

**Interim Report to the
Traffic Congestion Mitigation Commission**

January 10, 2008

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January 9, 2007

Fellow Commission Members,

Attached is the Interim Report to the Traffic Congestion Mitigation Commission. The Report, prepared by agency staff, lays out the Commission's legislative mandate and summarizes the Commission research and evaluation process over the course of the fall. To help inform the Commission's discussions moving forward, I directed agency staff to present and analyze several alternative plans, which we will discuss at the January 10 meeting.

In addition to the Mayor's plan, the Interim Report evaluates four alternatives, each focusing on one of the following approaches: congestion pricing, bridge tolling, pricing of parking and taxis, and license plate rationing. For the Commission's final recommendation, we may select one of the alternatives presented in this report, or may choose to modify one of the alternatives, combine elements of two or more alternatives, or put forward a wholly different plan. In that regard, I wish you to pay particular attention to the portion of the report which details each proposal's relative strengths and weaknesses. I wish to encourage discussion around what combination of blended proposals yields the best and most comprehensive plan.

In three weeks, our Commission will make a final recommendation to the City and State. On January 16th, we will have the opportunity to hear the comments and recommendations of the public on our work thus far and potential recommendations. I look forward to discussing the report in further detail with all of you and building a consensus on the best plan to address traffic congestion and its economic, environmental, and quality of life impacts on New York City and the region.

Sincerely



Marc V. Shaw

Chairman, Traffic Congestion Mitigation Commission

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Executive Summary

The Purpose of the Traffic Congestion Mitigation Commission

High levels of traffic congestion in New York City's central business district (CBD) have an adverse impact on the economy, environment, quality of life, and public health of the City and region. If the population of New York City continues to grow as is projected, congestion will worsen without action to expand transit service and to manage the transportation network more efficiently. In April 2007, New York City Mayor Michael R. Bloomberg proposed piloting a congestion pricing system in the most congested areas of Manhattan as a means of reducing traffic and raising funds for the transit system. Under the proposal, drivers would be charged a fee between 6 a.m. and 6 p.m. to enter, exit, or travel within Manhattan south of 86th Street. The revenue generated by congestion pricing would be used to bring the regional transit system up to a state of good repair and to fund system expansion projects. The congestion pricing plan ("the Mayor's plan") was part of PlaNYC, the Mayor's overall sustainability strategy for the City.

In recognition of the growing congestion problem in Manhattan and in response to the Mayor's plan, the State Legislature passed legislation in July, 2007, which was signed by Governor Eliot Spitzer, creating the 17-member Traffic Congestion Mitigation Commission ("the Commission"). The mandate of the Commission is to study and evaluate approaches to reducing congestion in the most congested areas of Manhattan, including the Mayor's plan, and to recommend a comprehensive traffic congestion mitigation plan to the City and the State by January 31, 2008. The Commission is required to set forth an implementation plan that achieves at least a 6.3 percent reduction in vehicle miles traveled (VMT) in Manhattan south of 86th Street—the estimated level of VMT reduction of the Mayor's plan.¹ The Commission members were appointed by public officials from across the City and State, as shown above.

Commission Appointing Authorities

- Governor: 3 Commissioners
- Assembly Speaker: 3 Commissioners
- Assembly Minority Leader: 1 Commissioner
- Senate President: 3 Commissioners
- Senate Minority Leader: 1 Commissioner
- New York City Council Speaker: 3 Commissioners
- New York City Mayor: 3 Commissioners

As part of the Mayor's plan, the City and State sought to leverage additional federal funding designated by the U.S. Department of Transportation (USDOT) for states and local governments pursuing pricing-based congestion reduction strategies. In August 2007, the City, along with the Metropolitan Transportation Authority (MTA) and New York State Department of Transportation (NYSDOT), signed an Urban Partnership Agreement (UPA) with USDOT. Under this agreement, the City and State are eligible to receive \$354 million in federal funding for transit and transportation system improvements if the City and State approve a pricing-based traffic mitigation plan by March 31, 2008. The federal funds would be used to improve transit services prior to the implementation of congestion pricing. The Commission may recommend any approach that achieves a 6.3 percent VMT reduction in Manhattan south of 86th Street, but a plan

¹ Analysis conducted in the spring of 2007 indicated a 6.3 percent VMT reduction for the Mayor's plan. As discussed on page 20, updates to the model used for the analysis were completed in the fall of 2007. With these updates, the projected VMT reduction for the Mayor's plan is 6.7 percent.

that does not use pricing as its primary congestion mitigation mechanism will render the City and State ineligible for the UPA funds.

In its research efforts, the Commission is being supported by an interagency working group of transportation professionals, including planning staff from the Mayor's Office of Long-Term Planning and Sustainability, the MTA, New York City Department of Transportation (NYCDOT), NYSDOT, and the Port Authority of New York and New Jersey (PANYNJ). All work products presented to the Commission by agency staff have been reviewed by the interagency working group.

Commission Process and Work to Date

Over the last four months, the Commission has gone through a comprehensive process of consulting with the public, evaluating a wide range of alternative approaches to traffic mitigation, and weighing the advantages and disadvantages of those approaches. Specifically, the Commission:

- reviewed transportation and transit enhancement plans prepared by the MTA and NYSDOT (these plans outline improvements that would be necessary for implementation of the Mayor's plan);
- held a series of public hearings across the City and region to solicit the input of the public on the issue of traffic congestion, possible remedies, and the impacts of the Mayor's plan;
- developed a list of evaluation criteria by which to evaluate different traffic congestion mitigation options, including indicators on traffic, transit funding, the environment, the economy, and neighborhood quality of life; and
- devised a research agenda examining alternatives, complements, and modifications to the Mayors' plan and reviewed analyses on those topics as prepared by agency staff.

MTA and NYSDOT Improvement Plans

The Commission began by reviewing the MTA and NYSDOT transit and transportation enhancement plans necessary for the implementation of the Mayor's congestion pricing plan. To accommodate the substantial increase in transit ridership expected as a result of the Mayor's plan, the City and the MTA would implement a series of short-term mass transit improvements, especially within the congestion zone and in areas of the city that

MTA Transit Enhancement Plan	Costs
Capital Cost	\$767 million
Annual Operating Cost	\$104 million
Annual Debt Service	\$56 million

lack convenient transit access to Manhattan. These improvements would include: new and expanded express bus service, more frequent bus and subway service on key lines, dedicated bus lanes on bridges, bus rapid transit (BRT), and new ferry service. Sufficient service

improvements would be in place prior to the implementation of the Mayor's plan to absorb the projected increase in transit demand. New funding would be needed for both the operating and capital costs associated with the MTA's plan.

In addition, NYSDOT evaluated the impact of the Mayor’s plan on the regional highway system and on transit services not provided by the MTA. NYSDOT found that the traffic impacts on the arterial system in general would likely be positive or neutral,

NYSDOT Enhancement Plan	Costs
Capital Cost	\$59.5 million
Annual Operating Cost	\$0.5 million

but it also saw the need for additional monitoring on key highway segments and interchanges to gauge the impacts of congestion pricing. The Mayor’s plan may also have a small impact on suburban transit services that are not

provided by the MTA. Based on this analysis, NYSDOT proposed, among other improvements, an enhanced traffic monitoring system, regional data collection and information sharing, additional suburban park-and-ride locations, and improved traveler information. New funding would be needed for both the operating and capital costs associated with NYSDOT’s plan.

Public Hearings and Commission Evaluation Criteria

As part of its statutory mandate to provide the opportunity for the public to participate and comment, the Commission conducted a series of public hearings in each borough of the City of New York (Manhattan, Queens, the Bronx, Brooklyn, and Staten Island), in Long Island, and in Westchester County. The Commission heard testimony from State and local elected officials, transportation and environmental groups, community organizations, and private citizens.

Witnesses provided their views on congestion in the City and the region, and the impact of congestion and various mitigation options on the economy, the environment, quality of life, public health, and the transportation network. Some raised equity, fairness, privacy, and/or feasibility issues with the Mayor’s plan, while others indicated their support for the Mayor’s plan, stating it would reduce congestion and provide funding for transit. Regardless of their position on congestion pricing, most speakers urged stronger action to counter worsening traffic congestion in and beyond the CBD and to improve the regional transit system.

Following the public hearings, the Commission discussed how it would evaluate alternative traffic congestion mitigation proposals. The legislation establishing the Commission requires that the Commission undertake a thorough review and study of plans to reduce traffic congestion, and that the Commission’s recommended plan achieve at least a 6.3% reduction in VMT. Given these guidelines, as well as concerns raised by the public, elected officials, and various stakeholder groups, the Chairman recommended a set of evaluation criteria to guide discussion at the October 25 meeting. The Commission’s evaluation criteria are as follows:

- 1) **Best practices (implemented elsewhere):** the degree to which the program is based on mitigation policies that have successfully been implemented in other cities.
- 2) **Reduction of Vehicle Miles Traveled:** estimate of VMT reduction in Manhattan south of 86th Street.
- 3) **Improvements in local and regional air quality and environment:** estimate of emissions reductions and other environmental impacts.

- 4) **Net revenues raised for mass transit:** estimate of net annual revenues raised to fund the transit system.
- 5) **Impacts on neighborhoods**
 - a. **Traffic congestion outside of the central business district:** estimate of traffic impacts on areas of the City outside the CBD.
 - b. **Parking:** the degree to which the program is likely to decrease the availability of on-street parking in neighborhoods adjacent to the CBD.
- 6) **Impact on economic classes:** the degree to which the program is progressive or regressive in the allocation of costs and benefits across economic classes.
- 7) **Regional equity:** the degree to which the program equitably allocates costs and benefits across geographic areas within the New York metropolitan region.
- 8) **Privacy:** the degree to which the program creates concerns over personal privacy rights.
- 9) **Implementability:** the feasibility of implementing the program given available technology, the program's design, and start-up and operating costs.
- 10) **Economic impact on jobs, business and the regional economy:** The impact of the program on the City and regional economy.

Research Agenda

Having set forth its evaluation criteria, the Commission turned its attention to developing a list of alternative congestion mitigation proposals for review and discussion. The Commission took a comprehensive approach to setting its research agenda, choosing to examine a wide array of potential approaches. Based on input from the Commission members, elected officials, the public, and stakeholder groups, the Chairman drafted a research agenda and presented it to the Commission. This agenda, presented in the box to the right, included an evaluation of policies that are alternatives to the Mayor's plan (such as mandatory carpooling), policies that could be alternatives or supplements to the Mayor's plan (such as higher parking meter rates), and modifications to the Mayor's plan (such as moving the northern boundary of the congestion pricing zone from 86th to 60th Street). Each of the options was evaluated using the ten criteria developed by the commission. The results of the research agenda revealed that several different approaches to congestion mitigation, including congestion pricing, bridge tolling, license plate rationing, and taxi and parking

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| <p>Commission Research Agenda</p> <p>Options reviewed:</p> <ul style="list-style-type: none">• Regulate and restrict truck movement• Telecommuting incentives• Increase cost of parking in CBD• Reduce use of government parking placards• Additional taxi stands to reduce cruising• Raise cab fares and fees charged to cabs• Raise tolls or variable tolls on existing facilities• License plate rationing• Required carpooling• Creation of High-Occupancy Toll lanes• Congestion pricing with a 60th St. northern boundary• Congestion pricing with no intra-zonal charge• Congestion pricing with a charge on FDR & West St.• Congestion pricing with variable charges or extended hours• Congestion pricing with a hybrid exemption• Congestion charging with a modified toll offset policy• Tolling alternatives |
|---|

policies, rate well on a number of the Commission’s evaluation criteria and were worthy of further review. (A full summary of the research agenda is presented in Chapter 4 of the Interim Report).

Options for Evaluation

Based on the feedback from the public hearings, the results of the research agenda, and discussion among the Commission members, the Chairman directed agency staff to develop a set of five options for further review by the Commission. These included the Mayor’s plan and four alternatives, each focusing on one of the following approaches: congestion pricing, bridge tolling, pricing of parking and taxis, and license plate rationing. The Chairman directed agency staff to estimate the VMT reduction of each option, and to then evaluate all options that meet the mandate of a 6.3 percent reduction in VMT along each of the evaluation criteria established by the Commission. For its final recommendation, the Commission may select one of the alternatives presented in this report, or may choose to modify one of the alternatives, combine elements of two or more alternatives, or put forward a wholly different plan. A summary of the five options, along with the comparative strengths and weaknesses of each, is presented below:

The Mayor’s Plan

Description	Parameter	Mayor's Plan
Passenger vehicles entering or leaving Manhattan below 86th Street during the business day (weekdays 6 am to 6 pm) would pay an \$8 daily fee. Trucks would pay \$21. Certain low-emission trucks would pay \$7. For trips within the congestion pricing zone, cars would pay \$4 and trucks would pay \$5.50. Emergency vehicles, transit vehicles, vehicles with handicapped license plates, taxis, and for-hire vehicles (radio cars) would be exempt. Vehicles using E-ZPass that travel through MTA or Port Authority (PA) tolled crossings on the same day would pay only the difference (if any) between their MTA or PA tolls and the congestion charge. Roads on the periphery of Manhattan will not be in the zone.	<i>Northern Boundary</i>	86 St
	<i>Intra-zonal Charge</i>	Yes (\$4)
	<i>Through Trips</i>	Free if using peripheral routes
	<i>Direction of Charge</i>	2-Way
	<i>Flat or Variable</i>	Flat \$8
	<i>12 Hour or 24 Hour</i>	12 hour
	<i>E-ZPass Toll Offset</i>	Yes
	<i>LPR Surcharge</i>	None
	<i>Fee or Toll</i>	Daily Fee
	<i> </i>	
<p>Strengths</p> <ul style="list-style-type: none"> • The Mayor’s plan is projected to reduce VMT by 6.7% and to generate \$420 million a year in revenues for transit investment.² • The Mayor’s plan would reduce traffic across the city, especially in neighborhoods adjacent to the congestion pricing zone, including Upper Manhattan, Long Island City, and Downtown Brooklyn. • Nearly all low and moderate income commuters take transit to the Manhattan CBD. These workers would benefit from the Mayor’s plan through short-term improvements in transit services and long-term expansion of the transit system. 		

² As the Port Authority’s proposed toll increase has not yet been approved, the revenue estimates for the Mayor’s plan and the alternative congestion pricing plan were based on current Port Authority toll rates. The Port Authority’s proposed toll increase would reduce congestion pricing revenues of the Mayor’s plan by approximately \$50 a year. This estimate would vary based on the extent to which drivers switch from cash payment to E-ZPass.

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- The intra-zonal charge discourages trips within the congestion pricing zone with the same pricing approach as for all other trips into or out of the zone.
- The 86th Street boundary includes a larger portion of the most congested area of Manhattan.
- The plan’s free periphery route allows drivers to travel around the CBD without paying the fee. For example, Brooklyn and Queens drivers could travel to the Bronx or Upper Manhattan via the FDR Drive without paying the fee.
- The plan does not raise significant regional equity concerns.

Weaknesses

- Compared to the other four plans, the Mayor’s plan has significantly higher capital costs. The Mayor’s plan includes a charge on trips within the zone and thus requires many more charging stations, each with an array of E-ZPass and license plate recognition (LPR) cameras.
- Similarly, the Mayor’s plan has significantly higher operating costs. The charge on trips within the zone and the free periphery route significantly increase the number of transactions that must be processed for each paying customer.
- Unlike the alternative congestion pricing and toll plans, described below, the Mayor’s plan does not include a charge on taxi and livery trips into or out of the zone—a major source of traffic and vehicle emissions in the CBD.
- The Mayor’s plan includes the placement of hundreds of cameras within and around the zone’s perimeter, compared to only 25 or 13 camera sites needed for the alternate congestion pricing and toll plan respectively. More cameras raise greater privacy concerns.
- As under the alternative congestion pricing and toll plans, park-and-ride activity could increase in neighborhoods near the zone or adjacent to major transit hubs if measures are not taken by the City to manage parking. Similarly, the plan could potentially create localized congestion impacts due to changes in traffic patterns in the region.
- A small proportion of low and moderate income workers—those who drive to the CBD and who do not have a feasible transit alternative—would be disproportionately impacted by the congestion fee as compared to higher income drivers.

