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Ronnie Lowenstein
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September 11, 2014

Borough President James S. Oddo
10 Richmond Terrace
Borough Hall, Room 120
Staten Island, New York 10301

Dear ~~Borough President Oddo~~: Jimmy

As you requested, IBO has updated work done on your behalf in 2006 on instituting a tourist fare on the Staten Island Ferry. Our revisions use more recent ridership and demographic data and have been adjusted to reflect increases in costs that have occurred since the original estimate. In addition, we looked at the impact of an increase in nonresident ferry ridership due to tourism and development.

Our update finds that with a stand-alone or dedicated fare system that does not rely on the MTA's Metrocard and an exemption from the fare for Staten Island residents and other city residents who work in the borough, a $2 fare (only charged on trips from Manhattan) would barely break even in present value terms over the presumed 15-year life of the fare system. However, a $4 fare would generate net revenues of $35.5 million over the life of the system.

The alternative of integrating the Staten Island Ferry into the MTA's MetroCard fare system would provide substantially higher net revenue: $6.1 million the first year and $67.4 million over 15 years. This option assumes a narrower fare exemption policy and that the MTA would cover the cost of printing and distributing fare cards. In addition, the MetroCard option assumes that the MTA would pay the city's Department of Transportation for each swipe of an unlimited-ride fare card, even though these swipes generate no additional revenue for the MTA.

IBO also considers the impact that new development on Staten Island's North Shore could have on ferry ridership and potential fare revenue. IBO estimates that the 1 million additional passengers per year projected to ride the Staten Island Ferry would generate roughly $1.6 million in net revenue with either a $4 fare with a dedicated fare system or with the use of MetroCard.

These findings are discussed in detail in the attached memo. If you have further questions or would like additional information, please contact me at ronniel@ibo.nyc.ny.us or 212-442-0225 or Alan Treffeisen, who produced the analysis, at alant@ibo.nyc.ny.us or 212-341-6052.

Sincerely,

Ronnie

Ronnie Lowenstein

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110 WILLIAM STREET, 14th FLOOR
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Date: September 2014

To: Ana Champeny

From: Alan Treffeisen

SUBJECT: Estimate of Revenues and Costs of Staten Island Ferry Tourist Fare

The office of Staten Island Borough President James Oddo has requested that IBO update its 2006 analysis of the potential revenue from implementing a tourist fare on the Staten Island Ferry. The analysis uses more recent ridership and demographic data, as well as updated cost estimates.

Following our original study, IBO first considered a stand-alone fare system, with the fare charged only leaving Manhattan and exemptions for all Staten Island residents and other New York City residents who work in Staten Island. After accounting for the costs of implementing and administering the fare system, a $2 fare would generate net revenues of just $804,000 in present value terms over the presumed 15-year life of the fare system, while a $4 fare would generate net revenues of $35.5 million over the same period.

IBO expanded the original analysis to also consider the option of incorporating the Staten Island Ferry into the Metropolitan Transportation Authority's (MTA) MetroCard system. Under this alternative, passengers would use a MetroCard to pay the fare at both the Whitehall and St. George terminals. The city would pay for the installation of MetroCard turnstiles and would provide payments to the MTA for their maintenance. In return, the MTA would make payments to the city following a pattern similar to existing arrangements with NICE Bus in Nassau County and the Westchester Bee bus system. Only residents of Staten Island would be exempt from the fare, mirroring the discounts on Verrazano Bridge tolls that are offered to the borough's motorists. IBO estimates that over a 15-year period, net revenues to the city from a MetroCard fare system would be $67.4 million in present value terms. However, changes in certain assumptions in the analysis such as a broader fare exemption policy, asking the city cover the cost of printing and distributing fare cards, or limiting the reimbursement to the city for swipes with an unlimited-ride fare card could reduce the estimated net revenue.

Finally, IBO examined the potential impact that new development near the Saint George ferry terminal would have on fare revenues. IBO estimates that the projected increase of 1 million passengers per year would generate roughly $1.6 million in net revenue with either a $4 fare with a dedicated fare system or with the use of MetroCard.

A Stand-Alone Fare System

Following our 2006 analysis, IBO first analyzed a stand-alone fare system consisting of tickets valid only on the ferry, plus a "smart card" allowing Staten Island residents and residents of the other four boroughs of New York City who work in Staten Island to travel for free.

Estimated Ridership and Fare Revenues. For purposes of our estimate, we assumed that all residents of Staten Island, as well as other New York City residents who could document that they work on Staten Island, would continue to ride the ferry without charge. Other passengers would pay a fare at Whitehall Terminal in lower Manhattan for travel to St. George Terminal in Staten Island. No fare would be charged for trips from Staten Island to Manhattan.

