

UTRC

Annual Report
2006



www.utrc2.org



Planning and Management of Regional Transportation Systems in a Changing World

The preparation of this report was funded by a grant from the Research and Innovative Technology Administration of the U.S. Department of Transportation. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

*This report represents activities of UTRC from
October 1 2005 - September 30 2006.*

The cover page photo of the George Washington Bridge was taken on September 11, 2006 -- the fifth anniversary of the attacks on The World Trade Center. Courtesy of our friends at PANYNJ.

DESIGN CREDITS

Patrick Isaac
Melissa Budsock
Camille Kamga

University Transportation Research Center- Region 2

City College of New York
Marshak Hall, Suite 910
New York, NY 10031

Telephone: 212-650-8050

Fax: 212-650-8374

Website: www.utrc2.org



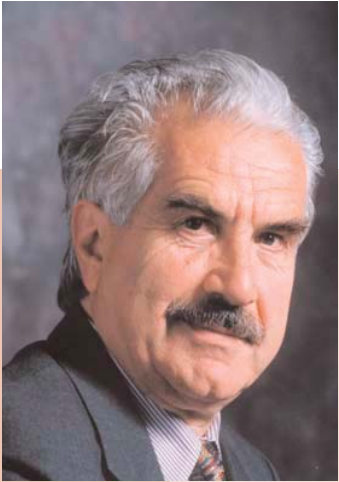


**PLANNING · MANAGEMENT · DESIGN · POLICY · LAND USE ·
EDUCATION · ENGINEERING · GIS · ENVIRONMENT · ITS ·
OPERATIONS · TECHNOLOGY TRANSFER · POLICY · LAND USE**

TABLE OF CONTENTS

Chairman's Message	p.6
Director's Message	p.7
Center's Theme	p.8
Center's Staff	p.10
Management Structure	p.12
Member Universities	p.14
Financial Report	p.16
Education and Training	p.18
Technology Transfer	p.25
Research Projects	p.47

Chairman's Message



John Falcocchio

We are proud of our accomplishments. Our successes have been documented in our annual reports over the years. But none gives me more pleasure than this year's achievement: we have been re-designated as Region 2 Transportation Center by the US Department of Transportation.

The US DOT and our peers valued our vision for the future and our plan to implement our educational and research programs to achieve the vision.

As we continue to expand knowledge and understanding in how best to deal with the complexities of our urban transportation system, and its role in the economic and social fabric of our region, our plans for the future emphasize students and faculty collaboration with transportation providers and users. This collaboration is essential in producing the new talent in the transportation industry that can relate to the technical as well as the non-technical issues that impact transportation solutions.

I want to thank the good work of the UTRC staff for this success, and the outstanding leadership of Buz Paaswell, our Executive Director.

John C. Falcocchio
Professor of Transportation Planning and Engineering
Director, Urban ITS Center
Polytechnic University

Director's Message

SAFETEA-LU required that there be a competition to be named (or renamed) a Regional Center for Federal funding under the University Transportation Centers Program. We are delighted to have been renamed the Region 2 Center and we congratulate our nine Sister Centers in the other USDOT Regions. We believe that, the UTC program and the Centers operating under that program have had significant and positive influence on an emerging generation of transportation professionals, the organizations they serve and the public who benefit from improvements in their complex transportation systems. I would urge those of you who are reading this report to explore the activities of the other centers – our website at www.utrc2.org.

If one looks across the transportation landscape, it is possible to identify certain topical themes that emerge and become part of the collective conversation, almost independent of location or mode. Currently we have found that asset management and risk evaluation are two such interrelated themes. The country is undergoing huge shifts in its demographics, economics and culture. We are rebuilding, and trying to keep up with infrastructure that emerged when the country was 200 million strong. With rapid advances in information technology and innovations in managing complex systems pervading this landscape, transportation organizations are reinventing themselves and meeting their new missions addressing customer based performance targets and new operating efficiencies.

UTRC is working with the State and City DOTs, Transit Agencies and Port Authority to develop tools and procedures addressing asset management and tools and procedures to better quantify the complex set of variables collected under the title of risk. With new programs, UTRC is engaging young faculty members and their students to bring fresh ideas to the research and analysis table; we are partnering with unconventional firms and organizations (i.e., they don't have transportation in their title) through an entrepreneurial round table to stimulate out of the box thinking; and, we are bringing new rounds of training in these thoughts to our agency partners.

While this annual report is a snapshot of what we have done lately, these new programs and many others will be reported on our website. We welcome your visits and look forward to your discussions.

Robert E Paaswell
Distinguished Professor of Civil Engineering, Director
University Transportation Research Center



**Robert E.
Paaswell**

Center's Theme

Region II is a complex and evolving region. Part of its complexity comes from its size: New York is the nation's largest metropolitan area and financial capital. It contains over 21 million people, who collectively make over 1/3 of the nation's transit trips; it also contains the nation's third largest port, and 600,000 businesses, requiring the movement of over 500 million tons of freight annually. Region II is also diverse: it contains other major metropolitan communities like Buffalo, Trenton, and San Juan; large and growing suburbs; and varied and beautiful rural areas.

The region is also dynamic. It is an international crossroads, a hub for both domestic and international travel of people and goods, dependent on global interconnectivity for its livelihood. The region is working to confront tremendous challenges in economic realignment and environmental protection, many of which relate directly to its transportation system. New York City alone is planning for an additional one million residents over the coming decades. Yet it has also been the site of two major terrorist attacks in as many decades, the second of which forever changed how it approaches security and safety. There is an overarching need to operate its critical transportation systems efficiently while addressing all of these challenges.

In response to these challenges, UTRC has chosen as its theme, "Planning and Managing

Regional Transportation Systems in a Changing World."

Planning today, in Region II, requires knowledge of multi-modal and intermodal systems serving both freight and passenger movements. Planning in the region involves not only MPOs, but all of the many agencies taxed with the need to move people and goods 24/7. Planning is constrained by institutional mandate and history, the need to catch up with a backlog of capital needs, and a chronic shortage of adequate funds for both maintaining and building the infrastructure. UTRC's role is to provide through academic programs, a solid base on which planning decisions can be made. 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 II, means knowledge of interaction among complex multi modal systems, budgeting, system operations and performance targets, customer needs, the need to address security, and – when fighting fires stops – a sense of vision of system performance and regional change. Management takes place at every level: from Board Chairpersons to line operators. Today, transportation systems increasingly rely on real time technology and rapid transfer of operational information. New management strategies are needed to be able

“Planning and Management of Regional Transportation Systems in a Changing World”

to take full advantage of the benefits that these technologies can provide.

Responses to change: As the world changes, the demands on the transportation system change as well. Tomorrow’s transportation systems will need to be more secure, more resilient to natural hazards, less damaging to the environment, and better able to use available capacity efficiently. UTRC will work to assist regional agencies in organizational change responsive to new missions and challenges.

RESEARCH PROGRAM

A centerpiece of UTRC’s mission is an ongoing program of basic and applied high quality peer reviewed research. The majority of UTRC’s projects arise directly out of the needs of the region’s public agencies. In these cases, an RFP for a specific project is issued by a sponsoring agency. UTRC circulates the RFP to its entire network of Principal Investigators (now over 140 faculty members at its 12 member institutions). After all proposals are received, UTRC reviews the proposals to ensure that their budgets meet UTRC criteria and use equivalent assumptions. Proposals are then passed on to the sponsoring agency, which selects the winning team.

UTRC staff also work closely with public agencies in Region II, both to understand their needs, and to help them formulate research problem

statements. When the nature of problems faced by agencies is complex, UTRC will work closely with agency staff over an extended period of time to develop appropriate problem frames and methodological approaches that can later become the basis for agency-generated research projects.

UTRC also directly sponsors research proposals, on a competitive basis, generated by faculty within its consortium. The annual UTRC Research Initiative stimulates new ideas and their implementation. Proposals are peer-reviewed by researchers at other UTCs, and by public agencies and practicing professionals within Region 2, and scored according to their relevance to the region’s needs, the quality of proposed research approach, and other criteria.

In 2007, UTRC will launch a new Advanced Technology Initiative, in which it will partner with advanced research centers around the region – including the New York State Center for Advanced Technology in Photonics Applications at CUNY and the Center for Advanced Technology in Nanomaterials and Nanoelectronics at SUNY at Albany. UTRC will lend its expertise working with public agencies that build and operate transportation infrastructure to open channels for discussion on how these emerging technologies can be applied in the transportation arena.

UTRC has unique capabilities to provide students and professionals with the knowledge and skills they need to adapt as the region’s needs evolve.

Center's Staff



Dr. Robert Paaswell

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



Dr. Claire McKnight

Assistant Director,
Education & Training



Dr. Camille Kamga

Associate Director,
Administration &
Information Technology



Dr. Todd Goldman

Associate Director for
New Initiatives



Robert Baker

Assistant Director,
Research



Herbert Levinson

Icon Mentor



Dr. Joseph Berechman
Visiting Scholar



Dr. Ellen Thorson
Senior Research Fellow



Melissa Budsock
Communications and
Outreach Coordinator



Feaid Mohammed
Student Intern



Patrick Isaac
Student Intern



Management Structure

Dr. Robert E. Paaswell 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, 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.



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

Allison L. C. de Cerreño, Ph.D.
New York University, New York

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

Jose Holguin-Veras, 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 Dobbelaar, Jr., Ph.D.
Stevens Institute of Technology, New Jersey

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



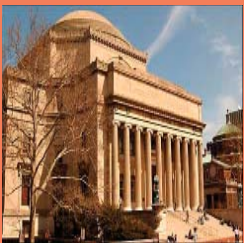
** A new board will oversee
UTRC during the 2007-2009 cycle.*

Member Universities



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.



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.



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.



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.



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.



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.



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.



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.,



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.



