

REGION II
UNIVERSITY TRANSPORTATION
RESEARCH CENTER



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PROGRAM PROGRESS PERFORMANCE REPORT

*Submitted to the Office of the Assistant Secretary for
Research and Technology*

Federal Grant # DTRT12-G-UTC02

Project Title: University Transportation Research Center – Region 2

Name of Grant: University Transportation Center

Program Director: Camille Kamga, Ph.D, Director UTRC, Assistant Professor of
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Project/Grant Period: Start Date: January 1, 2012 End Date: January 31, 2017

Reporting Period Start Date: July 1, 2015

Reporting Period End Date: December 30, 2015

Report Term or Frequency: six months


Signature _____

Penny Eickemeyer, Associate Director for Research, UTRC

CONSORTIUM MEMBERS

City University of New York, Clarkson University, Columbia University, Cornell University, Hofstra University, Manhattan College, New
Jersey Institute of Technology, New York Institute of Technology, New York University, Polytechnic Institute of NYU, Rochester Institute of
Technology, Rowan University, Rensselaer Polytechnic Institute, Rutgers University*, State University of New York, Stevens Institute of
Technology, Syracuse University, The College of New Jersey, University of Puerto Rico

*Member under SAFETEA-LU Legislation

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This report will cover UTRC's three mission areas: Research, Technology Transfer, and Education for activities that occurred under the Grant# DTRT12-G-UTC02 during this reporting period.

1. ACCOMPLISHMENTS

A. Goals and objectives:

- a) Research: To support the USDOT Strategic Goals and to advance the state of practice in planning and management of regional transportation systems; the research program consists of both agency-initiated and faculty-initiated studies
- b) Education and workforce development: To improve the knowledge base and approach to problem solving of the region's transportation workforce
- c) Technology transfer: To increase the awareness and level of information concerning transportation issues facing Region 2 to the education, research and practicing community; disseminate project reports, studies, analysis, and use of tools to the community; and provide unbiased information and testimony to decision-makers concerning regional transportation issues consistent with the UTRC theme.

B. Accomplishments under these goals:

- a) Research

Examples of Ongoing projects under Grant# DTRT12-G include:

Development of the Household Activity Pattern Problem as an Activity-Travel Simulator-UB

- Demonstrations of Urban Outdoor Lighting for Pedestrian Safety and Security-RPI
- Freight Demand Forecasting in the Context of the Built Environment: An Integrated Land Use-UB
- Impacts of Freight Parking Policies in Urban Areas: the Case of New York City –RPI
- Integrating Real-time GIS and Social Media for Qualitative Transportation Data Collection- Hunter
- IIMS Staten Island Web and Smartphone Development, Deployment and Evaluation –UB
- Integration of Bus Stop Count Data with Census data for Improving Bus Service – Albany
- Laser Scanning Aggregates for Real Time Property Identification –Rowan
- Modeling Disaster Operations from an Interdisciplinary Perspective in the New York-New Jersey Area –NYU
- Metrics and Performance Response Functions for Assessment of Resilience of Urban Infrastructure System-NJIT

- Nitrogen Dioxide Sequestration Using Demolished Concrete and Its Potential Application in Transportation Infrastructure Development –Stony Brook
- Nondestructive Evaluation of Pavement Structural Condition for Rehabilitation Design - Rutgers
- Optimizing Work Zones for Highway Maintenance with Floating Car Data (FCD) – NJIT
- Panama Canal Expansion and the Economic Impacts on New York and New Jersey States –UB
- PPS-AQ and PPS-CMP hosting, maintenance, and technical support - Cornell
- Real-time Estimation of Transit Origin-Destination Patterns and Delays Using Low-Cost Ubiquitous Advanced Technologies-NYU
- Relationships between public-private financing, speed, and rail infrastructure development
- Smarter Multi-modal Traffic Signal Control with Both Floating Sensor Network and Fixed Sensor Network
- Street Standards as Parking Policy: Identifying Residents' Willingness to Pay –NYU
- Techniques for Information Extractions from Compressed GPS Traces - Albany
- The Ties that Bind: Developing a Bi-national Transportation-Combined Economic Simulation Model to Assess Security and Policy Implications of US-Canada Border Bridges-UB
- Truck Driver Fatigue Assessment using a Virtual Reality System-Rowan

