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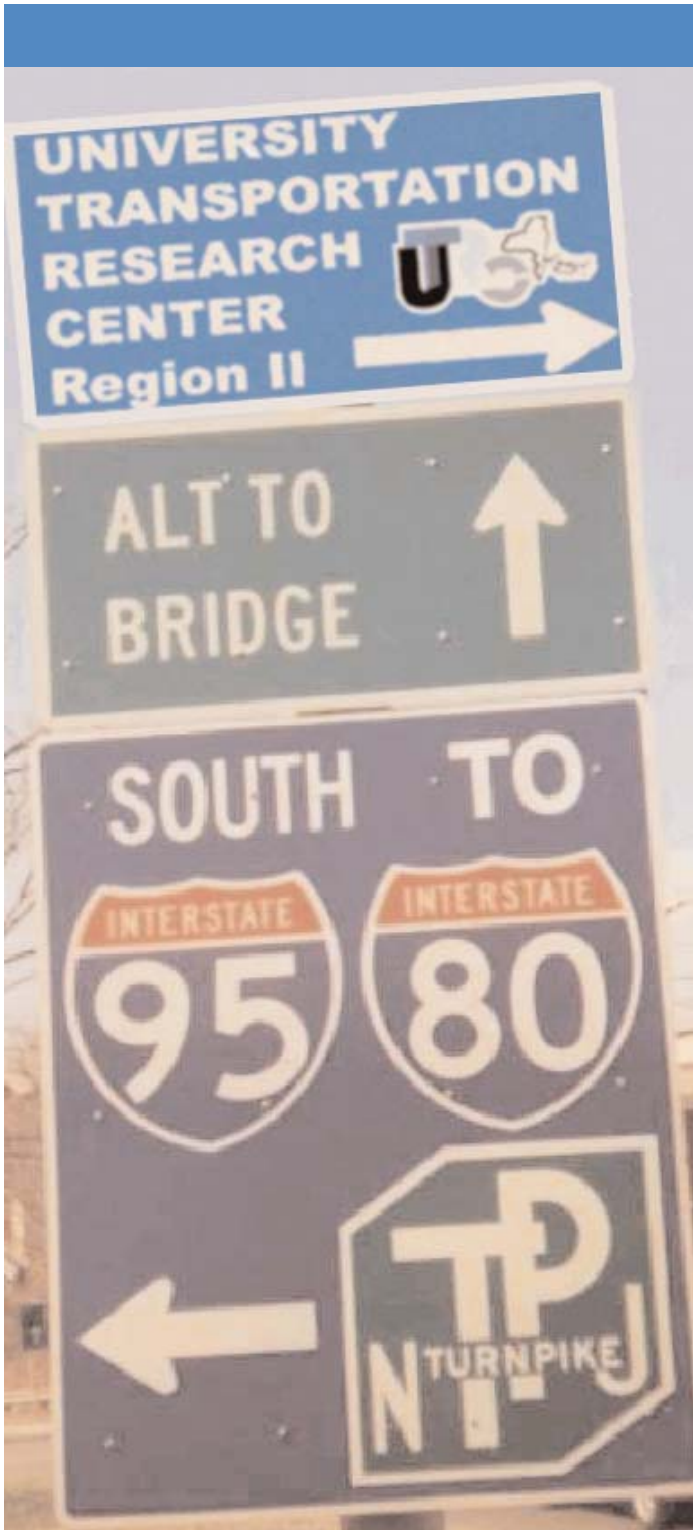


**A N N U A L
R E P O R T**

**FISCAL YEAR
2002 - 2003**



UNIVERSITY TRANSPORTATION RESEARCH CENTER
REGION III



Annual Report Fiscal Year 2002-2003

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DESIGN CREDITS

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Camille Kamga

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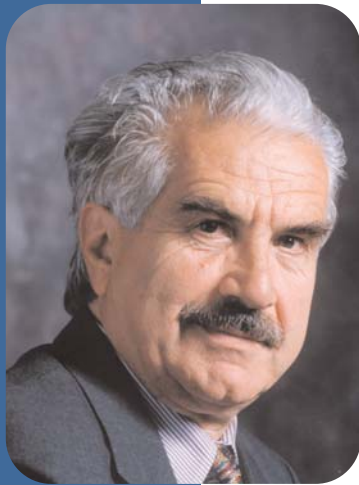




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Chairman's Message



FALGOUTCHIO
JOHN

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

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

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

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



Director's Message

Hardware to software, human resource management to highway asset management - this range of regional transportation issues is being addressed by UTRC faculty and students. Perhaps these very broad arrays of work underscore how diverse are the opportunities within the field of transportation. UTRC has worked with Civil, Industrial and Electrical Engineers and Computer Scientists; this is expected. But one of our most successful projects is led by a team of Psychologists. We work constantly with Architects, Urban Designers and Urban Planners. We have assembled a strong team of economists and regional scientists to work on a highly visible project for an important regional client. And we have had a Doctor of Education Work on a labor market study for a State DOT. What is most rewarding to the UTRC Faculty is to see the students who have worked on these projects emerge to positions of leadership and responsibility in their agencies, organizations and firms.

It is especially rewarding in Region 2 to see this new generation come into a profession that is full of change and great challenges. The challenges come into a region coping with its economic future as part of a "Global Economy"; what is our role and how we must as transportation professionals guide and select our much needed infrastructure investments. Restoration of Lower Manhattan, a constant and significant regional focus, becomes now one of many regional needs. A new suburban bridge over the Hudson River, a great number of new rail rapid projects, a rail freight tunnel, proposals for Bus Rapid Transit, introduction of IT into our transit

systems, serious discussions of road pricing, transportation to meet a 2012 Olympics bid are all on the transportation table. While we are involved with aspects of these projects, our students and Faculty are also involved in projects that respond to these initiatives: community transportation (and economic development) plans, air quality and local health, equity - not only of the transportation users, but among the diverse professional organizations. It is soon clear why multi disciplinary approaches are needed for such complex and immediate issues. Such complexity also highlights the unique contributions that can be made by a consortium of strong academic institutions.

Clearly Region 2 is rich in opportunity. And, through attending meetings with senior agency staff and through classes enriched by talks and discussions with local, national and international practitioners, our students and their mentors -both faculty and professionals - are becoming part of the changes that are shaping our profession. These changes are many faceted; they are within our Transportation agencies as they focus more on meeting stakeholder needs and expectations. They are within our ability to pay for needed infrastructure improvements, forcing us to seek new types of funding and revenues. And they are culture changes brought about by the IT and communications revolutions and modern computing. UTRC is proud to be a part of the Region 2 Transportation community. My colleagues and I hope this report gives you a sense of what we are doing and serves as an invitation to discuss our work or any aspect of transportation with us.



ROBERT E.
PAASWELL



Center's Theme

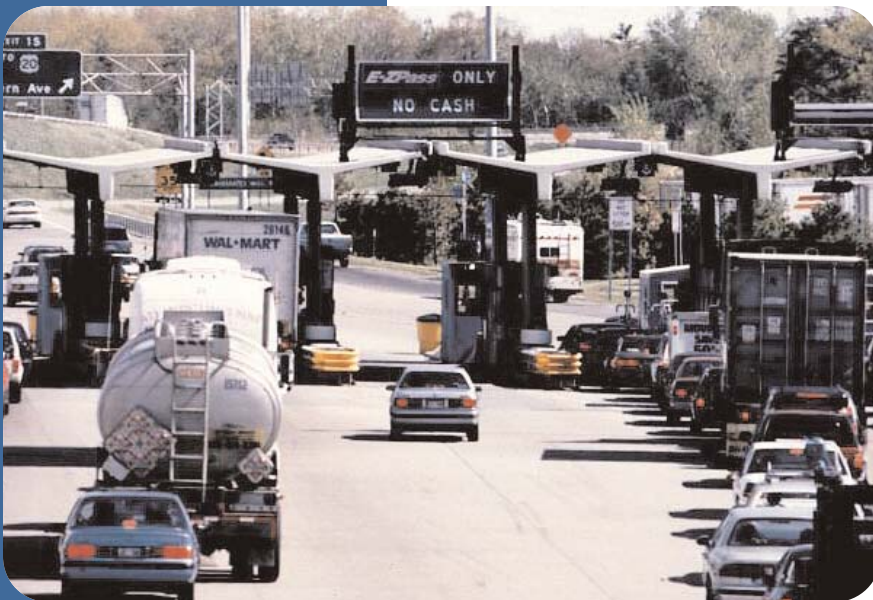
The University Transportation Research Center (UTRC) presents unique capabilities to the profession as these changes evolve. A concentration of major universities with capabilities to address such issues: the quantification of environmental impact (Columbia) and valuation of externalities and congestion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

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

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

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

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





complex set of many modes in the region respond to customer needs from a quality perspective in a multi modal fashion.

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

While modernization involves the integration of new technologies into the modes it also concerns new ways of linking labor and management to operate the systems, new organizational and institutional structures to address multi modal and multi jurisdictional issues, and new means of funding investments - coupled to new means of users paying for the services they receive. Planners and managers need new tools to address such issues.

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

“Planning and Management of Regional Transportation Systems”



Center's Staff



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



Camille Kamga
Assistant Director,
Administration &
Information Technology



Robert Baker
Assistant Director,
Research



Dr. Claire McKnight
Assistant Director,
Education & Training



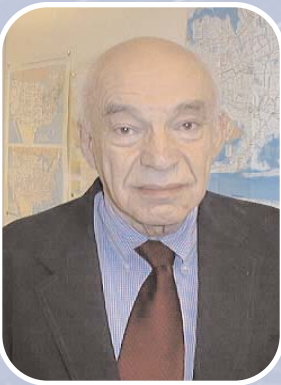
Dr. Todd Goldman
Senior Research Fellow



Dr. Joseph Berechman
Visiting Scholar



Dr. Frederick Brodzinski
Business Manager



Herbert Levinson
Icon Mentor



UTRC's Interns
(from left to right) Edgardo Molina, Asad Chaudhary, Sau Mei Lau, Munia Jamil, Soanya Ahmad (not shown), Roberto Martin (not shown).



