THE NYMTC STAFF TRAINING PROGRAM: A COLLABORATION BETWEEN THE NEW YORK METROPOLITAN TRANSPORTATION COUNCIL AND THE NYU WAGNER RUDIN CENTER FOR TRANSPORTATION POLICY AND MANAGEMENT

Exploring the MPO – University Research Center Partnership as a Model for Establishing Continuing Education Programs for Regional Transportation Agency Professionals

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ABSTRACT

From September 2008 to April 2009, the New York Metropolitan Transportation Council collaborated with the NYU Wagner Rudin Center on a unique program to offer training courses to professional transportation staff from regional transportation agencies. The Program consisted of 23 courses organized within three distinct modules, Skill Building, Transportation Policy, and Tools and Methods. Tailored for line and mid-level staff as a parallel and complimentary track to the already established NYMTC Executive Education Program developed in the 1990s, 86% of Program participants reported the curriculum to be of strong content and with high relevance to their jobs and professional development. The Program offers a model for MPO and university research center collaboration on continuing professional education for transportation professionals. Connecting agencies through MPOs with university educational resources aligns the training goals to the MPO's regional objectives as well as national transportation education initiatives.

INTRODUCTION

Regional transportation planning practice has developed considerably in the past twenty years. With expanding legislative requirements and social and economic changes, transportation planners need to deal with a wide range of demands and concerns on environmental and sustainable development, economic growth and social equity issues in addition to their traditional responsibilities. More than ever before, transportation professionals need an extensive base of knowledge and a broad set of skills – technical skills but also communication skills, for example – to effectively perform their jobs (*1*).

Historically, transportation agencies followed a traditional public administration management model: they hired technical staff with expertise in specific projects and managers who focused on completing those projects within time and budget constraints. Increasingly, however, these same transportation agencies are being asked to adopt more strategic- and planning-based management styles. Managers must now interact with, accommodate, and persuade a wide array of external actors; they must organize their efforts around an evolving and changing set of strategic goals; and they must have the creativity and flexibility to implement new management strategies to enhance operations in times of fiscal and capacity constraints. At the same time, technical staff have many more tools at their disposal. Thus, they must understand how best to use them and how to translate their findings for those who are not as familiar with these new techniques.

To meet these challenges, transportation agencies need professional staff at all levels that understand best practices in their fields and can communicate effectively with stakeholders and members of other agencies and disciplines. Managers need to be familiar with emerging management concepts, while also recognizing the uses and limitations of new technologies and analysis techniques. Technical professionals need to understand the strategic purposes to which their analyses and modeling outputs will be applied and ways to communicate their findings to mitigate misuse or misinterpretation. Finally, managers and technical staff need to work together effectively, understanding how their jobs interrelate and contribute to their agency's mission.

The MPO planning process relies on local governments acting together in cooperation with elected officials; Federal, State, regional, county and municipality agencies; transit operators; interest groups; and other stakeholders to set regional transportation policy and priorities. The needs in the New York metropolitan region are intensified given the complexity of the region in terms of population, land use, transportation system, economic development and the number of agencies involved in the transportation planning process. The greater New York metropolitan region is covered by six Metropolitan Planning Organizations (MPOs), including: New York Metropolitan Transportation Council (NYMTC), North Jersey Transportation Planning Authority (NJTPA), South Western Regional Planning Agency (SWRPA), South Central Regional Council of Governments (SCRCOG), Greater Bridgeport Regional Planning Agency (GBRPA), and Housatonic Valley Council of Elected Officials (HVCEO).

1. PROGRAM DESCRIPTION AND PURPOSE

1.1 History and Background

In the early 1990s, the need for NYMTC to have a more systematic training program emerged from the development of its new travel demand model in the NYMTC region. The old travel demand model was outdated. A comprehensive survey, data collection and model development program was planned to provide a state-of-practice modeling tool with updated data in the NYMTC region. The scale and complexity of the data collection and model development program required transportation professionals from various transportation, planning and environmental agencies in the NYMTC region to update their related knowledge and skill. With different backgrounds of academic training from engineering or planning, from different colleges, times, and countries, many professionals found it difficult to reach a common understanding of modeling practice and principals. In such a large region, transportation professionals rarely met face-to-face, a key factor for building trust and sound partnerships.

Without proper understanding of the travel demand model and an appreciation of how the data and model could be used to address regional transportation issues and projects, participation in building the model and providing accurate input data from various agencies came into question. A regional model cannot achieve its full potential without active participation from the stakeholders and its potential users. It was increasingly urgent and necessary to synchronize the understanding and knowledge of respective professionals from different agencies in the NYMTC region.

