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Letter from the Publisher

As this issue goes to press, things seem to be collapsing around us. Wall Street is in disarray, the Federal Highway Trust Fund has just been saved, but for how long is unclear, and for the first time in fourteen years, no New York baseball team is in the playoffs.

At the same time, we are in the midst of some changes here at the *Journal*, though with much better outcomes! In particular, our Editor for many years, Brian Sterman, has taken a new position and is no longer able to serve in this role. While we are very excited for him and wish him the best of luck, his leadership on the *Journal* (not to mention his baseball metaphors) will be sorely missed. Joining us as our new Editor is Gerry Bogacz, who brings with him fresh ideas and thoughts as we wend our way through a seminal moment in U.S. history that will have important implications for transportation.

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Inside NYTJ

A New Vision for the Port Authority — Interview with Christopher Ward

The Port Authority of New York and New Jersey is under new leadership. ***Rachel Weinberger****, Assistant Professor of City and Regional Planning at the University of Pennsylvania, interviewed* ***Christopher Ward****, Executive Director of the Port Authority of New York and New Jersey, on his perspective on the role of the agency and his vision for the region in the coming decades.*

RW: Chris, you're back at the Port Authority after a five-year hiatus. Other than the Park Avenue address, how has the agency changed?

CW: The Port has changed in its complexity, largely because of Ground Zero. The last Pataki years had such a focus on Ground Zero that attention to regional development from the New York side was less than ideal. We have to get Ground Zero behind us. We need to put the projects in the ground, get them built, move beyond the policy debate it has been. It's no longer a "What is America? What is New York?" set of questions. It's buildings, a PATH station, a memorial.... We're building it and we need to get it behind us. What's different is getting that strategic plan back up and balanced and thoughtful and forward looking.

RW: Once you get past Ground Zero, what is your vision for the Port Authority?

CW: My vision question for the Port Authority (PA) is if you live in New York or you live in northern New Jersey and you're part of the port region, you have to ask yourself what kind of region or city do you want to live in 30 years from now; what will that place be? Look at Port Newark or LaGuardia Airport 30 years ago; there was nothing there. Or opening the Holland Tunnel 50 years ago; can we imagine what things we will want to have in place 30 years from now to have this be a livable, sustainable region? Do we have the power of imagination to put those things in place today so the region functions later?

RW: What are those things?

CW: Until we figure out how to move goods in the same way as we are figuring out how to move people, we will have missed half the equation. We can't consume the amount of externally created goods or the amount of food grown and harvested elsewhere with the current goods movement strategy. How does a region function when it imports like we do? U.S. Congressman Jerrold Nadler says the rail freight tunnel is needed. If you can't come up with a better idea, and if you can't understand where this region is going to be with regard to freight then build Jerry's [Nadler] tunnel. This is a fundamental challenge that the Port Authority will have to come to grips with. We're doing an EIS on the tunnel and a freight analysis. But that is the beginning of 50 years of work.

RW: The tunnel has come in and out of favor with the Port…

CW: We're doing it. Another question for the region is "are there limits to growth?" Are there management questions about how much we can bring in to the region? Is every container of equal value? Should we try to capture all the cargo that we can? Is every airplane good for us? After a point, Manhattan couldn't sustain a port. At what point can New Jersey no longer sustain a port?

RW: Because the real estate has become too valuable?

CW: Just density. When Port Newark was built, it was green fields and brown fields. Now there is a city wrapped around it the way Manhattan wrapped around the port when it was there. Then you had a congestion and quality of life problem.

RW: When you say we can't sustain a port you mean we can't move goods beyond

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the region because the density and congestion are too intense? How much of the freight coming in is destined beyond the immediate region? What if the PA only serviced goods that serve the region and didn't worry about goods clearing the region?

CW: That's a fascinating question. Right now we are pulling ship cargo that traditionally came in to Los Angeles and Long Beach and then was trucked or sent by rail to New York. That was shorter and faster for goods coming from the Pacific Rim. Those goods are increasingly coming through the Suez directly into New York. A lot of that commodity is leaving this region, going to Chicago and beyond. The question becomes what value is it for the Port to be moving things into the hinterland. Will freight port cargo logistics make that move more efficient elsewhere so we are not a throughput port, but more of a destination port?

On the other hand, this country consumes an enormous and increasing amount of goods from around the world. If we capture that commerce, how do we do it in a way that isn't detrimental to local quality of life? How do you create a better transportation network that radiates out from here, so there's less of a congestion problem?

Some of that is political leadership that is changing and has to continue changing to drive institutions in a way that we haven't seen. If we want to achieve the next level of prosperity and growth, the United States needs to understand what Asia, Europe and India have grasped. We've had our head in the sand since the Reagan years thinking that the market solves all of our problems, that you can do more with less, that the private sector does it better and that taxes are a waste of money. That paradigm will have to shift. The infrastructure gap and transportation gap are just too huge.

We need real national leadership. I give the Mayor credit for the congestion pricing initiative. That's the beginning of people thinking about how we're going to pay for these things. The MTA is teetering; when the MTA goes bad it's going to be bad in a big, big way. The city just won't be able to function the way we'd expect it to function. We've seen what happens when the MTA declines. We have to see a big paradigm shift to people paying for things and understanding the problems that we face.

RW: In addition to the freight tunnel, what about other kinds of capacity? Is increasing capacity the only solution? Is a demand management system the solution?

CW: Creating a different management system is clearly in the future. People don't like to think that government regulates, but we're coming out of this period where we thought "the market solves these problems." In the future, you will see some form of regulation, management and organization of how this region functions from a freight perspective. Look at the million trucks the rail freight tunnel would take off the road. They go anywhere they want, in any vehicle they want, at any time of day they want, frequently violating existing truck route and weight limit laws, probably violating some bridge weight limits and if you look at how much it's going to grow, you see it is an unsustainable model for community health, for regional mobility, for utilization of limited capacity. We need a better machine, that's managed and you have to have a better system around the region that can absorb it. Thirty years from now if you want to bring goods into the city you essentially have your E-ZPass, it gives you access, you go to your location, your route and time of day are prescribed.

We'll have to have freight distribution centers. You can't have disorganized long-haul trucking. We'll need to reorganize freight patterns, thinking about external strategic locations, whether they are at the end of rail lines or areas of highway access.

RW: Who is going to push that reorganization? Some of that originates outside the region. Who has to be involved?

CW: You start with the Port and radiate out to the MPOs (NJTPA and NYMTC). The MPOs need real teeth. Then you engage the private sector. There has to be a discussion that sends a message to the private sector: "this is where you make money. In order for us to absorb how you're making money you need to think differently about the markets."

The model could involve areas of the region being franchised. The franchisee gets to deliver within an area and it becomes their job to be part of the solution. We regulate how the private sector operates, but the private sector gets to take advantage of this market opportunity.

RW: Is FedEx interlining with DHL in that scenario?

CW: FedEx would be interlining with CSX and Norfolk Southern or airfreight cargo out of Canada. They would be part of a freight distribution system that originates in Asia and LA and Chicago. They would be an element of the last part of the haul.

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RW: And aviation?

CW: Another reason we're turning from the notion that the market can solve the problems is the chaos that exists in the air space. We're dealing with the administration's attempt to let the market dictate aviation industry growth and how we use our airspace. New York is suffering. The private sector isn't solving the problem; there are unlimited delays and a terrible flying experience.

RW: Where are you with the FAA in terms of auctioning slots?

CW: We are in a standoff. It's more of the Bush administration's attempt to have the market solve the problem. A certain degree goes back to the Reagan doctrine. But somebody has to land the planes. If you don't have enough people, you don't get to land as many. That's a shortcoming in the FAA; there aren't enough people to land all the planes we put up in the sky. So planes need to be farther apart and they land less efficiently. The idea that the market gets to decide means that each slot goes to the highest bidder and then to the highest value market. This utilization of airspace doesn't make sense. It's not good for the economy, it's not good for where people want to go unless you happen to be that very wealthy market that wants to go to that one very wealthy place where your ticket price is immaterial to you. The market may equilibrate at some point but in the meantime a lot of damage is done. That's not the way to get value out of the air transport system.