The Alternative Congestion Pricing Plan

Description	Parameter	Alt C.P. Plan	
The alternative congestion pricing plan is a modified approach to congestion pricing that eliminates the intra-zonal charge and free periphery, charges inbound trips only, and moves the northern boundary of the charging zone to 60 th Street. Cars would be charged an \$8 fee to drive into the zone on weekdays between 6am and 6pm. Trucks would pay \$21, except for low-emission trucks, which would pay \$7. Under this fee-based plan, drivers would pay once upon entering the charging zone and would be able to make additional trips in and out of the zone at no additional cost. For E-ZPass users, the value of all tolls paid on MTA or Port Authority bridges and tunnels would be deducted from the fee up to \$8. In addition, the plan includes three taxi and parking measures, described at right.	<i>Northern Boundary</i>	60 St	
	<i>Intra-zonal Charge</i>	None	
	<i>Through Trips</i>	Charged	
	<i>Direction of Charge</i>	Inbound	
	<i>Flat or Variable</i>	Flat \$8 fee	
	<i>12 Hour or 24 Hour</i>	12 hour	
	<i>E-ZPass Toll Offset</i>	Yes	
	<i>LPR Surcharge</i>	\$1	
	<i>Fee or Toll</i>	Daily Fee	
		\$1 taxi/livery trip surcharge for trips that start and/or end in zone	
		Increase metered parking rates within zone	
		Eliminate resident parking tax exemption within zone	

Strengths

- The alternative congestion pricing plan is projected to reduce VMT by 6.8% and to generate \$520 million a year in revenues for transit investment.
- The alternative congestion pricing plan has significantly lower capital and operating costs than the Mayor’s plan and is comparable in those categories to the toll plan.
- Similar to the other plans, the alternative congestion pricing plan would reduce traffic across

<p>the city especially in neighborhoods adjacent to the congestion pricing zone, including Upper Manhattan, Long Island City, and Downtown Brooklyn.</p> <ul style="list-style-type: none"> • Similar to the Mayor’s plan and toll plan, the alternative congestion pricing plan would benefit low and moderate income residents through improved transit. • The alternative pricing plan would further encourage Manhattan residents to use transit by increasing the cost of parking within the CBD and by adding a \$1 surcharge on taxi trips that end or begin within the zone. • Compared to the Mayor’s plan, the alternative congestion pricing plan is easier to implement. • The plan does not raise significant regional equity concerns.
<p>Weaknesses</p> <ul style="list-style-type: none"> • Unlike the Mayor’s plan, there is no free peripheral route and drivers would have to pay to travel through the CBD. For example, Brooklyn and Queens drivers that travel to the Bronx or Upper Manhattan via the FDR Drive would pay the congestion fee. • The elimination of the intra-zonal charge would leave no per-day charge on private auto use within the zone for drivers not using metered parking at their destination. However, the smaller zone minimizes the impact of this problem. • As under the alternative congestion pricing and toll plans, park-and-ride activity could increase in neighborhoods near the zone or adjacent to major transit hubs if measures are not taken by the City to manage parking. Similarly, the plan could potentially create localized congestion impacts due to changes in traffic patterns in the region. • A small proportion of low and moderate income workers—those who drive to the CBD and who do not have a feasible transit alternative—would be disproportionately impacted by the congestion fee as compared to higher income drivers.

The East River and Harlem River Toll Plan

Description	Parameter	Toll Plan
<p>All un-tolled East River and Harlem River crossings would be subject to inbound and outbound tolls. These tolls would be in effect 24 hours a day, seven days a week, and would match the toll rates on the MTA’s East River crossings.³ The Henry Hudson Bridge toll was assumed to be increased to \$4 to match the rates on the other crossings. Following the MTA toll structure, trucks would pay higher tolls depending on their size. Similar to the Mayor’s plan, tolls would be collected electronically; there would be no toll plazas or physical barriers. Cars would be charged a \$4 per-trip toll 24 hours a day to enter or leave Manhattan by any East or Harlem River crossing. The Port Authority toll structure would remain the same.</p>	<i>Tolled Crossings</i>	East and Harlem River bridges
	<i>Direction of Toll</i>	2-way
	<i>Flat or Variable</i>	Flat \$4 toll
	<i>12 Hour or 24 Hour</i>	24 hour
	<i>LPR Surcharge</i>	\$1
	<i>Fee or Toll</i>	Per-trip Toll
	<i> </i>	
<p>Strengths</p> <ul style="list-style-type: none"> • The toll plan is projected to reduce VMT by 7% and to generate \$859 million a year in new revenues for mass transit—the most of any of the alternatives considered. • The toll plan would enable the City, the MTA, and Port Authority to move toward a more uniform tolling strategy for Manhattan, including the potential implementation of one-way tolling and/or time-of-day pricing on all crossings into Manhattan. • The toll plan has significantly lower capital and operating costs than the Mayor’s plan, and slightly lower operating costs than the alternative congestion pricing plan. One-way tolling on all crossings would further reduce operating costs for both the MTA and the City. The plan also 		

³ Tolls would apply to: the Brooklyn Bridge, Manhattan Bridge, Williamsburg Bridge, Queensboro Bridge, Willis Avenue Bridge, Third Avenue Bridge, Madison Avenue Bridge, 145th Street Bridge, Macombs Dam Bridge, Alexander Hamilton Bridge (Cross Bronx Expressway), Washington Bridge, University Heights (207 St.) Bridge, Broadway Bridge and Henry Hudson Bridge (increase from current toll).

- includes fewer cameras than the Mayor’s plan.
- The toll plan would eliminate the need to match transactions to calculate a daily charge and would enable uniform charges to cash and E-ZPass customers.
 - Similar to the Mayor’s plan and the alternative congestion pricing plan, the toll plan would benefit low and moderate income residents through improved transit.
 - Similar to the other plans, the toll plan would reduce traffic across the city. It would have a greater impact on traffic in the Bronx, especially on through truck traffic.
 - Compared to the two congestion pricing plans, the toll plan would significantly impact local trips between the South Bronx and Harlem/Washington Heights. This shift would reduce vehicle emissions in these neighborhoods.

Weaknesses

- Tolls would apply to all trips into and out of Manhattan and would be in effect 24 hours a day, seven days a week. By charging at all hours, the toll plan does not distinguish between drivers who contribute to peak period congestion and drivers who travel at less congested times.
- Unlike the Mayor’s plan and the alternative congestion pricing plan, the toll plan does not address trips that start and end within Manhattan. Under the alternative congestion pricing plan, for example, many of these trips would be charged at 60th Street or would be captured by the \$1 taxi surcharge within the zone.
- Compared to the two congestion pricing plans, the toll plan would significantly impact local trips between the South Bronx and Harlem/Washington Heights. This shift could have a local adverse economic impact.
- Per-trip tolls would have a greater impact on commercial vehicles than the two congestion pricing plans. A commercial vehicle making multiple trips in and out of Manhattan would pay for each trip under the toll plan, rather than a flat daily fee under either the Mayor’s plan or the alternative congestion pricing plan.
- The toll plan would institute a toll on the Cross Bronx Expressway/I-95 corridor, causing potential diversions to other regional routes and tolled facilities. This would require further evaluation.
- The plan has disproportional impacts on motorists from the Bronx.
- As under the alternative congestion pricing and toll plans, park-and-ride activity could increase in neighborhoods near the zone or adjacent to major transit hubs if measures are not taken by the City to manage parking. Similarly, the plan could potentially create localized congestion impacts due to changes in traffic patterns in the region.
- A small proportion of low and moderate income workers—those who drive to the CBD and who do not have a feasible transit alternative—would be disproportionately impacted by the toll as compared to higher income drivers.

The License Plate Rationing Plan

Description	Parameter	Rationing Plan
License plate rationing restricts a set of vehicles from entering a specified area on certain days based on the last digit of the vehicle’s license plate. Under this scenario, the City would ban a particular vehicle once every five days, e.g., restricting 20 percent of all vehicles each weekday from 6 am-6 pm. The rationing restriction would apply to the area of Manhattan south of 86 th Street. Emergency vehicles, transit vehicles, and vehicles with handicapped license plates would be exempt. Enforcement could be conducted using a system of license plate cameras similar to the Mayor’s plan or by posting police officers at each of the entry points into the rationing zone.	<i>Vehicles Restricted Daily</i>	20%
	<i>Northern Boundary</i>	86 th Street
	<i>12 Hour or 24 Hour</i>	12 hour

Strengths

- The rationing plan is projected to reduce VMT by 10.3 percent, assuming that the system

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<p>coordinates plate numbers for multi-car households.</p> <ul style="list-style-type: none"> • Similar to the other plans, the rationing plan would reduce traffic across the city, especially in neighborhoods adjacent to the congestion pricing zone, including Upper Manhattan, Long Island City, and Downtown Brooklyn. • The plan would require either the installation of LPR cameras around the rationing zone, with similar capital cost to the alternative pricing plan, or a dedicated staff of police officers to manually enforce the restriction. • The plan would not have a disproportionate impact on low and moderate income commuters; all drivers would be equally impacted. Some income equity issues could emerge if two-car households are able to circumvent the restriction. • The plan raises no regional equity concerns.
<p>Weaknesses</p> <ul style="list-style-type: none"> • The plan does not generate revenue and would need to be coupled with a broad-based tax measure to fund transit investments. • The rationing plan provides less flexibility to businesses. Under the congestion pricing and toll plans, businesses and employees would always have the ability to make auto trips into Manhattan or the CBD, albeit for a price. Under rationing however, businesses would lack that flexibility. • The rationing plan reduces revenue to the Port Authority and MTA. • As under all four plans, park-and-ride activity could increase in neighborhoods near the zone or adjacent to major transit hubs if measures are not taken by the City to manage parking. Similarly, as with all four plans, the plan could potentially create localized congestion impacts due to changes in traffic patterns in the region.

The Combination Plan

Description	Parameter	Combination Plan
<p>This plan includes a series of measures to significantly increase the cost of on-street and off-street parking in Manhattan south of 60th Street, including raising the City parking tax for garages within the CBD, eliminating the resident parking tax exemption within the zone, increasing meter rates within the zone, and charging a \$2 overnight parking fee for all on-street spaces within the zone. In addition, the plan calls for reducing by 10,000 the number of government parking placards used to commute to jobs in the zone (these placards allow government employees to park in restricted spaces or without charge in metered spaces). In order to reduce taxi traffic, the plan also includes an \$8 surcharge on all taxi trips within, into, or out of the area of Manhattan south of 86th Street.</p>	Increase parking tax from 18.375% to 38.375% in CBD	
	Eliminate resident parking tax exemption in CBD	
	Increase meter rates in CBD	
	Reduce by 10,000 number of government parking placards used to commute to CBD jobs	
	\$2 overnight parking fee in CBD	
	\$8 surcharge for taxi trips with start and /or end south of 86 Street.	
<ul style="list-style-type: none"> • The combination is projected to reduce VMT by 3.2 percent, and thus does not meet the Commission’s legislatively mandated criteria and is not evaluated in terms of strengths and weaknesses by the commission 		

Next Steps

Following the release of this report on January 10, the Commission will hold a public hearing on January 16 to solicit input from the public on the five proposed alternatives. Based on this feedback and further deliberations, the Commission will vote on a final traffic congestion mitigation plan at its January 31, 2008 meeting and forward its recommendation to the Governor, State Legislature, City Council, and Mayor for review.

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The commission is free to recommend a modified version of any of the plans presented above or to select a wholly different plan.

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https://www.nysdot.gov/portal/page/portal/programs/congestion_mitigation_commission

I. Introduction

The Purpose of the Traffic Congestion Mitigation Commission

High levels of traffic congestion in New York City's central business district (CBD) have an adverse impact on the economy, environment, quality of life, and public health of the City and region. If the population of New York City continues to grow as is projected, congestion will worsen without action to expand transit service and to manage the transportation network more efficiently. In April 2007, New York City Mayor Michael R. Bloomberg proposed piloting a congestion pricing system in the most congested areas of Manhattan as a means of reducing traffic and raising funds for the transit system. Under the proposal, drivers would be charged a fee between 6 a.m. and 6 p.m. to enter, exit, or travel within Manhattan south of 86th Street. The revenue generated by congestion pricing would be used to bring the regional transit system up to a state of good repair and to fund system expansion projects. The congestion pricing plan ("the Mayor's plan") was part of PlaNYC, the Mayor's overall sustainability strategy for the City.

In recognition of the growing congestion problem in Manhattan and in response to the Mayor's plan, the State Legislature passed legislation in July 2007, which was signed by Governor Eliot Spitzer, creating the 17-member Traffic Congestion Mitigation Commission ("the Commission").⁴ The mandate of the Commission is to study and evaluate approaches to reducing congestion in the most congested areas of Manhattan, including the Mayor's plan, and to recommend a comprehensive traffic congestion mitigation plan to the City and the State by January 31, 2008. The Commission is required to set forth an implementation plan that achieves at least a 6.3 percent reduction in vehicle miles traveled (VMT) in Manhattan south of 86th Street—the estimated level of VMT reduction of the Mayor's plan.⁵ VMT is a standard indicator used by transportation professionals and policy makers to measure the amount of traffic within a defined road network. Reducing VMT in New York City will ease traffic delays, reduce greenhouse gas and other vehicle emissions, and benefit businesses and workers.

Commission Requirements

Process Requirements

- Review and evaluate alternative traffic congestion mitigation options
- Solicit input from the public
- Issue a recommended plan to the City and State by January 31, 2008

Recommendation Requirements

- Recommended plan must achieve at least a 6.3 percent VMT reduction
- Must include a description of MTA and NYSDOT enhancement plans
- Must be approved by a majority vote of the Commission

⁴ For the full text of the legislation (S. 6432, A. 9362), see Appendix A

⁵ Analysis conducted in the spring of 2007 indicated a 6.3 percent VMT reduction for the Mayor's plan. As discussed further on page 20, updates to the model used for the analysis were completed in the fall of 2007. With these updates, the projected VMT reduction for the Mayor's plan is 6.7 percent.

Process Going Forward

- Commission to deliberate on draft report options at January 10, 2008 meeting
- Public hearing on draft report on January 16, 2008
- Chairman to discuss final recommendation with Commission members
- Commission to vote on release of final report and recommendation on January 31, 2008

As part of the Mayor's plan, the City and State sought to leverage additional federal funding designated by the U.S. Department of Transportation (USDOT) for states and local governments pursuing pricing-based congestion reduction strategies. In August 2007, the City, along with the Metropolitan Transportation Authority (MTA) and New York State Department of Transportation (NYSDOT), signed an Urban Partnership Agreement (UPA) with USDOT.⁶ Under this agreement, the City and State are eligible to receive \$354 million in federal funding for transit and transportation system improvements if the City and State approve a pricing-based traffic mitigation plan by March 31, 2008. Pricing-based traffic mitigation systems impose fees on drivers to encourage them to switch to transit or other alternative modes, to carpool, or to travel at less congested times. The federal funds would be used primarily to improve transit services prior to the implementation of congestion pricing, especially in neighborhoods underserved by existing train and bus lines. The State recognized the availability of this funding when setting out the legislation creating the Commission. The Commission may recommend any approach, but a plan that does not use pricing or that is not expected to achieve the 6.3 percent VMT reduction will render the City and State ineligible for the UPA funds.

UPA Funding Requirements

Conditions prior to receiving the UPA grant funds:

- City and State must approve a congestion mitigation plan and grant legal authority to implement by March 31, 2008
- The plan must achieve at least a 6.3 percent reduction in VMT below 86th Street
- The plan must include transit enhancements
- Pricing must be the plan's principle mechanism for reducing congestion
- The plan must be otherwise acceptable to USDOT

If City receives funds, conditions during the period of the UPA grant:

- The plan must be implemented by March 31, 2009
- The plan must be in effect for at least 18 months

This draft report summarizes the Commission's work over the past four months, including the results of its public hearings, research agenda, and deliberations, and the comprehensive analysis of several preliminary alternative traffic congestion mitigation plans prepared for the Commission's consideration. The Commission has gone through a comprehensive process of consulting with the public, evaluating a wide range of

⁶ For the full text of the Urban Partnership Agreement, see Appendix B

alternative approaches to traffic mitigation, and weighing the advantages and disadvantages of those approaches. This report presents the results of the Commission's work. The remainder of the report is organized as follows:

Section II: Background - The Mayor's Plan

- Summary of the Mayor's proposed plan, as presented by City staff to the Commission on September 25, 2007.
- Summary of the MTA's and NYSDOT's proposed transit and transportation enhancement proposals necessary to implement the Mayor's plan, as presented by agency staff to the Commission on October 25, 2007.

Section III: Public Comment and the Commission's Evaluation Criteria

- Summary of testimony at the Commission's seven public hearings, held throughout the region in October and November 2007, as presented by Governor's Office staff to the Commission on November 20, 2007.
- Outline of the Commission's evaluation criteria for alternative proposals, as discussed and agreed upon by the Commission on September 25 and October 25, 2007.

Section IV: Research Agenda

- Summary of the results of the Commission's research agenda, as developed by the Commission over the course of its meetings and presented by agency staff to the Commission on November 20, December 10, and December 17, 2007.

Section V: Recommended Alternatives for Further Review

- Outline and evaluation of five alternative traffic congestion mitigation plans selected by the Commission for further review, including: the Mayor's plan, a modified congestion pricing plan, a bridge tolling plan, a license plate rationing plan, and a taxi and parking policies plan.

Appendices

- Legislation creating the Commission, staff white papers, consultant technical memoranda, presentations to the Commission, and other background materials produced during the course of the Commission's work.

Following the release of this report on January 10, the Commission will hold a public hearing on January 17 to solicit input from the public on the five proposed alternatives. Based on this feedback and further deliberations, the Commission will vote on a final traffic congestion mitigation plan at its January 31 meeting and forward its recommendation to the Governor, State Legislature, City Council, and Mayor for review.

Commission Membership and Staff

As stated by the statute that established the Commission, the Commission's membership was nominated by public officials from across City and State government, including: the Governor (three nominees), Speaker of the Assembly (three nominees), President of the Senate (three nominees), Assembly Minority Leader (one nominee), Senate Minority Leader (one nominee), City Council Speaker (three nominees), and Mayor (three nominees). The Commission's chair, Marc Shaw, was appointed by the Governor and approved by the Commission at its first meeting. The Commission's 17 members first convened on September 25 and held four additional meetings before the end of 2007.

Commission Members

Appointed by the Governor

- Elliot "Lee" Sander is Executive Director and CEO of the MTA.
- Marc V. Shaw (Chairman) is Executive Vice President for Strategic Planning at Extell Development Co. and a former Deputy Mayor of New York City and Executive Director of the MTA.
- Anthony E. Shorris is Executive Director of the Port Authority of New York and New Jersey.

Nominated by the Assembly Speaker

- Assemblyman Richard L. Brodsky represents the 92nd Assembly District and serves as Chairman of the Committee on Corporations, Authorities and Commissions.
- Assemblywoman Vivian E. Cook represents the 32nd Assembly District and serves as Assistant Majority Leader.
- Assemblyman Herman Denny Farrell, Jr. represents the 71st Assembly District and serves as Chairman of the Committee on Ways and Means.

