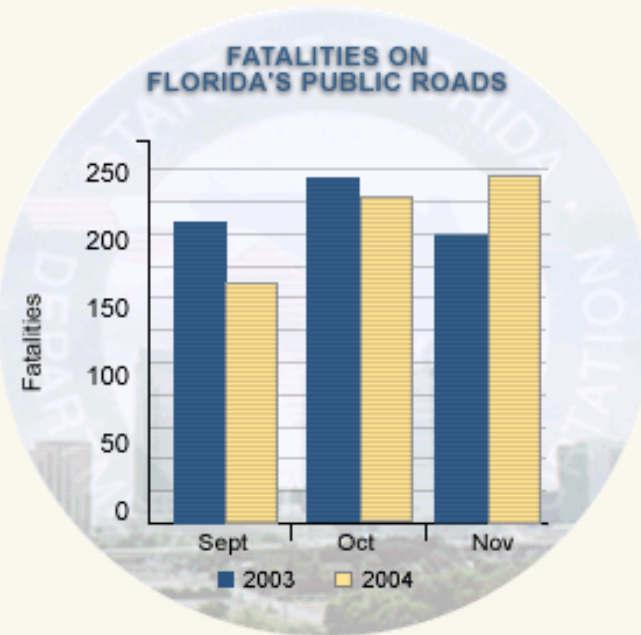


- **Organization and administration of statewide transit vehicle procurement contracts**
- **In-state FVPP Inspection Facility – Tallahassee**
- **Purchased 1,941 vehicles to date**
- **FTA 5310 Program Administration**
- **Florida Department of Transportation—Davis Productivity Award**

Trends and Conditions Research



FLORIDA TRANSPORTATION INDICATORS



T-BEST Model Development

T-BEST Arc

Transit Boardings
Estimation and Simulation Tool

2004

v 1.1



Florida Department of Transportation
Public Transit Office

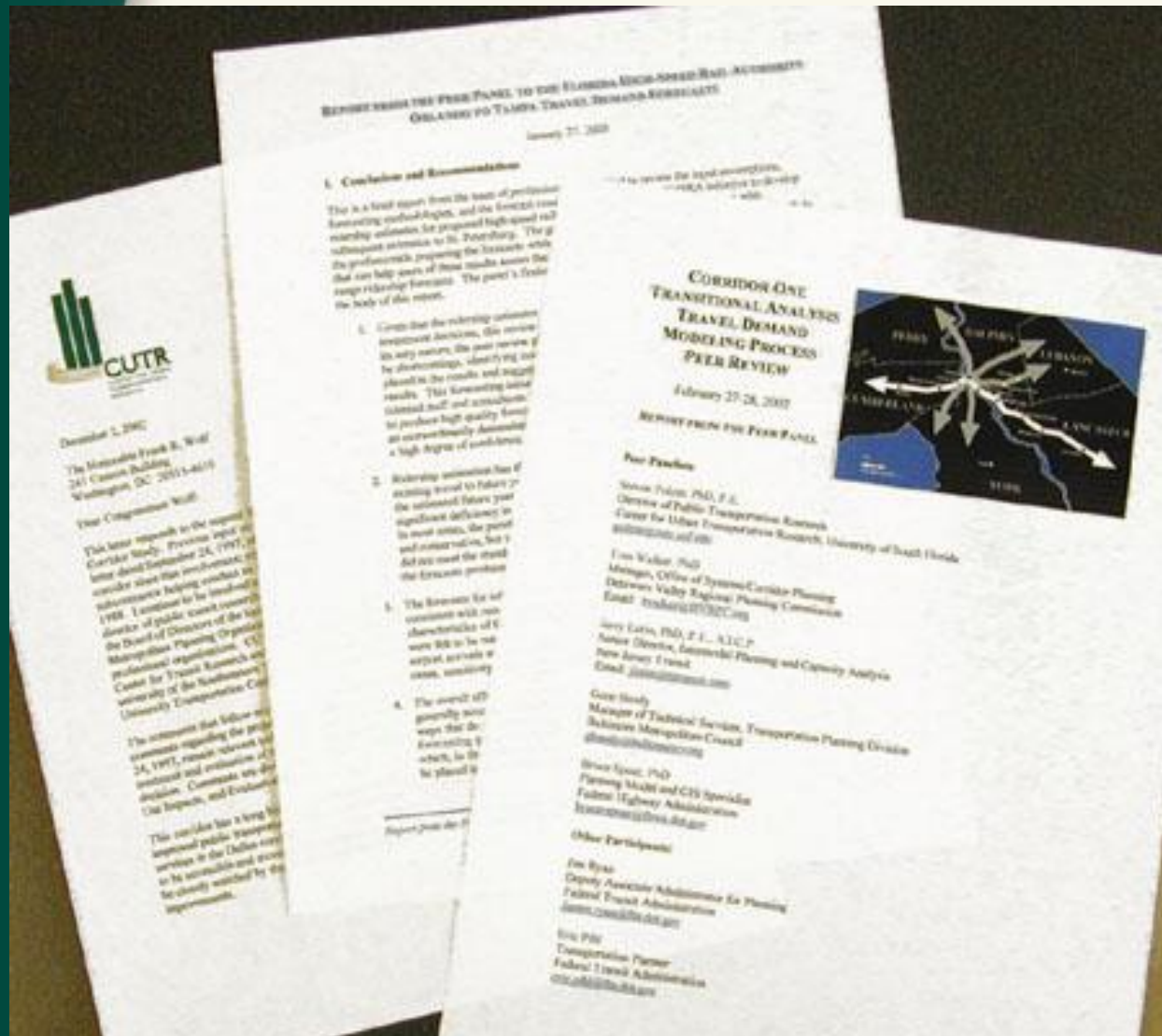


Expert Evaluation and Review

**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**



