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PLANNING ■ MANAGEMENT ■ DESIGN ■ POLICY ■ LAND USE

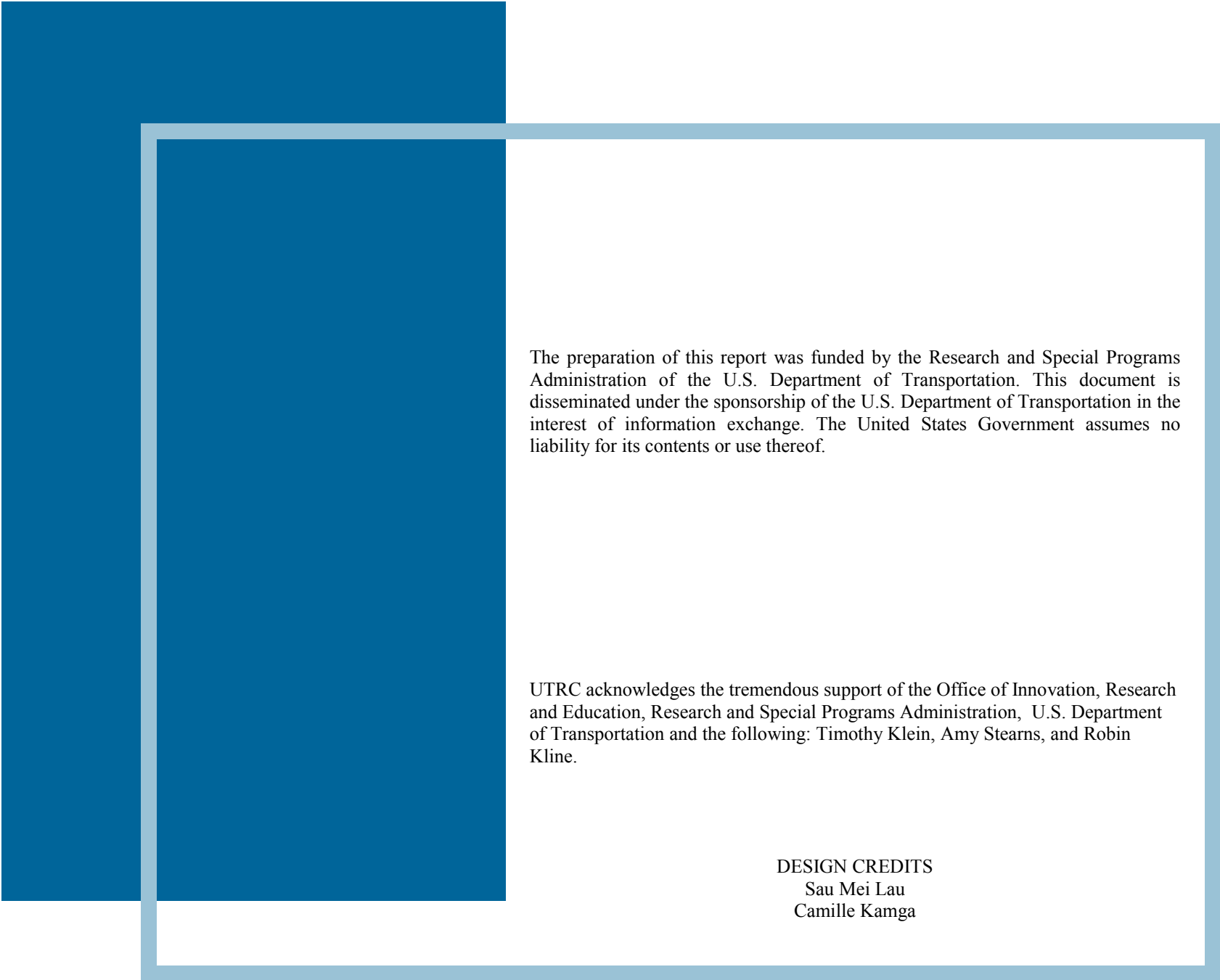
annual report fiscal year 2001 - 2002

university transportation research center - region 2

UTRC



www.utrc2.org



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**University
Transportation
Research Center
Region 2**

□
Annual Report

□
**Fiscal Year
2001 - 2002**



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... Planning and Management of Regional Transportation Systems...

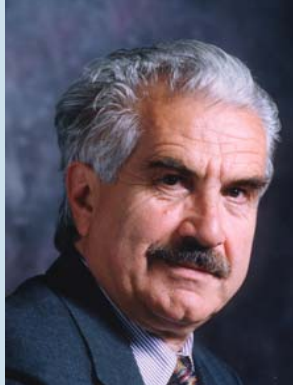


Fiscal Year 2001 - 2002

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Chairman's Message



This annual Report details the progress made by UTRC in the past year. As a consortium of twelve major Academic Institutions, UTRC draws upon a broad set of disciplines and professional experience. To the more traditional engineering disciplines, UTRC adds management, public policy, psychology and behavior, political science, GIS, planning, architecture and urban design.

Over the past fourteen years, UTRC has served Region 2 in strong and positive ways. These are seen in the tremendous variety of projects done for a number of sponsors - a market study for a proposed new regional ferry, commuter stress and mode choice or new freight models. The strength of UTRC is seen through the professionals it trains. The many students, taking courses or

programs in these disciplines, enter into or are promoted upwards in careers that address regional transportation issues. And a common "success story" is from the many students who cite significant career advancement as a reward for being engaged in UTRC programs or studies. UTRC also plays a leadership and integrative role with the many other Institutes and centers in the region.

It has been gratifying to serve as Chairman during this period of progress and growth and I am proud to present this report on our many achievements.

John Falcocchio

Director's Message

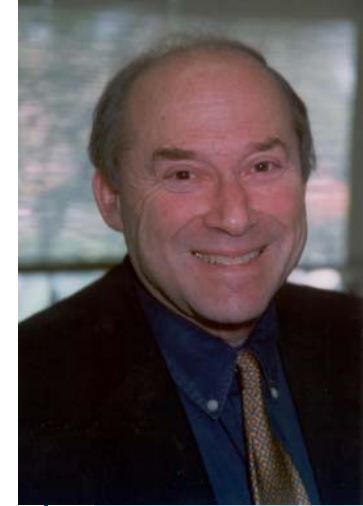
The last year has been a difficult year for UTRC. We all know of the profound effect that the acts of September 11, 2001 had on the City of New York and the entire region. While working through our annual plan, we also worked with our colleagues in a number of agencies that were severely impacted by 9.11. A year later, with renewed strength and purpose, there is a common regional effort to rebuild and move ahead. Many of the UTRC faculty, staff and students have been working on rebuilding efforts. By far, the regions strongest response for rebuilding has been to restore the transportation systems to and within lower Manhattan. UTRC has brought some of these efforts into the classroom, involving that generation that will live with the rebuilt environment in planning, design and analysis. And the concept of including security in all aspects of transportation planning and design, from cargo terminal to subway station has been made part of our 21st Century vocabulary.

Region 2, as are all the regions, is driven by its economics. UTRC has worked on two major studies concerning transportation and economic development. For New Jersey DOT, we examined the role their major investments in transportation, particularly rail, has played in the significant growth of Northern New Jersey. Housing and business relocations, job growth and industry agglomeration were tied to major accessibility increases. Northern New Jersey is also home to the Port of NY/NJ, and intermodal transportation is an integral aspect of the region's economy. For New York State, UTRC is

doing a study of major transportation corridors, with a specific analysis of freight investments. The theme of this study is the "Global Economy". And while that term has become ubiquitous in all of our (UTCs) various studies, examination of shifting global markets, trade routes, the impacts of NAFTA, and the shift of manufacturing strength to Asia show how transportation linkages to those markets are creating new locations of economic opportunity and growth in US cities.

From local to global, rebuilding downtown Manhattan to improving the flow of international goods at Plattsburgh, New York, or taking part in a conference in Manchester, England on urban security, UTRC continues its role in preparing professionals to take leadership roles in 21st Century transportation systems. The tools, ITS, information technology and next generation communications, dynamic supply modeling, labor force training, use of new materials and building techniques, go from research to the classroom to the seminar room. We have given our students a heavy responsibility; the enormous support and confidence of our sponsors, from USDOT to city DOT have helped provide the calories they must burn to meet these new challenges.

Robert E. Paaswell



ROBERT E.

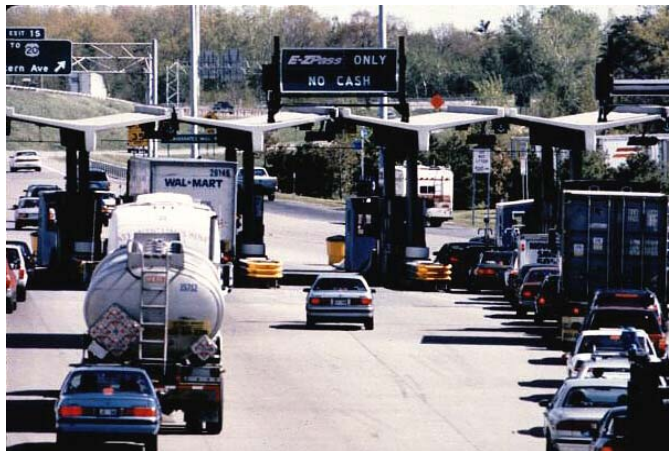
PAASWELL

Center's Theme

“Planning and Management of Regional Transportation

The University Transportation Research Center (UTRC) presents unique capabilities to the profession as these changes in transportation evolve. UTRC is a concentration of major universities with capabilities to address such issues: the quantification of environmental impact (Columbia) and valuation of externalities and congestion pricing (RPI, POLY, Rutgers, SUNY), Intermodal (SUNY, UPR, Cornell), transit operations and reform (CCNY), UTRC, is at the intersection of practice and the entering professional.

