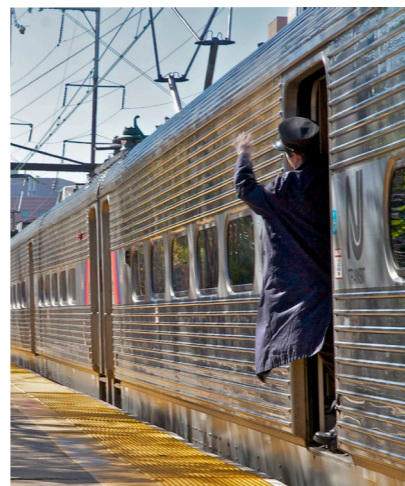


# 2013 ANNUAL REPORT

## ALAN M. VOORHEES TRANSPORTATION CENTER

RUTGERS

Edward J. Bloustein School of  
Planning and Public Policy



# OUR NAMESAKE



## ALAN M. VOORHEES

Alan Manners Voorhees (1922 – 2005) was a pioneering figure in the history of transportation planning. After serving with distinction in the Second World War, Mr. Voorhees received degrees in engineering and planning from the Rensselaer Polytechnic Institute and the Massachusetts Institute of Technology. Published in 1956, his paper “A General Theory of Traffic Movement” revolutionized travel forecasting by developing a gravity model to predict the distribution of urban trips based on land use intensity.

After ten years at the Automobile Safety Foundation, he founded his own consulting firm, Alan M. Voorhees and Associates, in 1961. The firm grew to include ten offices in the United States as well as offices in Caracas, London, Melbourne, Sao Paolo, Toronto and Zurich. Throughout the middle of the century, the firm planned new urban mass transit systems including Washington, DC’s Metro and MARTA in Atlanta, GA. In 1967, the firm merged with Planning Research Corporation, where Mr. Voorhees continued his work.

After leaving the consulting world, Mr. Voorhees served as Dean at the College of Architecture, Art and Urban Sciences at the University of Illinois Chicago and founded Southeast Atlantic Airlines, which now operates as Express Jet, the world’s largest regional carrier.

Mr. Voorhees was born in New Brunswick, New Jersey. He is a Fellow of the American Institute of Certified Planners and recipient of the American Society of Civil Engineer’s Harland Bartholomew Award for enhancing the role of engineers in planning and development. He was awarded the Bronze and Silver Stars for his service as a member of the US Navy’s Underwater Demolition Team during World War II.

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*Research and Technical Assistance efforts at VTC are made possible in part through sponsorship from the following organizations:*

- Federal Highway Administration
- Federal Transit Administration
- National Academy of Sciences
- NJ Department of Transportation
- NJ Division of Disability Services
- NJ Office of Emergency Management
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- NJ TRANSIT
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Transportation  
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# A MESSAGE FROM THE DIRECTOR



Since joining Rutgers University and the Voorhees Transportation Center over five years ago, I have seen the Center continue to grow and tackle new challenges, both in research and service to the community. We currently have nearly 30 staff and about 30 active projects, in a wide variety of areas. Of particular note in the last year is the integration of NJTIP – the New Jersey Travel Independence Program, a former non-profit – which aims to increase the self-sufficiency of older adults and those with disabilities in using the public transit network in New Jersey and the greater region. We have also been leading the efforts of our HUD funded project, Together North Jersey, and the development of a Regional Plan for Sustainable Development.

The coalition of stakeholders that comprise Together North Jersey includes twelve counties in North Jersey, five cities, the North Jersey Transportation Planning Authority, NJ TRANSIT, the NJ Office of Planning Advocacy, and a long list of non-governmental partners. This effort has already funded 18 local demonstration project technical assistance grants, 14 local government capacity grants, and eight small micro-grants to community-based groups working in local communities. The latter mainly represent traditionally underrepresented and disadvantaged populations not typically involved with sustainable planning initiatives.

Our Bicycle and Pedestrian Resource Center completed its twelfth year successfully providing technical assistance to local partners and conducting research on non-motorized transportation issues in New Jersey. This past year we held our second Complete Streets summit attracting 300 attendees from throughout New Jersey and worked with community groups that organized the first Cyclovia event in New Brunswick, with over 4000 participants. Research initiatives included an analysis of bicycle travel to some of the major rail stations in New Jersey and an assessment of how people value the investment in pedestrian and bicycle infrastructure that is being made in New Jersey.

The Safe Routes to School Resource Center, completing its eighth year of operation, continues to work with schools throughout the state to create safe walking and bicycling environments for students. Research efforts focused on continuing to work with schools, police departments and municipalities to train crossing guards throughout the state. The siting of schools in locations that are not easily accessible has been a persistent problem. Looking at historical siting patterns and crash analysis near schools, various recommendations have been made to improve the siting of schools in New Jersey.

Various competitive research projects conducted for the New Jersey Department of Transportation have been completed. These include development of the GASCAP model to assess greenhouse gas emissions from construction projects and our report on the benefits of transit oriented development. This past year we began a new project that will be working to develop guidelines for increasing the diversity of staff hired and retained by the New Jersey Department of Transportation. Our partnership with the Mineta National Transit Research Consortium is also continuing and final reports for many of the completed projects will be released in the next few months.

I have just listed a small sampling of the many projects completed in the last year and currently underway. More information on all of our activities is available on our website (which will be undergoing a major upgrade in the next few months).

I would also like to take this opportunity to thank our supporters that have given generously to the Center over the past year. The gifts of support we receive are integral to growing our research program and supporting the students we are educating. In the next year we hope to expand our efforts at attracting funding for high quality research work while continuing to support our service mission to the State of New Jersey and beyond.