> *"If you ask yourself: 'What city do you want to be in?' You also have to ask: 'What am I willing to invest...?'"*

There's got to be some flexible mechanism or model that gets you there, instead of simply selling the slots to the highest bidder because then they're not going to be servicing Rochester. They'll never fly to Rochester.

RW: That's the argument you get back: "maybe it is too bad for Rochester."

CW: Here's where I would agree. I don't need a flight from La Guardia or from Newark to Philadelphia, though there are plenty. From Stewart Airport to Rochester is a market and that is a connectivity market that you want to maintain. I'm not saying I have the answer. But the solutions to the problems we have are not solely found in the market.

RW: Let's talk about that La Guardia to Philadelphia flight. What are the opportunities for you to cooperate with Amtrak and clean up the Northeast Corridor?

CW: We're getting there. A strong New York/New Jersey leadership role on what intercity rail does for this region, connecting Boston to Washington, DC, having Moynihan station as a hub and eliminating those flights up and down the Northeast is paramount.

That would free up a lot of runway and air space. So we have a huge interest in Amtrak's success in getting operating money and at the end of the day getting capital money. We will probably have to build another Amtrak tunnel under the Hudson River because the ARC Tunnel will only provide interim capacity for Amtrak. To accommodate the demand that Amtrak is forecasting over the 30 years after ARC is completed, we'll need to build another tunnel.

RW: It's humbling when you think about it. We are adding rail capacity for the first time in 100 years and we'll be tapped out in 20.... You mentioned congestion pricing, is it going to come back?

CW: Yes, in some way, shape or form. I love when people become populist about it: "How are the poor people of Brooklyn and Queens going to get into Manhattan?" Considering it's the mass transit system that gets 80% of people into Manhattan, not their car, when mass transit is about to go broke that's a lousy argument.

The loss of the commuter tax was huge. Something has to come back.

RW: With increasing gas prices though, people are driving less. Is congestion pricing going to be a good source of capital funds with driving demand going down? Are you getting the same level of tolls?

CW: People always ask us that question. The elasticity of demand at our crossings is so small that nothing seems to affect demand. Maybe we lost 1% of demand because of the spike in prices. It's temporary. Once things settle out, even when fuel prices settle out high, people come back.

RW: The PATH train. It's a little bit of an

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Christopher O. Ward is the Executive Director of The Port Authority of New York and New Jersey (and President of the Port Authority's wholly owned entities: Port Authority Trans-Hudson Co., the Newark Legal and Communications Center Urban Renewal Corporation, and the New York and New Jersey Railroad Co.). Appointed on May 22, 2008, he previously served at the Port Authority as Chief of Planning and External Affairs, as well as Director of Port Redevelopment from 1997 to 2002.

Immediately prior to being appointed Executive Director of the Port Authority, Mr. Ward served for over two years as Managing Director of The General Contractors Association of New York, Inc. (GCA), where he directed and managed the major trade association that represents the heavy construction industry in the City of New York.

Before joining the GCA, Mr. Ward spent a year as Chief Executive Officer of American Stevedoring, Inc., a stevedoring and port services company headquartered at the Brooklyn Port Authority Marine Terminal with major operations at the Elizabeth Port Authority Marine Terminal. Mr. Ward had previously worked at American Stevedoring in the 1990s.

Prior to leading American Stevedoring, Mr. Ward served as Commissioner of the NYC Department of Environmental Protection (DEP) for the Bloomberg Administration from 2002-2005. Mr. Ward led a staff of 6,500 and managed a combined capital and operating budget of over $2 billion. During his tenure at the DEP, he oversaw the maintenance and ongoing construction of the City's water supply, distribution and wastewater system, carried out Federal Clean Water Act and Clean Air regulation, and managed all conservation programs and hazardous and asbestos material emergencies and remediation.

Prior to his service at the Port Authority, Mr. Ward spent much of his professional career in service to the City of New York in various capacities, such as Senior Vice President for Transportation and Commerce at the Economic Development Corporation, Assistant Commissioner at the Department of Telecommunications and Energy and as Director of Research at the Department of Consumer Affairs.

Mr. Ward holds a Bachelor of Arts from Macalester College and a Master of Theological Studies from Harvard University's Divinity School. Mr. Ward has also served as an Adjunct Professor at the School of International and Public Affairs at Columbia University.

In the Region

MTA Metro-North's Stewardship of a Transit Oriented Development for the Beacon Train Station

By Randall J. Fleischer, Wendy Johnston & Greg Sylvester

The expected release of a Request for Proposals by MTA Metro-North Railroad (Metro-North) for Transit-Oriented Development (TOD) at the Beacon Station in the winter of 2008-09 is the result of several years of master planning, outreach, stakeholder meetings and community involvement led by MTA Metro-North Railroad. Once finished, the TOD will encompass the entire 18-acre station site owned by Metro-North, adjacent to the station and the Hudson River. Consistent with MTA's recent Sustainability and Smart Growth focus, Metro-North's experience leading TOD planning at the Beacon Station in Dutchess County, while a first for the agency, provides an example of the ways in which transit agencies can participate in the local planning process to develop TODs in suburban communities.

The Goal

With a commuter rail service that extends to the Hudson Valley and to south-western Connecticut, Metro-North has continually planned for innovative ways to expand access to its transportation network, as annual ridership has grown from approximately 48 million passengers in 1984 to over 85 million today. A policy to promote TOD as a way of increasing ridership, supporting more efficient land use and leveraging public assets to generate revenue reflects the proactive role Metro-North plays in encouraging such development in and around its stations.

Beacon Short-Term Station Improvements, Completed in 2007; photograph provided by Randy Fleischer, MTA Metro-North Railroad.

The goal of the branded "Be In Beacon" TOD is to facilitate increased access to Metro-North for its growing ridership, while enhancing the quality of life and catalyzing economic revitalization for the local community. This goal is consistent with Metro-North's recognition that construction of additional parking facilities at stations — while effective to a certain degree — is not the only long-term solution to station access, given that projected ridership increases will outpace both growth in the capital budget and the availability of land for expanded parking around its stations. A system-wide strategic program that supports sustainable mixed-use development, as part of station-centered TODs, provides a long-term, sustainable approach to greater access to public transportation.

The Planning Process, Stakeholder and Community Involvement

At the Beacon Station, Metro-North recognized the criticality of a broad-based outreach process in achieving a region-wide perspective while understanding the role of the station within the community. Since many communities in the region have expressed concern about increasing density in established settings, the Beacon Station project team informed and educated community residents and stakeholders on the benefits of such development, including the ability of the station area to serve as a Gateway to Beacon and the Hudson River.

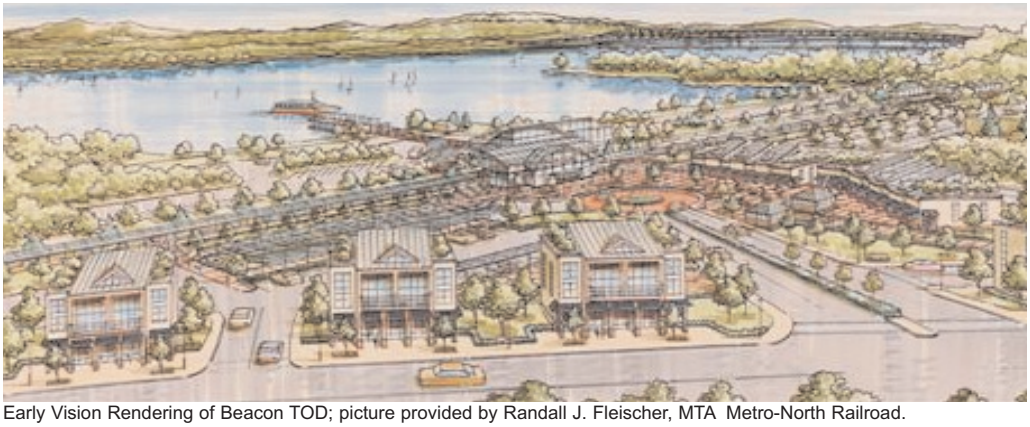
In early 2002, Metro-North initiated and facilitated a community planning charrette for a Station Area Master Plan that would improve station access at Beacon by adding parking and other means of access while linking the station area with downtown Main Street and surrounding attractions such as the Dia:Beacon museum. The planning charrette engaged more than 20 key stakeholders, including representatives from the City of Beacon, Dutchess County, local and Federal agencies, multiple New York State agencies and departments, and major neighboring environmental, cultural, and local interest groups. The charrette laid the groundwork for continued planning over the next two years, which then involved the public at large and focused on integrating the station area into the fabric of the community.