Sandra Jackson
Secretary

Management Structure

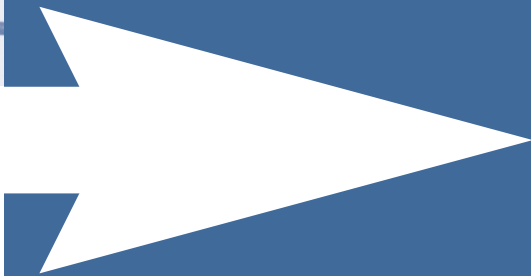
UTRC has adopted a corporate style of management. In this style, the UTRC Board provides policy guidelines, and approval of UTRC activities. Dr. Robert Paaswell, Distinguished Professor of Civil Engineering at City College of New York, serves as Chief Executive Officer, overseeing day to day operations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

The Board of Directors, chaired by Dr. John Falcocchio of Polytechnic University, and conducts its business through a well organized committee structure. The Board (Committee of the

whole) reviews Center Objectives and Programs, approves budgets, and reviews and recommends actions forwarded by its two major working committees.

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





UTRC Board of Directors

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Arnim H. Meyburg, Ph.D.

Cornell University, New York

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Stevens Institute of Technology, New Jersey

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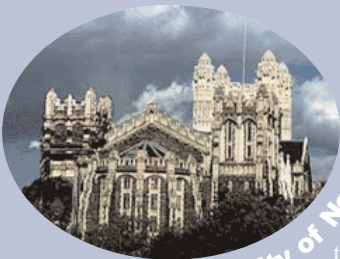
Robert Paaswell, Ph.D.

Executive Director

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

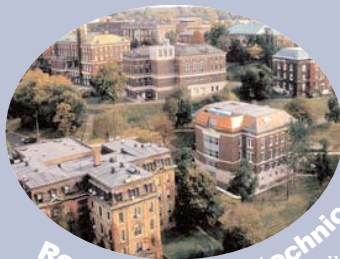


Member Universities



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



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.



Columbia University

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



New York University

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



Princeton University

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



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.



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.



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.



Polytechnic University

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



Rutgers University

The State University of New Jersey programs of graduate study leading to the Masters of Science and Ph.D. degrees may be arranged in a wide variety of areas.

The fields of specialization may include structural analysis and design, computational mechanics, structural reliability, or structural optimizations., et el.



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.



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.



Financial Report

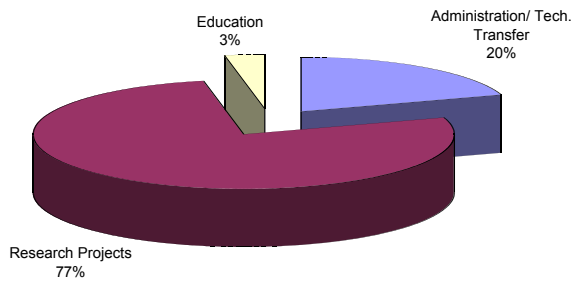
The following charts summarize the UTRC revenues and expenditures for FY 2002 - 2003. The University Transportation Research Center Region 2 funding allocated to programs totaled \$3,757,751 in 2002-2003. This year, the annual USDOT grant allocated to programs represents 25 percent of the total allocation.

UTRC's longtime partners, New Jersey Department of Transportation, and New York State Department of Transportation provided a combined 64 percent of the budget in 2002-2003. UTRC's In-kind funds from university

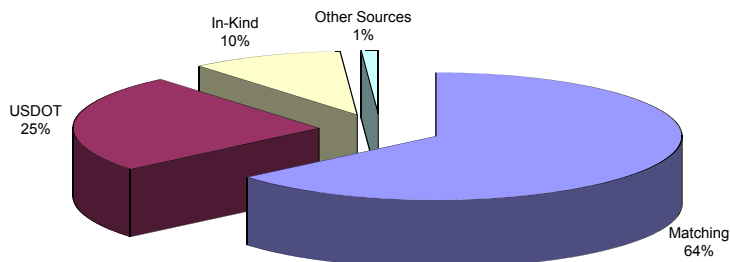
members and agencies were 10 percent of the total budget.

The share of funds allocated among programs differed from the previous fiscal year. With strong partnerships and solid financial commitments from federal, state and local agencies, UTRC allocated 77 percent of its total budget to research projects. To carry out administrative and technology transfer programs, 20 percent of funds were used. The remaining 3 percent of the budget is provided for the Advanced Institute for Transportation Education.

FY 2002 - 2003 Funds Allocation



FY 2002 - 2003 Revenues



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





Research Projects

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

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

Each of the studies incorporate the latest analytic tools and theories. Sponsors can evaluate competitive proposals to insure the most responsive UTRC team conducts the work. Research work spills over directly to the classroom. For example, a project for New Jersey DOT

involves the use of a complex land use transportation model. The inventor of the model was invited to UTRC to present a series of classes on all aspects of designing, using and interpreting the model. The class was attended by a large group of students, as well as faculty and staff from transportation agencies.

The program includes both studies that are identified with





The research program is responsive to the UTRC theme: "Planning and Management of Regional Transportation Systems."



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

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

During the fiscal year October 1, 2002 to September 30, 2003, the following new UTRC research projects are listed and are funded under the current USDOT grant:

NEW Research Projects



Project No:	49777-11-04
Title:	Handbook of Scour Countermeasures Designs
Performing Organization:	New Jersey Department of Transportation
Sponsors:	United States Department of Transportation New Jersey Department of Transportation
Principal Investigator:	Anil K. Agrawal, Ph.D. Associate Professor The City College of New York Steinman Hall, T -121 Convent Avenue at 140th Street New York, NY 10031 Phone: 212-650-8442 Fax: 212-650-6965 E-mail: agrawal@ccny.cuny.edu



Project Objective:

The objectives of this study are:

- Identify and recommend scour countermeasures for both existing and new bridges,
- Standardize the identified scour countermeasure technologies; provide standard details and drawings, construction procedures, and design technologies for use by bridge designers,
- Develop guidelines in the form of a New Jersey Scour Countermeasures Handbook. The Handbook will contain identified scour countermeasures, standard details, and practical cost - benefit relationships for New Jersey structures, stream geometry, stream soil conditions, environmental constraints and feasibility.

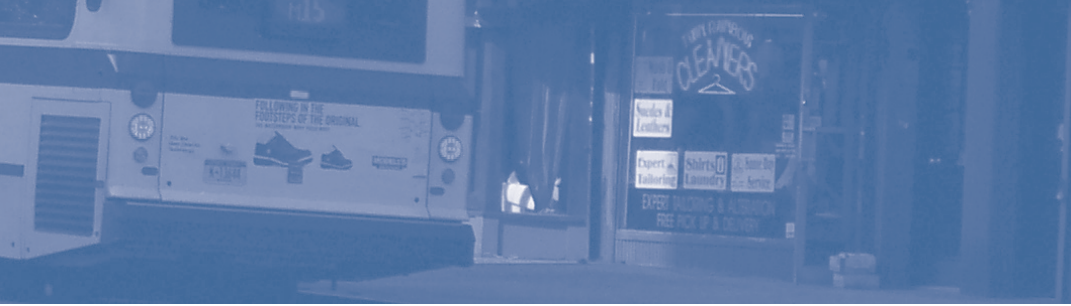
Project Abstract

Bridge engineers are presented with numerous typical and non-typical scour countermeasure designs for application to scour critical bridges. A wide variety of countermeasures are presented in the publications to control channel instability and to mitigate scour at foundations of abutments and piers. Some widely used countermeasures include: foundation strengthening, sheet piles, concrete apron

walls, curtain walls, sacrificial piles and pier modifications. Additional widely used technologies include impermeable spurs, drop structures, retards, riprap, grouted riprap and grout filled bags. Some State highway agencies have worked with articulated blocks, grouted riprap, and gabion mattresses.

This research will focus on the identification of additional technologies and structural solutions, which are applicable for New Jersey structural applications, stream geometry, stream soil conditions, environmental constraints and feasibility (physical restrictions). Economic, cost effective technologies of countermeasures will be determined to match New Jersey resources and scour countermeasures for both existing structures and new bridge construction. Practical, cost effective technologies for New Jersey will be the primary focus for the identification of additional technologies.

The identified technologies will be presented in the form of guidelines for the design, construction and use of scour countermeasures. A New Jersey Scour Countermeasures Handbook will be presented for the selection of appropriate applications for the variety of scour conditions, which are encountered in New Jersey. The Handbook will contain selected permanent scour countermeasures for identified scour critical bridges, and guidelines for application, design and construction. The practical guidelines will assist engineers in the selections of appropriate technologies to facilitate the overall design.



Project Objective:

The objective of the investigation is to assist New York State Department of Transportation Main Office Information Technology Bureau (the Bureau) in assessing the needs and roles of Regional Information Technology organizations (the Regions) in order to better utilize the Department's IT resources and improve its performance. The investigation, therefore, will provide the Bureau with an integrated road map of the current tasks at each Region, their inter-relationships with each other and with the Bureau, and a suggested model of operation for Bureau and Regions. The model will be based on assessment metrics and benchmarks developed as part of the research.

Project Abstract:

This proposal is to assess the roles and responsibilities of the Regional Information Technology organizations of New York State Department of Transportation (NYSDOT). The Information Technology (IT) resources of NYSDOT are organized using a matrix structure. The Main Office Information Technology Bureau has an advisory role in relationship to the Regional Information Technology organizations. In order to better understand the roles and responsibilities of the Regional Information Technology organizations, their resource needs must be identified and documented. This information will enable Regional Directors and other Department managers make more efficient and effective use of NYSDOT IT resources.



