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

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

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

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

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.
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 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.
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

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Herbert Levinson
Icon Mentor

Sandra Jackson
Secretary

Dr. Joseph Berechman
Visiting Scholar

UTRC’s Interns
(from left to right) Edgardo Molina, Asad Chaudhary, Sau Mei Lau, Munia Jamil, Soanya Ahmad (not shown), Roberto Martin (not shown).
UTRC has adopted a corporate style of management. In this style, the UTRC Board provides policy guidelines, and approval of UTRC activities. Dr. Robert Paaswell, Distinguished Professor of Civil Engineering at City College of New York, serves as Chief Executive Officer, overseeing day to day operations and providing a bridge between UTRC policies and the activities and resources used to carry out those policies.

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

The two committees, Research and Technology Transfer, chaired by Dr. Ali Maher of Rutgers University, and Education and Training, chaired by Dr. Neville Parker of City College, are the working hearts of the Board. Each is responsible for developing the yearly program of activities, overseeing the selection of projects, and recommending to the full Board the programs of projects commensurate with the budget.
The transportation systems that serve UTRC Region 2, both multimodal and intermodal must serve the customers and stakeholders within the region and globally.
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.

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.

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.

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.

New York University

Member Universities
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.

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.

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 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.

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.

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 cetera.

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.

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.
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.
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.
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.
## 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 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, 24,000 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. Beneekolah 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, 24,000 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
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 be 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.

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.

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<th>Project No:</th>
<th>55657-04-15</th>
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<tr>
<td>Title:</td>
<td>Development of Smart Bridge Bearing Systems- A Feasibility Study</td>
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<td>Performing Organization:</td>
<td>New York State Department of Transportation</td>
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| Sponsors:   | United States Department of Transportation  
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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.
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.

Project Abstract:

Petroleum contaminated soil and groundwater are the most common 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 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 divergences 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 42nd Street, Room 509 New York, NY 10036 Phone: 646-471-2680 Fax: 646-471-8939 E-mail: Richard_Marchitelli@cushwa ke.com
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.

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 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:

- 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 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 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 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.”

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

## ONGOING Research Projects

<table>
<thead>
<tr>
<th>Project No:</th>
<th>Title:</th>
<th>Performing Organization:</th>
<th>Sponsors:</th>
<th>Principal Investigator(s):</th>
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<tbody>
<tr>
<td>55657-01-14</td>
<td>Seasonal Variations of In-situ Materials Properties in New York State</td>
<td>New York State Department of Transportation</td>
<td>United States Department of Transportation; New York State Department of Transportation</td>
<td>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: <a href="mailto:LHI1@cornell.edu">LHI1@cornell.edu</a></td>
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<tr>
<td>49777-11-03</td>
<td>The Impact of Mode and Mode Transfers on Commuter Stress</td>
<td>New Jersey Department of Transportation</td>
<td>United States Department of Transportation; New Jersey Department of Transportation</td>
<td>Richard Wener, Ph.D. (Assistant Professor, Polytechnic University, Six Metrotech Ctr, Brooklyn, NY 11201; Phone: 718-255-3585; Fax: 718-255-0305; E-mail: <a href="mailto:rwener@poly.edu">rwener@poly.edu</a>) and 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: <a href="mailto:gwe1@cornell.edu">gwe1@cornell.edu</a>)</td>
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<tr>
<td>49777-13-03</td>
<td>Survey of Driver Perceptions of Railroad and Light Rail Warning Devices/Grade Crossings</td>
<td>New Jersey Department of Transportation</td>
<td>United States Department of Transportation; New Jersey Department of Transportation</td>
<td>Raghavan Srinivasan, Ph.D. (Assistant Professor, Dowling College, Idle Hour Blvd, Oakdale, New York 11769; Phone: 631-244-3365; E-mail: <a href="mailto:srinivar@dowling.edu">srinivar@dowling.edu</a>)</td>
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<tr>
<td>49777-12-02</td>
<td>ITS Operational Support</td>
<td>New Jersey Department of Transportation</td>
<td>United States Department of Transportation; New Jersey Department of Transportation</td>
<td>Raman Patel (Urban ITS Center, Polytechnic University, Six Metrotech Ctr, Brooklyn, NY 11201; Phone: 718-260-3349; E-mail: <a href="mailto:rpatel@poly.edu">rpatel@poly.edu</a>) and Hualiang Teng, Ph.D. (Assistant Professor, Polytechnic University, Six Metrotech Center, Brooklyn, NY 11201; Phone: 718-260-3196; E-mail: <a href="mailto:hteng@poly.edu">hteng@poly.edu</a>)</td>
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</table>
| 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                 | 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                                                |
|              |                                                  |                                   | New Jersey Department of Transportation                    | 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                 | 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