The transportation systems and the environment in which they operate throughout Region 2 are complex and undergoing rapid change. The complexity comes from the extent of the Region, and the impact that the nation's largest city has on it. For example, the New York Metropolitan area has over 19 million people, 600,000 businesses and 9 million workers, three major airports, 10,000 miles of highway, one third of the nation's transit riders, dozens of marine and intermodal terminals, and over 700 million tons of freight that must be moved. The Region also serves International borders along the Great Lakes and Northern New York, and in Puerto Rico.



Planning today, in Region 2, assumes knowledge of multi-modal and intermodal systems serving both freight and passenger movements. Professionals must address the demands of sustainability and the environment while squeezing more capacity out of aging and costly infrastructure to meet current pressures of economic growth. Planners must also understand why regional stakeholders make implementation of projects time consuming and difficult while the region is characterized by severe congestion and the high costs of moving goods and people. And planners must understand the links between investment needs and funding strategies.

Today's professionals involved with regional infrastructure improvements need to integrate a broad base of disciplines that cut across technology, law, finance, management and consumer behavior.

Management today, in Region 2, means knowledge of interaction among complex multi modal systems, budgeting, system operations and performance targets, customer needs, and, when fighting fires stop, a sense of vision of system performance and regional change. Management takes place at every level - from Board Chairpersons to line operators. Managers are called upon to become productive and efficient, to understand their roles in operations and administration, and to help make the complex set of many modes in the region respond to customer needs from a quality perspective in a multi modal fashion.



linking labor and management to operate the systems, new organizational and institutional structures to address multi modal and multi jurisdictional issues, and new means of funding investments - coupled to new means of users paying for the services they receive. Planners and managers need new tools to address such issues.

The examples show that the momentum of change in our systems is well underway; we need to create a momentum toward advanced capability for those who plan and manage these systems.

Planning and management as a response to change:

Transportation systems serving the Region are being rapidly modernized. The introduction of electronic toll or fare collection has had major impact on the region: 80% of morning commuters over the Tappan Zee Bridge use EZ Pass; introduction of Metrocard on New York subways and buses have generated 1 million new riders per day! New Jersey is building a number of new rail transit lines using innovative financing. It will need to plan and design new organizations to operate these systems and manage the development they stimulate. Puerto Rico is building a rail system in San Juan; it will force major cultural changes in the traditional *por puesto* - a private cab system. While modernization involves the integration of new technologies into the modes it also concerns new ways of



Center's Staff



Dr. Robert Paaswell
Director and
Distinguished Professor
of Civil Engineering,
City College of New
York



Robert Baker
Assistant Director,
Research



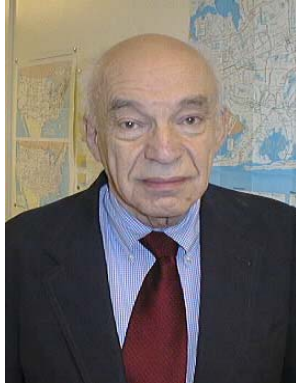
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Assistant Director, Edu-
cation & Training



**Dr. Frederick
Brodzinski**
Business Manager



Herbert Levinson
Icon Mentor



Sandra Jackson
Secretary



Dr. Joseph Berechman
Visiting Scholar



Student Interns
Soanya Ahmad, Mark Rodriguez, Sau Mei Lau, Asad Chaudhary, Munia Jamil (from left to right)

Management Structure

UTRC has adopted a corporate style of management. In this style, the UTRC Board provides policy guidelines, and approval of UTRC activities. Dr. Robert Paaswell, Distinguished Professor of Civil Engineering at City College of New York, serves as Chief Executive Officer, overseeing day to day operations and providing a bridge between UTRC policies and the activities and resources used to carry out those policies.

The Board of Directors, chaired by Dr. John Falocchio of Polytechnic University, and conducts its business through a well organized committee structure. The Board (Committee of the whole) reviews Center Objectives and Programs, approves budgets, and reviews and recommends actions forwarded by its two major working committees.



The two committees, Research and Technology Transfer, chaired by Dr. Ali Maher of Rutgers University, and Education and Training, chaired by Dr. Neville Parker of City College, are the working hearts of the Board. Each is responsible for developing the yearly program of activities, overseeing the selection of projects, and recommending to the full Board the programs of projects commensurate with the budget

UTRC Board of Directors

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Henry Dobbelaar, Jr., Ph.D.

Stevens Institute of Technology, New Jersey

Benjamin Colucci, Ph.D.

University of Puerto Rico, Puerto Rico

Robert Paaswell, Ph.D.

Executive Director

The transportation systems that serve UTRC Region 2, both multimodal and intermodal must serve the customers and stakeholders within the region and globally.





City University of New York

The City University of New York (CUNY), situated in one of the world's pre-eminent cities, is the largest urban university in the United States and its third-largest public university system. Some 200,000 students are enrolled for degrees on 20 campuses in all five boroughs of New York City. Another 150,000 students take adult and continuing education courses.

Rensselaer Polytechnic Institute - The Center for Infrastructure and Transportation Studies provides a focal point for campus research addressing the world's infrastructure and transportation needs. More than 30 faculties over 15 departments and each Rensselaer's five schools participate in the research of the Center.



Gary Gold



Columbia University

Through its broad range of innovative multidisciplinary programs, and through the earnest exploration of difficult questions, Columbia provides students from the United States and around the world with the depth of understanding and intellectual flexibility they need to respond to the challenges we all will face in the years to come.

New York University

Center for Transportation Policy and Management conducts research and education in the field of transportation policy and management, with particular emphasis on urban transportation issues. The Center has an extensive program for transportation managers and professionals.



Princeton University's program in transportation is an interdisciplinary program offered jointly by the School of Engineering and Applied Science and the Woodrow Wilson School of Public and International Affairs.

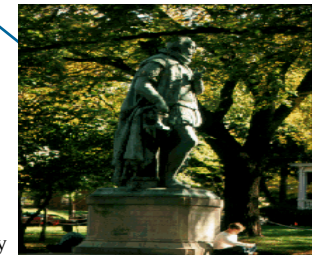
Dowling

Housed at the Brookhaven Center, Dowling College's School of Aviation & Transportation is a nationally recognized leader in aviation education, as well as a pioneer in the field of intermodal transportation.



Polytechnic University - The Urban Intelligent Transportation Center was established by New York City Department of Transportation to promote the use of ITS technologies that enhance the operational efficiency of City services, better serve customer' travel needs, and improve the City's quality of life.

Rutgers, The State University of New Jersey programs of graduate study leading to the Masters of Science and Ph.D. degrees may be arranged in a wide variety of areas. The fields of specialization may include structural analysis and design, computational mechanics, structural reliability, or structural optimizations., et el.





Cornell University offers a Master of Civil Engineering Program (usually a ten course curriculum) designed to prepare students for professional practice. There are two options in this program: one in civil and environmental engineering design and one in engineering management. Both options require a broad based background in an engineering field.

State University of New York

Maritime's graduate program offers instruction in transportation management.

Stony Brook's graduate programs lead to degrees in applied mathematics and statistics, computer science, electrical engineering, material science and engineering, and mechanical engineering.



Stevens Institute of Technology

Major areas of current faculty research include soil structure interactions, soil mechanics and deep foundation systems, advanced oxidation of hazardous wastes, transport of nonaqueous-phase liquids in the subsurface.

University of Puerto Rico offers a five year degree of Bachelor of Science in Civil Engineering, and programs leading to the degrees of Masters of Science, and Doctorate of Philosophy. Students specialize in Structural, environmental/water resources, soils or transportation engineering.



- ➔ City University of New York
- ➔ Columbia University
- ➔ Cornell University
- ➔ Dowling College
- ➔ New York University
- ➔ Polytechnic University
- ➔ Princeton University
- ➔ Rensselaer Polytechnic University
- ➔ Rutgers University
- ➔ State University of New York
- ➔ Stevens Institute of Technology
- ➔ University of Puerto Rico

Member
Universities

Financial Report

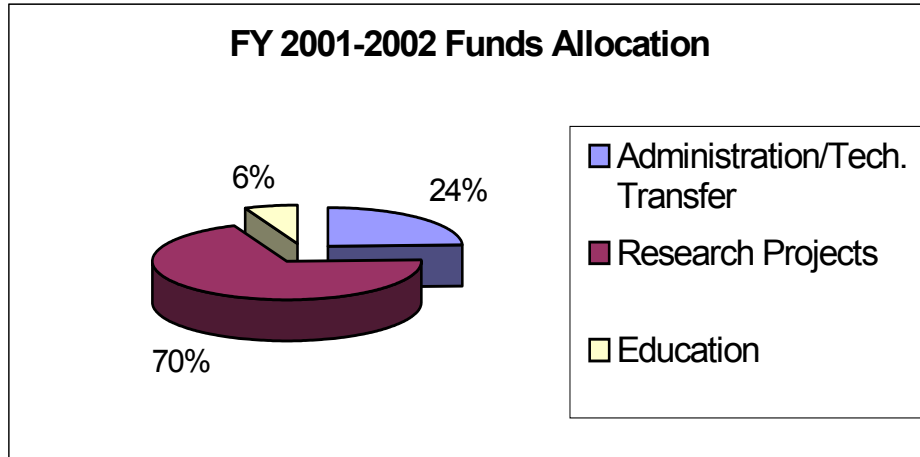
The following charts summarize the UTRC revenues and expenditures for FY 2001 - 2002. The University Transportation Research Center Region 2 funding allocated to programs totaled \$2,968,061 in 2001-2002. 26% of the funds were received from other federal sources and were not used as a match for the USDOT grant.