NYMTC reached out to the University Transportation Research Center (UTRC) Region II in the early 1990s to collaborate on the design and implementation of a training program to address these issues for both management and technical staff at the various agencies in the region. The UTRC Region 2 (representing USDOT Region II, including New York, New Jersey, Puerto Rico and the U.S. Virgin Islands) is one of ten original University Transportation Centers established in 1987 by the U.S. Congress. These Centers were established with the recognition that transportation plays a key role in the nation's economy and the quality of life of its citizens. University faculty members provide a critical link in resolving our national and regional transportation problems while training the professionals who address our transportation systems and their customers on a daily basis.

Congress established the UTRC to support research, education and the transfer of technology in the field of transportation. UTRC Region II's theme, "Planning and Managing Regional Transportation Systems in a Changing World", matches NYMTC's training goals and needs. Functioning as a consortium of twelve major Universities throughout the region, UTRC is located at the CUNY Institute for Transportation Systems at The City College of New York, the lead institution of the consortium. Through its consortium, an Agency-Industry Council and its Director and Staff, the Center supports research, education, and technology transfer (*2*). The first training program offered in the early 1990s proved highly successful by various NYMTC and UTRC measures. Nevertheless, training at that time focused primarily on technical skills development.

1.2 The NYMTC Executive Development Training Program: a Precursor to the Staff Training Program

Management skills are critical to effective leadership in any field. However, individuals are often promoted into management and leadership positions based primarily on their technical expertise.

As a result, such individuals find themselves in new positions without the tools for success. The transportation industry is no exception. Furthermore, the increasing number of individuals forecasted to retire in the coming years places considerable urgency on effectively training the next generation of transportation industry leaders.

Starting in the mid-1990s, NYMTC collaborated with the NYU Wagner Rudin Center for Transportation Policy and Management to offer an annual executive development course to for mid- and upper-level transportation managers in the New York metropolitan region. The Program's pedagogy focused on providing knowledge and tools for building and honing broad management skills as well as practical awareness of specific issues facing managers in the transportation sector and in the region. The Program still exists today with roughly 30 sessions offered over the course of a year.

Expert instructors and guest lecturers present information that is applicable, timely, relevant, and tailored to the participants' needs and concerns. Among other critical issues, the NYMTC/Rudin Center's Executive Development series prepares participants to deal with:

- A complex institutional, political and media environment;
- Mounting financial and operational constraints, especially in light of the upcoming reauthorization of federal surface transportation funding;
- Ever-changing community and environmental concerns;
- Relatively new management challenges due to safety and security requirements;
- The implementation of new technologies, new transportation modes and project management innovations;
- The incorporation of new planning, financial and operational concepts, (potentially also including congestion pricing schemes and greenhouse gas (GHG) markets and/or GHG offset programs);
- The increasing focus on truly multi-modal and inter-modal planning that involves looking at how the entire system functions, rather than using a piece by piece approach, considering both passengers and freight; and,
- The need for cooperation and consensus, as well as prioritization, around a broad regional vision.

Given its dense population, aging infrastructure, and its unique set of historical, institutional and political factors that often hamper inter-agency cooperation and coordination and broad regional planning, the challenges inherent in approaching such issues are exacerbated in the New York metropolitan region. The Executive Training Program provides participants with a broad understanding of these issues while focusing specifically on the New York metropolitan region, with emphasis on helping to foster the ties that will help improve cooperation among agencies to eventually enable the region to more effectively compete for funding at the national level.

1.3 The NYMTC Staff Training Program

After more than a decade, the second NYMTC Staff Training Program was developed and implemented to provide line and mid-level staff with the tools, skills and understanding they needed to succeed in the current transportation environment. The Program was designed to provide a comprehensive, focused, and integrated education and professional development vehicle. Planned outcomes included improving the professional capacity of participating staff as well as the levels of interdisciplinary and interagency cooperation and communication.

Continuing professional education was an answer to the rising demands of needs of both mid-level transportation managers and technical personnel around the New York metropolitan region facing professional needs to adopt more strategic- and planning-based management styles.

The Rudin Center provided expertise for constructing the curriculum, drawing from talented professors and practitioners from across the New York and transportation academic landscape. Four primary authors led the development:

- Allison L. C. de Cerreño, Director, NYU Wagner Rudin Center for Transportation Policy and Management
- John Falcocchio, Visiting Scholar, NYU Wagner Rudin Center, and Director, Urban ITS Center, Polytechnic University
- José Holguín-Veras, Visiting Scholar, NYU Wagner Rudin Center, and Professor, Rensselaer Polytechnic Institute
- Alan Zerkin, Visiting Practitioner, NYU Wagner Rudin Center, and Adjunct Associate Professor, NYU Wagner

NYU Rudin Center Research Scientist Marta Panero also made significant contributions coordinating research efforts to assess skills needs left unmet by National Highway Institute (NHI) and National Transit Institute (NTI) offerings.

The Staff Training aimed to provide up to date and critical methodology while discussing practical tools for participants to take into the workplace. To attain this, the Rudin Center and NYMTC surveyed regional agencies for training needs to determine the necessary course mix, and where possible, tailor to the participants' needs and concerns. Table 1, below, shows the results from the conducted needs assessment. Based on feedback from agency transportation professionals, the Rudin Center assembled a comprehensive class listing, marrying the agencies training demands with expertise and methodological resources available within the research center and New York University.

