



**REGION II  
UNIVERSITY TRANSPORTATION  
RESEARCH CENTER**

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**Program Progress Performance Report by the University Transportation Research Center,  
Region 2  
Submitted to RITA**

Federal Grant # DTRT12-G-UTC02

Project Title: University Transportation Research Center – Region 2

Name of Grant: University Transportation Center

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Project/Grant Period: Start Date: January 1, 2012 End Date: January 31, 2016

Reporting Period Start Date: July 1, 2013

Reporting Period End Date: December 31, 2013

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

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

On-going research under Grant# DTRT12-G-UTC02 during this period includes:

- IIMS Staten Island Web and Smartphone Development, Deployment and Evaluation – SUNY Buffalo, NYU/Poly
- Road Weather Information System (RWIS) Statewide Implementation Plan –NJIT /CCNY
- Adaptive Traffic Signal Control System (ACS-Lite) for Wolf Road –RPI/CCNY
- Landfill Closure with Dredged Materials Desktop Analysis Multiple Sources Development -Rutgers
- Offshore Wind Development (OSW) Research –SUNY Maritime
- Freight-Tricycle Operations in New York City-CCNY
- Support for NYMTC for CMAQ Application and Documentation –CCNY
- Impact Analysis of Recreational Transit Services on Local Community Economic Development, Employment and Spending - Rutgers
- Leveraging Brightness from Transportation Lighting Systems through Light Source Color: Implications for Energy Use and Safety for Traffic and Pedestrians - RPI
- Data collection and econometric analysis of the demand for non-motorized transportation - Cornell

- Speed and Design Consistency of Combined Horizontal and Vertical Alignments in Two-Lane Rural Roads - UPR
- Air Quality Impact of Traffic Congestion in Midtown Manhattan - Poly
- Energy Savings from Transit Passes: An Evaluation of the University at Buffalo NFTA Transit Pass Program for Students, Faculty, and Staff - Buffalo
- Analysis of Environmental, Economic, and Infrastructure Impacts of Transportation Activities Associated with High Volume Horizontal Fracturing Operations in the Marcellus Shale Formation Using the Geospatial Intermodal Freight Transport (GIFT) Model - RIT
- Optimum Fund Allocation to Rehabilitate Transportation Infrastructure - NJIT
- Determine Viscoelastic Mechanical Properties of Warm Mix Asphalt (WMA)-Reclaimed Asphalt Pavement (RAP) Mixes under High Stresses in Airfield Flexible Pavements and Its Impact on Design Life. - Rowan
- Use of Web-Based Rider Input for Transit Management in the New York City Region - NYU
- Investigation of the Carrs Creek Geofoam Project - Syracuse
- Metrics and Performance Response Functions for Assessment of Resilience of Urban Infrastructure System - NJIT
- Planning level assessment of greenhouse gas emissions for alternative transportation construction projects - Rutgers
- Modeling Disaster Operations from an Interdisciplinary Perspective in the New York-New Jersey Area -Rutgers
- Energy Efficient and Environmental Friendly Cement Free Concrete (CFC) for Pavement and Bridge Deck Application -Clarkson
- Automating the Reporting and Progress Monitoring Process using Mobile Computers for Highway Construction Projects -UPR
- 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
- A GIS-based Performance Measurement System for Assessing Transportation Sustainability and Community Livability - Buffalo
- Robotic Inspection of Bridges Using Impact-Echo Technology - CCNY
- Empowering Individuals to Make Environmentally Sustainable and Healthy Transportation Choices in Mega-Cities through a Smartphone App -Queens College/Hunter College
- Promoting Transportation Flexibility in Extreme Events through Multi-Modal Connectivity - NYU
- On-Road Energy Harvesting for Traffic Monitoring – Stony Brook
- Financing high speed rail in the U.S. and France: the evolution of public-private partnerships – John Jay College