Sincerely,

Robert Noland

Professor of Transportation Planning and Policy

Director, Alan M. Voorhees Transportation Center

# ABOUT THE VOORHEES TRANSPORTATION CENTER



The Alan M. Voorhees Transportation Center (VTC) at Rutgers, The State University of New Jersey, is a national leader in the research and development of innovative transportation policy. Established in 1998, VTC is one of 18 research centers within the Edward J. Bloustein School of Planning and Public Policy.

In the context of New Jersey as a living laboratory, VTC seeks to lead an informed public discussion of transportation policy issues and is committed to conducting research and finding innovative approaches to transportation problem solving. Through its research, VTC identifies and explores transportation linkages to other public policy areas, such as economic development, social policy, land use, political governance and finance.

VTC also participates in multiple educational activities, through professional training for the transit industry at the National Transit Institute, the transportation curriculum at the Bloustein School, and through the New Jersey Travel Independence Program, which provides travel instruction programs for older adults, people with disabilities and other transportation-disadvantaged populations.



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## ALAN M. VOORHEES LIBRARY AND ORAL HISTORY ARCHIVE

VTC staff are engaged in creating the Alan M. Voorhees Library and Oral History Archive to document plans, projects and personalities who helped build our modern transit system and interstate highway system. This archive is intended to record the contributions of professionals in the field of transportation planning and policy, in particular those who have made a significant contribution to the field throughout their career and would like to make available their records for historical research. The archive emphasizes significant New Jersey luminaries as well as former key personnel from Alan M. Voorhees and Associates, who were instrumental in many significant transportation projects around the world. The goal of the archive is to ensure the future accessibility of these records, documents, and accumulated knowledge for historical research.

Materials have been collected and cataloged with assistance from the Rutgers Library. In addition to archival material, VTC is conducting a series of oral history interviews. These interviews highlight—in their own words—the significant achievements of noteworthy

transportation professionals from A.M. Voorhees and Associates and others to New Jersey, and beyond. The interviews will be made available as part of this archive. Three video interviews, with a total of over 10 hours of unedited footage, have been collected and transcribed so far. Two more interviews are scheduled and will be completed when funds become available. In addition, eight boxes of documents and materials have been cataloged and will be transferred to the Rutgers Library. Staff at VTC, led by Dr. Robert Noland, and the Rutgers Libraries under the guidance of Thomas Frusciano, Rutgers University archivist, are currently working on building an infrastructure to make the archival documents, interview videos, and transcripts available online. This work is being undertaken with support from the VTC Advisory board and with funding from the University Transportation Research Center (UTRC) and private donors. Additional funds are being sought from private donations and public grants to continue collecting and cataloging archival materials as well as recording and transcribing additional oral histories.

# RESEARCH HIGHLIGHTS

## TOGETHER NORTH JERSEY.

### CONNECTING PEOPLE, PLACES AND POTENTIAL

In January 2012, the Edward J. Bloustein School for Planning and Public Policy at Rutgers University, led by researchers at the Voorhees Transportation Center, received a \$5 million Sustainable Communities Regional Planning grant from the US Department of Housing and Urban Development. Grant funds were used to create Together North Jersey (TNJ) with representatives from 12 participating North Jersey counties and five cities, the North Jersey Transportation Planning Authority (NJTPA), NJ TRANSIT, the NJ Office of Planning Advocacy, and several non-governmental

organizations. TNJ is charged with preparing a Regional Plan for Sustainable Development (RPSD) that will define what “sustainable community development” means in North Jersey and will identify ways to align existing plans, regulations, investments and incentive programs at all levels of government to improve economic and environmental conditions while promoting equity and resource efficiency. To do this, TNJ is drawing upon the expertise of its core members, but is also undertaking a robust program of public involvement and stakeholder outreach to gain input and feedback on the RPSD as it is developed.

Together North Jersey is also leveraging and aligning an additional \$5 million in local matching funds from NJ TRANSIT and NJTPA, among other parties. Almost half of these funds are being invested at the local level to build capacity and advance local priorities. Together North Jersey has already awarded 40 local project grants, including strategic planning, conceptual design, feasibility-type investigations and training on topics such as economic and workforce development, complete streets implementation, transit-oriented development, crime prevention through environmental design, public bike-sharing, recreational trails, parklet design standards and green infrastructure implementation, among other initiatives. Below are just a few of the local project TNJ has made possible:

- **Perth Amboy Bay City Transit District Strategy:** Building on the Perth Amboy Economic Growth Strategy completed in 2012, TNJ sponsored this local demonstration project to create a new plan for the area within the half-mile radius of the Perth Amboy train station. This project will greatly support the city in their goal to create a transit overlay district and achieve Transit Village designation.
- **Inner Morris and Essex Strategic Corridor Plan:** This project brought together the communities of Orange, East Orange and Newark, forming the Urban Essex Coalition for Smart Growth. The coalition has created a new plan for the shared Morris and Essex Rail Line, Main Street, and Route I-280 corridors based around three priorities: increasing quality of life; using connectivity to drive economic development; and strengthening connections to opportunities
- **United Way of Passaic County’s Hunger Free Community Initiative:** This local government capacity grant resulted in the completion of a county-wide food security assessment that engaged over 970 county residents. To complement the Initiative’s regional sustainable and equity focus planning process, United Way of Passaic County conducted a GIS-assisted, participatory mapping project to identify gaps in food access to assist in developing strategies to increase access to healthy foods.

These local investments are creating “on-the-ground” success stories and models for local planning and implementation that will guide the way for similar efforts as TNJ moves from planning to implementation in the years ahead. Together North Jersey will continue to provide an invaluable coordinating framework to advance implementation of the RPSD once it is developed through the individual and collective actions of its members.