Nominated by the Assembly Minority Leader

- Andy Darrell is Director of the Living Cities program at Environmental Defense and also serves as New York Regional Director.

Nominated by the Senate President

- Richard Bivone is President of the Nassau Council of Chambers of Commerce and the President and Founder of RMB Drafting Services.
- Thomas F. Egan is Chairman of the State University of New York Board of Trustees and a managing director at Citigroup Global Markets.
- Gary LaBarbera is the President of the New York City Central Labor Council and serves as Joint Council 16 President.

Nominated by the Senate Minority Leader

- Gerard Ronski is a former partner at the law firm Ross and Cohen, LLP and is currently counsel for Arverne by the Sea, a mixed-use development project.

Nominated by the Mayor

- Gene Russianoff is a staff attorney for NYPIRG's Straphangers Campaign and a long-time transit advocate.
- Janette Sadik-Khan is Commissioner of the New York City Department of Transportation.
- Elizabeth C. Yeampierre is a civil rights attorney and Executive Director of UPROSE, Brooklyn's oldest Latino community-based organization.

Nominated by the City Council Speaker

- Rev. Edwin C. Reed is the Chief Financial Officer of the Greater Allen AME Cathedral of New York.
- Andrea Batista Schlesinger is Executive Director of the Drum Major Institute, a progressive policy institute in New York City.
- Kathryn S. Wylde is President and CEO of the Partnership for New York City, a nonprofit organization of the city's business leaders.

In its research efforts, the Commission is being supported by an interagency working group of transportation and transit professionals, including planning staff from the Mayor's Office of Long-Term Planning and Sustainability, the MTA, the New York City Department of Transportation (NYCDOT), NYSDOT, and the Port Authority of New York and New Jersey (PANYNJ), as well as two transportation engineering firms: Cambridge Systematics (policy research and technical reviews) and Parsons Brinckerhoff (travel demand modeling). The interagency group has met weekly during the course of the Commission's work to discuss progress on the research agenda and to review a series of white papers on the issues and alternatives raised by Commission members and the general public. All work products presented to the Commission by agency staff have been reviewed by the interagency working group.

In addition, each appointing authority, including the offices of the Assembly Speaker and Minority Leader, Senate President and Minority Leader, and City Council Speaker, assigned a staff liaison to assist in the review of research findings and the preparation for Commission meetings. All white papers delivered to the Commission, as well as presentation materials and research reports, were provided for comment to each appointing authority liaison and their respective staff.

II. Background: The Mayor's Plan

Traffic Congestion: A Growing Challenge to New York City

On a typical weekday in 2005, about 800,000 vehicles entered Manhattan below 60th Street, the area regarded as New York's CBD for the purpose of this report.⁷ Although New York City has the most comprehensive transit system in the United States, more than 274,000 workers drove to their jobs in New York's CBD on a typical weekday in 2000.⁸ Cars, trucks, buses, taxis, bicyclists, and pedestrians compete for space in an increasingly crowded and congested streetscape. As New York City's population and economy have grown over the past fifteen years, traffic congestion has worsened. Between 1990 and 2005, heavy congestion on the major bridge and tunnel crossings into Manhattan increased from seven hours per day to ten hours per day.⁹ Rush hour is no longer confined to the morning and evening peak periods and is spreading to encompass most of the workday (see Graph 1). The impact of traffic volumes on Manhattan speeds can be seen in Graph 2, which summarizes data from GPS systems recently installed in medallion taxicabs. GPS data for October 2007 show that taxi trips average 6 mph within Midtown Manhattan and 8 mph within the CBD as a whole (below 60th Street), between 8 am and 6 pm

New York is now among the most congested cities in the United States. According to the Texas Transportation Institute's *2007 Urban Mobility Report*, the New York region ranks second in the nation in terms of annual aggregate congestion delay.¹⁰ The majority of the delay is spent during the peak hours, with the average traveler experiencing 46 hours of annual delay in 2005, up from 34 hours in 2000, a 35 percent increase.¹¹ Some congestion is healthy and indicates the vibrancy of a city and its economy. Above a certain level, however, extreme congestion begins to take a toll on a city's economic competitiveness and potential for growth. In the case of the New York metro region, estimates of the cost to the economy of congestion range as high as \$13 billion a year.¹² These costs include wasted fuel, lost time, increased operating costs, and lost business revenues. Congestion also increases greenhouse gas and air pollution emissions, degrades the speed and reliability of bus service, and decreases neighborhood quality of life.

Worsening congestion has occurred despite dramatic improvements to the transit system and sustained growth in transit ridership. Since New York City's transit system fell into disrepair in the late 1970's and early 1980's, over \$76 billion has been authorized for investment in improving the subway, bus, and commuter rail systems and bringing them into a state of good repair. As service has improved, ridership on the regional transit network has increased dramatically.¹³ Overall, drivers make up only

⁷ New York Metropolitan Transportation Council (NYMTC). *2005 Regional Transportation Statistical Report*. September 2007. (p. 57)

⁸ Source: U.S. Census 2000

⁹ New York City Department of Transportation. *Mobility Needs Assessment 2007-2030*. (p. 24)

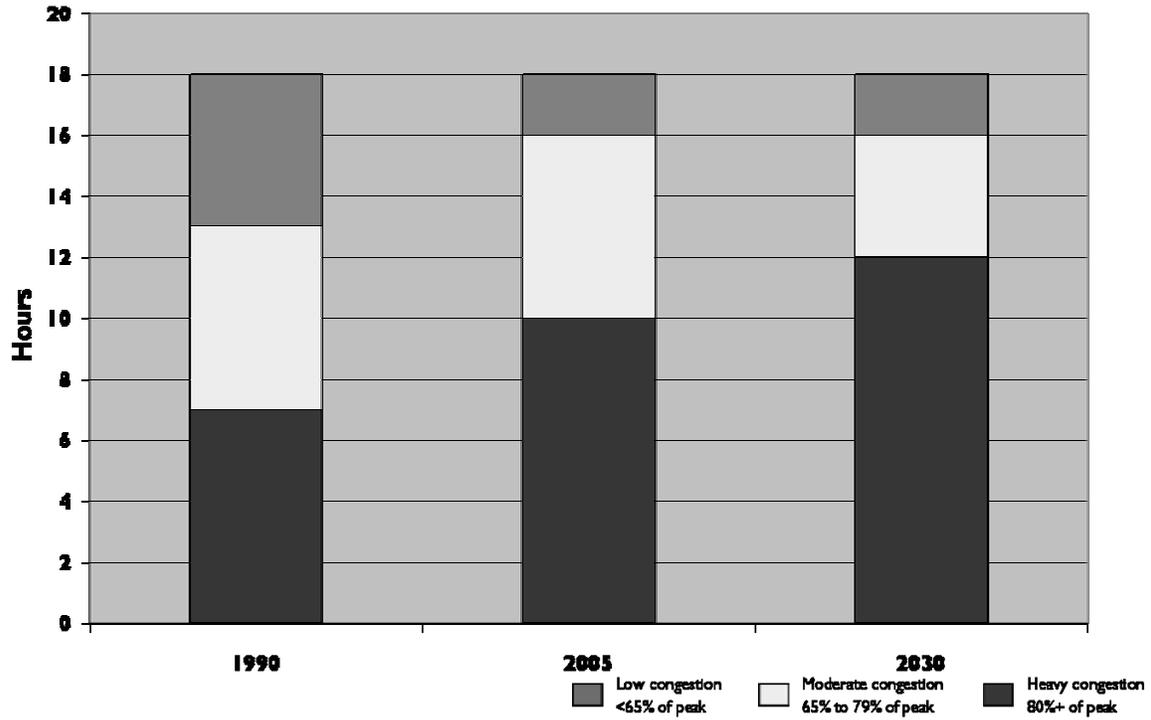
¹⁰ Texas Transportation Institute (TTI) at Texas A&M University: *The 2007 Urban Mobility Report*. September 2007. (p. 34)

¹¹ TTI, 2007. (p. 38)

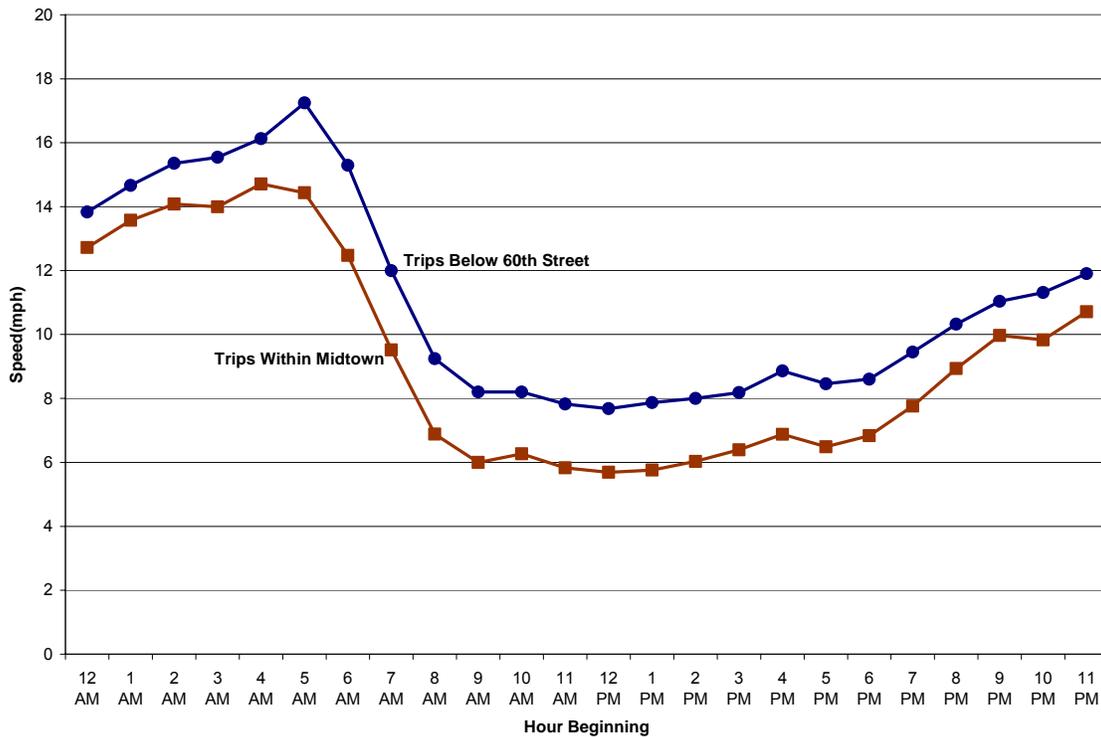
¹² Partnership for New York City (PFNYC). *Growth or Gridlock? The Economic Case for Traffic Relief and Transit Improvement for a Greater New York*. December 2006. (p. 40)

¹³ NYMTC, 2007. (p. 43)

Graph 1: Trends in Congestion at Manhattan Bridges and Tunnels 1990-2030



Graph 2: Average Taxi Speeds for Midtown and South of 60th St. Trips, Weekdays October, 2007



about 16 percent of all commuters to the CBD, the lowest share of any major U.S. city.¹⁴ New York City residents are particularly transit-dependent. For example, only five percent of employed New Yorkers drive to work in the CBD.¹⁵ However, the percentage of CBD-bound travelers who drive has remained relatively constant since 1975.¹⁶ Thus, as the City's population and economy have grown, so has auto traffic to the CBD. Unless driver behavior changes significantly, the number of vehicles entering the CBD each day will continue to rise.

By 2030, nearly a million more residents, 750,000 more jobs, and millions more visitors are expected to further strain the City's transportation system.¹⁷ The current road and highway system cannot handle the anticipated increase in traffic without dramatically worsening traffic and its related impacts on the economy and the environment. Expanding the highway network or adding capacity to existing highways and roads would be an expensive and lengthy process, as well as disruptive to neighborhoods and damaging to the environment. New transit lines are crucial to the City's future development and quality of life, but system expansion projects like the Second Avenue Subway and East Side Access will not be completed for a number of years. Furthermore, the regional transit agencies face a multi-billion dollar capital funding shortfall for their current slate of state of good repair and system expansion projects.¹⁸ Without additional funding now, the system will not be able to meet future ridership demands.

The Mayor's Plan

At the Commission's first meeting on September 25, 2007, representatives from the City gave a presentation on the Mayor's congestion pricing plan. A copy of the Mayor's plan is included in Appendix C. As stated by the City's representative, the purpose of the Mayor's plan is twofold: (1) to reduce traffic congestion in New York City and thereby benefit the economy, environment, and neighborhood quality of life of New York City, and (2) to raise funds for the capital needs of the regional transit system. Funds generated by the plan would also be used to offset investments in the road network necessary to implement the plan.

Under the Mayor's plan, passenger vehicles entering or leaving Manhattan below 86th Street during the business day (weekdays 6 am to 6 pm)—with the exception of the FDR Drive, the West Side Highway, and Battery Park Underpass—would pay an \$8 daily fee. Regular trucks would pay \$21 and designated low-emission trucks would pay \$7. For trips within the congestion pricing zone, cars would pay half price (\$4) and trucks would pay \$5.50. The charge would apply to all vehicles, except emergency vehicles, transit vehicles, vehicles with handicapped license plates, taxis, and neighborhood car services (radio cars).

¹⁴ Source: U.S. Census 2000

¹⁵ The remainder walk, bike or take transit to the CBD, or work outside of the CBD altogether.

¹⁶ NYMTC, 2007. Auto traffic did register a significant decline after the attacks of September 11, 2001, due to economic dislocations, driving restrictions, and current construction in lower Manhattan, but data has shown traffic to be returning quickly to pre-9/11 levels.

¹⁷ New York City Department of City Planning. *New York City Population Projections by Age/Sex and Borough, 2000-2030*.

¹⁸ New York City Mayor's Office of Long-Term Planning and Sustainability. *PlaNYC: A Greener, Greater New York*. April 2007. (p. 80)

Vehicles using E-ZPass that travel through MTA or Port Authority (PA) tolled crossings on the same day would pay only the difference (if any) between their MTA or PA tolls and the congestion charge. A uniform cost to enter the zone will encourage motorists to use the closest East River crossing rather than diverting to one of the un-tolled East River bridges. This type of “bridge shopping” behavior currently causes significant congestion in downtown Brooklyn, Williamsburg, Long Island City, and parts of the South Bronx. Because roads on the periphery of Manhattan will not be in the zone, drivers making trips around the zone (for example, from Harlem to Brooklyn) would not be charged provided those drivers stayed on the peripheral routes.

Payment would involve no toll gates or waiting areas. The technological backbone of the system would be E-ZPass, which relies on communications between in-vehicle transponders and roadside readers, and is used by more than 70 percent of New York area drivers who pay tolls on MTA and Port Authority bridges and tunnels. For drivers paying by E-ZPass, the charge would appear on drivers’ E-Z Pass statements. For those drivers without E-Z Pass, their license plates would be recorded by cameras and payments could be made through the internet, the telephone, or at participating retail outlets. Drivers would have two days to pay the charge before incurring a penalty. The City proposes implementing the Mayor’s plan as a three-year pilot with a concurrent analysis of the plan’s traffic, environmental, and neighborhood impacts. Analysis conducted in the spring of 2007 indicated that the Mayor’s plan would reduce VMT south of 86th Street by 6.3 percent. As discussed in greater detail on page 20, the model used for the VMT analysis was updated in the fall of 2007. With these updates, the projected weekday VMT reduction for the Mayor’s plan rose to 6.7 percent.



The City anticipates that neighborhoods near the congestion pricing zone would also experience a reduction in traffic as fewer drivers pass through on their way to the zone. The City would work with local communities to address any potential negative impacts of the plan, such as drivers seeking to avoid the charge by parking in areas outside the zone and walking or switching to transit. Possible solutions include parking permits for residential neighborhoods and an expansion of the Muni-meter program. Since the September 25 meeting, NYCDOT has begun working with peripheral neighborhoods to identify local parking issues and challenges, including both those related and unrelated to the Mayor’s plan.

Interim Report to the Traffic Congestion Mitigation Commission

The Mayor's proposal for congestion pricing is part of a broader transportation plan that would use the revenues from congestion pricing as well as increased State and City contributions to fund major new transit programs and to achieve a state of good repair of the existing system. The plan also includes traffic management measures that would not decrease VMT, including proposed state legislative reforms of block-the-box ticketing rules (which currently do not allow Traffic Enforcement Agents (TEAs) to issue block-the-box tickets), the expanded use of red light cameras and the use of cameras for enforcing bus lanes (both requiring state legislation), and 100 additional TEAs. In a related effort, the City recently announced a comprehensive program to reduce the number and misuse of government parking placards. Under the plan, every City agency will reduce its number of parking placards by at least 20 percent, and the issuance of parking placards will be centralized. A new placard enforcement unit will also be created within the New York City Police Department.

Three key components of the Mayor's plan to reduce traffic

- Congestion pricing
- Transit improvements
- Peripheral strategies

The Mayor's plan has been the subject of considerable public debate since its release in the spring of 2007. While many public officials, policy experts, advocacy organizations, newspapers, and citizens expressed support for the concept of congestion pricing, many raised questions about the Mayor's plan and its impact. A report by the New York State Assembly Committee on Corporations, Authorities and Commissions, issued on July 9, 2007, summarized a series of questions about the Mayor's plan that have dominated public discussion. Those questions are presented below. A key goal of the Commission has been to shed light on these important issues, informed both by the public discussion prior to the Commission's establishment and through its public hearings. (See Chapter III for details on the Commission's public hearings.)