Completed Projects during this period include:

- Broadband Hybrid Electromagnetic and Piezoelectric Energy Harvesting from Ambient - Stony Brook
- Characterizing Highway Corridor Length to Evaluate Travel Time Reliability using Probe Vehicle Data –TCNJ
- Characterizing and Quantifying the Shrinkage Resistance of Alkali Activated (Cement Free) Concrete –
- Effect of plug in hybrid electric vehicle adoption on gas tax revenue, local pollution, and greenhouse gas emissions-Rowan
- Evaluation of Public-Private Partnership Contract Types for Roadway Construction, Maintenance, Rehabilitation, and Preservation-UB –draft submitted
- Investigating the Network System Effects of Mileage Fee-RPI – Ban
- Modeling Emissions and Environmental Impacts of Transportation Activities Associated with High Volume Horizontal Hydraulic Fracturing Operations in the Marcellus Shale Formation –RIT
- Omitted variable bias in crash data analysis –Rutgers
- Port Resilience: Overcoming Threats to Maritime Infrastructure and Operations from Climate Change-Stevens Institute of Technology
- Requirements, Model and Prototype for a Multi-Utility Locational and Security Information Hub-NJIT
- Suburban Poverty, Public Transit, Economic Opportunities and Social Mobility -NYU
- Techniques for Information Extraction from Compressed GPS Traces- Albany

- The Economy of Preventive Maintenance of Concrete Bridges –Syracuse
- The Role of Social Media in Improving the Safety and Efficiency of Traffic Operations during Non-Routine Events such as Incidents and Planned Special Events—RPI

Quarterly Reporting

As part of its partnership with regional agencies, UTRC continued its quarterly meeting process with NJDOT and NYSDOT. UTRC also requires written quarterly progress reports on both agency-initiated and faculty-initiated projects. During this reporting period, these were requested for work completed through March 30, 2015 and June 30, 2015.

As examples of project progress, excerpts from these written reports for several projects are provided below.

Impacts of Freight Parking Policies in Urban Areas: The Case of NYC

This project focuses on the issue of parking for freight vehicles in Manhattan. In most city centers and business districts (including Manhattan), parking is very limited which causes truck drivers to double park, idle, circle blocks, or extend into sidewalks and roadways while using undersized loading areas. Ideal policy should maximize the net social benefits of freight activity by ensuring efficient freight flows, while mitigating the negative impacts associated with freight activity. This study will assess the conditions and policies in Manhattan related to parking and freight vehicles. The process involves close collaboration with the NYCDOT. During the past reporting period, the following was accomplished:

- Analysis of the pilot test survey in the study area was completed and scenarios were built accordingly.
- RPI and NYCDOT are analyzing the video data captured in the study area with time lapse video cameras.
- Additional information was collected regarding parking fines in the study area to incorporate it in the simulation module.
- The simulation framework was completed and is awaiting the inputs from the discrete choice models.
- The next step is to incorporate the discrete choice models that are being developed into the simulation framework, in order to predict the behavior of carriers and assess the outcomes of the different policy levers and parking schemes.

