

# **Connecting Workers with Jobs: The Port Authority's Role**

**by Jeffrey M. Zupan**

**Senior Fellow for Transportation  
Regional Plan Association**

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## **Connecting Workers with Jobs: The Port Authority's Role**

This paper will focus on the commuting trip in the New York Metropolitan Region (the Region)<sup>1</sup> and how the Port Authority of New York and New Jersey (the Port Authority) can bring its considerable talents and resources to assist in ensuring that the transportation systems can bring workers in the Region to and from work comfortably, reliably and quickly each day. Without such a transportation system the Region's economy is bound to suffer. The RPA Region, comprising 31 counties in three states and covering almost 13,000 square miles and the much smaller Port Authority district of 1,500 square miles are shown in Figure 1 for comparison purposes.

The focus on the work trip makes sense. It is the work trip that fills up the capacity of the transportation system twice a day, every workday in the year. During morning commuting hours, typically 80 percent or more of all trips are to work, and during the evening commuting hours the percent ranges from 50 to 70 percent. The providers of our transportation system must have the capacity to accommodate the peak period; if that problem is solved the rest of the day will be taking care of, save the limited times and places when other peaks occur, such as at the end of holiday weekends, near malls before Christmas, and after major sporting events.

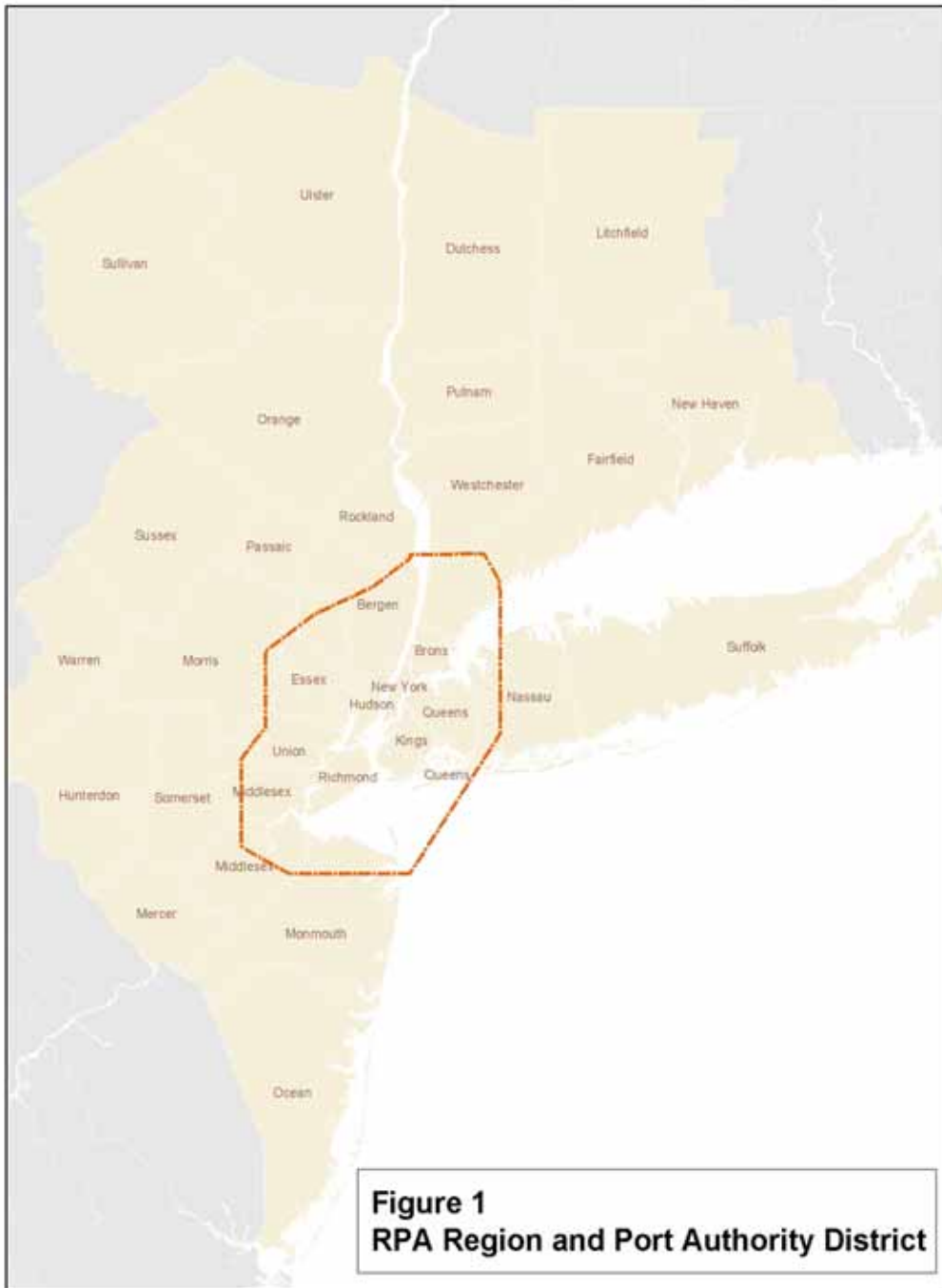
Lest one thinks the trip to work is becoming *passé*, given the advent of home PCs, emails, faxes and cell phones, the 2000 US Census shows that nationally, the share of all workers who work at home grew to 3.3 percent, up from 3.0 percent 10 years earlier, hardly a startling gain in work-at-home and telecommuting. These devices may have made the work day more flexible, but have barely put a dent in the volume of trips to and from work.

### **The Work Trip and the Port Authority**

What are the dimensions of the work trip in the Region? The 2000 Census indicates that 9.3 million residents of the Region traveled to work within the Region during the census week in April 2000. The Census county to county work trip volumes for all 31 counties

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<sup>1</sup> Regional Plan Association defines the Region as a 31-county area in the states of New York, New Jersey and Connecticut stretching from New Haven to Trenton, from Montauk to the Delaware River and north to the Catskills.



in Regional Plan Association’s definition of the Region have been organized around 24 groups of trips stratified according to whether the trips involved crossing a state border or a major water body, i.e., the Hudson River, the New York Harbor, the East River, or Long Island Sound. These 24 categories were further grouped in three categories defined

by their relevance to the Port Authority's mission, namely to address transportation needs in and around the Port of New York. The results are shown in Table 1.

The first group includes those markets where there is a direct relevance to the Port Authority. It totals some 461,000 workers. These are people who either cross the Hudson River, or the Arthur Kill or the Kill Van Kull, the two waterways separating Staten Island and New Jersey. Workers in these markets must either use Port Authority bridges and tunnels or the transit systems that cross the Hudson.

The second set of markets, identified as secondary ones, total just under 6 million workers, about 13 times larger than the primary markets. It is mostly made up of travelers within the five boroughs (about 2.9 million) and those traveling totally within New Jersey (about 2.7 million). Commuters in these markets are relevant to the Port Authority too. They may a) travel on their facilities, for example traveling on PATH within New Jersey only, b) use facilities that are directly connected to Port Authority or other trans-Hudson facilities, for example NYC subway riders who use the subway stations at the Port Authority Bus Terminal or Penn Station, c) use the highways that approach one or more of the six Port Authority's bridges or tunnels, d) cross the Hudson at a parallel crossing to a Port Authority facility, for example the Tappan Zee Bridge, or they may be traveling to work at Newark Airport, a Port Authority facility. The secondary markets cannot be totally discounted when discussing the Port Authority's mission. These markets often affect or are affected by the trips made in their primary markets.

