

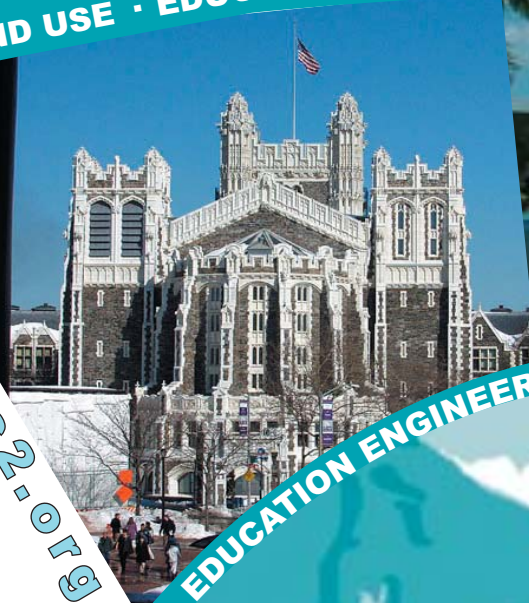
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UNIVERSITY TRANSPORTATION
RESEARCH CENTER
REGION II

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ANNUAL REPORT FISCAL YEAR 2004

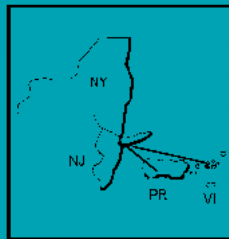
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Annual Report Fiscal Year 2004

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University Transportation Research Center Region II



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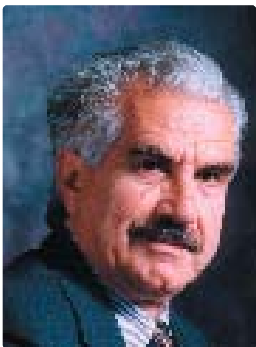
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Chairman's Message

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 fifteen 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

Five very brief years ago we noted that the Year 2000 would mark a watershed year for transportation. The years prior had been given to the development of new technologies – not only in transportation, but for every aspect of our working and social lives. Since 2000 transportation organizations have been deploying and learning how to work with this range of technologies that cover everything from use of the Internet to remote sensing to wireless communications. These technologies, so much a part of all of our lives (how many emails do we open every day, how many mobile phone calls do we make) are creating organizations to rethink how they provide transportation services and are causing them to rethink what their new missions might be in this rapidly changing 21st Century.

UTRC has been working with its client organizations in assisting to bring about this new paradigm of transportation delivery. And perhaps, more than symbolically, the students – graduate and undergraduate – have worked on a number of projects that will firm up this new culture of computer and IT driven organizational operations. Nothing could underscore this more than when the Commissioner of a State DOT invited the undergraduate students working on a project for him to sit down and share their perspective of the importance and needs of transportation in his State.

With some perspective since 2000, it is interesting to note how the types of projects or seminars have changed to meet changing needs. Organizations are intensely budget conscious and some innovative UTRC work has been directed to assist in developing new techniques for project evaluation and budget allocations. Our work on cost models continues. And we will work with the local MPO to improve the utilization of the Best Practices Model – and to help train our students to be fluent in the model use. This constant interchange between clients, faculty and students, the utilization of UTRC as a resource and a partner, truly underscores the value of this program. And, of course, we continually meet - as in our recent, successful one day workshop - to discuss the challenges of technology integration and transportation practice.

As the new paradigm unfolded, Region 2 had to cope with the tragedy of September 11, 2001. An example of the strong partnership between UTRC and the Region 2 organizations has been shown through a joint MPO – UTRC program. The program will honor the lives of the three MPO staff who were deceased on September 11. The program will support a new generation of students studying for advanced degrees in transportation in both coursework and on projects of regional merit. This focus on problems, utilization of the newest advances in practice and theory and the close work of UTRC and our Region 2 Transportation organizations shows that we have taken an eager approach to meet the challenges facing us in the early 21st Century.



ROBERT E.
PAASWELL



“Planning and Management of Regional Transportation

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 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.

Center's Theme

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 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.



The University Transportation Research Center (UTRC) presents unique capabilities to the profession as these changes evolve. 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.



Dr. Robert Paaswell

Director and Distinguished
Professor of Civil Engineering,
City College of New York



Robert Baker

Assistant Director,
Research



Dr. Todd Goldman

Assistant Director for
New Initiatives



Camille Kamga

Assistant Director,
Administration & Information
Technology



Dr. Claire McKnight

Assistant Director,
Education & Training



Dr. Frederick Brodzinski

Business Manager



Icon Mentor

Herbert Levinson



Secretary

Sandra Jackson

Center's Staff



Visiting Scholar

Dr. Joseph Berechman



UTRC's Interns

(from left to right) Edgardo Molina, Asad Chaudhary, Sau Mei Lau, Munia Jamil, Soanya Ahmad (not shown)

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 Falcocchio 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



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

UTRC Board of Directors



Robert Paaswell, Ph.D.
Executive Director



Neville Parker, Ph.D.
City College of New York, New York

Arthur Lerner-Lam, Ph.D.
Columbia University, Earth Center, New York



Arnim H. Meyburg, Ph.D.
Cornell University, New York

Roy Sparrow, Ph.D.
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John Falcocchio, Ph.D., Chairman
Polytechnic University, New York



George List, Ph.D.
Rensselaer Polytechnic Institute, New York

Ali Maher, Ph.D.
Rutgers University, New Jersey

Shmuel Yahalom, Ph.D.
State University of New York, Maritime, New York

Herbert Herman, Ph.D.
State University of New York, Stony Brook, New York

Henry Dobbelaer, Jr., Ph.D.
Stevens Institute of Technology, New Jersey

Benjamin Colucci, Ph.D.
University of Puerto Rico, Puerto Rico



Rutgers University

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.

Dowling College

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.



Member Universities



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

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.



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.

University of Puerto Rico

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.



State University of New York

SUNY's graduate programs offers instruction in transportation management.

There are also programs leading to degrees in applied mathematics and statistics, computer science, electrical engineering, material science and engineering, and mechanical engineering.



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.



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.



Cornell University

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.



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



Financial Report

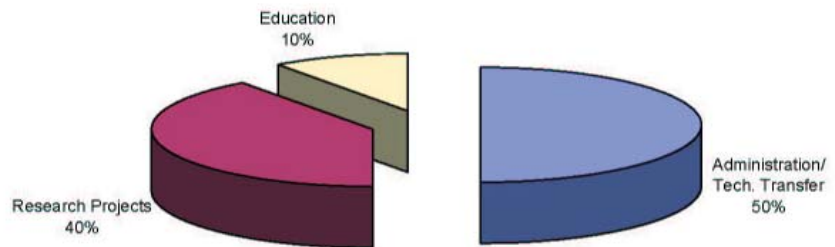
The following charts summarize the UTRC revenues and expenditures for FY 2003 - 2004. The University Transportation Research Center Region 2 funding allocated to programs totaled over \$1.5M in 2003-2004. This year, the annual USDOT grant allocated to programs represents 50 percent of the total allocation.

UTRC's longtime partners, New Jersey Department of Transportation, and New York State Department of Transportation provided a combined 25 percent of the budget in 2003-2004. UTRC's In-kind funds from university members and agencies were 25 percent of the total budget.

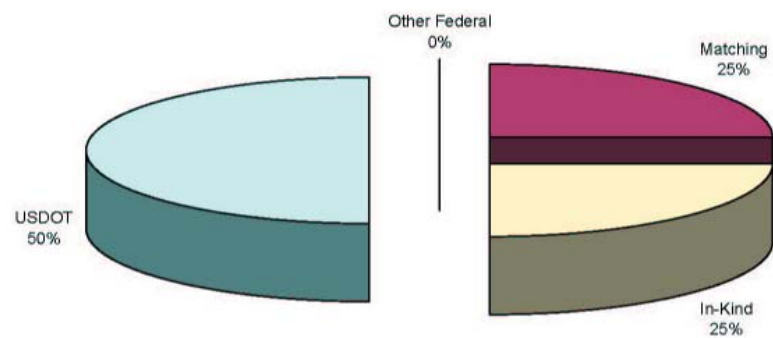
The share of funds allocated among programs differed from the previous fiscal year. With strong partnerships and solid financial commitments from federal, state and local agencies, UTRC allocated 40 percent of its total budget to research projects. To carry out administrative and technology transfer programs, 50 percent of funds were used. The remaining 10 percent of the budget is provided for the Advanced Institute for Transportation Education.