<table>
<thead>
<tr>
<th>Project No:</th>
<th>Title:</th>
<th>Performing Organization:</th>
<th>Sponsors:</th>
<th>Principal Investigator(s):</th>
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</thead>
</table>
| 55657-02-14 | New York in the New World Economy | New York State Department of Transportation | United States Department of Transportation                                 | Robert E. Paaswell, Ph.D.  
Director and Distinguished Professor of Civil Engineering  
University Transportation Research Center  
City College of New York  
Y-Building, Room 220  
New York, NY 10031  
Phone: 212-650-8072  
Fax: 212-650-8374  
E-mail: paaswell@utrc2.org |
|             |                               |                                        |                                                                           | 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 |
|             |                               |                                        |                                                                           | 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 |
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<th>Project No:</th>
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<th>Principal Investigator(s):</th>
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<td>55332-01-02</td>
<td>An Assessment of Methodological Alternatives for a Regional Freight</td>
<td>New York Metropolitan Transportation Council</td>
<td>New York Metropolitan Transportation Council</td>
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<td>Model in the NYMTC Region, Phase 2</td>
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<td>Jose Holguin-Veras, Ph.D.</td>
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<td>Institute for Transportation Systems</td>
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<td>49777-15-02</td>
<td>Developing Data Resources for the 21st Century: Urban Applications</td>
<td>New York State Department of Transportation</td>
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<td>75144-07-01</td>
<td>Crosswalk Safety: Evaluation of the Light Guard System - Phase 2</td>
<td>New Jersey Department of Transportation</td>
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<td>Peter Boyce, Ph.D.</td>
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<td>75150-00-01</td>
<td>NYCDOT Green Bus Lines Route Analysis</td>
<td>New York City Department of Transportation</td>
<td>United States Department of Transportation</td>
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<td>Claire McKnight Ph.D.</td>
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<td>Civil Engineering, City College</td>
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<td>Robert E. Paaswell, Ph.D.</td>
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<td>Analysis Of Human Factors in Nighttime Work Zones</td>
<td>New Jersey Department of Transportation</td>
<td>United States Department of Transportation</td>
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# Completed Research Projects