The tertiary market group of some 2.9 million travels at a sufficient distance from Port Authority facilities to be largely irrelevant to their mission.

A closer look at the primary markets show that more than half (279,000 of the 461,000) of these workers travel into Manhattan from residences west of the Hudson, including from counties in New York State as well as those in New Jersey. Another 24,000 make that trip in reverse, starting their day in Manhattan and working west of the

**Table 1**

**Work Trip Markets in the Region  
by Degree of Responsibility of Port Authority**

<b>Primary Markets</b>	<b>2000 Work Trips</b>	<b>Major Vehicular Crossings</b>	<b>Legend</b>
WHR <u>to</u> Manhattan	279,246	GWB/LT/HT	GWB = George Washington Bridge LT = Lincoln Tunnel HT = Holland Tunnel WHR = West of Hudson EHR = East of Hudson HRE = Hudson Valley East SIB = Staten Island Bridges VNB = Verranzano-Narrows Bridge TZB = Tappan Zee Bridge
Thru Manhattan	56,068	GWB/LT/HT / ER	
WHR / EHR	44,920	GWB/LT/HT	
NJ / LI via So. Corridor	25,599	SIB / VNB	
Manhattan <u>to</u> WHR	23,728	GWB/LT/HT	
NJ / SI	23,552	SIB	
WHR NYS / LI	7,963	GWB	
<b>TOTAL</b>	<b>461,076</b>		
<b>Secondary Markets</b>	<b>2000 Work Trips</b>	<b>Major Vehicular Crossings</b>	
Within NYC	2,869,320	East River	
Within NJ	2,688,682	none	
LI <u>to</u> Manhattan	135,606	East River	
No. Suburbs <u>to</u> Manhattan	115,492	Harlem River	
Trans-Hudson No.	57,023	TZB	
SI / LI	52,864	VNB	
WHR NJ /WHR NY	39,059	none	
Manhattan <u>to</u> No. Suburbs	11,184	Harlem River	
Manhattan <u>to</u> LI	7,668	East River	
SI / HVE and CT	4322	VNB / LI Sound	
<b>TOTAL</b>	<b>5,981,220</b>		
<b>Tertiary Markets</b>	<b>2000 Work Trips</b>	<b>Major Vehicular Crossings</b>	
Within LI	1,216,074	none	
Within CT	786,042	none	
HV East / CT	323,160	none	
WHR NY / WHR NY	277,205	none	
Within HVE	203,635	none	
HVE-CT / LI	51,810	LI Sound	
HV West / LI	1,677	TZB	
<b>TOTAL</b>	<b>2,859,603</b>		

Hudson. Another 100,000 cross the Hudson, either traveling through Manhattan or crossing the East River (56,000) or to and from points on the mainland, e.g., the Bronx, the Hudson Valley or Connecticut (45,000). Close to 50,000 use the Staten Island Bridges, to either travel between Staten Island and points west of the Hudson (24,000) or between Long Island and points west of the Hudson (24,000).

Table 2 takes a closer look at these market groups to see how they are changing. The Port Authority's primary markets have expanded by 40 percent in the 1980 to 2000 period; more than half of the added 130,000 trips have accrued to the west of Hudson to Manhattan market, which grew by 39 percent or 78,000 commuters. In contrast, the secondary market group grew by only 13 percent; the tertiary market group by 15 percent. This dynamic suggests the growing importance of the Port Authority's primary markets.<sup>2</sup>

The other primary markets are also showing substantial gains and these cannot be overlooked. Although small in number, the trips involving Staten Island are growing very rapidly. Work trip travel between New Jersey and Long Island that are likely using the southern corridor through Staten Island more than doubled; trips between New Jersey and Staten Island grew by 74 percent; and trips between Staten Island and Long Island also doubled.

Perhaps most noteworthy in these data is the contrast in growth to Manhattan from the three suburban sectors. While "west of Hudson" trips grew by 78,000 or 39 percent, northern suburban trips to Manhattan grew by only 19 percent (18,000) and Long Island to Manhattan trips dropped by 6.6 percent, or by about 9,500 commuters. Stated differently, of the 87,000 added suburbanites commuting to Manhattan between 1980 and 2000, 78,000 started their day west of the Hudson River. Viewed still another way, in

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<sup>2</sup> The US Census data for 2000 has been found to have inaccuracies which have yet to be corrected by the Census Bureau and unfortunately, may never be. In particular, data for work trips into Bergen and Westchester counties appear to be low; for the purpose of these tables one can assume that the secondary and tertiary markets are somewhat under-represented.

**Table 2**

**Stratified by Degree of Responsibility of  
Port Authority of New York and New Jersey**

<b>Primary Markets</b>	<b>1980 Work Trips</b>	<b>1990 Work Trips</b>	<b>2000 Work Trips</b>	<b>% Change 1980 to 2000</b>
WHR <u>to</u> Manhattan	201,197	254,246	279,246	38.8
Thru Manhattan	41,330	57,041	56,068	35.7
WHR / EHR	35,887	47,844	44,920	25.2
NJ / LI <u>vía</u> So. Corridor	12,430	19,861	25,599	105.9
Manhattan <u>to</u> WHR	19,551	21,447	23,728	21.4
NJ / SI	13,555	20,800	23,552	73.8
WHR NYS / LI	5,584	7,631	7,963	42.6
<b>TOTAL</b>	329,534	428,870	461,076	39.9
<b>Secondary Markets</b>	<b>1980 Work Trips</b>	<b>1990 Work Trips</b>	<b>2000 Work Trips</b>	<b>% Change 1980 to 2000</b>
Within NYC	2,614,745	2,815,491	2,869,320	9.7
Within NJ	2,334,763	2,620,401	2,688,682	15.2
LI <u>to</u> Manhattan	145,127	135,710	135,606	-6.6
No. Suburbs <u>to</u> Manhattan	96,961	113,436	115,492	19.1
Trans-Hudson No.	31,263	50,585	57,023	82.4
SI /LI	25,986	41,622	52,864	103.4
WHR NJ /WHR NY	25,281	38,200	39,059	54.5
Manhattan <u>to</u> No. Suburbs	7,781	10,721	11,184	43.7
Manhattan <u>to</u> LI	4,472	7,857	7,668	71.5
SI / HVE and CT	3,324	3,901	4,322	30.0
<b>TOTAL</b>	5,289,703	5,837,924	5,981,220	13.1
<b>Tertiary Markets</b>	<b>1980 Work Trips</b>	<b>1990 Work Trips</b>	<b>2000 Work Trips</b>	<b>% Change 1980 to 2000</b>
Within LI	1,025,047	1,184,287	1,216,074	18.6
Within CT	723,437	802,548	786,042	8.7
HV East / CT	306,586	314,143	323,160	5.4
WHR NY / WHR NY	230,950	266,666	277,205	20.0
Within HVE	163,334	196,977	203,635	24.7
HVE-CT / LI	43,834	56,116	51,810	18.2
HV West / LI	2,033	2,063	1,677	-17.5
<b>TOTAL</b>	2,495,221	2,822,800	2,859,603	14.6

1980 the west of Hudson sector contributed 45 percent of the Manhattan jobs filled by suburbanites; by 2000 that share had risen to almost 53 percent. Thus, the sector that is of most concern to the Port Authority and the largest portion of its primary market group is growing much faster than other suburban sectors.