Questions Identified in New York State Assembly "Interim Report: An Inquiry into Congestion Pricing as Proposed in PlaNYC 2030 and S.6068," July 9, 2007

- What congestion pricing revenues are produced by residents of the five boroughs, the suburban counties, and Connecticut and New Jersey respectively?
- What are the congestion impacts of congestion rationing?
- Which neighborhoods outside the zone will see an increase in automobile activity?
- Which neighborhoods outside the zone should receive residential parking permit programs?
- What standards for permit eligibility, and other practices, should be developed?
- Where should the revenues from such permit fees be deposited?
- How should fees be collected from non E-Z Pass users?
- Should environmental reviews be completed before implementing congestion pricing?
- Which neighborhoods will see an increase and which a decrease in air pollution?
- What privacy protections can be applied to congestion pricing?
- Can the plan be amended to reduce its regressivity? If so, what are the revenue

impacts?

- If pricing mechanisms are valid to deal with congestion of city streets, can and should they be applied to other public services and facilities?
- What have been the results of congestion pricing in London and elsewhere with respect to fees, revenues, environmental quality, and congestion? What have been similar results for congestion rationing?
- How can the plan be amended to excuse from payment of congestion fees those complying with alternate-side-of-the-street parking regulations?
- Should taxis and other liveries be exempt from the fee?
- Should buses be required to pay the fee?
- What other revenues are available if congestion pricing is not enacted?
- Should congestion pricing revenues be directed solely at unfunded capital needs, or should they be available for regular operating expenses?
- Should the Mayor's proposal be amended to create an actual "pilot program"?
- Is an average 0.6 mph improvement in traffic flow sufficient to justify the implementation of congestion pricing?
- Do the fees need to be increased in order to guarantee effective congestion reduction?

MTA: Transit Enhancements to the Mayor's Plan

If the Mayor's plan were implemented, the City and MTA estimate that an additional 78,000 daily transit trips would take place within the City, and an additional 6,000 transit trips would be generated from the northern and eastern suburbs to the City. As required by the state legislation establishing the Commission, the MTA prepared a report and presentation to the commission that described:

- how the MTA would meet the increase in demand to public transportation due to the implementation of the City plan;
- the additional MTA capital and operating needs required to implement the transit response; and
- the impact of these needs on the MTA's capital and operating budgets.

To address this increase in ridership, the City and MTA would implement a series of short-term mass transit improvements, especially within the congestion zone and in areas of the city that lack convenient transit access to Manhattan. These improvements would include: new and expanded express bus service, more frequent bus and subway service on key lines, dedicated bus lanes on bridges, bus rapid transit (BRT), and new ferry service. Sufficient service improvements would be in place prior to the implementation of the Mayor's plan to absorb the projected increase in transit demand.

The MTA would be responsible for expanded express bus, local bus, and subway service. In addition, the MTA and the City would be responsible for jointly implementing a BRT program and would also institute a monitoring system to analyze changes in travel demand and modify the new and expanded transit services as needed. A copy of the MTA report and presentation, which provides a detailed description of the proposed service enhancements, is included in Appendix D.

Components of MTA Enhancement Plan

- 309 new buses to provide service on 12 new bus routes and increased frequency on 33 existing routes within New York City
- 58 new buses to provide expanded express service to Manhattan from the New York suburbs
- New and enhanced bus service will provide improved access to Manhattan and to subway lines serving the CBD
- Enhancements to key subway lines in Manhattan and the other Boroughs, requiring the purchase of 46 new subway cars and \$100 million in improvements to subway stations
- Initiation of service improvements prior to the start of the congestion pricing pilot in April 2009
- MTA will cooperatively monitor actual travel with NYCDOT and other agencies

Assuming the use of available federal funds provided for by the Urban Partnership Agreement, the unfunded capital costs associated with these new services total \$447 million during the pilot period, and an additional \$320 million to be expended after the pilot period if increased bus service is continued. Financing these capital costs would result in an annual debt service of \$56 million. Once fully implemented, the MTA would need approximately \$104 million annually to operate and maintain this service, net of additional revenue gained by new ridership. These costs are not currently accounted for in the agency's operating and capital budgets. Tables 1 and 2 summarize the capital and operating funds necessary to implement these improvements to the MTA system.

Table 1: Summary of Projected MTA Capital Needs by Year (\$ in millions)

Expense Category	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
City buses	220.0	-	-	-	-	-	-	-	-	-	220.0
Subway Cars	105.8	-	-	-	-	-	-	-	-	-	105.8
2 bus Depots	-	80.0	-	-	-	106.7	106.7	106.6	-	-	400.0
Bus Lay-up	2.5	2.5	20	-	-	-	-	-	-	-	25.0
BRT	-	10.9	3.7	3.7	3.6	-	-	-	-	-	21.9
Sub. Buses	-	38.2	-	-	-	-	-	-	-	-	38.2
Park & Rides	-	8.0	32.0	-	-	-	-	-	-	-	40.0
Stat. Renov.	-	-	-	50.0	50.0	-	-	-	-	-	100.0
Less UPA	184.3	-	-	-	-	-	-	-	-	-	184.3
TOTAL	144.0	139.6	55.7	53.7	53.6	106.7	106.7	106.6	-	-	766.6
Debt Service	-	11	22	33	35	40	45	50	53	56	

Source: MTA

Table 2: Summary of Projected MTA Operating Needs by Year (\$ in millions)

Operating Expenses	10/2008-3/2009	4/2009-12/2009	2010	2011	1/2012-3/2012	Total
Subway Serv. Start Up	2.1	-	-	-	-	2.1
Subway Car Overhauls	8.0	-	-	-	-	8.0
Bus Service Start Up	34.0	-	-	-	-	34.0
Bus Overhauls	6.7	-	-	-	-	6.7
BRT	6.5	-	-	-	-	6.5
Other Start Up Costs	2.6	-	-	-	-	2.6
Subway Service Operating	-	6.2	8.3	8.3	2.1	24.9
Bus Service Operating	-	65.7	87.6	87.6	21.9	262.8
Bus Storage / Service / Maintenance	-	17.3	23.0	23.0	5.8	69.1
BRT	-	9.8	13.0	13.0	3.3	39.1
Suburban Bus Service	-	14.6	19.5	19.5	4.9	58.5
Data Collection	-	1.3	1.7	1.7	0.4	5.1
Less Revenue	-4.1	-36.7	-48.9	-48.9	-12.2	-150.8
TOTAL	55.8	78.2	104.2	104.2	26.2	368.6

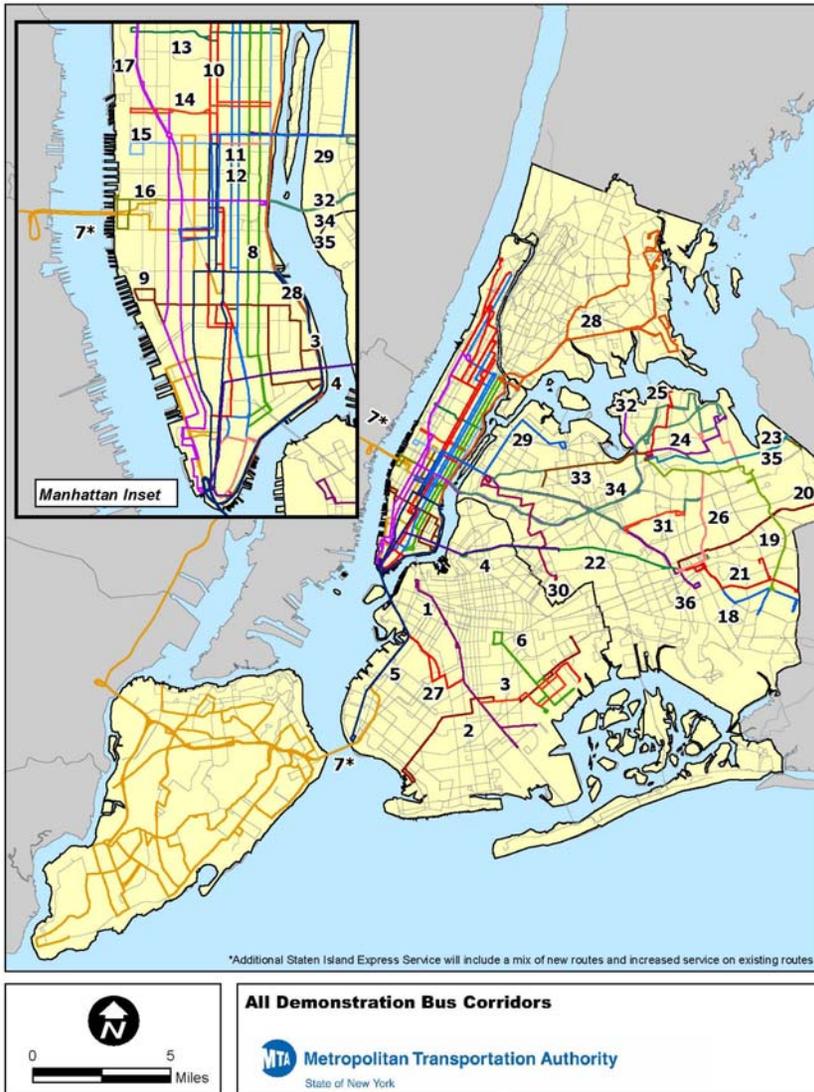
Source: MTA

During the course of its review of the MTA's transit enhancement plan, the Commission discussed a number of issues. Key questions raised included:

- *Issue* - A Commission member raised the issue of the how the additional capital and operating costs identified in the MTA's plan would be paid for and asked the MTA to clarify the total finance cost of the capital program.
 - *Response* – The MTA responded that the MTA operating and capital budgets did not contain the funding necessary to support the new capital and operating costs associated with the enhancement plan. The City has subsequently proposed that the funds from the congestion fee be used to finance the system's capital costs and the MTA and NYSDOT enhancement plans (including operating expenses). The City would use current revenues to finance these costs with the understanding that it would be reimbursed once the system begins generating revenue.

- *Issue* - A Commission member raised the issue of whether NJ Transit and the Port Authority had been engaged in discussions regarding the Mayor's plan and its impact on transit.
 - *Response* – Port Authority staff are participating in the interagency working group. The agency has noted that its proposed toll increase and trans-Hudson capital investments are consistent with the objectives of the Mayor's plan. In addition, City and Port Authority staff have discussed the potential impact of the Mayor's plan on commuters west of the Hudson River with representatives from NJ Transit.

Proposed MTA NYC Bus Improvements



* Numbers in the map above represent new or expanded bus services

Proposed MTA Subway Improvements



Interim Report to the Traffic Congestion Mitigation Commission

- *Issue* - The Chairman directed staff to make the MTA presentation and all other meeting presentations available to the general public on the Commission's website.
 - Response – Staff made all meeting materials available on the Commission's website:
https://www.nysdot.gov/portal/page/portal/programs/congestion_mitigation_commission

NYSDOT: Monitoring and Information Enhancements to the Mayor's Plan

The Mayor's plan would also have an impact on the regional highway network. In response, NYSDOT evaluated the effects of the Mayor's plan on the highway system and on transit services in New York State not provided by the MTA (primarily private suburban bus carriers). NYSDOT found that the traffic impacts would likely be positive or neutral, but also saw the need for additional monitoring on key highway segments and interchanges to gauge the impacts of congestion pricing. The Mayor's plan may also have a small impact on suburban transit services not provided by the MTA. As required in the legislation establishing the Commission, NYSDOT prepared a report and presentation to the Commission that included:

- a description of additional capital needs required for implementation of the Mayor's plan;
- the proposed utilization of any potential revenues derived from such a plan for implementation of such a plan; and,
- the impact of such revenue upon the agency's capital and operating budgets.

Upon questioning from the Commission, NYSDOT divided its proposed improvements into two categories: those that were essential to the implementation of the Mayor's plan and those that would complement the Mayor's plan but were not necessary for its implementation. In the essential category, the NYSDOT plan called for an improved traffic monitoring system, regional data collection and information sharing, two additional suburban park-and-ride locations, and improved traveler information. The complementary proposals included a range of initiatives, from enhancing signal timing citywide to creating a "511" traffic information hotline. A copy of the NYSDOT report and presentation is included in Appendix E.

NYSDOT estimated that these improvements would require \$59.5 million in capital funds and \$500,000 in annual operating funds. These costs are not currently accounted for in the agency's operating and capital budgets. NYSDOT suggested that the start-up costs associated with the NYSDOT enhancements be paid for by New York City funds and revenues generated by the system. Table 3 below summarizes the capital and operating costs associated with NYSDOT's proposal.

Table 3: Summary of NYSDOT Capital and Operating Costs

Project Name	Project Description	Total (Millions)	Annual
Non-MTA Transit Services	Purchase/lease additional suburban express bus Park-and-Ride facilities	\$20.00	
Non-MTA Transit Services	Passenger shelters/amenities for suburban express bus service	\$10.00	
Expand Transmit/Travel Time Network	Expand installation of Transmit readers to cover all segments of limited access facilities in NYC and increase deployment of real-time traffic information displays	\$10.00	
Expand CCTV Coverage	Expand the existing CCTV system coverage to all limited access highways to better monitor traffic conditions on roadways leading to the zone	\$5.00	
Instrument Arterial Highways	Expand monitoring of traffic flow on arterial highways	\$2.00	
Multi-agency (NYSDOT, NYCDOT, NYMTC) Data Collection and Sharing Needs	One-time start-up costs for transportation data collection	\$11.00	
Interagency Information Sharing	Create a user-friendly, GIS and browser-based interface to share traffic data among agencies involved in the Mayor's plan	\$1.50	\$0.50
TOTAL		\$59.50	\$0.50

Source: NYSDOT

III. Public Comment and Evaluation Criteria

Commission Public Hearings

As part of its statutory mandate to provide the opportunity for the public to participate and comment, the Commission conducted a series of public hearings in each borough of the City of New York (Manhattan, Queens, the Bronx, Brooklyn, and Staten Island), in Long Island, and in Westchester County. The Commission heard testimony from numerous witnesses, including State and local elected officials; various transportation, environmental, and community-based organizations; and private citizens. Other individuals who did not present oral testimony at the hearings submitted written testimony.

There was a broad range of public comment provided at the Commission's hearings on traffic congestion and mitigation in the City of New York. The seven hearings were well attended by the public, and the Commission heard approximately 25 hours of testimony. Witnesses provided their views on the current amount and type of congestion in the City and the region, and the impact of congestion and various mitigation options on the economy, the environment, quality of life, public health, and the transportation infrastructure. Regardless of their position on the Mayor's plan, most speakers urged stronger action to counter worsening traffic congestion in and beyond the CBD. A number testified about a current lack of transit options, as well as concerns about the adequacy of existing transit systems and financing for addressing transit needs.

Some raised equity, fairness, privacy, and/or feasibility issues with the Mayor's plan, such as traffic, parking and health impacts on adjacent neighborhoods, burdens on those of lesser means, the disabled and the elderly, and the cost of constructing and maintaining a pricing system. Others indicated their support for the Mayor's plan, stating it would reduce congestion, finance public transportation improvements and improve public health and air quality in the region. A significant share of those who testified in support of the Mayor's plan did so contingent on the provision of enhanced transit services and parking mitigation strategies.

A variety of witnesses spoke of the regional nature of transportation and expressed concerns about the impact that congestion mitigation proposals could have on commuters, residents, and the transportation infrastructure regionally. Many witnesses provided specific options to address congestion including mass transit and highway/bridge improvements, freight movement, modifications to pricing for the use of roadways, the use of technology, alternative transportation modes, traffic and parking enforcement, telecommuting, and more. Suggestions ranged from allocating more curb space for truck loading and unloading, to implementing a mandatory three-person carpooling rule below 60th Street, to increasing the number of bus routes throughout the City. Appendix F provides a full list of the recommendations that the Commission received through the hearing process. In addition, full transcripts of the hearings and written testimony received by the Commission are available on the Commission's website.¹⁹

¹⁹ Web address as accessed 1/3/08:

https://www.nysdot.gov/portal/page/portal/programs/congestion_mitigation_commission/public-testimony

Commission Evaluation Criteria

After reviewing the Mayor's plan and soliciting feedback from the public, the Commission discussed how it would evaluate alternative traffic congestion mitigation proposals. When the Mayor's plan was released in the spring of 2007, a range of questions were raised as to its impact on traffic, the economy, the environment, equity, peripheral neighborhoods, and funding for transit. The legislation establishing the Commission requires that the Commission undertake a thorough review and study of plans to reduce traffic congestion, and that the Commission's recommended plan achieve at least a 6.3 percent reduction in VMT. Given these guidelines, as well as concerns raised by the public, elected officials, and various stakeholder groups, the Chairman recommended a set of evaluation criteria to guide discussion at the October 25 meeting. The criteria were reviewed by the Commission and adopted. The Commission's evaluation criteria are as follows:

1. **Best practices (implemented elsewhere):** the degree to which the program is based on congestion mitigation policies that have successfully been implemented in other cities.
2. **Reduction of Vehicle Miles Traveled in the business district:** estimate of VMT reduction in Manhattan south of 86th Street.
3. **Improvements in local and regional air quality and environment:** estimate of emissions reductions and other environmental impacts.
4. **Net revenues raised for mass transit:** estimate of net annual revenues raised to fund the transit system.
5. **Impacts on neighborhoods**
 - a. *Traffic congestion outside of the business district:* estimate of traffic impacts on areas of the City outside the CBD.
 - b. *Parking:* the degree to which the program is likely to have a positive or negative impact on the availability of on-street parking in neighborhoods adjacent to the CBD.
6. **Impact on economic classes:** the degree to which the program is progressive or regressive in the allocation of costs and benefits across economic classes.
7. **Regional equity:** the degree to which the program equitably allocates costs and benefits across geographic areas within the New York metropolitan region.
8. **Privacy:** the degree to which the program creates concerns over personal privacy rights.
9. **Implementability:** the feasibility of implementing the program given available technology, the program's design, and start-up and operating costs.
10. **Economic impact on jobs, business and the regional economy:** The degree to which the program is likely to have a positive or negative impact on total jobs and the City and regional economy.