FY 2003 - 2004 Funds Allocation



FY 2003 - 2004 Revenues



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.

Research Projects



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.



Category: Physical Infrastructure
Project # 49777-13-05

Title: Identification of Traffic Control Devices for Mobile and Short Duration Work Operations

Performing Organization: New Jersey Department of Transportation

Sponsors: United States Department of Transportation
New Jersey Department of Transportation

Principal Investigator: Robert E. Paaswell, Ph.D, Director and Distinguished Professor
University Transportation Research Center
City College of New York
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New Research Projects

During the fiscal year October 1, 2003 to September 30, 2004, the following new UTRC research projects are listed and are funded under the current USDOT grant:

Project Objective:

The overall objective of this research project is to study mobile work zone safety with particular attention to the identification of work zone safety devices, information systems for the reduction of safety and congestion, and implementation of innovative techniques to reduce delays and crashes due to work zones. The specific objectives are to:

- Provide improvements for maximum protection of the motoring public and workers in the work zone and in the set up of the work zone,
- Identify state-of-the art work zone technologies to improve worker safety in mobile work zone and short term maintenance operations,
- Identify information systems for work zone traffic control to reduce delays and crashes,
- Meet the current standards established by internal policies of the NJDOT,
- Identify “best practices” for the use of law enforcement to improve work zone safety,
- Identify key issues to be considered from public outreach and information systems.



NEW RESEARCH PROJECTS

Project Abstract

The research approach will include the identification of potential technologies and information systems, evaluation of the identified devices and systems with appropriate maintenance yards and crews, and the parathion of specifications and Baseline Document Change papers for adoption by the NJDOT. Potential technologies and information systems will be identified from the NJDOT New Technologies and Products database of approved and under evaluation products, Transportation Research Board and National Cooperative Highway Research Program reports, international sources, Strategic Highway Research Program reports, other State DOT correspondence, and manufacturers and vendors. The identified technologies and information systems will be researched to obtain users and technical information on their effectiveness.



Category: Transportation Systems Performance
Project # 49777-14-05*

Title: Assessment of Border Crossing Needs 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: Robert E. Paaswell, Ph.D, Director and
Distinguished Professor
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External Project Contact:

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1220 Washington Ave.
Albany, NY 12232
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Email: PHoole@dot.state.ny.us



Project Objective:

The approach that will be used to accomplish this work will rely primarily on an extensive literature review to gather information and assess available data. Formal and informal interviews will be held as warranted. When all the data and discussion are collected and assessed, a final report will be drafted summarizing the results

NEW RESEARCH PROJECTS

Project Abstract

Surface trade with Canada and Mexico increased each successive year between 1994, when NAFTA entered into effect, and 2000. Despite a decline in 2001, surface transportation modes still carried almost 90% of the total NAFTA trade, representing \$547.3 billion. Roughly two-thirds of this trade was generated by the bilateral trade relationship between Canada and the United States. Indeed, Canada remains the United State's strongest trading partner, exceeding trade with Mexico and with the European Union. Further, though this trade flows through 22 principal border crossings between the United States and Canada, in 1999, the six highest volume crossings handled approximately 90% of the value and three-quarters of the tonnage and truck trips. Three of these six crossings are in New York State.

New York State plays a pivotal role in freight transport between Canada and the United States. In 1999, New York accounted for 32% of the weekly tonnage and 31% of the trucks crossing the Canada-U.S. borders at major crossings. Only Michigan was higher, with 39% and 41.2%, respectively. The next tier state was Washington at 11% and 11.4%, respectively – significantly lower than New York or Michigan. Of the trucks crossing between Canada and the Border States, between 25% and 50% of them both originate and are destined for locations beyond the Border States. Thus, they generate economic value nationally.



Project:

Transportation Choices and the Future of the NYC Economy*

Performing Organization:

The City College of New York

Sponsor:

The Partnership for New York City. This project did not use federal funds.

Principal Investigator:

Robert E. Paaswell

*This project is not used for the grant matching requirement



Project Objective:

The objective of this project was to assist a major business group assess the relative benefits of a series of major capital transportation investments. The research project sought to demonstrate how a Goal Achievement Matrix approach could assist complex investment decisions involving multiple policy objectives. Beyond highlighting each project’s individual benefits, the research effort also used multiple analytical approaches to highlight the synergies and/or tradeoffs among the various investment choices.

Project Abstract:

New York is facing a difficult set of decisions about how to prioritize its transit infrastructure investments. After spending decades rebuilding its transit system, it is able for the first time in a generation to expand its transit network. And after the terrorist attacks of Sept. 11, 2001, New York faces a tremendous challenge in selecting investments that will help rebuild Lower Manhattan’s economy. Faced with the need to determine its own priorities among the many worthy transit projects competing for public funds, The Partnership for New York City, a network of business leaders dedicated to enhancing the economy of the five boroughs of New York City, requested UTRC’s assistance providing impartial analysis of the relative economic benefits of the major proposed investments.

The projects considered in this research included:

- Fulton Transit Center and new PATH terminal at the World Trade Center
- West Street Tunnel
- Second Avenue Subway
- No. 7 Subway Extension to Manhattan’s Far West Side
- New Hudson River Tunnel for N.J. Transit
- Long Island Rail Road connection to Grand Central Terminal
- Long Island Rail Road/AirTrain connection to Lower Manhattan
- New Penn Station in Farley Post Office
- PATH extension to Newark Airport Station

For each project, the research team estimated net transportation benefits from projected ridership shifts and trends, reduced travel times, reduced exposure to overcrowding, and reduced air pollution from automobile traffic, using a comparable set of assumptions. They then used these streams of benefits to calculate the net present value of each project. Finally, the net present value was combined with other social, economic, and political factors in a Goal Achievement Matrix. This allowed the Partnership to examine how differing assumptions about the relative importance of various policy objectives influenced the relative scores received by the projects.

more **NEW RESEARCH PROJECTS**



Project Objective:

This is the first stage of a larger effort to assist the Metropolitan Transportation Authority in developing an approach to capital programming that better accounts for lifecycle costs and impacts of investments on operating budgets. Phase 1 of the project used a case study approach to demonstrating the long-term capital and operating costs of deferring investments in the agency's critical infrastructure.

Project Abstract:

To illustrate how deferred capital investments impact the MTA's capital and operating budgets, the UTRC research team worked with each of MTA's four operating authorities (New York City Transit, Metro-North Railroad, Long Island Rail Road, and Bridges & Tunnels) to select a total of six case studies. They worked closely with the capital planning staff, as well as maintenance and/or operations staff at each agency to develop and refine the cases, and to identify data sources and suitable analysis methods.

After developing detailed analyses of the net budgetary impacts and net present value of canceling or deferring each investment, the research team placed these results in a larger framework. In general, capital investments in the transit system has three interrelated rings of impacts. First, it has internal impacts – the capital and operating budget impacts examined in this study. Second, it affects the users of the transportation system, through changes in cost and system performance. That, in turn, results in changes in ridership and farebox revenue. Third and finally, the changing health of the transit system has broader impacts on the region's economic well-being, which also ultimately influences the transit agency's tax and farebox revenues. It is broadly anticipated that sustained investment in state of good repair and normal replacement investments leads to a "virtuous cycle" of efficiencies, cost savings, and positive spillover effects, while postponing needed investments in the system can lead to a spiral of decline.

Focusing solely on the agencies' internal benefits of capital investment, the six case studies confirmed the "virtuous cycle" hypothesis. Despite conservative assumptions, the study found that timely investment in good repair delivers higher performance at a lower price than stretching out these investments to save money. Ultimately, failing to reinvest in the system costs more in the long run.

Project:

Impacts of Capital Budgets and Capital Programming, Phase 1 *

Performing Organizations:

The City College of New York, College of Staten Island

Sponsor:

Metropolitan Transportation Authority.
This project did not use federal funds.