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<th>Performing Organization:</th>
<th>Sponsors:</th>
<th>Principal Investigator(s):</th>
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</table>
| 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 | 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 | 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 | 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                           | United State Department Of Transportation  | Shmuel Yahalom, Ph.D.  
Associate Professor  
SUNY Maritime College  
6 Pennyfield Avenue  
Bronx, NY 10465  
Phone: 718-409-7290  
E-mail: yahaloms@aol.com |
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<td>75144-01-01</td>
<td>New Jersey Link to the 21st Century: Maximizing the Impact of Infrastructure Investment</td>
<td>New Jersey Department of Transportation</td>
<td>United States Department of Transportation New Jersey Department of Transportation</td>
<td>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: <a href="mailto:paaswell@utrc2.org">paaswell@utrc2.org</a> Jose Holguin-Veras, Ph.D. Assistant Professor, City College of NY Bdg. Y220, New York, NY 10031 Phone: 212-650-8060 E-mail: <a href="mailto:jhv@rpi.edu">jhv@rpi.edu</a> Raghavan Srinivasan, Ph.D. Assistant Professor, Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: <a href="mailto:sriniv@unc.edu">sriniv@unc.edu</a> Claire McKnight Ph.D. Associate Professor, City College of NY Bdg. Y220; New York, NY 10031 Phone: 212-650-8050, E-mail: <a href="mailto:mcknight@utrc2.org">mcknight@utrc2.org</a> Kaan Ozbay, Ph.D. Assistant Professor, Rutgers University 623 Bowser Rd. Piscataway, NJ 08854 Phone: 732-445-2792, Fax: 732-445-0577 E-mail: <a href="mailto:kaan@rci.rutgers.edu">kaan@rci.rutgers.edu</a> Joseph Berechman Ph.D. Visitor Scholar, UTRC Bdg. Y220; New York, NY 10031 Phone: 212-650-8050, E-mail: <a href="mailto:yossi@utrc2.org">yossi@utrc2.org</a></td>
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<td>58635-01-02</td>
<td>Development of Bus Maintenance Information</td>
<td>New York City Transit</td>
<td>New York City Transit</td>
<td>Mohsen Jafari, Ph.D. Professor, Department of Industrial Engineering Rutgers University</td>
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<td>Office: Computing Research &amp; Education Building 96 Frelinghuysen Road, Piscataway, NJ 08854</td>
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<td>55657-01-13</td>
<td>Benefits Package Value</td>
<td>New York State Department of</td>
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<td>Frederick Brodzinski, Ed.D. Associate Director Institute for Transportation Systems Y-Building, Room 220 New York, NY 10031 Phone: 212-650-8055 E-mail: <a href="mailto:fbrodzinski@ccny.cuny.edu">fbrodzinski@ccny.cuny.edu</a></td>
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<td>75144-01-02</td>
<td>Evaluation of the Performance of Retroreflectors in</td>
<td>New Jersey Department of</td>
<td>United States Department of Transportation</td>
<td>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: <a href="mailto:parker@utrc2.org">parker@utrc2.org</a></td>
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<td>75144-04-01</td>
<td>Evaluation of the Effectiveness of the Graduated Driver</td>
<td>New Jersey Department of</td>
<td>United States Department of Transportation</td>
<td>Raghavan Srinivasan, Ph.D. Assistant Professor, Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: <a href="mailto:srini@unc.edu">srini@unc.edu</a></td>
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<td>Claire McKnight Ph.D. Associate Professor, City College of NY Bdg. Y220; New York, NY 10031 Phone: 212-650-8050 E-mail: <a href="mailto:mcknight@utrc2.org">mcknight@utrc2.org</a></td>
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<td>Raghavan Srinivasan, Ph.D. Assistant Professor Dowling College Idle Hour Blvd. Oakdale, New York 11769 Phone: 631-244-3365 E-mail: <a href="mailto:srinivar@dowling.edu">srinivar@dowling.edu</a></td>
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<td>New Jersey Department of Transportation</td>
<td>United States Department of Transportation, New Jersey Department of Transportation</td>
<td>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: <a href="mailto:mcknight@utrc2.org">mcknight@utrc2.org</a> 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: <a href="mailto:paaswell@utrc2.org">paaswell@utrc2.org</a></td>
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<td>United States Department of Transportation, New Jersey Department of Transportation</td>
<td>Hualiang Teng, Ph.D. Assistant Professor Polytechnic University Six Metrotech Center Brooklyn, NY 11202 Phone: 718-260-3196 E-mail: <a href="mailto:hteng@poly.edu">hteng@poly.edu</a></td>
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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.
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, Mayaguez Campus where she is currently working on a research project associated with the highway safety, identification of hazardous location and road safety audit. Dr. Benjamin Colucci is her academic advisor at the graduate program in Transportation in UPRM.
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.

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 eigth 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.

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