The Commission has consistently applied these criteria to all options considered, including the Mayor's plan. The interagency working group has used the Commission's evaluation criteria as the template for its research and analysis.

IV. Research Agenda

Development of the Research Agenda

Having set forth its evaluation criteria, the Commission turned its attention to developing a list of alternative congestion mitigation proposals for review and discussion. The Commission took a comprehensive approach to setting its research agenda, choosing to examine a wide array of potential approaches. Based on input from the Commission members, elected officials, the public, and stakeholder groups, the Chairman drafted a research agenda and presented it to the Commission at the October 25 meeting. This agenda, presented in Table 4 below, included an evaluation of policies that are alternatives to the Mayor's plan (such as mandatory carpooling), policies that could be alternatives or supplements to the Mayor's plan (such as higher parking meter rates), and modifications to the Mayor's plan (such as moving the northern boundary of the congestion pricing zone from 86th to 60th Street). These categories encompass the full range of alternative approaches to congestion mitigation. The research agenda was a living document and was frequently expanded and modified during the research effort.

Table 4: Commission Research Agenda

	Alternative to the Mayor's Plan	Supplement to the Mayor's Proposal	Modification to the Mayor's Proposal
Regulate and restrict truck movement	√	√	
Telecommuting incentives	√	√	
Increase cost of parking in the central business district (CBD)	√	√	
Reduce use of parking placards by public employees	√	√	
Additional taxi stands to reduce cruising ("No Hail Zone")	√	√	
Raise cab fares and fees charged to cabs	√	√	
Raise tolls or implement variable tolls on existing facilities	√		
License plate rationing	√		
Required carpooling	√		
Creation of High-Occupancy Toll ("HOT") lanes	√		
Congestion pricing with a changed northern boundary			√
Congestion pricing with no intra-zonal charge and a charge on FDR & West St.			√
Congestion pricing with variable charges or extended hours			√
Congestion pricing with a hybrid exemption			√
Congestion charging with a modified E-ZPass toll offset policy			√

Each of the items on the research agenda was subject to a uniform review process by the interagency group and was evaluated based on the Commission's ten criteria. Staff used a set of standard tools to analyze each alternative, applying the appropriate tool based on the nature of the alternative. These tools included the New York Metropolitan Transportation Council's Best Practices Model or BPM.²⁰ The BPM is an advanced travel demand model that estimates how regional traffic and transit flows respond to changing land use, infrastructure and toll and fare policy conditions. The model is the standard federally accepted tool for NYMTC's members, used in all regional air quality analyses and planning activities.²¹ The BPM covers a 28-county region and can provide detailed data on changes to travel patterns in the City and region, including VMT, auto trips, and transit trips. Other tools used by agency staff included research on best practices, spreadsheet-based models that isolated the impact of taxi and parking policies, emissions impact analysis, and a cost and revenue model.²²

The BPM underwent a scheduled update in September 2007 in which the 2005 transit network was loaded. However, the 2002 transit network was used in the April 2007 model run, which formed the basis of the Mayor's Plan. The update was completed in September 2007 and reflects increases in the amount of mass transit service throughout the city and metro area. For example, there are now four operational subway tracks on the Manhattan Bridge, as opposed to two that were in service in 2002. One result of the model update is that when congestion pricing is applied, drivers find their transit alternative slightly more attractive and are thus slightly more likely to switch to transit. The update has slightly increased the VMT reduction estimated for the Mayor's plan from 6.3 percent to 6.7 percent.

Over the past four months, the interagency working group has reviewed a wealth of analysis, including over twenty runs of the BPM on various scenarios, white papers summarizing the findings for each alternative, technical memos on the implementation of select alternatives in other cities, and several detailed presentations summarizing the above. Given the Commission's desire to provide a succinct account of its work, this report provides a high-level overview of the research results. A complete set of appendices is available on the Commission's website, which includes the full work product of the interagency group.²³ Included are presentations that were made by agency

²⁰ The BPM was used to study alternatives expected to affect multiple aspects of travelers' mode and route choice. Since the model includes multivariate statistical simulations of the actual choices made by travelers, it weighs the importance of policies like license plate rationing against other inputs into travelers' choices (such as the price, availability, and convenience of transit versus driving). This makes it ideal to study policies that may have multiple, or even counterintuitive, impacts.

²¹ The BPM is being used, for example, to model the traffic and air quality impact of the Tappan Zee Bridge and I-287 Corridor Study and the Goethals Bridge Modernization Draft Environmental Impact Statement.

²² Spreadsheet models were used when the level of detail needed to test the alternative was not available in the BPM (the BPM is a regional model that does not represent detailed operations like parking meters, or the stopping and starting of taxis). The spreadsheet models applied documented price elasticities to estimate the expected change in demand for transportation goods (such as curb parking), with respect to changes in price (such as raising parking meter rates). This approach is ideal when the alternative was specifically targeted at a particular market segment, and is a standard application of economic analysis techniques that are accepted throughout the transportation field.

²³ https://www.nysdot.gov/portal/page/portal/programs/congestion_mitigation_commission

staff to the Commission and white papers which apply the Commission’s evaluation criteria to each of the alternatives considered (see Appendix G).

As part of its work, the interagency working group discussed the potential impact of the MTA’s and Port Authority’s proposed toll increases on the Mayor’s plan or on any alternative congestion pricing scenario. The MTA has approved a modest increase in tolls on its Manhattan crossings, including the Brooklyn-Battery Tunnel, the Queen Midtown Tunnel, and The Triborough Bridge.²⁴ The Port Authority has also proposed increasing tolls on its Hudson River crossings, including the Holland and Lincoln tunnels and the George Washington Bridge.²⁵ A summary of the MTA and Port Authority toll proposals is presented below in Table 5.

Both the MTA and Port Authority toll proposals were released after the Commission’s research process was well underway. In order to be consistent with the requirements of the UPA and given that the Port Authority has not yet finalized or received approval of its plan, the interagency working group used the base traffic and toll conditions from the UPA as the basis of the Commission analysis. Once the proposals were available, the group took the proposed toll increases into consideration in the analysis of the alternatives. The MTA toll increases are modest, between four and ten percent, and thus will not significantly impact the revenues raised by the Mayor’s plan or its VMT impact. In the case of the Port Authority proposal, the peak toll rates will match the \$8 daily congestion fee. Taken with the Mayor’s plan, the VMT impact of congestion pricing will not change substantially. Revenue that would have been collected through congestion fees would instead be collected as tolls by the Port Authority. Preliminary analysis under the BPM indicates that the toll increases would reduce net revenues under the Mayor’s plan by approximately \$50 million a year. Further, the model assumes an increase in the E-ZPass market penetration rate from 73 percent to 78 percent. To the extent that cash to E-ZPass migration is higher, net revenues would decrease.

Table 5: MTA Approved Toll Increase and Port Authority Proposed Toll Increase

MTA	Current East River Tolls	Approved Future Tolls
E-ZPass Car Toll	\$4 (one-way)	\$4.15 (one-way)
Cash Car Toll	\$4.50 (one-way)	\$5 (one-way)
Port Authority	Current Hudson River Tolls	Proposed Future Tolls
Peak E-ZPass Car Toll (6-9am; 4-7pm)	\$5 (round-trip)	\$8 (round-trip)
Off-Peak E-ZPass Car Toll	\$4 (round-trip)	\$6 (round-trip)
Cash toll (all times)	\$6 (round-trip)	\$8 (round-trip)

As the Commission discussed the agenda over the course of the fall, Commission members made a number of comments, including:

²⁴ The MTA also approved toll increases on the Henry Hudson Bridge; E-ZPass tolls will increase from \$1.75 to \$1.90 and cash tolls from 2.25 to \$2.75. A full description of the toll increase, including increases in truck tolls, can be found on the MTA website: <http://www.mta.info/mta/news/hearings/fareandtol/bandt-sample.htm>

²⁵ The Port Authority is also proposing toll increases on the PATH system and other inter-state bridges. These increases have yet to be approved. A full description of the toll increase, including increases in truck tolls, can be found on the PORT AUTHORITY website: http://www.panynj.gov/budget_cap_plan/index_pt1.html

- *Issue:* A Commission member questioned the accuracy of the BPM given that it uses a 1997 survey of travel behavior in the New York City metro region to inform its determination of traveler mode choice.
 - *Response:* further review by staff and the Chairman established that an update of the mode choice element (which is based on the 1997 travel survey data) was not feasible within the timeframe of the Commission and that the BPM, the federally accepted planning tool used by the state and regional transportation agencies, was capable of conducting the analysis necessary for the Commission's work.

- *Issue:* A Commission member requested that an origin and destination study be conducted to determine the travel patterns in the New York City region.
 - *Response:* agency staff concluded that an accurate origin-destination study for an area as large as that modeled in the BPM was not feasible within the four-month time frame of the Commission. The Chairman also directed agency staff to meet with the Commission member to further discuss the issue (see text box below).

Why did the Commission rely on existing data rather than launch a new origin-destination survey?

Origin-destination surveys are used by transportation planners around the world to gather information on trip patterns and mode choices and to plan transportation and transit projects. In a typical O-D study, such as the Regional Travel-Household Interview Survey (RT-HIS), conducted in 1997-1998, a statistical sampling method is used to survey a representative collection of households. Respondents are asked to provide demographic information and details of their specific travel patterns. An O-D survey typically takes several years to complete. For example, before conducting their survey, the RT-HIS survey team had to first identify 42,000 representative households in the 28-county region. Each household was sent a survey, and follow-up recruitment and interviews were conducted with each respondent. Final responses were validated and weighted to capture the best approximation of the demographic and travel mix seen in the region. The RT-HIS household interview and recruitment process alone took over a year, from February 1997 to May 1998. Data analysis and report preparation took additional time, and the final work product was not released until 2000.

Alternatives and Supplements to the Mayor's Plan

At the meetings on November 20 and December 10, agency staff presented the results of analysis on potential alternatives and supplements to the Mayor's plan. These ranged from significant traffic interventions, such as banning trucks from the CBD during daytime hours, to smaller policy initiatives, such as providing tax incentives to encourage telecommuting. Given the varying scale of these proposals, the impact on daily VMT ranges from zero to over a six percent reduction. Some alternatives, such as required carpooling, would not raise any funds for transit, while others, such as a \$2 surcharge on all for-hire vehicle trips within the zone (including taxis, livery cabs, and black cars), could raise as much as \$140 million a year. Table 6 on the following pages summarizes the research on alternatives and supplements reviewed by the Commission.

Table 6: Research Results – Alternatives and Supplements to the Mayor’s Plan

Policy Category	Specific Approach	Change in VMT south of 86th Street*	Revenue raised for transit**
Night delivery and telecommuting incentives			
Telecommuting incentives		0.03 - 0.21%	\$0
Policies to encourage businesses to schedule deliveries during the evening, thereby reducing day time congestion.	<i>Per-axle charge and tax incentive</i>	0.1 - 1.0% daytime, 0% over 24 hours	\$0 - 200 million
	<i>Daytime delivery ban</i>	8.1% daytime, 0% over 24 hours	\$0
Increase cost of parking in the Manhattan CBD			
Policies to increase the cost of on-street and off-street parking in the CBD, thereby encouraging drivers to switch to transit.	<i>Eliminate parking tax rebate for Manhattan residents</i>	0.05%; less if parking operators absorb tax	\$22 million
	<i>Raise parking tax to 28.375% from 18.275% (applies to all drivers)</i>	0.2%; less if parking operators absorb tax	\$71 million
	<i>Raise parking tax to 38.375% from 18.275% (applies to all drivers)</i>	0.3%; less if parking operators absorb tax	\$120 million
	<i>Increase rates for on-street parking</i>	0.5%	\$17 million
	<i>Overnight on-street parking fee (\$2 in CBD)</i>	0.4%	\$7 million
	<i>Parking freeze</i>	0%	\$0
	<i>Treat value of employer-provided parking as income, for city income tax purposes</i>	0.02%	Small
	<i>Parking cash-out</i>	0.02%	\$0
Reduce use of parking placards by public employees			
Policies to reduce the number of parking placards (which allow city, state, and federal employees to park for free on-street), and thereby encourage public employees to switch to transit.	<i>Reduce free on-street parking for government employees currently commuting to jobs in lower Manhattan by 3,000 placards</i>	0.1%	\$0
	<i>Reduce by 5,000 placards</i>	0.2%	\$0
	<i>Reduce by 10,000 placards</i>	0.3%	\$0

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Policy Category	Specific Approach	Change in VMT south of 86th Street*	Revenue raised for transit**
Taxi policies: surcharges and taxi stands			
Policies to reduce taxi cruising through expansion of taxi stands and no-hail zones	Additional taxi stands in CBD	Not known	\$0
Policies to increase the cost of cab rides within the zone, thereby encouraging cab riders to switch to transit.	\$1 surcharge	0.3%	\$70 million
	\$2 surcharge	0.6%	\$140 million
	\$4 surcharge	1.0%	\$270 million
	\$8 surcharge	1.7%	\$516 million
License plate rationing			
Policies that ban groups of vehicles from entering the CBD on specific days of the week (based on the last digit on the vehicle's license plate), thereby encouraging transit use and reducing traffic into the CBD.	1 in 10 days	5.1%***	Reduces MTA and PA toll revenues that support transit
	1 in 5 days	10.3%***	Reduces MTA and PA toll revenues that support transit
Carpool and HOV/HOT lane strategies			
Policies that require vehicles entering the CBD to be carrying at least two or three passengers, thereby encouraging transit use and reducing traffic into the CBD.	Required carpooling	Expected to be substantial	Reduces MTA and PA toll revenues that support transit
Implementing lanes for exclusive use by high-occupancy vehicles and/or vehicles paying a toll so as to increase capacity and reduce congestion on major highways leading into the CBD.	Creation of High-Occupancy Toll ("HOT") lanes	0%	Uncertain
East River bridge tolls			
Implementing per-trip tolls 24 hours on all East River bridges into Manhattan	MTA toll structure on all East River bridges (\$4 each way with E-ZPass)	5.6%	\$531 million

* All figures are 24 hour averages unless otherwise noted.

** Revenue figures do not include impact, if any, on MTA and Port Authority toll revenues.

*** Figures assume that all vehicles from each multi-car household are restricted on the same day.

For more detailed research findings on the alternatives, please refer to the Commission's website.²⁶ Included in the appendices are the summary presentations made to the Commission on November 2 and December 10, as well as white papers on each of the alternatives and technical memoranda on select options.

During the course of its review of potential alternatives and supplements to the Mayor's plan, Commission members discussed a number of issues. These included:

- The Commission requested a number of clarifications, including details on the methodology used to evaluate each of the alternatives. (These were provided by the interagency working group at the December 17 meeting. See Appendix H)
- In response to the proposal to ban trucks from the CBD during daytime hours, several Commission members voiced serious concerns over the feasibility and the adverse economic impacts of this approach.
- The Commission discussed the merits of the residential parking tax exemption for Manhattan residents. Some Commission members believe the provision would decrease cruising for street parking by providing car owners with an incentive to store their vehicles in a garage. Others felt the exemption provides an incentive for residents to own a car.
- In response to proposals to raise metered parking rates within the CBD, several Commission members voiced support for the proposal as a way to discourage driving and to raise revenue.
- In response to proposals to levy a \$2 or \$1 surcharge on taxi trips within the CBD, several Commission members voiced support for such a proposal. One Commissioner cautioned that an overly high surcharge would actually be an incentive for people to drive, especially those who now take transit from the suburbs and then take a taxi. One Commissioner requested an analysis of raising the surcharge to \$4 or \$8. (Estimates of the impact of these two options were provided at the December 17 meeting and are included in Table 6.)

Modifications to the Mayor's Plan

At the December 17th meeting, Commission staff presented the analysis of potential modifications to the Mayor's plan. Staff looked at a wide range of potential modifications, including changes to: the northern boundary of the congestion pricing zone, the types of trips charged (i.e. exempting trips within the zone), the fee structure (i.e. the use of variable or 24 hour fees), and the type of charge (i.e. the use of a per-trip toll rather than a daily fee). The chart on page 27 presents the VMT and revenue impacts of these alternatives. The alternatives fall with a range from 5.9 to 8.3 percent VMT reduction and \$387 million to \$615 million in net revenue generated for transit. The revenue numbers do not take into account the impact on MTA and Port Authority toll revenues, a substantial portion of which are used to fund transit operations and capital needs. Capital costs range from \$224 million for the Mayor's plan to \$62 million for the East River Bridge tolls alternative.

²⁶ https://www.nysdot.gov/portal/page/portal/programs/congestion_mitigation_commission

Explanation of Modifications to the Mayor's Plan

- Northern Boundary – moving the northern boundary of the congestion pricing zone south to 60th Street.
- Intra-zonal Charge – eliminating the \$4 fee charged to trips taken solely within the congestion pricing zone.
- Through Trips – charging vehicles that drive only on the FDR and 9A/West Side Highway, these routes were free under the Mayor's plan.
- Direction of Charge – charging only inbound trips, rather than trips in both directions (the Mayor's plan charges outbound traffic).
- Variable Fee – charging a varying congestion pricing fee at different times of the day.
- 24 Hour Charging – charging the congestion fee 24 hours a day.
- Toll Offset – eliminating or reducing the toll offset provided to users of the MTA and Port Authority tolled crossings into Manhattan.
- License Plate Recognition Surcharge – levying a \$1 surcharge on drivers who enter the zone and do not use E-ZPass
- Fee or Toll – charging a per-trip toll instead of a daily fee

For more detailed research findings on the alternatives, please refer to the Commission's website.²⁷ Included is the summary presentation made to the Commission on December 17.