Project No:	55657-01-15
Title:	Information Technology Operations
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigator:	William Wallace, Ph.D. Decision Sciences & Engineering Systems Rensselaer Polytechnic Institute 110 Eight Street Troy, NY 12180 Phone: 518-276-2895 Fax: 518-276-8227 E-mail: wallace@rpi.edu

NEW

Research Projects

Project No:	55657-02-15
Title:	Frequency of Work Zone Accidents on Construction Projects
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigators:	Raghavan Srinivasan, Ph.D. Senior Transportation Research Engineer Highway Safety Research Center University of North Carolina 730 Airport Road, Chapel Hill, NC 27599 Phone: 919-962-7418, E-mail: srini@unc.edu Hualuang Teng, Ph.D. Research Assistant Professor, The University of Virginia PO Box 400742 Charlottesville VA 22904 Phone: 434-924-1461 E-mail: hht4n@cms.mail.virginia.edu

Project Abstract:

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. According to the National Work Zone Safety Information Clearinghouse, in one year, work zones in this country are associated with more than 700 fatalities, 24000 injury crashes, and 52,000 property damage-only crashes, and the estimated cost of these crashes exceed \$4 billion per year. One could argue that the work zones are likely to increase in number due to the emphasis on repair and reconstruction. Hence, it can be expected that the number of accidents in work zone will increase correspondingly. Following is a brief discussion of results from previous studies on work zone safety.



Most studies seem to indicate that the introduction of work zones lead to an increase in accident rates, although this increase is highly dependent on traffic and geometric conditions, traffic control devices, and other aspects of the work zone environment. The increase in crash rate at work zones may be due to several reasons including "the general disruption

of traffic due to closed lanes, improper lane merging maneuvers by drivers, and inappropriate use of traffic control devices" (Venugopal and Tarko 2000). Work zones seem to be especially difficult for trucks. Benekohal and Shim (1999) surveyed 930 truck drivers and found that 90% of those surveyed considered traveling through work zones to be more hazardous than traveling through regular sections. Daniel et al. 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. According to the National Work Zone Safety Information Clearinghouse, in one year, work zones in this country are associated with more than 700 fatalities, 24000 injury crashes, and 52,000 property damage-only crashes, and the estimated cost of these crashes exceed \$4 billion per year. One could argue that the work zones are likely to increase in number due to the emphasis on repair and reconstruction. Hence, it can be expected that the number of accidents in work zone will increase correspondingly. Following is a brief discussion of results from previous studies on work zone safety. Traffic control devices are intended to reduce the frequency of crashes. For example, Garber and Srinivasan (1998) found that changeable message signs with radar could reduce the possibility of speeding at work zones, and hence reduce the frequency / severity of crashes. In another study, orange rumble strips due to their high visibility were found to have a significant effect on vehicle speeds (Meyer, 2000). However, in some cases, these traffic devices may



themselves be a safety hazard to drivers, passengers, and the workers, and need to be studied carefully (e.g., see Bligh et al., 1998; Bryden et al., 1998). Rear-end crashes have consistently been the most predominant type of crashes. This has been found to be true for work-zones as well. Between 30 and 40% of crashes at work zones are rear-end crashes (Wang et al., 1996). Very few published studies have analyzed the causes and the factors associated with rear-end crashes in work zones. One possible reason is the lack of detailed data. NYSDOT is one the few state agencies that has specific detailed information about its work zone accidents. This database provides a unique opportunity to conduct a detailed investigation of these accidents, identify causal factors, and identify procedures to reduce these crashes.

Project Objective:

The specific objectives of the proposed research are:

- Identify effective and economic sensing devices that can be utilized for instrumentation,
- elastomeric bearings,
- To develop possible instrumentation schemes for implementing the concept of "smart bearings", and
- To conduct feasibility study for producing instrumented bearings.

Project Abstract

The proposed research will critically review and analyze various cost-effective (existing as well as emerging) sensing techniques for use in smart bridge bearings. These sensing technologies will reviewed on the basis of cost-effectiveness, implementability, maintenance, technical expertise required for acquisition and analysis of data, and reliability of the technology in field conditions. The central focus of the proposed research will be to identify technologies that are cost-effective, low maintenance and robust for field conditions. The final outcome of the proposed research will be the demonstration of feasibility of the "smart bridge bearing" concept and its detailed implementation plan. The proposed research will result in specific recommendations for production and development of the smart bearings to meet the stated functional objectives.

Project No:	55657-04-15
Title:	Development of Smart Bridge Bearing Systems- A Feasibility Study
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigator:	Anil K. Agrawal, Ph.D. Associate Professor The City College of New York Steinman Hall, T -121 Convent Avenue at 140th Street New York, NY 10031 Phone: 212-650-8442, Fax: 212-650-6965 E-mail: agrawal@ccny.cuny.edu

NEW

Research Projects

Project No:	55657-05-15
Title:	Assessing New York State DOT's Alternatives to Herbicides
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigator:	Christopher Nowak, Ph.D. Associate Professor Forest and Natural Resource Management State University of New York College of Environmental Science and Forestry Syracuse, NY 13210 Phone: 315-470-6575 E-mail: canowak@esf.edu

Project Objective:

Objectives for the proposed research and assessment program are as follows, as provided in the problem statement provided by NYSDOT :

- 1: evaluate the current vegetation management program and "Alternatives to Herbicide" program.
- 2: develop recommendations for the vegetation management program and "Alternatives to Herbicide" program.
- 3: develop a systematic framework and research protocol for identification, evaluation and implementation of environmentally sensitive, lower maintenance, and cost effective vegetation management techniques that can be integrated into the overall vegetation management program.



Project Abstract:

Roadside rights-of-way (ROWs) are important technical and ecological features of the landscape. Tens of thousands of miles of such ROWs traverse New York. The New York State Department of Transportation (NYSDOT) is responsible for 15,000 miles of roadside ROWs, including 3,000 miles of guiderails. Over 100,000 acres of land are mowed on NYSDOT ROWs each year.

Vegetation on roadside ROWs are managed for multiple objectives: (1) to provide motorists with adequate site distances; (2) to control visibility of signs and guiderails; (3) to prevent deadly fixed objectives (usually trees that may impact cars that leave the roadway); (4) and to maintain pavement by controlling drainage problems and prevent pavement breakage by plants. Different vegetation management treatments may be used within a roadside ROW to meet these objectives. Mowing is commonly used in areas away from the road surface and guiderails, and herbicides are used along road edges and under the guiderails and near signs (NYSDOT undated). Cultural and biological control are achieved by establishing and maintaining low plant cover in certain ROW zones. A broader, more proactive approach to the use of cultural and biological control may be warranted on NYSDOT ROWs. NYSDOT has recently developed a program on "Alternatives to Herbicides" in an effort to improve environmental protection. This program is consistent with the agency-wide "Environmental Initiative". NYSDOT's Environmental



Initiative focuses on: (1) communicating and cooperating with environmental resource agencies and the public; (2) planning, designing, and building environmentally sound transportation facilities; and (3) including innovative environmental components in transportation projects (from NYSDOT website: www.dot.state.ny.us/eab/envinit.html). In terms of actual practice of vegetation management, results of the "Alternatives to Herbicides" projects and initiatives have, to-date, not been well integrated into the overall NYSDOT IVM system. We suggest that this problem may be related to the notion that the NYSDOT vegetation management program is not perceived, nor conducted, as an Environmental Management System (EMS). We propose to aid in solving these shortfalls by assessing the herbicide alternatives program and the vegetation management system currently employed by NYSDOT. We will conduct

a thorough review of information on herbicide alternatives and make recommendation on how to research, demonstrate and operationally test these alternatives. We will, in conjunction with representatives from NYSDOT, develop an EMS model as a framework for an assessment tool that includes a series of agency/industry specific principles, criteria, and indicators. Conclusion of the assessment will define needs and methods to facilitate the integration of the herbicide alternatives program into the overall business of roadside ROW management. We expect the assessment will show how NYSDOT can develop an EMS using existing environmental programs and systems (e.g., the Integrated Vegetation Management program) and improve business and environmental protection.

NEW

Research Projects

Project No:	55657-06-15
Title:	Development of a Portable Petroleum By-Products Chemical Sensor
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigator:	Michael Carpenter, Ph.D. Assistant Professor School of NanoScience and NanoEngineering State University of New York - Albany 251 Fuller Road Albany, NY 13203 Phone: 518-437-8686 Fax: 518-437-8637 E-mail: mcarpenter@uamail.albany.edu

Project Objective:

The purpose of this project is to explore and then develop and evaluate a portable petroleum hydrocarbon sensor based on a micro-concentrator and nanoparticle fluorescence. This device will be used to test soil samples for levels of petroleum hydrocarbons that include gasoline, diesel fuel and dielectric fluids containing polychlorinated biphenyls (PCBs). The device will provide an accurate and simple field analysis of soil samples, thereby reducing the time and money spent on laboratory analysis of field samples, and minimizing the downtime at construction sites waiting for analytical lab results. All documentation should be sufficient and adequate to assist U.S. EPA and State environmental agencies in evaluating the device for potential approval as field method for measuring petroleum-related contaminants.



contaminants encountered by transportation agencies (National Research Council, 1993). Contaminated soils affect the design, construction and real estate acquisitions of these agencies. Hence, more realistic quantities and bids, minimization of construction delays, and fair compensation for contaminated property would be achieved if "clean" zones could be delineated early in project design.

Traditional approaches used in screening for contaminated zones are field instruments such as photo ionization detectors (PIDs) or flame ionization detectors (FIDs). Based on elevated field readings soil and/or groundwater samples are then collected and sent to an off-site laboratory for analysis. This slow, cumbersome approach does not work well for projects with tight design schedules or when unexpected contamination is found during construction. An accurate, real-time method that produces data of comparable quality to standard U.S. EPA analytical tests would be of great benefit to New York State and others in the environmental field.