## RESEARCHER PROFILE **DAVID AIMEN**



My guiding motivation has always been finding ways to improve the equity of transportation planning and to use my research and planning skills to contribute to understanding the many complexities of environmental justice and the socioeconomic impacts of transportation decision making. Transportation systems and services deliver access and mobility, connecting us to jobs, schools, healthy food choices, recreation, health care and

other destinations vital to securing opportunities for ourselves and our families. But, how these systems and services were sited and designed – and the priority we give today to how they are maintained and operated – continues to have an extraordinary influence on the economic vitality, health, and safety of our cities and towns. The cumulative and adverse effects of prior transportation and land use decisions continue to diminish the livability of communities in New Jersey, isolating residents in some places within our cities and inner ring suburbs to areas of “low-opportunity” and high environmental “stress.”

As part of the management team for Together North Jersey (TNJ) we are preparing a Regional Plan for Sustainable Development. The TNJ initiative integrates government and community and private stakeholders, offering an integrated framework for identifying and addressing the fundamental challenges of building sustainable communities. This project has been stimulating for me as it provides an opportunity to build a path that will consider the needs of disadvantaged communities and provide a plan for making them more sustainable.

Environmental justice and equity considerations are also central to my current research and technical assistance initiatives at VTC. With the John J. Heldrich Center, I am a co-PI for research for NJDOT, *Increasing Representation of Females and Minorities in the NJDOT Workforce* which will result in a strategic plan for ensuring diversity in the recruitment and retention of employees. For an NCHRP study, *Environmental Justice Analyses When Considering Toll Implementation Changes*, expected to begin in the summer of 2014, I will be part of a multi-firm team tasked with creating a guiding framework to identify and address the range of environmental justice issues that surface as tolling solutions become increasingly prevalent across the United States.



## **MEASURING BENEFITS OF TOD**

As part of VTC’s ongoing assessment of Transit Oriented Development in New Jersey, VTC recently completed a final report titled *Measuring the Benefits of Transit Oriented Development*. This project involved the assessment of the main benefits associated with the development of TOD in New Jersey. This included how TOD can affect travel, civic engagement, public health, safety, and the economic value of property near a station. In most cases we found beneficial impacts, including more walking and transit use relative to driving, indicators of increased civic engagement and self-reported health, as well as enhanced value of property from both the development associated with TOD and station access.

In addition, VTC in partnership with NJ TRANSIT recently launched NJTOD, a new web portal for tracking and disseminating news and research on transit oriented development in New Jersey and throughout the country. In addition to being the home of the Transit-Friendly Development Newsletter, NJTOD houses many of VTC’s studies on transportation and land development.

Visit the website at [www.njtod.org](http://www.njtod.org)

# RESEARCH HIGHLIGHTS



## NEW JERSEY 2013 BICYCLING TO RAIL TRANSIT BENCHMARKING REPORT

The objective of this research was to (a) establish a statewide benchmark of bicycling to rail stations for transit trips, (b) prepare an inventory of bicycle parking amenities such as lockers and racks at stations, and, (c) comprehend the needs and barriers of persons who currently bicycle to train stations. As a part of the study, an inventory of bicycle parking amenities at 214 New Jersey rail stations was prepared. The effort also included counts of parked bicycles at stations and documentation of nearby bicycling infrastructure, such as bicycle lanes. Another task included counts of bicyclists arriving and departing train stations. This effort was restricted to 35 stations with the highest bicyclist volumes recorded by past NJ TRANSIT surveys. The stations with the highest bicyclist volumes were Westfield, New Brunswick, Princeton Junction, Newark Penn, Collingswood, Summit, Cranford, and Metuchen. An intercept survey of persons who bicycled to stations was also conducted at selected stations. Responses were received from 158 persons, intercepted at 22 stations, who were traveling to or from stations. Analysis of the survey revealed that most people who bicycle to stations do so for health, fitness and enjoyment. The survey also revealed that the trip

origins of more than half of the bicyclists were between 1 and 3 miles from stations. Finally, a focus group involving eight people who bicycle to stations provided insights about perceived bicycling needs and barriers. Some focus group participants perceived bicycling to be superior than walking to a station or driving, others considered themselves “captive” bicyclists, that is, they would prefer to drive, but no parking is available at the station. Several participants expressed dissatisfaction with road conditions around stations and others were dissatisfied with bicycle parking at stations. A final report was prepared and submitted to NJDOT.





## EVACUATION PLANNING: HELPING NEW JERSEY PREPARE FOR NATURAL DISASTERS

In 2011, Tropical Storm Irene prompted the first large-scale evacuation in New Jersey's modern history. As the storm approached, VTC researchers were in the fourth year of a five-year effort to enhance the State's preparedness and capacity to undertake large-scale evacuations in response to both man-made and natural disasters. This multi-year evacuation planning project was funded by the New Jersey Office of Emergency Management (NJOEM) and the New Jersey Office of Homeland Security and Preparedness (NJOHSP). The project produced a series of Regional Emergency Mass Evacuation Plans (REMEP) that cover all 21 counties in the State. The plans were informed by research, modeling and extensive outreach to emergency management professionals statewide as well as the real-world experiences of the VTC research team who helped to staff the State Emergency Operations Center (SEOC) during Irene.