During the course of their review of potential modifications to the Mayor's plan, Commission members discussed a number of issues. These included:

- A Commission member noted the savings in terms of annual operating costs of eliminating the charge on trips within the zone. Also noted was the fact that the reduction in operating cost may more than offset the loss in revenues.
- Several Commission members stated the need to charge residents of the zone for driving if the intra-zonal charge were eliminated. Options considered included a taxi surcharge, increased parking meter rates, a \$2 overnight parking fee in Manhattan, and increases in the City's parking tax.
- The Commission discussed the relative merits of including a free periphery route. One Commission member noted that eliminating the free periphery route might have negative consequences on low-income neighborhoods in Brooklyn and the Bronx.
- The Commission discussed the relative merits of moving the northern boundary of the zone to 60th Street. Noted were the modest impact on net revenues and the likely small impact on parking in the area north of 60th Street, given the limited supply and high cost of parking in this area.
- In general terms, the Commission discussed the possibility of packaging a modified congestion pricing plan together with several of the supplements discussed at the December 10th meeting.

²⁷ https://www.nysdot.gov/portal/page/portal/programs/congestion_mitigation_commission

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Table 7: Research Results – Modification to the Mayor’s Plan

Modification	Mayor's Plan	#1	#2	#3	#4	#4A	#4B	#5	#6	Cordon toll
		Move northern boundary to 60th Street	Eliminate intra-zonal charge	Charge thru trips using periphery	Charge inbound trips only	Inbound only with variable tolls	Inbound only with variable tolls- 24 hours	Reduce or eliminate E-ZPass toll offset	\$1 surcharge for LPR customers	
Northern Boundary	86 St	60 St	60 St	60 St	60 St	60 St	60 St	60 St	60 St	60 St
Intra-zonal Charge	Yes	Yes	No	No	No	No	No	No	No	No
Through Trips	Free	Free	Free	Charged	Charged	Charged	Charged	Charged	Charged	Charged
Direction of Charge	2-Way	2-Way	2-Way	2-Way	Inbound Only	Inbound Only	Inbound Only	2-Way	2-Way	2-Way
Flat or Variable	Flat \$8	Flat \$8	Flat \$8	Flat \$8	Flat \$8	\$10/\$8/\$6	\$10/8/6/4	Flat \$8	Flat \$8	Flat (MTA)
12 Hour or 24 Hour	12 hour	12 hour	12 hour	12 hour	12 hour	12 hour	24 hour	12 hour	12 hour	24 hour
E-ZPass Toll Offset	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	N/A
LPR Surcharge	None	None	None	None	None	None	None	None	\$1	None
Fee or Toll	Daily Fee	Daily Fee	Daily Fee	Daily Fee	Daily Fee	Daily Fee	Daily Fee	Daily Fee	Daily Fee	Toll
VMT Change	6.7%	6.2%	5.9%	6.1%	6.0%	6.8%	8.2%	8.3%	6.3%	13.4%
Capital Cost	\$224.30	\$219.17	\$125.37	\$72.88	\$72.88	\$72.88	\$72.88	\$72.88	\$72.88	\$ 71.85
Gross Revenue	\$649.00	\$585.00	\$475.00	\$497.00	\$498.00	\$526.00	\$618.00	\$672.00	\$513.00	\$ 1,155.00
Operating Cost	\$229.46	\$197.98	\$62.58	\$58.21	\$62.43	\$61.71	\$99.36	\$57.06	\$57.92	\$ 96.05
Net Revenue	\$419.54	\$387.02	\$412.42	\$438.79	\$435.57	\$464.29	\$518.64	\$614.94	\$455.08	\$ 1,058.95

Note 1: Net revenue for Transit does not include impact on Port Authority and MTA toll revenues used to fund transit operations and investments. Cost estimates are preliminary.

Note 2: As described in further detail on page 21, the revenue estimates for the Mayor’s plan and options 1-6 were based on current Port Authority toll rates. The Port Authority’s proposed toll increase would reduce congestion pricing revenues of the Mayor’s plan by approximately \$50 a year. This estimate would vary based on the extent to which drivers switch from cash payment to E-ZPass.

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- A Commission member requested an analysis of the alternatives showing the distribution of fee revenues by geographic trip origin. At the direction of the Chairman, this analysis has been provided for the pricing-based alternatives analyzed in this report and is presented in the next chapter.
- The Chairman directed the Commission to begin thinking about three or four possible alternatives for further review in January, including the Mayor's plan, a modified congestion pricing plan, a toll plan, and a non-congestion pricing plan. The Chairman stated that he would hold small group meetings with Commission members over the last two weeks in December and the first week in January to discuss these options.

V. Options for Evaluation

At the direction of the Commission Chairman, agency staff evaluated the Mayor’s plan and four alternatives, described below. The alternatives each focus on one of four different approaches: congestion pricing, bridge tolling, pricing of parking and taxis, and license plate rationing. The Chairman directed staff to evaluate the VMT reduction of each option and to evaluate all options that meet the mandate of a 6.3 percent reduction in VMT using each of the evaluation criteria established by the Commission. Note that in all alternatives, new revenues would be used to fund transit and other transportation-related capital projects.

For its final recommendation, the Commission may select one of the alternatives presented in this report, or may choose to modify one of the alternatives, combine elements of two or more alternatives, or put forward a wholly different plan. The recommendation made by the Commission in its final report will take a number of factors into account, including research findings, comments from the public, and the strengths and weakness of each option. Through this process, the Commission can choose to modify any given plan, including those in this report, so as to reduce its weaknesses and enhance its strengths.

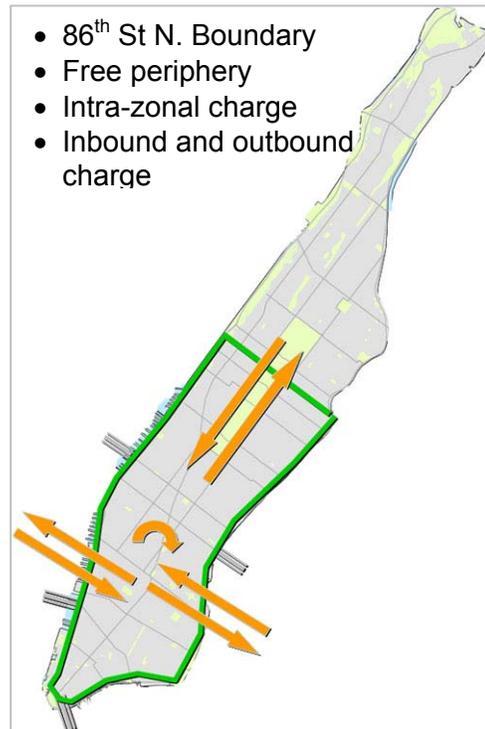
The options are as follows:

Option 1: The Mayor’s Plan

For a full description of the Mayor’s plan, please refer to Section II, page 8. The chart and graphic below summarize the key elements of the Mayor’s plan. As noted earlier, the Mayor’s plan would be implemented in tandem with a series of traffic enforcement and neighborhood parking improvements, as proposed in PlaNYC.

Table 8: The Mayor’s Plan

Parameter	Mayor's Plan
<i>Northern Boundary</i>	86 St
<i>Intra-zonal Charge</i>	Yes (\$4)
<i>Through Trips</i>	Free if using peripheral routes
<i>Direction of Charge</i>	2-Way
<i>Flat or Variable</i>	Flat \$8
<i>12 Hour or 24 Hour</i>	12 hour
<i>E-ZPass Toll Offset</i>	Yes
<i>LPR Surcharge</i>	None
<i>Fee or Toll</i>	Daily Fee
Supplements	
Neighborhood parking strategies	

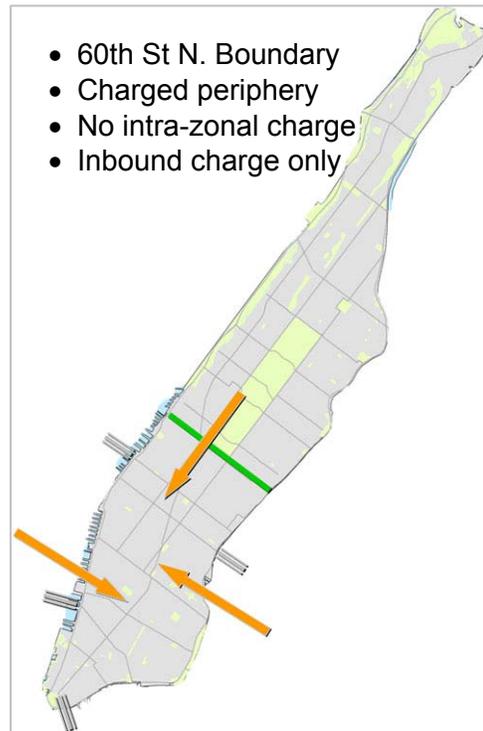


Option 2: An Alternative Approach to Congestion Pricing

The alternative congestion pricing plan is a modified approach to congestion pricing that eliminates the intra-zonal charge and free periphery, charges inbound trips only, and moves the northern boundary of the charging zone to 60th Street. Cars would be charged an \$8 fee to drive into the zone on weekdays between 6am and 6pm. Trucks would pay \$21, except for low-emission trucks, which would pay \$7.²⁸ Under this fee-based plan, drivers would pay once upon entering the charging zone and would be able to make additional trips in and out of the zone at no additional cost. For E-ZPass users, the value of all tolls paid on MTA or Port Authority bridges and tunnels would be deducted from the fee up to \$8.

Table 9: Alternative Congestion Pricing Plan

Parameter	Plan
<i>Northern Boundary</i>	60 St
<i>Intra-zonal Charge</i>	None
<i>Through Trips</i>	Charged
<i>Direction of Charge</i>	Inbound
<i>Flat or Variable</i>	Flat \$8 fee
<i>12 Hour or 24 Hour</i>	12 hour
<i>E-ZPass Toll Offset</i>	Yes
<i>LPR Surcharge</i>	\$1
<i>Fee or Toll</i>	Daily Fee
Supplements	
Neighborhood parking strategies	
\$1 taxi/livery trip surcharge for trips that start and/or end in zone	
Increased metered parking rates within zone	
Eliminate resident parking tax exemption within zone	



The alternative congestion pricing plan would use the same electronic fee collection system as the Mayor’s plan, but with a significantly reduced number of sensors due to the elimination of the intra-zonal charge and free periphery. Moving the northern boundary to 60th Street would lead to many more intra-Manhattan trips being charged the \$8 fee, such as trips from the Upper East Side into the CBD. Non-E-ZPass users would be subject to a \$1 surcharge to encourage E-ZPass use and to cover the additional cost of processing license plate image transactions. In addition, the alternative congestion pricing plan includes a package of parking and taxi policies designed to further discourage driving within the zone, including a \$1 surcharge on taxi and livery trips that start and/or end within the zone during congestion pricing hours, increased on-street parking meter

²⁸ The discount would apply to new trucks that meet the most current EPA engine standards and to trucks that have been retrofitted with EPA-approved equipment to reduce emissions by 85 percent. The goal of this incentive is to encourage truck owners to switch over to cleaner diesel trucks, which currently constitute a small portion of the regional truck fleet.

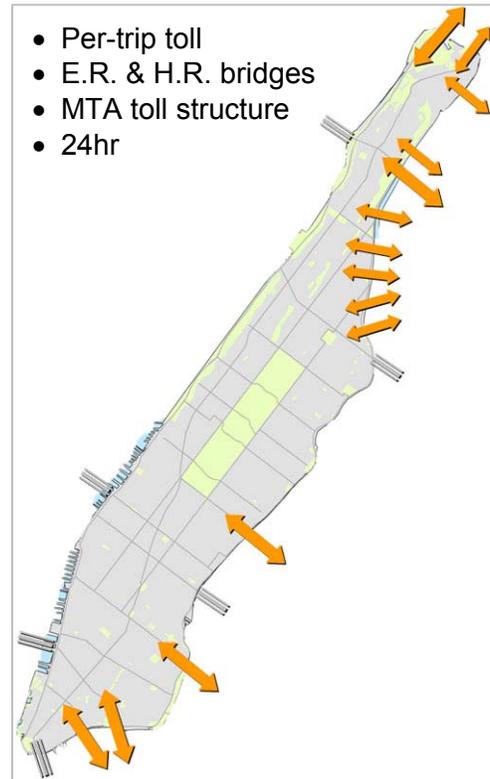
rates within the zone, and elimination of the resident parking tax exemption for off-street parking garages and lots within the zone.

Option 3: Tolling the East River and Harlem River Bridges

Agency staff also conducted further analysis of an East River and Harlem River bridge toll plan (henceforth the toll plan). The toll plan expands on previous proposals to toll the City’s major East River crossings, including the Brooklyn, Manhattan, Williamsburg, and Queensboro bridges, and differs somewhat from the tolling option presented to the Commission on December 17.

Table 10: The Toll Plan

Parameter	Plan
<i>Tolled Crossings</i>	East and Harlem River bridges
<i>Direction of Toll</i>	2-way
<i>Flat or Variable</i>	Flat \$4 toll
<i>12 Hour or 24 Hour</i>	24 hour
<i>LPR Surcharge</i>	\$1
<i>Fee or Toll</i>	Per-trip Toll
Supplements	
Neighborhood parking strategies	



Under the toll plan, all un-tolled East River and Harlem River crossings would be subject to inbound and outbound tolls. These tolls would be in effect 24 hours a day, seven days a week, and would match the toll rates on the MTA’s East River crossings.²⁹ The Henry Hudson Bridge toll would also be increased to match the rates on the other crossings.³⁰ Following the MTA toll structure, trucks would pay higher tolls depending on their size. Similar to the Mayor’s plan, tolls would be collected electronically using E-ZPass readers and license plate recognition (LPR) cameras; there would be no toll plazas or physical barriers, except where they already exist. In essence, cars would be charged a \$4 per-trip toll (rising to \$4.15 on March 16, 2008) 24 hours a day to enter or leave Manhattan by any East or Harlem River crossing. The Port Authority toll structure would remain the same.

The toll plan would allow for the subsequent elimination of two-way tolling on all of the MTA’s East River crossings and the implementation of inbound only tolling on all river crossings into Manhattan, resulting in operating cost savings.

²⁹ Tolls would apply to: the Brooklyn Bridge, Manhattan Bridge, Williamsburg Bridge, Queensboro Bridge, Willis Avenue Bridge, Third Avenue Bridge, Madison Avenue Bridge, 145th Street Bridge, Macombs Dam Bridge, Alexander Hamilton Bridge (Cross Bronx Expressway), Washington Bridge, University Heights (207 St.) Bridge, Broadway Bridge and Henry Hudson Bridge (increase from current toll).

³⁰ Any toll increase on the Henry Hudson Bridge would be subject to a SEQR review.

This plan includes a new toll on the Alexander Hamilton Bridge, which is part of the I-95 corridor and carries significant through traffic. Increasing the cost of travel from the George Washington Bridge to the Cross-Bronx Expressway could cause some through traffic to divert to other routes, such as the Tappan Zee Bridge. Further analysis of this issue and potential mitigation measures is required if this option is to be pursued.

Option 4: License Plate Rationing

For a fourth option, the Chairman directed agency staff to present for discussion a license plate rationing plan (henceforth the rationing plan). License plate rationing restricts a set of vehicles from entering a specified area on certain days based on the last digit of the vehicle’s license plate. Agency staff analyzed a scenario under which the City would ban a particular vehicle once every five days, thereby restricting 20 percent of all vehicles each weekday from 6 am-6 pm. The rationing restriction would apply to the area of Manhattan south of 86th street. Emergency vehicles, transit vehicles, and vehicles with handicapped license plates would be exempt. Enforcement could be conducted using a system of LPR cameras similar to the Mayor’s plan or by posting police officers at each of the entry points into the rationing zone. For further information on license plate rationing, please refer to the license plate rationing white paper in Appendix G.

Table 11: The Rationing Plan

Parameter	Plan
<i>Vehicles Restricted Daily</i>	20%
<i>Northern Boundary</i>	86 th Street
<i>12 Hour or 24 Hour</i>	12 hour
Supplements	
Neighborhood parking strategies	

Unlike the other four alternatives under consideration, the rationing plan would not generate revenue for transit through fees or tolls. At the December 10th meeting, the Commission discussed whether it should examine broad-based tax policies that could be coupled with a rationing plan. The Chairman concluded that a comprehensive analysis of broad-based tax options was beyond the scope of the Commission’s mandate. The Chairman did, however, direct staff to conduct a preliminary survey of broad-based tax options that could generate revenue for transit. This analysis is presented in the text box on the following page. If so desired, the State Legislature and Governor can further evaluate these tax options after the conclusion of the Commission’s work.



Also discussed was the issue of two-car households. Under a rationing plan, a commuter with access to two cars could simply switch vehicles on the day that the

primary vehicle is banned. As a solution to this problem, it was proposed that the motor vehicle departments in New York, New Jersey, and Connecticut create a system to register license plates by household. Although the feasibility of this approach has not yet been determined, the VMT impacts of the rationing plan presented here assume the implementation of household-based vehicle registration.