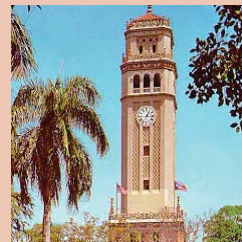
Rensselaer Polytechnic Institute

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.



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.



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.

The New Jersey Institute of Technology and Rowan University will be joining the UTRC Consortium beginning in 2007

Financial Report

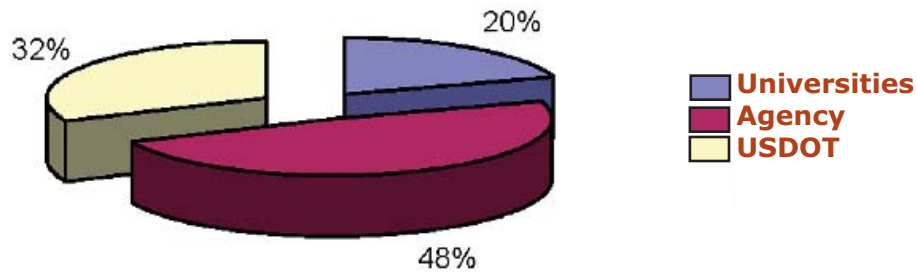
The following charts summarize the UTRC revenues and expenditures for FY 2005-2006. The University Transportation Research Center Region 2 funding allocated to programs totaled approximately \$2.5 M in 2005-2006. This year, the annual USDOT grant allocated to programs represents 32 percent of the total allocation.

UTRC's longtime partners, New York State Department of Transportation, New York Metropolitan Transportation Council and New Jersey Department of Transportation, provided a combined 48 percent of the revenues in fiscal year 2005-2006. UTRC's support from university members and agencies were 20 percent of the total budget.

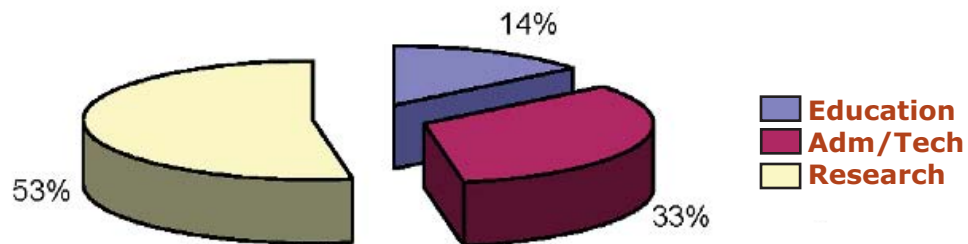
Continued with tradition, and strong partnerships, and solid financial commitment from federal, state, and local transportation agencies, UTRC allocated 53 percent of its total budget to research projects. To carry out administrative and technology transfer programs, 33 percent of funds were used. The remaining funds were allocated to the Advanced Institute for Transportation Education program.



FY 2005-2006 Revenues



FY 2005-2006 Funds Allocation



Education and Training

Brenda Cruz **UTRC Student of the Year Award**

Brenda Cruz has been chosen as 2005 Student of the Year by the University Transportation Research Center. Students of the year are selected on technical merit, research, academic performance, professionalism, and leadership. Ms. Cruz was an outstanding participant in the NYSDOT sponsored university research project "Potential for Off-Peak Deliveries to Commercial Urban Areas", which was conducted by the Rensselaer Polytechnic Institute on behalf of NYSDOT and was presented at NYMTC last year.

Ms. Cruz has also received national recognition as the recipient of the 2005 Charley V. Wootan Memorial Award, for Outstanding Masters Thesis in Transportation Policy and Planning, completed this summer at the Rensselaer Polytechnic Institute (RPI). The Wootan Award was established by the Council of University Transportation Centers (CUTC), an organization that brings together university based transportation centers and transportation programs across the U.S. Ms. Cruz' thesis, "On the Definition of Policies to Foster Off-Peak Commercial Deliveries to Congested Urban Areas," is considered groundbreaking in this area. A native of Puerto Rico, she received a Master of Science in Transportation Engineering from RPI in 2005 and a Bachelor of Science (Magna Cum Laude) in Industrial Engineering from the University of Puerto Rico, Mayagüez

in May 2002. She has also served as treasurer of the Alpha Pi Mu National Honor Society; a member of the Society of Hispanic Professional Engineers (SHPE); and a member of the Golden Key National Honor Society.

Ms. Cruz joined NYSDOT as a Junior Engineer in the Statewide Policy Development Section last year. She is currently working in the Statewide Policy Development section, helping to shape the future of corridor and freight policy in the State.



Dr. Kaveeshwar, former Administrator of RITA and Ms. Brenda Cruz

NJDOT's Outstanding University Student in Transportation Award

Mr. Zhihua Yi is currently a Ph.D. student at the City College of New York. Mr. Yi's Ph.D. thesis is on "Blast Loads on Highway Bridges: Mechanisms and Mitigations". In this work, Mr. Yi has been working on modeling approaches for blast loads and behavior of bridge components during blast loads using high-precision Finite Element Analysis. Mr. Yi has developed a unique approach through using existing software from the Department of Defense for blast loading used for highway bridges without any modification. In fact, the detailed high-precision finite element model of a highway bridge developed by Mr. Yi may be used by FHWA Resource Center as a part of the course on blast loads on bridges. In addition, Mr. Yi has done extensive work on the preparation of the "Handbook on Bridge Scour Countermeasures", a project funded by NJDOT, under the supervision of his advisor, Professor Agrawal, and Dr. Khan of STV, Inc.



Mr. Zhihua Yi

AITE Graduate Scholarship Program

In 2006, six people received graduate scholarships for Advanced Institute for Transportation Education (AITE). The recipients are five full time students and one agency employee. The students will be completing a Master in Transportation Engineering at the University of Puerto Rico, Mayaguez campus (1), University at Albany (2), Rutgers University (2), and Polytechnic University (1). They all started their programs in September.

AITE's purpose is to increase the knowledge and capabilities of transportation professionals through education in transportation and related fields. A major part of the AITE program is to provide scholarships to young people, both those that are just starting their careers and those who are already working in the transportation field who want to increase their knowledge and skills. The largest scholarship program is the AITE Graduate Scholars Program.

Financial support up to a value of 20,000 dollars is available for outstanding Masters students in transportation programs at one of the six participating universities. Scholarships are available both to people entering the transportation field for the first time and to people already working for transportation agencies and companies.

2006 Summer Transportation Institute at CCNY

The enrollment of students with engineering or technical backgrounds continues to fall 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 eleventh year in 2006. The STI Project Director and UTRC board member, 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 - 2006 Summer Transportation Institute, commenced with the Opening Ceremony on Monday, July 3, 2006, and concluded with its Closing/ Award Ceremony on Saturday, July 29, 2006. Of the 20 scholarships awarded, 16 incoming students completed the program, in addition to two participants in the Internship component. The 16 primary students represented grades 9 through 12. The two interns are in the eleventh and twelfth grades. The 2006 STI staff consisted of Alma T. Jefferson, M.A., Program Administrator, Academic Coordinator, Steve Bryan, and Academic Aides, Kevin M. Charles,

Osei Rhone, and Roxzanne Rolston.



2006 – STI Highlights

- Dr. Ardie Walser, Associate Dean, School of Engineering - The City College of New York, addressed the 2006 students, staff, and parents during the Opening Ceremony on Monday, July 3, 2006.
- Dr. Claude Villiers, Civil Engineering Department – CCNY mentored the interns and facilitated their presentation during the Closing Ceremony.
- On Thursday, July 27, 2006, the students celebrated during the Second Annual STI Luncheon. The luncheon was held in the Amsterdam Room, at CCNY. This year, under the direction of computer instructor, Oluwaseun Adelekan, the students presented their outstanding web designs during the Web Design Competition.



STI graduating class of 2006

- President Gregory Williams, addressed the students, staff, and invited guests. Invited guests included Dean (SOE) Joseph Barba, Associate Dean Walser, as well as other members of the CCNY community.
- 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 2006 Poster Session. The Poster Session was held on Thursday, August 10, 2006, at the Brookhaven National Laboratory.



STI interns on a field trip

Women's Transportation Seminars Scholarship

On October 5, 2006, UTRC awarded \$1000 to the winner of the Greater New York Women's Transportation Seminars Graduate Scholarship winner, Li Chen. UTRC was proud that the New York chapter of WTS has chosen a student closely associated with the Center as the winner this year. Li Chen is a doctoral student in the CUNY Civil Engineering Program. Her advisor is UTRC director, Robert Paaswell.



WTS Scholarship winner, Li Chen

Li received a bachelors in Transportation Management and Masters in Computer Science from Nanjing University of Aeronautics and Astronautics. Since coming to the New

York region, she was also awarded the NYMTC September 11th Memorial Program Award in 2005; as part of that program, she was an intern to NYCDOT in their Traffic Planning Division, working on the West Side Manhattan Transportation and Traffic Study. Her research interests include risk analysis, transportation project cost control, and schedule uncertainty.

Sept. 11th Memorial Program Update

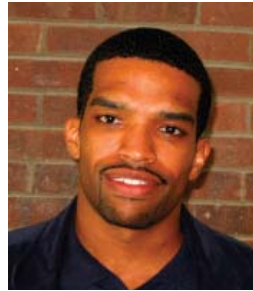
The University Transportation Research Center has continued to work with the New York Metropolitan Transportation Council (NYMTC) to administer NYMTC's September 11th Memorial Program for Regional Transportation Planning – Academic Initiative. This program was established to honor three colleagues lost in the attack on the World Trade Center, Ignatius Adanga, Charles Lesperance, and See Wong Shum. NYMTC designed this program to educate and motivate people interested in transportation technology and planning and to encourage innovations in planning activities throughout the region. The program's Academic Initiative provides tuition and stipend support to talented graduate students from across the region for internships and independent research projects.