TABLE 1 Preliminary Listing of Potential Course Offerings

	Course Topic	Technical Staff	Management Staff	All Staff	CEUs
Skill Building	Building Effective Teams			✓	
	Communication and Interpersonal Skills I: Introduction	✓	✓		
	Communication and Interpersonal Skills II: Advanced Skills	✓	✓		
	Conflict Management and Negotiation I			✓	✓
	Conflict Management and Negotiation II		✓		✓
	Decision Making and Creative Problem Solving	✓	✓		
	Developing Influence Skills		✓		
	E-Government			✓	
	Effective Presentation Making			✓	
	Improving Organizational Skills			✓	
	Improving Project Management Skills	✓	✓		
	Labor Relations		✓		
	Leadership and Managerial Styles		✓		
	Managing Contracts and Budgets		✓		
	Managing for Quality (TQM)		✓		
	Managing Stakeholder Relations		✓		
	Media Relations		✓		
	Mentoring			✓	
	Strategic and Change Management		✓		

	Course Topic	Technical Staff	Management Staff	All Staff	CEUs
Tools and Methods	Asset Management			✓	
	City Logistics I: Tools and Methods	✓			
	Congestion Management I: Causes and Methods		✓		✓
	Context Sensitive Solutions			✓	
	Economic Analysis in Transportation Policymaking	✓	✓		
	Geographic Information Systems I: Introduction			✓	
	Geographic Information Systems II: Advanced Skills	✓			
	Incident Management	✓			
	Interpreting and Understanding Data and Models		✓		✓
	Intro to the Best Practice Model			✓	✓
	Models in Depth: Demographic Modeling and Forecasting	✓			
	Models in Depth: Emissions and Air Quality Modeling	✓			
	Models in Depth: Freight Transportation Modeling	✓			
	Models in Depth: Mode Choice Models and Transit Network	✓			
	Models in Depth: Trip Generation and Distribution	✓			
	Models in Depth: Trip Assignment and Feedback	✓			
	Performance Indicators and Performance-Based Budgeting			✓	
	Public Involvement Techniques in Transportation			✓	✓
	Statistics for Traffic and Transportation			✓	
	Transportation Economics			✓	✓
	Transportation Survey Methods and Innovations	✓			
	Travel Demand Management I: Techniques	✓			✓
	Urban Freight Demand			✓	
Policy Issues	City Logistics II: Sustainable Policies		✓		
	Congestion Management II: Political Implications		✓		
	Freight, Economic Development and Transportation Network			✓	
	History of Transportation and the Legacy of ISTEA			✓	✓
	Inter-jurisdictional Challenges and Opportunities			✓	
	Measuring Economic Benefits of Transportation Investments			✓	
	NEPA and Environmental Impact Assessment			✓	
	Travel Demand Management II: Policy Implications			✓	
	Transportation Finance – Federal, State, and Local			✓	
	Transportation in Society			✓	
	Transportation Security			✓	
	Understanding Induced Demand			✓	

1.4 Course Schedule

To provide guidance to participants in selecting classes most appropriate to their specific organizational and skill levels and needs, the program was divided into three modules: skill building; tools and methods; and policy issues. Within each of these areas, multiple classes were developed, some aimed specifically at managerial staff, some aimed specifically at technical staff, and some aimed at both groups, as shown in Table 1 above. For many of the courses designed for technical skills building, the curriculum committee anticipated a large number of attendees with engineering backgrounds who would have potential interest in continuing education credits (CEUs). Early in the design phase, the Rudin Center worked closely with the New York State Education Department's Office of the Professions – State Board for Engineering and Land Surveying, to ensure that attendees successfully completing appropriate coursework would obtain CEUs. Here again, the University connection proved important given NYU's approved status as a CEU provider by New York State.

Skill Building

Skill building classes addressed skill sets of a general nature (not specific to transportation). Classes focused on managerial styles, how to build successful teams, communication skills (written and verbal), motivation skills, power and influence, negotiation and conflict resolution, strategic planning and thinking, and ethics. To make the classes more relevant for the participants, particular attention was given to incorporating transportation-specific content into exercises and cases used during the course of discussion.

Tools and Methods

Tools and methods module classes touched on tools and methods of relevance to the technical and/or management staff. For example, classes were offered on geographic information systems (GIS), asset management, performance indicators, and in best practices for engaging the public and key stakeholders. In each case, participants learned not only how to apply the tools, but also how to interpret and explain results.

Policy Issues

Policy issues courses focused on the major debates surrounding key issues in transportation: financing transportation (the federal role, public-private partnerships, pricing, tolling), access and equity issues (environmental justice, ADA compliance, NIMBY), and labor relations.

Table 2, below, shows the final schedule of courses offered between September 2008 and April 2009.