Estimating Ridership. Since turnstiles are no longer in use at Whitehall and St. George Terminals, all ridership figures for the Staten Island Ferry are estimates based on surveys or visual counts. The Mayor's Management Report, using numbers provided by the city Department of Transportation (DOT), reports 21.4 million one-way trips on the Staten Island Ferry in 2013. IBO has used data reported by DOT to the Federal Transit Administration (FTA) to arrive at an estimate of 21.9 million annual one-way trips, with 80 percent occurring on weekdays.[1]

The procedures followed to determine the distribution of ridership by residence and trip purpose are essentially the same as in IBO's 2006 analysis (http://www.ibo.nyc.ny.us/iboreports/TouristFare.pdf). To estimate the number of trips that would be subject to the proposed tourist fare, we analyzed data from the 2010-2011 Regional Household Travel Survey (RHTS), conducted by the New York Metropolitan Transportation Council and the New Jersey Transportation Planning Authority. The RHTS, which surveyed only metropolitan area residents, estimated 57,238 average weekday riders on the ferry, 51,995 of whom were Staten Island residents. We assumed that the other 5,243 trips by metropolitan region residents were work-related. Subtracting the RHTS total from the average weekday ridership of 67,601 (IBO's estimate based on FTA data), we estimate an average of 10,363 trips each weekday by individuals who are not residents of the metropolitan area. To estimate weekend ridership, we used aggregate data reported to the FTA, and assumed a share of non-Staten island residents that was 30 percent higher than on weekdays.

The fare is assumed to apply to all weekend riders from outside Staten Island, plus all weekday riders from outside New York City.[2] Under these assumptions, 4.0 million of the 21.9 million one-way trips on the ferry each year would be subject to the fare.

Annual Staten Island Ferry Ridership, by Place of Residence
Millions of trips

	Weekdays		Weekends		
	Shares	Ridership	Shares	Ridership	Total Ridership
S.I. Residents	77%	13.5	70%	3.0	16.6
Other NYC	8%	1.3	10%	***0.4***	1.8
Outside NYC	15%	***2.7***	20%	***0.9***	3.6
TOTAL	**100%**	**17.6**	**100%**	**4.3**	**21.9**

SOURCE: IBO based on Department of Transportation; RHTS
NOTE: Numbers in bold italics indicate trips that would be subject to the proposed fare.
New York City Independent Budget Office

To facilitate implementation of the fare collection system, the analysis assumes that the fare will be charged only leaving Manhattan. Because almost all individuals who pay the fare will return to Manhattan by ferry, the payment is essentially a round-trip fare.

IBO assumed that for every marginal increase of $1 in the round-trip fare, the number of paid trips will decline an additional 4.0 percent, a more muted response than assumed in our 2006 study.[3] We project that with a $2 round-trip fare, there would be 1.85 million paid trips (equivalent to 3.71 million one-way rides), while with a $4 fare, there would be 1.71 million trips paying a fare (3.42 million one-way trips). Fare revenue would be $3.71 million with the $2 fare, and $6.83 million with the $4 fare.

Estimated Capital and Operating Costs. Based on discussions with vendors of fare collection equipment in 2006, IBO estimated the cost of purchasing, installing, maintaining and operating a fare collection system. The current analysis assumes the same type of fare system as in the 2006 study, consisting of ticket vending machines and gates, including disabled access gates. The original cost estimates have been updated to 2014 dollars using IBO's New York state and local government deflator for capital and operating costs.

Capital Costs. We assumed a fully automated system, with tickets sold only at machines. Building and staffing ticket booths would add substantially to the cost. The following elements would be required for an automated system and are included in our cost estimate:

- *Ticket Vending Machines.* The cost of a ticket vending machine depends on the complexity of the fare structure and other factors. We assumed 16 ticket vending machines at a cost of $75,000 each, or $1.2 million total.
- *Gates.* We assumed 24 gates would be required, at a cost of $31,250 each, for a total of $750,000.
- *Installation.* We assumed one-time installation costs of $3.1 million.

Capital equipment purchases, including installation, would total $5.1 million. We assumed this amount would be capitalized over 15 years at an interest rate of 5.0 percent, for an annual cost of $485,000.