Integrating Real-time GIS and Social Media for Qualitative Transportation Data Collection

In transportation planning, the activity-based model system is considered as the next-generation demand forecasting model and requires the input of trip modes and purposes of individuals. GPS-based travel surveys can avoid many problems in traditional paper and phone surveys and are becoming increasingly popular in major cities worldwide. In the past few years, Dr. Hongmian Gong has developed a computing system consisting of a smartphone app that transmits GPS data to an Amazon cloud server where GIS algorithms detect travel modes and trip purposes of individuals. Because of the urban canyon effects and mixed land use typical in high-density cities such as New York, speculating trip purposes has proved to be very challenging without qualitative information from survey participants. This study will integrate the GIS data with a

travel survey for a better understanding of trip purpose. According to the PI, the following was accomplished during the past reporting period:

- The implementation and setup of the tweet classifier has been completed. It is now properly integrated with the geoevent processor, so that the tweet classification is triggered whenever one of our study participants posts a tweet (in fact, it can also be set up to be triggered by specific keywords or hashtag, which may prove useful when monitoring the overall status of the public transport system). These classified tweets are then also pushed to a live webmap, which is automatically updated through a web socket connection as soon as new tweets come in.
- The researchers are currently working on publishing a second web map that shows the classified trips. In order to do that, we need to publish the corresponding geodatabase as a geodata service, which has caused some problems. We are currently working with the ESRI support to resolve this issue.
- The researchers are learning more about the ESRI network analysis in order to use it for analysis of the multimodal network.

Nondestructive Evaluation of Pavement Structural Condition for Rehabilitation Design – Rutgers

The Falling Weight Deflectometer (FWD) is most commonly used to evaluate highway pavement structural condition for estimation of pavement remaining service life and overlay design. Recently, the need to accurately characterize layer material properties of the existing pavement has increased with the implementation of the new AASHTO Mechanistic-Empirical Pavement Design Guide (MEPDG). Although a number of studies have been conducted for using FWD data in rehabilitation design, several challenges still exist due to the complex nature of pavement system. These challenges include but are not limited to: 1) the viscoelastic modulus of asphalt mixture that varies depending on temperature profile in the pavement and loading frequency; 2) the nonlinear anisotropy of unbound material; and 3) dynamic analysis of pavement behavior under FWD loading. The primary goal of this research project is to develop an integrated method for pavement in-situ condition evaluation and rehabilitation design based on modeling and analysis of FWD deflection data. During this reporting period, the researchers

- Developed finite element models that simulate FWD testing on pavement. A large material database has been used to develop the relationship between FWD surface deflections and critical pavement responses.

The Ties that Bind: Developing a Bi-national Transportation-Combined Economic Simulation Model to Assess Security and Policy Implications of US-Canada Border Bridges-UB

The objectives of this research are to understand the economic importance of border bridges on the U.S.-Canada economies, especially involving the various US states proximate to the Province of Ontario, and to simulate various U.S.-Canada border bridge policy and security scenarios. Through this research, a novel bi-national transportation-combined economic simulation model will be developed that contributes to providing hierarchical economic impacts at the state/province or lower levels of the two countries. Complex and disaggregated models can lead to a better understanding of how economic impacts resulting from traffic pattern changes on the border bridges can affect the local economies of neighboring states in the United States.

Combining models and data from the two countries, this project will bring methodological innovations in border security and freight transportation modeling. To date:

- The final report has been prepared based on the published paper at *Research in Transportation and Business Management* (RTBM), 2015, 16(1): 32-49.

Truck Driver Fatigue Assessment using a Virtual Reality System

The proposed project will use the CAVE Automated Virtual Reality Environment to develop a system capable of evaluating driver reactions and assess driver fatigue in a safe no-risk environment. Driver alertness and reactions will be tested under a variety of conditions (e.g. day, night, snow, rain, fog, etc.) and a variety of events will test the driver's awareness (e.g. lane closures, sudden traffic stops, construction, erratically behaving cars). Driver statistics such as lane location, driver crossing over dashed or solid white lines, reaction time and eyelid droop/closure will all be recorded and assessed. During this reporting period, the following was accomplished:

- Completion of the data collected through students' simulations.
- Developed a procedure for analyzing the data.
- Corrected several coding bugs within the simulation code.
- Conducted additional student driver simulations.