Project Abstract:

Petroleum contaminated soil and groundwater are the most common





Project Objective:

The objective of this study is to determine actual economic impacts on property values, relative to highway projects requiring partial takings from adjacent properties. This research will involve study of several individual properties, from which a general conclusion can be hypothesized. The Department, working through the Technical Work Group, has identified candidate highway projects for study.

Project Abstract:

Each year the Department acquires several hundred parcels from commercial properties in conjunction with transportation projects. Most of these acquisitions are partial takings, meaning that only a portion of a total property is acquired. In many of these situations, it was perceived that the remainder property (the portion of the property NOT acquired for the project) has suffered economic damage because of the severance of the portion taken. Such perceived damages are above and beyond the value of the portion acquired, known as the direct take.

There is little empirical evidence to support the amounts of severance damage that actually occur. In theory, the estimation of such damages are based on appraisals known as "before and after" appraisals. This means that the property is appraised as it exists prior to the acquisition, and is then appraised again immediately after the taking, with the difference reflecting both the value of the parcel acquired (direct take), and the loss in value of the remainder property

(severance damage). Such appraisals have traditionally been performed with very little, if any, market evidence to support the estimates of severance damage.

The lack of factual basis for possible severance damages has created wide divergences of opinion. While many cases are settled by general agreement of the parties (the Department and the claimant), many others are litigated. Those that cannot be settled without trial usually reflect the most extreme divergence of opinions. For many years, litigators have been faced with divergent conclusions based on little other than "opinion." Under such circumstances, appraisers become regarded as advocates of a position, rather than unbiased interpreters and reporters of factual matters. The amount of "typical" severance damage has become more a matter of legal precedent than a matter of economic fact. This is not desirable.



Project No:	55657-08-15
Title:	Severance Damage Study
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigator:	Richard Marchitelli, Ph.D. School of Continuing and Professional Studies Real Estate Institute; New York University 11 west 42 nd Street, Room 509 New York, NY 10036 Phone: 646-471-2680 Fax: 646-471-8939 E-mail: Richard_Marchitelli@cushwake.com



NEW Research Projects

Project Objective:

The goal of this study is to more fully explore the fragility of the current means for funding the Highway Trust Fund. It will explore why this fragility exists, gather the various proposals and recommendations to bolster the fund, and where possible provide an assessment of each one as well as the potential impact on New York

Fund (HTF) will be depleted by 2006 and the mass transit account balance will fall to \$0 three years later.

These projections in the midst of discussions regarding the reauthorization of federal funds for surface transportation have led to a number of recommendations aimed at bolstering the financial base of the HTF. Such recommendations include, for example:

Project Abstract:

In 2000, the U.S. Department of Transportation estimated that an average annual investment of \$56.6 billion would be necessary over the next 20 years to maintain the nation's existing highways and bridges. It also estimated that an average annual investment of \$10.8 billion would be needed over the same period to maintain the nation's transit systems. At the same time, according to current baseline projections from the Congressional Budget Office, the highway account of the Highway Trust

- Redirecting the portion of the gasohol tax (2.5¢/gallon) currently being diverted to the General Fund;
- Eliminating the current excise tax exemption for gasohol (currently at 5.3¢/gallon) or refunding the HTF highway account from the General Fund, the equivalent of the receipts lost from this exemption;
- Resuming the accrual of interest on the HTF's balances (this was ended in 1998); and/or,
- Raising taxes on gasoline and heavy truck use.

These suggestions will all help the current status of the HTF, according to the Congressional Budget Office, but they still may leave the HTF in a fragile position. Other longer-term solutions have been put forth to reduce the Fund's reliance on gasoline taxes (in FY2001, 58% of the funding for the HTF was derived from gasoline taxes). These include, for example, targeting highway users more directly instead of relying on a fuel tax as well as a variety of innovating financing proposals - the most recent of which is AASHTO's suggestion for a Transportation Finance Corporation.

Project No:	55657-09-15
Title:	Funding Analysis for Long Term Planning
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigator:	Allison L. C. de Cerreño, Ph.D. Rudin Center New York University 4 Washington Square North New York, NY 10003 Phone: 212-998-7545 Fax: 212-998-3890 E-mail: allison.decerreno@nyu.edu





Project Objective:

The goal of this study is to develop a research plan that will enable the interested NYSDOT staff to get a full understanding of modeling tools. This kind of expertise can be obtained by understanding:

1. Theoretical approach adopted by the developers in terms of individual traffic and transportation related models used.
2. Data requirements of each modeling tool
3. Capabilities and limitations of each tool for real-world applications
4. Validation and calibration requirements as well as the accuracy of the forecasts produced by each tool.

Project Abstract:

Like many other State Departments of Transportation, NYSDOT is constantly required to analyze highway development projects using some of the advanced modeling tools available in the market. Most of the time, modeling work is done by transportation consultants hired by NYSDOT. However, it is clear that a complete and adequate understanding each potential modeling tool such as Paramics, VIS SUM, IDAS, CORSIM, MITSIM, TRANSIMS, INTEGRATION, DYNASMART, ATSIM.

Project No:	55657-10-15
Title:	Operational Analysis, Technical Guidance and Support
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigators:	<p>Jose Holguin-Veras, Ph.D. Associate Professor Dept. of Civil and Environmental Eng. Rensselaer Polytechnic Institute 110 Eight Street, Troy, NY 12180-3590 Phone: 518-276-6221 Fax: 518-276-4833 E-mail: jhv@rpi.edu</p> <p>Kaan Ozbay, Ph.D. Assistant Professor, Rutgers University 623 Bowser Rd. Piscataway, NJ 08854 Phone: 732-445-2792 Fax: 732-445-0577 E-mail: kaan@rci.rutgers.edu</p>



NEW Research Projects

Project No:	55657-12-15
Title:	Quantifying Non-Recurring Delay on New York City's Arterial Highways
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigators:	<p>George F. List, Ph.D. Chair and Professor, Civil and Env. Eng. Center for Infrastructure and Transportation Studies Rensselaer Polytechnic Institute 110 8th Street Troy, NY 12180-3590 Phone: 518-276-6362 E-mail: listg@rpi.edu</p> <p>John Falcocchio, Ph. D. Department of Civil Engineering 6 Metro Tech Center Brooklyn, NY 11201 Phone: 718-260-3612 Fax: 718-260-3433 E-mail: jfalcocc@poly.edu</p> <p>Kaan Ozbay, Ph.D. Assistant Professor, Rutgers University 623 Bowser Rd. Piscataway, NJ 08854 Phone: 732-445-2792 Fax: 732-445-0577 E-mail: kaan@rci.rutgers.edu</p> <p>Kyriacos C. Mouskos, Ph.D. Research Professor, City College of NY Bdg. Y-220 New York, NY 10031 Phone: 212-650-8050 Fax: 212-650-8374 E-mail: mouskos@utrc2.org</p>

Project Objective:

The main product from the project is a tool by which NYSDOT and NYCDOT can quantify NRD, for specific locations and corridors and for the City in total. The tool has to predict NRD in a way that tracks to the causal factors: for example, the type of incident, location, weather conditions, v/c (volume-to-capacity) ratio, LOS (level of service), vehicle speeds, number of lanes and ramps involved, etc.

Project Abstract:

The project will help NYSDOT and NYCDOT better quantify and predict the non-recurring delay (NRD) from incidents on the City's highway network. NRD is a substantial portion of the total delay that occurs within the City and it can be mitigated through various actions. If NYSDOT and NYCDOT can better predict NRD and trace it to the causing factors, they can take actions to reduce it. Those actions range from TSM and ITS measures to geometric changes and capacity investments.





Project Objectives:

Phase I. The objective of this phase is to identify the causes of delays that slow or prevent construction project closeouts. The findings of this phase will present recommendations for actions that resolve the causes of the delays or prevent the closeouts.

Phase II. The objective of this phase is to identify the variety of problems that can occur when NYSDOT includes improvements for local governments as part of State highway construction projects. The findings will recommend alternate approaches to resolve the problems and contain the advantages and disadvantages of these approaches.

Project Abstract:

Several issues are discussed in the literature that generally effect the termination of an infrastructure contract and transfer of project ownership to the government agency (Ref. 1, 2,3,4,5). Several of these issues are project construction claims, dispute resolution and cost overruns. Research studies have analyzed the nature of such claims and specific insights are offered into the fundamental causes of claims that delay projects. Dispute resolution in the construction industry is another concern for project delay. Disputes can be expensive and litigation can cause even longer delays. Research sources offer solutions into both the classification and frequency of disputes and claims with respect to damage type, highway project element and fundamental causes. Alternative dispute resolutions methods are available in the literature for further reference.

Although specific research references to project closeout procedures appear to be few, one research source discusses concession strategies for deciding when the project ownership will be transferred from the contractor to the government agency (Ref. 6). Project closeout procedures generally determine the contract deliverables, authorities of the contractor and the agency, and the responsibilities between the parties. Some studies have produced techniques and methods for organizational structural, contracting procedures, methods of project funding, and risk allocation strategies. Contract closeouts periods can be established for critical reviews that protect the interests of both the contractor and the agency. Government agencies have developed procedures for administering multi-jurisdictional infrastructure projects (Ref. 7), and for capital planning and funding of these Municipal infrastructure systems (Ref.8, 9 & 10). Agencies have developed empirical approaches to these problems that may be useful in optimizing the functional effectiveness of publicly financed projects. In the contest for optimizing public transportation funds and for political decision making process, methods were developed as a framework for project funding and utilizing interagency metropolitan planning organizations. As the problems in this study become clear, additional research from contract management sources and other State agencies will provide guidance for the final recommendations. The services of a contract manager with legal credentials will provide additional insights into the problem solutions.