On September 21st, 2006, NYMTC and UTRC announced the second group of students chosen to participate in this program. They include:



Amit Arora, a masters student in Urban Planning at Rutgers University. She will conduct an independent research project on off-street parking regulations and supply/demand issues in the NYMTC region, under the guidance of her advisor,

Prof. Dan Chatman, and NYMTC Assistant Director for Planning Gerry Bogacz.

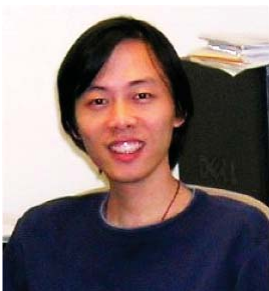


Michael Silas, a doctoral student in Civil Engineering at Rensselaer Polytechnic Institute. He will conduct an independent research project on modeling firms' responses to incentives for off-peak freight deliveries in New York City, under the

guidance of his advisor, Prof. José Holguín-Veras, and Nathan Erlbaum of the New York State Department of Transportation.



Richard Barone, a masters student in Urban Planning at Columbia University. He will be doing an internship with NYMTC's Technical Group to develop new regional strategies for data sharing and web-based analysis tools.



Xiaoqiang Chen, a doctoral student in Civil Engineering at City College. He will conduct an independent research project on the relationship between land use and transit ridership behavior, under the guidance of his advisor,

Prof. Cynthia Chen, and James Barry of MTA New York City Transit.

Final 2005-06 Presentations

On October 18th, 2006, the four students who participated in the 2005-06 Academic Initiative presented their work at a NYMTC Brown Bag Lunch Seminar.

David Dayu Zhang reviewed the highlights and key outcomes of the major NYMTC



conference, "Good to Go – Transit Options for Older Adults," which was held on Sept. 26, 2006. A recent graduate of the urban planning program at Columbia University, Mr. Zhang worked with NYMTC to help plan this and other regional policy conferences.



Wei Li described the findings of her research on transportation services for the region's aging population. As a student in Civil Engineering at CUNY, she gathered data on the characteristics of transit services for seniors in Westchester County, through interviews and data analysis.



Jeevanjot Singh, a Civil Engineering student at Rutgers, described her work studying time-of-day pricing in bus transit, on behalf of the Westchester County Department of Transportation. She has examined how these

strategies are being used nationwide, and developed models to estimate how they would affect travel in Westchester.



Li Chen, a student in Civil Engineering at CUNY, described her work assisting the New York City Department of Transportation with its West Side Manhattan Traffic and Transportation

Study. She has helped the DOT launch this study and assess existing traffic, pedestrian, bicycle, safety and land use conditions in this rapidly evolving area on the edge of the region's central business district.

Planning Initiative

In addition to the student component of the program, NYMTC also made several grants for innovative projects under its Planning Initiative. A UTRC member, the NYU Wagner Rudin Center for Transportation Policy and Management, received a grant for a study of "Transportation and Land Use in the NYMTC Region: Strengthening Urban-Suburban Coordination."



NYMTC announces Sept. 11th Memorial Program grant for the Rudin Center

Technology Transfer

The 8th Annual New Jersey Department of Transportation Research Showcase

The 8th Annual NJDOT Research Showcase highlighted "Turning Problems into Solutions." This year's event was hosted by The College of New Jersey at the Brower Student Center on October 27th 2006. The event brought the New Jersey and New York transportation community to join together to showcase their transportation research activities and reach out to research users within the region.

The focus of this event is to highlight the broad spectrum of transportation topics being explored by the Bureau of Research of NJDOT. The university partners are encouraged to highlight ongoing projects as well as present panel discussions themed to a particular aspect of research. All NJDOT employees, customers, and private sector parties were invited.

The program interests practitioners, decision makers, and end users who are seeking new ways of addressing ITS-Congestion Mitigation, Infrastructure, Safety/Human Factor and Environmental issues. The NJDOT Bureau of Research sponsors this program at no cost to the participants and looks forward to meeting with the entire research community.

The University Transportation Research Center participated in the conference with speakers and had a booth to showcase its research efforts. UTRC researchers networked with NJDOT engineers and consultants to discuss cooperative research projects and regional research efforts at the conference.



Congressman Rush Holt



Camiille Crichton-Sumners, NJDOT



Dr. Robert Paaswell, UTRC



Stephen Dilts, Deputy Commissioner

The 6th Annual Tri-State Transit Symposium

On October 18, 2005 the NYU Wagner Rudin Center for Transportation Policy & Management and the University Transportation Research Center hosted the 6th Annual Tri-State Transit Symposium, which focused on transit security and the financial future of transit in the region. The symposium was particularly timely, taking place shortly after the October subway alert and three weeks before the vote on the Transportation Bond Act. What follows is a brief summary of the day's presentations.

Peter Kalikow, Chairman of the Metropolitan Transit Authority (MTA) provided the keynote address, stressing the importance of passage of the Bond Act. Mr. Kalikow stated that three things are of highest importance in New York City: safety, education and transportation. The Bond Act is critical for transportation and includes funding for several key projects, including: the first phase of the Second Avenue Subway; Long Island Railroad access to Grand Central; and a direct link from midtown to Kennedy Airport. Mr. Kalikow remarked that public transit in New York has become a "victim of our own success," with many buses, subways and commuter trains are experiencing overcrowding. The Bond Act would help alleviate this crowding. The Chairman went so far as to say that by passing the Bond Act, New Yorkers could "write down 2005 as the year that we took control of our system."

The first panel of the day, "National and Regional Transit Security," consisted of: Eva Lerner-Lam, President, Palisades Consulting Group; David Gaier, Chair, Roving Transit Security Guidelines Subcommittee, Transportation and Development Institute of the American Society of Civil Engineers; and Ronald Libengood, Chief Executive Officer and Principal Consultant, SecuraComm. Dr. Allison C. de Cerreño of the NYU Wagner Rudin Center served as moderator.

The second panel, "Financial Future of Transit in the Region," covered the newly passed transportation reauthorization bill, titled "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users" (SAFTEA-LU), as well as the Bond Act. The panelists were: Janette Sadik-Khan, Senior Vice-President, Parsons Brinkerhoff; Christopher Boylan, Deputy Executive Director, MTA; Catherine Nolan, Assemblywoman, 37th Assembly District, New York State Assembly. The moderator was NYU Wagner Rudin Center Director Elliot Sander.

The panel and the symposium concluded with Mr. Boylan's presentation, "SAFTEA-LU to Rebuild and Renew." Mr. Boylan stressed that the MTA must continue to educate the riding and non-riding public that the money is being spent wisely. In order for public transportation to succeed it must "gain public confidence" and "deliver on promises."

Deconstructing Development Density: Effects on the Quality, Quantity and Price of Travel

Dr. Daniel G. Chatman



Prof. Chatman proposes an innovative but straightforward theoretical framework in which the built environment is hypothesized to influence household non-work travel choices by affecting the qualitative characteristics, quantity (distance), and per-unit prices of travel

to access out-of-home activities. He applies the quality-quantity-price framework to an empirical test using a detailed computer-aided telephone survey of metropolitan households in San Diego and the San Francisco Bay Area along with highly individualized proxy land use measures constructed in a GIS. Higher development density has been hypothesized to decrease auto use by reducing walking distances (both to local activities and to transit stops), increasing road congestion, inducing transit agencies to provide denser transit networks with higher service frequency, and making walking more pleasant.

But not all of these effects occur when development density increases because they depend on such inter-correlated factors as land

use type, road capacity, parking availability, and building design. This complexity has been poorly accounted for in empirical research, resulting in an incomplete understanding of the relative importance of the different hypotheses, and possibly accounting for ambiguous empirical results in this literature.



This paper makes such distinctions theoretically clear with respect to trip making and auto use. Dr. Chatman described specific measures of local residential neighborhood density to distinguish different influences on household travel. "Network load density" has the strongest effects, by slowing autos down (e.g., via narrow streets) and making auto use otherwise less convenient (e.g., via parking reductions), while "activity density," transit access and other conventional measures are weaker. Previous contradictory empirical findings likely suffer from omitted variable bias.

The seminar was sponsored by the New Jersey Department of Transportation and the Region 2, University Transportation Research Center.

Empty Marine Container Management in a Port MegaCity Region Dr. Maria Boilé

This presentation was sponsored by New York Metropolitan Transportation Council and the Region 2 University Transportation Research Center and was held at the NYMTC facilities in New York City to discuss the growing number of containers surrounding the ports of New York.



With the global container population approaching 16 million TEU (20-foot container equivalent units) and the estimated 2.5m TEU of empty boxes are currently sitting in yards and depots around the world waiting for use. Stockpiling of containers at the port terminals or at nearby areas is a potential environmental hazard and consumes valuable land for businesses. The talk addressed the very dynamic and multidimensional problem of empty marine container management in a port megacity region, with special reference to the NY-NJ region. The two major aspects of empty container management, namely effective use of empty equipment with empty trip minimization, and empty container accumulation, were discussed, and global experiences and trends and regional challenges for NY-NJ were presented. The talk aimed at promoting awareness of the nature of

this crucial intermodal transportation industry problem among stakeholders associated with it and the policy, planning and scientific community in the region.

NYMTC Executive Development Program

Management skills are critical to effective leadership in any field. However, all too often, individuals are promoted into management and leadership positions based primarily on their technical expertise. As a result, these individuals find themselves in new positions without the tools for success. The transportation industry is no exception. Yet, management of the nation's transportation systems continues to be a complex and challenging assignment as managers and policymaking staff confront a myriad of issues resulting from a variety of circumstances including an increasingly complex institutional, political, and media environment; mounting financial and operational constraints; ever-changing community and environmental concerns; the implementation of new technologies, new transportation modes, and project management innovations; and the incorporation of new planning, financial, and operational concepts.