- The Effects of Public-Private Partnerships on Traffic Safety: Evidence From Mexico
- Street Standards as Parking Policy: Identifying Residents' Willingness to Pay - Cornell
- Real-time Dynamic Pricing for Bicycle Sharing Programs - Buffalo
- Developing self-cleaning and air purifying transportation infrastructure components to minimize environmental impact of transportation – Stony Brook
- National Aviation Security to Cyber-terrorism: An Integrated Framework to Quantify the Economic Impacts of Cyber-terrorist Behavior - Buffalo
- Subsurface Imaging of Corrosion in Painted Steel Bridges - Poly
- Effectiveness Based Pavement Preservation Selection Based on Statistical Analysis of Long-Term Payment Performance Data – Rutgers
- Social Network Based Dynamic Transit Service through the OMITS System - Columbia
- Lessons from Hurricane Sandy for Port Resilience – Stevens Institute
- Benchmarking for Asset Hierarchy, Criticality Assessment and Risk Analysis – Rutgers
- Sidewall Collapse of Underground Structures due to Loss of Lateral Support Under Blast Loading – CCNY
- Street Standards – NYU
- Integration of Bus Stop Data-SUNY Albany

The above-listed projects progressed nicely during this reporting period and some have come to completion.

Completed Projects include:

- Lessons from Hurricane Sandy for Port Resilience
- Offshore Wind Development (OSW) Research
- Leveraging Brightness from Transportation Lighting Systems through Light Source Color: Implications for Energy Use and Safety for Traffic and Pedestrians
- Data collection and econometric analysis of the demand for non-motorized transportation (draft final)
- Sidewall collapse of underground structures due to loss of lateral support under internal blast loading-(draft final)
- Developing self-cleaning and air purifying transportation infrastructure components to minimize environmental impact of transportation (draft final)
- Energy Efficient and Environmental Friendly Cement Free Concrete (CFC) for Pavement and Bridge Deck Application (draft final)

### **Other Research Activities**

GPS Research Cluster Team for Transportation - Hunter College

Research Cluster on Connected Vehicles and Cyber Transportation Systems Research - SUNY Buffalo

## **Quarterly Reporting**

As part of its partnership with regional agencies, UTRC continued its quarterly meeting process with NJDOT and NYSDOT. Quarterly meetings were held in NJDOT, New Jersey Transit, and NYSDOT offices. During these meetings principal investigators (PIs) gave presentations to the project managers and Departmental Units, which have commissioned the studies. In addition, to assure for the best outcome, PIs and agency project managers (from all sponsored agencies including NYSERDA, NYMTC, NYCT, NJDOT, NJT, NYSDOT, NYCDOT) meet and/or talk about ongoing work throughout the duration of the research. 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 September 30, 2013 and December 31, 2013.

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

### *-Lessons from Super Storm Sandy for Port Resilience*

All milestones were completed including the final report. It is anticipated that a technical paper will be presented at the 33<sup>rd</sup> International Congress of PIANC, in San Francisco, CA June 1-5, 2014. The report recommended further research to understand how human factors play into enhancing resilience in lifeline systems, especially given the mix of public and private stakeholder.

### *-A GIS-based Performance Measurement System for Assessing Transportation Sustainability and Community Livability*

Began collecting transportation and land use data that are needed to develop performance measurements for Erie County and Niagra County in New York. Testing began for testing PMs in the Buffalo case study.

### *-RWIS Weather Information System Statewide Implementation Plan*

Work continued for the design of a Statewide RWIS Network for NYSDOT operations, a technical memorandum per task 7 was developed. During this reporting period, the research team focused on the following four actions:

- Enhancing the model by selecting potential RWIS sites for those regions which did not respond to the survey
- Considering regional spatial weather variability in the RWIS typical site selection process
- Prioritizing the “problem” RWIS sites identified by the survey takers
- Formulating a prototype RWIS life cycle benefit-cost model for future application

### *-Offshore Wind Development*

Final report complete. PI presented research results to the sponsor, NJDOT, on November 26, 2013. They provided the final report, a PowerPoint presentation, executive summary and presented for about two hours. A dialogue and a question and answer session was also included. The report will now be reviewed by the sponsor for comments.