b) Education and workforce development

- 2015-2016 NYMTC/UTRC September 11th Memorial Program interns continued. 2014-15 interns presented their work at a brownbag session on September 16, 2015 at the NYMTC office, 25 Beaver Street, New York, NY. This year's presentations included *Customer Perception of Select Bus Service Enhancements* by Dan Wan from the Graduate Center, CUNY who interned at NYCDOT; and *Regional Bicycle - Pedestrian Handbook*, by Gauri Jumde from NYU Wagner, who interned at NYMTC.
- The AITE scholarship awardees for 2015 continued their studies.
- Professional development in collaboration with the New York State Association of MPOs continued. The initial course has been completed. Additional courses are in the process of selection in collaboration between NYSAMPO, UTRC, and the CUNY School of Professional Services.
- UTRC presented the WTS Leonard Braun Memorial Scholarship to Alexandra Gore, a Master of Science in Transportation Planning and Engineering student at the Polytechnic School of Engineering at NYU during the award ceremonies at the WTS NY Gala on October 7, 2015.

c) Technology Transfer

- **NJDOT Technology Transfer Presentations**

UTRC and NJDOT sponsored an In-House Lecture Series at the NJDOT Offices at Trenton, NJ.

The following topic was presented during this reporting period.

DATE	TOPIC	PI(S)	UNIVERSITY
October 8, 2015	Unmanned Aerial Vehicles	Lawrence H Brinker, Esq.	NUAIR Alliance

- **Freight Workshop in NYC**

On September 16, 2015 a workshop titled “Improving Freight Systems in Metropolitan Areas: From New York City to Across the Globe” was held. The purpose of the workshop was to bring the public and private sectors and researchers together to discuss and share ideas on strategies to improve freight activity in metropolitan areas. This workshop was hosted by Rensselaer Polytechnic Institute (RPI) and the New York Institute of Technology (NYIT) and was jointly sponsored by the VREF Center of Excellence for Sustainable Freight Systems (CoE-SUFS) and the University Transportation Research Center (UTRC)

- **4th annual international symposium on Public- Private Partnerships with Cornell University**

On September 15th and 16th, 2015, the Cornell University Program in Infrastructure Policy, or CPIP, hosted the 4th Annual International Symposium on Public- Private Partnerships in New York City. The symposium brought together twenty world-renowned scholars of public-private partnerships from around the world under the theme of “Public Perceptions of Public-Private Partnerships.” Scholars from Copenhagen, Lisbon, Milan, Canada and many other countries attended. Fourteen academic papers were presented on important policy issues such as, “Why do countries differ in terms of government support for public-private partnerships? Explaining variations in PPP support in twenty European countries,” and “Measurement Matters: Improving Infrastructure P3 Comparative Evaluation.”

- **The 28th International Association of Transportation Regulators (IATR) Conference**

The International Association of Transportation Regulators (IATR)’s 28th Annual Conference was held on September 27-30 at the Montreal Marriott Chateau Champlain, Canada. The conference theme was “New Transportation Directions; Regulatory Resiliency, Renewal, and Regeneration.” UTRC staff actively participated in the organization and planning of the 2015 IATR annual conference. The conference was very well attended by international regulators and many presenters shared their best state/city practices with attendees. The Former NYS Governor, Hon. David Paterson was the keynote speaker on the Tuesday Luncheon. The governor’s keynote speech along with speakers’ presentations and conference proceedings are available to IATR members on the IATR website.