This year, the annual USDOT grant allocated to programs represents 25 percent of the total allocation.

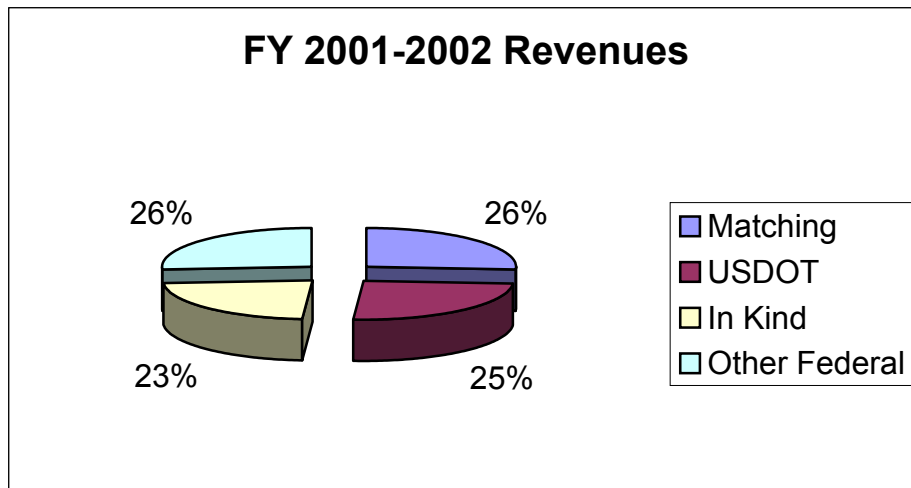
UTRC's longtime partners, New Jersey Department of Transportation, and New York State Department of Transportation provided a combined 26 percent of the budget in 2001-2002. UTRC's In-kind funds from university members and agencies were 23 percent of the total budget.

The share of funds allocated among programs differed from the previous fiscal year. With strong partnerships and solid financial commitments from federal, state and local agencies, UTRC allocated 70 percent of its total budget to research projects. To carry out administrative and technology transfer programs, 24 percent of funds were used. The remaining 6 percent of the budget is provided for the Advanced Institute for Transportation Education.





UTRC currently operates on an annual joint grant from the Federal Highway Administration and the Federal Transit Administration that is matched with funds from state, local, university, and private sources. The Center is administered through U.S. DOT's Research and Special Programs Administration.



Research Projects

The objective of the research program is to develop an agenda that is responsive to the problems addressed by regional organizations and stakeholders, and to conduct that program in close cooperation with these partners, developing means of rapid dissemination of results.



The program includes both peer reviewed studies as well as targeted, short term projects. All have one fundamental characteristic: they are conducted by teams of faculty and students, and bring current thinking and state of practice approach to the problems.

Each of the studies incorporate the latest analytic tools and theories. Sponsors can evaluate competitive proposals to insure the most responsive UTRC team conducts the work. Research work spills over directly to the classroom. For example, a project for New Jersey DOT involves the use of a complex land use transportation model. The inventor of the model was invited to UTRC to present a series of classes on all aspects of designing, using and interpreting the model. The class was attended by a large group of students, as well as faculty and staff from transportation agencies.



The program includes both studies that are identified with research partners of projects targeted to the theme, and targeted, short-term projects. The program develops competitive proposals, which are evaluated to insure the most responsive UTRC team conducts the work.

Under the current grant, the new research projects and the ongoing research projects concentrate the program efforts on the categories of Transportation Systems Performance and Information Infrastructure to provide needed services to the New Jersey Department of Transportation, New York State Department of Transportation and the Port Authority of New York and New Jersey while enhancing the center's theme.



The research program is responsive to the UTRC theme

Research Projects



New Research Projects

During the fiscal year October 1, 2001 to September 30, 2002, the following new UTRC research projects are funded under the current USDOT grant:

Project No:	55657-02-14
Title:	New York in the New World Economy
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigator:	Dr. Robert E. Paaswell Director and Distinguished Professor University Transportation Research Center City College of New York Y-Building, Room 220 New York, NY 10031

Project Objective:

This study will suggest approaches to address the impacts of these events; simultaneously it will capture recent economic history to note advantages and disadvantages of specific locations and corridors with the State of New York, within regional states, and the new, Global (International) corridors. For New York to sustain its global economic advantages it must build on its strengths, and its unparalleled location advantages.

Project Abstract:

- The study will build scenarios that influence New York State infrastructure investments (or policies). It will also examine traditional geographic groupings of counties (e.g., the Niagara Frontier, the Southern Tier), and propose, where appropriate, new groupings that accommodate the complex issues of economic growth, the role of infrastructure, the simultaneous role of communications and information technology, and the momentum towards global economic activities.
- It will provide a clarified set of issues, based upon an analysis and discussion of regional and global trends and forces for examination by New York State Department of Transportation (NYSDOT). It will also, post September 11, 2001 address issues of concern such as national and regional security. This impacts goods movements as seen by the tension between speed of movement and intense searches as seen in delays at the New York – Canada border crossings.
- It will focus, in particular on goods movement, both by mode (truck, rail, air) and intermodally. It will develop infrastructure investments or strategies pertinent to goods movement, specific to New York State as a whole and to distinct, identified regions and corridors within the State, and corridors that connect the State to other regions and globally. The proposal shall define risks associated with such investments to facilitate the evaluation of the identified investments.
- The work will conclude with a succinct, user-friendly report to assist NYSDOT senior staff in the evaluation of proposed regional goods movement and infrastructure strategies.

Project No:	55657-01-14
Title:	Seasonal Variations of In-situ Materials Properties in New York State
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigator:	Dr. Lynne H. Irwin Cornell Local Roads Program Cornell University 416 Riley-Robo Hall Ithaca, NY 14853-5701 Phone: 607-255-8033 E-mail: LHI1@cornell.edu

Project Objective:

The objective of this research is to enable the New York State Department of Transportation (NYSDOT) to expedite use of the new American Association of State Highway Transportation Officials (AASHTO) 2002 *Pavement Design Guide*. The research will provide the NYSDOT with seasonal models to design pavements using mechanistic-empirical methods for some of the most critical sub grade soils and locations in New York State. For locations not included in this research (due to budget constraints), the report will provide a framework and methodology whereby the NYSDOT can develop additional seasonal models.

Project Abstract:

The Cornell Local Roads Program is submitting this proposal in response to the New York State Department of Transportation Request for Proposals (RFP) C-01-54 DETERMINE SEASONAL VARIATIONS OF INSITU MATERIALS PROPERTIES. The results of this research will enable the New York State Department of Transportation (NYSDOT) to expedite use of the new American Association of State Highway Transportation Officials (AASHTO) 2002 Pavement Design Guide. The research will provide the NYSDOT with seasonal models to design pavements using mechanistic-empirical methods for some of the most critical subgrade soils and locations in New York State. For locations not included in this research (due to budget constraints), the report will provide a framework and methodology whereby the NYSDOT can develop additional seasonal models.





Research Projects

Project No:	49777-11-03
Title:	The Impact of Mode and Mode Transfers on Com-muter Stress
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Dr. Richard Wener Assistant Professor Polytechnic University Six Metrotech Center Brooklyn, NY 1120` Phone: 718-255-3585 Fax: 718-255-0305 E-mail: rwener@poly.edu

Project Objective:

The primary objective of this study is to increase our understanding of degree of stress experienced by mass transit commuters and the impact of that stressful experience on commuters' lives, psychologically and psycho physiologically, at work and at home. We also seek to better understand the individual and trip factors and conditions that can serve to increase or ameliorate stress from the trip.

Project Abstract:

This proposed study builds upon and extends the previous research in a number of ways. First, an important limitation of our initial study is a small, homogeneous (largely white, middle and upper-middle class)

sample. From the stress literature in general, and work on commuting there are good reasons of believe that gender and possibly ethnicity moderate such effects. Males and African-Americans reveal greater physiological reactivity to stress. Females react more strongly emotionally and, because of their more typically heavier domestic responsibilities vis-à-vis of men, tend to experience commuting as a greater source of stress. The proposed sample will represent a more diverse population.

Second, our pilot work revealed that the time of the commute and, possibly, the degree of predictability helps explain why commuting is stressful. If we can better understand what factors account for the ill effects of commuting, we will be in a better position to design and implement public transit improvements that address efficiency, economic and consumer health. To investigate more fully how these underlying mechanisms might account for commuting impacts on riders health and well being, we need a broader range of commuter time and predictability, plus a larger sample size.