Principal Investigator:

Robert E. Paaswell

*This project is not used for the grant matching requirement

Ongoing Research Projects

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

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|---|---|---|--|
| 49777-11-04 | Handbook of Scour Countermeasures Designs | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Anil K. Agrawal, Ph.D. Associate Professor, City College of NY T-121, New York, NY 10031 Phone: 212-650-8442, Fax: 212-650-6965 E-mail: agrawal@ccny.cuny.edu |
| 55657-02-15 | Frequency of Work Zone Accidents on Construction Projects | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | Raghavan Srinivasan, Ph.D. Senior Transportation Research Engineer Highway Safety Research Center University of North Carolina 730 Airport Road, Chapel Hill, NC 27599 Phone: 919-962-7418, E-mail: srini@unc.edu Hualuang Teng, Ph.D. Research Assistant Professor, The University of Virginia PO Box 400742 Charlottesville VA 22904-4742 Phone: 434-924-1461 E-mail: hht4n@cms.mail.virginia.edu |

ONGOING RESEARCH PROJECTS

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|--|---|---|--|
| 55657-04-15 | Development of Smart Bridge Bearing Systems- A Feasibility Study | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | Anil K. Agrawal, Ph.D. Associate Professor The City College of New York Steinman Hall, T -121 Convent Avenue at 140th Street New York, NY 10031 Phone: 212-650-8442, Fax: 212-650-6965 E-mail: agrawal@ccny.cuny.edu |
| 55657-05-15 | Assessing New York State DOT's Alternatives to Herbicides | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | Christopher Nowak, Ph.D. Associate Professor Forest and Natural Resource Management State University of New York College of Environmental Science and Forestry Syracuse, NY 13210 Phone: 315-470-6575 E-mail: canowak@esf.edu |



| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|---|---|---|--|
| 55657-06-15 | Development of a Portable Petroleum By-Products Chemical Sensor | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | Michael Carpenter, Ph.D. Assistant Professor School of NanoScience and NanoEngineering State University of New York - Albany 251 Fuller Road Albany, NY 13203 Phone: 518-437-8686, Fax: 518-437-8637 E-mail: mcarpenter@uamail.albany.edu |
| 55657-10-15 | Operational Analysis, Technical Guidance and Support | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | Jose Holguin-Veras, Ph.D. Associate Professor Dept. of Civil and Environmental Eng. Rensselaer Polytechnic Institute 110 Eight Street, Troy, NY 12180-3590 Phone: 518-276-6221, Fax: 518-276-4833 E-mail: jhv@rpi.edu Kaan Ozbay, Ph.D. Assistant Professor, Rutgers University 623 Bowser Rd. Piscataway, NJ 08854 Phone: 732-445-2792, Fax: 732-445-0577 E-mail: kaan@rci.rutgers.edu |

ONGOING RESEARCH PROJECTS

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|--|---|---|--|
| 55657-12-15 | Quantifying Non-Recurring Delay on New York City's Arterial Highways | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | George F. List, Ph.D. Chair and Professor, Civil and Env. Eng. Center for Infrastructure and Transportation Studies Rensselaer Polytechnic Institute 110 8th Street Troy, NY 12180-3590 Phone: 518-276-6362 E-mail: listg@rpi.edu |



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E-mail: mouskos@utrc2.org

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|--|---|---|--|
| 49777-21-03 | Evaluation Study of the Port Authority of NY & NJ's Value Pricing Initiative | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Jose Holguin-Veras, Ph.D. Associate Professor Dept. of Civil and Environmental Eng. Rensselaer Polytechnic Institute 110 Eight Street, Troy, NY 12180-3590 Phone: 518-276-6221, Fax: 518-276-4833 E-mail: jhv@rpi.edu Kaan Ozbay, Ph.D. Assistant Professor, Rutgers University 623 Bowser Rd. Piscataway, NJ 08854 Phone: 732-445-2792, Fax: 732-445-0577 E-mail: kaan@rci.rutgers.edu |
| 55657-01-14 | Seasonal Variations of In-situ Materials Properties in New York State | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | Lynne H. Irwin, Ph.D. Cornell Local Roads Program Cornell University 416 Riley-Robo Hall Ithaca, NY 14853-5701 Phone: 607-255-8033 E-mail: LHI1@cornell.edu |
| 55657-11-15 | Speed Project Closeouts/ Streamline Local Financing | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | Robert E. Paaswell, Ph.D. Director and Distinguished Professor University Transportation Research Center City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8050, Fax: 212-650-8374 E-mail: paaswell@utrc2.org |

ONGOING RESEARCH PROJECTS

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

The UTRC has completed the following projects under the current grant.

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|-------------|--|---|---|--|
| 49777-12-02 | ITS Operation Support Contracts | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Raman Patel Urban ITS Center, Polytechnic University Six Metrotech Ctr, Brooklyn, NY 11201 Phone: 718-260-3349 E-mail: rpatel@poly.edu Hualiang Teng, Ph.D. Assistant Professor Polytechnic University Six Metrotech Center Brooklyn, NY 11201 Phone: 718-260-3196 E-mail: hteng@poly.edu |
| 49777-17-03 | Assess impacts and Benefits of Traffic Signal Priority for Buses | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Raghavan Srinivasan, Ph.D. Assistant Professor Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: srini@unc.edu |

Completed Research Projects

The UTRC has completed the following projects under the current grant.

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|--|--|--|--|
| 75150-00-01 | NYCDOT Green Bus Lines Route Analysis | New York City Department of Transportation | United States Department of Transportation New York City Department of Transportation | Claire McKnight Ph.D. Associate Professor Civil Engineering, City College Bdg. Y220, New York, NY 10031 Phone: (212) 650-8050 E-mail: mcknight@utrc2.org Robert E. Paaswell, Ph.D. Distinguished Professor, City College Bdg. Y220, New York, NY 10031 Phone: 212-650-8072; Fax: 212-650-8374 E-mail: paaswell@utrc2.org |
| 49777-07-02 | Analysis of Human Factors in Nighttime Work Zones | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Jose Holguin-Veras, Ph.D. Assistant Professor City College of New York Bdg. Y220, New York, NY 10031 Phone; 212-650-8060 E-mail: jhv@rpi.edu |
| 75144-07-01 | Crosswalk Safety: Evaluation of the Light Guard System | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | 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 |

COMPLETED RESEARCH PROJECTS

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|--|---|---|---|
| 75144-04-01 | Evaluation of the Effectiveness of the Graduated Driver Licensing System in New Jersey - Phase 1 | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Raghavan Srinivasan, Ph.D. Assistant Professor, Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: srini@unc.edu Claire McKnight Ph.D. Associate Professor, City College of NY Bdg. Y220; New York, NY 10031 Phone: 212-650-8050, E-mail: mcknight@utrc2.org |
| 75144-06-01 | Analytical Tool for Measuring Emission Impact of ACCEL/DECEL Lanes | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Hualiang Teng, Ph.D. Assistant Professor Polytechnic University Six Metrotech Center Brooklyn, NY 11201 Phone: 718-260-3196 E-mail: hteng@poly.edu |
| 58635-01-02 | Development of Bus Maintenance Information | New York City Transit | New York City Transit | Mohsen Jafari, Ph.D. Professor, Department of Industrial Engineering Rutgers University Office: Computing Research & Education Building 96 Frelinghuysen Road, Piscataway, NJ 08854 Phone: 732- 445-3627 E-mail: jafari@rci.rutgers.edu |

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|--|--|---|--|
| 55657-01-13 | Benefits Package Value | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | 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 |
| 75144-01-02 | Evaluation of the Performance of Retro reflectors in Snowplow able Raised Pavement Markers | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | 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@utrc2.org |
| 49777-11-02 | Characteristics of Traffic Flow in 55 & 65 MPH Speed Limits | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Raghavan Srinivasan, Ph.D. Assistant Professor Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: sriniv@unc.edu |
| 55332-01-02 | An Assessment of Methodological Alternatives for a Regional Freight Model in the NYMTC Region, Phase 2 | New York Metropolitan Transportation Council | New York Metropolitan Transportation Council | 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@rpi.edu |