A public workshop was then held to gather additional feedback on three alternatives developed from the charrette. Comments from stakeholder groups and the public helped to identify a preferred option, and ongoing planning meetings refined the Master Plan elements to achieve consensus on the final vision. The unknown impact of the Master Plan on downtown business was a critical issue that emerged from the planning process. To address this issue, the project team also convened meetings with business owners, and developed two approaches:

1) The Master Plan would avoid directly competing with existing businesses on Main Street in its planned commercial uses in the TOD district; and,

2) Measures would be taken to link the station to the downtown, including streetscape and way-finding signage at the station to inform patrons of Beacon's

Randall J. Fleischer is Senior Director, Business Development, Facilities & Marketing; **Wendy Johnston**, is Assistant Director, Parking & Facilities Planning; and **Greg Sylvester** is Senior Planning Administrator. All three are at MTA Metro-North Railroad.



Early Vision Rendering of Beacon TOD; picture provided by Randall J. Fleischer, MTA Metro-North Railroad.

various points of interest, specifically on Main Street.

A final public Informational Open House, held in 2004, laid out a short-term Improvement Plan and a long-term Master Plan for the station area. The public reaction to these resulting plans was overwhelmingly positive.

Initial Implementation Steps

As parking demands increased at Beacon Station and a waiting list for parking permits soared to 700 applicants, the short-term Improvement Project was advanced by Metro-North with stakeholder support. It resulted in the award-winning *Beacon Station Parking & Access Improvement Project*, completed in 2006. This project:

- Created a "sense of place" to the station area through a new "gateway" entrance/plaza and a unique station identification illuminated signage.
- Provided significant increased access to the station, when combined with the concurrent initiation of ferry service from Newburgh to Beacon in 2005 (funded by NYSDOT);
- Improved traffic circulation on roadways connecting to the station, redirecting vehicles from residential streets;
- Added a new station canopy and extensive landscaping to improve the aesthetics of the station;
- Provided perimeter way-finding signage to improve access to other attractions in Beacon; and,
- Added 365 parking spaces which, with the new ferry park and ride in Newburgh, eliminated the wait list for parking.

Moving the Long-Term Master Plan Forward

In parallel with the short-term project implementation, the long-term Master Plan was moved forward as well. Prepared with technical support by Urbitran/DMJM Harris and FxFowle, it included a TOD designed to both improve service for current customers and to generate economic growth in the City of Beacon and the surrounding region. The key element of the Master Plan was a self-sustaining mixed-use TOD that would act as a gateway to the Beacon waterfront, consistent with the Master Plan principles developed through the planning process. The TOD element seeks to:

- Promote Smart Growth principles, including improved access to Metro-North, increased development density supporting housing (with lower residential parking requirements) and commercial and cultural activities;
- Enhance access to, and preserve key views of, the Hudson waterfront;
- Integrate the multi-modal transportation facilities already at the site;
- Fund enhancements to the transportation facilities through a TOD/public-private partnership;
- Support development approaches for the site that complement, but do not compete with, the local economy;
- Develop linkages to connect the station area to other local venues;
- Provide access points and traffic control measures to move pedestrians and vehicles safely and efficiently in the station area, despite increased utilization; and,
- Coordinate with adjacent planned communities.

The Metro-North "Be In Beacon" development team, led by Metro-North and supported by the MTA Real Estate and Legal departments, has been pursuing a two-step approach to implement the Master Plan. The first step was the development of a Request for Expressions of Interest (RFEI), which allowed interested developers to provide early input regarding the development potential of the site, thus assisting the development team in establishing realistic parameters for the issuance of a formal Request for Proposals (RFP). In addition, the RFEI helped to

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Letter from the Publisher (Cont. from p. 1)

One of the first items to which we will have to attend is, in fact, financing our system. As we move closer to authorizing the next surface transportation bill, a vision for what it is we want and need to fund is necessary. In her lead article for the *Journal*, Rachel Weinberger interviews Chris Ward, Executive Director of the Port Authority of New York and New Jersey, and talks to him about his vision for the Port Authority and the New York Metropolitan Region. In his discussion with Rachel, Chris describes the challenges for the transportation system and the strategic choices that will have to be made.

As various states and regions begin to jockey for their share of funding in the next bill, one of those critical strategic choices will involve the development of a regional partnering strategy, as Thomas Wakeman III and Paul Bea, Jr. point out in their article on **Financing Transportation**. They describe what others are already doing and what needs to be done in the greater New York Metropolitan area to foster such partnerships and vision.

Partnerships are equally important at the local level, especially as new models are pursued to reduce congestion and enhance quality of life. Two complementary articles touch on Transit Oriented Development (TOD) as a means to do just this. In an **In the Region** article by Randall Fleischer, Wendy Johnston, and Greg Sylvester, the authors describe the process of developing and implementing the TOD in Beacon, New York. Recognizing that many transit riders use bus rather than rail, in a **Transportation and Land Use** article, Simon McDonnell reviews recent developments by New York City's Department of Transportation, and discusses the potential for Bus Rapid Transit as an anchor for TOD.

When dealing with transportation and land use, and particularly TOD, pedestrians are an important focal point. In a **Rudin Center Research** article, Allison L. C. de Cerreño and Hyeon-Shic Shin summarize initial findings from a study funded by the Federal Highway Administration on pedestrian groups considered to be at higher-risk for involvement in crashes with vehicles. While a work in progress, the article provides some interesting glimpses into the importance of identifying such populations in order to improve overall pedestrian safety.

The final article summarizes a co-sponsored event by the Institution of Civil Engineers and the NYU Wagner Rudin Center that explored the success of the Channel Tunnel Rail Link in London.

I hope you enjoy this issue of the *Journal*.

Transportation and Land Use

Bus Rapid Transit as an Anchor for Transit Oriented Development in New York City

By Simon McDonnell, Ph.D.

One of the most exciting developments on the New York City public transit agenda is the proposed (and partially operational) Select Bus Service that represents the City's first real attempt at Bus Rapid Transit (BRT). Demonstration corridors for this service were chosen after a long process involving the use of a number of assessment criteria. However, that process did not explicitly explore the potential for BRT to act as an anchor for transit oriented development (TOD). Is there a need for a wider analysis of BRT's role as a potential anchor for more sustainable TOD patterns as well as, more generally, the impacts of BRT on surrounding neighborhoods?

Both BRT and TOD are advocated as mechanisms for developing sustainable transport and development patterns in urban and suburban areas. The former often involves the reallocation of road space for the exclusive use of buses, and the introduction of ancillary measures to improve transit efficiency and ultimately to encourage travelers' shift to the improved transit service. The latter is aimed at promoting the development of higher density residential and commercial centers in proximity to transit stops to encourage greater transit ridership and more sustainable communities. Together, these strategies seek to make better use of existing infrastructure and resources to leverage more sustainable outcomes in transport and development patterns. This is a central policy goal of planners in any city and is especially important in the context of an economic downturn that is exacerbating an already chronic problem in financing transportation infrastructure and operations.

TOD has created considerable excitement in planning circles (Christopher, 2006). However, when academics and policymakers refer to TOD, they are generally alluding to development strategies centered on rail transit stops (either heavy or light rail). Indeed, there is a large and growing literature on rail TOD (RTOD) and its impacts on both transit use and neighborhood impacts (Ewing, 1999; Cervero et al., 2004; Renne and Wells, 2005). In contrast, the question of bus transit operations being used as a similar anchor for TOD, known as BTOD, has largely escaped research focus. This is primarily due to the fact that relatively low frequency suburban bus systems without fixed infrastructure lack both magnitude and perceived permanence, thus presenting significant risks for potential developers (Currie, 2006).

Despite this situation, almost 10% of TOD plans are anchored by bus operations in the United States (Cervero et al., 2004; Christopher, 2007). In addition, the advent of BRT operations in many cities has reframed the concept of BTOD within the context of potentially higher service levels than ordinary on-street bus transit services. Authors such as

Map of planned Select Bus Service (SBS) routes in New York City; the route in the Bronx is already operational. Graphic provided by MTA NYC Transit and available from: http://www.mta.info/mta/planning/sbs/images/citywide_map.gif

Levinson et al. (2003) have indicated that BTOD has the potential to be an important aspect of BRT.