The disproportionate growth in Trans-Hudson commuting can be traced to higher population growth in New Jersey and other places west of the Hudson, as compared to the northern suburbs east of the Hudson. Higher density housing in nearby Hudson County has been a strong contributor. New ferry services and direct rail service to Penn Station via the Midtown Direct connection made the commute less onerous for those riders and may have played a role too.

### **Manhattan's Role in the Economy of the Region**

The importance of the commute to Manhattan cannot be overstated. In 2003 in its report on the need for a new rail tunnel under the Hudson River,<sup>3</sup> RPA detailed the continued economic role of Manhattan in the Region. Manhattan provides the well paying jobs increasingly filled by New Jersey and other west of Hudson residents. This can be looked at from the opposite direction; west of Hudson communities provide the well-educated labor force necessary for New York City's economy. This economic symbiosis benefits both states and is likely to continue.

Even after three decades of job decentralization in the tri-state region, Manhattan remains the dominant source of wealth generation in the Region. Manhattan's Central Business District (CBD) has remained largely intact despite three deep recessions and the rapid growth of office, retail and service jobs outside of New York City. Table 3 from the earlier RPA report shows the continued importance of Manhattan as a share of jobs, wages and office floorspace. Even though its share of employment has been gradually declining for years, one out of every four jobs in the Region is still located in Manhattan. Remarkably, Manhattan's share of wages has increased to 36% since 1980 even though its proportion of employment dropped to 23%. This is evidence both of the shift away from manufacturing and wholesale trade, and of increases in the high- skilled, high

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<sup>3</sup> The Case for a New Passenger Rail Tunnel Under the Hudson River into Manhattan, Regional Plan Association, December 2003

paying jobs in finance, insurance, real estate and related fields. Today, nearly two-thirds of all of the office space in the Region is in Manhattan, in spite of growth in office markets elsewhere in the Region.

All parts of the Region benefit economically from Manhattan in several respects. More than 500,000 commuters from beyond the five boroughs of New York City earn their wages in Manhattan, which are spent and recycled in communities throughout the Region. The total wages earned by suburbanites commuting to Manhattan is about \$66 billion annually, with more than half of that, about \$35 billion earned by commuters from west of the Hudson.

**Table 3**  
**Share of Jobs, Wages and Office Space in the Tri-State Region, 1980 and 2002**

	Jobs		Wages		Office Space	
	1980	2002	1980	2002	1980	2002
<b>Manhattan</b>	27%	23%	33%	36%	NA	65%
<b>Other New York City</b>	14%	13%	12%	8%	NA	3%
<b>East of Hudson Suburbs</b>	26%	27%	24%	24%	NA	16%
<b>West of Hudson</b>	33%	36%	31%	31%	NA	16%

Note: The geographic region used for office space calculations is slightly smaller than the one used for jobs and wages, and for office West of Hudson only includes New Jersey. If fully comparable geography was used, the Manhattan and Hudson shares might be slightly less and the West of Hudson share larger.

Source: economy.com

Manhattan’s economic engine does more than supply direct wages. Its offices, stores and restaurants are an enormous market for local firms throughout the Region to sell services and supplies. Manhattan also acts as an incubator for firms that originate in the CBD that eventually migrate to other locations in the Region. Finally, Manhattan’s business opportunities and cultural amenities allow the Region to attract and maintain, arguably, the most talented and diverse workforce in the world.

**Midtown’s Importance and Growth Potential**

Within the Manhattan CBD, Lower Manhattan and Midtown are distinct districts, both essential to the vitality of the Region’s economy. Downtown is focusing on the huge task of rebuilding in the aftermath of the 9/11 tragedy. Its potential for office space is limited by the absence of space to build upon (with the exception of the World Trade Center site

where replacing the 10 million square feet of office space on 9/11 is not certain); the strong move toward a more varied 24-hour district with more housing, shopping and tourist attractions also circumscribe its growth for in-commuting.

In contrast, Midtown serves as the prime location for corporate headquarters, and is the center of culture and tourism, as reflected in its higher rents, which in turn undoubtedly harbor higher paying jobs; its rental rates for offices are about one-fifth higher than lower Manhattan's, indicating greater demand for space there. Upwards of 1.5 million workers are found in Midtown. Its continued attractiveness, combined with the availability of sites for at least 60 million square feet of office space, makes its growth in commuting likely, as long as the transportation system is able to deliver the commuters. Included are 25 million square feet of office space to be built after 2010 on the west side between Tenth Avenue and the Hudson River. This growth in development capacity would bring with it at least another 240,000 office workers in Midtown. To this would be added workers in restaurant, retail and other non-office jobs.

The combination of Midtown's strength, the availability of land west of the Hudson and new transit services suggests that the west of Hudson commute to Manhattan will continue to grow more rapidly than commutes from the north or east or commutes to Lower Manhattan. Although all parts of the Region are facing a shrinking amount of developable land, West of Hudson is least constrained. It still has the largest amount of land available for potential residential development, in addition to urban areas that could be redeveloped. It also has the ability to draw from growing areas beyond the traditional commutershed, such as several counties in Pennsylvania. Also, the completion of Secaucus Junction, which offers a direct one-transfer ride to midtown for Bergen, Passaic, Rockland and Orange County commuters gives further impetus for commuter growth. And finally, there are prospects for additional rail services into Manhattan. More on this last point later.

With so much of the Port Authority's mission tied to the movement of commuters and others across the Hudson and with the continued importance of Manhattan, particularly Midtown, this report next focuses on the future of trans-Hudson commuting to Manhattan.

## **Running Out of Room**

Today, there are three road crossings of the Hudson that directly feed Manhattan – the George Washington Bridge and the Lincoln and Holland tunnel -- all owned and operated by the Port Authority. To the north the Tappan Zee Bridge also carries some, but not many Manhattan-bound commuters.

There are three rail tunnels under the Hudson, the Pennsylvania rail tunnel that brings NJ TRANSIT (NJT) and Amtrak trains into Penn Station near the south end of Midtown at 32<sup>nd</sup> Street, and two PATH tunnels. PATH is the rapid transit system operated by the Port Authority which serves a number of distinct trans-Hudson functions. These include a) the transporting of rail commuters who transfer at Hoboken to the World Trade Center (WTC) in lower Manhattan and to the west side from the Greenwich Village north under Sixth Avenue as far as Herald Square, b) carrying commuters destined for lower Manhattan who transfer in Newark for the WTC and lower Manhattan, and c) bringing in commuters who live in the Hudson County communities of Hoboken, Jersey City, and Bayonne.