### *-Nighttime Highway Construction Illumination*

On November 22, the demonstration mock-up for marking and signage materials was conducted in Watervliet, NY to demonstrate temporary pavement marking materials, sign materials, traffic drum wrap, barricade sheeting, conspicuity marking tape and photoluminescent paint and tape. Representatives from NYSDOT provided input about the visibility of these materials and their luminances were measured. There will be a final mock demonstration in early spring 2014.

### **Other Agency Meetings**

UTRC met at NYSDOT headquarters in Albany, New York on November 22, 2013 with project managers regarding UTRC services and the ability to assist and conduct research under their SPR funding, which is available. Dr. Camille Kamga, Director of UTRC and other UTRC PIs made a presentation to NYSDOT project managers and discussed UTRC capabilities and previous projects. The NYSDOT coordinator of SPR funding encouraged them to think about possible projects that they might need.

UTRC met with the Port Commerce of the Port Authority of NY and NJ, NJDOT and NYMTC to discuss potential studies.

### **Issuing RFPs**

On July 1, 2013, UTRC issued a call for pre-proposals with an August 31, 2013 due date. Topics were allowed in all area related to UTRC's theme, Planning and Managing Transportation Systems in a Changing World and addressing any one of our focus area categories. Due to the expectation of a large number of submissions, UTRC chose to conduct the proposal selection process in two phases for research proposals - the pre-proposal and full proposal stages.

Of the 67 full proposals received, 53 were in the research category, seven in educational transfer, and 6 in the emerging scholars (previously minigrant) group. Emerging Scholars and Educational transfer projects were evaluated by external reviewers and selected in just a single phase based on scores and availability of funds. Awards for these were made and the subcontract processes between the consortium schools and RF CUNY are underway at this time.

The pre-proposals were also sent out for external review for evaluation and selection of those that would be invited to submit a full proposal. Invitations to the PI for the submission of full proposals were made on November 12, 2013 with a due date of December 23, 2013. Selections are expected by early February 2014.

### Recently Selected Emerging Scholars and Educational Tech-Transfer Projects

- Freight Demand Forecasting in the Context of the Built Environment: An Integrated Land Use - Buffalo
- Development of the Household Activity Pattern Problem as an Activity-Travel Simulator - Buffalo
- 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

- Relationships between public-private financing, speed, and rail infrastructure development - John Jay
- PPS-AQ and PPS-CMP hosting, maintenance, and technical support – Cornell
- Panama Canal Expansion and the Economic Impacts on New York and New Jersey States – Buffalo
- Laser Scanning Aggregates for Real Time Property Identification – Rowan
- VREF - Year 1 – CCNY/Columbia/Hofstra/Buffalo

Another research activity involved a large, three-year NYCDOT/NYS DOT -funded proposal, (\$1,500,000) , Coordinated Intelligent Transportation Systems Deployment in New York City (CIDNY). The RFP was issued by the agencies and circulated by UTRC to all consortium schools. Sixteen proposals were received. In collaboration with FHWA NYC Metro Office, NYSDOT, and NYCDOT, UTRC has been involved with appointing a selection committee and organizing an upcoming meeting to select first-year projects under the CIDNY program. The current RFP to fund proposals during 2014 calls for several different task assignments including development of a multi-agency, multi-modal construction management tool, data collection of vehicular movement, development of an introductory course on Traffic Incident Management (TIM) response for transportation operators, strategic intelligent transportation systems (ITS) deployment plan for New York City, research on pedestrians and cyclists safety using ITS technology in New York City, and development of a data storage and access platform for MTA BusTime data. These proposals were due by July 31, 2013. Project selection and start-up is expected to occur during the next quarter.

b. Education and workforce development - During this period, UTRC accomplished the following:

- NYMTC/UTRC September 11<sup>th</sup> Memorial Program Academic Initiative- The two new awardees for 2013-14 began their internships.
- AITE-Students selected under AITE began their research and education.