- **Visiting scholar seminar: Innovation and Disruption in Urban Mobility**
Dr. Susan Shaheen, Co-director of the Transportation Sustainability Research Center (TSRC) of the Institute of Transportation Studies at the University of California (UC) Berkeley presented at the UTRC Visiting Scholar Seminar on October 9, 2015 at the SUNY Global Center. Dr. Shaheen is also an adjunct professor in Civil and Environmental Engineering at UC Berkeley. The event explored innovation and disruption in urban mobility.
- **UTRC at the 2015 NJDOT Showcase**
UTRC students, faculty, and staff attended and participated at the 17th Annual NJDOT Research Showcase, held on October 23rd, 2014 at the Conference Center at The Enterprise Center at RCBC, (Rowan College at Burlington County)
- **TransportationCamp**
The 2015 TransportationCamp NYC was held on November 14, 2015 at the City College of New York. The event was hosted by the Young Professionals in Transportation and the University Transportation Research Center. The goal of the event was to assemble planners, software developers, engineers, students, dreamers, and professionals for an exciting day of “un-conferencing.” Unlike a traditional conference, the specific session topics were determined by participants, which provided each attendee an opportunity to lead and shape the event. TransportationCamp NYC 2015 fostered an open conversation and collaboration between all parties interested in mobility and the radical changes the near-future promises in transportation. The event was attended by more than 550 delegates.
- **3rd Annual Transportation Technology Symposium on Innovative Mobility Solutions**
UTRC hosted the 3rd Annual Transportation Technology Summit on November 20, 2015 at the New York Institute of Technology. This unique summit brought together leading experts, academics, practitioners, industry stakeholders and advocates to discuss the rapidly changing and expanding world of transportation technology innovative solutions and public policy-making implications. Presenters explored cutting-edge intelligent transportation systems, big data aggregation, and innovative transportation technology solutions to promote efficiency, safety, security and sustainability goals, as well as the impact on broader inter-modal and multi-modal transportation considerations
- **UTRC Co-Sponsored an NYIT Event: Its Travel Information Systems and Mobile Applications for Enhanced Transport**
On December 10, New York Institute of Technology held the workshop “ITS Travel Information Systems and Mobile Applications for Enhanced Transportation.” This workshop was sponsored by University Transportation Research Center (UTRC). More than 100 professionals in the field of transportation attended the event, including representatives from NYC DOT, NYSDOT, NJ Transit, MTA, Port Authority of NY & NJ as well as NY City Planning, consultants, engineering firms and academia.
- **Newsletter publications released**
Fall 2015 Newsletter was released during this reporting period.
- Brief video clips of interviews with PIs during this reporting period
- **Annual report**
An annual report was developed during this period and printed in January 2016.

d. Opportunities for Training and Development

Our seminars and workshops are designed to educate the transportation community on current issues in policy and best practices as well as foster meaningful discussion on these topics. We also provide funding to the September 11th Memorial Program to select current

students to serve in internship positions in regional and local agencies to enhance their educational experience.

C. Dissemination of results:

- **Compendium of TRB presentations**

A Compendium was produced to highlight all TRB presentations made by UTRC faculty at TRB's 95th Annual meeting, January 10, 2016 – January 15, 2016. Over 100 sessions included presentations made by one or more UTRC researchers.

- **Final Reports**

UTRC produced, posted, and circulated final reports for the projects completed during this reporting period (see research section B-a above)

D. Plans for next reporting period:

The following events are planned for the next reporting period:

- **Book Talk: Road Traffic Congestion; An Examination of the Causes, Consequences, and Possible Congestion Relief Strategies**, will take place on February 26, 2016 (<http://www.utrc2.org/events/book-talk-road-traffic-congestion>)
- **Start-up City: Inspiring Private-Public Entrepreneurship, Getting Projects Done and Having Fun**, a visiting scholar presentation, will be held on March 16, 2016 (<http://www.utrc2.org/events/start-city-inspiring-private-and-public-entrepreneurship-getting-projects-done-and-having-fun>)
- **Transportation Transformed: Advancing Eco-friendly Mobility**, a UTRC event co-sponsored by NYSERDA and NYSDOT will be held at the NYIT campus on April 7, 2016 (<http://www.utrc2.org/events/transportation-transformed-advancing-eco-friendly-mobility>)

2. PRODUCTS

Products this period

Products this period have included newsletters, press releases announcing final reports that were submitted, and short interviews of PIs regarding completed projects (see technology transfer section above).