Most bus commuters use the exclusive bus lane (XBL) on the Lincoln Tunnel's approach road to reach Manhattan and then disembark at the Port Authority Bus Terminal at 41st Street. Some commuters also use buses operating over the George Washington Bridge for transfers to New York City buses or subways, or through the Holland Tunnel for trips destined for lower Manhattan, where they are dropped off and picked up along the few north-south avenues there.

There is also ferry service. Most of it is operated by New York Waterway with a myriad of routes to the World Financial Center on the Hudson River, to Pier 11 on the East River in lower Manhattan, and to 38<sup>th</sup> Street in Midtown on the Hudson River. West of the Hudson they provide service from Weehawken, a number of places in Hoboken and Jersey City. Other ferry services "across the Hudson" start in Monmouth County and cut across Raritan Bay and end in lower Manhattan at Pier 11. New York Waterway's recent financial troubles have resulted in a newly announced takeover of some of its routes by a private entity with New York Waterway to continue to operate those services for them.

These rail and motor vehicle systems are running out of capacity to handle growth. The rail tunnels have no capacity for added peak hour trains (except for the uptown branch of PATH which is underused because it travels circuitously to Midtown). Motor vehicle capacity topped out in 1962 when the lower deck was added to the George Washington Bridge. The Lincoln Tunnel last expanded in 1949, when the Port Authority Bus Terminal 41<sup>st</sup> Street was built. The Holland Tunnel has remained little different than when it opened in 1927.

The peak period capacity at the Lincoln and Holland tunnels has long ago been reached, and it is neither practical nor desirable to build another vehicular crossing. The Port Authority Bus Terminal (PABT), expanded in the 1980s, cannot handle any more buses, constrained by the capacity of the exclusive bus lane (XBL) to and through the Lincoln Tunnel and of the PABT itself. The XBL, the innovative 1970 approach to the Lincoln Tunnel has been scraping up against its limit of 730 buses in the peak hour and 1,600 buses in the peak period since the mid-1980s, as shown in Figure 2. The Port Authority is now studying whether it is possible to take one of the three inbound lanes for more buses or carpools, but with conclusions uncertain. PATH's two branches are ill-equipped to serve midtown growth: the WTC branch is poorly located to serve Midtown Manhattan. The uptown branch of PATH, which winds its way through Greenwich Village and Chelsea has some capacity, but only serves the west side from 34<sup>th</sup> Street south well. And while it is true that ferry expansion offers some possibilities for added trans-Hudson capacity growth, most of the viable trans-Hudson markets have already been exploited.

Against this backdrop, travel demand across the Hudson has been steadily increasing, as discussed earlier with respect to the work trip. Since 1980, the number of daily trips for all purposes into the CBD from the west has grown by 64 percent, while the growth from all other directions has been only 25 percent.<sup>4</sup>

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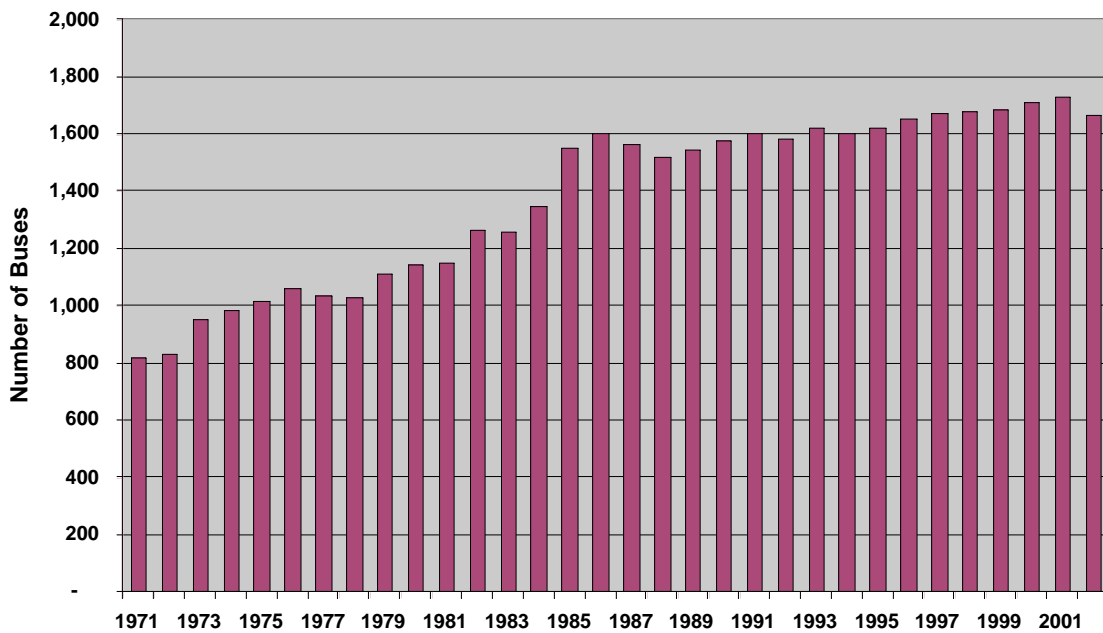
<sup>4</sup> The source of these data is the remarkable Hub-bound survey series, which was initiated by RPA in 1924, and published every eight years until the 1960s. Then it was taken over and published on an annual basis by the Tri-state Regional Planning Commission in the 1970s and now carried out annually by its successor agency, the New York Metropolitan Transportation Council.

In the peak period the travel growth from west of the Hudson has been largely confined to the rail and ferry modes, the only ones capable of absorbing any growth. As Table 4 shows, since 1980 the number of people entering the Manhattan CBD during the three hour morning peak by bus and PATH and the number of vehicles entering by autos has flattened out, having reached their limits since 1990, but the use of the rail network and of ferries grew substantially.

The rail growth into Penn Station can be attributed in part to rapid growth in the central New Jersey counties – Middlesex, Monmouth, and Somerset – served by three of NJT’s rail lines – the Northeast Corridor, the North Jersey Coast and the Raritan Valley

**Figure 2**

**Daily Peak Period Use of Exclusive Bus Lane  
1971 - 2002**



More recently, the construction of the Kearny Connection that made MidtownDirect service into Penn Station possible from the Morris and Essex lines has aided travel into Midtown. The Montclair Connection, which opened in 2002, has added access to Penn Station for residents along the Montclair Branch and the Boonton Line, and the Secaucus Junction, opened in 2003 gives access to Penn Station for three more rail lines in Bergen, Passaic, Rockland, and Orange counties. These projects will test the ability of the

railroad network to accommodate the passengers wishing to use Penn Station. NJT forecasts that rail traffic volumes will reach capacity in 2009.

**Table 4**

<b>Trans-Hudson Travel by Mode - 7am to 10am - 1980 to 2000</b>					
		<b>Persons</b>			
	<b>Vehicles Inbound at Lincoln and Holland Tunnels</b>	<b>Port Authority Bus Terminal</b>	<b>PATH Uptown and WTC Branches</b>	<b>Penn Station</b>	<b>Ferry</b>
<b>1980</b>	18,890	58,700	54,100	16,000	0
<b>1990</b>	20,716	69,743	66,100	21,394	5,934
<b>2000</b>	20,897	71,956	67,043	34,518	11,529

Source: Hub-bound Series; Tri-state Regional Planning Commission, 1980 and New York Metropolitan Transportation Council, 1990, 2000

With the absence of other options, and the improved attractiveness of commuter rail as an option to reach Midtown as a result of the two new connections and the Secaucus Junction projects, the demand to use rail into Penn Station has been growing rapidly, pushing up against available capacity.