TABLE 2 Final NYMTC Staff Training Program course schedule (and CEU's available)

Policy Issues

- Transportation. Economics: Basic Concepts of Transp. Economics and Benefit Cost Analysis (6)
- History of Transp. Policy and Planning in the New York Metropolitan Region (2)
- Improving Mobility and Accessibility - the Policy Challenges (1.5)

Skill Building

- Communications and Interpersonal Skills Session A
- Making Effective Presentations Session A
- Communications and Interpersonal Skills Session B
- Making Effective Presentations Session B
- Project Management Session A
- Developing Management Skills Session A
- Conflict Management and Negotiation (4)
- Project Management Session B
- Public Involvement Strategies
- Developing Management Skills Session B

Tools and Methods

- Interpreting and Understanding Data and Models I Outputs I Session A
- Congestion Management I: Causes and Methods
- Introduction to the Best Practice Model (BPM) Session A
- Introduction to the Best Practice Model (BPM) Session B (0.4)
- Travel Demand Forecasting Process Session A
- Getting the Most Out of GIS: GIS for Beginners Session A (0.7)
- Travel Demand Forecasting Process Session B (0.7)
- Interpreting and Understanding Data and Models I Outputs I Session B (0.7)
- Getting the Most Out of GIS: GIS for Beginners Session B

1.5 First Year Program Results

The curriculum architects designed a simple post-test survey to gather information from participants to evaluate program effectiveness. Over the course of the seven-month program, 424 participants from more than 14 metropolitan regions, transportation-related departments and agencies received training in one of the Program's 23 workshops. The attendees of the training program came from regional transportation agencies, including MTA, NYC Department of City Planning, NYC Department of Transportation, NYMTC, NYS DOT, Port Authority, and Westchester Department of Public Works. Eleven transportation, engineering, planning and management professors covered the course offerings, hailing from a variety of academic institutions, professional organizations and businesses including NYU Wagner, Rensselaer Polytechnic Institute, the Bronx County Historical Society, Cambridge Systematics, and the University of Pennsylvania.

Student evaluations from each session allowed the Rudin Center to capture opinions from more than 89% of participants. Overall, the evaluation was positive and indicated that participants found the courses informative, educational and worthwhile. For instance, in response to the question, "in terms of my background and expertise, the content of this workshop was:", 46.9% selected "intermediate" and 30.2% selected "somewhat advanced," compared to 11.7% that consider it as "somewhat basic." 6.9% reported it as "very advanced" compared to the 4.2% who responded as "very basic."

Thirty-five percent of the participants indicated that they "strongly agree" that "the workshop's content was relevant to my job", while 51.3% "agree." Combined, 86.2% indicated that the workshops were relevant to their jobs. Thirty-three percent of the participants "strongly agree" that "the workshop better prepared me to do my job or perform my role", while 52.1% "agree." All told, 84.9% regarded themselves as having benefited from the workshop, compared with the 86.2% who thought of it as simply "relevant". Thirty-seven percent of the participants "strongly agree[d]" that "the workshop content and materials were helpful, while 53.6% only indicated that they "agree." Overall, 90.5% of participants responded positively to course materials, even higher than the percentage who thought of it as simply "relevant."

Ninety-one percent of the participants "strongly agree[d]" (42.4%) or "agree[d]" (48.8%) that "the workshop provided useful ideas or techniques." Ninety-three percent "strongly agree[d]" or "agree[d]" that "the instructor delivered the materials well." Ninety-five percent "strongly agree[d]" or "agree[d]" that "the instructor was able to answer questions and comments from the workshop participants," indicating effective teacher-student interaction. Eighty-nine percent "strongly agree[d]" or "agree[d]" that "the presentations were easy to see, hear and understand." Overall, eighty four percent of participants "strongly agree[d]" or "agree[d]" that "the workshop met or exceeded expectations," while 87.2% stated they "would recommend this workshop to others."