We also wish to examine several other characteristics of the commuting experience that may contribute to stress. These include mode of transit, number of stages in the commute, perceived control over the commute, and effect and qualities of the microenvironment of the car (crowding, temperature, noise levels, available seats, etc.). The proposed sample will be selected to include a larger sample size and show a greater range of variation of the commute - time, number of mode changes, etc.

Third, our initial study focused primarily on the commute experience during the commute. Chronically challenging conditions, however, create situations that can spill over into other life domains - work and family in the present case. Do improved commuting conditions that lower stress contribute to higher job satisfaction, longer tenure on the job, enhanced performance? Are happier, more relaxed commuters

more patient and socially engaged with their mates and children? Questions such as these are obviously important and to date remain unexamined. In the proposed study we will more closely examine ‘spillover’ effects.

Fourth, we can improve our research design by building in a longer time period of observation. If transit improvements lead to true reductions in stress, as indicated in our previous study - do they last? Or, are the results we uncovered simply a short-lived “honeymoon effect?” We can also strengthen our research design by the inclusion of standardized assessment tools that account for individual differences in emotional judgments. Negative affectivity can be measured and then statistically modeled, allowing greater precision in self-report measures.



Fifth, this study provides the opportunity for a rare direct comparison among commuters using different modes of transportation. There are no studies in the literature that compare car, bus and train riders, even at one point in time. By conducting our pre-change survey among car and bus riders in the affected area, we have the likelihood of finding some who will switch to the new service, giving us the chance to assess difference among modes both between and within subjects.

Research Projects

Project No:	49777-12-03
Title:	Impact of Congestion on Bus Operations and Costs
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Dr. Claire McKnight Associate Professor City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8050 Fax: 212-650-8374 Email: mcknight@tid1s0.engr.cuny.edu

Project Objective:

The proposal has three primary objectives:

- To develop a model specific to the conditions in New Jersey that predicts the speed or travel time at which buses can operate under different levels of congestion
- To use the model to determine the number of buses and hours of operation that New Jersey Transit has had to add due to increases in congestion
- To use the model to predict further increases in the number of buses, hours of operation, and associated cost for predicted levels of congestion.



Project Abstract:

Traffic congestion interferes with the ability of a transit agency to provide good bus service. By reducing the speed that buses can travel, congestion requires a greater expenditure of resources (particularly the number of buses, drivers, and vehicle hours) to provide a given level of service to the passengers.

The object of this proposed project will be to estimate the actual cost of congestion to New Jersey Transit from the requisite additional resources due to congestion. This will be done through the construction of a model of bus travel time as a function of congestion and other factors and the use of the model to calculate additional bus travel time. From these numbers, the additional vehicle hours, buses, and drivers will be calculated. Using a cost allocation model, the increase in cost will be calculated.

The proposed work will be done by a team of researchers from the Region 2 University Transportation Research Center (UTRC), combining the strengths of researchers at City College of New York and at Rutgers University.

Project No:	49777-13-03
Title:	Survey of Driver Perceptions of Railroad and Light Rail Warning Devices/Grade Crossings
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Raghavan Srinivasan, Ph.D. Assistant Professor Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: srinivar@dowling.edu

Project Objective:

The objective of this study is to conduct a human factors survey to understand drivers' and pedestrians' behavior and perceptions at various types of railroad crossings and determine their understanding of different types of traffic control devices. This understanding would help the Diagnostic Team to take necessary steps to improve the safety of railroad crossings and also determine the appropriate information that should be included in the driver's manuals.

The specific objectives of this study are to:

- Determine drivers' (auto, truck, hazmat carrier, school bus, commercial bus, etc.) and pedestrians' behavior and perceptions at the various types of railroad and light rail grade crossings.
- Determine drivers' (auto, truck, hazmat carrier, school bus, commercial bus, etc.) and pedestrians' understanding of the various active and passive railroad warning devices at the

- public railroad and light rail grade crossings in New Jersey.
- Determine what information should be included in the New Jersey Drivers' manual and in the New Jersey Commercial Drivers' manual on Railroad and light rail lines.
- Recommend the appropriate questions that should be included in the written Driver and Commercial Drivers exams to insure that all understand the various active and passive railroad and light rail warning devices at New Jersey's 1600 crossings.

Project Abstract:

Use of new technology is important. However, in order to have a continued reduction in the number of train/ vehicle crashes, there is a need for better understanding of driver behavior and perceptions at different types of railroad crossings. A recent study of railroad crossings by the National Transportation Safety Board (NTSB, 1998) concluded that the standard signs mandated by the Manual of Uniform Traffic Control Devices fail to communicate to the driver what action is needed at a crossing. Another recent study found that many drivers do not fully understand what is required of them when they encounter a flashing light signal at a railroad crossing (Abraham et al., 1998).

To understand driver behavior at different types of crossings, it is necessary to conduct a human factors survey of driver behavior and perceptions. Driver behavior is dependent on the background of the driver and can vary between different parts of the country. This survey would help in the design and installation of appropriate traffic control devices and find better ways of educating the driving population about the possible hazards.

An important component of driver education is to ensure that appropriate information is included in the driver's manuals and appropriate questions are included in the written driver's exams. A preliminary review of selected pages of New Jersey's driver's manual indicates that the manual does not provide a comprehensive coverage of the topic in a user-friendly manner.

Research Projects

Project No:	49777-15-03
Title:	Technology Transfer Projects: Energy Absorption Fender System, Precast or Prefabricated Bridge Deck Systems, & Smart Bridge Applications
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Dr. Neville Parker Professor and Director Institute of Transportation Systems City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8050 Fax: 212-650-8374 E-mail: parker@tid1s0.engr.ccny.cuny.edu

Project Objective:

For Part A: Energy Absorbing Fender Systems

- (1) Identify existing technology, which has been used for bridge fender protective systems by other states or countries.
- (2) Identify State of the Art Systems that are of the Energy Absorbing/Impact deflecting variety that are either currently in use or commercially available. Make sure that the State of the Art Systems conform to the AASHTO Design Guide Specification Commentary for Vessel Collision Design of Highway Bridges. (Volume I Final)

For Part B: Precast or Prefabricated Bridge Deck Systems

- (1) Identify all precast or prefabricated bridge deck system types manufactured in NJ & other states.
- (2) Provide a Location and History of Performance of the Identified Precast or Prefabricated Bridge Deck Systems.
- (3) Provide a cost comparison of these systems versus cast-in-place systems.

For Part C: Smart Bridges

- (1) Compile a list of all Smart Bridge installations that have been constructed throughout the United States and Canada along with the types and locations.
- (2) Ascertain strengths and weaknesses of each system installed and prepare a list detailing the particulars.



Project Abstract:

This study is a literature search and technology transfer for three separate bridge related areas:

A) The Design of Energy Absorbing Fender Systems for the Protection of Bridge Piers & Abutments:

Bridge Structures in navigable waterways are at risk of being damaged by collision by marine vessels. The risk for severe damage to the Bridge Structure is tremendous. Currently fender systems are installed around the piers as rigid barriers which provide protection however, in any collision, these barriers are damaged or destroyed and require repairs. It is desired that Bridge Fender Systems be identified that absorbs and deflects any impacts without damage to the system thus preventing extensive repairs. This study will require an extensive

literature search into the state of the art protection systems, which are being used by other states, and any commercially available systems that are in use throughout the world.

B) Precast or Prefabricated Bridge Deck Systems:

Bridge deck replacement is a costly and lengthy process causing traffic delays and congestion. A desirable alternative to the cast in place method of repairing a deck is Precast or Prefabricated Bridge Deck Systems. Cost savings can be achieved through the use of such systems in both real dollars and time saved to the motoring public. To evaluate possible savings a performance history must be known. This study will require an extensive literature search to ascertain other states practices. Also industry guidelines and specifications should be compiled along with the design criteria to which such systems are designed.



C) Smart Bridges:

There has been a trend over the past several years in the Bridge Design and Construction Field to provide “Smart Bridge” installations. Typical installations include incorporation of sensors to detect steel corrosion, concrete delamination, Truck weigh-in-motion, and heated decks to offset the need for deicing chemicals. Information is necessary to analyze the effectiveness of these Bridge installations. This study will require an extensive literature search to ascertain other states experiences with such installations. An assemblage of knowledge that has been realized as a result of Smart Bridge installations can be used to establish reliable reinforcement steel detailing, minimum concrete cover criteria, and other aspects of bridge construction



Research Projects

Project No:	49777-16-03
Title:	Technical Solutions to Overcrowded Park & Ride Facilities
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Dr. Kyriacos C. Mouskos. Research Professor Institute of Transportation Systems City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8050 Fax: 212-650-8374 E-mail: mouskos@tid1s0.engr.ccny.cuny.edu

Project Objective:

The Department’s goal is to maximize use of Park & Rides in order to reduce highway congestion. In most cases, effective Park & Ride management is key to efficient use of facilities. A monitoring system can help the department evaluate why locations are under and over utilized. Furthermore, the system can be used to evaluate changes to improve facility use. The study should identify the “best practice” for Park & Management considering the type, characteristics and quantity of DOT locations. Monitoring systems must also be evaluated for use, cost and capability to integrate with motorist information systems.