**ARC is Born**

Presciently foreseeing the problem of trans-Hudson capacity as early as 1990,<sup>5</sup> the Port Authority spearheaded and largely funded a study of the problem, working as partners with NJT and the Metropolitan Transportation Authority (MTA). The three agencies formed Access to the Region’s Core (ARC) and agreed to move forward only if they achieved full agreement on each step along the way.

In addition to the objective of gaining more capacity across the Hudson, ARC set out as a second objective to find a better means of having west of the Hudson commuters reach the east side of Midtown. Today, all the transit portals from the west – Penn Station, the Port Authority Bus Terminal, and PATH leave commuters on the west side, requiring an additional ride either on a bus, subway or taxi, or a long walk. For example, ARC found

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<sup>5</sup> More accurately perhaps is that the Port Authority has been concerned about this issue for many years earlier. In 1965 the author of this team was part of a consultant team hired by the Port Authority to examine alternatives for trans-Hudson travel.

that only 27 percent of Midtown office space built after World War II was found within a 20-minute walk of Penn Station on the west side, while 88 percent was within a 20-minute walk of Grand Central Terminal on the east side. Consistent with that was the share of Midtown jobs within a 20-minute walk: 36 percent for Penn Station; 70 percent for Grand Central.

After an exhaustive review of all alternatives, including all possible modes and combinations of modes, the ARC study settled on a limited number of commuter rail alternatives. All would add a new two-track tunnel into Midtown, effectively doubling rail capacity.

### **Benefits of a New Tunnel**

Among the key objectives of a new tunnel is to reduce auto use into Manhattan and on the roads leading to it, and conversely increase transit use the most. This can be shown to be most closely associated with a direct, and preferably a one seat ride. In Table 5 the transit mode shares are shown for three commuting territories: a) with direct one-seat rail service into Penn Station, b) with a two-seat ride either with a transfer to a train destined for Penn Station or via Hoboken and PATH, and c) without any rail service. The absence of direct rail produces considerably lower shares of transit use, and consequently more auto use, about double the share, even with the presence of bus service. Direct rail service would be more ubiquitously available if a new tunnel was built, and can be expected to dampen the amount of commuters who drive; about 30,000 fewer people could be expected to enter Manhattan in autos each day from the west.

**Table 5**  
**Mode Choice for Trans-Hudson Trips to Manhattan by Availability of Rail – 1990**

<b>Areas With:</b>	<b>Transit Trips</b>	<b>Auto Trips</b>	<b>Total Trips</b>	<b>Percent Transit</b>	<b>Percent Auto</b>
<b>One-seat Direct Rail</b>	37,774	8,750	46,524	81.2	18.8
<b>Two-seat Rail</b>	71,286	35,719	107,005	66.6	33.4
<b>No Rail</b>	51,610	29,203	80,813	63.9	36.1

Source: Source data from NJ TRANSIT with analysis by RPA.

A new rail tunnel would also shift some riders from buses, unclogging the XBL and opening up more capacity for additional bus service, where rail lines did not operate.

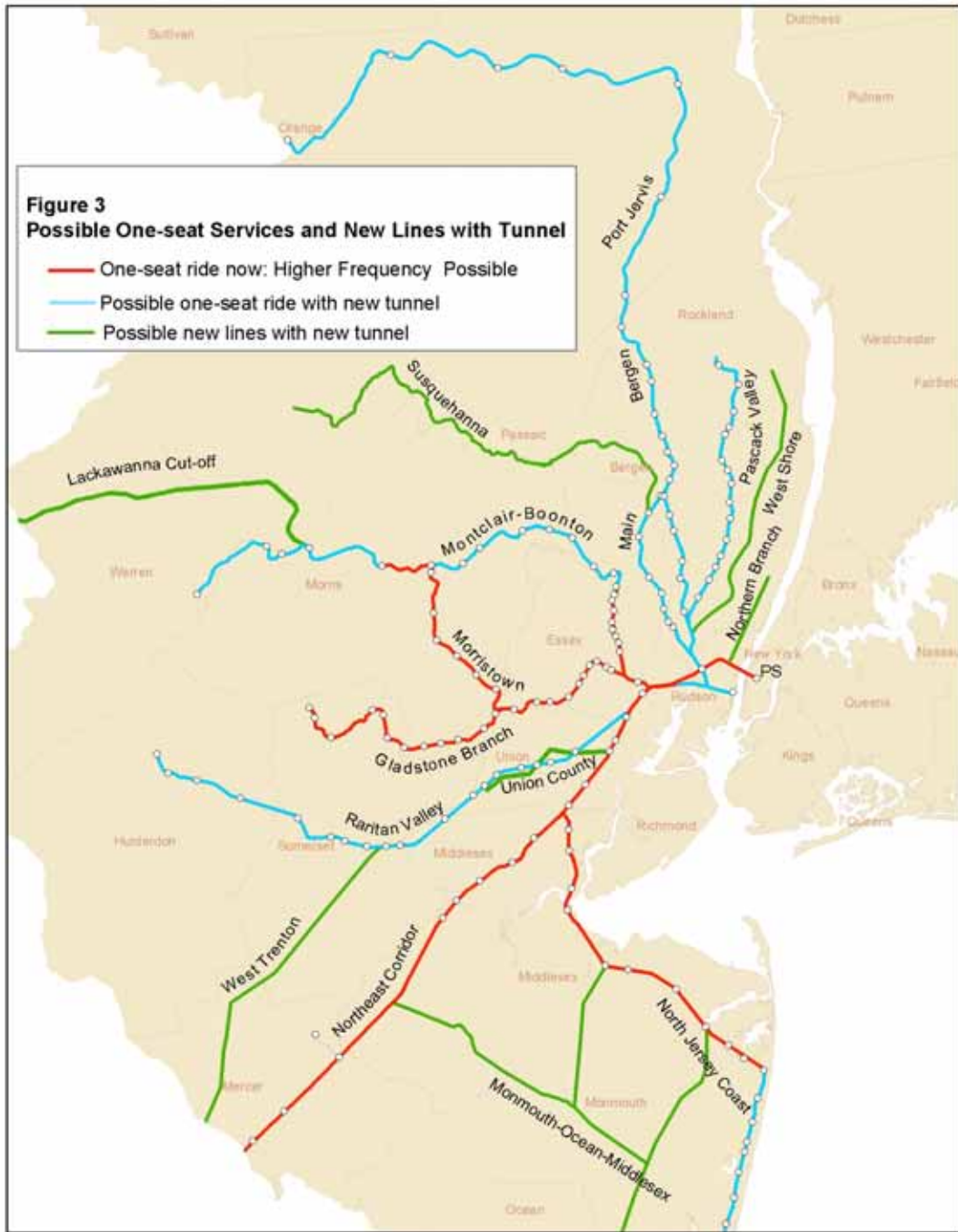
“Reverse” commuting to west of Hudson locations would also benefit from the new tunnel, with added service frequency possible, more direct service and service on new lines, depending on the decisions made to serve peak direction commuting.