The potential of bus-based TOD may be especially interesting to policymakers involved in the recent push for BRT in New York City. As of now, the adopted corridor selection process has largely excluded any explicit analysis of the potential impact on the surrounding neighborhoods and the potential for BTOD in these BRT catchment areas. The question is,

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should future corridor selection analyses explicitly allow for such impacts to be assessed?

The Policy Context

New York City Transit operates in excess of 200 local, limited-stop and express bus services carrying over 2.5 million riders daily — thirty-five of those services carry more than 20,000 passengers per day (McNamara et al., 2007). However, the competition for scarce urban road space among private motor vehicles, commercial vehicles, public buses, and non-motorized modes has been partially responsible for an average bus speed of less than 8 miles per hour — one of the slowest average speeds in the United States (City of New York, 2007). Accordingly, the Metropolitan Transportation Authority (MTA), the New York City Department of Transportation (NYCDOT), and New York State Department of Transportation (NYSDOT) have embarked on a joint project to introduce BRT in New York City. Five high-quality demonstration routes, labeled Select Bus Services, are proposed to be operational by 2011, with an additional five routes added by 2014. One of the initial five demonstration routes is already in operation along Fordham Road in the Bronx.

The strategy is drawn from PlaNYC, Mayor Bloomberg's long-range sustainability plan. The strategy notes that of the 231 counties in the United States with populations in excess of 250,000, the four with the longest commute times are four of New York City's five boroughs: Queens, Staten Island, The Bronx and Brooklyn. PlaNYC envisions the extensive use of BRT in corridors not optimally served by the subway network. Almost 30% of city residents live more than half a mile from a subway station and twenty-two areas of the city are identified as having high concentrations of Manhattan-bound car-using commuters because they lack transit alternatives.

PlaNYC also envisions a New York City with up to one million additional residents and 350,000 more housing units by 2030. This anticipated growth further highlights the need for TOD-related policies allowing for more efficient use of the City's resources and infrastructure. Unfortunately, as we know, federal grants contingent on implementation of the Manhattan congestion charge plan have disappeared with the proposal's failure to pass the State legislature. In many respects, this makes the case for better use of existing infrastructure even more compelling.

With this in mind, BRT has the potential to be a very attractive strategy to further stimulate sustainable transport and land use patterns. It is envisioned to be a flexible, high performance rapid transit mode combining equipment, service and intelligent transportation systems into a permanently integrated system with a quality image and identity (Zimmermann and Levinson, 2004). In this regard, it may be able to tap into some of the advantages that fixed-rail transit maintains over local on-street bus operations without the associated high capital costs, lengthy construction time, and inflexibility of the resulting fixed-route service (Levinson et al., 2003; Currie, 2006). Indeed, Paaswell et al. (2004) have noted that BRT should not be seen as an alternative to rail. Instead, BRT should be used to mitigate competition over New York's shared but limited street space and to improve the streets' efficiency.

What is less well understood is BRT's impact on surrounding neighborhoods and its potential role as an anchor for BTOD.

Existing Research

The existing focus on rail-anchored TOD is not surprising given the relatively new nature of BRT and the perceived advantages that rail has over on-street bus operations in terms of permanence and service attributes (both by potential riders and by developers). In addition, rail generally supports higher densities than typical bus services. However, authors such as Currie (2005) have shown that the advantage that rail holds over on-street bus services in terms of consumer perception is significantly reduced by BRT operations that achieve similar service levels and characteristics.

Cervero (1993) found little evidence of TOD projects in bus-dominated suburban markets. However, more recent analysis has identified a small number of BTOD projects in operation (Cervero et al., 2004). In New York, Paaswell et al. (2004) have advocated the development of a BRT network and note that along particular corridors, the right set of investments and policies can support high density TOD. Recently, the Transportation Research Board has analyzed the role of bus transit services in land use and noted

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Honorees for the 2009 Annual Leadership in Transportation Awards

The following individuals and agencies will be honored on February 24, 2009:

Civic Leadership:
Joan Byron, Pratt Center for Community Development

Public Agency:
MTA New York City Transit, jointly with New York City Department of Transportation, for the Select Bus Service program

Public Leader:
Susan Kupferman, Metropolitan Transportation Authority

Public Servant:
Raymond Sandiford, The Port Authority of New York and New Jersey

Lifetime Achievement:
Robert Paaswell, CCNY (CUNY) and Region II University Transportation Research Center

Each year, the NYU Wagner Rudin Center for Transportation Policy & Management and its Council on Transportation bestow a set of awards to distinguished leaders in the field of transportation. Awards are given for Public Leader, Public Servant, Civic Leadership, and Public Agency. From time to time, we also choose to give additional awards when individuals or agencies merit them.

Past awardees have included Mayor Michael Bloomberg (2008 Public Leader), County Executive Thomas Suozzi (2007 Public Leader), David Gunn, former President of Amtrak (2007 Special Tribute), and NJ Transit (2007 Public Agency), among others. A list of all previous recipients is available on the Rudin Center's website at: *http://www.wagner.nyu.edu/rudincenter/conferences/annualawards.php.*

Financing Transportation

Building a Regional Transportation Strategy

By Thomas H. Wakeman III and Paul H. Bea Jr.

"When it comes to planning infrastructure and large-scale environmental systems, the megaregion concept makes a lot of sense. Particularly in transportation, it's harder for cities and individual states to go it alone." Armando Carbonell, Chair of the Department of Planning and Urban Form at the Lincoln Institute.

The arteries that comprise passenger and freight transportation infrastructure in the New York metropolitan region cross many political boundaries. This circulation system — big in both size and complexity — consists of individual elements that were built over time by various State, regional and municipal agencies. There was a time when those road and rail elements functioned well together and served their intended markets. Indeed, the countless public and private enterprises grew in a fertile economic environment that owed its existence and success to the roads, bridges, docks, and rails that were built by those agencies.

Today, the metropolitan region has swelled in population and economic activity. It now touches parts of four states — New York, New Jersey, Connecticut, and Pennsylvania — and is embedded in an even larger Northeast Megaregion. The collective wealth of transportation infrastructure built for another time cannot function as well when basic consumer items are shipped from Asia to Allentown and commuters travel from Bucks County to Manhattan. It is a system overburdened with demands on capacity and in a state of repair that challenges financial and planning resources.

Without adequate transportation capacity in the near future and beyond, our extended metropolitan region will suffer growing economic, environmental, and social consequences. It will survive but not thrive.

It is not just this greater metropolitan region that is at risk. Several national organizations judge the nation's transportation system to be in crisis. They state that traffic congestion cost the national economy $78 billion in 2005, adding $8 billion to the price of consumer goods, increasing commuter trips by 4.2 billion hours, and wasting almost 3 billion gallons of gasoline as cars idled in traffic jams. Besides the economic concerns, this congestion contributes to human health impacts. Thousands of tons of pollutants are pumped into the air annually causing multiple respiratory problems for motorists and residents.

The problems are not limited to the impacts of local congestion on individuals. The nation's transportation infrastructure, valued at $1.75 trillion, makes it possible to move $6 trillion worth of goods as part of a domestic and an international marketplace. The nation's economic strength increasingly depends on trade. In fact, international trade is estimated to contribute almost one-third of the country's Gross Domestic Product.

International trade relies on efficient transport between markets, with the majority of goods (90%) carried by the maritime shipping industry. However, the global logistics chain is comprised of more than big ships and it neither stops nor starts at the nation's doorstep. That logistics chain includes a vast system of ports, roads, railways, and linkages to inland distribution centers, warehouses and manufacturers.

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Two national reports released in January 2008 — the first on freight mobility by the General Accounting Office (GAO, 2008, Freight Transporation: National Policy and Strategies can Help Improve Freight Mobility) and the second on future transportation needs, by the National Surface Transportation Policy and Revenue Study Commission — describe the national transportation system, particularly the components of the system which move freight, as inadequate to meet future needs. The GAO report notes the lack of a national freight strategy and the Commission report recommends a complete restructuring of Federal programs, a new national revenue strategy for transportation financing, and complimentary infrastructure investments to meet current and future mobility needs.