Project No:	55657-11-15
Title:	Speed Project Closeouts/ Streamline Local Financing
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigator:	Robert E. Paaswell, Ph.D. Director and Distinguished Professor University Transportation Research Center City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8050 Fax: 212-650-8374 E-mail: paaswell@utrc2.org



NEW Research Projects

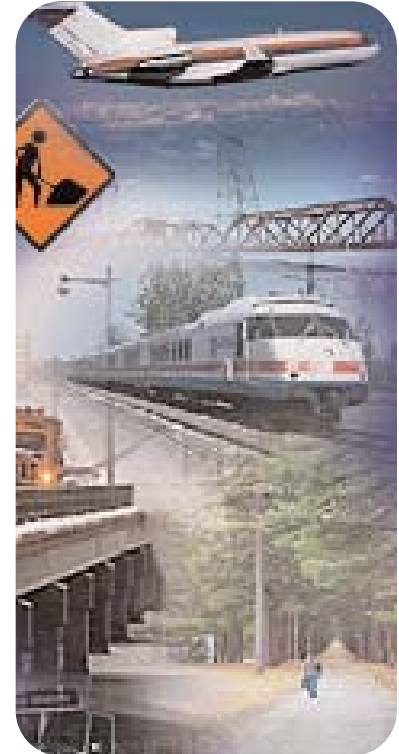
Project No:	55657-16-15
Title:	Regional Integration - Transportation Communications Interface Profiles
Performing Organization:	New York State Department of Transportation
Sponsors:	United States Department of Transportation New York State Department of Transportation
Principal Investigators:	Robert E. Paaswell, Ph.D. Director and Distinguished Professor University Transportation Research Center City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8050; Fax: 212-650-8374 E-mail: paaswell@utrc2.org Tarek Saadawi, Ph.D. Director of the Center of Information Networking and Telecommunications City College of New York Tel: 212-650-7263, Fax: 212-650-8249 E-mail: saadawi@ccny.cuny.edu

Project Objective:

This project will demonstrate how over 54 transit agencies in the NYSDOT downstate region can share transit service and operations data using a standard language and syntax. Based on an existing transit data exchange standard called TCIP, transit agencies and vendors (who support products that are deployed in the region) will agree (in a series of consensus workshops) to a common method and language in which to exchange data among different critical applications including regional customer information. The common method and language will be documented in a specification called the Scheduling Data Profile (SDP). Participating vendors and transit agencies will use tools developed by the UTRC team to implement a working model that supports a selected number of applications. The UTRC team will support the vendors and agencies in developing the software that facilitates the sharing of information, and CINT will build a testing facility to verify and validate the data exchange among participants. The UTRC team will perform a requirements analysis of transit agency needs and vendor concerns prior to initiating the consensus workshops. These analyses may drive the focus of the workshops, tools and end product.

The three key project objectives include:

1. Develop a TCIP-regional schedule data profile and communication protocol to facilitate the accelerated and economical deployment of integrated, multi-operator transit ITS
2. Develop and document tools to support



the development and implementation and testing of TCIP compliant Application Programming Interfaces (APIs) to permit interoperable exchange of schedule data among different regional transit ITS software and devices.

3. Develop and apply the regional profile (including actual APIs) in specific test-bed applications to ensure that input/outputs are interoperable with regional ITS projects including:

- Schedule data maintenance associated with the TRIPS 123 Transit Advisor transit itinerary project.
- Enable the generation of a standardized and interoperable stream of schedule data from the range of vendor and homegrown schedule management tools in use within the region to

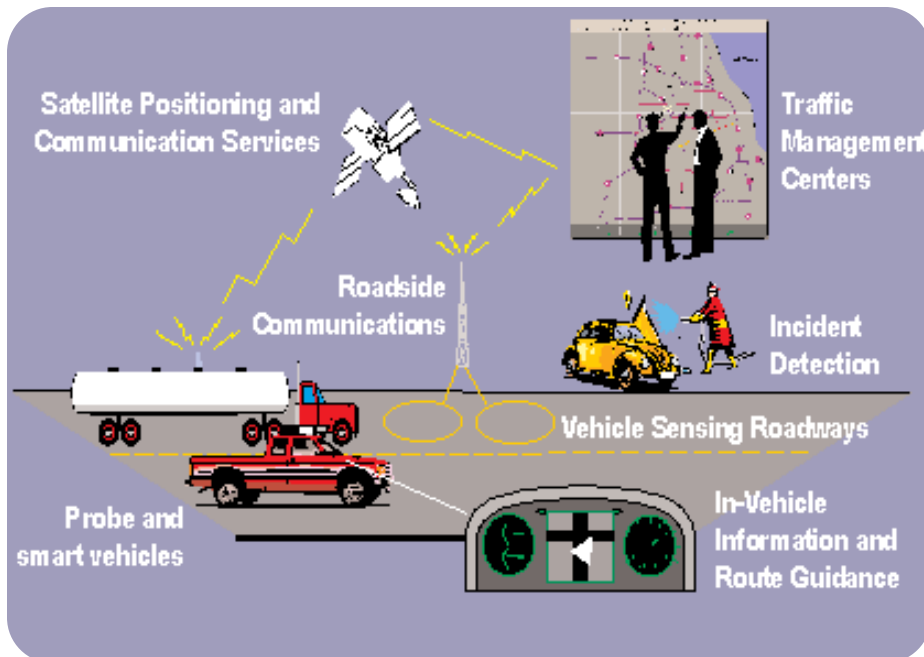


regional deployments of Automated Vehicle Locations systems, including MTA NYC transit, NYCDOT sponsored private operators, MTA Long Island Bus, Westchester Beeline, Suffolk County Transit."

activities that involve the movement of passengers from one operating jurisdiction to another. The database will be based on national data standards and protocols that support the US Department of Transportation's National Intelligent Transportation Systems (ITS) Architecture.

Project Abstract:

This Project will enable New York State transit operators to automatically load their schedule data into a non-proprietary database that will make it possible for different operators to exchange their schedule data seamlessly and efficiently. This will make it much easier for operators in the New York Metropolitan area to coordinate passenger information services, plan emergency evacuations and facilitate other transportation integration



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



ONGOING Research Projects

Project No:	Title:	Performing Organization:	Sponsors:	Principal Investigator(s):
55657-01-14	Seasonal Variations of In-situ Materials Properties in New York State	New York State Department of Transportation	United States Department of Transportation New York State Department of Transportation	Lynne H. Irwin, Ph.D. Cornell Local Roads Program Cornell University 416 Riley-Robo Hall Ithaca, NY 14853-5701 Phone: 607-255-8033 E-mail: LHI1@cornell.edu
49777-11-03	The Impact of Mode and Mode Transfers on Commuter Stress	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Richard Wener, Ph.D. Assistant Professor, Polytechnic University Six Metrotech Ctr, Brooklyn, NY 11201 Phone: 718-255-3585 Fax: 718-255-0305 E-mail: rwener@poly.edu Gary Evans, Ph.D. Professor, Cornell University E306 Martha Van Rensselaer Hall Ithaca, NY 14853 Tel: 607-255-4775 Fax: 607-255-0305 E-mail: gwel1@cornell.edu
49777-13-03	Survey of Driver Perceptions of Railroad and Light Rail Warning Devices/Grade Crossings	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Raghavan Srinivasan, Ph.D. Assistant Professor Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: srinivar@dowling.edu
49777-12-02	ITS Operational Support	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Raman Patel Urban ITS Center, Polytechnic University Six Metrotech Ctr, Brooklyn, NY 11201 Phone: 718-260-3349 E-mail: rpatel@poly.edu Hualiang Teng, Ph.D. Assistant Professor Polytechnic University Six Metrotech Center Brooklyn, NY 11201 Phone: 718-260-3196 E-mail: hteng@poly.edu



Project No:	Title:	Performing Organization:	Sponsors:	Principal Investigator(s):
49777-21-03	Evaluation Study of the Port Authority of NY & NJ's Value Pricing Initiative	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Jose Holguin-Veras, Ph.D. Associate Professor Dept. of Civil and Environmental Eng Rensselaer Polytechnic Institute 110 Eight Street, Troy, NY 12180 Phone: 518-276-6221 Fax: 518-276-4833 E-mail: jhv@rpi.edu Kaan Ozbay, Ph.D. Assistant Professor, Rutgers University 623 Bowser Rd. Piscataway, NJ 08854 Phone: 732-445-2792 Fax: 732-445-0577 E-mail: kaan@rci.rutgers.edu
49777-17-03	Assess impacts and Benefits of Traffic Signal Priority for Buses	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Raghavan Srinivasan, Ph.D. Assistant Professor Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: srinivar@dowling.edu

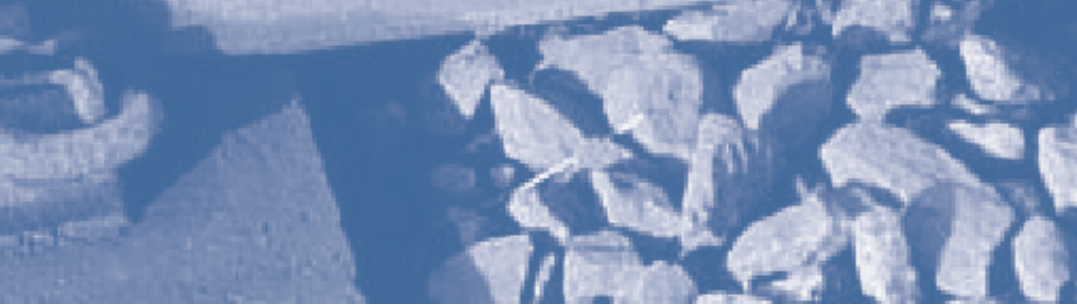


The UTRC has completed the following projects under the current grant.