2. CREATING ACCESS TO EDUCATION AND TRAINING FOR REGIONAL AGENCIES

2.1 Connecting Training Demand with Educational Supply

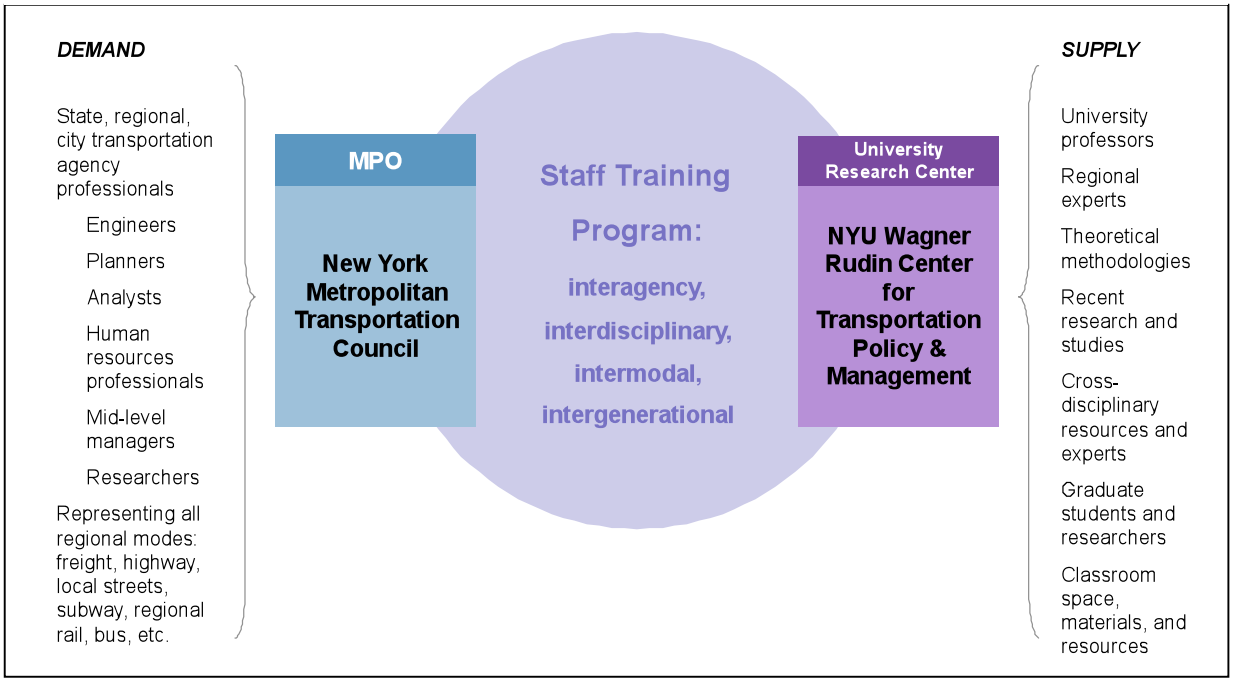
The partnership between NYMTC and the NYU Wagner Rudin Center to establish the NYMTC Staff Training Program aligns fundamental drivers inherent to transportation agencies, MPOs and university research centers. Public sector transportation agencies need low cost access to

high quality staff education and training resources to remain effective. MPOs exist to aid the coordination of regionally-relevant transportation agencies. University-imbedded transportation research centers base their success on working relationships with leading experts and professors and access to cutting edge resources and data sets to generate timely research. The NYMTC and Rudin Center Program establish a conduit between the broad training demands of metropolitan transportation agencies and the diverse supplies of educational experts and resources found within the reach of a university research center. Figure 1 illustrates how the model enables agency employees and human resources strategists gain direct access to the latest skill building, policy management and methods training resources within the university.

Today's public-sector transportation agencies face multiple and competing objectives and scope increases--realities driving the -need for access to comprehensive, leading edge training and education for staff. In 2003, the Committee on Future Surface Transportation Agency Human Resource Needs of the Transportation Research Board released *The Workforce Challenge*, a comprehensive account of the training needs facing modern transportation agencies. The report highlights four primary factors that illustrate the growing need for more comprehensive and high quality training for agency staff people:

1. *Scope expansion* Agency missions and objectives have greatly expanded in scope over the last decade with trends toward increasing skill needs in areas including intermodal planning and linking, community engagement and outreach, economics and financing, environmental sustainability, telecommunications and data management and information technologies. In this environment, "agencies require a workforce with a wider range of technical disciplines than ever before" (*3*), creating greater need for cross-disciplinary training.

FIGURE 1: MPO-University Research Center Model for collaboration on transportation professional continuing education



2. *Budget constraints* Today's agencies run leaner than the same agencies a decade ago, with fewer people expected to generate more work. Education and training opportunities must exist to develop interdisciplinary line staff with capable hard and soft skill sets.
3. *Generational planning* According to *The Workforce Challenge*, "more than 50 percent of the state transportation agency workforce will be eligible to retire in the next 10 years" (*3*). Agencies face an ever increasing need to bolster midlevel managerial skill development and transportation policy education.
4. *Technology advancement* With the private sector spending "at least four times more than transportation agencies" (*3*) on employee development and constantly deploying newer technologies, public agencies must adapt quickly and remain responsive to an ever changing transportation sector. Method development for staff in computer-aided design and planning, intelligent transportation systems and data management empower staff to better manage the advancing developments taking place in the sector.

In concert with NYMTC, the Rudin Center designed the Staff Training Program course schedule and curricula with a strategic eye towards the evolving needs of New York City region transportation agency staff educational needs, both now and in anticipation of future readiness. Rudin Center staff organized the Program course offerings into three categories:

- **Policy Issues** Four courses focused on economic analysis, the history of transportation policy in New York City and mobility and accessibility policy issues
- **Skill Building** Ten courses focused on professional and midlevel management development, including skill development for communications, presenting, public engagement, general management, conflict negotiation and project management
- **Tools and Methods** Nine courses offering in-depth sessions on a variety of computer-aided approaches for planning and design, including congestion management, the Best Practice Model (BPM), GIS, data modeling and travel demand forecasting.