An added tunnel would also prevent the degradation of reliability likely to take place when demand approaches capacity, and if designed properly, build in redundancy to a rail system during routine maintenance and renovation of the existing tunnel or in the event of an emergency.

### **Who Gets to Use a New Passenger Rail Tunnel?**

New service into the tunnel could be provided in many different combinations of a) greater frequency of service on existing lines responding meet growing demand; b) creation of more direct lines with one-seat rides into Penn Station from among lines now requiring a transfer, and c) new or re-instituted rail lines that have been long discussed. These three are shown in Figure 3 in red, blue and green, respectively. This last group has seven possible new lines, each a subject of separate studies. These lines – the Northern Branch, the West Shore, the New York, Susquehanna and Western, the Lackawanna Cutoff, the West Trenton line, the Union County line, and the Monmouth-Ocean-Middlesex or MOM line – are each the subject separate studies to determine their costs and benefits and then to advance them in the process. But all have added rail capacity under the Hudson River as a prerequisite.

Discovering how best to use the added capacity requires a careful analysis of which approach among many offers the most benefit in new riders, travel time savings, and cost-effectiveness, that also meets the anti-sprawl, smart growth objectives of New Jersey. Those lines where the communities are most amenable to the creation of more compact land uses around their stations to increase ridership and where the station areas are designed to be more friendly to potential riders arriving on foot will gain an edge.



**East Side Access**

In an attempt to meet the second objective of east side access, ARC explored direct rail service options from west of the Hudson to and through Penn Station and into Grand Central Terminal, and possibly through Grand Central north into Metro North territory.

Early in 2003, after years of analysis slowed by the need for unanimous agreement among the three agencies with differing agendas and responsibilities, the major investment study report by ARC was released, concluding that a new rail tunnel made the most sense. However, the report did not converge on a solution as to where the rail tunnel would go in Manhattan, where it would pick up and discharge passengers, and where trains would be stored.

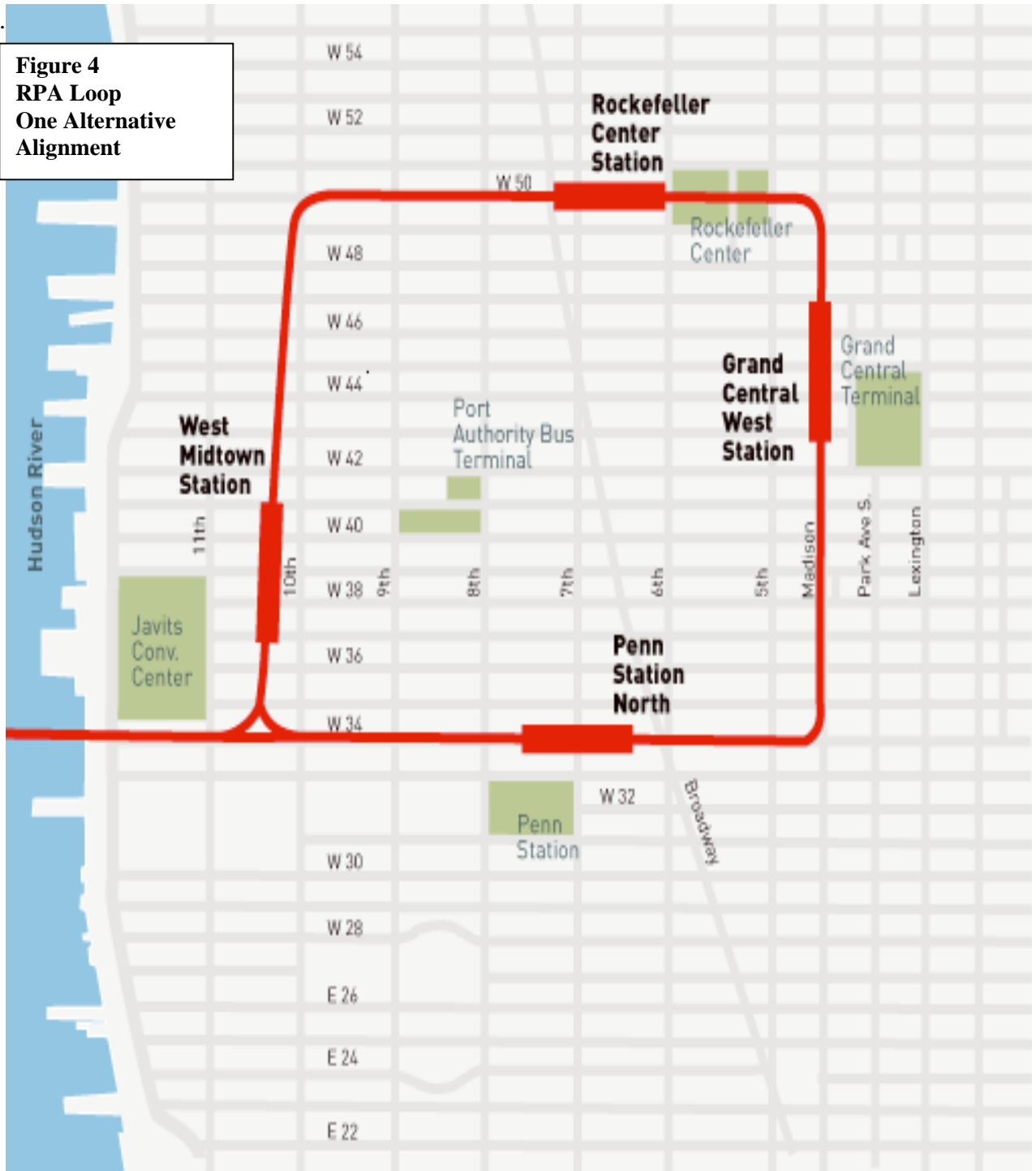
ARC originally posited three alternatives. The only one to reach the east side (by entering Grand Central Terminal) was rejected by the MTA, causing it to be scratched from consideration. Of the remaining alternatives one would involve a new terminal under Penn Station, requiring difficult construction and a long climb for passengers to the surface. The other would extend the station tracks and platforms on the south side of the existing Penn Station and then operate empty trains under the East River where they would be stored in Sunnyside Yard in Queens. The two alternatives were initially retained for the next phase, a \$5 million Environmental Impact Statement (EIS), now under the joint direction of NJT and the Port Authority.

### **RPA and East Side Access**

The absence of an alternative that could provide direct service to the east side was troubling to RPA. Consequently, we proposed an alternative, known as the loop and described and advocated for in the report cited earlier. The RPA proposal would have a stop at 34<sup>th</sup> Street at Seventh Avenue and continue the rail line under 34<sup>th</sup> Street, turn north under Madison Avenue with a second stop at about 45<sup>th</sup> Street, turn west under 50<sup>th</sup> Street with a stop at Seventh Avenue and then turn south on the far west side to serve the new developments proposed there with a fourth stop and then continue under the Hudson River to New Jersey. One version of the loop is depicted in Figure 4. This paper will not make the full case for this concept, only summarize its advantages.