The objectives of this study are to:

1. Determine an effective organizational structure and program for Park and Ride Management.
2. Determine the most effective method/technology for monitoring

DOT’s Park and Ride facilities.

3. Determine the feasibility of linking a monitoring system for Park & Rides to a motorist information system.
4. Develop a prototype parking information/reservation system for NJDOT’s Park & Rides program.

Project Abstract:

The Department maintains over 30 Park & Ride locations. The Park & Rides support commuters accessing carpools, vanpools and private carriers. An annual survey (visual observation) is conducted in planning to determine usage and provide input for future planning. The frequency of survey is not enough to properly manage the locations, which are in some cases over and under utilized. Management of Park & Rides is not centralized. Responsibilities for leases, maintenance, incidents, and planning cuts across a number of operational areas. The Department will consider a recommendation to name a Park and Ride manager. Planning is interested in a technology solution to monitor usage. The system could be coupled with a motorist information system to help motorists choose a location with open space.

A comprehensive park and ride program for NJDOT is needed to improve the operation and efficiency of the present Park and Rides system and to provide a future plan for anticipated demand for parking. The principal elements of such a program may include:

- A real time monitoring and data warehousing of the parking occupancy at each park & ride facility per time period of the day, day of the week and special conditions.
- A demand model for existing and future park & ride facilities.
- A parking information/reservation system that will provide information to the travelers on the availability of parking and the associated cost to park at a Park & Ride facility.
- A Park & Rides management/planning program for NJDOT

Project No:	49777-17-03
Title:	Assess impacts and Benefits of Traffic Signal Priority for Buses
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Raghavan Srinivasan, Ph.D. Assistant Professor Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: srinivar@dowling.edu

Project Objective:

The objectives of the proposed research include the following:

- To assess the impacts of and the implementation issues associated with the use of bus signal priority in New Jersey;
- To develop operational test plans for implementing signal priority at promising locations; and
- To assess the benefit and costs of signal priority.

The operational plans to be developed will identify a limited number of locations where signal priority could be tested. An evaluation plan and budgeting information would also be provided so that the benefits and costs of implementing signal priority could be assessed. The requirements for implementing signal priority at the locations identified will be determined. These requirements include possible modification of local ordinates, operating costs, resource requirements, and the compatibility of signal priority with the local signal systems.

Project Abstract:

Bus transportation has traditionally served as the backbone of public transportation. Despite the importance and efficiency of buses, compared to the automobile, these vehicles are weighted equally with automobiles at traffic signals where a bus carrying 50 passengers is treated the same as an auto with a single person. Delays caused by traffic signals and by street traffic congestion increase bus-operating costs and degrade transit service quality. Reducing transit travel times, improving schedule adherence, and increasing passenger comfort can work toward increasing bus ridership. Moreover, reducing delay for transit vehicles, whether along a specific corridor or on a network-wide basis, allows the transit agency to operate more efficiently, thereby reducing overall transit system operating cost.

One approach to minimizing delays to bus transportation is by implementing bus signal priority. Bus signal priority is an attempt to minimize or eliminate delays to buses at a signalized intersection by temporarily altering the traffic signal phase so that an approaching bus receives a green phase when it arrives. The potential savings in bus travel times can allow buses to maintain its schedule and provide better reliability in travel times. This may attract additional riders away from automobiles to transit. Signal priority differs from signal preemption, as used at at-grade railroad crossings or for emergency vehicles, where unconditional priority is provided to all approaching vehicles equipped with detection technologies. Signal priority provides conditional priority dependent on various objectives of the transit system authority. Some of these objectives may be to reduce vehicular emissions, reduce transit operating costs, reduce vehicle and person delay, to name a few (TCRP, 1996).

Although signal priority has proven to be an effective tool for reducing delays to buses, this technique is not always beneficial to the overall traffic network. Providing priority for transit vehicles along a corridor with a large number of transit vehicles can cause a coordinated network to be out of step resulting in an overall increase in delay. Bus signal priority also has the disadvantage of penalizing the cross-street traffic when high transit volumes exist at the corridor. This can create significant delays at locations where the cross-street carries significant traffic volumes. Some traffic engineers, local elected officials, and others have been reluctant to provide traffic signal priority for transit out of a concern that it would cause non-transit vehicles to encounter significantly increased delay.

Research Projects

Project No:	49777-21-03
Title:	Evaluation Study of the Port Authority of NY & NJ's Value Pricing Initiative
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Jose Holguin-Veras, Ph.D. Assistant Professor Institute for Transportation Systems City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8060 E-mail: jhv@ti-mail.engr.cuny.cuny.edu

Project Objective:

The project's main focus is to analyze users' behavioral changes as a consequence of the implementation of value pricing by the Port Authority of New York and New Jersey (PANYNJ). The items to be monitored, studied, evaluated, and, where appropriate, compared before and after implementation of pricing scheme as well with and without pricing are: 1. Operational elements at PANYNJ's facilities, 2. Current toll structures and role of electronic toll collection, 3. Socio-economic profiles of users, 4. Inter-Agency Coordination, 5. E. Media and Decision-Makers' Reaction, 6. Travel Behavior: Passenger Transportation, 7. Commercial Vehicles, and 8. System Wide Impacts (PANYNJ and competing facilities).



Project Abstract:

The proposed plan describes the components of data collection and analysis, as well as the supporting activities. This document describes the activities to be carried out, the methods to be applied, the data sources to be utilized, as well as the corresponding deliverables. Other sections of the document describe the organizational structure of the research team, the assignments of lead responsibility and the anticipated timeline. The project's main focus is to monitor the impacts of the PANYNJ's Value Pricing initiative, both at the system wide level and at the user level. The research team is interested, among other things, in assessing the behavioral changes as a consequence of the implementation of value pricing. Due to the importance and magnitude of the commercial vehicle traffic through the priced facilities (57,000 trucks/day in 1998), the research team is particularly interested in monitoring the behavior of both shippers, businesses and commercial vehicle operators. There are three main focus areas: *Descriptive Analyses, Behavioral Analyses and System Wide Impacts*. In each of these focus areas, different items will be analyzed and investigated. The items to be monitored, studied, evaluated, and, where appropriate, compared before and after implementation of the value pricing scheme.



Ongoing Research Projects

The following four projects were initiated during the current grant, which began in October 1999. This research work is ongoing and active.

Project No:	75144-01-01
Title:	New Jersey Link to the 21 st Century: Maximizing the Impact of Infrastructure Investment—Phase 2
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Dr. Robert E. Paaswell Director and Distinguished Professor University Transportation Research Center City College of New York Y-Building, Room 220 New York, NY 10031

Project No:	49777-12-02
Title:	ITS Operational Support
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Hualiang Teng Assisant Professor Polytechnic University Six Metrotech Center Brooklyn, NY 11202 Phone: 718-260-3196 E-mail: hteng@poly.edu

Project No:	55332-01-02
Title:	An Assessment of Methodological Alternatives for a Regional Freight Model in the NYMTC Region, Phase 2
Performing Organization:	New York Metropolitan Transportation Council
Sponsors:	New York Metropolitan Transportation Council
Principal Investigator:	Jose Holguin-Veras, Ph.D. Assistant Professor Institute for Transportation Systems City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8060 E-mail: jhv@ti-mail.engr.ccnycunv.edu

Project No:	49777-15-02
Title:	Developing Data Resources for the 21 st Century: Urban Applications of Geographic Information Systems
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation
Principal Investigator:	Catherine Lawson Assistant Professor SUNY, University at Albany Earth Science 218 Albany, NY 12222 Phone: 518-442-4775 E-mail: lawsonc@albany.edu

Research Projects

Completed Research Projects

The UTRC has completed the following projects under the current grant



Project No:	75144-07-01
Title:	Crosswalk Safety: Evaluation of the Light Guard System - Phase 2
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Peter Boyce, Ph.D. Assistant Professor Rensselaer Polytechnic Institute 110 8th Street Troy, NY 12180-3590 Phone: 518-687-7130 E-mail: boycep@rpi.edu

Project No:	75150-00-01
Title:	NYCDOT Green Bus Lines Route Analysis
Performing Organization:	New York City Department of Transportation
Sponsors:	United States Department of Transportation New York City Department of Transportation
Principal Investigator:	Claire McKnight Ph.D. Assistant Professor Civil Engineering, City College Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8050 E-mail: mcknight@ti-mail.engr.ccnycunycunyu.edu

Project No:	49777-07-02
Title:	Analysis of Human Factors in Nighttime Work Zones
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Jose Holguin-Veras, Ph.D. Assistant Professor Institute for Transportation Systems City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8060 E-mail: jhv@ce-mail.engr.ccnycunycunyu.edu

Project No:	58635-01-02
Title:	Development of Bus Maintenance Information
Performing Organization:	New York City Transit
Sponsors:	New York City Transit
Principal Investigator:	Mohsen Jafari, Ph.D. Professor, Department of Industrial Engineering Rutgers University Computing Research & Education Building 96 Frelinghuysen Road Piscataway, NJ 08854 Phone: 732-445-3627 E-mail: jafari@rci.rutgers.edu



Project No:	75144-06-01
Title:	Analytical Tool for Measuring Emission Impact of ACCEL/DECEL Lanes
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Hualiang Teng Assisant Professor Polytechnic University Six Metrotech Center Brooklyn, NY 11202 Phone: 718-260-3196 E-mail: hteng@poly.edu

Research Projects

Project No:	55657-01-13
Title:	Benefits Package Value
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigator:	Frederick Brodzinski, Ed.D. Associate Director Institute for Transportation Systems Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8055 E-mail: fbrodzinski@ccny.cuny.edu



Project No:	75144-01-02
Title:	Evaluation of the Performance of Retroreflectors in Snowplowable Raised Pavement Markers
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Neville A. Parker, Ph.D., Director Institute for Transportation Systems City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8050 E-mail: parker@ti-mail.engr.cuny.cuny.edu

Project No:	75144-04-01
Title:	Evaluation of the Effectiveness of the Graduated Driver Licensing System in New Jersey– Phase 1
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Raghavan Srinivasan, Ph.D. Assistant Professor Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: srinivar@dowling.edu



Project No:	49777-11-02
Title:	Characteristics of Traffic Flow in 55 & 65 MPH Speed Limits
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Raghavan Srinivasan, Ph.D. Assistant Professor Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: srinivar@dowling.edu

Education & Training

The objective of the UTRC Education and training program is to train students and provide advanced or re-training of practitioners to plan and manage regional transportation systems.