From October 2008 through April 2009, these 23 courses attracted over 560 enrollments participants from more than 170 agency employees. Seventy-one percent of enrollees registered for more than one class, with over 40 people participating in five or more classes. The Program trained staff from more than fifteen states, regional and local public-sector transportation agencies representing all metropolitan passenger and freight modes. The Rudin Center covered Program costs through a $200,000 grant awarded by NYMTC, essentially enabling all participants to enroll at no direct cost to the agencies.

2.2 Opportunity Comparison Analysis

Before 2008, transportation professionals in the New York metropolitan region pursued continuing professional education largely through national- and state-level sources. These include transportation planning programs and training courses offered by NHI, NTI, and the Travel Model Improvement Program (TMIP), and management courses offered through various New York State programs. The vast majority of training resources exist in online, internet-based environments. In-class opportunities exist, but for the most part these training sessions occur in conjunction with various conferences requiring staff to accrue travel expenses in addition to educational costs. The Staff Training Program developed a third option for agency professionals,

providing regionally relevant, in-class education across a comprehensive subject set at no cost to the agency other than employee opportunity costs.

2.3 Regionalism and In-Classroom Training

At their January 2008 meeting, the TRB Transportation Education and Training Committee recommended distance learning, webinars, and online courses as "strategies for reaching already-employed professionals looking to advance in their education or careers or to make mid-career changes" (*4*). While internet-based educational opportunities offer transportation professionals a less expensive and more accessible training option, in-classroom experiences allow for the development of working relationships amongst participants. The Staff Training Program intentionally designed a physical learning environment to bring transportation professionals across the region into the same room. The in-class experience created through the MPO-university partnership allowed for a rich educational experience for agency employees, at no cost to the transportation agencies.

The working relationships created in the Program's collaborative learning classrooms occur on two particular levels of importance to tomorrow's transportation needs. First, Staff Training students engage in interdisciplinary and intergenerational learning and dialogue. The 2008-09 session attracted agency employees across age and experience spectra, hailing from engineering, planning, human resources and other departments. Given the realities of generational experience gaps, "brain drains" and traditional functional firewalls often present within the professional transportation community, intergenerational and interdisciplinary interaction must start in the classroom to influence the workplace.

Secondly, bringing employees from multiple agencies across the New York City region into the same learning space connects with the MPO's pursuit of regionalism. With classmates from agencies such as the New York State Department of Transportation, the Metropolitan Transportation Authority, MTA Bridges & Tunnels, MetroNorth Railroad and the Nassau County Planning Department, students took part in interagency and intermodal learning. In the classroom, employees from local transit companies learned alongside staff from city government, creating understanding around common lexicons for transportation problem solving while facing the various perspectives of the agencies and modes represented. The model aims to get program participants leaving the classroom with new business cards to add to their rolodex and resources from other agencies now only a phone call away.

3. TRAINING ALIGMENT WITH MPO MISSION AND NATIONAL GOALS

3.1 Supporting the Mission of the MPO

The NYMTC Staff Training Program, by synchronizing the understanding as well as enhancing skills and knowledge among transportation professionals, assists NYMTC stakeholders in the development of common measures and builds consensus for achieving shared goals. The training also facilitates the understanding of transportation professionals from various agencies on an MPO's five core functions (*5*):

1. Establish a setting – fair & impartial
2. Evaluate transportation alternatives
3. Maintain a Long Range Transportation Plan (LRTP)

4. Develop a Transportation Improvement Program (TIP)
5. Involve the public – residents and key affected sub-groups (PIP)

It is critical that transportation professionals from various local agencies, with specific modal or geographic missions, look at issues from a regional and systematic perspective. The Program structure, in which multiple agency professionals learn together, helps stakeholders to communicate more effectively through the MPO platform in the regional transportation planning decision-making process. The courses provide an opportunity for transportation planners from around the NYMTC region to discuss and debate different issues on technical and policy issues. This kind of dialogue is critical to addressing possible misunderstandings of various technical issues that may generate mistrust and inefficiency.

The participants' diversified backgrounds brought challenges as well as opportunities for effective communication and understanding. The NYMTC Staff Training Program was designed not only to facilitate multimodal learning and building consensus within the region, but also to help build a bridge from the federal level to regional policy challenges and technical improvements.

3.2 Alignment with National Policy and Educational Goals

A thorough examination of course offerings and program structure reveals alignment of major Program themes with many of the high level aspects of SAFETEA-LU, representing current federal transportation policy and the prevailing guidance for the next transportation authorization, as reflected in the draft Surface Transportation Authorization Act (STAA) released in June 2009 by the US House of Representatives Transportation and Infrastructure Committee (*6*). Outside of a policy perspective, the NYMTC programming contains elements similar to those recommended by a study of national transportation professional training needs conducted by the Southwest Region University Transportation Center in 2002. These alignments suggest potential scalability and reproducibility of the MPO-university research model for staff training to other urban areas in the US outside of the greater New York metropolitan region.