The following education and workforce development initiatives are ongoing:

- The Outdoor Lightning Institute - RPI
- Improving Transportation Engineering Education by Applying the Inverted Classroom Concept - UPR
- Major Workforce Challenges Confronting New York City's Transit Industry - CUNY GC
- Preparing Emerging Leaders in Transportation Innovation – NYU

c. Technology Transfer

The following events were held during this reporting period.

#### **Board Meeting December 5**

UTRC held its Board Meeting on December 5, 2013 and made several presentations about past work, the end of initial SAFETEA-Lu grant and the beginning of grant procedures under MAP

21. UTRC's newest members, Manhattan College and the New York Institute of Technology were introduced.

- Reshaping Metropolitan America; Development Trends and Opportunities to 2030, September 20, 2013
- Last Mile Freight Delivery: Use of Cleaner Mobility Vehicles October 4, 2013 (NYSERDA/NYS DOT-sponsored)
- Parking Reform Made Easy, November 8, 2013 (Visiting Scholar Seminar)
- Learning from America's Mistakes: Moscow and Abu Dhabi Defining the Great 21<sup>st</sup> Century Metropolis (November 15, 2013 (Visiting Scholar Seminar

Newsletter Publications were released during the reporting period in the spring and summer of 2013.

The 2013 annual report was disseminated in December 2013.

A Press release for our NYSERDA/UTRC pneumatic tubes project was circulated to organizations

Proceedings document for Last Mile Freight Delivery Conference

Other Technology Transfer activities funded by this grant and led by member institutions:

- Narratives of transportation planning: An archive of documents and oral histories - Rutgers
- Mobile Information Technology for Improving Traffic Management at Planned Special Events – RPI
- Improving Freight System Performance in Metropolitan Areas - RPI

#### 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 11<sup>th</sup> Memorial Program to select current students to serve in internship positions in regional and local agencies to enhance their educational experience. The eighth year of this program will begin in September with two additional interns from Columbia University and the City University of New York. We also fund the AITE program to offer undergraduate and graduate scholarships to talented students to pursue either a traditional civil engineering degree leading to a graduate transportation program or an undergraduate program in a related field (e.g., planning, public administration) tailored to transportation. The graduate scholarships attract both bright students finishing up bachelor degrees and working transportation professionals who want to expand their transportation expertise. As noted above 12 awards (7 university, 5 agency) have been granted for the upcoming academic year.

#### D. Dissemination of results:

Spring and Summer 2013 Newsletter

E. Plans for next reporting period: We will continue with all of our programs and research and plan to hold a GPS conference, the 3<sup>rd</sup> Annual Connected and Autonomous Vehicle symposium,



and the Globalization of Brooklyn Water Conference. We are also planning to implement short video clips of PIs discussing completed research projects.

## **2. Products**

Products this period have included newsletters, release of the 2013 annual report, press releases announcing final reports that were submitted and several papers in professional journals.

<b>3. Participants and Collaborating Organizations</b>						
<b>Partner (University)</b>	<b>Agency Sponsor</b>	<b>Location</b> (see attached)	<b>Project(s) (# funded)</b>	<b>Contribution</b>	<b>Other Collaborators</b>	<b>Role</b>
Clarkson	N/A	Potsdam, NY	Faculty-initiated (1)	research		
Cornell	N/A	Ithaca, NY	Faculty-initiated (1)	research		
CUNY:						
Queens College	N/A	Flushing, NY	Faculty-initiated (1)	research		
John Jay	N/A	New York, NY	Faculty-initiated (1)	research		
CCNY	NYSERDA	New York, NY		research	Revolution Rickshaws, NYCDOT	coordinates participants, advisor
CUNY Graduate Center NYC Labor Information Service	N/A	New York, NY	Faculty-initiated (1)			
Manhattan College	N/A	Bronx, NY				
NJIT	N/A	Newark, NJ	Faculty Initiated (2)	research		
NJIT	NYSDOT		Agency Initiated (1)	research		
NYIT	N/A	New York, NY				
NYU	N/A	New York, NY	Faculty Initiated (2)	research		
RIT	N/A	Rochester,	Faculty-	research		