Advanced Institute for Transportation Education (AITE)

The Advanced Institute for Transportation Education (AITE) provides fellowships to Master's level students in transportation programs at Region 2 consortium schools. The fellowships may be used for either a traditional civil engineering transportation program or in related fields, such as urban planning or public administration. The program is aimed at two types of students: the recent bachelor degree recipient who has not yet started a transportation job (termed a "full time student") and the working transportation professional who wants to enrich their transportation expertise. Besides free tuition and a stipend, the full time students have the opportunity to work on a major research project under a faculty mentor; some of the research projects are listed in the previous section. The scholarship for full time students lasts for three semesters.

For the transportation professionals, the UTRC AITE coordinator works closely with agency coordinators at the major regional transportation agencies to promote the AITE program, to target those employees who can most benefit, and to ensure a smooth application process. Each agency employee must have their supervisor sign off on the application to minimize conflicts between job and school responsibilities and to encourage the agencies to benefit from the program, for instance, by having the students do master's projects on topics of interest to the agency. The employee/students receive free tuition and paid time off from work for four semesters.

In 2002, 21 people applied for Advanced Institute for Transportation Education Graduate Scholarships. Eleven of these were full time students and ten were agency employees. New York State Department of Transportation forwarded applications from seven of their employees. From these applications, seven received scholarships, five full time students and two agency employees. All seven are attending school this semester.

To achieve this objective, UTRC concentrates on both the tools of education and the ways of delivering the programs to a diverse group of future and practicing professionals. One aspect of UTRC's program is to reach out to under represented minorities, women, and others to whom transportation was an unthought of or unattainable career choice. UTRC has a history of training and educating such students, who have gone on to great rewards in their careers.

Undergraduate Program in Transportation

The University Transportation Research Center and the Institute for Transportation Systems at the City University of New York developed the undergraduate program in transportation education in the early 1990's, with the objective of encouraging undergraduates, especially women and minorities, to pursue studies in transportation, planning, urban affairs and economic development.

The program is available to both students currently matriculated at a college or university, in an Associates or Bachelors degree program, as well as transportation agency/industry employees who demonstrate an interest in furthering their education. Scholarships are earmarked in amounts up to a maximum of \$2,500. Scholarship recipients must include internships, and research assistantships as well as course work in their programs of study, and are awarded pro-rated payments from the overall award when they achieve grades of B+ or higher in those studies.

Women in Transportation Seminars (WTS)

In October 2001, UTRC awarded \$1000 to the winner of the Greater New York WTS Graduate Scholarship winner, Yi Qi. Ms. Qi started her college education in statistics in China. She started studying transportation in Fall 1999 at Polytechnic University under Dr. Harry Teng. She has worked on freeway incident detection, vehicle emissions for NJDOT, and incident frequency and duration for New York City. At the time of winning the scholarship, she had already written six journal papers. Her goals are to earn a Ph.D. in transportation engineering, to teach transportation, and to do research in transportation modeling.

2001 UTC Outstanding Students of the Year Awards

Mayrai Gindy (photo: 2nd from left) was selected as the UTRC Student of the Year for 2001. She was honored at the 11th Annual Student of the Year Awards at TRB. Ms. Gindy is currently pursuing her doctorate degree in civil and environmental engineering at Rutgers University. She received her bachelors of science degree in civil engineering, also from Rutgers,



with a 4.0 grade point average. As a graduate student, Mayrai has received the AITE Graduate Scholarship, a Center of Advanced Infrastructure and Transportation Graduate Fellowship, and a National Science Foundation Graduate Fellowship. Her current research project is the Instrumentation and Monitoring of the New Doremus Avenue Bridge, in Newark, New Jersey. The Doremus Avenue Bridge is the first part of the Portway International/International Corridor Program, a series of freight improvement projects. It is also the first bridge to be designed according to the new Load and Resistance Factor Design (LRFD) – American Association of Transportation Official (AASHTO) Bridge Specifications in the State of New Jersey.

Education & Training

UTRC Supported Student Presents at Dwight David Eisenhower Transportation Fellowship Program (DDETF) Research Showcase



The FHWA Universities and Grants Programs sponsored the Seventh Annual Dwight David Eisenhower Transportation Fellowship Program Research Presentation Showcase during the 81st TRB Annual Meeting on January 15, 2001 at Washington, DC.

Ellen Thorson, a 2001 recipient of the Dwight David Eisenhower Transportation Fellowship Award, and 2001 UTRC Region 2 student of the year presented a paper on the “Integrative Freight Market Simulation (IFMS)” at the 2002 Dwight David Eisenhower Transportation Fellowship Showcase in Washington, DC. The IFMS is a National Science Foundation-sponsored research project, which involves the development of a comprehensive freight transportation demand model that depicts both commodity flows and vehicle trips. This model has a two-level solution approach. One level deals with the economic problem of estimating the provision of freight service consistent with market equilibrium and profit maximization, while the other level deals with the network problem of constructing tours which are consistent with the economic solution and other system constraints. The IFMS will enable researchers to estimate freight origin destination matrices based on secondary information, model the flow of both commodities

and commercial vehicles, incorporate logistic information into the freight planning process, and study the impact of real-time traffic control on commercial vehicle traffic.



In addition to Ellen’s presentation, the UTRC presented its vision of service as the regional source for preparing new professionals for the XXI Century transportation workplace and providing the research and tools for practicing professionals and key stakeholders to understand critical problems as they plan and manage the region’s complex transportation systems. The presentation emphasized the center’s theme, “Planning and Management of Regional Transportation Systems” and the center’s program, “Education, Research and Technology Transfer”. With an emphasize on minority student participation, the center presented current research programs with the New Jersey Department of Transportation, the New York State Department of Transportation and New York City Transit Authority.



The 2002 Summer Transportation Institute (STI)

The Institute for Transportation Systems (ITS) Summer Transportation Institute directed by Dr. Neville A. Parker, professor at City College of New York (CCNY) completed its seventh year in 2002. It continued bridging the gap between supply and demand, by creating awareness and stimulating interest in high school students to take maximum advantage of the opportunities that exist in the Transportation industry.

The Non-Residential - 2002 Summer Transportation Institute, hosted at the University Transportation Research Center at CCNY, commenced with the Opening Ceremony on Monday, July 8, 2002, and concluded with its Closing/Award Ceremony on Saturday, August 3, 2002. Of the 30 scholarships awarded, 25 students were accepted into the primary program. However, 22 new students completed the program, in addition to 5 participants in the Internship component. The 22 primary students were in grades 9 through 12. The 5 interns attended grades 10-12.

STI 2002 - Overview

-The thrust of the program, this year, focused on the necessity to fully encourage and enhance the self-esteem of our STI participants. The seeds of perseverance, encouragement, and respect for self and others were planted.

-The Intern component was extended to six (6) weeks. During the first week, the project director conducted a very intense, focused orientation.

-Debriefing of Counselors: The project director met with the counselors (individually) at the conclusion of the program. An integral aspect of the debriefing session was to advise them of their options and futures in the transportation industry and pipeline.

The highly stimulating STI program introduced students to (a) careers in transportation; (b) passengers and freight transportation; (c) management of transportation systems; (d) innovations in transportation; (e) intermodalism versus multimodalism; (f) social, economical and environmental impacts of transportation systems; (g) construction engineering issues; (h) research, technology and its application in the Transportation industry, as well as the transferability of the multitude of engineering specializations to transportation.

ITS has a continuing commitment to provide quality education for all students and openly seeks every opportunity to expand efforts to assist them. In conjunction with the mission of ITS, the Federal Highway Administration (FHWA), along with the New York State Department of Transportation (NYSDOT) and other transportation agencies, seek to provide educational experiences for secondary school students that enhance career awareness in the transportation industry.

Strong support for the Summer Transportation Institute - in the form of funding and/or participation - has been given by the Federal Highway Administration (FHWA), the New York City and State Departments of Transportation (NYCDOT & NYSDOT), the Metropolitan Transportation Authority (MTA), the Port Authority of New York & New Jersey (PANY & NJ), New York City Transit (NYCT), the University Transportation Research Center (UTRC), Ghandi Engineering, Urbitran Associates Inc., the New York City Board of Education, New Jersey Transit Light Rail Planning and Management Office, Federal Motor Carrier Safety Administration, New York City Maritime Administration and the City University of New York Community. To reach its full potential, a commitment of continued support and funding is required from these, as well as other organizations.