In the wake of Tropical Storm Irene, VTC researchers also conducted post-disaster surveys and outreach that helped to document data and information about local experiences during the evacuation. That data in turn helped to validate the planning assumptions embedded

in the plans. VTC researchers also participated as core members of the state agency team that established New Jersey's first-ever state-supported shelter system and wrote the New Jersey Coastal Storm Emergency Bus and Paratransit Vehicle Mobilization and Operations Plan. In October 2012, that plan was used to support evacuations when Superstorm Sandy, the second costliest Atlantic hurricane in US history, made landfall near Brigantine, New Jersey.

Since Sandy, VTC has been retained by the New Jersey Department of Transportation (NJDOT) to support the NJDOT Office of Emergency Management to accomplish its responsibilities under the State Emergency Operations Plan. VTC researchers are assisting NJDOT to: improve its communication and coordination with other transportation agencies and authorities during times of emergency; clarify and formalize the way NJDOT personnel support emergency operations during weather events and other disasters; and help ensure the State's transportation infrastructure and services are resilient to extreme weather events and other types of disasters.

# RESEARCH HIGHLIGHTS



## THE GASCAP MODEL

After several years of development, VTC has completed work on the Greenhouse Gas Assessment Spreadsheet for Capital Projects (GASCAP) model, which allows planners to analyze the life-cycle greenhouse gas emissions associated with the construction of transportation infrastructure. This model is the most comprehensive tool yet available to evaluate different material inputs to a road construction project, different project staging approaches, and the impact of project maintenance over time. Selected case studies suggest that most of the greenhouse gas emissions associated with road construction are embedded in the upstream emissions of materials production. State DOT's can best reduce emissions by staging projects to minimize disruption or diversions of traffic.

The model is available at [www.gascap.org](http://www.gascap.org)



## RESEARCHER PROFILE CHARLES BROWN

I am both an urban planner and a researcher. I have worked in rural, suburban, and urban areas across three states: Mississippi, Florida, and New Jersey. Collectively, this experience has deepened my love for all people and places and has solidified my commitment to strengthening the relationship between transportation and community development. This experience has also enriched my excitement for and expertise in a number of topics, including bicycle and pedestrian mobility and safety, transportation and the built environment, and transportation and social equity.



Since joining VTC, I have had the pleasure of working closely with the New Jersey Department of Transportation (NJDOT) and a plethora of other municipal, county and state government agencies, for-profit, and non-profit organizations. These collaborations — inclusive and equitable in nature — have advanced projects, policies, and “big ideas” to improve overall community well-being (economic, social, environmental and cultural). Some of the notable projects and initiatives resulting from these collaborations focus on complete streets policy adoption and implementation, statewide bicycle and pedestrian safety, bicycle rental and sharing, crime prevention through environmental design, multi-modalism, economic impacts of active transportation, and health in all policies.

As we venture into 2014 and beyond and face the challenges of rapid urbanization, climate change, demographic shifts, new economies, and advances in technology, I will remain committed to making places safer and more pedestrian-, bicycle-, and transit-friendly. I will also work collaboratively and tirelessly to continue to advance research, projects, and initiatives that benefit all communities—regardless of social, economic, or ethnic backgrounds.

## THE NEW JERSEY BICYCLE AND PEDESTRIAN RESOURCE CENTER



In 2013 the New Jersey Bicycle and Pedestrian Research Center (BPRC) continues to grow, expanding its mission through research and outreach to motivate, educate, and empower citizens to create safer and more accessible walking and bicycling environments through cutting edge research, education, and sharing of resources. Housed at VTC, BPRC assists public officials, transportation and health professionals, and the public in creating a safer and more accessible walking and bicycling environment through primary research, education and dissemination of information about best practices in policy and design. The Center is supported by the New Jersey Department of Transportation through funds provided by the Federal Highway Administration.

BPRC conducted its annual review of pedestrian crash data in New Jersey. The analysis addressed the characteristics and geographical distribution of vehicle-pedestrian crashes and found that a) many more drivers than pedestrians involved in crashes are from out-of-town; b) lower pedestrian danger index (PDI) values —indicating greater pedestrian safety — tend to be in urban areas whereas those with high PDI values tend to be located in suburban and rural areas; c) younger people were more likely to be injured in crashes, while older adults are more likely to be killed; d) municipalities with low PDI values tend to have high non-white populations and low median household incomes; and e) there is a significant relationship between posted speed limit and crash severity.

BPRC submitted to NJDOT its recommendations regarding interpretation of the state's electric bicycle laws. The recommendations included: 1) that the Department of Transportation request that the Motor Vehicle Commission begin discussions of whether electric-powered bicycles can be registered effectively in accordance with existing state law, whether MVC's pertinent regulations ought to be modified, and, if so, what modifications ought to be made; 2) that the Department of Transportation request the Motor Vehicle Commission to join it in asking the Office of the Attorney General of the State of New Jersey to determine whether the Consumer Product Safety Act, supersedes MVC regulations of electric-powered bicycles; and 3) that the Department of Transportation support proposed legislation to regulate the operation of low-speed electric bicycles.

In October, BPRC coordinated with the city of New Brunswick and others to hold and evaluate New Brunswick's initial Ciclovía event. BPRC's evaluation made several key findings. First, approximately 4,200 people attended the event. Second, 46.1 percent of all survey respondents (n=317) live in New Brunswick and an additional 16.1 percent live in zip codes immediately adjacent to New Brunswick. Third, the majority of those surveyed walked or bicycled, and over 60 percent of all those who responded exercised longer at the Ciclovía than they normally do. Some 75 percent of those surveyed were very satisfied with the event and would support more city funding for it.

BPRC hosted its second New Jersey Complete Streets Summit in October 2012. Approximately 300 people attended the summit, including elected officials, engineers, planners, and health and environmental professionals. BPRC and NJDOT awarded five municipalities for their individual success in complete streets implementation.