3. Participants and Collaborating Organizations						
Partner (University)	Agency Sponsor	Location (see attached)	Project(s) (# funded)	Contribution	Other Collaborators	Role
		NY	initiated (1)			
Rowan University		Glassboro, NJ	Faculty-initiated (1)	research		
RPI	N/A	Troy, NY	faculty initiated (3)	research	NYSDOT	
RPI	NYSDOT		Agency Initiated (1)	research	Siemens, Sensys,	technology/devices
Rutgers	N/A	New Brunswick, NJ	Faculty-initiated (1)	research		
Rutgers	NJDOT		Agency-Initiated (3)		For Landfill Closure: Birdsall and the Richard Stockton College Coastal Research Center,	
SUNY:						
Buffalo		Buffalo, NY	faculty Initiated (3)	research		
Buffalo	NYSDOT		Agency Initiated (1)	research	NYU/Poly, General Dynamics Information Technology	research, technology
Stonybrook	N/A	Stonybrook,	faculty Initiated	research		

3. Participants and Collaborating Organizations						
Partner (University)	Agency Sponsor	Location (see attached)	Project(s) (# funded)	Contribution	Other Collaborators	Role
		NY	(1)			
Maritime	N/A	Throggs Neck, NY	faculty Initiated (1)	research	Halcrow, Douglas Westwook, CWS and Kaan Ozbay (Rutgers)	
Stevens Institute of Technology	N/A	Hoboken, NJ	Faculty-initiated (1)	research		
Syracuse		Syracuse, NY	Faculty-initiated(1)	research		
University of Puerto Rico	N/A	Mayaguez PR	faculty initiated(4)	Research		
Agency Partners:						
NYSERDA				Research sponsor	CCNY	
NYMTC		New York, NY		education (Sept. 11th Memorial Program)	UTRC	
NYMTC		New York, NY		sponsor	UTRC	
NYS DOT		Albany, NY		research	UTRC	
NJ DOT		Ewing, NJ		Research sponsor, tech transfer	UTRC	
NYCDOT		New York, NY		Advisor	UTRC	

3. Participants and Collaborating Organizations						
Partner (University)	Agency Sponsor	Location (see attached)	Project(s) (# funded)	Contribution	Other Collaborators	Role
Port Authority of NY and NJ		New York, NY		General sponsor collaboration	UTRC	
ITS-New York				education, tech transfer	UTRC	

<u>Partner</u>	<u>Street</u>	<u>City, State, Zip</u>
Clarkson	8 Clarkson Avenue	Potsdam, NY 13699
Cornell	Cornell University	Ithaca, NY 14853
CCNY	160 Convent Avenue	New York, NY 10031
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 Buffalo	12 Capen Hall	Buffalo, NY 14260
Stony Brook	100 Nicolls Rd	Stonybrook, NY 11794
SUNY Maritime	6 Pennyfield Avenue	Throggs Neck, NY 10465
Stevens Institute of Technology	9th Street	Hoboken, NJ 07030
Syracuse University	303 University Pl #335	Syracuse, NY 13244
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		

<b>Projects b Partner</b>						
<b><u>Partner</u></b>	<b><u>Projects</u></b>					
<b>Clarkson</b>	Energy Efficient and Environmentally Friendly Concrete					
<b>Cornell</b>	The Effects of Public-Private Partnerships on Traffic Safety: Evidence From Mexico					
<b>CCNY</b>	Robotic Inspection of Bridges	Freight-Tricycle Operations	Assistance to NYMTC with Financial Planning	Support for NYMTC for CMAQ Application and Documentation		
<b>John Jay College</b>	Financing high speed rail in the U.S. and France: the evolution of public-private partnerships					
<b>Queens College</b>	Empowering Individuals to Make Environmentally Sustainable and Healthy Transportation Choices in Mega-Cities through a					