COMPLETED Research Projects



Project No:	Title:	Performing Organization:	Sponsors:	Principal Investigator(s):
55657-02-14	New York in the New World Economy	New York State Department of Transportation	United States Department of Transportation New York State Department of Transportation	<p>Robert E. Paaswell, Ph.D. Director and Distinguished Professor of Civil Engineering University Transportation Research Center City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8072 Fax: 212-650-8374 E-mail: paaswell@utrc2.org</p> <p>Ross Weiner, Ph.D. Assistant Professor of Economics City College of New York NAC – Building, R6341 New York, NY 10031 Phone: 212-650-6213 Fax: 212-650-6341 E-mail: rweiner@ccny.cuny.edu</p> <p>Catherine Lawson, Ph.D. Assistant Professor SUNY, University at Albany Earth Science 218 Albany, NY 12222 Phone: 518-442-4775 E-mail: lawsonc@albany.edu</p>



Project No:	Title:	Performing Organization:	Sponsors:	Principal Investigator(s):
55332-01-02	An Assessment of Methodological Alternatives for a Regional Freight Model in the NYMTC Region, Phase 2	New York Metropolitan Transportation Council	New York Metropolitan Transportation Council	Jose Holguin-Veras, Ph.D. Assistant Professor Institute for Transportation Systems City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8060 E-mail: jhv@rpi.edu
49777-15-02	Developing Data Resources for the 21 st Century: Urban Applications of Geographic Information Systems	New York State Department of Transportation	United States Department of Transportation	Catherine Lawson, Ph.D. Assistant Professor SUNY, University at Albany Earth Science 218 Albany, NY 12222 Phone: 518-442-4775 E-mail: lawsonc@albany.edu
75144-07-01	Crosswalk Safety: Evaluation of the Light Guard System - Phase 2	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Peter Boyce, Ph.D. Assistant Professor Rensselaer Polytechnic Institute 110 8th Street Troy, NY 12180-3590 Phone: 518-687-7130 E-mail: boycep@rpi.edu
75150-00-01	NYCDOT Green Bus Lines Route Analysis	New York City Department of Transportation	United States Department of Transportation New York City Department of Transportation	Claire McKnight Ph.D. Associate Professor Civil Engineering, City College Bdg. Y220, New York, NY 10031 Phone: 212- 650-8050 E-mail: mcknight@utrc2.org Robert E. Paaswell, Ph.D. Distinguished Professor, City College Bdg. Y220, New York, NY 10031 Phone: 212-650-8072 Fax: 212-650-8374 E-mail: paaswell@utrc2.org
49777-07-02	Analysis Of Human Factors in Nighttime Work Zones	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Jose Holguin-Veras, Ph.D. Assistant Professor City College of New York Bdg. Y220, New York, NY 10031 Phone; 212-650-8060 E-mail: jhv@rpi.edu

COMPLETED

Research Projects

Project No:	Title:	Performing Organization:	Sponsors:	Principal Investigator(s):
49777-15-03	Technology Transfer Projects: Energy Absorption Fender System, Precast or Prefabricated Bridge Deck Systems, & Smart Bridge Applications	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Neville Parker, Ph.D. Professor , City College of New York Bdg. Y220, New York, NY 10031 Phone: 212-650-8050, Fax: 212-650-8374 E-mail: parker@utrc2.org Farhad Ansari, Ph.D. Professor, Univ. of Illinois at Chicago Chicago, Illinois 60607-7023 Tel: 312-996-2437, Fax: 312-996-3428 E-mail: fansari@uic.edu
49777-16-03	Technical Solutions to Overcrowded Park & Ride Facilities	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Kyriacos C. Mouskos, Ph.D. Research Professor , City College of NY Bdg. Y220, New York, NY 10031 Phone: 212-650-8050, Fax: 212-650-8374 E-mail: mouskos@utrc2.org Maria Boile, Ph.D. Assistant Professor, Rutgers University 623 Bowser Rd. Piscataway, NJ 08854-8014 Tel: 732-445-7979, Fax: 732-445-0577 E-mail: boile@rci.rutgers.edu
55657-09-15	Funding Analysis for Long Term Planning	New York State Department of Transportation	United States Department of Transportation New York State Department of Transportation	Allison L. C. de Cerreño, Ph.D. Rudin Center New York University 4 Washington Square North New York, NY 10003 Phone: 212-998-7545 Fax; 212-998-3890 E-mail: allison.decerreno@nyu.edu
49777-13-02	Intermodal Productivity and Goods Movement – Phase 3	Port Authority New York & New Jersey	United State Department Of Transportation Port Authority of New York & New Jersey	Shmuel Yahalom, Ph.D. Associate Professor SUNY Maritime College 6 Pennyfield Avenue Bronx, NY 10465 Phone: 718-409-7290 E-mail: yahaloms@aol.com



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

COMPLETED

Research Projects

Project No:	Title:	Performing Organization:	Sponsors:	Principal Investigator(s):
58635-01-02	Development of Bus Maintenance Information	New York City Transit	New York City Transit	Mohsen Jafari, Ph.D. Professor, Department of Industrial Engineering Rutgers University Office: Computing Research & Education Building 96 Frelinghuysen Road, Piscataway, NJ 08854 Phone: 732- 445-3627 E-mail: jafari@rci.rutgers.edu
55657-01-13	Benefits Package Value	New York State Department of Transportation	United States Department of Transportation New York State Department of Transportation	Frederick Brodzinski, Ed.D. Associate Director Institute for Transportation Systems Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8055 E-mail: fbrodzinski@ccny.cuny.edu
75144-01-02	Evaluation of the Performance of Retroreflectors in Snowplowable Raised Pavement Markers	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Neville A. Parker, Ph.D., Director Institute for Transportation Systems City College of New York Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8050 E-mail: parker@utrc2.org
75144-04-01	Evaluation of the Effectiveness of the Graduated Driver Licensing System in New Jersey– Phase 1	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Raghavan Srinivasan, Ph.D. Assistant Professor, Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: srini@unc.edu Claire McKnight Ph.D. Associate Professor, City College of NY Bdg. Y220; New York, NY 10031 Phone: 212-650-8050, E-mail: mcknight@utrc2.org



Project No:	Title:	Performing Organization:	Sponsors:	Principal Investigator(s):
49777-11-02	Characteristics of Traffic Flow in 55 & 65 MPH Speed Limits	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Raghavan Srinivasan, Ph.D. Assistant Professor Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: srinivar@dowling.edu
49777-12-03	Impact of Congestion on Bus Operations and Costs	New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Claire McKnight Ph.D. Associate Professor, City College of NY Bdg. Y220; New York, NY 10031 Phone: 212-650-8050, Fax: 212-650-8374 E-mail: mcknight@utrc2.org Robert E. Paaswell, Ph.D. Distinguished Professor, City College of NY Bdg. Y220, New York, NY 10031 Phone: 212-650-8072; Fax: 212-650-8374 E-mail: paaswell@utrc2.org
75144-06-01		New Jersey Department of Transportation	United States Department of Transportation New Jersey Department of Transportation	Hualiang Teng, Ph.D. Assistant Professor Polytechnic University Six Metrotech Center Brooklyn, NY 11202 Phone: 718-260-3196 E-mail: hteng@poly.edu





Education & Training

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

Advanced Institute for Transportation Education (AITE)

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

those employees who can most benefit, and to ensure a smooth application process. Each agency employee must have their supervisor sign off on the application to minimize conflicts between job and school responsibilities and to encourage the agencies to benefit from the program, for instance, by having the students do master's projects on topics of interest to the agency. The employee/students receive free tuition and paid time off from work for four semesters.

In 2003, 16 people applied for Advanced Institute for Transportation Education Graduate Scholarships. Five of these were full time students and eleven were agency employees. New York State Department of Transportation forwarded applications from ten of their employees. From these applications, seven received scholarships, four full time students and three agency employees. Six are attending school this semester and the seventh will start in January.



Kathleen Diaz Carrasquillo (middle), the UTRC Student of the Year for 2003.

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



Undergraduate Program in Transportation

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

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

2003 UTC Outstanding Students of the Year Awards

Kathleen Diaz Carrasquillo was selected as the UTRC Student of the Year for 2003. She was honored at the 12th Annual Student of the Year Awards at TRB. Currently Kathleen is finishing her masters degree at the University of Puerto Rico Mayaguez.

In 1996 she began her undergraduate studies in civil engineering at the University of Puerto Rico, Bayamón Campus. In 1998 Kathleen was awarded an Associate Degree in Science of Engineering and received the department medal for the highest GPA. In this year she transferred to the University of Puerto Rico, Mayaguez Campus (UPRM) to pursue a Bachelor of Science in Civil Engineering (BSCE). During this period as an undergraduate student Kathleen had her first professional experience working with the Puerto Rico Highway and Transportation Authority (PRHTA) as an engineering student in training. In addition, she participated in several transportation research projects in the planning area performing a network simulation to compare different levels of details. In 2001 she worked in a summer internship in Transportation at the University of Texas at Austin where she created an application using visual basic to integrate the capabilities of two planning tools. In May 2002, Kathleen graduated from UPRM Magna Cum Laude receiving her BSCE.

In January 2002 Kathleen began her graduate studies at the University of Puerto Rico, Mayagüez Campus where she is currently working on a research project associated with the highway safety, identification of hazardous location and road safety audit. Dr. Benjamín Colucci is her academic advisor at the graduate program in Transportation in UPRM.



Education & Training

Women's Transportation Seminars

In October 2002, UTRC awarded \$1000 to the winner of the Greater New York WTS Graduate Scholarship winner, Lida Izadmehr. Lida is working on her Ph.D. in Transportation Engineering at New Jersey Institute of Technology. She expects to finish in Spring 2004. Lida earned a BS in Electrical Engineering in 1990 from University of Texas at Austin, and a Masters in Transportation from NJIT in 1998. She has had several transportation engineering positions, including working as a traffic engineer at LaGuardia Airport.