Such difficulties are exacerbated in the New York metropolitan region where transportation agencies are simultaneously constrained

by a unique set of historical, institutional, and political factors that often hamper inter-agency cooperation and coordination and broad regional planning. Such lack of cooperation and consensus around a broad regional vision has made it difficult for the New York metropolitan region to compete successfully for project and program funding in the past. Recognizing that moving forward there is more competition for federal funding, and that the overall amount of available funds may for the first time shrink or remain steady, the need to improve cooperation and coordination in this region has taken on new salience.

The NYMTC Executive Development Program conducted by the NYU Wagner Rudin Center for Transportation Policy & Management provides a comprehensive, focused, and integrated education and professional development vehicle to achieve the primary objectives of improving the professional capacity of participating staff and establishing a key network of regional transportation professionals oriented to inter-agency cooperation and coordination.

The audience for this course is mid and upper level transportation managers around the New York metropolitan region. They will be looking for a course that provides value – something from which they not only learn while there, but that supplies them with the tools to add to their skills on their own after the class is completed. This course offers a chance for networking among the participants so they can build the

foundations for longer lasting relationships with their colleagues. Thus, this course provides ample opportunity purposely designed to foster such interaction.

The program now into its eighth year has received tremendous positive feedback from current students and past alumni and has achieved one of its primary goals of fostering a network among transportation professionals in the New York metropolitan region

The High Cost of Free Parking Dr. Donald Shoup

On December 16th, 2005, the University Transportation Research Center at City University of New York and NYU Wagner Rudin Center for Transportation Policy and Management hosted a Visiting Scholar Seminar, featuring Donald Shoup, Professor of Urban Planning at University of California, Los Angeles. Dr. Shoup's presentation was titled, "The High Cost of Free Parking," which is also the name of his recently published book. Combining wit and a wealth of knowledge on parking, Dr. Shoup said he chose to study parking because many people study cars the 5% when they are moving, but few study cars the 95% of the time they are parked.

Dr. Shoup noted that the American standard of providing free parking is problematic because it is paid for by everyone but the motorist. The

initial cost is borne by the developer, but is passed on to the business, which passes it on to the customer. Free parking therefore increases the costs of all goods by requiring businesses to bundle the cost of parking into the price of the good.



Dr. Donald Shoup

Further into his presentation Dr. Shoup pointed out the two largest mistakes in parking policy: "keeping curb parking free or cheap" and "requiring lots of off-street parking." He emphasized that there are numerous shortcomings in off-street parking requirements: 1) Planners do not know how much off-street parking to require. He supported this theory by presenting a sample of off-street parking requirements for funeral homes for 66

cities. Out of the 66 cities, 27 different parking requirements existed based on 14 different factors, and 20 cities had a requirement that no other city had. This shows that there is no consistent theory of how much off-street parking to require. 2) Off-street parking is ugly; Dr. Shoup showed many examples of sprawling mall parking lots and "snout" houses (single-family homes with a double garage in front forming a "snout") both of which are designed because of parking requirements. 3) Off-street parking requirements waste resources, directly and indirectly. "Directly, by increasing the land and capital devoted to parking, and indirectly, by increasing automobile use and urban sprawl." A 2002 study estimated the subsidy of off-street parking to be between \$127 and \$374 billion. In order to alleviate these problems, Dr. Shoup recommended that cities eliminate all off-street parking requirements, developers would still be allowed to build parking, but it would not be required.



In addition to removing off-street parking requirements, Dr. Shoup recommends two reforms in parking policy: 1) charge market rates for curbside parking, and 2) return the meter revenue to the neighborhoods that generate it. Set the price of curbside parking so that 15% of parking spots are open at all times. This will allow people to find parking without a long wait. Returning the meter revenue to the district that generates it will create political support for charging market rates for curbside parking. He presented the Old Pasadena shopping district as an example of a success story. Old Pasadena has gone through a renaissance in the last 30 years and this model was used to generate revenue for repairs and streetscape improvements in the shopping district.

Dr. Shoup said that he sees two possible futures: The first is to change nothing, “keep curbside parking free or cheap”, and “require ample off-street parking.” If we do this we are subsidizing parking in higher prices in all goods. “Cities will impose the high cost of free parking on everyone, even those too poor to own a car.” In addition, by subsidizing parking we are promoting driving over other transport modes.

However, he sees a second future, which is to “charge market-rate prices for curbside parking, use the revenue to improve the neighborhood that

generated it, and remove off-street parking requirements.” Districts that produce meter revenue will have money to perform needed improvements. Because off-street parking will not be required within zoning, the cost of parking will not be hidden in all other goods. Since parking will be more expensive, people will drive less and find other means of transport.

At a meeting of New York Metropolitan Transportation Council’s Program, Finance and Administration Committee (PFAC) in New York City, Prof. Shoup discussed innovative approaches to paid parking and urban renewal in smaller business districts. He contrasted the divergent experiences of Westwood Village with Old Pasadena, and explored how self-financed urban renewal can both attract retail customers and ensure the turnover of parking spaces.



Roundtable on Advanced Technology in Transportation

The University Transportation Research Center hosted a roundtable bringing together for the first time some of the region's leading advanced technology research centers to discuss transportation research needs and opportunities for collaboration. Participants included Albany NanoTech, the Center for Advanced Technology in Photonics Applications, the Center for Transportation Injury Research, the City College Visual Computing Laboratory, and the Center for Information Forensics and Assurance, as well as representatives from the New Jersey Department of Transportation, New York State Department of Transportation, MTA New York City Transit, and the New York Metropolitan Transportation Council. Each research center made a brief presentation of its work, focusing on potential applications in transportation.

Concentrating at Work: Reducing Auto Use Via Transit- Oriented Development at the Workplace

Dr. Daniel G. Chatman

Transit-oriented development (TOD) planning efforts in U.S. cities are often intended to create mixed-use developments near transit stops that include a significant amount of housing, consistent with Peter Calthorpe's pioneering definition of transit-

oriented development. But mixed-use, primarily nonresidential areas within cities may also have an important role to play. Dense development with shops and personal services near transit-served workplaces makes it easier for workers to carry out personal commercial activities on foot before, during, and after work, both providing a market for cost-effective transit commuter service and enabling reduced personal vehicle use during the rest of the day. It has also long been argued that primarily nonresidential development near transit stops may have stronger effects on both commute mode choice and non-work auto trip frequency. In part this is because, for historical, economic, and political reasons, both actual and potential development densities are usually higher, parking standards lower, transit service better, and availability of shops and services greater in predominantly nonresidential areas.

This presentation, which was sponsored by the Region 2, University Transportation Research Center and the New York Metropolitan Transportation Council, explored various ramifications of a nonresidential TOD strategy, and presented empirical evidence supporting the notion that concentrating at work has bigger transportation efficiency payoffs than concentrating at home. Regional and city planners trying to get people to use their cars less might profitably re-focus their land use strategies on nonresidential areas.

Partnerships for New York Innovative Transportation Financing and Contracting Strategies: Opportunities for New York State

Across the U.S., many states and transportation authorities are exploring innovative financing and contracting mechanisms that can improve the efficiency, flexibility, and accountability of capital project management. This conference, sponsored by the New York State Department of Transportation, examined "Transportation Development Partnerships" around the country, and the issues and best practices New York State should keep in mind as it considers how it might authorize similar partnerships. The conference was intended to inform key policymakers and stakeholders on the use of Transportation Development Partnerships, their value, when and where they are appropriate, where they have been successful, and how they can be



Commissioner Madison, NYSDOT

structured to protect the public interest.

This symposium was timely as the federal government is encouraging partnerships for transportation projects. Many states have



NYS Senator Libous



Welcoming Panel



NYS Assemblyman Brodsky



Michael Fleischer, NYS Thruway



Conference Attendees



Commissioner Madison and Dr. Paaswell

implemented partnership projects, and many more states are aggressively investigating the potential for public-private partnerships.

The conference, which was organized and coordinated by the Region 2, University Transportation Research Center, featured expert speakers from universities, civic organizations, consulting firms, financial institutions, and federal and state agencies. The event was sponsored by the New York State Department of Transportation. It was attended by approximately 275 people who heard 22 speakers from around the world.

A New Urban Paradigm: Building a Just and Sustainable Metropolis Enrique Peñalosa



Enrique Peñalosa, former mayor of Bogotá, Colombia, and an internationally recognized expert on urban development and administration, presented the Third Annual Lewis Mumford Lecture on Urbanism at The City College of New York (CCNY) on March 23, 2006.

The lecture, titled "A New Urban Paradigm: Building a Just and Sustainable Metropolis," was sponsored by the Graduate Program in Urban Design of CCNY's School of Architecture, Urban Design and Landscape Architecture and UTRC.

Mr. Peñalosa, one of the world's most respected authorities in urban development and administration, and a candidate for President of Colombia, elaborated on his belief that cities in developing countries are in a position to create a different and better urban model than that of industrialized nations, one "more for children than automobiles."

During his tenure, Mr. Peñalosa led massive

efforts to improve that city's infrastructure and education system. Among the initiatives carried

out during his term were improvements to the bus system, new parks and bicycle paths, trees plantings and restrictions on use of private automobiles. While he was mayor, public school enrollment increased by 34 percent as 250 schools and libraries were built or improved and schools were linked to the Internet via a network of 14,000 computers.

Other positions he has held include member of the Colombian House of Representatives, member of the Bogotá City Council, Economic Secretary to the Colombian President and President of the Colombian Institute of Mortgage Banks.

Mr. Peñalosa holds a BA in economics from Duke University, a Masters in management from France's Institut International D'Administration Publique and a DESS in Public Administration from the University of Paris II. His numerous honors include the National Colombian Architecture Prize, the Stockholm Challenge Award, and the Bill and Melinda Gates Foundation Prize. He has authored many articles and books, including *Democracy and Capitalism: Challenges of the Coming Century* and *Peñalosa and a City 2,600 Meters Closer to the Stars*.