3. PARTICIPANTS AND COLLABORATING ORGANIZATIONS

Partner (University)	Agency Sponsor	Location (see attached)	Project(s) (# funded)	Contribution	Other Collaborators	Role
Clarkson	N/A	Potsdam, NY	Faculty-initiated (1)	Research		
Columbia						
Cornell	N/A	Ithaca, NY	Faculty-initiated (2)	Research		
Cornell		Ithaca, NY	Agency Initiated (1)			
CUNY:						
Queens College	N/A	Flushing, NY	Faculty-initiated (1)	Research		
John Jay	N/A	New York, NY	Faculty-initiated (1)	Research		
CCNY		New York, NY	Faculty-initiated (3)			
CUNY Graduate Center NYC Labor Information Service		New York, NY	Faculty-initiated	Research		
Manhattan College		Bronx, NY				
NJIT	N/A	Newark, NJ	Faculty Initiated (3)	Research		
NJIT	NYSDOT			Research		
NYIT	N/A	New York, NY				
NYU	N/A	New York, NY	Faculty Initiated (3)	Research		

RIT	N/A	Rochester, NY	Faculty-initiated (1)	Research		
Rowan University		Glassboro, NJ	Faculty-initiated (2)	Research		
RPI	N/A	Troy, NY	faculty initiated (6)	Research	NYSDOT	
RPI	NYSDOT			Research	Siemens, Sensys,	technology/ devices
Rutgers	N/A	New Brunswick, NJ	Faculty-initiated (6)	Research		
Rutgers	NJDOT				For Landfill Closure: Birdsall and the Richard Stockton College Coastal Research Center,	
SUNY:						
Albany		Albany, NY	Faculty-Initiated (1)	Research		
Albany	NJDOT	Albany-NY	Agency-sponsored	Research		
Buffalo	NYSDOT			Research	NYU/Poly, General Dynamics Information Technology	research, technology
Stonybrook	N/A	Stonybrook, NY	faculty Initiated (2)	Research		

Maritime	N/A	Throgs Neck, NY	faculty Initiated (1)	Research	Halcrow, Douglas Westwook, CWS and NYU	
Maritime	NJDOT	Throgs Neck, NY	agency-initiated	Research		
New Paltz	N/A	New Paltz, NY	Faculty-initiated (1)	Research		
Stevens Institute of Technology	N/A	Hoboken, NJ	Faculty-initiated (1)	Research		
Syracuse		Syracuse, NY	Faculty-initiated(2)	Research		
The College of New Jersey	N/A	Ewing Township, NJ	Faculty-initiated (1)	Research		
University of Puerto Rico		Mayaguez PR				
Agency Partners:						
NYSERDA				Research sponsor	CCNY	
NYMTC		New York, NY		education (Sept. 11th Memorial Program)	UTRC	
NYMTC		New York, NY		Sponsor	UTRC	
NYSDOT		Albany, NY		research	UTRC	
NJDOT		Ewing, NJ		Research sponsor, tech transfer	UTRC	
NYCDOT		New York, NY			UTRC	
Port Authority of NY and NJ		New York, NY		General sponsor collaboration	UTRC	

ITS-New York				education, tech transfer	UTRC	
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<u>Partner addresses</u> <u>Partner</u>	<u>Street</u>	<u>City, State, Zip</u>
Clarkson	8 Clarkson Avenue	Potsdam, NY 13699
Columbia	116 th Street and Broadway	New York, NY 10027
Cornell	Cornell University	Ithaca, NY 14853
CCNY	160 Convent Avenue	New York, NY 10031
Hunter College	695 Park Avenue	New York, NY 10065
John Jay College	524 W. 59th Street	New York, NY 10019
Queens College	65-30 Kissena Blvd	Flushing New York 11367
CUNY Graduate Center	365 5th Avenue	New York, NY 10016
NJIT	323 Martin Luther King Blvd	Newark, NJ 07103
NYU	726 Broadway #350	New York, NY 10003
NYU/POLY	6 Metrotech Center	Brooklyn, NY 11201
RPI	110 8th Street	Troy, NY 12180
RIT	One Lomb Memorial Dr	Rochester, NY 14623
Rowan	201 Mullica Hill Rd	Glassboro, NJ 08028
Rutgers	57 US HWY 1	New Brunswick, NJ 08901
SUNY Albany	1400 Washington Avenue	Albany, NY 12222
SUNY Buffalo	12 Capen Hall	Buffalo, NY 14260
Stony Brook	100 Nicolls Rd	Stonybrook, NY 11794
SUNY Maritime	6 Pennyfield Avenue	Throggs Neck, NY 10465
SUNY New Paltz		
Stevens Institute of Technology	9th Street	Hoboken, NJ 07030
Syracuse University	303 University Pl #335	Syracuse, NY 13244
The College of New Jersey	2000 Pennington Rd.	Ewing Township, NJ 08618