STI 2003 - Overview

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

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

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

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

ITS has a continuing commitment to provide quality education for all students and openly seeks every opportunity to expand efforts to assist them. In conjunction with the mission of ITS, the

The 2003 Summer Transportation Institute (STI)

The Institute for Transportation Systems (ITS) Summer Transportation Institute based at The City College of New York (CCNY) completed its eighth year in 2003. It continued bridging the gap between supply and demand, by creating awareness and stimulating interest in high school students to take maximum advantage of the opportunities that exist in the Transportation industry.





Federal Highway Administration (FHWA), along with the New York State Department of Transportation (NYSDOT) and other transportation agencies, seek to provide educational experiences for secondary school students that enhance career awareness in the transportation industry.

Strong support for the Summer Transportation Institute - in the form of funding and/or participation - has been given by the Federal Highway Administration (FHWA), the New York City and State Departments of Transportation (NYCDOT & NYSDOT), the Metropolitan Transportation Authority (MTA), the Port Authority of

New York & New Jersey (PANY & NJ), New York City Transit (NYCT), the University Transportation Research Center (UTRC), Ghandi Engineering, Urbitran Associates Inc., the New York City Board of Education, New Jersey Transit Light Rail Planning and Management Office, Federal Motor Carrier Safety Administration, New York City Maritime Administration and the City University of New York Community. To reach its full potential, a commitment of continued support and funding is required from these, as well as other organizations.



Technology Transfer

Innovative Applications of Finite Element Modeling in Highway Structures **August 20-21, 2003** **New York, NY**

The Region 2 University Transportation Research Center and US Department of Transportation, Federal Highway Administration sponsored jointly the workshop: "Innovative Applications of Finite Element Modeling in Highway Structures". The objective of this national workshop which was the first of its kind, was to focus entirely on advancing the use of finite element analysis throughout the highway community. The diverse program was specifically designed to enable transportation department officials, practicing engineers, and researchers to exchange knowledge and experience about finite element modeling and structural mechanics. The two day workshop was held in downtown Manhattan at Alexander Hamilton US Customs House, One Bowling Green, New York.



**Truck Route Management and
Community Impact Reduction Study
New York City
Department of Transportation
June 17, 2003
City College of New York**

The Region 2, University Transportation Research Center hosted a community involvement kickoff meeting for NYCDOT's Truck Route Management and Community Impact Reduction Study. The meeting was held on June 17, 2003 at City College of New York. This citywide study coordinates engineering, educational, informational and enforcement efforts so that trucks remain on designated truck routes until reaching their destination and do not inappropriately utilize residential streets.

**Transforming to Tomorrow: DOT's
Challenge for Tomorrow
- Movers Forum
New York State
Department of Transportation
March 5, 2003
City College of New York**

The Region 2, University Transportation Research Center hosted a NYSDOT forum, "Transforming to Tomorrow: DOT's Challenge for Today" on March 5, 2003. The New York State Department of Transportation Commissioner asked his staff to look at ways that the department will have to change its way of doing business to meet its customer's expectations. Five priority results - mobility and reliability; safety; environmental conditions; economic sustainability; and security - were identified for the department focus on in the coming years, specifically in the areas of upstate, downstate and trade corridors.



**New York State
Department of Transportation
May 21, 2003
Albany, New York**

The Region 2, University Transportation Research Center provided two speakers: Dr. Robert E. Paaswell, Director and Distinguished Professor, University Transportation Research Center and Mr. Harry Schwartz, Urban Planner, CUNY Institute for Urban Systems, for this seminar and discussion series at the New York State Department in Albany for their engineers, planners and managers. The seminar summarized a pioneering study which was designed as an initial guide and a set of tools for smart growth in the complex and changing metropolis of New York City. The seminar was held on May 21, 2003.





Technology Transfer

Inaugural Conference: Strategies and Skills for Revitalizing Aviation CUNY Aviation Institute at York College March 5, 2003

The Region 2, University Transportation Research Center sponsored the CUNY Aviation Institute, Inaugural Conference: Strategies and Skills for Revitalizing Aviation on March 31, 2003 in the York College Campus. The Aviation Institute is located in York College, Jamaica Queens, New York. The conference was a platform for presentations and discussions on Economic Challenges and Security Issues in the aviation industry. The Institute's directors presented a vision for the future of the aviation industry and the institute. Presentations included: The Cyclical Crisis in commercial Aviation, Aviation Security, Global Competition and security Issues in Developing Nations, Economic Challenges, and Using Knowledge to Meet Aviation's Most Pressing Needs.

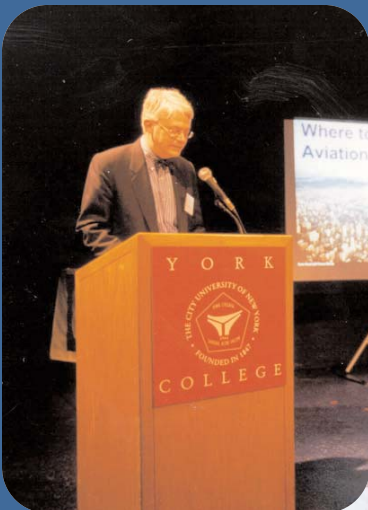
The CUNY Aviation Institute at York College is an initiative launched by a major grant from the Port Authority of New York and New Jersey to create the

first CUNY Institute focusing on aviation. The Institute is dedicated to growing valuable opportunities for students, faculty, and the private and public organizations participating in the aviation sector in Queens and across New York City.

On March 31st, 2003 the Aviation Institute held its inaugural conference. Gathering at the Performing Arts Center at York College under the theme of "Skills and Strategies for Revitalizing Aviation," the event brought local representatives, Port Authority officials, airport managers, business leaders, community and students together for a stimulating number of sessions on current aviation topics.

The day-long event started by greetings given by Congressman Meeks's office and Russell K. Hotzler, interim President of York College. Dr. Paul Stephen Dempsey, Professor at McGill University and Chairman of Frontier Airlines led the conference with a presentation drawn from his paper entitled "The Cyclical Crisis in Commercial Aviation: Causes and Potential Cures". Dr. Joseph Szyliowicz, of the University of Denver presented his paper illustrating the paradigm shifts in aviation security with the presentation of: "Aviation Security: Promise or Reality". Mr. William DeCota, Director of the Port Authority's Aviation Department rounded out the forum by speaking on the economic issues facing airport operators and the efforts that can bring about revitalization in the aviation industry.

The CUNY Aviation Institute at York College generates connections that will enable industry, members of the community and residents to take part in the economic engine of Queens and New York City. Through the development of





**Thinking Regionally: TEA-3
Reauthorization and Beyond
Rudin Center for Transportation
Policy and Management
March 24, 2003**

an accredited Bachelor of Science degree program in Aviation Studies, internships, and workshops graduates of York College will be highly qualified to be effective contributors to the ever-evolving post 9-11 aviation industry.

With a number of initiatives underway the Aviation Institute is off to a bold start. This summer in conjunction with York's College Now program the Institute has developed a Summer Aviation Academy for high school students that will be starting on July 7th. The Institute has also been able to develop scholarship opportunities for our students by the cultivating the generous support local industry groups such the Air Cargo Association. In the fall of 2003 the first undergraduate aviation courses, the first of many, will be offered at York College in the fall. The Aviation Institute is off to a great start, and promises to promote aviation through academic achievement in Queens and New York City.

The Region 2, University Transportation Research Center, Federal Reserve Bank of New York, and the NYU Wagner Rudin Center for Transportation Policy and Management co-sponsored the symposium, "Thinking Regionally: TEA-3 Reauthorization and Beyond". The symposium was held at the Federal Reserve Bank of New York on March 24, 2003. The symposium discussed the importance of the Tri-State region to the National economy, the importance of each of these states to each other's economies and the importance of transportation in the region and the nation. The Transportation commissioners of New Jersey New York, and Connecticut addressed current regional transportation need, congestion levels and lack of critical transportation links, new infrastructure and ITS development in their states. Senator Hilary Rodham Clinton and Representative Jerrold Nadler offered views of the current transportation situation in Washington, D.C.



Technology Transfer



Bi-State Interdependence Symposium Rudin Center for Transportation Policy and Management May 6, 2003

The Region 2, University Transportation Research Center, Voorhees Transportation Center of Edward Boustein School of Planning and Public Policy, and the NYU Wagner Rudin Center for Transportation Policy and Management co-sponsored the symposium, "Bi-State Interdependence Symposium". The symposium was held at New York University on May 6, 2003. The symposium was divided into two panel sessions: one focusing on the economy of the two states and one that examined specific transportation issues critical to the region.



Driving Change: Discussion Series on Smart Growth, New York State Department of Transportation, May 21, 2003, Albany, New York

The Region 2, University Transportation Research Center provided two speakers: Dr. Robert E. Paaswell, Director and Distinguished Professor, University Transportation Research Center and Mr. Harry Schwartz, Urban Planner, CUNY Institute for Urban Systems, for this seminar and discussion series at the New York State Department in Albany for their engineers, planners and managers. The seminar summarized a pioneering study which was designed as an initial guide and a set of tools for smart growth in the complex and changing metropolis of New York City. The seminar was held on May 21, 2003.

UTRC Study Analyzes the Way Federal Transportation Money is Spent (New York Times, Thursday May 29, 2003, "M.T.A. Projects Threatened by Federal Money Changes")

University Transportation Research Center researchers from the New York University, Rudin Center analyzed a proposal by Congress to alter the way federal transportation money is garnered from the gasoline taxes and other sources is divided among the states. The report seeks to quantify the way that the presence of a huge city, New York, with a large mass transit system, distorts the way the State of New York is treated under the current method of apportioning transportation funds. The report states that any proposal that would reduce New York's funding would have the effect of penalizing it for operating the mass transit system that is so vital to its very existence.