COMPLETED RESEARCH PROJECTS

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|--|---|---|--|
| 49777-13-02 | Intermodal Productivity and Goods Movement – Phase 3 | Port Authority of New York & New Jersey | United State Department of Transportation Port Authority of New York & New Jersey | Shmuel Yahalom, Ph.D. Associate Professor SUNY Maritime College 6 Pennyfield Avenue Bronx, NY 10465 Phone: 718-409-7290 E-mail: yahaloms@aol.com |
| 49777-15-03 | Technology Transfer Projects: Energy Absorption Fender System, Precast or Prefabricated Bridge Deck Systems, & Smart Bridge Applications | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Neville Parker, Ph.D. Professor , City College of New York Bdg. Y220, New York, NY 10031 Phone: 212-650-8050, Fax: 212-650-8374 Phone: 212-650-8050, Fax: 212-650-8374 E-mail: parker@utrc2.org Farhad Ansari, Ph.D. Professor, Univ. of Illinois at Chicago Chicago, Illinois 60607-7023 Tel: 312-996-2437, Fax: 312-996-3428 E-mail: fansari@uic.edu |
| 49777-16-03 | Technical Solutions to Overcrowded Park & Ride Facilities | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Kyriacos C. Mouskos, Ph.D. Research Professor , City College of NY Bdg. Y220, New York, NY 10031 Phone: 212-650-8050, Fax: 212-650-8374 E-mail: mouskos@utrc2.org Maria Boile, Ph.D. Assistant Professor, Rutgers University 623 Bowser Rd. Piscataway, NJ 08854-8014 Tel: 732-445-7979, Fax: 732-445-0577 E-mail: boile@rci.rutgers.edu |



| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|---|---|---|--|
| 75144-01-01 | New Jersey Link to the 21st Century: Maximizing the Impact of Infrastructure Investment | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Robert E. Paaswell, Ph.D. Distinguished Professor, City College of NY Bdg. Y220, New York, NY 10031 Phone: 212-650-8072; Fax: 212-650-8374 E-mail: paaswell@utrc2.org Jose Holguin-Veras, Ph.D. Assistant Professor, City College of NY Bdg. Y220, New York, NY 10031 Phone: 212-650-8060; E-mail: jhv@rpi.edu Raghavan Srinivasan, Ph.D. Assistant Professor, Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365, E-mail: sriniv@unc.edu Claire McKnight Ph.D. Associate Professor, City College of NY Bdg. Y220; New York, NY 10031 Phone: 212-650-8050, E-mail: mcknight@utrc2.org Kaan Ozbay, Ph.D. Assistant Professor, Rutgers University 623 Bowser Rd. Piscataway, NJ 08854 Phone: 732-445-2792, Fax: 732-445-0577 E-mail: kaan@rci.rutgers.edu Joseph Berechman Ph.D. Visitor Scholar, UTRC Bdg. Y220; New York, NY 10031 Phone: 212-650-8050, E-mail: yossi@utrc2.org |



COMPLETED RESEARCH PROJECTS

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|--|---|---|--|
| 49777-12-03 | Impact of Congestion on Bus Operations and Costs | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Claire McKnight Ph.D. Associate Professor, City College of NY Bdg. Y220; New York, NY 10031 Phone: 212-650-8050, Fax: 212-650-8374 E-mail: mcknight@utrc2.org Robert E. Paaswell, Ph.D. Distinguished Professor, City College of NY Bdg. Y220, New York, NY 10031 Phone: 212-650-8072; Fax: 212-650-8374 E-mail: paaswell@utrc2.org |
| 55657-09-15 | Funding Analysis for Long Term Planning | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | Allison L. C. de Cerreño, Ph.D. Rudin Center New York University 4 Washington Square North New York, NY 10003 Phone: 212-998-7545 Fax; 212-998-3890 E-mail: allison.decerreno@nyu.edu |
| 49777-15-02 | Developing Data Resources For the 21st Century: Urban Applications of Geographic Information Systems | New York State Department of Transportation | United States Department of Transportation | Catherine Lawson, Ph.D. Assistant Professor SUNY, University at Albany Earth Science 218 Albany, NY 12222 Phone: 518-442-4775 E-mail: lawsonc@albany.edu |

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|--|---|---|---|
| 55657-01-15 | Information Technology Operations | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | William Wallace, Ph.D. Decision Sciences & Engineering Systems Rensselaer Polytechnic Institute 110 Eight Street Troy, NY 12180 Phone: 518-276-2895, Fax: 518-276-8227 E-mail: wallace@rpi.edu |
| 49777-11-03 | The Impact of Mode and Mode Transfers on Commuter Stress | New Jersey Department of Transportation | United States Department of Transportation New Jersey Department of Transportation | Richard Wener, Ph.D. Assistant Professor, Polytechnic University Six Metrotech Ctr, Brooklyn, NY 11201 Phone: 718-255-3585, Fax: 718-255-0305 E-mail: rwener@poly.edu Gary Evans, Ph.D. Professor, Cornell University E306 Martha Van Rensselaer Hall Ithaca NY 14853 Tel: 607-255-4775; Fax: 607-255-0305 E-mail: gwe1@cornell.edu |
| 55657-08-15 | Severance Damage Study | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | Richard Marchitelli School of Continuing and Professional Studies Real Estate Institute; New York University 11 west 42nd Street, Room 509 New York, NY 10036 Phone: 646-471-2680, Fax: 646-471-8939 E-mail: Richard_Marchitelli@cushwake.com |

COMPLETED RESEARCH PROJECTS

| Project No: | Title: | Performing Organization: | Sponsors: | Principal Investigator: |
|-------------|-----------------------------------|---|---|---|
| 55657-02-14 | New York in the New World Economy | New York State Department of Transportation | United States Department of Transportation New York State Department of Transportation | Robert E. Paaswell, Ph.D. Director and Distinguished Professor of Civil Engineering University Transportation Research Center City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8072 Fax: 212-650-8374 E-mail: paaswell@utrc2.org |



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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.

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 below. 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 2004, 17 people applied for Advanced Institute for Transportation Education Graduate Scholarships. Nine of these were full time students and eight were agency employees. From these applications, six received scholarships, four full time students and two agency employees. They all started their programs in September.



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.

2004 UTC Outstanding Students of the Year Awards

Ms. Stacy Eisenman is a graduate of Rensselaer Polytechnic Institute (BSCE, 2002; MS, 2003) and is presently a PhD student at the University of Maryland. In 2004, she received the Student of the Year Award from the Region II Regional Transportation Center, National University Transportation Centers Program. In 2003, subsequent to receiving her masters degree from RPI, Ms. Eisenman began her doctoral program at the University of Maryland (College Park), where she joined the Maryland Transportation Initiative and was awarded the University Fellowship. She is currently working in the areas of roundabout simulation, the use of dynamic traffic assignment to control urban corridors, and network performance estimation and prediction. She has been the author or co-author of eight conference papers. Her professional affiliations include TRB, ITE, ITS America, ASCE, and ASEE. She is also a member of Tau Beta Pi and Chi Epsilon.

Women's Transportation Seminars

In October 26, 2004, UTRC awarded \$1000 to the winner of the Greater New York WTS Graduate Scholarship winner, Laynie Weaver. Laynie is working on her Master's degree in Urban Planning specializing in transportation planning while also working at the Voorhees Transportation Center. She expects to finish her degree in Spring 2005. Lida earned a BS in Geography in May 2000 from Texas A&M. She became interested in walking and bicycling as transportation on the Texas A&M campus, which helped mode her interest in transportation planning as a career.





2004 Summer Transportation Institute at CCNY

The enrollment of students with engineering or technical backgrounds is far below the number needed by the Transportation industry. These facts represent an unusual opportunity for students to enroll in engineering and/or technical disciplines. The Institute for Transportation Systems (ITS) - Summer Transportation Institute (STI) hosted at The City College of The City University of New York, completed its ninth year in 2004. The STI Project Director, Neville A. Parker, Ph.D., P.E., 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 - 2004 Summer Transportation Institute, commenced with the Opening Ceremony on Tuesday, July 6, 2004, and concluded with its Closing/Award Ceremony on Saturday, July 31, 2004. Of the 20 scholarships awarded, 20 students completed the program, in addition to 4 participants in the Internship component. The 20 primary students were in grades 9 through 12. The 4 interns attended the eleventh grade.