Finally, BPRC continues to offer outreach and resources to New Jersey communities through its Ambassadors in Motion program (NJAIM), and maintaining the NJ Walks and Bikes Blog and the BPRC website.

BPRC is on the web at [www.njbikeped.org](http://www.njbikeped.org)

# SERVICE AND TRAINING

## THE NEW JERSEY TRAVEL INDEPENDENCE PROGRAM (NJTIP)

Since 2007, NJTIP (New Jersey Travel Independence Program) has provided innovative travel instruction programs with the goal of increasing the mobility and self-sufficiency of people with disabilities, older adults, and other members of the New Jersey community by empowering them to use the public transit system safely and independently. In January, 2013 NJTIP became part of the Alan M. Voorhees Transportation Center and adopted the new name, “NJTIP @ Rutgers.” In its new home, NJTIP @ Rutgers plans to expand its programs statewide and collaborate with VTC researchers in areas including: safe streets, pedestrian safety, employment-related mobility, and senior mobility.



The NJTIP concept was developed during a two-year pilot program funded by NJ TRANSIT, which led to the development of a standardized curriculum designed to provide mastery of 27 distinct skills needed for safe and independent travel. NJTIP uses techniques and tools developed or endorsed by Easter Seals PROJECT ACTION and the Association of Travel Instruction. These methods have been tailored to fit the NJ TRANSIT bus and rail systems.



The travel training work conducted by NJTIP throughout New Jersey not only teaches people with disabilities the skills necessary to travel independently on public transit, it also helps them develop expanded educational, economic, social and recreational opportunities. This is illustrated in an excerpt from a recent thank you letter received from a graduate’s parents, about their experience with their son’s NJTIP @ Rutgers Travel Instructor.

**“...we were so worried about Matthew not being able to handle the bus routes but her reassurance in his capabilities outweighed our skepticism. She picked up on his weaknesses and gave him the confidence to move forward without any fear... She understood how important it is to us to have Matthew be as independent as possible. My son takes four buses a day to get to and from school... He is learning to be patient when the buses are late which is carrying over into his everyday routine...”**

In addition to one-on-one travel training and group travel instruction for people with disabilities and senior citizens, NJTIP @ Rutgers has also developed the Connect to Transit professional development curriculum with researchers from the Alan M. Voorhees Transportation Center. This curriculum helps professionals understand the variety of transportation services available in a given locale. These workshops provide tools to help participants understand how to use different services, navigate the local transportation systems independently, and then serve as informed transit advocates when working with their own clients.

More information on NJTIP @ Rutgers is available on the web at [policy.rutgers.edu/vtc/njtip](http://policy.rutgers.edu/vtc/njtip)



## CURRENT NJTIP PROJECTS

Through a contract with NJ TRANSIT Access Link, NJTIP @ Rutgers provides one-on-one training in Essex, Union, Somerset, Morris, Bergen, Passaic and Hudson Counties. There were 268 graduates from the one-on-one program through December 2013.

Through federal New Freedom grants administered by the Local Programs Office of NJ TRANSIT, NJTIP @ Rutgers provides targeted outreach, group training and travel instruction to people with disabilities and senior citizens in Passaic, Hudson and Union Counties. Through these contracts more than 750 individuals were contacted through outreach, 450 individuals received training, and 319 professionals participated in Connect to Transit workshops through October 2013.

NJTIP @ Rutgers has a history of working closely with schools and programs that serve students with special needs, and is working with The Children's Institute to implement a year-long mobility curriculum on site. Additional school-based projects include Connect to Transit training with Union County's Educational Services Commission, and in-class and in-the-field (on the bus) work with students from Edison High School, Hackensack High School, and Union High School, among others.

Since its arrival in January 2013 NJTIP @ Rutgers and VTC have received new grant awards from the Kessler Foundation to develop a transportation education program for people with Traumatic Brain Injury and from the Partners for Health Foundation to develop an aging in place mobility program in Montclair, NJ. Planned expansion includes Middlesex, Mercer and Burlington Counties, with funds anticipated in FY 2014-15.



# RESEARCH CENTER



## NEW JERSEY Safe Routes to School

New Jersey Safe Routes to School (SRTS) is a statewide initiative supported by the New Jersey Department of Transportation to create safer and more accessible environments for students to walk and bicycle to and from school. In 2013, the New Jersey SRTS Resource Center – which is housed within the Voorhees Transportation Center – conducted several activities to meet its mission of empowering communities to overcome barriers for children walking and bicycling to school.

Research conducted in the last year includes an assessment of students' perceptions of safety in the built environment. Students rated a series of photographs in a visual survey and identified elements of safety in qualitative discussions. Findings suggest students perceived being near adults, traveling in groups, and using crosswalks as significantly safer and seek integration of these elements into their environments to improve safety. In addition, research was conducted on the relationships between gender and youth bicycling behavior. Despite having the same opportunity to bicycle as boys, girls do so less frequently. Findings further show this pattern is established as early as age ten and persists through adulthood.

Two studies are highlighted elsewhere in this annual report. These are our multi-year crossing guard research and training program to educate police on best practices for training school crossing guards. We also evaluated historical school siting decisions and the number of youth pedestrian crashes as they relate to characteristics of schools built during different decades. Schools built in the early 1900s and those built after 1980 have higher youth pedestrian crashes than those built in the 1950s-70s.

Another important SRTS activity is managing NJ's Regional SRTS Coordinators who promote and implement SRTS events and plans and are located in Transportation Management Associations throughout the state. The Resource Center also awards schools and municipalities that have sustainable programs through an annual bronze, silver and gold level recognition program.