The nation's freight transport problems include: too little system connectivity, overall capacity, and capital and maintenance funding. The demand for mobility seems to be outstripping the public and private sectors' ability and willing-

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ness to make the required investments. Furthermore, much of the transportation system is old, and maintenance costs are increasing and competing for available funds. The National Association of Regional Councils (NARC) estimates that simply maintaining current levels of service on our already crowded highway and interstate systems will require an additional $34 billion in investment in the transportation system each year.

The approaching opportunity to address these needs comes with the Federal transportation legislation that authorizes spending for transportation improvements. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was enacted on August 10, 2005 and will expire on September 30, 2009. The law authorizes Federal surface transportation funding programs for highways and transit. It also specifies projects for funding, from community amenities to projects of "national significance" that include rail freight elements. These programs and projects are implemented by state departments of transportation (DOTs) and metropolitan planning organizations (MPOs).

In anticipation of the new bill, stakeholders at all levels of government and in the private sector are developing recommendations to present to Congress. Many stakeholders have formed coalitions that have coalesced around common challenges or specific projects of mutual benefit. They strategize as to how to best position themselves in the bid for public funding and policy solutions. These coalitions often represent multi-state regions whose spines are transportation corridors. This attention to regional approaches has been growing in recent iterations of the enacted federal surface transportation programs and policy bills.

The coalitions are built on the understanding that uncoordinated infrastructure and institutional elements form chokepoints and barriers to the seamless and cost-efficient movement of people and goods in a global logistics chain. They realize that planning and acting in isolation on individual transportation elements may serve to the advantage of competing regions — whether they are competing international gateways or metro areas working to attract industry. They understand that a concerted coalition effort can focus congressional interest and public opinion on the critical mobility needs of their region. Piecemeal investments do not support, much less enhance, overall system performance.

Likewise, our own extended New York City metropolitan region's leadership, including elected officials, DOTs, major transportation authorities, MPOs, and other public and private stakeholders, need to formulate a shared vision for a regional transportation system that bridges historic physical boundaries and political borders. This vision should go beyond rail passenger service — already proposed for multi-MPO discussion — to include other key surface transportation system elements. It should offer a clear, comprehensive statement on regional mobility that acknowledges the drawbacks of fragmentation and identifies where common cause can result in improved mobility. The statement should outline objectives for transportation investments and system performance, and should give particular attention to goods movement. Moreover, this vision must include the desired system capabilities and required infrastructure investments to meet economic, environment and energy objectives. It should identify how revised transportation policy can break down barriers to improved system operation and investment. Finally, it must recommend coordinated and cooperative action that can address the significant funding requirements to meet capital and maintenance needs of our regional transportation system.

Regionally valuable proposals could pertain to congestion mitigation, carbon emission reductions, commuter transportation, and goods movement. These may be "low hanging fruit", but they could give the budding coalition a foundation for collective advocacy. As for projects, there are several potential nuclei for building a strong coalition effort. The stakeholders could look to the Liberty Corridor program (advanced by Senator Robert Menendez and allocated $100 million in SAFETEA-LU), the New York Metropolitan Transportation Council's regional freight project (www.nymtc.org), the Port Authority's regional freight strategy, and New York City's PlaNYC 2030 (www.nyc.gov). Elements from these could be selected for the agenda to highlight certain types of goods movement improvements, for example, that are desired in all areas of the region, such as short haul rail or development of regional freight water routes.

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Rudin Center Highlights

UPCOMING EVENT

Wednesday, January 21, 2009

POWERING UP CITIES FOR PLUG-IN HYBRIDS

This event is co-sponsored with the New York Academy of Sciences, and features a panel of prominent speakers who will be discussing how plug-in hybrid electric vehicles (PHEVs) may be deployed in urban centers such as New York City.

The speakers include ***Mark Duvall***, Program Manager of Electric Transportation at the Electric Power Research Institute, who will present on the technological and economic issues that must be addressed to make PHEVs commercially viable. ***Arthur Kressner***, Director of Research and Development, Power Supply, at Con Edison, will then discuss the changes needed in the electrical supply system to successfully accommodate PHEVs, such as developing Smart Grid capability. ***Richard Drake***, Program Manager, Transportation & Power Systems R&D at NYSERDA, will focus on the results of the first phase of the NYS PHEV Initiative Program.

This event will be held at the NYAS, 7 World Trade Center, 40th floor, NY, NY 10007.

FEATURED PROJECT

BEST PRACTICES FOR CONTEXT SENSITIVE SOLUTIONS IN URBAN AREAS

The Mineta Transportation Institute, through the San Jose University Foundation, awarded a grant to the NYU Wagner Rudin Center to address the dearth of information related to CSS in large central cities. The goal of this study is to provide a more in-depth assessment of how CSS is used in practice in urban areas, touching upon:

- how CSS is incorporated into basic planning, programming, and design;
- what kind of policies have grown out of this process or help guide it;
- how public participation and stakeholder involvement is carried out and measured;
- what kinds of obstacles exist to successfully incorporating CSS in practice; and,
- what kinds of decisions are finally made in terms of balancing the various needs related to parking, non-motorized traffic, and throughput.

Rudin Center Research

Pedestrian Safety in Large Central Cities: Identifying Potential High-Risk Groups – A Work in Progress

By Allison L. C. de Cerreño, Ph.D. and Hyeon-Shic Shin, Ph.D.

Last year, funded by the Federal Highway Administration (FHWA) and in conjunction with the National Association of City Transportation Officials (NACTO), Inc., the NYU Wagner Rudin Center undertook the study, "Pedestrian Safety and Potential High-Risk Groups in Large Central Cities: Issues, Tools, and Policy." The goal of the effort is to identify potential high-risk populations — defined as a segment of the population which is overrepresented in pedestrian-vehicle crashes — and describe the tools for reducing their risk, while increasing safety for the broader population as well. Recently approved for a second year of funding, what follows is a summary of findings based on the initial deliverable recently submitted to FHWA.

Pedestrian Safety in Large Central Cities

Large populations, higher densities, and more people walking make ensuring pedestrian safety in large central cities an ongoing challenge. Indeed, pedestrians in large central cities continue to have a higher risk of being involved in pedestrian-vehicle crashes than other areas of the country. While the combined population of the 31 cities in the United States with populations exceeding 500,000 in 2006 accounted for roughly 12.7 percent of the total U.S. population, their share of pedestrian fatalities was approximately 17.4 percent (USDOT, 2006). Moreover, despite a number of interventions of various types, this overrepresentation has not changed much in more than a decade. Twenty-seven of the 31 largest central cities in the United States remain in the top 100 cities with respect to pedestrian fatality rates (USDOT, 2006).

High-Risk Populations

Just as people in large central cities are overrepresented in pedestrian fatalities and injuries, some groups appear to be at higher risk as well. However, whether those population groups are truly at higher risk and what causes this higher risk is not entirely clear. Since many cities have begun focusing on these perceived high-risk populations, investing time and resources in programs to reduce their risk, knowing whether they truly are at higher risk and what the factors are that cause that risk is important. The following paragraphs describe and briefly discuss several of these high-risk populations.

Children. Across the country, the number of child (5-15 years old) pedestrian fatalities and injuries declined by roughly 48 percent between 1996 and 2006, greater than the average across all age groups during the same period (USDOT, 1996; USDOT, 2006). Despite this decrease, children continue to be overrepresented in pedestrian-vehicle crashes, still accounting for 20 percent of all pedestrian fatalities and injuries in 2006, even though as a group they represented only 15 percent of the total U.S. population (USDOT, 2006).

> ***"... pedestrians in large central cities continue to have a higher risk of being involved in pedestrian-vehicle crashes than other areas of the country."***

Disaggregation of this population group by age and gender suggests that it may be specific groups of children who are at higher risk. For example, in 2006 injury rates for children 10-15 years old were roughly two times more than those for children between 5 and 9 years old (USDOT, 2006). Moreover, fatality and injury rates for male children between 5 and 9 years old were three times higher than those for female children (USDOT, 2006).