Table 3, below, demonstrates a high level, qualitative analysis of how the Program courses cover themes apparent in SAFETEA-LU and the draft STAA. While the table shows clear room for improvement to expand into areas including safety, environment, performance driven decision making, and energy efficiency, the first year Program offerings emphasize data-driven decision making and performance measurement themes--both of which play strong roles in the overall structures of SAFETEA-LU and STAA. Courses covering travel demand forecasting and congestion mitigation particularly overlap with a variety themes of both policies. Examining the forward-looking elements of STAA, and to a lesser degree SAFETEA-LU, including urban/rural mix, regional flexibility, and metropolitan mobility, reveals a number of subject overlaps within the Program. Furthermore, on a level above the curriculum, the Program structure reinforces these progressive transportation themes given the intermodal, intergenerational, and interdisciplinary structure of the in-class model.

TABLE 3: NYMTC Staff Training Program alignment with prevailing, federal transportation policies (Draft STAA: Surface Transportation Authorization Act, as proposed by the House of Representatives, Transportation and Infrastructure Committee, June 2008, (*6*))

		SAFETEA-LU Themes										*Additional Themes from Draft STAA**						
Modules	**Courses**	**Enhanced Safety**	**Traffic Congestion**	**Improving Efficiency**	**Data Driven Decision Making**	**Local/Regional Flexibility**	**Flexible Finance**	**Intermodalism**	**Environment**	**Performance Measurement**	**National System Planning**	**Performance Driven Decision Making**	**Metro Mobility & Connectivity**	**Urban/Suburban/ Rural Mix**	**Project Pipelines and Fast Tracking**	**Reporting and Accountability**	**Transit v. Highway Mix**	**Livability**
Policy Issues	Transportation. Economics: Basic Concepts of Transp. Economics and Benefit				✔		✔											
	Cost Analysis				✔		✔											
	History of Transp. Policy and Planning in the New York Metropolitan Region					✔								✔			✔	
	History of Transp. Policy and Planning in the New York Metropolitan Region					✔								✔			✔	
	Improving Mobility and Accessibility - the Policy Challenges		✔			✔		✔			✔		✔					✔
Skill Building	Communications and Interpersonal Skills Session A																	
	Making Effective Presentations Session A																	
	Communications and Interpersonal Skills Session B																	
	Making Effective Presentations Session B																	
	Project Management Session A														✔	✔		
	Developing Management Skills Session A																	
	Conflict Management and Negotiation																	
	Project Management Session B				✔													
	Public Involvement Strategies					✔							✔	✔				✔
	Developing Management Skills Session B																	
Tools and Methods	Interpreting and Understanding Data and Models I Outputs I Session A				✔					✔								
	Congestion Management I: Causes and Methods		✔		✔					✔			✔	✔				✔
	Introduction to the Best Practice Model (BPM) Session A				✔	✔									✔			
	Introduction to the Best Practice Model (BPM) Session B				✔	✔									✔			
	Travel Demand Forecasting Process Session A		✔		✔					✔			✔	✔				
	Getting the Most Out of GIS: GIS for Beginners Session A				✔													
	Travel Demand Forecasting Process Session B		✔		✔					✔			✔	✔				
	Interpreting and Understanding Data and Models I Outputs I Session B				✔					✔								
	Getting the Most Out of GIS: GIS for Beginners Session B				✔													

The 2002 *Education of Transportation Professionals* report makes a number of recommendations realized in the MPO-university research center joint model for staff training. First and foremost, the report emphasizes the importance of the "Educator-Professional Link," given the apparent lag between transportation education curricula and rapidly evolving planning practices (*7*). The MPO-university model, as discussed above, fundamentally seeks to establish this connection between practitioners in need of training and trainers with access to the latest research and resources. The resulting link further establishes a dialectic in which agency employees provide real-time feedback on actual practice versus theoretical methods professed by top educators, establishing a healthy "Theory-Practice Tension" (*7*). The report also recommends educational emphasis on communication skills, political contexts and multidisciplinary learning elements supported in both content and structure by the MPO-university research center collaboration.

4. CONCLUSIONS AND NEXT STEPS

Strong results based on participant post-course evaluations indicate promise for the NYMTC Staff Training program within the context of the New York metropolitan region's agency training needs. Strong program alignment with MPO mission and national policy and educational directives in the transportation sector further corroborate continuation of this model as a source for continuing professional education for transportation professionals. The MPO – University research center collaborative model appears to offer a plausible training option for metropolitan areas with objectives to both expand transportation agency capacity and capability while working toward regional planning cohesion.