Information about New Jersey Safe Routes programs and resources is available at [www.saferoutesnj.org](http://www.saferoutesnj.org)







## A STRATEGY FOR GETTING PEOPLE TO WORK

Principal investigator Andrea Lubin and senior researcher Stephanie DiPetrillo completed a research study focused on transportation equity concerns. This multi-year study was funded by the New Jersey Department of Human Services, Division of Disability Services and the Centers for Medicare and Medicaid Services and sought to address transportation related issues affecting a dramatically underrepresented segment of the US labor market: persons with disabilities.

A Strategy for Getting People with Disabilities to Work focused on both in-state and nationwide best practices and innovative methods to expand and leverage financial and other resources available to improve and enhance community transportation services for people with disabilities, particularly those seeking employment. New Jersey's community transportation providers – like many of their peers nationwide – have been coping with economic difficulties in maintaining the life-enhancing and in many cases life-sustaining services they provide to the transportation disadvantaged community.

Undertaking both primary and secondary research that included key informant interviews, a national online survey of community transportation providers, and focus groups with New Jersey consumers with disabilities seeking employment, the team developed a series of recommendations for county providers seeking to maintain and enhance their services.

Core recommendation categories focused on the need for providers and other community stakeholders to pursue the following:

- Program evaluation;
- A variety of grant funding and non-grant funding opportunities;
- Legislative and regulatory opportunities; and
- Operational efficiencies.

## FACULTY PROFILE MICHAEL SMART



My current research explores the ways in which social networks embedded in particular neighborhoods of affinity – such as immigrant neighborhoods and gay and lesbian neighborhoods –

influence the activity patterns of those who live in those neighborhoods. As part of this research agenda, I have examined the extent to which immigrant neighborhoods across the country function as “cities-within-cities,” developing techniques for describing the inward- or outward-focus of neighborhoods. I think this research helps to remind us that neighborhoods are social phenomena as well as physical places. This analytic lens may, for instance, help us understand why two physically similar neighborhoods may have considerably different travel activity and travel patterns.

Other research projects I am currently working on include an assessment of public participation processes related to transportation projects in diverse communities, a study of the declining automobile usage of young people in the ‘developed’ world, and an examination of the effects of gasoline price volatility on the public's support for public transportation.

I received my PhD from the Department of Urban Planning at UCLA's Luskin School of Public Affairs in 2011, as well as a Master's degree in City and Regional Planning from the University of Pennsylvania in 2006 and a Bachelor's degree in German from Yale in 2000.

# RESEARCH HIGHLIGHTS



## CROSSING GUARD RESOURCES AND TRAINING

Crossing guards play a vital role in the lives of children who walk or bike to school each day. At the same time, the position of crossing guard is one of the most dangerous of municipal jobs due to slips, trips and falls and crashes involving motor vehicles. In an effort to address safety concerns for crossing guards and the children they cross, the New Jersey Safe Routes to School Resource Center is developing a uniform, comprehensive statewide crossing guard training program and resources for police departments. The New Jersey Department of Transportation and the New Jersey Division of Highway Traffic Safety are funding this initiative.

A working group, comprised of New Jersey transportation, law enforcement professionals, and others, has contributed to development of the crossing guard training program. Other critical partnerships were established with the police training academies in Essex, Middlesex, and Burlington Counties to host trainings and with the OSHA division of the New Jersey Department of Health which supports crossing guard training as it relates to occupational safety.

In previous years, VTC conducted research including traffic safety officer interviews, crossing guard focus groups, and a review of best practices nationwide. These efforts formed the basis for the New Jersey Crossing Guard Training Manual for Supervisors and the train the trainer presentation designed in 2013. Crossing guard supervisors participated in three regional pilot train the trainer sessions. Discussion in these sessions helped to

identify issues that are confusing or where conflicting guidance is given. VTC received participant feedback through questionnaires, gauged the effectiveness of the training through use of a pre- and post-test quiz, observed a crossing guard training, and made changes to the Manual and the training materials in response to participant questions and comments.

Views of the Crossing Guard Resource Center webpage on the NJ SRTS website increased substantially this year as crossing guard supervisors accessed the information provided. The model policy and post observation report have proven to be particularly useful resources. Supervisors trained by VTC had access to the Crossing Guard Training PowerPoint presentation. Officers provided VTC with the results of the crossing guard pre- and post-training quiz and feedback on their training experience.

VTC created and distributed two tip sheets to every crossing guard in New Jersey as a reinforcement of training. Crossing guard supervisors commented favorably on these resources.

In the coming year, VTC anticipates offering additional regional train the trainer sessions, and developing new crossing guard training resources including a training video, photo resources, and additional tip sheets. VTC will explore the certification process for the training program and will address the particular challenges of crossing guard training in larger cities.



## HISTORIC ANALYSIS OF SCHOOL SITING IN NEW JERSEY

When schools are located far from homes, the likelihood that children walk or bicycle to school diminishes. School siting policies and practices that affect the size and location of schools can have serious consequences not only on rates of walking and bicycling, but also on children's safety, roadway congestion, greenhouse gas emissions, community health and on travel costs due to the need to bus and drive students to and from school. Previous research has shown that, on average, New Jersey students live closer to schools than students in the country as a whole, yet the proportions of students walking and being driven to school are virtually the same in the state as in the rest of the country. New Jersey students appear to walk less, in part, not because of distance to school, but due to perceptions of about unsafe walking conditions.