<b>Projects b Partner</b>						
<b><u>Partner</u></b>	<b><u>Projects</u></b>					
	Smartphone App					
<b>CUNY Graduate Center</b>	Major Workforce Challenges					
<b>NJIT</b>	Optimum Fund Allocation- Transportation Infrastructure	Metrics and Performance Response Functions for Assessment and Resilience of Urban Infrastructure Systems				
<b>NYU</b>	Use of Web-based Rider Input	Promoting Transportation Flexibility in Extreme Events	<i>Street Standards as Parking Policy: Identifying Residents' Willingness to Pay</i>			
<b>NYU(formerly NYU/POLY)</b>	Air Quality Impact of Traffic Congestion in Midtown Manhattan	Subsurface Imaging of Corrosion in Painted Steel Bridges				



<b>Projects b Partner</b>						
<b><u>Partner</u></b>	<b><u>Projects</u></b>					
<b>RPI</b>	Leveraging Brightness from Transportation Lighting Systems	The Role of Social Media in Improving the Safety and Efficiency of Traffic Operations	A GIS-based Performance Measurement System			
<b>RIT</b>	Analysis of Environmental, Economic and Infrastructure Impacts of Transportation Activities-High Volume Fracturing Operations-Marcellus Shale Formation					
<b>Rowen</b>	Visoelastic Mechanical Properties of WMA					
<b><u>Partner</u></b> <b>Rutgers</b>	<b><u>Projects</u></b> Planning Level Assessment of Greenhouse Gas Emissions	Modeling Disaster Operations	Effectiveness Based Pavement Preservation Selection Based on Statistical Analysis of Long-Term Payment Performance Data	Impact Analysis of Recreational Transit Services on Local Community Economic Development, Employment and Spending	Impact Analysis of Recreational Transit Services on Local Community Economic Development, Employment and Spending	Landfill Closure With Dredged Materials

<b>Projects b Partner</b>						
<b><u>Partner</u></b>	<b><u>Projects</u></b>					
<b>SUNY Buffalo</b>	Energy Savings from Transit Passes	Real-time Dynamic Pricing for Bicycle Sharing Programs	National Aviation Security to Cyberterrorism: An Integrated Framework to Quantify the Economic Impacts of Cyber-terrorist Behavior			
<b>Stonybrook</b>	Developing self-cleaning and air purifying transportation infrastructure components to minimize environmental impact of transportation					
<b>Maritime</b>	Off-Shore Wind Development					
<b>Stevens Institute of Technology</b>	Lessons from Hurricane Sandy for Port Resilience					
<b>Syracuse University</b>	Investigation of the Carrs Creek Geofam Project					

<b>Projects b Partner</b>						
<b><u>Partner</u></b>	<b><u>Projects</u></b>					
<b>University of Puerto Rico</b>	Improving Transportation Education	Data Collection and Econometric Analysis	Speed and Design Consistency	Automating the Reporting and Progress Monitoring...for Highway Construction Projects		
<b>Agencies:</b>						
<b>NYSDOT</b>	IIMS Staten Island Web and Smartphone Development, Deployment and Evaluation	Road Weather Information System (RWIS) Statewide Implementation Plan	ACS-Lite for Wolf Road			
<b>NYSERDA</b>	Freight-Tricycle Operations					
<b>NYCDOT</b>	Freight-Tricycle Operations					
<b>NJDOT</b>	Impact Analysis of Recreational Transit Services on Local Community Economic Development, Employment and Spending	Landfill Closure With Dredged Materials	Off-Shore Wind Development			

<b>Projects b Partner</b>						
<b><u>Partner</u></b>	<b><u>Projects</u></b>					
NYMTC	Tasks for New Major Projects	NYMTC Assistance with Financial Planning	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.

Impacts are expected from our new research projects as work continues.

#### 5. Changes/problems

Nothing to report

#### 6. Special reporting requirements

Nothing to report