UTRC Research Publishes in TR News: "You Can Learn on the Erie Canal", by Catherine Lawson

Dr. Catherine Lawson is Assistant Professor, Geography and Planning, and Interim Director of the Masters in Urban and Regional Planning Program, State University of New York at Albany, and a member of the University Transportation Research Center, City College of New York. Presenting many learned lessons, her article showed that the Erie Canal is a fascinating story of achievements, rewards, and reuse of a transportation facility. The story also offers today's transportation planning community several lessons: (1) Education is a critical link to real-world applications; (2) Creative financing strategies should involve a broad set of stakeholders; and (3) Understand the range of trip purposes and potential uses.

UTRC Research Publishes in TR News: "Improving U.S. Passenger Train Performance" by Anthony Perl

Dr. Anthony Perl is a past Director of The Aviation Institute at York College and a member of the UTRC. His article discusses three challenges that decisions makers must address to develop new rail policy, and two questions that must be resolved to achieve long term success in meeting intercity travel needs. New Public policy must address: 1. Institutional isolation, 2. Flawed corporate structure, and Atrophy of the supporting industry. Two key questions must be answered: 1. Where should responsibility for rail policy be located within the American political system, and 2. What relationship should business or the private sector have with the government is delivering passenger rail



services? Clear answers to the questions of what roles national and state governments should play and of the ways that government and business should interrelate in proving passenger rail service would strengthen the prospects for passenger rail in America.

**TransAction 2003
New Jersey Transportation Conference
and Expo: 27th Annual**

The University Transportation Research Center participated in the 27th Annual New Jersey TransAction Conference in Atlantic City, New Jersey in April 2003. The Center exhibited its education, research and technology programs to acquaint the conference attendees with the UTRC activities. The conference provided engineers, managers and students with an opportunity to learn about the state-of-the art transportation, road and bridge projects, and transit programs in an atmosphere of transportation managers, directors and engineers. The conference presentations featured experts from federal, state, county and local government as well as the private sector, consultants, users and others from across the nation and provided valuable information on transit, paratransit, highway construction, community minibuses, goods movement, pedestrian, bicycling, ferryboats, ridesharing, and transportation policy.

Technology Transfer



Icon Mentor Program

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

For the past four year UTRC selected Herbert Levinson, a member of the National Academy of Sciences to serve

as this year's icon mentor. Herbert Levinson is considered to be one of the fathers of modern transportation planning and has extensive knowledge of transportation activities and operations throughout the world.

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

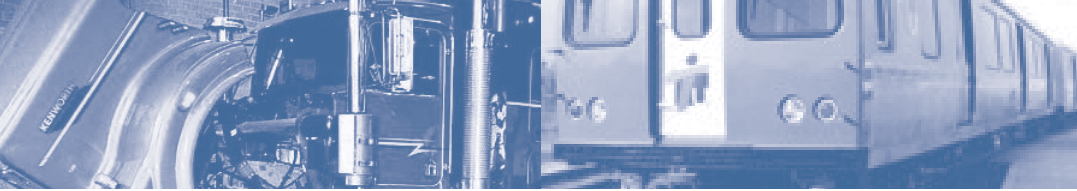
UTRC's Website

The screenshot shows the UTRC website in a Microsoft Internet Explorer browser window. The address bar displays <http://www.utrc2.org/>. The website header includes the UTRC logo, the text "UNIVERSITY TRANSPORTATION RESEARCH CENTER", and "Region II New York New Jersey Puerto Rico" with the logo for "the City College of New York". Below the header is a "site navigation" menu with links for "About Us", "Directory", "Research", "Events", "Site Information", and "Search". A "what's new" section contains three columns: "New RFPs" (listing NYMTC's Highways and Streets Planning Initiatives, Cape May County Roadway Elevations, and Assessment of Border Crossing Needs), "Latest Projects" (listing Quantifying Non-recurring Delay, Alternatives to Herbicides, and Handbook of Scour Countermeasures), and "Upcoming Events" (listing TRB 83rd Annual Meeting, Transportation, Border Control and Homeland Security, and Travel Behavior Analysis). A "quick links" section at the bottom features "Scholarships AITE Program", "UTRC In The News", "USDOT UTC Program", and "@UTRC2.org Webmail Access". The footer indicates "Page Last Modified: December 07, 2003" and "Site Information".

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

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

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



UTRC's Newsletter

RESEARCH NEWS

A Publication of the Region 2, University Transportation Research Center Winter 2003

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Consultation Members

- City University of NY
- Columbia University
- Cornell University
- Drexel College
- New York University
- Pennsylvania State University
- University of Maryland
- Virginia Polytechnic Institute
- West Virginia University
- West Virginia State University
- University of Pennsylvania

New York in the New World Economy: The Route I-87 Corridor.

The University Transportation Research Center together with Michael Gellis Associates, recently completed a major study of the Route I-87 corridor for the New York State Department of Transportation. The I-87 Corridor Report was completed to document the study.

The Route I-87 corridor, the New York State Thruway from New York to Albany and the Northway from Albany to the New York Canadian Border defines a major transportation corridor promoting commerce, tourism, commuting and a range of other activities. The corridor lies in the Eastern part of New York State, it links New York City to Canada and serves as a crucial point to New England, the Midwest and the South. This report will define this prominent corridor in some detail, highlighting the role of urbanization and economic activity, the impacts of landfills, and the role of transportation. By examining how the corridor responds to activities in three distinct regions, New York City, I-84 to the Capital District and the Capital District to the Canadian Border, the report will discuss transportation issues and opportunities. The report is organized to examine the corridor in terms of its connections, globally as well as locally. It then describes the environment the corridor traverses. It then examines economic opportunities and issues, relating these to the three segments of the corridor. The report discusses issues raised in discussion with a body of professionals regarding moving goods and people in and through the corridor. The report concludes with a discussion of opportunities that can enhance both the population and economic activity within this corridor.

This study was funded by the New York State Department of Transportation, Research and Risk Management Division.

Salutory J. Meja Massawe Receives NJDOT Award

Mr. Salutory J. Meja Massawe, Research Assistant and graduate student at the Institute of Transportation Systems at City College of New York, recently received Certificate of Recognition, from the New Jersey Department of Transportation, for his outstanding contributions in transportation research. Prior to attending The City College, Mr. Massawe was employed by the Ministry of Works - Department of Transportation in Tanzania. He received the Bachelor of Science - Engineering Degree in Civil Engineering in 1989 from University of Dar-es-Salaam Tanzania. A motivated professional with excellent organizational, interpersonal, communication and problem-solving skills, he was awarded a joint sponsorship from the International Road Federation (IRF) and the Government of Tanzania, for his post-graduate training at The City College of New York in 2000.

Mr. Massawe was awarded the Best Engineer Award by Tanzania President, Honorable Ali Hassan Mwinyi in 1994. He was the first Tanzanian engineer to plan, design and construct small (15m span) and medium (30m span) size bridges by utilizing locally available resources. Mr. Massawe is a Registered Engineer in the United Republic of Tanzania.

RESEARCH NEWS

A Publication of the Region 2, University Transportation Research Center Fall 2003

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REPORT ON SMART GROWTH IN THE NEW YORK METROPOLITAN REGION

Harry Schwartz, Urban Planning Consultant

A recently published report, sponsored by the CUNY Institute for Urban Systems and the Rockefeller Foundation, calls for the principles of smart growth to be implemented in the New York metropolitan area. The report, *2020 Vision, Smart Growth for the New York Metropolitan Region*, was prepared by Robert E. Paenwell, Director of the Institute and UTRC, together with Harry Schwartz and Leah Dickhoff.

Over the last two decades smart growth has emerged as strong national movement and its policies have been widely accepted in planning and government circles. New Jersey has adopted a smart growth management plan and it rose a top priority in the Governor's 2001 address to the legislature. In New York State, however, it has been overlooked as a tool for managing growth.

The report emphasizes several elements of smart growth for the metropolitan region: 1. Creating compact, mixed-use developments that provide choices in transportation, minimize pollution, and reduce energy consumption. Among the places where this can be achieved are sites in Inland, retained parts of New York City's waterfront and older consumer suburbs in Westchester and northern New Jersey. 2. Decentralizing economic growth to existing regional centers already served by transportation facilities and other infrastructure, such as downtowns, transit hubs and business in New York City, and the center of Newark. 3. Preserving open space and the natural landscape by reducing sprawling suburban sprawl and concentrating new residential development around existing centers. 4. Limiting expenditures for new highways and using public investment to upgrade existing transit services and build new facilities, so as to bring down the New Jersey Transit's overall station in Trenton.

In addition to describing the principles of smart growth and how they could be employed in specific situations in the region, the report describes legislative, regulatory, and fiscal measures that are being used to implement smart growth. It also offers a wealth of practical information on national, regional and local organizations active in the expanding field and a comprehensive bibliography on various aspects of smart growth.

Transit Technology Skills for the 21st Century

Robert E. Paenwell, Ph.D., Director, UTRC, City College of New York

The Region 2, University Transportation Research Center (UTRC) is conducting a project to address the nature of change for New York City transit workers. The Transit Worker Union of Greater New York asked the program. UTRC staff have been working with the Transit Workers Union and a coalition of MTA Unions to address the nature of change in the transit industry. The rapid integration of Information Technology and computer into all aspects of transit operations and equipment has led to the identification of new skills, potential jobs and processes of working essential for all involved in the public transit industry. UTRC has provided seminars to the coalition on "New Paradigms in Transit" and "Forecasting and Budgeting". Together with a number of labor unions, UTRC has prepared proposals to the US Department of Labor concerning labor force needs in the changing industry. Computer Based Train Control, Electronic Fare Cards, Automatic Vehicle Location and Computer controlled bus systems are all new technologies rapidly being integrated into transit in this region. New jobs will include managing and working with large scale data bases, working in a control room atmosphere, maintaining a fleet with self diagnosing capabilities, and operating vehicles with new levels of information available. The complexity of these new systems means that workers must be trained (or retrained) with new skills, but further requires workers to gain more management skills.

UTRC's Newsletter, *Research News* is published semi- annually and provides information to transportation

professionals about research, education, and outreach activities in Region 2. *Research News* is available online.



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