Broad-Based Tax Options: Revenue Potential

A series of income, corporate, sales, excise, and MTA-dedicated tax revenue options were analyzed by Commission staff, as summarized in the table below. These tax revenue estimates were prepared by the New York City Office of Management and Budget. If so desired, the State Legislature and Governor can further evaluate these tax options after the conclusion of the Commission’s work, as well as other tax options, such as creation of a carbon tax, increases in the City personal income tax rates, raising the State payroll taxes, or increases in the MCTD³¹ Urban Tax rates.

Tax	Tax rate		Additional Revenue Generated (\$ mil)			
	Current	Proposed	NYC Counties	Other MCTD Counties	Conn/ NJ	Total
Income Taxes						
Restore commuter tax (1)	--	0.45% / 0.65%	-	-	-	\$867
Corporate Taxes						
Raise MCTD corporate surcharge (2)	17.0%	30.0%				\$710
Sales Taxes						
Raise MCTD sales tax (3)	0.375%	0.75%	\$435	\$307	-	\$742
Excise Taxes						
Raise motor vehicle fuel tax (4)	\$0.08	\$0.16				\$533
Dedicated Taxes						
Raise MCTD mortgage recording tax (5)	0.30% / 0.25%	0.60% / 0.50%	\$234	\$248	-	\$482

Source: Preliminary estimates based on analysis conducted by NYC OMB.

- (1) Prior to 1999, wages and salaries earned by nonresidents (commuters) in New York City were taxed at a rate of 0.45 percent and self-employment income taxed at 0.65 percent.
- (2) The corporate surcharge includes several taxes on businesses operating within the MCTD.
- (3) In addition to State and local sales taxes, a 0.375 percent sales tax is currently levied within the MCTD.
- (4) New York State currently levies a \$0.08 per gallon excise tax on motor vehicle fuels. This proposal would raise that tax for the whole state.
- (5) The mortgage recording tax refers to two separate taxes levied within the MCTD: one on the borrower, at a rate of 0.30 percent of the value of the recorded mortgage, and a second on the lender, at a rate of 0.25 percent of the value of the recorded mortgage for one-family to six-family homes.

³¹ The Metropolitan Commuter Transportation District (MCTD) consists of the 12 counties of New York, Bronx, Kings, Queens, Richmond, Dutchess, Nassau, Orange, Putnam, Rockland, Suffolk, and Westchester.

Option 5: A Combination of Parking and Taxi Policies

Finally, the Chairman directed staff to evaluate a plan that used a combination of policies that increase the cost of parking and taxi fares (“the combination plan”). This plan includes a series of measures to significantly increase the cost of on-street and off-street parking in Manhattan south of 60th Street, including raising the City parking tax for garages within the CBD, eliminating the resident parking tax exemption within the zone, increasing on-street parking meter rates within the zone, and charging a \$2 overnight parking fee for all on-street spaces within the zone. In addition, the plan calls for reducing by 10,000 the number of government parking placards used to commute to jobs in the zone (these placards allow City, State, and Federal employees to park in restricted spaces or without charge in metered spaces.) In order to reduce taxi traffic, the plan also includes an \$8 surcharge on all taxi trips within, into, or out of the area of Manhattan south of 86th St. For further detail on these parking and taxi proposals, please refer to the parking policy and taxi policy white papers in Appendix G.

Table 12: The Combination Plan

Plan Components
Increase parking tax from 18.375% to 38.375% in CBD ³²
Eliminate resident parking tax exemption in CBD
Increase on-street parking meter rates in CBD
Reduce by 10,000 the number of government parking placards used to commute to CBD jobs
\$2 overnight parking fee in CBD
\$8 surcharge for taxi trips that start and /or end south of 86 Street.
Supplements
Neighborhood parking strategies (outside of the CBD)

³² The current off-street parking tax in Manhattan is 18.375 percent.

VMT Reduction and Revenue for the City

Estimate of VMT reduction in Manhattan south of 86th Street and of net annual revenues raised to fund the transit system.

Table 13 below lays out the VMT reduction, capital costs, operating costs, and net revenues for each the five alternatives.³³ The Mayor’s plan, the alternative congestion pricing plan, the toll plan, and the rationing plan all meet the Commission’s mandate to recommend a plan that reduces VMT by 6.3 percent, and are therefore evaluated on the Commission’s other criteria.³⁴ Although it generates significant revenues, the combination plan falls well short of meeting the VMT reduction mandate, and as a result, it is not evaluated further.

The Mayor’s plan, alternative congestion pricing plan, and toll plan all raise significant revenues that could be used to fund current and future transit and transportation projects. The rationing plan would need to be combined with new taxes or fees to generate funds. As discussed earlier, the two congestion pricing options do not take into account the Port Authority’s proposed toll increase, which would reduce the net revenues of these options by approximately \$50 million a year.³⁵

Table 13: VMT Reduction and Revenues Generated

Option	Mayor’s Plan	Alt. Pricing Plan	Toll Plan	Rationing Plan	Combination Plan
VMT Reduction (Below 86 St.)	6.7%	6.8%	7.0%	10.3%	3.2%
Capital Cost	\$224	\$73	\$67	*	NA
Gross Revenue	\$649	\$582	\$947	**	\$660
Operating Cost	\$229	\$62	\$88	*	***
Net Revenue	\$420	\$520	\$859	**	Apprx. \$660

*Costs are not estimated as they are dependent on implementation approach

**Alone, the rationing plan would generate no revenues. Coupled with a tax, it could generate comparable revenues to the other options

***Not estimated but not expected to be substantial

This analysis raises several issues for further consideration:

³³ These costs are preliminary estimates based on analysis conducted by Cambridge Systematics and NYCDOT staff.

³⁴ The rationing plan figure assumes that all vehicles within each multi-car household are restricted on the same day.

³⁵ Revenue that would have been collected through congestion fees would instead be collected as tolls by the Port Authority. Preliminary analysis under the BPM indicates that the toll increases would reduce net revenues under the Mayor’s plan and the alternative congestion pricing plan by approximately \$50 million a year. Further, the model assumes a change in E-ZPass penetration rates of 73 percent to 78 percent. To the extent that cash to E-ZPass migration is higher, net revenues would decrease.

- ***Tolls vs. Congestion Fees:*** The toll plan raises the most revenue (\$859 million annually) and has one of the larger VMT reductions of all plans considered. Tolls raise substantially more revenue than congestion pricing fees because they would be in effect 24 hours a day (as compared to 12 hours for a congestion fee) and would charge drivers for every trip in and out of Manhattan (as compared to a daily fee that allows multiple trips). Unlike the two congestion pricing options, the toll plan would impact driver behavior at all times of day, not just during periods of peak congestion.
- ***Relative Capital Costs:*** The complexity of the Mayor's plan results in higher capital costs as compared to the other plans. The capital costs of an electronic toll or fee collection system is driven by the number of electronic sensors and cameras needed to ensure compliance. By including a charge on trips within the zone, the Mayor's plan requires 340 charging stations across Manhattan, each with an array of E-ZPass readers and LPR cameras, increasing capital costs to over \$200 million. In comparison, the alternative congestion pricing and tolling plans require 25 and 13 charging stations, respectively, and each requires less than \$75 million in capital costs. The capital costs for rationing would depend on whether an electronic or manual enforcement system was used.
- ***Relative Operating Costs:*** The complexity of the Mayor's plan also drives up the operating costs of the system. The operating costs of a congestion pricing or electronic toll system are driven by the number of transactions that the system must process for each paying customer. For the Mayor's plan, the 340 charging stations located within the zone and at every entrance point to the zone would generate a large number of redundant E-ZPass reads and camera images, as many vehicles would already have been captured upon entering or leaving the zone. As a result, operating costs for the Mayor's plan are projected to consume 35 percent of gross revenues as compared to ten percent for the alternative congestion pricing plan and nine percent for the toll plan. Operating costs for the rationing plan would depend on whether an electronic or manual enforcement system was used. In the future, the toll option would allow for one-way tolling into Manhattan, thus lowering operating costs at MTA facilities.
- ***Ensuring New Revenues are Dedicated to Transit:*** At the Commission's public hearings, several speakers raised concerns over what mechanism would ensure that new funds were in fact spent on transit improvements. As directed by the Chairman, the final report will include further discussion of this issue.

Best Practices

The degree to which the program is based on congestion mitigation policies that have successfully been implemented in other cities.

All four plans are based on traffic mitigation practices that have been used in other major cities in the United States, Europe, and Asia. These practices include:

- **Fee-based congestion pricing zones:** London introduced a fee-based congestion pricing system in 2003. Drivers into central London's Congestion Pricing Zone (CPZ) are charged a flat £8 (\$16) fee between 7 am and 6 pm on weekdays. Evaluation studies have shown that the number of vehicles entering the CPZ is down 16 percent from prior to the implementation of the charge. In 2006, the charging zone generated net revenues of £123 million (\$244 million), which were used to fund enhanced bus service and other transit improvements.³⁶ The London scheme is most similar to the Mayor's plan and is similar to the alternative congestion pricing plan in some respects.
- **Tolling and toll cordons:** New York City has a long history of using tolls on major river crossings to raise revenue for the transportation system. More recently, the Port Authority has used variable tolls on its Hudson River crossings in an effort to encourage drivers to travel during off-peak periods. Internationally, Stockholm, Sweden, uses a toll cordon around the city center to raise revenue and reduce traffic. The Stockholm toll cordon, which was recently made permanent after a six month pilot period, reduced traffic entering the city by 22 percent.³⁷
- **License plate rationing:** License plate rationing has been implemented in several Latin American cities with severe air quality problems. The three best documented examples are in Mexico City, Mexico; Bogotá, Colombia; and São Paulo, Brazil. The short-term benefits of these programs had the desired effect of reducing motor vehicle travel, and the trial programs were made permanent. Lessons learned from these cities, however, show that long-term results have been mixed. Short-term air quality and traffic impacts have been difficult to sustain, as many drivers switched to taxis or purchased an additional vehicle to circumvent the restriction.

Improvements in local and regional air quality and environment

The degree to which the program reduces air pollution and impacts the environment.

Motor vehicle emissions are a significant contributor to local and regional air quality problems. Public health authorities are concerned about the impact of air pollution on public health in New York City and the region. Hence, agency staff modeled the impact of each of the four options on emissions of three key air pollutants: volatile organic compounds (VOCs), nitrogen oxides (NO_x), and carbon monoxide (CO). VOCs and NO_x are two of the precursors for ground-level ozone, commonly referred to as smog.³⁸ All three pollutants are demonstrated risks to public health and are regulated by the Federal Clean Air Act. The results of the emissions analysis are presented below in Graph 3. As

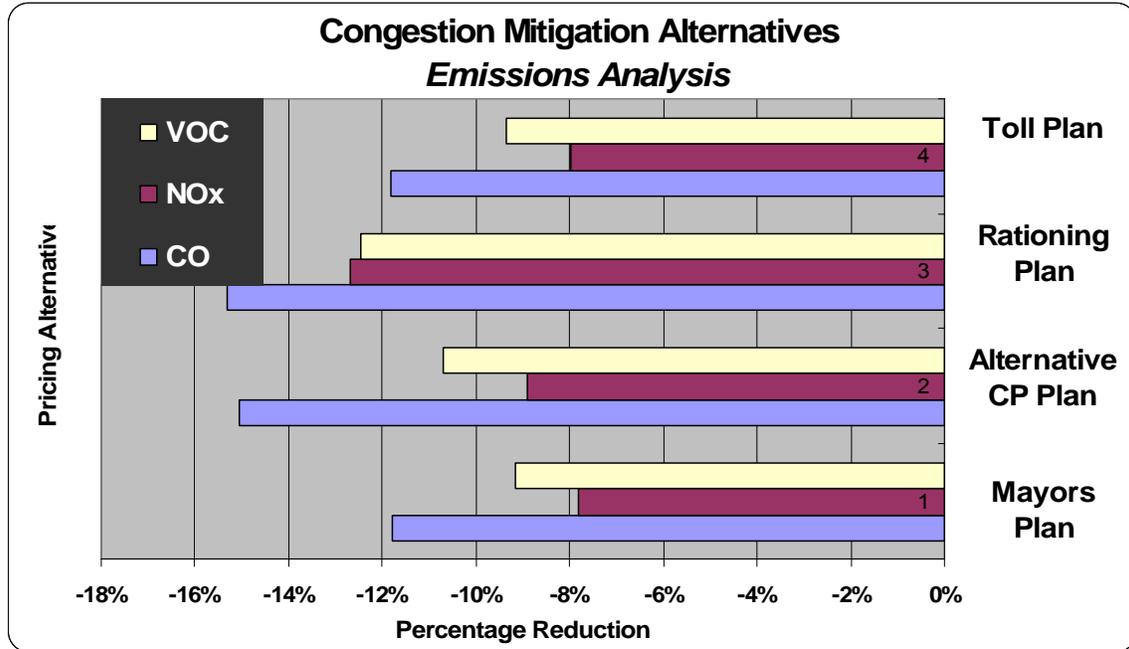
³⁶ Transport for London. *Central London Congestion Charging Zone: Impacts Monitoring Fifth Annual Report*. July 2007. (p. 114)

³⁷ Stockholm Trial website as accessed on 01/03/08:
<http://www.stockholmsforsoket.se/templates/page.aspx?id=183>

³⁸ Analysis was conducted using the on-line NYSDOT MOBILE6 emissions calculator. VMT and speed outputs from the BPM were input into the model to determine relative levels of emissions for: the base case (current conditions) and for each of the alternatives. The difference in emission levels between the base case and each of the alternatives was then calculated as presented in Table 14.

shown, all four plans are estimated to reduce emissions of these three key pollutants. These numbers represent decreases in emissions for the area south of 86th Street. Given that all of the options would change local and regional traffic flows, emissions impacts are likely to vary by neighborhood.

Graph 3: Emission Reduction Impact on Manhattan South of 86th Street



All four plans would reduce emissions by lowering VMT within New York City and improving vehicles speeds, which reduces idling—a significant source of pollution. However, neighborhood air quality is driven by a number of interrelated factors, including pollution from traffic, pollution from point sources (such as power plants), weather patterns, topography, and regional pollution (i.e. from other states). A more detailed air quality analysis would be required to determine the impact of the emissions reductions displayed in Table 14 on air quality and public health indicators. Such an effort would require additional resources and time to complete.

Impacts on Neighborhoods: Traffic and Parking

The estimate of traffic impacts on areas of the city and region outside the CBD and the degree to which the program is likely to have a positive or negative impact on the availability of on-street parking in neighborhoods adjacent to the CBD.

In terms of neighborhood traffic impacts, agency staff used the results of the BPM to estimate the VMT reduction for selected geographic areas for each of the four options. This analysis, presented in Table 14, looked at traffic within sections of the City and in neighboring suburban areas. All four options are projected to significantly lower VMT outside of the area of Manhattan south of 86th Street. The largest traffic impacts are likely to be in areas immediately adjacent to the congestion zone or newly tolled bridges, as

those areas will experience less through traffic headed into and out of the CBD. Accordingly, the Mayor's plan, the alternative congestion pricing plan, and the rationing plan will significantly reduce traffic in Upper Manhattan, Inner Brooklyn, and Western Queens. The toll plan, which would include tolls on bridges leading into Harlem and Washington Heights, would have a larger impact on traffic in the Bronx as compared to the other plans. Under the toll and congestion pricing plans, local traffic patterns in Brooklyn and Queens would likely change as traffic is redistributed from free City bridges to tolled crossings.

Each alternative would be beneficial to neighborhoods adjacent to the pricing zone by reducing through traffic bound for the congestion zone. However, the plans could cause an increase in park-and-ride activity in neighborhoods adjacent to the congestion zone or near major transit hubs. Motorists who park-and-ride seek to avoid a toll or fee by driving to an area outside the CBD, parking their cars, and then taking transit or walking to their final destination. These motorists can increase competition for on-street parking spaces in residential neighborhoods and generate more traffic on local streets. In many neighborhoods, this phenomenon already occurs as drivers seek to avoid the high parking costs in the CBD, congestion on approaches to Manhattan river crossings, and tolls on MTA and Port Authority crossings. At the Commission's public hearings, Commission members heard considerable concern over this issue from residents and neighborhood groups. As indicated in the description of the options, all four plans would include monitoring and parking mitigation measures to offset the impact of increased park-and-ride behavior.