NJ TransAction Transportation Conference

The University Transportation Research Center participated in the 31st Annual New Jersey TransAction Conference in Atlantic City, New Jersey in April 2006. The University Transportation Research 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.



Critical Issues Facing Aviation and the NY-NJ Region's Airports: Airport Capacity and Surface Transportation

The region's airports are important assets, not just in terms of providing the means for travelers to get to and from where they want to go or for freight to come in and out of the country, but also in terms of providing jobs and other economic benefits to the region. Yet, while the region's airports have some competitive advantages relative to other airports around the country, there are some serious shortcomings that have led a number of passenger and freight carriers to relocate some or all of their operations elsewhere in recent years. Among these challenges are chronic congestion on the roadways leading to and from the airports, congestion in the skies over the entire region, a shortage of modern cargo facilities, especially at JFK, and high real estate prices around all the airports.



The Port Authority has been addressing some of these issues, but the systemic nature of these problems remains, along with the unpredictability in travel it entails. Further, while the Port Authority can make improvements at its facilities, addressing related surface transportation issues beyond the airports requires coordination and cooperation with other agencies and operators, communities, and business and government leaders.

The event featured discussions and presentations by experts about the region's needs and how they might be met. In addition to the keynote address by Deputy Mayor Daniel Doctoroff, in which he announced the creation of a new high-level Task Force to address these difficulties, the symposium featured two panels of experts who tackled these issues through a combination of dialogue and presentation.

The first panel, "Airport Capacity," was moderated by William DeCota, Director of Aviation of the Port Authority of New York & New Jersey and featured the following panelists: Christopher Wearing, Managing Partner, New York Office, Accenture; Mitchell Moss, Professor of Urban Policy and Planning, NYU Robert F. Wagner Graduate School of Public Service; Cristyne Nicholas, President and CEO, NYC & Company; and Woodie Woodward, President, Woodward & Associates.

The second panel focused on surface transportation and was moderated by Elliot Sander, Director of

the NYU Wagner Rudin Center for Transportation Policy & Management. Among the discussants were Jonathan Jay, Managing Director of Cargo Services at John F. Kennedy International Airport for American Airlines; Robert Land, Senior Vice President for Government Affairs and Associate General Counsel of JetBlue Airways; David Lewis, Executive Vice President and Director for Economics and Financial Services of HDR/HLB Decision Economics Inc.; and Nancy Sparks, Managing Director of Regulatory Affairs of FedEx Express.



Quality Communities Workshop: "Advancing the Transportation - Land Use Connection"

The New York State Quality Communities Workshop, "Advancing the Transportation-Land Use Connection," was held in Binghamton on June 13, 2006. The New York State Department of Transportation (NYSDOT), Department of State, and Department of Environmental Conservation sponsored the event with the assistance of the University Transportation Research Center. The event attracted over 150 participants from state and local governments, regional organizations, universities, businesses, and citizens' organizations from throughout New York State.



NYSDOT Commissioner Thomas J. Madison, Jr. and NY State Lieutenant Governor Mary O. Donohue



Workshop Audience



Workshop Discussion



NYS Lieutenant Governor Mary O. Donohue



The closeout panel



Commissioner Madison

The workshop discussed New York State's approach to integrating transportation investment decisions with community land use planning. It featured presentations for New York State Lieutenant Governor Mary O. Donohue, NYSDOT Commissioner Thomas J. Madison, Jr., senior NYSDOT staff, and planners working around the state to introduce new approaches for how to improve the interface between the transportation system and the communities it serves. It was intended to provide input to NYSDOT as it develops a strategy for encouraging and supporting greater transportation and land use coordination in the future. The conference included breakout sessions featuring innovative practices from across the state to stimulate discussion and identify ideas for action.

**Lessons of Hurricane Katrina for
Emergency Preparedness, Evacuation
and Hospital Resiliency
Dr. Daniel B. Hess**



Dr. Hess spoke at the NYMTC about lessons from Hurricane Katrina.

Daniel B. Hess, assistant professor in the Department of Urban and Regional Planning at the University at Buffalo, State University of New York.

Shortly after Hurricane Katrina struck the Gulf Coast, Dr. Hess visited New Orleans on a week long reconnaissance mission with a multidisciplinary team of experts from the University at Buffalo charged with assessing damage and chronicling events in the disaster zone. The focuses of his research while in New Orleans was emergency preparedness, evacuation, and hospital resiliency. The presentation draws from images, video, and reports on in-field investigations and on-site

interviews.

The lessons learned about evacuation, organizational decisions, and medical infrastructure are useful in helping to make communities more resilient and safeguard against disaster.

**GPS Car Navigation Systems: Past,
Present and Future
Dr. Alain Kornhauser**

In this presentation, Dr. Alain Kornhauser discussed the “where we’re been, where we are and where we’re going with Satellite Navigation Systems,” and concluded the discussion with “why the NJDOT should be interested in Satellite Navigation”. Satellite Navigation provides guidance to people who want to go to new places, avoid congestion ahead and eliminate travel anxiety. The system makes the best, most efficient use of the highway infrastructure, provides for the free flow of traffic and improves the response of mobile assistance entities.

The system provides State agencies such as the NJDOT with optimal real-time management and control for mobile assistance. Forecasting travel times based on historical data, can be received or constructed and measure the time it takes to traverse a specific route from one location to another location. Peak hours and traffic patterns are accurately calculated from data which assists traffic management.

Frequency of Work Zone Accidents on Construction Projects

Dr. Raghavan Srinivasan

This presentation was held at NJDOT and Raghavan Srinivasan, Ph.D. from the University of North Carolina, presented. Safety in work zones continues to remain a high-priority issue for highway agencies partly due to the limited understanding of the causes of the crashes. The objective of this presentation was to give an overview of two projects that have looked at this issue in some detail.

The first project entitled Frequency of Work Zone Accidents on Construction Projects was funded by the New York State Department of Transportation (NYSDOT) and Region 2 of the University Transportation Research Center at City College of New York. This project was completed in August 2005.



The overall objective of this research was to study work zone accidents in New York State,

with particular attention to the occurrence and mitigation of rear-end vehicle accidents. The specific objectives were to:

- Recommend changes to the NYSDOT's accident database system for more efficient management and analysis.
- Conduct a detailed investigation of rear-end crashes in work zones and recommend measures that can reduce the frequency of these types of crashes.
- Report on traffic exposure data and accident patterns / parameters to be incorporated into future NYSDOT accident data analysis.

The presentation described the methodology that was used in this study and a summary of the results.

The second project entitled Traffic Safety Evaluation of Day-Time and Night-Time Work Zones is being funded by the National Cooperative Highway Research Program (NCHRP) through Project 17-30. The objectives of this ongoing research project as defined by the NCHRP Panel are fourfold: 1) Determine the crash rates for nighttime and daytime work zones; 2) Determine the nature of, and identify similarities and differences between, traffic-related crashes in nighttime and daytime work zones; 3) Develop management practices that promote safety and mobility in nighttime and daytime work zones; and 4) Develop work zone crash reporting recommendations to further improve the data collected on work zone crashes.

**Establishing a Long Term Cooperation
Strategy and Experiences from Europe
and the Olympics 2004 Floating
Accommodation Program
Dr. Sotiris Theofanis**



The presentation covers the theory and practice of port-city relationships. The new role of ports in today's transportation system, the ports' evolution, the new technologies and new managerial practices affecting the adjacent urban environment are analyzed. The functional, social, environmental mitigation, land use, economic impact and institutional issues associated with port-city links are discussed. Successful cases and best practices from around the world in establishing long term viable cooperation platforms between ports and

cities, particularly in waterfront development and reviving obsolete port facilities are discussed.

A large scale waterfront development case study relating to the Athens 2004 Olympics floating accommodation program, held in the Port of Piraeus, Greece, is presented. The project aimed at ensuring berthing capacity and associated landside facilities and services to accommodate 13,000 visitors on board cruise vessels, during the Athens 2004 Olympic Games. Numerous technical, operational, time schedule, and enhanced security challenges were successfully met. The special role of a coherent project governance structure, ensuring at the same time broad stakeholder participation is emphasized. Finally, challenges associated with the post event use of the facilities are discussed.



“Good to Go – Transit Options for Older Adults”

James S. Simpson

The New York University Wagner Rudin Center’s 7th Annual Tri-State Transit Symposium looked at efforts within and beyond the New York metropolitan area that are being developed to increase transit access for the fastest growing segment of the population. Panelists highlighted proven methods and explored the underlying policy, resource, and institutional issues that affect our ability to meet the mobility needs of older adults.

The event was co-sponsored by Region 2, University Transportation Research Center, the Wagner Rudin Center for Transportation Policy and Management, New York Metropolitan Transportation Council, AARP, Metropolitan Transportation Authority and the NYU Wagner Institute for Civil Infrastructure Systems. The conference was attended by 200 public officials, community and business leaders, transportation providers and planners, academic experts, and the regional press corps, as the conference discussed one of the most pressing transportation challenges in the New York metropolitan area.



Concentrating at Work: Reducing Auto Use Via Transit-Oriented Development at the Workplace

Dr. Daniel G. Chatman



Transit-oriented development (TOD) planning efforts in U.S. cities are often intended to create mixed-use developments near transit stops that include a significant amount of housing, consistent with Peter Calthorpe’s pioneering definition of transit-oriented development. But mixed-use, primarily nonresidential areas within cities may also have an important role to play. Dense development with shops and personal services near transit-served workplaces makes it easier for workers to carry out personal commercial activities on foot before, during, and after work, both providing a market for cost-effective transit commuter service and enabling reduced personal vehicle use during the rest of the day. It has also long been argued

that primarily nonresidential development near transit stops may have stronger effects on both commute mode choice and non-work auto trip frequency. In part this is because, for historical, economic, and political reasons, both actual and potential development densities are usually higher, parking standards lower, transit service better, and availability of shops and services greater in predominantly nonresidential areas.