Operating Costs. Annual operating costs of an automated system would include fare cards, equipment maintenance, staffing and debt service—interest and principal on the debt used to fund the purchase of equipment. Estimated annual operating costs would initially total $3.2 million.[4] We assume that operating costs would grow by 1.9 percent annually, based on IBO's projection of the New York state and local government deflator. With a $4 fare, operating costs would reach roughly $4.1 million in the 15th year, when the last debt service payment would be due. (With the $2 fare, costs would be slightly higher—$4.2 million—in year 15 due to the need to print more tickets to serve the additional riders.)

- *Fare Media.* Various fare media options are available. IBO's original study assumed that users exempt from the fare would receive a durable plastic "smart card" that would activate a turnstile without swiping. Fare-payers would use a paper ticket that would be swiped or inserted at the fare gate. The cost to produce and distribute a smart card is assumed to be $3.13 per card. All Staten Island residents 18 years or older, plus residents of other New York City boroughs who commute to Staten Island and provide the appropriate documentation, would receive a card (about 370,000 cards). We assume that the cards would be replaced every two years, but for accounting purposes we distributed the replacement cost evenly over two years. (Our previous study assumed that smart cards were replaced each year.) The cost of the paper tickets is assumed to be $0.13 each. Based on our ridership projections, the number of tickets required each year would be 3.71 million with a $2 fare, and 3.42 million with a $4 fare.
- *Maintenance and Staffing.* Maintenance of the equipment could be performed by contractual workers or by DOT employees. We assumed an initial annual cost of $1.3 million. In addition, we assumed one employee would be posted 24 hours per day to provide security and assistance (six employees total, plus one full-time supervisor) for an initial cost of $592,000. Finally, DOT would have to administer the resident pass program, which we assumed would require three full-time employees at an annual cost of $272,000.[5] (More employees might be required to initiate the program, but we did

not estimate these additional one-time costs.) Finally, there would also be nonlabor costs such as computers and software, office space, and other supplies, which we assumed would cost $50,000 annually.

A Stand-Alone Tourist Fare: The Bottom Line. It is reasonable to assume that both operating costs and fare revenues would increase over time. Our 2006 analysis assumed that costs would rise at a rate of 2.5 percent per year, while fares and ridership would remain constant. Our updated analysis assumes that operating expenses will increase 1.9 percent a year (as noted above) and that fare revenue increases at an annual rate of 2.0 percent (in line with the assumptions through 2017 in the MTA's latest financial plan). The increase in fare revenue is assumed to be due to regular upward adjustments in the fare itself rather than any increase in ridership, which would provide additional revenue.

A round-trip fare initially set at $2 and increasing at an annual rate of 2.0 percent would cover the capital and operating expenses of the fare system beginning the second year. Although we expect fares to rise at a slightly faster pace than expenses (2.0 percent annually vs. 1.9 percent) over time, net revenues—the difference between revenues and cost—are just $211,000 in year 15. The net present value of the income stream over the assumed 15-year life of the fare system would be a modest $804,000.

A round-trip fare of $4 would generate net revenue of $3.2 million the first year. Net revenues would rise more rapidly with a $4 fare than a $2 fare and reach $4.4 million by year 15, as the capital investment is being paid off. The net present value of the income stream is projected to be $35.5 million.

The MetroCard Alternative

IBO also looked at the alternative of collecting the fare through the Metropolitan Transportation Authority by installing MetroCard turnstiles in the ferry terminals at Whitehall and St. George, and exempting Staten Island residents from paying the fare.

The MetroCard Alternative. In thinking about how to implement a tourist fare on the Staten Island Ferry, IBO considered another option that would not require building a separate payment card system but instead would integrate the ferry with the MetroCard system of the MTA. We believe this could be done in a way that would preserve the ferry fare exemption for Staten Island residents while still charging a fare to visitors. The ferry fare exemption would operate on principles similar to the policies of MTA Bridges and Tunnels, which gives discounts on the Marine Parkway and Cross Bay bridges to residents of Rockaway and Broad Channel, and on the Verrazano-Narrows Bridge to residents of Staten Island. The ferry exemption would apply only to Staten Island residents, who would be provided with a fare card (perhaps similar to student MetroCards) allowing them to travel without charge on the ferry. Only ferry turnstiles would accept these cards.

There is a precedent for non-MTA transit services to use MetroCard: the Bee-Line bus system in Westchester County and NICE buses in Nassau County both allow pay-per-ride and unlimited-ride MetroCards as payment on their vehicles. The MTA then negotiates a payment to these transit operators based on the number of card swipes, the type of card used, and whether or not trips are linked to other trips on NYC Transit.

Using MetroCards on the Staten Island Ferry would require the installation of turnstiles at both South Ferry and St. George terminals, which we assume would be paid for by the city. There are already MetroCard vending machines at or adjacent to the terminals, although as a convenience additional machines could be installed near the turnstiles. Pre-paid MetroCards could also be sold by merchants in the terminals.