2004 – STI Highlights

- Approximately 31 students applied to the 2004 STI Program, as a result of the collaborative efforts of Program Administrator, Alma T. Jefferson, with Gene Blaufarb, Educational Consultant, Office of Admissions – CCNY, and the CUNY Gateway Coordinators.
- Gregory H. Williams, President - The City College of New York, addressed the 2004 students, staff, and parents during the Opening Ceremony on Tuesday, July 6, 2004. This is the second year that President Williams participated in the program.
- Dr. Isaac Kwame Takyi delivered the Keynote Address, during the Closing Ceremony. Dr. Takyi is a Senior Director of Technology and Information Services at the Metropolitan Transportation Authority, New York City Transit.
- Mr. Joel Dreyfuss, a senior writer at Bloomberg Markets and a 1971 graduate of The City College of The City University of New York, delivered remarks during the Closing Ceremony.
- As an added enhancement to the program, TRAC PAC II software (SIMCity, Bridge Builder, Construction, and the Environmental Modules) purchased from the American Association of State Highway and Transportation Officials (AASHTO) was introduced to the 2004 students.
- Donations to the Pikarsky Fund are now tax-exempt. Mr. Kevin Walkes, a graduate of CCNY, and a former STI Program Coordinator was instrumental in obtaining donations from former CCNY graduates to assist the STI at CCNY.
- The NYC Louis Stokes Alliance for Minority Participation (LSAMP) in Science, Technology, Engineering and Mathematics Project Director, Claude Brathwaite, Ph.D., invited the STI Interns to participate in the NYC LSAMP Summer 2004 Poster Session. The Poster Session was held on Thursday, August 12, 2004, at the BNL (Brookhaven National Laboratory) in Upton, New York.
- On Friday, July 30, 2004, Dr. Parker, the STI Students and Staff visited the NYC Office of Emergency Management, Emergency Operations Center, 11 Water Street, Brooklyn, NY 11201. This is the first time that the program was granted clearance to visit this facility.
- 2004 interns trained and supervised by Dr. Neville A. Parker, conducted experiments, research, and presentations on, “Non-Destructive Testing Using Portable Seismic Property Analyzer (PSPA).” This equipment is a highly technological apparatus worth \$35,000.



Technology Transfer

Visiting Scholar Seminar: Time Use and Travel Behavior: Modeling the Connection.

Dr. Ram M. Pendyala

As part of the University Transportation Research Center's visiting scholar program, Dr. Ram Pendyala from the University of South Florida gave a presentation on the emergence of activity-based approaches to travel demand analysis, where travel demand is explicitly recognized as a derived demand. Activity-based approaches emphasize people's time use patterns. This presentation focused on explaining the role of time use in travel demand analysis and provided a key example of how the temporal dimension can be incorporated into emerging activity-based travel demand models. The presentation was given to an audience of city planners, transit planners, consultants and academics from local Universities.

Dr. Ram M. Pendyala is an Associate Professor and the Graduate Coordinator in Civil and Environmental Engineering at the University of South Florida (USF) in Tampa, specializing in Transportation Engineering and Planning. Dr. Pendyala received his Masters (1990) and Ph.D. (1992) degrees from the University of California at Davis. He has his Bachelors degree in Civil Engineering from the Indian Institute of Technology (IIT) in Madras, India



Visiting Scholar Seminar:
Transportation and Homeland Security
Stephen E. Flynn, Ph.D.

In a continuing effort to inform the New York and New Jersey Regional community in homeland security issues, the University Transportation Research Center presented Stephen E. Flynn, Ph.D. Dr. Flynn is a retired U.S. Coast Guard commander, and a foremost expert on homeland security and border control, and director of the Council on Foreign Relations' Hart-Rudman task force on homeland security. He received his Ph.D., and M.A.L.D. from the Fletcher School of Law and Diplomacy at Tufts University and his B.S. from the U.S. Coast Guard Academy. Dr. Flynn spoke on what can be done in this regional area in the face of a war and an environment of terrorism.

Dr. Flynn was the director of the Independent Task Force that prepared the October 2002 publication, America—Still Unprepared, Still in Danger. That report concluded that the United States remains dangerously unprepared to prevent and respond to a catastrophic attack on U.S. soil. The task force that came to that conclusion included two former secretaries of state, three Nobel laureates, two former chairmen of the Joint Chiefs of Staff, a former director of the CIA and FBI, and some of the nation's most distinguished financial, legal, and medical experts.



Visiting Scholar Seminar:
The Automobile in the City:
New Views of an old Problem
David Gurin

In an effort to understand the conflict between the city and the car, this University Transportation Research Center seminar discussed the essence of the conflict between

car and city, and what measures can be taken to achieve transportation that is democratic, aesthetic and safe. The domination of the city by the private car has lowered urban standards of beauty, safety, health, quiet and equity. But this domination has had a long history of opponents and they have achieved a degree of success in some cities, where policies and programs have been introduced to overcome automotive damage.

David Gurin, a graduate of Cornell and of the Harvard Graduate School of Design, is a city planner with wide experience in land use and transportation planning. He was an activist on transportation issues who was one of the founders of the New York group, Transportation Alternatives. He wrote about the auto and the city for popular and professional journals. In 1978 he was appointed Deputy Commissioner for Planning and Research of the New York City Department of Transportation. He oversaw the implementation of bus and bicycle lanes and compiled City Streets, a master plan for transportation in the city. In 1991 he moved to Toronto, where, he became Metropolitan Toronto Planning Commissioner until 1998. He is currently a planning consultant and an adjunct professor of urban planning at Ryerson University in Toronto. He recently wrote "Driven to Action: Stopping Sprawl in Your Community" a citizen's guide to the urban environment, published by the David Suzuki Foundation, a leading Canadian environmental advocacy group.

TECHNOLOGY TRANSFER

Visiting Scholar Seminar: Cars and Communities

Dr. Ben Hamilton-Baillie

Ben Hamilton-Baillie is a specialist in urban design and traffic engineering. Following a career in public housing, he worked with the transport organisation Sustrans to develop the UK's National Cycle Network. The award of a Winston Churchill Fellowship allowed him to investigate latest approaches to traffic in towns across mainland Europe. In 2001 he became the first UK citizen to be awarded a Loeb Fellowship to the Design School at Harvard University, allowing him to research and

develop ideas about the relationship between cars and communities. He has taught and lectured extensively across the UK, northern Europe and the USA, and is author of "Home Zones: Reconciling People, Places and Transport" (Harvard 2001). He is currently strategy director for the West of England Partnership, a long-term planning think-tank based in Bristol, England, and is a visiting lecturer at the University of the West of England.



and surprising new approaches to safety and traffic management. He covered ideas about gateways and transition zones, speed management and safety, and the relationship between urban designs, engineering and behavioural psychology. Such ideas are in their infancy in the USA, but they offer the possibility for new relationships between vehicles, pedestrians, bicycles and the public realm. Ben drew on recent examples from several European countries to suggest ways in which traffic engineering and urban design might combine to enhance the prosperity, vitality and safety of the public realm.



For generations, the spaces between buildings in the towns and cities across the USA and Europe have been dominated by the requirements of traffic engineering, with its language of signs, traffic signals, bollards, barriers, kerbs and road markings. As a result most cities, towns and villages look increasingly alike, and there has been little opportunity to express community values, history, or a sense of place.

Ben's talk examined some of the history of traffic in towns, illustrated by examples of some remarkable





Regional Partnerships in Transportation,
NYU Wagner Rudin Center
for Transportation Policy & Management

Co-hosted by the NYU-Wagner Rudin Center for Transportation Policy and Management, NYU-Wagner Institute for Civil Infrastructure Systems and the University Transportation Research Center, this Conference provided a forum for objective discussion of policy and institutional issues to deployment of intelligent transportation systems, in addition to celebrating E-ZPass and other regional successes. Effective implementation of Transportation technologies often requires multiple agencies and multiple departments within those agencies to coordinate their efforts – something not always easily done. Studies have concluded that institutional collaboration and cooperation that allows formal sharing and integration of information and systems across agencies and organizations is a key challenge in deploying ITS. As technologies are sought for multi-model purposes and are used across jurisdictional lines, these issues become even more complex. Regional examples of institutional collaboration and cooperation were examined for implementation of ITS. Panelists spoke to national and international examples and obstacles and opportunities along with lessons learned and future possibilities were addressed.