This presentation explored various ramifications of a nonresidential TOD strategy, and presented empirical evidence supporting the notion that concentrating at work has bigger transportation efficiency payoffs than concentrating at home. Regional and city planners trying to get people to use their cars less might profitably re-focus their land use strategies on nonresidential areas, particularly to the extent that development of and in such areas is constrained by existing policies such as zoning codes and minimum parking requirements.



Reliable Neighborcast: A New Communications Paradigm for Vehicle-to-Vehicle Applications

Dr. Nicholas F. Maxemchuk

This presentation covered 3 topics: 1) described a set of applications for vehicle-to-vehicle networks, 2) described a new communication paradigm called "Reliable Neighborcast," and 3) described a protocol, RNP, that implements reliable neighborcast.

Vehicle-to-vehicle networks use wireless links to communicate between nearby trains, planes or automobiles. The networks are used to provide warnings and coordinate the operation of the vehicles. The applications provide safer, more fuel efficient use of trains, planes and automobiles, increase the volume of traffic that can be handled by existing airports, highways and railways, thereby reducing the need to construct new transportation facilities, and, can lead to new ways to use subways and buses to make mass transit faster and more convenient.

The applications are implemented on ad hoc networks and do not require a large investment in new networking infrastructure. In the applications that we describe, each vehicle communicates with a set of nearby vehicles. The set of nearby vehicles is a vehicle's neighborhood. Every vehicle has a different set of neighbors, and the sets of neighbors change

as vehicles move with respect to one another. The applications require reliable delivery, delay bounds and message sequencing, in order for the vehicles to operate safely.

Reliable broadcast or multicast protocols are not adequate for vehicle-to-vehicle applications. These protocols provide message delivery guarantees to all of the members of a group. In vehicle-to-vehicle applications the group of vehicles may be very large and cover a large area. For instance, in an automotive application the group may consist of all of automobiles on a highway. However, vehicles do not use the information from vehicles that are far away, and providing the delivery guarantees to the entire group results in messages being forwarded and recovered unnecessarily. Reliable neighborcast is more focused and only provides the delivery guarantees to those vehicles that need a message.

RNP is a protocol that implements reliable multicast. It guarantees that 1) a vehicle reliably receives the messages transmitted by all of its neighbors, 2) messages that are received by multiple vehicles are placed in the same order at each of the vehicles, and 3) a vehicle knows which other vehicles have received each message that it receives. Most group communications protocols that have changing groups are quasi-stationary. They provide guarantees to a fixed group of receivers, use a different protocol to change the group, then provide the guarantees to the new group. 4) RNP is a dynamic protocol. It

uses a voting procedure to continuously change the group as the protocol operates. This makes RNP well suited to the rapidly changing groups in vehicle-to-vehicle networks. 5) RNP efficiently uses the limited bandwidth in the wireless network. A highway is a 1-dimensional network, the surface of an airfield is a 2-dimensional network, and an air space is a 3-dimensional network. 6) RNP provides the guarantees within a delay bound. It quickly provides guarantees that all of the receivers in the neighborhood have recovered and sequenced a message, independent of the number of receivers in the neighborhood. In a time that is proportional to the number of receivers in the neighborhood, it learns which receivers are in the neighborhood and which neighbors have acquired the message. The trade-off between delay and guarantees makes RNP useful in a range of applications that require different guarantees.



Manhattan on the Move: A Transportation Agenda for a Growing City

The Hon. Scott Stringer, Manhattan Borough President, organized this event "...to bring together experts, policymakers, business, civic, and community leaders, urban planners and residents to identify transportation reform and development needs. We will invite all participants to weigh in on a variety of questions that bear on our City's transportation sustainability and, as a group, begin to lay the foundation for solutions."

The event featured a keynote address from Enrique Peñalosa, the former mayor of Bogotá, who is internationally renowned for his innovative approaches to urban transportation.

Road to Energy Independence: New York City's Alternative Transportation Future

The Center for Sustainable Energy at Bronx Community College was asked by the New York City Department of Transportation to become part of the "AFV Odyssey," a nationwide initiative of the National Alternative Fuels Training Consortium (NAFTC), an event that will get national media coverage taking place in more than 50 locations around the country. In order to collaborate with this initiative the

Center held its annual alternative fuel vehicle ("AFV") conference on, Thursday, October 12, 2006. It was held at the historic Gould Memorial Library Auditorium with vendor displays in the Rotunda and luncheon at the Roscoe Brown Student Center.



The day-long conference presented four thought provoking panels-- exploring such issues as the latest fuel developments, cutting edge technologies, policy challenges, incentives and business opportunities. In addition, a vendor display and vehicle exposition featured the latest in energy-efficient vehicles that appealed to fleet managers, business representatives, educators, students, and the general public. The day ended with a ceremony for the Annual Center for Sustainable Energy's Sustainable Energy Pioneer Awards.

Sponsors included the New York City Department of Transportation, the New York State Energy Research and Development Authority, and the Bronx Overall Economic Development Corporation.

Research Projects

The centerpiece of UTRC's mission is an ongoing program of basic and applied peer reviewed research that addresses its theme of "Planning and Managing Regional Transportation Systems in a Changing World" as well the region's transportation needs. To implement this mission, UTRC strives to break down barriers to research, cooperation, and innovation in the transportation field, by fostering partnerships across intellectual fields, academic institutions, and university-government-private sector divides.

Most projects are proposed directly by public agencies. Typically, a sponsoring agency issues a request for proposals through UTRC to its network of over 140 affiliated principal investigators, and then selects a winning proposal. When problems are complex, UTRC staff work closely with agencies to them define and frame their research needs.

UTRC also funds innovative, faculty-driven research on a competitive basis. In the annual UTRC Research Initiative, faculty submit proposals on research topics of their choice. The proposals are then peer-reviewed by scholars at other UTCs and by practicing professionals in the region. The evaluation and selection process scores proposals on innovation, technical merit, and relevance to the region's transportation needs.

All research requires active monitoring of progress and periodic briefings. UTRC also

works with research sponsors to develop an "implementation phase" in all projects, as appropriate. This may include staff training workshops or the development of step-by-step plans for adoption of a new technology or procedure.



UTRC's research program is responsive to needs identified by regional organizations and stakeholders, and conducted in close cooperation with these partners, with a goal of rapid dissemination and implementation of results.

Location-efficient mortgages and the land market: Who benefits?

Performing Organization: University Transportation Research Center

Sponsor: United States Department of Transportation

Principal Investigators: Daniel G. Chatman, Ph.D.
Assistant Professor
Bloustein School of Planning
and Public Policy
Rutgers University
33 Livingston Ave, Suite 302
New Brunswick, NJ 08901
Tel.: 732.932.3822 x724
E-mail: chatman@rutgers.edu

Project Objective:

To better understand the dynamics of “location-efficient mortgage” programs. These programs typically allow a higher percentage of income to be devoted to a personal mortgage for those purchasing a home with good transit and walking access.

Project Abstract:

The centerpiece of the location-efficient mortgage (LEM) program is a set of underlying criteria that allow a higher percentage of income to be devoted to a personal mortgage when purchasing a home with good transit and walking access, under the presumption that households who do not incur the costs of owning and maintaining autos can afford a larger mortgage (Holtzclaw et al. 2002). The LEM program is currently funded by Fannie Mae and tested in cities including Chicago, Los Angeles, San Francisco and Seattle (Institute for Location Efficiency 2006). Proponents hope that the program will promote auto independence and reduce sprawl (e.g., Krizek 2003; Danielsen, Lang, and Fulton 1999).

Grounds for skepticism include the argument that people who live in “efficient” neighborhoods may or may not use transit or walk at a higher rate (e.g., Boarnet and Crane 2001), and that

because residents of such areas do not have lower default rates currently, the program may increase defaults and not be market-supportable (Blackman and Krupnick 2001).

In this paper the principal investigator will investigate two additional problems with LEMs. In high-demand areas, households tend to bid to the maximum of their ability to pay for a mortgage, and the LEM allows people to make higher bids on housing located in “efficient” places. But this may simply result in a one-time windfall for land owners without helping make such locations more affordable. The LEM will raise the bid-rent envelope for all bids in targeted areas, while it may fail to stimulate the development of denser housing in targeted areas because the target cities typically have affordable housing problems exacerbated precisely by policies limiting density (Fischel 1985; Levine, Inam, and Torng 2005; Glaeser and Gyourko 2002). Meanwhile, in lower-demand markets, households who prefer to travel via transit and on foot are presumably already willing to outbid other households and the LEM program does nothing to change this sorting process.

In high demand markets without policies limiting density, the sorting process likely works as intended only under particular conditions of heterogeneity of income and travel preferences which the principal investigator will explore and specify in the study.

The study will conclude by discussing the restrictive conditions under which LEMs can be expected to promote spatial sorting by travel preferences, encourage tradeoffs between greater spending on housing and reduced auto use, or lead in the long run to densification in location-efficient areas.

Ferry Parking and Landside Access

Project Objective:

The goal of this study is to assist the New York Metropolitan Transportation Council (NYMTC) in the assessment and evaluation of both current and future potential of sites suitable for the development of facilities to support waterborne transportation of people and freight. Specifically, the study will focus on the development of assessment criteria to optimize under-utilized marine transportation resources and services. This study will:

- Review previous research about waterborne transportation needs of the region;
- Develop criteria (in consultation with NYMTC) to assess the viability of existing and potential sites that can be used for the development of facilities and infrastructure to support waterborne transportation;
- Evaluate and prioritize sites for development. The study region will encompass all ten NYMTC counties but concentrate on filling current gaps in knowledge.

Abstract:

The project is designed to assess and evaluate the suitability of sites for the development of facilities to support waterborne transportation of people and freight in the New York metropolitan region. The study effort will be guided by a Steering Committee drawn from members of NYMTC's Program Finance and Administration Committee members.