Research was undertaken to evaluate characteristics of K-8 students, the schools, and the areas surrounding schools based on the year each school was built in order to identify school siting patterns. VTC identified schools of interest for further study and evaluation based on high numbers of youth pedestrian crashes and other criteria, and prepared school characteristic profiles of these schools. These profiles summarized information that may be relevant to future crash analysis around high crash schools. Through a review of the literature, New Jersey school siting data, fieldwork and data analysis, several preliminary recommendations for the school siting process in New Jersey emerged such as the need to consult crash data, understand land use patterns and road characteristics, consider conditions particular to urban areas, construct smaller scale schools and avoid dangerous infrastructure. Further research into land use traits around schools with high numbers of youth pedestrian crash rates may yield concrete recommendations for ensuring pedestrian safety around schools.



# RESEARCH HIGHLIGHTS

## HOW DO PEOPLE VALUE PEDESTRIAN AND BICYCLE INFRASTRUCTURE?

This research sought to evaluate how people value different types of bicycle and pedestrian infrastructure. Data were collected from a total of 600 respondents in Bloomfield and Cherry Hill. The respondents rated photographs of bicycle and pedestrian infrastructure on an 11-point scale and reported the primary justification for each rating. Statistical analyses compared the scores for different types of infrastructure while controlling for socioeconomic and demographic characteristics of the respondents. The tests revealed that persons who are accustomed to using a particular type of infrastructure typically rate that infrastructure highly. The survey also

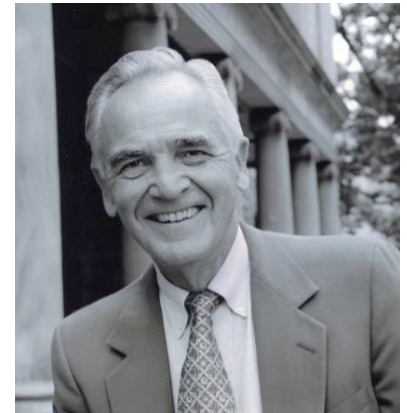
revealed that bicyclists have the highest preference for off-road bicycle paths, followed by on-road bicycle lanes, and the lowest preference for bicycle sharrows (marks that indicate a shared road lane). When asked how resources should be spent on constructing or improving bicycle and pedestrian infrastructure, both bicyclists and non-bicyclists strongly preferred construction of separated bicycle paths. The survey also revealed that physical condition, width, surface material, and street frontage significantly affected the ratings of pedestrian infrastructure such as sidewalks, paths, and crosswalks. A final report was submitted to the NJDOT summarizing the research findings.

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## REMEMBERING RALPH W. VOORHEES (1926 - 2013)

Ralph W. Voorhees, a 1948 graduate of Rutgers University and friend and benefactor to the Edward J. Bloustein School of Planning and Public Policy and Rutgers University, died of natural causes on Monday, November 4, 2013. He was 87.

Mr. Voorhees dedicated many years to volunteerism and civic engagement in several key areas of community and university life. In the 1970s, Mr. Voorhees and his brother, Alan, established the Jane Voorhees Zimmerli Art Museum at Rutgers in commemoration of their mother. In the 1990s, he helped to found the Alan M. Voorhees Transportation Center, named in honor of his brother, a pioneer in the field of transportation planning. Most recently, his family endowed the Ralph W. Voorhees Center for Civic Engagement at the Bloustein School in 2011 in order to celebrate Mr. Voorhees' continued commitment to community service.



A senior vice president for investments at Paine Webber, Mr. Voorhees was named to the prestigious Paine Webber Chairman's Club and was selected by Registered Representative magazine as one of 20 outstanding brokers of 1983. He retired in 2001 after 45 years in the brokerage business. His civic involvement began in 1958 after he was elected a councilman in Highland Park, where he lived for most of his life. Mr. Voorhees' community memberships have included serving as a member of ASA Holdings Inc.'s Board of Directors, and as chairman of the boards of the United Way of Central New Jersey, Family Counseling Services of Middlesex County, the Robert Wood Johnson University Hospital, and the New Brunswick Cultural Center.

Mr. Voorhees chaired Rutgers University Foundation's Board of Overseers and served on the President's Council Fundraising Committee. He was also a trustee at Voorhees College, a historically black college in Denmark, South Carolina which was founded with seed money from his great uncle and aunt. His efforts earned him widespread recognition, both in New Jersey and nationally.

He was a recipient of many awards for his service, including the US Presidential Recognition Award for volunteerism, the B'nai B'rith Torch of Liberty Award, and the Rutgers University Alumni Federation's Meritorious Service award. He was inducted into the Rutgers Hall of Distinguished Alumni in 1996.

Mr. Voorhees is predeceased by his wife, Barbara, and survived by a stepbrother, Fred Zimmerli; four children, Judy, Mark, Jane, and Alan Voorhees; and 15 grandchildren.

## 2013 PUBLICATIONS

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**Hanson, C.S., Noland, R.B., & Brown, C.** (2013). The Severity of Pedestrian Crashes: An Analysis Using Google Street View Imagery. *Journal of Transport Geography* 33, 42-53.

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**Noland, R.B.** (2013). From Theory to Practice in Road Safety Policy: Understanding Risk versus Mobility. *Research in Transportation Economics*, 43(1), 71-84.

**Noland, R.B., & Hanson, C.S.** (2013). How Does Induced Travel Affect Sustainable Transportation Policy? In Renne, J.L., & Fields, B., eds. *Transport Beyond Oil: Policy Choices for a Multimodal Future* (pp. 70-85). Washington, DC: Island Press.

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**Smart, M. and Klein, N.** (2013). Neighborhoods of Affinity: Social Forces and Travel in Gay and Lesbian Neighborhoods. *Journal of the American Planning Association*, 79(2), 110-124.