IBO has made an estimate of the costs and revenues from implementing a MetroCard fare system on the Staten Island Ferry. This estimate assumes that only Staten Island residents would be exempt from the fare, and that both pay-per-ride and unlimited ride MetroCards would be valid on the ferry. Our estimate of how much revenue DOT would receive is based on the MTA's current arrangements with the Westchester Bee bus system and the NICE bus system in Nassau County.[6] In the case of pay-per-ride MetroCards, these transit operators are reimbursed for the revenue corresponding to initial swipes, but receive no revenue when the ride is a counted as a free transfer. For pay-per-ride cards, IBO assumes that one-sixth of swipes involve a free transfer and do not result in a payment to DOT. This figure is arrived at by assuming that one-third of tourist trips from Whitehall, but no trips from St. George, involve a free transfer. In the case of unlimited-ride MetroCards, the agencies receive a fixed payment per swipe, typically around $1.55, and we assume that a similar payment would be made to DOT.

Overall, around half of nonstudent trips on NYC Transit subways and buses are made using pay-per-ride MetroCards, and about half are made using unlimited-ride cards. (Around 3 percent of trips are made using cash or single-ride tickets.) IBO has assumed that the roughly 50-50 split for the two card types would hold on the Staten Island Ferry. Assuming they would have bought the card anyway, users of unlimited-ride MetroCards would face no additional expense with the imposition of a fare on the ferry, and their travel behavior would presumably not change. However, we expect users of pay-per-ride MetroCards to reduce their ferry travel in response to the fare.[7]

IBO's estimate includes costs to collect fares at the Staten Island Ferry. First, installation of turnstiles at each terminal (48 in total, 24 at each terminal and a proportional installation cost) is assumed to be financed through 15-year bonds.[8] Second, the operating costs identified on the stand-alone fare system are assumed to be comparable to costs under the MTA fare system. IBO assumes that under the MetroCard option, the city would pay for 24-hour supervision of the fare area. In addition, the city would make annual payments to the MTA, starting at $1.6 million the first year and increasing by 1.9 percent per year, to cover maintenance and administrative costs related to the fare system. The costs of printing and distributing MetroCards are assumed to be borne by the MTA.

IBO's assumptions about increases in revenues and costs parallel those under a stand-alone fare system: IBO assumes that MetroCard fares increase at a rate of 2.0 percent per year, while costs other than debt service increase at an annual rate of 1.9 percent. We estimate that net revenues to the city's Department of Transportation from requiring MetroCard payments from riders other than those living on Staten Island would be $6.1 million in the first year, rising to $8.3 million in year 15. The net present value of the income stream over the 15 years would total $67.4 million. The increase in revenue compared with a dedicated fare system is striking. However, the favorable result for the city depends on the assumptions that all non-Staten Island residents pay the fare, that the MTA absorbs the cost of MetroCard distribution, and that the MTA provides a substantial payment to the city for trips (those made with unlimited-ride cards) that do not generate any additional revenue. If the MTA only reimbursed the city for the use of pay-per-ride MetroCards, the net present value of the income stream over the 15-year life of the fare system would be much lower, a total of $21.5 million.

Increased Ridership Due to New Development on Staten Island

Major new development projects are planned for Staten Island. IBO has analyzed the impact these developments would have on ferry ridership and fare revenues.

Increased Ridership Due to New Development on Staten Island. In his request to IBO, Borough President Oddo noted that ridership on the ferry is expected to increase due to investment in the area near the St. George Ferry Terminal. A recent article in *Crain's New York Business* describes two new major development projects planned for the area near the St. George ferry terminal: the New York Wheel, a giant Ferris wheel that will provide aerial views of New York harbor; and the Empire Outlets shopping complex.[9] Referring to the two developments, *Crain's* article states that "According to studies commissioned by developers, an additional 1 million people will use the city-run ferry, while another million will pay a premium to board boats from points in the city other than lower Manhattan to travel directly to Staten Island."

While IBO has examined planning documents for the new development in Staten Island, we have not analyzed in detail the methodology and assumptions behind the ridership estimates reported in *Crain's*. Therefore, we cannot make a judgment regarding their reasonableness. The actual increase in passengers on the Staten Island Ferry due to new development will depend not only on the number of new residents and visitors generated by the development, but also on the price and availability of alternate ferry service. The potential for additional fare revenue would depend on the specific fare policies instituted by DOT. For our present purpose, we have adopted the estimate reported in *Crain's*: 1 million additional one-way trips (500,000 round trips) on the DOT-operated Staten Island Ferry attributable to new development in St. George.[10] Furthermore, we assume that if a fare were imposed on the ferry, all new trips generated by the new development would be subject to that fare. This is a simplification, as some of the trips would be generated by new residential units whose inhabitants (exempt from the fare) commute to Manhattan.