What places children at higher risk is a subject of debate. Some studies point to underdeveloped decision making abilities while others suggest that differences in temperament (in particular, impulse control) are more relevant. A different set of studies points more to neighborhood factors, noting that higher youth population densities, higher unemployment, lower household income, and higher traffic flow are associated with increased risk (LaScala, 2004). Of particular interest was a study by Safe Kids Worldwide (2006) which found that crime influences children's walking behavior. In some communities, children noted they would rather knowingly place themselves at higher risk of a crash by crossing the street at mid-block than have eye-contact with and/or walk past groups of people to get to the corner (Safe Kids Worldwide, 2006). They were more afraid of becoming victims of crime than being hit by an oncoming car. Important for transportation agencies, such findings suggest that pedestrian safety measures alone are unlikely to reduce risk in such situations; instead, multi-agency and multi-faceted approaches well beyond the purview of transportation will be needed.

Older Adults. Older adults (those 65 years and older) are clearly overrepresented in pedestrian fatalities, considering

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their population share is only 12 percent but they accounted for 20 percent of total pedestrian fatalities in 2006 (USDOT, 2006). Pedestrian safety for older adults is an increasing concern in large central cities as the older adult population is expected to grow to roughly 20% of the total U.S. population by 2029, and the majority of them live in metropolitan areas (He et al., 2005; C. de Cerreño, 2006). Risk factors for older adults include slower walking speeds (making it difficult for them to cross streets within the time allotted), diminished sensory perception (reducing their ability to effectively gauge safe gaps between vehicles for crossing), lag in reflexive responses (leading to reduced response times), and lowered physical resilience (leading to a higher risk of severe injuries and fatalities when involved in a crash).

People with Disabilities. There are 43 million people with disabilities in the United States, and while there are many types of disabilities, most pedestrian safety discussions focus solely on the visually impaired or treat all disabilities as a singular challenge (Wegmen, 2003). Even in the group most studied, however, there remain challenges of navigating in urban areas. Visually impaired pedestrians are taught to make crossing decisions based on the geometry of curbs, the sound of cars running parallel to crosswalks, and/or accessible signals (e.g., pushbutton and audible signal with pushbutton) (Bentzen el al., 2000). However, high traffic volumes and the accompanying noise, complex intersection designs with left turn lanes or uncontrolled right turn lanes, and traffic signals geared toward vehicles make it difficult for visually impaired pedestrians to safely cross streets (Bentzen et al., 2000).

Of particular note, design features for some types of disabilities may actually make it more difficult for individuals with other disabilities to safely cross streets. For example, one survey found that the existence of curb ramps (which help those who cannot easily step up or down) made it more difficult for visually impaired individuals to recognize the boundary between the road and the walkway (Bentzen et al., 2000). Moreover, even traffic control devices aimed specifically at certain disabilities may not be effective. For example, 94 percent of one set of study respondents noted that they have difficulty finding pushbuttons because they lack information about their existence and/or the pushbuttons are located too far from the crosswalk. In addition, audible signals are not always heard in noisy urban environments, and when they are, it is not always clear in which direction one should walk (Bentzen et al., 2000).

Hispanics, African Americans, and Native Americans. A number of studies have identified Hispanics, African Americans, and Native Americans as being at higher risk for pedestrian-vehicle crashes. However, other studies have suggested that race and ethnicity are not truly determining factors. Instead, they point to socioeconomic characteristics as being more important. For example, one study found that populations with lower incomes show lower vehicle ownership, live in high-density areas with high traffic volumes, and walk more, thus leading to much higher rates of pedestrian exposure to vehicles (see table) (Gantz et al., 2003).

Next Steps

Six potential groups were identified as being at higher risk for pedestrian-vehicle crashes. However, throughout the literature on pedestrian safety, there is little consistency in how these high-risk groups are delineated. The age ranges for older adults, for example, are not consistent and often lead to very different results. For Hispanics, data is often not sufficiently disaggregated so it is difficult to determine whether documented

Mode Choice by Race/Ethnicity

Modes	Whites	Hispanics	African Americans
Automobile	87.6	83.1	78.9
Walk	8.6	11.8	12.6
Transit	0.9	2.4	5.3
Other	2.9	2.7	3.2
Total	100	100	100

From: U.S. Census Bureau, 2000 Census Summary File 1, QT-P3, Race and Hispanics or Latino, U.S. Department of Commerce, http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=01000US&-qr_name=DEC_2000_SF1_U_QTP3&-ds_name=DEC_2000_SF1_U (accessed February 13, 2008).

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MTA Metro-North... (Cont. from page 5)

market the project to the development community and created excitement about its potential.

As the RFEI document was being developed through the summer of 2007, two other processes were underway that facilitated the Beacon TOD project. The first, spurred by Metro-North's master planning efforts, was the City of Beacon's update of its thirty-year Comprehensive Plan. As part of that process, Metro-North recommended creating a new TOD zone around the train station, a concept that was embraced by the City and incorporated into its final Comprehensive Plan.

The second process was a transportation linkage study for the City funded by the New York State Department of State. The focus of the study was to analyze transportation linkages among identified attractions in the City, including the Beacon Institute at Denning's Point, the Beacon Harbor and Waterfront, the train station, Dia:Beacon, Madam Brett Park, and Main Street. The study confirmed that a TOD at the station could be a key catalyst for connecting with Main Street, and identified a bus shuttle and way-finding system as key elements in establishing this linkage.

After stakeholder input, the RFEI was released on October 29, 2007. A marketing plan was developed to support its release and ads were placed in key real estate and development journals, as well as major periodicals in the greater New York City and Hudson Valley area. Over sixty firms requested a copy of the RFEI and, despite a significant snowfall on December 13, over 40 firms attended a site tour and informational session the next day.

Upon receipt of a number of developer responses to the RFEI, the TOD project team held one-on-one interviews with each of the interested developers to clarify the development potential of the site. Metro-North then engaged in a detailed economic analysis of various TOD massing and phasing options and also held discussions with the City concerning the level of density needed for an economically viable project. The primary objective of this analysis was to determine the best combination of mixed uses that could support the TOD project and the economic development of Beacon, while retaining the culture of the City.

Based on this information Metro-North created a model TOD Programmatic plan for the station area that best represented what was economically achievable at the levels of density and parking needed, along with an optimal mix of residential and commercial development. This unique model served as the basis to lobby the City for further zoning changes and was used to frame the creation of the targeted TOD Request for Proposals.

The Results

The Master Plan for TOD at the Beacon Station has been developed with an exceptional level of participation at planning sessions and public meetings. The Master Plan framework established by Metro-North and its outreach process in Beacon has garnered international interest, including visits of officials from China, Australia and the United Kingdom. In addition, two academic institutions have included the Beacon TOD process in graduate-level design studios as a model for Smart Growth planning and implementation, thereby helping broaden the understanding of the next generation of transportation planners as well. It is expected that this collaborative planning process and resulting Master Plan will lead to a TOD that benefits Metro-North customers, the City of Beacon and the surrounding region. ◆

Megaprojects... (Cont. from page 16)

ing: union labor and prevailing wages; competition for labor and construction materials; material shortages, and procurement; shortage of bids; logistics of accessing and operating in a dense urban area; insurance costs; escalating costs of raw materials; and contractor claims.

Mr. Mir noted that the labor situation in the United Kingdom is very different, which allowed the team to develop the financial and insurance packages without need to consider potential loss of time due to labor actions. Further, the project was able to draw from a large European construction market and managers were able to meet with suppliers, contractors and unions during the pre-procurement stage. With respect to potential material shortages, some contractors were able to pool resources to purchase materials jointly, thus reducing costs. Moreover concrete batching plants and tunnel fabrication yards were established and used jointly by contractors. It is not clear whether these arrangements would be possible in New York.

However, the "logistics" related lessons appeared particularly relevant for New York from Mr. Mir's perspective. For example, the project benefited from considering, during the planning phase, the size and adequacy of construction site areas and the necessary land was acquired before the construction phase (and ultimately returned back). Also considered very early on was the delivery of materials to, and spoils from, the construction sites and the amount of material required or generated for removal. Existing warehouses were identified and adapted for contractors use (e.g., storing materials and machinery).