The RPA loop would offer direct rail service to the east side, the Rockefeller Center area and the emerging far west side, all without using Grand Central Terminal, which the MTA is set against. Train storage, a problem for the other proposals would be achieved

**Figure 4  
RPA Loop  
One Alternative  
Alignment**



with service turning back into New Jersey where space is available. Given the post-9/11 climate, the loop proposal would also benefit by operating separately from the existing system, so that in the event of a loss of either the existing tunnel or new tunnel, or of an

event in Penn Station or in the new station, or even for routine maintenance the rail system can continue to operate effectively and flexibly.

Once the DEIS study began in 2004 it became clear that neither of the remaining alternatives as designed were satisfactory. Fortunately, the alternative for a new station at 34<sup>th</sup> Street was examined, as first suggested by RPA as part of the loop study. The two agencies are now proceeding with the station centered on Seventh Avenue with connections to all subway lines between Sixth and Eighth Avenues. Not precluded is RPA's loop, which can be built as a continuation at a later date. In fact, examination of the loop as part of the EIS shows no fatal flaws for the concept.

To strengthen the case for the tunnel, NJT Executive Director George Warrington has been meeting with business and government groups in New York City, arguing convincingly that the project has as much value to New York City as it does to New Jersey. His success can be measured by the recent endorsement of ARC by the New York City Partnership, a New York City business group. To buttress his arguments, NJT commissioned a report by Economic Research Associates (ERA); the report has recently been made public.<sup>6</sup> ERA found that the permanent economic impacts accruing to the Region by 2035 would be about \$15 billion, ballooning to \$25 billion in 2035, consisting of gains in employment, higher gross regional product and personal income. About half would accrue to each state. The two states and New York City would accumulate over \$1 billion in taxes by 2035.

The new tunnel is expected to cost about \$5 billion, with more precise estimates still to be made. NJT is seeking to secure a "full funding grant agreements" with the federal government. This would set the share of the cost that the federal government would be willing to contribute, anticipating that local contributions would cover the rest. There is certainly a strong possibility that the Port Authority would contribute some, and possibly the entire local match. This is certainly a suitable role for the Port Authority given their bi-state responsibilities, and the critical importance of the project. By doing, so they can give greater legitimacy to the project in the eyes of the federal government. To the

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<sup>6</sup> Economic and Fiscal Impacts of the ARC Project, Economic Research Associates, November 10, 2004

extend that this fell short, the New Jersey Transportation Trust Fund could also contribute, provided that it is replenished. The Fund runs out of money this year and will require new revenue sources, which likely involve a substantial gas tax increase. New Jersey currently had the third lowest gas tax in the nation.

### **Ferries**

Theoretically, upwards of 3 \_ million of the more than 9 million work trips in the Region – all who must cross a major body of water – could be served by waterborne vehicles. The actual potential is considerable smaller, since reaching the water’s edge, not just the water crossing is part of the trip. Nonetheless, there is a role for ferries, especially where both access to the water edge and egress from it are easy and where the current ground choices are unattractive. It is with these characteristics in mind that the Port Authority spearheaded the revival of ferry service in 1986 by paying for the marine infrastructure for the Hoboken to Lower Manhattan ferry service, operated by New York Waterway, a private entity.

Over time other services were tried, some more successful than others, with the less successful ones dropped when they couldn’t show a profit. Unlike other transit modes with their public operating subsidies, privately-operated ferry services have had to show a profit or at least break even to continue their operations.

The confluence of higher fuel prices, over-aggressive route expansion and declining ridership after the re-institution of PATH services two years after 9/11, have led to the reduction in New York Waterway’s services and raised interest in examining the role of the public sector in encouraging and possibly supporting ferry service in the Region.

This turn of events suggests that the time is ripe for a fresh look into the appropriate scope of ferry services in the Region; the Port Authority is the obvious choice to lead that effort, working cooperatively with the other relevant transportation agencies such as NJT and the New York City Department of Transportation. They would start by establishing the ground rules for ferry services that might be: a) a significantly faster and more attractive transit options than current ground transit options, b) a substitute for higher cost

ground transit alternatives, c) able to offer a lower subsidy requirement than current transit alternatives, d) the catalyst for waterfront development, d) a reliever of congestion on parallel transit or highway facilities; and f) offer redundancies for existing transit service.

Once these criteria were established they can be applied to the potential markets in the Region to create a ferry plan for the Region. The resultant candidates for ferry service could include those with or without public subsidies.

### **Trips Not Bound for Manhattan**

Among the work trips in the Port Authority's primary markets highlighted earlier in Table 1 are the 182,000 plus likely to use Port Authority facilities to cross the Hudson but not bound for jobs in Manhattan. These trips are important because they tend to use the same facilities as those used by the market headed for Manhattan. Of these, 24,000 are residents of Manhattan making "reverse commute" trips to west of the Hudson work locations. If their jobs are in transit accessible locations they can benefit from the transit service in place to carry the Manhattan-bound worker, and would further benefit from then new services that a new rail tunnel would bring. This suggests that for transit to be effective then jobs west of the Hudson be focused in such places. This is a policy for which the Port Authority can play a supporting role. The remaining 158,000 include many who can take advantage of the commuter rail and subway system in place, and would benefit from the construction of the ARC tunnel. These include both west of Hudson residents bound for the Bronx, Brooklyn and Queens, Nassau or Suffolk counties and east of Hudson residents bound for west of the Hudson locations.

Only about 7 percent of all suburb to suburb trips between New Jersey and east of the Hudson suburbs use the commuter rail system. The absence of through rail service among the three commuter systems – NJT, Metro North, and the LIRR – hampers these trips today. These three rail companies do not view these potential customers as their primary responsibility and they may also fear the "incursion" of the equipment of other operators on their own property. To be sure there also technical issues of compatibility, but the greatest barrier seems to be "turf." The Port Authority would be a logical entity to take the lead to overcome the barriers to rail service that connects one suburban sector of the

Region with another. This could be done by setting aside funds to operate, maintain and store equipment for a separate through service not now the province of any one of the current operators, and for addressing compatibility issues.

### **Making Vehicle Water Crossings More Efficient**

The Port Authority has been a lead player in trying to get more productivity out of the highway network. These measures fall into three categories: providing preferential treatment for vehicles carrying more people, pricing their facilities to encourage a shift away from the peak period, and speeding up toll collections.

The preference given to buses using the Exclusive Bus Lane or XBL, planned and implemented by the Port Authority, which opened in December 1970, and has been an enormous success story; savings of 15 minutes or more for riders have accrued to those riding over 1600 buses a day for 34 years! Perhaps of even greater benefit has been the reliability in the trans-Hudson trip that it has almost guaranteed on a daily basis. The XBL uses an outbound lane converted for inbound use during the morning peak period. As noted earlier, the Port Authority has just launched a study of whether it is possible to build upon this success by reassigning one of the three inbound lanes to the Lincoln Tunnel for vehicles that carry more people than the single-occupant passenger car, and possibly for single-occupant vehicle drivers willing to pay to use the lane to expedite their trip. Even more radical would be to convert bus chasses for use by package freight and allow them to use either the XBL or the newly converted lane under study. There is also a preferential treatment for buses and carpools approaching the George Washington Bridge, but this program is much more modest than the one at the Lincoln Tunnel.