# EDUCATION & TRAINING

## THE PLANNING PROGRAM AT THE BLOUSTEIN SCHOOL OF PLANNING AND PUBLIC POLICY

The Master of City and Regional Planning program at the Bloustein School, ranked third in the country, prepares students for practice through a curriculum designed to develop an understanding of the linkages between the social, economic and political factors of urban society and the physical and environmental framework of regions and communities. VTC employees contribute to the Master's program by offering classes in transportation policy and coordinating certificates in transportation studies and transportation security.

Mentoring the upcoming generation of transportation planners and policy professionals is a core goal of the Voorhees Transportation Center. Each year, VTC provides several graduate assistantships to Bloustein students, as well as offers part-time work opportunities to the broader Rutgers student community. Many of our students serve an integral role on the projects to which they are assigned and contribute fresh perspectives to our work.

[www.policy.rutgers.edu/academics](http://www.policy.rutgers.edu/academics)

### Certificate Programs

#### Transportation Studies Certificate

The graduate Transportation Studies Certificate is a cross-disciplinary program open to graduate students in the Department of Civil and Environmental Engineering and in the two graduate programs (Urban Planning and Public Policy) of the Bloustein School. Two concentrations are offered: technology and design, and policy and planning. The technology and design concentration focuses on analysis and design issues and is directed to students interested in traffic engineering and facility design. The policy and planning concentration focuses on planning issues, analysis and models.

#### Transportation Management Vulnerability, Risk and Security Certificate

The graduate certificate in Transportation Management: Vulnerability, Risk and Security provides students with a risk analysis approach to transportation policy. Participants develop expertise through a multi-disciplinary approach, providing them with skills that apply to future work and enrich their research skills in the field of transportation planning and management. The certificate enables students to apply their classroom experience to reducing risk exposures and developing efficient interdisciplinary networks in response to system vulnerabilities. It is offered through the Bloustein School in cooperation with the Schools of Engineering, Arts and Sciences and the School of Public Health.

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### VTC DISTINGUISHED LECTURE SERIES

#### The Tragedy of Transportation: Underfunding our Future Richard Ravitch, Former Lieutenant Governor of New York

On November 11, 2013 the Alan M. Voorhees Distinguished Lecture was delivered by Richard Ravitch, former chair of the Metropolitan Transportation Authority. Mr. Ravitch, a lifelong New Yorker, was educated at Columbia College and Yale Law School, and became known as "Mr Fix-It" because of his "renaissance man" abilities to solve difficult problems. In 1979, he was selected by Governor Hugh Carey to lead the MTA during the agency's most troubled time. He is widely credited as having been the catalyst for the restoration of the MTA in subsequent years. In his lecture, "The Tragedy of Transportation: Underfunding our Future", Mr. Ravitch told the story of his involvement with the MTA and the political hurdles he overcame to save the agency. The tragedy, however, remains with both the Federal government and most states continuing to underfund maintenance and improvements to aging transportation infrastructure.



## **PARTNER CENTERS**

### **CENTER FOR TRANSPORTATION SAFETY, SECURITY, AND RISK**

The Center combines the complementary expertise of faculty and staff in risk analysis and transportation. It is part of the Edward J. Bloustein School of Planning and Public Policy and works cooperatively with its sister organizations, the National Transit Institute (NTI) and the Voorhees Transportation Center. The Center also works with other Rutgers faculty and staff in the School of Engineering, Center for Advanced Infrastructure and Transportation, School of Environmental & Biological Sciences, School of Public Health and with University staff involved in disaster preparedness and emergency response. Together, these organizations provide outstanding expertise in risk analysis and transportation security and safety.

For more information on the Center for Transportation Safety, Security and Risk, visit their website at [www.eac.rutgers.edu/ctssr](http://www.eac.rutgers.edu/ctssr)

### **NATIONAL TRANSIT INSTITUTE**

VTC's commitment to achieving the education component of our mission is realized in part through our relationship with the National Transit Institute (NTI). Established in 1992 at Rutgers University under the Intermodal Surface Transportation Efficiency Act of 1991, NTI became part of the Voorhees Transportation Center in 1999. NTI receives funding through the Federal Transit Administration and through supplemental project-related grants.

NTI's mission is to provide training, education and clearinghouse services in support of public transportation and quality of life in the United States. The Institute is a valued partner with public transportation service providers, Rutgers University, trade associations and other industry organizations. NTI offers a robust and diverse course catalog, as well as a variety of education products and tools.

The NTI annual report can be found online at [www.ntionline.com/documents/NTIAnnualReport\\_2013.pdf](http://www.ntionline.com/documents/NTIAnnualReport_2013.pdf)

For more information on NTI, visit their website at [www.ntionline.com](http://www.ntionline.com)

### **RALPH W. VOORHEES CENTER FOR CIVIC ENGAGEMENT**

The Ralph W. Voorhees Center for Civic Engagement is a collaboration between university faculty, students and community development actors seeking to enhance educational opportunities, facilitate innovative research, and build community development capacity. The Center hosts the Ralph W. Voorhees Public Service fellowship program for undergraduate and graduate students who work with community organizations on group projects each fall, providing students with a network of civic-minded scholars and practitioners. These efforts build community capacity and contribute to the intellectual life of the university.

The center's activities also include conducting community and urban research. Faculty and students collaborate with local actors to create original research, publish in journals and present their findings at academic conferences. The center also seeks to enhance dialogue and discussion among communities, government, students and scholars and support the development of innovative public policy.

For more information on the Ralph W. Voorhees Center for Civic Engagement, visit their website at [www.rwv.rutgers.edu](http://www.rwv.rutgers.edu)

# RUTGERS

Edward J. Bloustein School of  
Planning and Public Policy

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