University of Puerto Rico	Puerto Rico, 65	Mayaguez 00860
Agencies:		
NYSDOT	50 Wolf Road	Albany, New York 12205
NYSERDA	17 Columbia Circle	Albany, New York 12203-6399
NYMTC	199 Water Street	New York, New York 10038
NYCDOT	55 Water Street	New York, New York 10041
NJDOT	1035 Parkway Avenue	Trenton, NJ 08625
NYCDOT	55 Water Street	New York, NY
PANYNJ	225 Park Avenue South	New York, NY 10003
ITS-NY	14 Loveland Court	Cranbury, NJ 08512
NYCT	2 Broadway	New York, NY 10004
USC/Volvo		Los Angeles, CA

PROJECTS BY PARTNERS

<u>Partner(s)</u>	<u>Project(s)</u>		
Clarkson	Characterizing and Quantifying the Shrinkage Resistance of Alkali Activated (Cement Free) Concrete		
Columbia			
Cornell	The Effects of Public-Private Partnerships on Traffic Safety: Evidence From Mexico	PPS-AQ and PPS-CMP hosting, maintenance, and technical support	Street Standards as Parking Policy: Identifying Residents' Willingness to Pay
CCNY	Support for NYMTC for CMAQ Application and Documentation	Adaptive Traffic Signal Control System (ACS-Lite) for Wolf Road	
Hunter College	Empowering Individuals to Make Environmentally Sustainable and Healthy Transportation Choices in Mega-Cities through a Smartphone App		
John Jay College	Relationships between public-private financing, speed, and rail infrastructure development		
Queens College	Empowering Individuals to Make Environmentally Sustainable and Healthy Transportation Choices in Mega-Cities through a Smartphone App		
CUNY Graduate Center			
NJIT	Optimizing Work Zones for Highway Maintenance with Floating Car Data (FCD)	Metrics and Performance Response Functions for Assessment and Resilience of Urban Infrastructure Systems	Requirements, Model and Prototype for a Multi-Utility Locational and Security Information Hub

NYU	Suburban Poverty, Public Transit, Economic Opportunities and Social Mobility		Real-time Estimation of Transit Origin-Destination Patterns and Delays Using Low-Cost Ubiquitous Advanced Technologies		Street Standards as Parking Policy: Identifying Residents' Willingness to Pay	
NYU(formerly NYU/POLY)	Subsurface Imaging of Corrosion in Painted Steel Bridges			IIMS Staten Island Web and Smartphone Development, Deployment and Evaluation Modeling Disaster Operations		
RPI	Improving Freight System Performance in Metropolitan Areas	The Role of Social Media in Improving the Safety and Efficiency of Traffic Operations	Investigating the Network System Effects of Mileage Fee	Demonstrations of Urban Outdoor Lighting for Pedestrian Safety and Security	Adaptive Traffic Signal Control System (ACS-Lite) for Wolf Road	Impacts of Freight Parking Policies in Urban Areas: the Case of New York City
RIT	Modeling Emissions and Environmental Impacts of Transportation Activities Associated with High Volume Horizontal Hydraulic Fracturing Operations in the Marcellus Shale Formation					
Rowan	Effect of plug in hybrid electric vehicle adoption on gas tax revenue, local pollution, and greenhouse gas emissions			Truck Driver Fatigue Assessment using a Virtual Reality System		
Rutgers	Omitted variable bias in crash data analysis Non-destructive Evaluation of Pavement Structural	Effectiveness Based Pavement Preservation Selection Based on Statistical Analysis of Long-Term Payment Performance Data		Real-time Estimation of Transit Origin-Destination Patterns and Delays Using Low-Cost Ubiquitous Advanced Technologies	Landfill Closure With Dredged Materials	Impact Analysis of Recreational Transit Services on Local Community Economic Development, Employment and Spending