Intelligent Transportation Systems Technology for
Public Transit Conference and Workshop

Looking into the future, the promises of the ITS technologies are greater than ever. This Conference and Workshop by the University Transportation Research Center was a unique gathering of researchers, students, developers, engineers, managers, and decision makers from government, academia, and industry to focus on the Intelligent Transportation Systems (ITS) Technology in Public Transit. This dedicated forum provided an excellent

learning and networking opportunity to anyone interested in the best practices, local conditions, integration, safety and security, customer support, and operations and maintenance of ITS technologies for public transportation.

The region will have smart highways that will automatically inform drivers of road conditions; the region will have smart transit buses and subways that are driverless; the region will have small devices installed in our cars that guide us through the traffic; we will have customized information that supports seamless end-to-end travel choices delivered to us everywhere we go; and we will have a safe and secure system that can both detect and respond to regional crises.

Public transit has benefited greatly from the modernization impetus of ITS. The conference theme is Intelligent Transportation Systems (ITS) Technologies for Public Transit. The objectives of the conference are to explore opportunities that ITS technology can provide in enhancing the operation of public transit and develop research problem statements concerning improvement of the state-of-the art of ITS Transit Technology.

The University Transportation Research Center published the Conference Proceedings, Intelligent Transportation Systems Technology for Public Transit, in May 2004. The proceedings are posted on the Centers web site.

TECHNOLOGY TRANSFER

One-Day Workshop Transportation in the 21st Century Wang Center - Stony Brook University

The Stony Brook University, Department of Technology and Society, and the NSF Center for Thermal Spray Research, and the University Transportation Research Center co-sponsored this one-day workshop on emerging critical issues in civil transportation, for both land and marine. This First Transportation Infrastructure Symposium focused on the future of SMART Technologies for the 21st Century. As our transportation infrastructures face decay and with ever present maintenance problems, it is imperative to formulate an agenda for research directed at real problems. It is also essential to introduce a new generation of policy specialists and engineers to the challenges facing transportation. This workshop is thus dedicated to today's and tomorrow's transportation specialists with the premise that one must clearly understand the problems in order to invent solutions. With this in mind, experts in various areas of transportation policy and technology have been asked to present their views of the current and emerging problems and approaches which need to be considered by transportation authorities, both states and federal.

Aviation Seminar Series and Reception on Honor of Queens Aviation Education Month

This lecture series was sponsored by the CUNY Aviation Institute at York College, CUNY Institute of Urban Systems and University Transportation Institute of City College for the education, training and research to prepare students for entry into professional careers in aviation. This lecture featured the president of York College, The Federal Aviation Administration Regional Administrator, and panelists from JetBlue Airways, The Port Authority of New York & New Jersey, and the Federal Aviation Administration.



TransAction 2004 New Jersey Transportation Conference and Expo: 29th Annual

The University Transportation Research Center participated in the 29th Annual New Jersey TransAction Conference in Atlantic City, New Jersey in April 2004. The Center exhibited its education, research and technology programs to acquaint the conference attendees with the UTRC activities. The conference provided engineers, managers and 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.



Research Newsletter, Summer 2004

This publication of the University Transportation Research Center newsletter addresses the research reports and events of the Center. A research report by UTRC Principal Investigator Dr. Richard Wener of Polytechnic University, “Running for the 7:45: The Effects of Public Transit Improvements on Commuter Stress,” was among the top ten papers downloaded from the Kluwer Online Journal web site.

This research project took advantage of the implementation of a major mass transit improvement by New Jersey Transit which provided a “one-seat ride” into New York City for many commuters who previously had to transfer in Hoboken in order to take Port Authority Trans Hudson (PATH) trains into New York City. The creation of this new service provided a natural experiment in which some riders switched to the new route, while others continued to use their previous route. We studied psychological and psychophysiological responses to these commuting options, using a quasi-experimental, pre-post change, field research design. We found that riders on this new line had lower levels of stress, as multiply measured, than they had earlier, before the advent of this new train, or as did other riders currently using the Hoboken-PATH option. The stress effects seemed to be mediated by the time of the trip – that is, the reduced trip time of the new,

direct service seemed to be a primary factor in the reduced stress to riders. Predictability of the trip was also inversely correlated with stress, but did not distinguish between the commuter groups. These results were largely replicated with a student group who rode the same lines acting as simulated commuters.

The Summer 2004 Newsletter featured 14 research summaries of UTRC reports, Directors message and events such as the XIII Pan-American Conference of Traffic and Transportation Engineering, September 26th – 29th, 2004, in Albany, New York.

[UTRC Presentations for the New Jersey Department of Transportation: Smart Growth in New Jersey, Smart Bridge Technology, and Travel Behavior Analysis](#) [University Transportation Research Center Lecture Series](#)

Smart Growth in New Jersey: The UTRC presented a lecture on the topic of Smart Growth for the NJDOT. Over the last few years “smart growth” has emerged as a strong movement and its policies are widely accepted in planning and government circles. State legislatures, localities and private organizations -all concerned about uncontrolled development, suburban sprawl, and loss of open space, protecting the environment and creating balanced transportation - have embraced the principles

of smart growth. This lecture, tailored for the general transportation audience, summarized a pioneering study that was designed as an initial guide and a set of tools for smart growth in the complex and changing environments of New Jersey.

Smart Bridge Technology: In this presentation by the UTRC, a detailed review of these technologies was presented for NJDOT engineers. Applications were illustrated through several case studies. With a large number of aging and old bridges in our bridge inventory, retrofit of these bridges to sustain earthquakes has become an urgent priority. With innovative development of smart damping technology during last two decades, retrofit of bridges using these systems has become a viable alternative to traditional retrofit of bridges

Travel Behavior Analysis: As our movement always involves people, travel behavior analysis remains to be one of the most active fields in transportation. The UTRC presented a seminar on Travel Behavior for NJDOT planners and designers. Travel behavior analysis is one of the center’s main strength including research in: Activity scheduling and rescheduling, Household member interaction, Residential and job location choices, Time and money allocation, Risk assessment of travel behavior under ATIS information, and Micro-simulation of individual travel

TECHNOLOGY TRANSFER

4th Annual Tri-State Transit Symposium

The 4th Annual Tri-State Transit Symposium was co sponsored by the NYU-Wagner Rudin Center for Transportation Policy and Management and the University Transportation Research Center. This year's symposium focused on the Future of Intercity Rail and Financing Transit Capital Programs. The Keynote speakers were William Millar, President of The American Public Transportation Association, and Commissioner Joseph Boardman of NYSDOT. The other distinguished guests included: Richard Ravitch, Principal, Ravitch, Rice &



Company; Assemblywoman Catherine Nolan, NYS Assembly, District 37; Christopher P. Boylan, Deputy Executive Director, MTA; Rod Diridon, Executive Director, Mineta Transportation Institute; Samuel S. Reid, Deputy Assistant Secretary for Govt. Affairs, USDOT; and Joseph Bress, Vice President of Labor Relations, Amtrak.

Urban Mobility Report Technical Committee Meeting, Hosted by the UTRC and NYSDOT

The University Transportation Research Center provided meeting facilities for the multi-state pooled fund research study that is being hosted by the New York State Department of Transportation and conducted by the Texas Transportation Institute. The project title is "Urban Transportation Performance Measures." The UTRC arranged meeting rooms, provided faculties and arrangements for the technical committee meeting in New York City.

XIII Pan-American Conference of Traffic and Transportation Engineering Albany, New York

The University Transportation Research Center participated in the Pan-American Conference of Traffic and Transportation Engineering (PANAM XIII) which was hosted by Rensselaer Polytechnic Institute, a UTRC

consortium member. The conference was held for the first time in the United States on September 26-29, 2004, at the Albany Crowne Plaza Hotel, Albany, New York. This important activity is endorsed by the Society of Hispanic Professional Engineers (SHPE).