Fare Revenues from New Development, Using a Dedicated Fare System. As before, IBO assumes that under a stand-alone fare system, fares would be paid only leaving Manhattan, essentially making the charge a round-trip fare. Moreover, we assume that all new ferry ridership generated by the new development in St. George would be visitors who are subject to the fare. Each increase of $1 in the round-trip fare is again assumed to reduce the number of trips by 4 percent. This means that a round-trip fare of $2 would reduce the number of round-trips generated by the new development to 460,800 and—after subtracting the cost of fare media—would generate net revenue of $862,000. A round-trip fare of $4 would lower the number of round-trips to 425,000 while yielding a $1.6 million increase in net revenue.

Fare Revenues from New Development, with a MetroCard Fare System. IBO again assumes that all additional ferry ridership generated by the new development in St. George would be subject to the fare. The market shares of pay-per-ride and unlimited MetroCards are once again assumed to be 50 percent each, with the fare charged in both directions. IBO projects that after adjusting for the drop-off in ridership among users of pay-per-ride MetroCards, the new development projects in St. George would generate an additional 908,000 one-way trips on the ferry, and $1.6 million in fare revenue for the city. As before, this analysis assumes that the MTA would absorb the costs of printing and distributing farecards, and that the MTA would pay DOT a similar amount for each swipe of an unlimited-ride MetroCard as it currently pays NICE Bus and the Westchester Bee.

Endnotes

[1]http://www.ntdprogram.gov/ntdprogram/pubs/profiles/2012/agency_profiles/2082.pdf. Retrieved August 5, 2014.

[2]Our original study assumed that all residents of the New York Metropolitan Transportation Council (NYMTC) region (New York City and 23 nearby counties in New York, New Jersey, and Connecticut) who worked in Staten Island were eligible for the fare exemption. An exemption only for city residents would be easier to administer, and might be justified on the grounds that the ferry is financed largely through tax revenues from city residents. In any case, survey data indicate that less than two percent of the region's residents who use the ferry live outside New York City.

[3] IBO's original study assumed a somewhat greater decline of 5.0 percent for each $1 increase in the round-trip fare. Under the 4.0 percent assumption, the elasticity of demand (percent change in ferry ridership in response to a one percent change in the fare, calculated as an arc elasticity at $1 intervals) is -.06 at a fare of $2, and -.14 at a fare of $4. A study of ferry demand in British Columbia, Canada reported an elasticity of -.28 for the principal routes between the mainland and Vancouver Island. The main Vancouver-Victoria route involves a one-way trip of 95 minutes (compared with 30 minutes for the Staten Island Ferry), and currently has a one-way base fare of $16.25 (Canadian dollars). http://www.bcferrycommission.com/wp-content/uploads/2011/07/InterVISTAS-Traffic-forecast-report-for-BCFS.pdf.

[4]We have made the simplifying assumption that the cost of the smart cards is evenly spread over two years.

[5]The city may need more than three administrative staff to operate a Staten Island resident fare exemption program, which would increase the cost and reduce net revenues. Due to limited information upon which to base an estimate of the number of staff that would be necessary, we decided to use the same assumption as our 2006 estimate.

[6]The MTA also has an arrangement with the Roosevelt Island Tram, operated by the Roosevelt Island Operating Corporation, a New York State authority. The tram only accepts MetroCards as payment.

[7]IBO did not attempt to measure the extent to which passengers might shift from pay-per-ride to unlimited-ride MetroCards if a fare were imposed on the ferry.

[8]We prorated the total installation cost in the stand-alone fare option based on the share of equipment cost for turnstiles and then multiplied by two because the gates would be at each terminal.

[9]http://www.crainsnewyork.com/article/20140302/HOSPITALITY_TOURISM/140229840/ferry-operators-cruise-to-staten-island.

[10]Planning documents for the New York Wheel and Empire Outlets project indicate that the developments would generate around 1.5 million new ferry trips at midday and on afternoons, Monday through Saturday. This leads us to conclude that the figure of 2 million new ferry trips referred to in the Crain's article (see previous endnote) refers to one-way trips. The remaining increase of 500,000 trips will presumably come from other new developments planned for Staten Island, including residential complexes where employed residents will mostly work in Manhattan.