	Condition for Rehabilitation Design							
SUNY Albany	Integration of Bus Count Data with Census Data							
SUNY Buffalo	Freight Demand Forecasting in the Context of the Built Environment: An Integrated Land Use IIMS Staten Island Web & Smartphone Development, Deployment and Evaluation	Real-time Dynamic Pricing for Bicycle Sharing Programs Evaluation of Public-Private Partnership Contract Types for Roadway Construction, Maintenance, Rehabilitation, and Preservation	National Aviation Security to Cyber-terrorism: An Integrated Framework to Quantify the Economic Impacts of Cyber-terrorist Behavior	Panama Canal Expansion and the Economic Impacts on New York and New Jersey States	Smarter Multi-modal Traffic Signal Control with Both Floating Sensor Network and Fixed Sensor Network	The Ties that Bind: Developing a Bi-national Transportation-Combined Economic Simulation Model to Assess Security and Policy Implications of US-Canada	A GIS-based Performance Measurement System for Assessing Transportation Sustainability and Community Livability	Development of the Household Activity Pattern Problem as an Activity-Travel Simulators

SUNY New Paltz	Empirical Analysis of Consumer Aspects of Autonomous Cars							
Stonybrook	Broadband Hybrid Electromagnetic and Piezoelectric Energy harvesting from Ambient Vibrations and Pneumatic Vortices Induced by Running Subway Trains				On-Road Energy Harvesting for Traffic Monitoring			
Maritime	Real-time Estimation of Transit Origin-Destination Patterns and Delays Using Low-Cost Ubiquitous Advanced Technologies							
Stevens Institute of Technology	Port Resilience: Overcoming Threats to Maritime Infrastructure and Operations from Climate							
Syracuse University	Investigation of the Carrs Creek Geofoam Project				The Economy of Preventive Maintenance of Concrete Bridges			
The College of New Jersey	Characterizing Highway Corridor Length to Evaluate Travel Time Reliability using Probe Vehicle Data							
University of Puerto Rico								
Agencies:								

NYSDOT	IIMS Staten Island Web and Smartphone Development, Deployment and Evaluation	ACS-Lite for Wolf Road
NYSERDA		
NYCDOT		
NJDOT	Impact Analysis of Recreational Transit Services on Local Community Economic Development, Employment and Spending	Landfill Closure With Dredged Materials
NYMTC	PPS-AQ and PPS-CMP hosting, maintenance, backup and technical support	Support for NYMTC for CMAQ Application and Documentation

4. IMPACT

UTRC programs impact the transportation community in several ways. Through seminars, workshops, and conferences, information is disseminated and interdisciplinary discussions are fostered; which enable transportation professionals to gain knowledge and varying perspectives on issues. This, in turn, helps practitioners to implement policies that bring about efficient and effective solutions to meet local, regional, and national transportation needs. UTRC programs also have an impact on preparing the next generation of transportation professionals through internships and classroom-based instruction. Likewise, dissemination of research findings helps to foster collaboration between academic researchers and practitioners, which assists practitioners in implementing innovative solutions that meet their specific needs.

5. CHANGES/PROBLEMS

We are working to collect final reports for some projects that are overdue. Project work has been completed on these, but reports are still outstanding.

6. SPECIAL REPORTING REQUIREMENTS

Nothing to report