PANAM is the premier transportation conference in Latin-America. It is more than 20 years old and the largest transportation event that focuses on this important part of the world. Held bi-annually since its inception in 1980, this important conference is regularly attended by several hundred transportation researchers, senior decision makers and transportation professionals, including present and past Transportation Ministers, from nearly all countries in the Americas.

Papers deal with the various facets of transportation engineering and planning, including: Transportation planning and economics, Demand and network modeling, Traffic engineering Public transportation, Sustainable transport policies, Transport and land use, Transport and the environment, Transportation infrastructure, Freight transportation and logistics management, Intelligent Transportation Systems and information technology applications, Road pricing, Transportation funding and private concessions, Human resources, and Road safety .

The Award Committee of the XIII Pan-American

Conference of Traffic and Transportation Engineering (PANAM XIII) decided unanimously to honor four outstanding professional whose long careers and shining examples have become role models for generations of transportation professionals. Herbert Levinson, Icon Mentor at UTRC received the PANAM's Leadership Award that commemorates the contribution of those individuals that have played an outstanding role in shaping the future of the transportation profession, either by forming future generations of professionals or by their path breaking contributions to transportation science and practice



UTRC Supported Student, Waqar Azam Receives Outstanding University Student In Transportation Research Awards from the New Jersey Department of Transportation

Mr. Waqar Azam, Research Associate and graduate student at the University Transportation Research Center, Institute of Transportation Systems at City College of New York, recently received the Outstanding University Student In Transportation Research Award, from the New Jersey Department of Transportation, for his outstanding contributions in transportation research. He joined a research team headed by Professor Robert Paaswell for New Jersey Department of Transportation research project, Identification of Traffic Control Devices for Mobile and Short Duration Work Operations. Waqar assisted in preparing the reports for the literature search, analysis of work zone traffic accidents and developing criteria for work zone safety devices tasks.

Waqar is a graduate student in the Civil Engineering program at City College. Originally from Pakistan, he completed a Bachelors Degree in Civil Engineering in 2000 from the University of Engineering and Technology, Taxila. He received the "Government Merit Scholarship" for his academic achievement. After receiving his Bachelors Degree and before coming to U.S.A, he worked for Highway Engineering Firms, supervised



the construction of highway projects, and worked in an Asphalt Plant.

During the work for his master's degree, Waqar explored the diversity of transportation engineering with studies in traffic engineering and construction management courses. He has a keen interest in both the diverse fields of transportation, highway engineering and traffic engineering. In addition to his interest in Civil engineering, he enjoys reading newspapers, history books and biographies. He is also keenly interested in studying International Relations and Management.

TECHNOLOGY TRANSFER

UTRC Director Cited in New York Times Article

In the New York Times article, “Jamaica Seeks to Build on AirTrain,” Dr. Robert Paaswell cited the importance of the AirTrain for potentially reviving downtown Jamaica, Queens, and New York. The AirTrain is an important link between Jamaica and Kennedy International Airport, taking passengers from railroad/subway connections to the passenger terminals in about 12 minutes. A rail link has been suggested between lower Manhattan and Jamaica that would improve the connection for business people and travelers. The UTRC has been actively involved in the development of the AirTrain and the Jamaica area through several research studies and has developed a significant expertise in this subject.

Herbert S. Levinson, UTRC Icon Mentor, Contributes to the New Transit Capacity and Quality of Service Manual

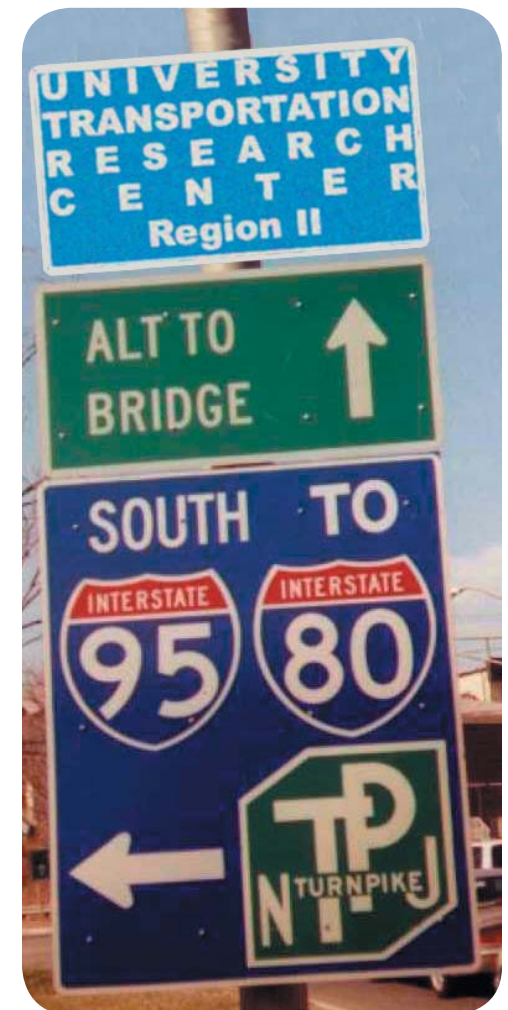
Herbert S. Levinson, Icon Mentor to students and staff of the University Transportation Research Center contributed to the publication of the second edition of the Transit Capacity and Quality of Service Manual (TCQSM) Report 100. The report assembles a range of information and procedures to aid transit planners, operators, and researchers. The 572-page book with CD-Rom is a

companion to the Transportation Research Board’s reference, the Highway Capacity Manual.

The new TCQSM provides a consistent set of techniques and procedures for evaluating the quality of service and the capacity of transit services, facilities, and systems. The manual covers all types of public transportation - buses, rail transit, ferries, and terminals, and provides planning and operational techniques, along with syntheses of ridership and demands.

The new edition adds quality of service indices for urban fixed-route and demand-responsive transit. TCQSM brings together quality of service procedures and guidelines from a passenger’s perspective, along with procedures to estimate transit vehicle capacity and person capacity.

The manual provides guidance but does not set standards. Setting standards for the amount or level of service that should be provided for a specific situation is the prerogative of individual transit agencies, which should take into account local characteristics and available resources.





UTRC Assists the New York State Advisory Panel on Transportation Policy for 2025 Report

During the summer of 2004 the University Transportation Research Center, Region 2, at City College assisted the New York State Department of Transportation (NYSDOT) in gathering public input and formulating policy for the revision of their 20-year Statewide Transportation Master Plan. Under the guidance of the DOT commissioner, Joseph Boardman, an advisory panel of 12 transportation experts was convened to hold nine public hearings statewide to listen to public comments and then work with the DOT to update the plan.

The UTRC was given the task of recording and developing summaries of these hearings for use by the panel. Ross Weiner, Associate Professor of economics at City College, and Camille Kamga, an Assistant Director of the UTRC coordinated this effort. The work was carried out by Chris Andrichak, a Master's Degree Candidate at Hunter College and four summer undergraduate interns from the CUNY Honor College. The reports were developed in a very timely way to provide input to the DOT Executive Team during the hearing process, and served to develop the final advisory panel report of findings and recommendations.

On December 15, 2004, the UTRC released the report: "Transportation -- Trouble Ahead: The New York State Advisory Panel on Transportation Policy for 2025" The panel's report documents the extent and importance of New York's complex, highly multi modal and diverse transportation system, outlines recent trends and policy issues, and presents a set of findings and recommendations that, if implemented, will result in an improved transportation system that meets the needs of New York citizens and businesses for years to come. The report emphasizes the trouble that lies ahead if bold leadership is not shown and adequate, meaningful funding is not provided. According to Dr. Robert Paaswell, a modern, effective and efficient transportation system is required to maintain jobs and protect our quality of life. Improvements were made to the transportation system during the 1990's, but funding programs on both the State and Federal levels are coming to an end. At the same time changes in the global economy, skyrocketing truck traffic and an aging population have placed additional stress on the transportation system.