The final panel of experts added to Mr. Mir's discussion, with the NYU Wagner Rudin Center's Director, Allison C. de Cerreño, beginning by noting that one additional point of departure between London and New York is important. Specifically, she suggested that the local and national political context related to transportation megaprojects is quite different in the two countries, with much less support for transportation investments in the United States than overseas. Further, and related, she noted that the discussions of costs and benefits are quite different as well, with benefits from the High Speed 1 project including various social and development benefits, while cost/benefit analyses of high speed rail in the United States tend to revolve primarily around revenue generation.

Michael Cuddy, P.E., Vice President, PB, New York Business, agreed with this assessment, adding that as a result, there is a lack of public funding for infrastructure in the United States, made worse by a large number of megaprojects competing for these limited funds. He also noted that there is a need for a cultural shift in the way projects are currently managed. He felt that there is a certain resistance to change and that agencies, contractors, and/or designers are reluctant to give up perceived control as was done in London. While Anil Parik, P.E., Program Manager, MTA Capital Construction Co., generally agreed with the importance of managing megaprojects differently, and stressed the importance of having the contractors integrated early in the process, he also noted that it is important to avoid constant design changes along the way.

Michael Anderson, P.E., Project Director, Tappan Zee / I-287 Environmental Review, NYSDOT, agreed but suggested that often some "catalyst," specifically a champion, is needed to move these large projects. Indeed, in the case of the CTRL, Colin Stewart highlighted the importance of having a visionary leader at the time who was willing to garner support for the project. ◆

Pedestrian Safety... (Cont. from page 11)

and/or undocumented immigrants are included. In terms of people with disabilities, most studies are dedicated to visually impaired pedestrians though their needs may be markedly different than others in this same broad grouping (e.g., paraplegics, developmentally delayed). For the populations distinguished by race or ethnicity, the studies often do not sufficiently address various socioeconomic variables, making it difficult to determine what exactly is leading to the higher risk for these groups. Finally, not all of the groups are, or are perceived to be, at higher-risk in all cities. For example, in Seattle, the Asian American population has been identified as being at higher risk for pedestrian-vehicle crashes, though this group was not identified by any other city.

The Team has recently completed Task 2 of this study, focusing on collecting qualitative information related to pedestrian safety. The purpose of this task was to clarify which of these groups are truly at higher risk (as opposed to perceived to be at higher risk), to identify potential tools and policies for mitigating this risk, and to identify any additional issues related to data collection and to initiating, implementing and evaluating pedestrian safety policies for high-risk populations. ◆

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A New Vision for the Port Authority (Cont. from page 3)

orphan. Does it make sense for it to belong to someone else?

CW: Interoperability and systems integration has to come between MTA, PATH and New Jersey Transit and if that really became real, we'd have no reason to be running PATH. Over time, if we're really going to be a region, these stovepiped transportation assets have to be fully integrated. Eventually we wouldn't be running PATH.

RW: Just to wrap up, can you give us a sense of what the Port Authority will be doing under the watch of Chris Ward?

CW: I think the Port's going to face a bunch of strategic questions. The first one is about getting ARC built. We need to be a partner in that, we're a major funding player. It's tied to where Penn Station is and Farley, and then it's tied to what's the best thing that we can do for Amtrak. That's a major strategic initiative that we have to be a part of; not that we need to run the project, but we have to be focused and in the middle of it.

Then you have the Port. We're doing the next big comprehensive Port master plan deciding locations for the next big assets. There will be a new master plan with strategies for accommodating growth balanced with what's the right level of growth and what are the changes in the growth model.

Then there are some big infrastructure questions: the Goethals Bridge; we've been working on it for 20 years. We have to start planning for the Bayonne Bridge and the Outerbridge Crossing. These bridges are reaching the ends of their useful lives. There are questions about terminal development and aviation facilities. The airline industry isn't characterized by big financially solvent airlines that can spend $2 or $3 billion to build an airline terminal. How are we going to finance all that growth that we know is coming?

The bus terminal, everyone forgets about the bus terminal. It's this incredible piece of mass transit. It operates as a high-efficiency machine. We see further growth in Northern New Jersey and Southern Tier NY. Buses are going to be a cheap interim step before rail gets there. How are we managing this bus system? Are we bringing too many buses into Manhattan? All of those are on the Chris Ward watch.

Every question comes back to the regional paradigm and a national paradigm shift. If you ask yourself what city do you want to be in? You also have to ask: What am I willing to invest to make sure I live in the right city and the right region? ◆

BRT... (Cont. from page 7)

that additional research is needed to deliver valid assessments of such transit-supportive land uses (Christopher, 2006). That report identified the implementation barriers as: 1) institutional; 2) resource and financial; and 3) stakeholder interactions — findings that largely mirror Paaswell et al., 2004.

The first barrier relates to overcoming the normal division of responsibilities and policy focus with regard to transportation and land use. We have seen this problem tackled to some extent in New York with the cross-agency supported Select Bus Services; however, land use is not explicitly addressed by the formation of this coalition. The benefits of transit service providers building coalitions with stakeholders (i.e. developers, communities, other agencies etc.) for potential BTOD projects are one way of overcoming potential opposition to such schemes. This can be difficult, especially with developers, as the internal project planning by the developer can often significantly pre-date public sector awareness of the project. This being the case, early efforts aimed at highlighting the benefits of transit alliances to potential developers could be helpful.

The main obstacle to BTOD is related to the financial and resource challenges faced by transit service providers. Typically, land use policy is beyond the jurisdiction of transit agencies; development and planning resources are ussually devoted to direct provision of services rather than interaction with other agencies and private entities. On the developer side, it is likely that lenders, unfamiliar with BTOD (and TOD in general) maybe be less likely to fund these types of projects.

Policymakers and researchers must also be cognizant of the differing levels of BRT services that exist when highlighting the potential advantages that BRT anchored TOD has over more traditional BTOD operations that rely on on-street bus operations. Recently, Kantor et al. (2008) characterized bus rapid transit as "BRT-heavy" and "BRT-lite". The former is defined as using dedicated right-of-ways and often other attributes such as off-board ticketing, queue jumping and signal priority. The latter lacks exclusive right-of-ways and typically uses fewer BRT ancillary measures. For the reasons given above, we would expect that BRT-heavy will have stronger impacts both for transit attractiveness and possibly on its ability to act as an anchor for TOD.

"... the integration of transportation and land use planning is increasingly seen as essential to promoting more sustainable development patterns, something that is enshrined in the concept of TOD."

Candidate Corridor Selection Process

The Select Bus Services (SBS) project envisioned for New York City can be classed as BRT-heavy. It includes the use of exclusive bus lanes for the majority of each route, pre-boarding ticket machines, real time information, limited stop services, signal priority and a distinct brand identity (http://www.mta.info/mta/planning/sbs/whatis.htm). The selection criteria for the Select Bus Services demonstration routes involved initially choosing 80 candidate corridors for which there were more than 15,000 daily riders and whittling these down to 36 using 7 selection criteria (McNamara, et al., 2007):

- The level of daily ridership;
- Limited-stops on the corridor;
- Headway during peak times;
- Headways during off-peak times;
- Speed Ratio (average peak journey times/night time journey times);
- Is there a central business district served;
- Ridership history.

Candidate corridors were further reduced from 36 to 15 by investigating the potential benefits of BRT implementation in a given corridor and the potential ease of implementation in the corridor (i.e., BRT compatibility). It is from these 15 candidate corridors that 5 demonstration projects were initially selected, one in each borough. However, neither the criteria nor the benefits analysis directly examines the potential impact of BRT routes on the surrounding neighborhoods or the potential for transit oriented development. Since the five routes were selected, stakeholder interactions derailed the Queens demonstration corridor after intense opposition to the reallocation of road space from parking. Instead, two Manhattan bus priority corridors were added to the project (34th Street and 5th/Madison Avenues).

Now, the prospect of five additional corridors being selected for the second phase of the Select Bus Services project clearly raises the question of the role of BRT in incentivizing development in the associated catchment areas. This is especially important in areas that are presently under-served by transit (typically in the outer boroughs). However, those neighborhoods will also likely determine the fate of the corridors. In addition to the characteristics of the corridors themselves, analysis of the neighborhood attributes would seem to be merited. Especially important are the present and potential land use properties of these neighborhoods. It may be expected that catchment areas that are already zoned as relatively high density or slated for up-zoning would likely be superior to those that are low density or experiencing down-zoning. At present, it seems that such explicit analysis is beyond the scope of the SBS selection process.