The project consists of three major tasks. The first task is an analysis of relevant literature including an analysis of previous reports and studies conducted in the region. The literature review will be augmented through interviews with experts in the region to generate a preliminary set of screening criteria and help determine the thresholds that should be used to identify preferred locations based on their physical characteristics. The second task is the development of an interactive GIS-based scenario builder that will assist decision-makers in understanding how individual factors (such as prevailing land use patterns) as well as the relationship between factors (i.e., land uses, land values, and prevailing traffic flows) shape the criteria used to identify viable sites for development. The third task is to use agreed-upon assessment criteria to conduct a detailed analysis of no more than ten to twelve sites. Once the analysis of sites has been

completed, the research team, working in close consultation with NYMTC staff and the steering committee will develop a prioritized list of sites suitable for development. Prioritization will be based on the growth potential of these sites, their role in the regional intermodal transportation system, expandability of the facilities, impacts of such development (e.g. environmental impacts, congestion), community acceptability, cost effectiveness, general public safety, as well as homeland security concerns.



Performing

Organization: New York Metropolitan Transportation Council

Sponsor: United States Department of Transportation
New York Metropolitan Transportation Council

Principal

Investigators: Laxmi Ramasubramanian, Ph.D
Associate Professor
Department of Urban Affairs and Planning
Hunter College, City University of New York
695 Park Avenue, Room 1616A HW
New York, NY 10021
Tel.: 212-772-5594; Fax: 212-772-5593
Email: laxmi@hunter.cuny.edu

Feasibility of Freight Villages in the NYMTC Region

Performing Organization: New York Metropolitan Transportation Council

Sponsor: United States Department of Transportation
New York Metropolitan Transportation Council

Principal Investigators: Maria P. Boilé, Ph.D.
Associate Professor
Center For Advanced Infrastructure
& Transportation
Dept. Of Civil And Environmental Engineering
Rutgers University
623 Bowser Rd. Piscataway, NJ 08854
Tel.: 732-445-7979
Fax: 732-445-0577
E-Mail: Boile@Rci.Rutgers.Edu

Project Objective:

This project, based on experiences drawn from the United States and international state-of-the-art and state-of-practice, will investigate the feasibility of freight villages in the NYMTC region.

Project Abstract:

Privately developed freight centers are increasingly drawn to suburban locations due to cost and scarcity of land in urban areas. It should be noted that all European freight villages are located in suburban areas with sufficient land area and expansion opportunities. On the other hand from a public sector transportation standpoint, urban freight villages are considered to offer a more efficient development pattern, since they are expected to be more conducive than suburban sites to a rail- or water-oriented distribution pattern and allow for a greater reduction in truck VMT. From an economic development perspective, urban freight villages may offer an opportunity to transform derelict industrial sites or brownfields, typically having rail access, into high value-added employment and commercial nuclei.

The NYMTC Regional Freight Plan addresses the matter of developing urban freight villages and discusses the functions of a rail freight village, in relation to rail-oriented distribution, as opposed to truck-oriented distribution. The study discusses briefly the potential advantages of this type of freight village, as well as the impediments associated with its development in the NYMTC region.

The study draws on the example of a proposal to develop an urban freight village at Tremley Point, Union County, NJ and finally proposes four potential sites for freight village development, i.e. those of Maspeth at Queens, South Brooklyn Waterfront, Harlem River Yard at The Bronx and Pilgrim State Hospital Site at Suffolk County. All of these locations present space and/or access limitations and need further consideration to reach a relevant decision. Each site also represents existing and potential transfer points between modes, a requisite for ILC development. However, within an urban setting, there is greater potential for conflict (e.g., among land uses, community considerations, etc.) It is evident that scarcity of land and the unavailability of adequate land parcels call for the examination of a hybrid type of freight village, with a rather limited core area, but leveraging its space limitations with synergies associated with adjacent freight transportation related activities and businesses heavily related to freight transportation services. The role of the public sector in assisting this effort can be crucial, ensuring synergies associated with local redevelopment zones, in-place industrial parks and brownfields redevelopment programs.



Transportation And Related Land Use In The NYMTC Region: Strengthening Urban-Suburban Coordination

Project Objective:

The Rudin Center for Transportation Policy and Management at New York University's Robert F. Wagner Graduate School of Public Service shall undertake a year-long research initiative that shall serve the following purposes:

- (1) Identify and describe the nature of the obstacles to effective urban-suburban and suburban-suburban coordination in transportation and land use.
- (2) Assess the specific areas related to transportation and land use where such coordination is most urgently needed. Among these might be, for example, implementation of new technologies across county lines or bus rapid transit within the region.
- (3) Benchmark practices in this region with what select metropolitan areas are doing elsewhere around the country to better coordinate efforts in transportation and land use across jurisdictional lines.
- (4) Identify best practices and specific practical ways that they could be implemented in the NYMTC region.

To carry out this effort, the Rudin Center shall begin with a short information-gathering survey, primarily aimed at PFAC members and secondarily, where warranted, at additional jurisdictional entities within the region. The Center shall, at the same time, undertake a literature review and short telephone inquiries as needed within and beyond the region. Following this initial assessment, more detailed interviews shall be held with selected agencies, and city, county, town, and village officials from within and beyond the region. Finally, the information gathered through all the above mechanisms shall be assessed, analyzed, and synthesized into a final report that shall be submitted to NYMTC.

Project Abstract:

During the past few years, the Rudin Center has completed numerous research projects in transportation, ranging from on-street parking policy and management, to highway and street issues, to context sensitive solutions, to intelligent transportation systems. One thing common to the findings of the work for each of these diverse areas was the need for more effective coordination on transportation and land use issues within the New York Metropolitan Transportation Council (NYMTC) region

between New York City and the suburban counties to its north and east, and among the suburban counties themselves.

While there is agreement on the need for regional approaches to such issues as highway congestion, land use, increased freight traffic, and transportation operations more broadly, effective mechanisms for fostering coordination on such issues are still lacking in many cases. Further, this is a concern that other metropolitan areas also continue to grapple with around the country. When asked about on-street parking policies, for example, representatives from Boston, Chicago, and Washington, DC suggested that better collaboration was needed with suburban areas which often fail to realize that policies undertaken in the suburbs can have negative affects on their urban neighbors.

This study shall explore issues related to urban-suburban and suburban-suburban coordination on transportation and related land use issues throughout the NYMTC region, identifying successes and challenges, as well as best practices when possible. This project shall support the goals of the NYMTC Regional Transportation Plan (RTP) in several ways. Most directly, a seamless "state-of-the-art" regional transportation system necessitates effective coordination throughout the region and recognition that land use and operational decisions taken in one area can affect another location within the region. Further, finding ways to better coordinate efforts shall aid in harmonizing the transportation system with its surroundings.

Performing

Organization: New York Metropolitan Transportation Council

Sponsor:

United States Department of Transportation
New York Metropolitan Transportation Council

Principal

Investigators:

Allison L. C. de Cerreño
Rudin Center for Policy & Management
295 Lafayette Street
New York, NY 10012
Tel.: 212-998-7547
Fax: 212-995-4611
E-mail: allison.decerreno@nyu.edu

Ongoing Research Projects

Title	Performing Organization	Sponsors	Principal Investigator
Transportation and Related Land use in the NYMTC Region: Strengthening Urban-Suburban Coordination	New York Metropolitan Transportation Council	United States Department of Transportation New York Metropolitan Transportation Council	Allison L. C. de Cerreno, Ph.D. Rudin Center for Policy & management
Feasibility of Freight Villages in the NYMTC Region	New York Metropolitan Transportation Council	New York State Department of Transportation	Maria Boilé, Ph.D., Assistant Rutgers University Kaan Ozbay, Ph.D. Rutgers University Allison L. C. de Cerreño, Ph.D. Rudin Center, New York University Richard Hawks, Ph.D. State University of NY - ESF
Ferry Parking and Landside Access	New York Metropolitan Transportation Council	United States Department of Transportation New York State Department of Transportation	Laxmi Ramasubramanian, Ph.D. Hunter College Maria Boilé, Ph.D., Assistant Rutgers University
Effects of New York State Roadways on Amphibians and Reptiles: A Research and Adaptive Mitigation Program	New York State Department of Transportation	United States Department of Transportation New York State Department of Transportation	James P. Gibbs, Ph.D. State University of New York
Household Travel Survey Research	New York Metropolitan Transportation Council	United States Department of Transportation New York Metropolitan Transportation Council	Catherine Lawson, Ph.D. The University at Albany-SUNY
Public Transit in New York City: Keeping Up with the Trend	University Transportation Research Center	United States Department of Transportation	Cynthia Chen, Ph.D. City College of New York Hongmian Gong, Ph.D. Hunter College
Deformation of Cohesionless Fill due to Cyclic Loading	University Transportation Research Center New York State Department of Transportation	United States Department of Transportation New York State Department of Transportation	Sophia Hassiotis, Ph.D. Stevens Institute of Technology

Ongoing Research Projects

Title	Performing Organization	Sponsors	Principal Investigator
Freight Movement as an Economic Indicator for the New Jersey/New York Bi-State Area	University Transportation Research Center	United States Department of Transportation	Kaan Ozbay, Ph.D. Rutgers University
Feasibility of Establishing a Virtual Container Yard to Optimize Empty Container Management	University Transportation Research Center	United States Department of Transportation	Maria Boilé, Ph.D., Assistant Rutgers University
Pedestrian Safety in the NYMTC Region, Phase 1	New York Metropolitan Transportation Council	United States Department of Transportation New York Metropolitan Transportation Council	Claire McKnight Ph.D. Kyriacos C. Mouskos, Ph.D. City College of New York
NYMTC Best Practice Model Support Project :Evaluation and Testing of Regional Models-Phase 1	New York Metropolitan Transportation Council	United States Department of Transportation New York Metropolitan Transportation Council	Robert E. Paaswell, Ph.D. City College of New York Cynthia Chen, Ph.D. City College of New York Maria Boilé, Ph.D. Rutgers University
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. North Carolina State University John Falcocchio, Ph. D. Polytechnic University Kaan Ozbay, Ph.D. Rutgers University Kyriacos C. Mouskos, Ph.D. City College of New York