TECHNOLOGY TRANSFER

The panel's report is being provided to transportation decision makers and stakeholders in order to begin a meaningful discussion of the State's transportation needs and funding requirements. The Panel developed three overarching findings from the hearings:

1. New York State's transportation system is under stress and conditions will worsen unless the state changes the planning, investment, management and institutional relationships that drive the system;
2. Multiple transportation operations in the state must be integrated to form a seamless system that delivers improved service while enhancing the environment. The NYSDOT is the only statewide multimodal transportation agency and must lead a comprehensive effort to optimize the transportation system; and
3. New York State must develop a new strategy that provides substantial, sustainable and predictable funding dedicated to transportation investments.

The report is currently available for download from the UTRC's website at <http://www.utrc2.org/publications>

Transportation-Trouble Ahead



Findings and Recommendations of the New York State Advisory Panel on Transportation Policy for 2025

Dennis Fitzgerald, Richard Gorman, Patricia Gilchrist, James McGowan,
James Melius, M.D., Dr. P.H., James Newman, Mitchell Pally, Arthur Roth,
Janette Sadik-Khan, Elliot Sander, Thomas Tranter, and James Tripp

November 2004



UTRC's Newsletter, Research News is published semi-annually and provides information to transportation professionals about research, education, and outreach activities in Region 2. Research News is available online.



RESEARCH NEWS

Special Edition: Research Reports

A Publication of the Region 2 University Transportation Research Center

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REPORT ON SMART GROWTH IN THE N METROPOLITAN REGION

Harry Schwartz, Urban Planning Consultant

A recently published report, sponsored by the CUNY Institute for Urban & Regional Studies, calls for the principles of smart growth to be implemented in the New York metropolitan area. The report, *2020 Vision: Smart Growth for the Region*, was prepared by Robert E. Paaswell, Director of the Institute and Harry Schwartz and Linda Davidson.

Over the last two decades smart growth has emerged as an emerging national policy that has been widely adopted in planning and government circles. New smart growth management plans and it was a top priority in the Governor's legislative agenda in New York State, however, it has been overlooked in a tool.

The report emphasizes several elements of smart growth for the metropolitan region, including: 1. Decentralizing economic growth to existing transit-served by transportation facilities and other infrastructure, such as rail and transit, around existing centers. 2. Preserving natural landscape by reducing sprawling suburban sprawl and compact development around existing centers. 3. Limiting expenditures for new highway investment, to upgrade existing transit services and build new facilities in New Jersey. Transit's new rail station in Secaucus.

In addition to describing the principles of smart growth and how they affect city situations in the region, the report describes legislative, regulatory, and other actions to implement smart growth. It also offers a wealth of practical, regional and local organizations active in the existing field and a bibliography on various aspects of smart growth.

Transit Technology Skills for the 21st Century
Robert E. Paaswell, Ph.D., Director, UTRC, City College of New York

The Region 2 University Transportation Research Center (UTRC) is conducting a project to address the needs of New York City transit workers. The Transit Worker Union of Greater New York asked the UTRC to develop a curriculum to address the needs of transit workers and a coalition of UTRC's advisors to address the nature of industry. The rapid integration of Information Technology and computers into all aspects of transit operations as identification of new skills, potential jobs and processes of working essential for all involved in the public transit provided seminars to the coalition of "New Paradigms in Transit" and "Training and Redesigning". Together we formed a union. UTRC has prepared proposals to the US Department of Labor concerning labor force needs in this changing transit environment. Electronic Funds, Automatic Vehicle Location and Computer controlled bus systems rapidly being integrated into transit in this region. New jobs will include managing and working with working in a central control atmosphere, maintaining a fleet with self diagnosing capabilities, and operating with information available. The complexity of these new systems means that workers must be trained or retrained if they requires workers to gain some management skills.



RESEARCH NEWS

Summer 2004

A Publication of the Region 2 University Transportation Research Center

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Running for the 7:45: The Effects of Public Transit Improvements on Commuter Stress

Richard E. Winters, Polytechnic University; Gary W. Evans, Cornell University; Donald Phillips, Polytechnic University; & Natasha Nadler, Fordham University

This research project took advantage of the implementation of a major mass transit improvement by New Jersey Transit which provided a "one-seat-ride" into New York City for many commuters who previously had to transfer in Hoboken in order to take Port Authority Trans Hudson (PATH) trains into New York City. The creation of this new service provided a natural experiment in which some riders switched to the new route, while others continued to use their previous route. We studied psychological and psychophysiological responses to these commuting options, using a quasi-experimental, pre-post change, field research design. We found that riders on this new line had lower levels of stress, as multiply measured, than they had earlier, before the advent of this new train, or as did other riders currently using the Hoboken-PATH option. The stress effects seemed to be mediated by the time of the trip - that is, the reduced trip time of the new, direct service seemed to be a primary factor in the reduced stress to riders. Predictability of the trip was also inversely correlated with stress, but did not distinguish between the commuter groups. These results were largely replicated with a student group who rode the same lines acting as simulated commuters.

Note: This paper was among the top ten papers downloaded from the Elsevier Online Journal web site.

UTRC Director Cited in New York Times Article

In the article, "Jerusalem Seeks to Build an Air Train," Dr. Robert E. Paaswell cited the importance of the Air Train for potentially relieving downtown Jerusalem. The Air Train is an important link between Jerusalem, Queens and Kennedy International Airport, taking passengers from midland-airport connections to the passenger terminals in about 12 minutes. A mid link has been suggested between Lower Manhattan and Jamaica that would improve the connection for business people and travelers.

The Jerusalem area which is a major hub for the Long Island Rail Road, and has extensive highway and bus service, is an ideal opportunity for transportation planners to create an urban of what these planners call transit-related smart growth communities.

"With necessary and significant private, public or mixed investment in site acquisition and maintaining new and modernized infrastructure, downtown Jerusalem could be successfully revived," according to a study issued last year by City University's Institute for Urban Systems, whose principal authors were Robert Paaswell, Harry Schwartz and Linda Stone Davidson. Because of its connection to the airport, the economic engine of Jerusalem's resurgence was expected to be airfare and air travel related businesses, although real estate specialists caution that development should not be limited to transportation-related projects.

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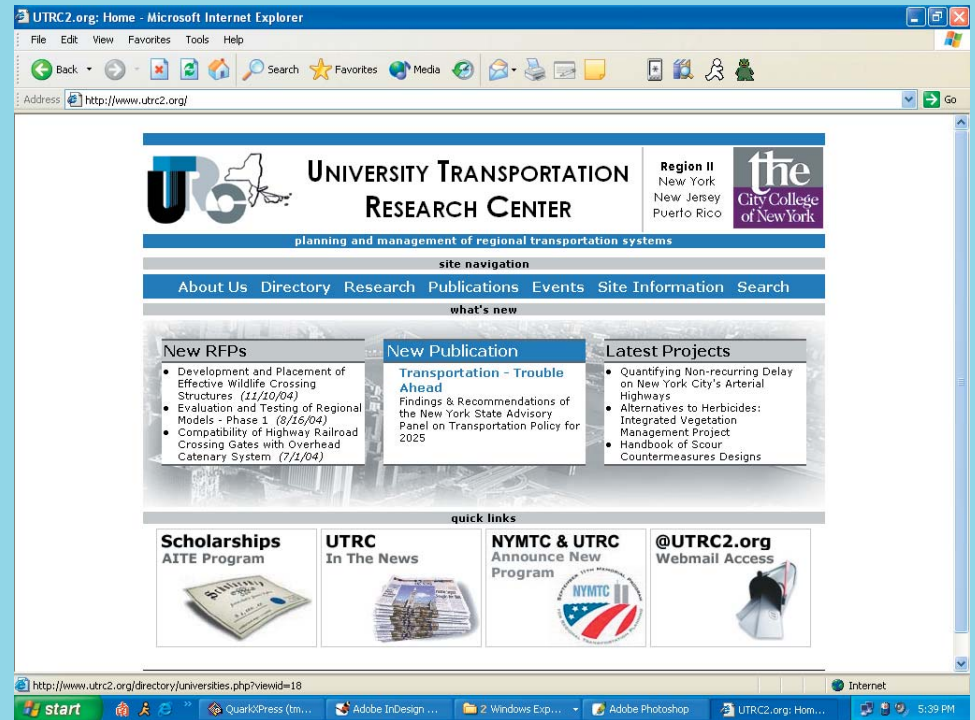
UTRC's Newsletter



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.



UTRC's Website



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