Technology Transfer

Visiting Scholar Seminars

The Region2, University Transportation Research Center organized three Visiting Scholar Seminars, which were held New York City Technical College, Klitgord Auditorium, in Brooklyn, New York. The presenters and their presentations were:

Modern Ferry Transportation in New York February 22, 2002 by Arthur E. Imperatore, Jr., President, ARCORP Properties

Mr. Imperatore, Jr is President and Chief Executive Officer of ARCORP Properties, which includes several privately held corporations among them NY Waterway, Dry Dock Restaurant Corp. and Romulus Development Corp. His corporate involvements include real estate development, ferry and connecting bus transportation, and full-service restaurant operations.

Water transportation has become a serious and growing new mode of mass transit in New York Harbor, especially since the events of last September 11. Mr. Imperatore, Jr. presented the history, current operation and future plans of NY Waterway, the country's largest private ferry operator. He discussed current and future routes, design and construction of existing and new vessels and the development of a new generation of water transportation infrastructure, including terminals

and surface connections throughout the Harbor. Special emphasis was given to the impact of enhanced ferry transportation on the redevelopment of New York Harbor's formerly industrial waterfronts.



Transportation Reform at the Crossroads: Transportation Equity Act for the 21st Century (TEA-21)

**April 19, 2002 by David Burwell, President & CEO
Surface Transportation Policy Project (STPP).**

David Burwell is President and CEO of the Surface Transportation Policy Project (STPP) a nationwide network of more than 250 organizations devoted to improving the nation's transportation system. Mr. Burwell, who is a co-founder of STPP and serves at its chairman from 1990-1997 has overall responsibility for the strategic direction and management of STPP, that includes the New Directions Initiative, a multi-year campaign that makes federal and State transportation policies better serve families and communities. Prior to joining STPP, Mr. Burwell co-founded and led the Rails-to-Trails Conservancy, the nation's largest trails and greenways organization devoted to the conversion



of abandoned rail corridors to public trail use. Mr. Burwell worked as legal counsel for the National Wildlife Federation where he specialized in transportation, land use and air quality issues. He authored several books and articles on transportation, law and policy. He was the initial recipient of the Transportation Achievement Award, an annual STPP award for outstanding achievement in transportation policies.

The year 2003 is shaping up as the year of reckoning for national transportation policy. Next year, the Transportation Equity Act for the 21st Century (TEA-21), which authorizes distributions from the federal highway and transportation trust fund, expires. Mr. Burwell discussed the Transportation Equity Act for the 21st Century. The assurance that public transportation investments promote community-based social, economic and environmental objectives was the subject of the presentation. His discussion included the law authorizing expenditures from the airport and airways trust fund, and Amtrak funding. He discussed the financing structures for all federally funded transportation systems that are before Congress for renewed funding. His discussion included the Surface Transportation Policy Project, the nation's leading transportation reform coalition, and the formed the Alliance for a New Transportation Charter to engage in a broad policy debate on how transportation investments are serving community needs.

Transport for London: A Discussion of Modern Transportation Governance
June 21, 2002, by Jay Walder, Managing Director, Finance and Planning, Transport for London, UK

Mr. Walder is the Managing Director, Finance and Planning of Transport for London (TfL), a new entity created to manage London's roads and transit system as part of Great Britain's effort to devolve powers and responsibilities from the national to local governments. TfL's current responsibilities include bus, river and taxi services, light rail, and street management and it is soon to include the London Underground. Transport was the central plank of the Mayor's election campaign, and with nearly 8 million trips a day on London's buses and Tube, it is easy to see why it remains a top priority for the people of London.



He discussed two controversial actions that have characterized much of TfL's work in its early days. In March, TfL awarded contracts for the first large-scale Congestion Charging scheme in a major western city. All cars will be charged £5 per day (\$7.50) to enter the central area of London during business hours. In early May, amid heated controversy, the national government decided to proceed with a controversial plan to turn over responsibility for the London Underground to a "public-private partnership." These 30-year contracts would transfer the responsibility for all day-to-day maintenance and capital works to two private consortiums, while maintaining the responsibility for the operation of trains in public hands. The Mayor and TfL have adamantly opposed the national government's plan to privatize key elements of the Underground before it is handed over to TfL.

UTRC goes far beyond what might be considered "traditional" technology transfer activities. The Center has designed its Technology Transfer activities to be far reaching and responsive to the needs of both practicing professionals and interested citizens.

Technology Transfer

Regional Transportation Research Initiative Conference November 8, 2001

The Region 2, University Transportation Research Center sponsored and organized the Regional Transportation Research Initiative Conference, which was held in the Department of Civil Engineering, Institute of Transportation Systems at City College of the City University of New York. The Conference brought together top technical and managerial staff from all major transportation agencies, faculty from the 12 member universities, and high level managers of State and National transportation programs.



Dr. Robert E. Paaswell, Director of the University Transportation Research Center and Dean Mohammad Karim of the School of Engineering at the City College of New York welcomed the participants.

Mr. Timothy A. Klein, Associate Administrator for Innovation, Research and Education, Research and Special Programs Administration, U.S. Department of Transportation, was the Keynote speaker at the Conference. Ms. Letitia Thomson, Regional Administrator of the Federal Transit Administration and Mr. Arthur O'Connor, Regional Office of the Federal Highway Administration talked about research perspectives from their respective agency.

The program featured regional views of transportation issues by the two regional Metropolitan Planning Organization - the New York Metropolitan Transportation Council and the New Jersey Transportation Planning Authority. Panel discussions by Mr. William Hoffman, NJDOT Director of Research and Technology, Mr. Richard Albertin,

NYSDOT Director Resource & Risk Management, Mr. James Rediker, Assistant Executive Director, Planning, New Jersey Transit, Mr. William Wheeler, Director of Planning, Metropolitan Transportation Authority and Mr. Cruz Russell, Director, Office of Policy & Planning, Port Authority of New York & New Jersey presented views and issues for transportation and transit research in the region.

Afternoon breakout session's topics included discussions on Economics Planning and Policy, Engineering Issues, New Technologies, and Human Resources to address regional transportation issues for future research. Mr. Herbert Levinson, UTRC Icon Mentor, summed-up future regional transportation needs. The conference was concluded by a presentation on "Turning Research into Policy" by Elliot Sander, Director of the New York University Rudin Center for Transportation and Policy Management.

The Conference was attended by 150 representatives of New Jersey and New York State regional transportation agencies and consultants.



Technology Transfer



Bus Rapid Transit New York Region Workshop

The Region2, University Transportation Research Center hosted the New York Regional Workshop on Bus Rapid Transit that met on November 29, 2001 at City College of New York. The Workshop theme, “Bus Rapid Transit – Building the Case for a New Mode Choice in New York” addressed a one-day learning experience designed to educate and inform transportation professionals and decision-makers about BRT. Sessions and panels discussed the potential for better service for existing riders, attracting new riders to the improved service, and improved efficiency of operations for transit providers. The Workshop demonstrated that BRT could be an effective low cost alternative to expensive new rail transit. It was concluded that BRT and compact, pedestrian-oriented land use are mutually supportive.

Bus Rapid Transit is a rapid mode of transportation that combines the quality of rail transit and the flexibility of buses. The rubber-tired BRT vehicles operate over a variety of travel ways – exclusive lanes on mixed traffic arterial streets or separate rights-of-ways, or on free flowing freeway HOV lanes. Relative to existing transit buses, the BRT offers reduced travel times. New technologies and ITS systems can be easily integrated into the BRT.

The complete BRT system combines flexible service and new technologies to improve customer service and reduce traffic delays. Urban corridors are prime candidates for the BRT system. BRT express commuter service can help reduce rush hour congestion to urban areas and employment centers. The National Transit Institute in cooperation with the Federal Transit Administration sponsored the Workshop. The participating agencies included: New York State Department of Transportation, New York City Transit Authority, and New York Metropolitan Transit Council. The event was attended by 130 participants from government agencies, consultants, and students.



3rd Annual NJDOT Research Showcase, October 12, 2001

The Region 2, University Transportation Research Center hosted and organized the New Jersey Department of Transportation's Third Annual Research Showcase, "Turning Problems into Solutions". The Research Showcase was held on October 12, 2001 at Princeton University in Princeton, New Jersey. The Showcase was sponsored by the NJDOT Research & Technology Division to demonstrate the NJDOT Research program, which is performed by the University Transportation Research Center, and the other University Research partners.

The Showcase keynote speaker was Dr. Jameson W. Doig, Professor of Politics and Public Affairs at Princeton University and author of *Empire on the Hudson and Metropolitan Transportation Politics and the New York Region*. The Showcase featured talk and presentations by NJDOT officials and other transportation experts. The main panel discussions, "New Jersey Intermodal Imperative –



Creating a World Class System for Worldwide Trade," focused on freight and commerce theme. The Region 2 – University Transportation Research Center- City College of New York, the Center for Advanced Infrastructure and Transportation (CAIT) at Rutgers University, the National Center for Transportation and Industrial Productivity (NCTIP) at New Jersey Institute of Technology, Rowan University and Steven's Institute of Technology, gave theme presentations of University accomplishments.