In early 2001, as part of a toll increase, the Port Authority introduced a three-tier toll charge on the three Hudson River crossings. The highest toll was for those who still insisted on using cash, the second highest for E-ZPass customers traveling in the peak, and the lowest for off-peak E-ZPass users. This “value pricing” concept was intended to reduce peak use and shift vehicles to times of the day when capacity was available. It has been most successful in shifting trucks and passenger cars away from the morning peak into the before 6am period. Other toll agencies in the Region have also pursued the

concept. The New Jersey Turnpike has a time differential and the New York State Thruway Authority has been highly successful in its pricing of the Tappan Zee Bridge at a higher rate for trucks in the peak period. These differentials have become possible with the advent of E-ZPass, now used by over 70 percent of all vehicles using Port Authority facilities, reducing collection times and delays at toll plazas.

Speeding toll collection at toll barriers and the resultant capacity gains has come from the introduction of drive-through, non-stop collection. The Port Authority has introduced 25 mph toll lanes at two of the three approaches to the George Washington Bridge and at all three bridges connecting Staten Island and New Jersey. The Turnpike and the Garden State Parkway have added them too, allowing vehicles to drive through at normal highway speed. The MTA, the largest toll collection agency in the United States, is the only toll agency in the Region who has not introduced high speed toll collection. The next step should be the total elimination of cash toll collection, which could be accomplished with the next generation of toll collection involving smart cards imbedded in all vehicles. Who takes the lead in our Region is an open question, but there is little doubt that there is an important role for the Port Authority.

### **I-278 Corridor**

In the primary market group there are about 100,000 trips that logically would either originate in, be destined for or travel through Staten Island. These markets are growing rapidly. They are likely to use Interstate 278, and many will use one of the three Port Authority's bridges between Staten Island and New Jersey. The I-278 corridor is critical to the economy of the Region as only one of two highway corridors providing access for trucks into and through New York City and Long Island from the west. The Goethals Bridge alone carries 30 million vehicles a year, including 2.4 million trucks. The corridor stretches from I-78 in New Jersey, the New Jersey Turnpike, the Goethals Bridge, the Staten Island Expressway on Staten Island, the Verrazano-Narrows Bridge, the Gowanus Expressway and the Brooklyn-Queens Expressway in Brooklyn, the Kosciusko Bridge and the Long Island Expressway. No less than six transportation agencies are responsible for one or more of these facilities, including the DOTs of the two states, the Port Authority, the MTA, and indirectly, the New York City DOT. And no less than six

projects are in some state of decision-making in the corridor – this Goethals Bridge DEIS, the Staten Island Expressway DEIS, the MTA’s plans to revamp the toll plazas at the Verrazano-Narrows Bridge, the NYSDOT project to replace the aging elevated Gowanus Expressway and their plans for the Brooklyn-Queens Expressway and the Kosciuszko Bridge.

Rational and consistent policies are absent for tolls and for preferential treatments. Today, three agencies collect tolls in the corridor; two of the three have policies to charge more in the peak than in the off peak, the third does not. One agency charges a toll in both directions, the second in one direction, and the third, as required by a narrowly drawn and misconceived federal law, in the other direction. Two agencies have a policy of installing high-speed toll lanes, the third does not. While there are historic reasons for each of these situations and each agency is proceeding with good intentions, taken together they add up to a sub-optimization in the corridor.

Similarly, policies related to preferential treatments in the corridor are inconsistent. The New Jersey Turnpike Authority provides preferences for buses and high occupancy vehicles in both directions in the peak period. The Goethals Bridge has no such policies – it doesn’t have the space today. On the Staten Island Expressway, the NYSDOT is proposing to add a bus lane, but may not allow high occupancy automobiles, yet in Brooklyn on the Gowanus Expressway they have created a lane for buses and high-occupancy automobiles, but only in the inbound direction. Through the rest of the corridor no preferential treatments are offered.

The Port Authority, using the current Goethals Bridge EIS can be a springboard for rationalization of both toll and preferential treatment policies in the I-278 corridor from New Jersey to Queens. The objectives could include a) establishing variable time of day tolls to ease peak congestion, b) moving toward totally cash-less, booth-less non-stop toll collection by creating high speed toll lanes and establishing a system of privacy to allay “big-brother” fears, c) creating policies that do not direct excess traffic to any one part of the Region, d) and that establish a uniform policy of preferential treatment in the corridor.

Toll and preferential treatment policies are ways of squeezing out more capacity from existing highway networks. The Port Authority can take the lead in creating these policies corridor-wide as an important adjunct to investment policies for new infrastructure, including the replacement of the Goethals Bridge.

### **Trucks**

Although this paper is about moving people, the issue of freight movement, at least indirectly is relevant here. The more trucks removed from the road, the freer is the movement of commuters in passenger cars. The explosive growth of truck traffic in the Region continues to strain the capacity of the highway network and weaken its infrastructure. The Port Authority must take a direct role to develop a strategic plan for moving freight into, out of, and within the Region, and of implementing that plan.

### **Paying the Fare**

There has been significant progress in the last few years in improving the process of how transit fares are paid, most notably in the form of the MetroCard used by MTA customers. PATH is now transitioning to the MetroCard. But NJT, many local bus carriers, and ferry operators are still not part of that system. Eventually, the MetroCard will be replaced by a smart card, the next generation of fare collection. The Port Authority should continue to be party to these efforts.

### **Summary**

The list is long of what the Port Authority can or should do to improve the lot of the daily commute to work in the Region. This paper suggests some of these directions, which in many cases the agency is already pursuing. In sum these are:

The Port Authority should be the primary source of local funding for a new passenger rail tunnel under the Hudson with the objective of not only adding the trans-Hudson capacity needed but the necessary access to the east side of Midtown Manhattan.

By providing funding for creation of comparable infrastructure, the Port Authority should jumpstart efforts to interconnect the three rail systems in the Region to permit riders to effortless travel through the Region rather than just to its center.

Work with sister agencies to develop a framework for ferries in the Region that will set the agenda for an affordable transit system that supplements the one we already have.

Coordinate the many plans among six transit agencies for the I-278 corridor to create a seamless corridor with consistent policies for preferential treatment and toll policies, including the replacement of the Goethals Bridge.

Work with the other toll agencies in the Region to create a booth-less, cashless, non-stop toll collection system in this Region.

Take a direct role to develop a strategic plan for moving freight into, out of, and within the Region, and of implementing that plan.

Work with the other transit agencies to make it possible for the commuter to use only one fare media, cashless, and easy to use, no matter how many transfers they make.

Last but not least, make getting to and from work in the Region a joy, not a hardship.

### **A Personal Note**

The author of this paper has been working for, with, or in opposition to the Port Authority for almost 40 years. I can attest that the hallmark of the organization has always been its professionalism, preparedness, and careful planning, a testament to the resources the Port Authority was able to provide, which translated into a high quality of staff and leadership. In the early 1990s, ill-conceived efforts to trim its “non-essential” budget, handicapped the Port Authority’s planning capability. The collection of essential data, research resources and a high quality library were sacrificed. It does little good to have a strategic plan as being discussed at this colloquium that cannot be backed up by such resources.