Completed Research Projects

Title	Performing Organization	Sponsors	Principal Investigator
NYCDOT Green Bus Lines Route Analysis	New York City Department of Transportation	United States Department of Transportation	Claire McKnight Ph.D. City College New York
		New York City Department of Transportation	Robert E. Paaswell, Ph.D. City College New York
Analysis of Human Factors in Nighttime Work Zones	New Jersey Department of Transportation	United States Department of Transportation	Jose Holguin-Veras, Ph.D. City College of New York
		New Jersey Department of Transportation	
Crosswalk Safety: Evaluation of the Light Guard System	New Jersey Department of Transportation	United States Department of Transportation	Peter Boyce, Ph.D. Rensselaer Polytechnic Institute
		New Jersey Department of Transportation	
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	Raghavan Srinivasan, Ph.D. Dowling College
		New Jersey Department of Transportation	Claire McKnight Ph.D. City College New York
Analytical Tool for Measuring Emission Impact of ACCEL/DECEL Lanes	New Jersey Department of Transportation	United States Department of Transportation	Hualiang Teng, Ph.D. Polytechnic University
		New Jersey Department of Transportation	
Development of Bus Maintenance Information	New York City Transit	United States Department of Transportation	Mohsen Jafari, Ph.D. Rutgers University
		New York City Transit	
Benefits Package Value	New York State Department of Transportation	United States Department of Transportation	Frederick Brodzinski, Ph.D. Institute for Transportation Systems, City College of New York
		New York State Department of Transportation	
Evaluation of the Performance of Retro reflectors in Snowplowable Raised Pavement Markers	New Jersey Department of Transportation	United States Department of Transportation	Neville A. Parker Ph.D. City College of New York
		New Jersey Department of Transportation	

Completed Research Projects

Title	Performing Organization	Sponsors	Principal Investigator
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. Dowling College
An Assessment of Methodological Alternatives for a Regional Freight Model in the NYMTC Region, Phase 2	New York Metropolitan Transportation Council	United States Department of Transportation New York Metropolitan Transportation Council	Jose Holguin-Veras, Ph.D. City College of New York
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. SUNY Maritime College
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. City College of New York Farhad Ansari, Ph.D. Univ. of Illinois at Chicago
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. City College of New York Maria Boilé, Ph.D. Rutgers University
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. City College of New York Jose Holguin-Veras, Ph.D. City College of New York Raghavan Srinivasan, Ph.D. Dowling College Claire McKnight Ph.D. City College of New York Kaan Ozbay, Ph.D. Rutgers University Joseph Berechman Ph.D. UTRC

Completed Research Projects

Title	Performing Organization	Sponsors	Principal Investigator
New York in the New World Economy	New York State Department of Transportation	United States Department of Transportation	Robert E. Paaswell, Ph.D. City College of New York
		New York State Department of Transportation	Ross Weiner, Ph.D. City College of New York
			Catherine Lawson, Ph.D. SUNY, University at Albany
Impact of Congestion on Bus Operations and Costs	New Jersey Department of Transportation	United States Department of Transportation	Robert E. Paaswell, Ph.D. City College New York
		New Jersey Department of Transportation	Claire McKnight Ph.D. City CollegeNew York
Funding Analysis for Long Term Planning	New York State Department of Transportation	United States Department of Transportation	Allison L. C. de Cerreño Ph.D. New York University
		New York State Department of Transportation	
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. SUNY, University at Albany
Information Technology Operations	New York State Department of Transportation	United States Department of Transportation	William Wallace, Ph.D. Rensselaer Polytechnic Institute
		New York State Department of Transportation	
Handbook of Scour Countermeasures Designs	New Jersey Department of Transportation	United States Department of Transportation	Anil K. Agrawal, Ph.D. City College of New York
		New Jersey Department of Transportation	
Severance Damage Study	New York State Department of Transportation	United States Department of Transportation	Richard Marchitelli New York University
		New York State Department of Transportation	
Development of Smart Bridge Bearing Systems- A Feasibility Study	New York State Department of Transportation	United States Department of Transportation	Anil K. Agrawal, Ph.D. City College of New York
		New York State Department of Transportation	

Completed Research Projects

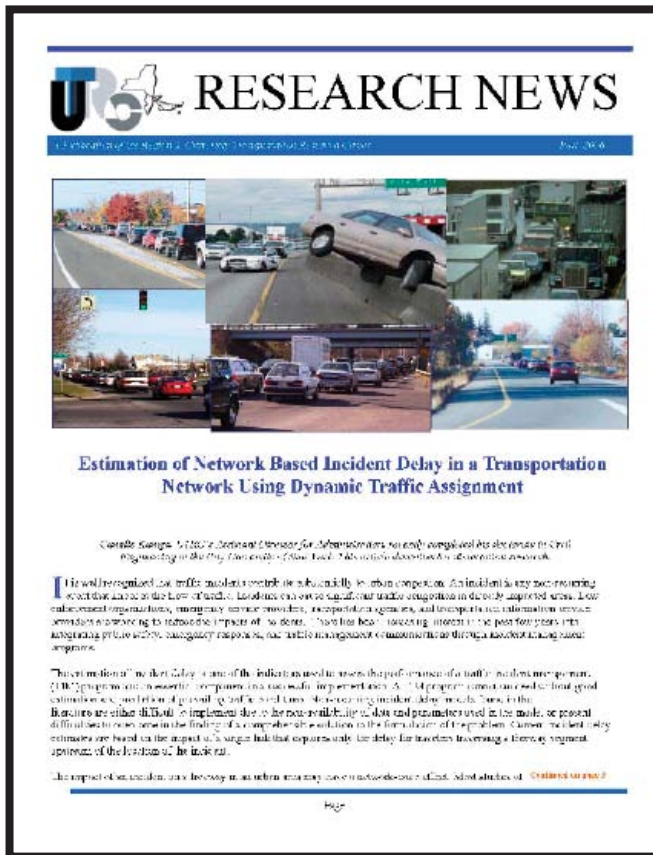
Title	Performing Organization	Sponsors	Principal Investigator
ITS Operation Support Contracts	New Jersey Department of Transportation	United States Department of Transportation	Raman Patel, Ph.D. Polytechnic University
		New Jersey Department of Transportation	Hualiang Teng, Ph.D. Polytechnic University
Evaluation Study of the Port Authority of NY & NJ's Value Pricing Initiative	New Jersey Department of Transportation	United States Department of Transportation	Jose Holguin-Veras, Ph.D. City College of New York
		New Jersey Department of Transportation	Kaan Ozbay, Ph.D. Rutgers University
Alternatives to Herbicides: Integrated Vegetation Management	New York State Department of Transportation	United States Department of Transportation	Christopher Nowak, Ph.D. SUNY College of Environmental Science and Forestry
		New York State Department of Transportation	
Development of a Portable Petroleum By-Products Chemical Sensor – Phase 1	New York State Department of Transportation	United States Department of Transportation	Michael Carpenter, Ph.D. Marina A. Petrukhhina, Ph.D. SUNY - Albany
		New York State Department of Transportation	
Frequency of Work Zone Accidents on Construction	New York State Department of Transportation	United States Department of Transportation	Raghavan Srinivasan, Ph.D. University of North Carolina
		New York State Department of Transportation	Hualuang Teng, Ph.D. The University of Virginia
Assess impacts and Benefits of Traffic Signal Priority for Buses	New Jersey Department of Transportation	United States Department of Transportation	Raghavan Srinivasan, Ph.D. Dowling College
		New Jersey Department of Transportation	
The Cost of Transporting People in New Jersey, Phase 2: Model Enhancements and Integration with Existing Travel Demand Models and Other Tools	New Jersey Department of Transportation	United States Department of Transportation	Kaan Ozbay, Ph.D. Rutgers University
		New Jersey Department of Transportation	
Identification of Traffic Control Devices for Mobile and Short Duration Work Operations	New Jersey Department of Transportation	United States Department of Transportation	Robert E. Paaswell, Ph.D. City College of New York
		New Jersey Department of Transportation	

Completed Research Projects

Title	Performing Organization	Sponsors	Principal Investigator
Speed Project Closeouts/ Streamline Local Financing	New York State Department of Transportation	United States Department of Transportation New York State Department of Transportation	Neville Parker, Ph.D. City College of New York
Analysis of Capital Cost Elements for Light Rail Transit	Federal Transit Administration	Federal Transit Administration	Robert E. Paaswell, Ph.D. City College of New York
Assessment of Border Crossing Needs in New York State	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 Robert E. Paaswell, Ph.D. City College of New York
The Impact of Mode and Mode Transfers on Commuter Stress, Phase 2	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Richard Wener, Ph.D. Polytechnic University Gary Evans, Ph.D. Cornell University
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 University
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. University of North Carolina
Callaborative Exploratory Research: On The Anticipatory Route Guidance Problem	University Transportation Research Center New York State Department of Transportation	United States Department of Transportation New York State Department of Transportation	Soulaymane Kachani, Ph.D. Columbia University Georgia Perakis, Ph.D. Massachusetts Institute of Technology
Location-efficient mortgages and the land market: Who benefits?	University Transportation Research Center	United States Department of Transportation	Daniel Chatman, Ph.D. Rutgers University

UTRC's Newsletter & Website

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



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.



University Transportation Research Center
City College of New York
Marshak Hall, Suite 910
New York, NY 10031
Telephone: 212-650-8050
Fax: 212-650-8374
Website: www.utrc2.org



Photo by PANYNJ