The goal of the Third Annual Research Showcase was to highlight transportation research accomplishments by the NJDOT and its University research partners. The major emphasis of the Research Showcase was to familiarize all participants with a broad spectrum of research topics and to provide incentives for future strategic research. The showcase enhanced the research partnerships with University researchers and focused on building a world-class transportation system in New Jersey. University researchers, NJDOT management and operations, and other state, local and Federal agencies, attended the daylong Showcase.

Technology Transfer



TransAction 2002 New Jersey Transportation Conference and Expo: 26 Annual

The University Transportation Research Center participated in the 26th Annual New Jersey TransAction Conference in Atlantic City, New Jersey in April 2002. The Center exhibited its education, research and technology program and provided students with an opportunity to learn about the state-of-the art transportation, road and bridge projects, and transit programs in an atmosphere of transportation managers, directors and engineers. The conference presentations featured experts from federal, state, county and local government as well as the private sector, consultants, users and others from across the nation and provided valuable information on transit, paratransit, highway construction, community minibuses, goods movement, pedestrian, bicycling, ferryboats, ridesharing, and transportation policy.

New York Metropolitan Regional Freight Forum

The Region 2, University Transportation Research sponsored and hosted the New York Metropolitan Regional Freight for the New Jersey-New York metropolitan area at City College on February 13, 2002. The conference highlighted post 9-11 freight movement post, the future of the Port of NY & NJ, improving airport access, rail freight, and waterways for moving freight and passengers.

The purpose of this forum was three fold: First, the forum represents an opportunity to discuss what the region has done in the freight purview since 1998 and determine the future direction of the freight delivery system; Second, the forum represents an opportunity for the MPOs in the metropolitan region to discuss freight issues common to each of them and devise solutions to address them; and Third, the regional freight plan has achieved a position at which it is necessary to obtain the input of the freight community, decision-makers, and the general public. The plan is in need of recommendations for improvements to the freight transportation system. Therefore the forum was an important opportunity to obtain this feedback. The forum was a tri-state event. The event was attended by 150 participants from government agencies, consultants and students.

Multimodal Freight Transportation during the 81st TRB Annual Meeting at Washington, DC

UTRC – Region 2 participated at the Poster Session on Multimodal Freight Transportation during the 81st TRB Annual Meeting at Washington, DC. The poster session was sponsored by Committee on Freight Transportation Planning and Logistics; Committee on Freight Transport Regulations; Committee on Urban Freight Transportation; Task Force on Agricultural Transportation; Committee on Ports and Channels; and Committee on International Trade and Transportation.

UTRC was represented by:

Dr. George List, Department Chair, Civil Engineering, Rensselaer Polytechnic Institute showcased the Best Practice Truck Flow Estimation Model for New York City Region.

Dr. Jose Holguin-Veras, Associate Professor of Civil Engineering at City College showcased the Truck Trip Generation at Container Terminals: Results from a Nationwide Survey.

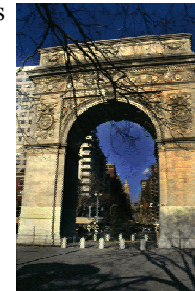
Dr. Catherine Lawson, Assistant Professor, Geography and Planning, SUNY, University at Albany showcased “Making Contact: Developing an Effective Methodology to Survey the Freight Community”.

The Second Annual New York/New Jersey Regional Aviation Symposium titled, “Rebuilding Air Travel after September 11th: Integrating Security and Service.”

The Rudin Center for Transportation Policy & Management at NYU’s Robert F. Wagner Graduate School of Public Service and the University Transportation Research Center – Region 2 co-sponsored this major symposium.

On May 7, 2002, in conjunction with the Port Authority of New York and New Jersey, the Rudin Center held The Second Annual New York/New Jersey Regional Aviation Symposium titled, “Rebuilding Air Travel after September 11th: Integrating Security and Service.” Two hundred individuals attended the event, conducted in partnership with the New York Metropolitan Transportation Council, the University Transportation Research Center, and the CUNY Institute for Urban Systems. The symposium offered fresh information and

timely evaluations on the airlines, airports, travel patterns, and security. Keynote and luncheon addresses were given by William DeCota, Director of Aviation at the Port Authority; Gordon Bethune, Chairman & CEO of Continental Airlines; and Hon. John Mica, Chairman of the Sub-Committee on Aviation, U. S. House of Representatives. Among the panelists featured were Joanne Paternoster, Assistant Director for Customer Service and Standards in the Aviation Department of the Port Authority; Allen Ganz, Vice President for Business Development at Visionics Corporation; Vicki Escarra, Executive Vice President and Chief Marketing Officer of Delta Airlines, Inc.; Samuel Buttrick, Managing Director of U.S. Equity Research at USB Warburg, LLC; and David Plavin, President of the Airports Council International – North America.



Technology Transfer



Icon Mentor Program

Region 2 is rich in professionals who have devoted their careers towards advancing transportation theory and practice. Each year, the University Transportation Research Center will select one of these persons to serve as its Consortium wide mentor. He/she will be available throughout the year to meet with students, and faculty at each consortium institution and literally, give out pearls of wisdom.

For the past three years UTRC selected Herbert Levinson, a member of the National Academy of Sciences to serve as this year's icon mentor. Herbert Levinson is considered to be one of the fathers of modern transportation planning and has extensive knowledge of transportation activities and operations throughout the world.

Herb is a planning innovator and member of National Academy of Engineering. He is also one of the major leaders and innovators in modern transportation planning. His knowledge about technique, practice and projects is without parallel. Herb is an invaluable resource to the region.

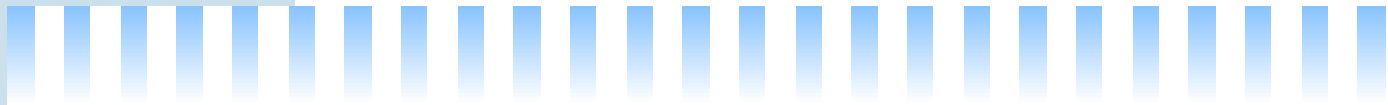
UTRC's Website

The University Transportation Research Center Region 2 maintains a Website at <http://www.utrc2.org> which contains a comprehensive overview of the center's objectives, purposes and functions for planning and management of regional transportation systems.

The Website serves as an information tool for those transportation agencies that are interested in the Center's Research activities and as a bulletin board for students who are interested in pursuing transportation research studies toward advanced degrees.

The Website is a focal point for updated information presented in an accessible format which is visually pleasing and logically navigable.





RESEARCH NEWS

A Publication of the Region 2 University Transportation Research Center
Spring 2001

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Is BRT Right for New York?

The UTRC hosted the New York Regional Workshop on Bus Rapid Transit that met on November 29, 2001 at City College of New York to discuss that question. The Workshop theme, "Bus Rapid Transit -- Building the Case for a New Mode Choice in New York" addressed a one-day learning experience designed to educate and inform transportation professionals and decision-makers about BRT. Sessions and panels discussed the potential for better service for existing riders, attracting new riders to the improved service, and improved efficiency of operations for transit providers. The Workshop demonstrated that BRT could be an effective low cost alternative to expensive new rail transit. It was concluded that BRT and compact, pedestrian-oriented land use are mutually supportive.

Bus Rapid Transit is a rapid mode of transportation that combines the quality of rail transit and the flexibility of buses. The rubber-tired BRT vehicles operate over a variety of travel ways -- exclusive lanes on mixed traffic arterial streets or separate rights-of-way, or on free flowing freeway HOV lanes. Relative to existing transit buses, the BRT offers reduced travel times. New technologies and ITS systems can be easily integrated into the BRT.

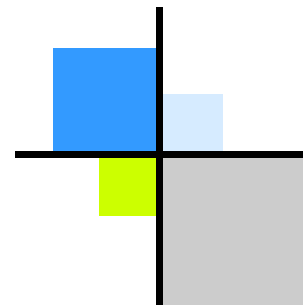
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UTRC Supported Student Presents at DDETF Showcase

Ellen Thorson, a 2001 recipient of the Dwight David Eisenhower Transportation Fellowship Award, presented a paper on the "Integrative Freight Market Simulation (IFMS)" at the 2002 Dwight David Eisenhower Transportation Fellowship Showcase in Washington, DC. The IFMS is a National Science Foundation-sponsored research project, which involves the development of a comprehensive freight transportation demand model that depicts both commodity flows and vehicle trips. This model has a two-level solution approach. One level deals with the economic problem of estimating the provision of freight service consistent with market equilibrium and profit maximization, while the other level deals with the network problem of constructing tours which are consistent with the economic solution and other system constraints. The IFMS will enable researchers to estimate freight origin destination matrices based on secondary information, model the flow of both commodities and commercial vehicles, incorporate logistic information into the freight planning process, and study the impact of real-time traffic control on commercial vehicle traffic.

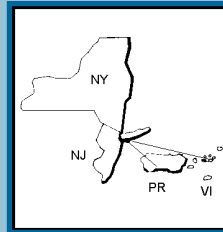
UTRC Newsletter

UTRC Newsletter, Research News is published semi annually and provides information to transportation professionals about research, education, and outreach activities in Region 2. Research News will be available online next year.





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