Though the Rudin Center and NYMTC joint effort has only marked one year of execution, a few next steps appear clear for further expansion of the Program in the future:

- **Course Schedule Expansions** Post-course evaluations captured participants' interests in additional subjects to offer for future Program iterations. Table 4, below, summarizes the spectrum of new content requested by participants.
- **Case-Based Pedagogy** Future Program iterations could include collaborative work between teaching faculty and MPO and agency staff members to capture and produce case studies from the region. This approach could potentially build better critical thinking capacity among future course participants while further emphasizing the political and other contexts sensitive to the region and relevant to local agency professionals.
- **Graduate Student Engagement** Courses offered to agency employees can allot a certain number of seats made available to Masters of Urban Planning, Transportation Policy and other students following certain engineering or other related disciplines. The inclusion of students within the MPO-University research center training program allows for agency employees to interact with fresh approaches and new thinking discussed in university classrooms while connecting tomorrow's workforce with current professionals and practice.
- **Cluster Track/Certification** Students should be allowed either to enroll in individual courses or in a specialized cluster. In a specialized cluster, different courses are grouped together, forming a coherent bundle of methods and skills. Before the training classes are open for enrollment, students can receive a communication with all the different courses required to become a specialist in a

particular area and obtain a certification for that specialization. As a second step, participating agencies could choose to recognize these certificates for advancing career purposes.

- **Online Resource Database** For easier access, all materials for all the classes can be compiled, organized and made available online for course participants, in perpetuity. Ideally, an online community becomes established using wiki software that allows not only access to class materials but information exchange among and within agencies.
- **Program Evaluation** While the first iteration of this Program considered only a post-test for measuring effectiveness, future efforts need to consider more robust outcome and impact evaluation methods. For instance, a pre-post evaluation design, with a baseline assessment survey of participant capabilities prior to class participation followed by several post test surveys following completion, would better gauge program impact. Measures used should be in-line with learning outcomes measures used to evaluate NHI and NTI continuing education. Additional assessments to consider, depending on resource constraints, would include surveying managers of staff participating in the Program, issuing standardized tests as part of course completion requirements, and conducting more in-depth participant interviews.

Finally, outside of fixes and adjustments to the Staff Training Program itself or other similar reproductions, at a policy level the U.S. Department of Transportation and members of Congress should consider assembling national guidance for MPOs to construct university research center partnerships for continuing transportation professional education. The next federal surface transportation authorization presents a timely and appropriate vehicle for such an opportunity to expand training opportunities available to federal, state, and local transportation related agencies. Common implementation guidance and curriculum frameworks, measures and metrics, and best practices sharing networks would greatly benefit scaling and reproducing similar collaborative efforts in urban areas throughout the United States.

TABLE 4 Summary of post-course evaluation results for requested new content for future Program iterations

Suggested New Content and/or Classes	Course Category	% of Respondents
Advanced Management: Human Resources	Skill Building	12.2%
Intermediate/Advanced GIS	Tools & Methods	8.1%
Advanced Project Management	Skill Building	6.5%
Public Outreach, Communications and Marketing	Skill Building	6.5%
Transportation Modeling and Simulation	Tools & Methods	4.9%
Activity Based Model	Tools & Methods	4.1%
Advanced Writing & Presentation Skills	Skill Building	4.1%
Sustainable Transportation (TOD, Complete Streets, etc.)	Policy Issues	4.1%
Advanced CADD for Transportation	Tools & Methods	3.3%
Congestion and Value Pricing	Policy Issues	3.3%
Data Gathering and Management	Tools & Methods	3.3%

Environmental Impact Assessment (NEPA, SEQRA, etc.)	Skill Building	3.3%
IT Management, ITS, and GPS	Tools & Methods	3.3%
Public Speaking	Skill Building	3.3%
Regional Infrastructure Planning & Management	Skill Building	3.3%
Streets & Highways: Capacity, LOS, and Safety	Policy Issues	3.3%
Advanced Negotiations & Mediations	Skill Building	2.4%
Air Quality & Modeling	Tools & Methods	2.4%
Suggested New Content and/or Classes	**Course Category**	**% of Respondents**
Best Practice Models	Tools & Methods	2.4%
Climate Change	Policy Issues	2.4%
Freight & Maritime	Policy Issues	1.6%
Inter-Agency Coordination	Policy Issues	1.6%
Online Mapping (Google Maps, etc.)	Tools & Methods	1.6%
Transportation Policy and Economics	Policy Issues	1.6%
Advanced Technology Transportation (HSR, Alt Fuels, etc.)	Policy Issues	1.6%
Bonds and Insurance	Tools & Methods	0.8%
Census and Demographics	Tools & Methods	0.8%
Current Transportation Trends	Policy Issues	0.8%
Federal Funding Process	Skill Building	0.8%
History of MTA Operations and Facilities	Policy Issues	0.8%
Legal Issues in Transportation Design	Policy Issues	0.8%
Operations Management	Skill Building	0.8%
	Total	100%

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