Conclusions

As Orcutt (2005) notes, the integration of transportation and land use planning is increasingly seen as essential to promoting more sustainable development patterns, something that is enshrined in the concept of TOD. However, explicit analysis of the impacts of bus-based TOD is underdeveloped. With

the spread of BRT applications, it would seem the justification for analyzing the wider catchment area impacts has grown. In New York, this is especially important in the context of the Select Bus Services selection process and there is a need to investigate whether there is a role for additional selection criteria. In this way, we may be more fully able to assess the wider benefits of BRT and see if, as Levinson et al. (2003) have indicated, bus based TOD has potential to be an important aspect of BRT applications — in the advocacy, planning and implementation phases. ◆

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Building a Regional... (Cont. from page 9)

Examples of multistate cooperation abound in the northeast and between some or all of four States. The tri-state transportation and public safety agencies that constitute TRANSCOM demonstrate daily that the simple act of information-sharing helps to bridge their separate operational jurisdictions. The Delaware River Basin Commission has for years played an essential role in managing valuable fresh water resources. Interstate port and transit authorities were created to address cross border transportation challenges.

On the other hand, the consequence of not forming a regional coalition to formulate multi-state cooperation is to prolong regional transportation fragmentation and its resultant penalties. Inaction will contribute to the economic, environmental, and equity impacts already caused by the current transportation system's undercapacity, patchy interconnectivity, and deteriorating assets. It can lead to our competitive disadvantage as other areas of the country advance, not burdened with as many transportation challenges.

> ***"...the consequences of not forming a regional coaliton to formulate multi-state cooperation is to prolong regional transportation fragmentation and its resultant penalties."***

We are now at a crucial junction, and whether our regional transportation system would be able to optimize the movement of people and goods in the future depends on current decisions and on the region's ability to engage in collaborative approaches to transportation financing. As Francis McArdle of New York, member of the National Surface Transportation Policy and Revenue Study Commission recently said in reference to our region: "We now have a region that is interconnected with the world. Our infrastructure investments must be aimed at maintaining and enhancing those world connections. If we don't make them, whether by choice, by accident or neglect, we are shaping a future for the region that will leave us a backwater in the stretch to the 22nd Century." ◆

TRANSPORTATION COALITIONS RELATED TO THE 2009 FEDERAL SURFACE TRANSPORTATION BILL

Building America's Future

Co-founded by Gov. Edward Rendell (D-PA), Gov. Arnold Schwarzenegger (R-CA) and Mayor Michael Bloomberg (I-NY), this coalition seeks to make infrastructure funding a national priority. Launched in January 2008, the coalition calls on elected/public officials from all levels of government to establish a list of infrastructure-related priorities to be addressed in coming legislation. The coalition now enjoys the support of additional governors, including: Jon Corzine (NJ), Charlie Crist (FL), Janet Napolitano (AZ), Martin O'Malley (MD), Deval Patrick (MA), John Baldacci (ME), Donald Carcieri (RI), Jim Douglas (VT), Christine Gregoire (WA), Jennifer Granholm (MI), Tim Kaine (VA) and Bill Ritter (CO). Further information is available at: *http://investininfrastructure.org*

Transportation for America

This broad coalition includes representatives from transportation, urban planning, public health, environmental and housing organizations. The coalition focuses on promoting a 21st-century transportation system by building modern infrastructure and healthy communities. Organizations involved are coordinating at the national, state, and local level on various transportation policies and how they relate to economic opportunities, climate change, energy security, health, housing and community development. Further information about this coalition is available at: http://t4america.org/

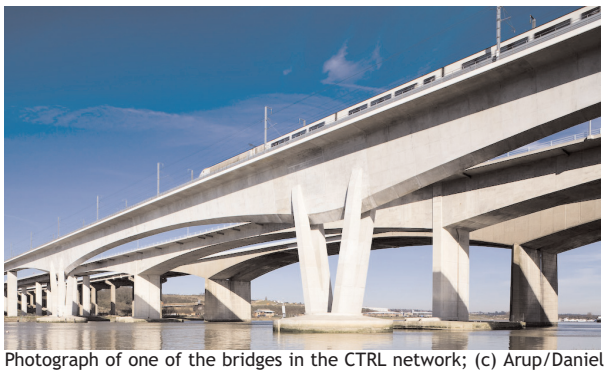
Americans for Transportation Mobility

This coalition was launched in direct anticipation of the 2009 Surface Transportation bill. Member organizations include the American Public Transportation Association, the American Road and Transportation Builders Association, The American Society of Civil Engineers, the Associated Equipment Distributors, the Associated General Contractors, the Association of Equipment Manufacturers, the International Union of Operating Engineers, the Laborers International Union of North America, the National Asphalt Pavement Association, the National Stone, Sand & Gravel Association, the United Brotherhood of Carpenters and Joiners of America, and the U.S. Chamber of Commerce. Further information is available at: *http://www.fasterbettersafer.org/*

Megaprojects: Lessons from the Channel Tunnel Rail Link

On October 2, 2008 the Institution of Civil Engineers (ICE) and the NYU Wagner Rudin Center for Transportation Policy and Management co-sponsored a half-day conference on the Channel Tunnel Rail Link (CTRL), a complex and successful megaproject that used a public private partnership to link England and continental Europe. Completed in 2007, on time and within budget, the high speed rail link, now allows passengers to travel between London and Paris (roughly 307 miles) in approximately two hours and twenty minutes.

Participants at the event had the opportunity to learn about various aspects of the CRTL design-build project, which required the construction of 67 miles of rail tracks, four international stations, 144 bridges, three major tunnels (17 miles), and two large viaducts, along with various linkages to commuter railroad networks along the way, and numerous other engineering and design features (e.g., ventilation systems, noise barriers, a permanent dewatering system with 22 chalk wells and pumping stations, and communication systems, etc).



Photograph of one of the bridges in the CTRL network; (c) Arup/Daniel Clements.

The morning session involved presentations from the project's partners: Arup, Bechtel, Halcrow, and Systra. Colin Stewart, Director of Global Rail Business at Arup, described the history and background of the project and special funding arrangements adopted; Paul Johnson, Director, Environmental and Outreach at Arup, spoke about the related environmental issues; Ian Blight, Director at Halcrow, gave details of the many complex new structures required, and Ian Gardener, Director, Infrastructure Group, Arup, described the urban regeneration that was stimulated by the project. Then Andre Leboucher, Director at Systra, spoke about the systems and how they integraed with existing infrastructure while Ailie MacAdam, Director at Bechtel, discussed the pioneering project management structure, which lead to the successful delivery of the project. The afternoon panelists initiated a dialogue regarding the lessons from CTRL and how they might be applied to the development and deployment of megaprojects in New York City.

The current president of ICE, David Orr, provided the keynote address, setting the foundation for the dialogue that followed, elaborating on his vision for improving the management of large-scale projects and offering seven guiding principles:

- ***Work to have informed clients***. It is important to involve the clients from the very beginning of the project so they have a full understanding of what to expect during the design and construction phases.
- ***Focus on the crucial first steps***. Having a good understanding of the entire project helps to avoid scope creep while allowing for risks and uncertainties. Importantly, he recommended to avoid declaring a cost estimate too early in the project.
- ***Consider impacts and manage them through timely planning processes***. This helps to balance the needs of the many with the interests of the few. A related presentation by Paul Johnson described the CTRL community outreach campaign advanced in order to gain the trust of, and build confidence among, clients, central and local governments, communities and investors. The outreach identified and helped to address concerns related to noise and vibration, impacts on communities, the environment (and biodiversity) and the integrity of archeological sites, as well as costs and acceptable risks.
- ***Have solid designs***, which must be functional and have overall positive impacts.
- ***Coordinate financial planning*** and move beyond a short-term planning framework (e.g., three years) to one that allows for the costs of proper maintenance and operations.
- ***Manage risk proactively***, including instituting independent peer review processes.
- ***Deliver procurement excellence***. A "new engineering contract" (or NEC3) is seen to lead to improvements in design and construction because of transparency throughout the process, which results in no surprises, and also provides incentives for innovation.

With respect to lessons for New York, Nazir Mir, Vice President of Halcrow, outlined several issues that differ between New York and London, includ-

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