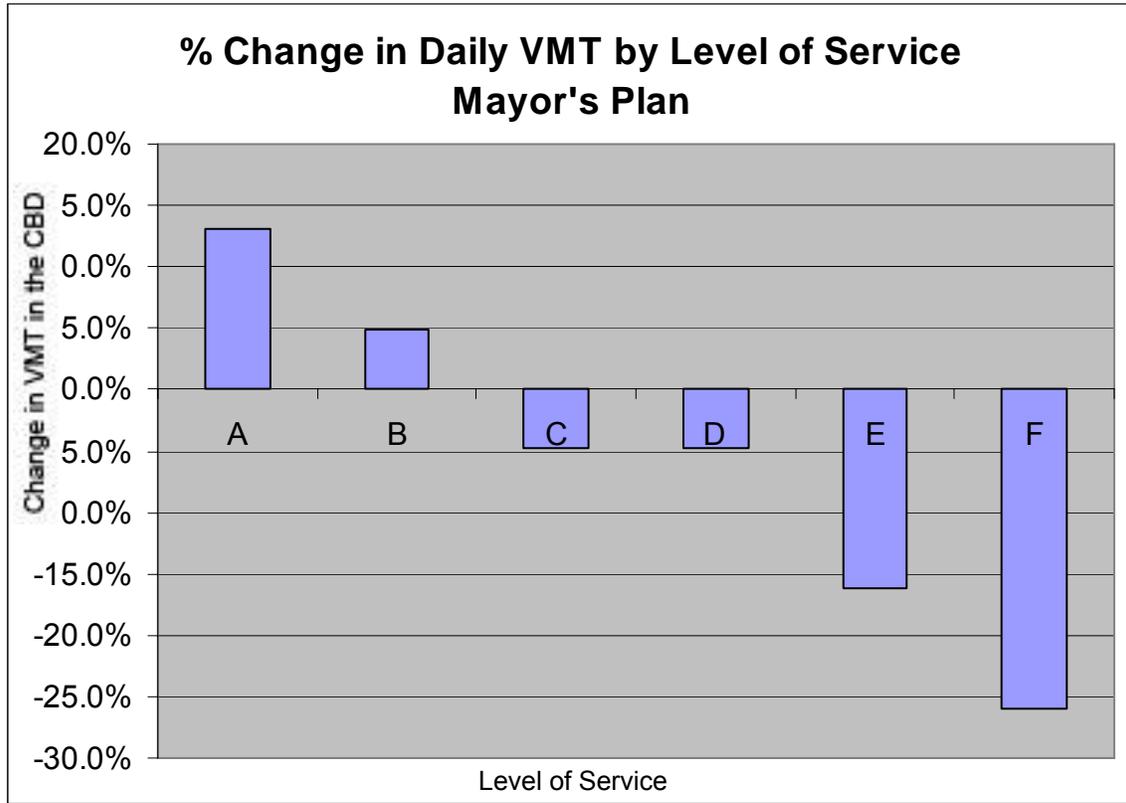
Impacts on Congested Areas

VMT reductions can generally be expected to reduce traffic congestion and improve traffic flow. The specific impact on traffic conditions will vary depending on the level of traffic congestion that drivers currently experience. For example, a given VMT reduction will be more noticeable in conditions of heavy traffic congestion than when vehicles are already flowing freely on streets or highways. The effect of VMT reductions from the different alternatives can be seen by examining changes in the "level of service," a standard classification of traffic conditions widely used by traffic engineers. This scale classifies traffic conditions from good to bad using a scale from A to F. For level of service A, traffic is flowing freely and there is no traffic delay. For level of service F, streets are operating at or beyond their capacity and drivers experience stop-and-go conditions with unpredictable travel times.

Policies that mitigate traffic congestion will reduce the amount of time that drivers spend in level of service F conditions and shift conditions to toward better levels of service. For example, Graph 4 shows the effects of the Mayor's plan on level of service the CBD. Total VMT in level of service F conditions would be reduced by 26%, and by 16% for level of service E (near-breakdown conditions). Total VMT in the best conditions (level of service A) would increase by 13%.

Table 15 shows the reduction in level of service F for the CBD and other geographic areas, for each of the alternatives under consideration. As this table shows, level of service F conditions would be reduced not only in the CBD, but also in neighborhoods across the City.

Graph 4: Level of Service Impacts of the Mayor's Plan



Interim Report to the Traffic Congestion Mitigation Commission

Table 14: VMT Reductions by Sub-region

	1. Mayor's Plan	2. Alternative Congestion Pricing Plan	3. Toll Plan	4. Rationing Plan
Manhattan South of 86th St	-6.7%	-6.8%	-7.0%	-10.3%
Manhattan CBD (South of 60th St)	-6.3%	-6.4%	-6.2%	-10.4%
Manhattan 60th - 86th St	-8.2%	-8.0%	-9.4%	-9.8%
Manhattan north of 86th St	-4.9%	-3.8%	-4.1%	-8.6%
Manhattan (total)	-5.9%	-5.4%	-5.7%	-9.5%
Bronx	-1.9%	-1.3%	-5.8%	-2.9%
Brooklyn	-2.0%	-1.9%	-2.8%	-2.9%
Northwest Brooklyn *	-3.8%	-4.7%	-6.0%	-4.7%
Rest of Brooklyn	-1.1%	-1.1%	-1.1%	-2.3%
Queens	-1.5%	-1.4%	-2.0%	-2.6%
Western Queens **	-5.6%	-6.1%	-6.9%	-7.5%
Rest of Queens	-1.2%	-0.9%	-1.5%	-2.2%
Staten Island	-1.3%	-1.0%	-0.8%	-2.3%
Long Island	-0.3%	-0.3%	-0.4%	-0.4%
New Jersey	-0.3%	-0.3%	-0.3%	-0.7%
Orange & Rockland	-0.4%	-0.4%	0.3%	-0.5%
East of Hudson (CT, Dutchess, Putnam and Westchester)	-0.3%	-0.2%	-0.5%	-0.7%
NYC	-2.4%	-2.1%	-3.2%	-3.9%
Outside NYC	-0.3%	-0.3%	-0.3%	-0.6%

*Northwest Brooklyn includes: Park Slope, Carroll Gardens, Boerum Hill, Red Hook, Downtown Brooklyn, Williamsburg, Greenpoint and Bushwick

**Western Queens includes: Long Island City, Astoria and Sunnyside

Table 15: Change in Daily Level of Service F for Selected Geographies

	1. Mayor's Plan	2. Alternative Congestion Pricing Plan	3. Toll Plan	4. Rationing Plan
Manhattan (South of 86th St)	-28.7%	-34.3%	-26.6%	-39.1%
Manhattan CBD (South of 60th St)	-26.0%	-32.3%	-22.1%	-37.6%
Manhattan 60th - 86th St	-33.2%	-37.6%	-34.0%	-39.6%
Manhattan north of 86th St	-24.4%	-20.9%	-11.4%	-39.7%
Manhattan (total)	-27.0%	-29.0%	-20.6%	-39.3%
Bronx	-9.2%	-8.3%	-34.6%	-23.4%
Brooklyn	-17.2%	-14.1%	-19.7%	-18.1%
Northwest Brooklyn *	-23.0%	-22.1%	-28.4%	-18.2%
Rest of Brooklyn	-12.9%	-8.3%	-13.4%	-18.1%
Queens	-9.4%	-8.8%	-9.5%	-13.4%
Western Queens **	-34.4%	-38.6%	-46.3%	-29.4%
Rest of Queens	-7.0%	-5.8%	-5.9%	-11.8%
Staten Island	-9.9%	-12.3%	-11.8%	-21.1%
Long Island	-5.0%	-8.0%	-7.5%	-9.1%
New Jersey	-0.9%	-0.8%	0.8%	-2.5%
Orange & Rockland	0.1%	-1.3%	-0.1%	-7.2%
East of Hudson (CT, Dutchess, Putnam and Westchester)	-7.3%	-7.9%	-7.5%	-8.8%
NYC	-15.9%	-15.7%	-16.1%	-22.8%
Outside NYC	-2.2%	-2.9%	-1.6%	-4.7%

*Northwest Brooklyn includes: Park Slope, Carroll Gardens, Boerum Hill, Red Hook, Downtown Brooklyn, Williamsburg, Greenpoint and Bushwick

**Western Queens includes: Long Island City, Astoria and Sunnyside

Impact on economic classes

The degree to which the program is progressive or regressive in the allocation of costs and benefits across economic classes.

Agency staff examined how each of the four options would impact residents of varying income levels.

Under the rationing plan, both high and low income motorists would be compelled to alter their travel behavior for days on which their vehicles were restricted. Consequently, the rationing plan would not have a disproportionate impact on low or moderate income drivers. That said, families with two or more vehicles may possibly have greater travel flexibility under the rationing plan, if a driver with two cars could switch vehicles on the day when her primary vehicle is restricted. Households with two vehicles have, on average, higher incomes than households with a single vehicle. Issuing license plates by household could avoid this problem, but would require, at a minimum, the cooperation of the motor vehicle departments from New York, New Jersey, and Connecticut as well as extensive enforcement if drivers sought to evade these efforts.

The Mayor's plan, the alternative congestion pricing plan, and the toll plan all include the imposition of new fees and tolls. In order to better understand the impacts of these costs on different socioeconomic groups, agency staff examined the income profiles of those groups most likely to pay the fee or toll. This data is presented in Table 16.³⁹ This analysis raises several issues for further consideration:

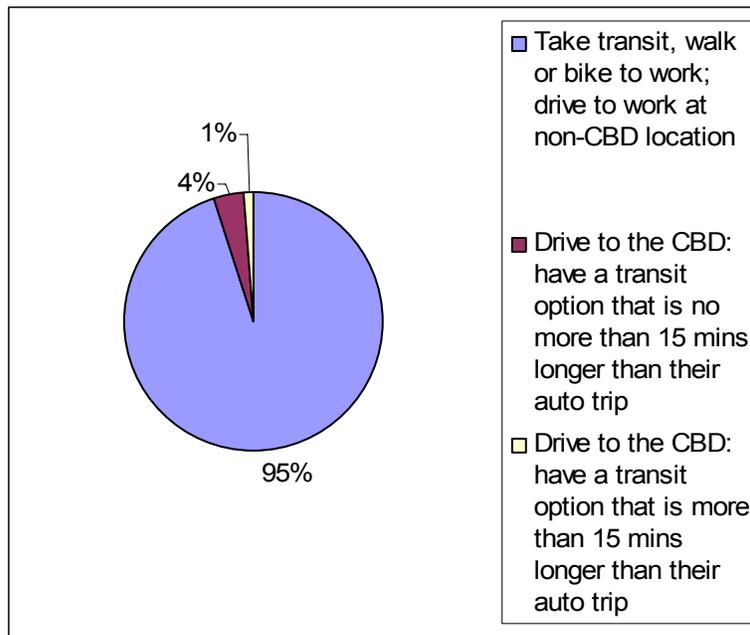
- **The fee and toll plans most impact those who drive to the CBD on a daily basis:**
As was noted in the introduction, the vast majority of trips into the zone are not made by automobile. Therefore, individuals who typically walk, bike, or take transit to the CBD would not be financially affected by the fee or toll options. Of motorists, those who drive into the CBD every day for work would be most impacted. For example, under the Mayor's plan a daily auto commuter from Upper Manhattan to the Financial District would pay about \$2,000 in congestion fees each year (versus \$912 a year for transit). By comparison, a motorist who drives into the zone on weekdays once or twice a month for shopping or entertainment would pay about \$100 to \$200 a year in congestion fees under the Mayor's plan.
- **Those who commute by car to the CBD earn comparatively higher incomes:**
Agency staff analyzed the income levels of city and suburban residents who use the auto as their primary mode to reach Manhattan jobs. Staff found that of the 2.14 million workers in Manhattan, about 292,000, or 14 percent, drive to work each day. These workers have a median annual income of \$60,941. This compares to a median annual income of \$46,416 for all workers in Manhattan, including the 1.85 million who take transit, walk, or bike to work. In aggregate, the fee would most impact commuters who earn 31 percent more than the median income of all Manhattan workers. Taking into account other income earners in the household, workers who

³⁹ MTA research has shown that many motorists are reimbursed for their toll expenses by their employers. For example, the MTA found that 22 percent of weekday motorists using the Queens-Midtown Tunnel are reimbursed for their tolls. This analysis does not take toll reimbursement into account.

drive to work in Manhattan have a median household income of \$103,700. This compares to a median household income of \$89,379 for all Manhattan workers.

- **A small proportion of low and moderate income commuters who drive would be disproportionately impacted by a fee or toll:** Most low and moderate income commuters into the CBD take transit or walk, and would not be impacted by a fee or toll. Of all City residents who commute to work, only five percent drive to the CBD.⁴⁰ Of that five percent, most (80 percent) have a feasible transit alternative to get to work that would take no more than 15 minutes longer than their auto trip.⁴¹ Therefore, only one percent of Manhattan workers lack a viable alternative to paying a congestion fee or toll (see Graph 4). The low and moderate income workers disproportionately impacted by a fee or a toll represents a further sub group within this one percent.
- **A large number of low and moderate income residents would benefit from improved transit services under any of the three revenue-generating plans:** As a group, low and moderate income City residents rely more on transit for their travel needs as compared to higher income City residents. Therefore, these residents would benefit more from the short-term transit enhancements that would precede a toll or fee plan and from the expansion to transit system made possible by increased revenues for transit investment.

Graph 5: Travel Choices of Commuters who Live in New York City



⁴⁰ 2000 U.S. Census

⁴¹ Bruce Schaller, "Necessity or Choice: Why People Drive into Manhattan." Transportation Alternatives, February 2006.

Table 16: Income Analysis by Travel Mode of Commuters to Manhattan

	Total workers in Manhattan	Residence of Manhattan Commuters								
		Manhattan	Bronx	Brooklyn	Queens	Staten Island	Long Island	Hudson Valley	New Jersey	Connecticut
Total Workers	2,141,105	624,712	182,844	359,608	354,795	53,151	135,873	118,280	276,903	31,471
Mean earnings	\$75,112	\$89,563	\$35,353	\$48,412	\$43,318	\$58,347	\$99,947	\$131,664	\$95,976	\$205,307
Median earnings	\$46,416	\$50,784	\$29,759	\$35,549	\$35,549	\$50,784	\$72,113	\$79,223	\$69,066	\$121,881
Drove to work	292,454	28,249	24,525	30,469	51,681	8,883	31,464	39,267	69,375	7,143
Mean	\$88,532	\$96,248	\$58,564	\$61,181	\$52,024	\$64,406	\$98,391	\$108,549	\$111,866	\$191,687
Median	\$60,941	\$60,941	\$42,151	\$44,893	\$42,252	\$53,831	\$74,144	\$76,176	\$71,097	\$69,066
Other means*	1,848,651	596,463	158,319	329,139	303,114	44,268	104,409	79,013	207,528	24,328
Mean	\$72,989	\$89,247	\$31,757	\$47,229	\$41,834	\$57,132	\$100,416	\$143,152	\$90,665	\$209,306
Median	\$45,705	\$50,784	\$28,033	\$35,549	\$35,549	\$49,768	\$71,097	\$81,254	\$67,035	\$137,116

Source: U.S. Census, American Community Survey 2006

* Includes: transit, walking, and bicycling

Regional Equity

The degree to which the program equitably allocates costs and benefits across geographic areas within the New York metropolitan region.

To better understand regional equity impact of the proposals, agency staff analyzed the geographic origins of current travelers to the CBD and who would pay new fees or tolls under each of the four plans. As license plate rationing does not include fees or tolls and applies to all drivers regardless of place of residence, agency staff concluded that the rationing plan would not raise regional equity issues. For the remaining three plans, agency staff determined the number of CBD-bound drivers from six geographic areas across the New York region. Staff then evaluated five key questions:

- (1) What proportion of CBD-bound travelers come from each geographic area?
- (2) What proportion of drivers to the CBD come from each geographic area?
- (3) What proportion of *current MTA and Port Authority toll revenues* are paid by CBD-bound drivers from each geographic area?
- (4) What proportion of *new congestion mitigation toll and fee revenues* under the three options would be paid by CBD-bound drivers from each geographic area?
- (5) What proportion of *toll and fee revenues dedicated to transit* (including both current tolls and proposed congestion mitigation tolls or fee) would be paid by CBD-bound drivers from each geographic area?

Who travels into the CBD?

First, agency staff determined the place of residence of drivers who travel into or within the CBD during a typical weekday.⁴² This data is presented in Table 17. In all cases, the table indicates the place of residence of travelers and not the origin of their trips. The first column shows the proportion of travelers to the CBD on a typical weekday from each of the geographic areas. This column includes travelers who drive, take transit, walk or bike. For example, 34 percent of travelers to the CBD live in Manhattan.

The second column shows the proportion of drivers to or through the CBD on a typical weekday from each of the geographic areas.⁴³ This table includes all trip purposes (both work and non-work) of auto drivers. If a person travels more than once per day, he or she is counted only once. For example, the table shows that 24 percent of those driving to or through the CBD live in New Jersey.

These two sets of figures provide a baseline against which to compare the proportion of drivers who currently pay tolls at MTA and Port Authority facilities against

⁴² Residents of the CBD shown in these tables include those who: (1) travel exclusively within the CBD, and those who (2) leave the zone and then travel back into the CBD later in the day (reverse commuters, for instance). The unit is travelers, not trips, meaning that a traveler who makes multiple trips during the day is counted only once.

⁴³ Drivers to the CBD shown in these table include those who: (1) drive to a destination in the CBD at least once during the day; and (2) drive through the CBD at least once during the day. The unit is drivers, not trips, meaning that a driver who makes multiple trips during the day is counted only once, but tolls and/or fees paid on all trips are included.

the proportion of drivers who would (1) pay congestion mitigation congestion mitigation tolls or fees under each of the three options and (2) contribute to transit under each of the three options through both existing tolls and congestion mitigation tolls or fees.

Table 17: Who currently travels to the CBD and how do they get there?

Place of residence	CBD Travelers on a typical weekday: where do they live?	
	Travelers who drive, take transit, walk or bike to the CBD (24 hours)	Travelers who drive to or through the CBD (24 hours)
Manhattan	34%	27%
Bronx, Bklyn, Qns, SI	39%	35%
Nassau/Suffolk	4%	7%
Other NY State	3%	6%
Connecticut	1%	2%
New Jersey	19%	24%
Total - %	100%	100%
Total	2,616,697	670,935

For this type of data, the BPM provides a standard report that groups together the Bronx, Brooklyn, Queens, and State Island. Agency staff is working to calculate data by borough and will present those results to the Commission once they are completed.

Who pays tolls today?

Second, agency staff determined what proportion of current MTA and Port Authority toll revenues collected from CBD-bound drivers are paid by motorists from each geographic

Table 18: Who pays tolls today?

Place of residence	Proportion of tolls paid by CBD-bound drivers from each geographic area (typical weekday)
Manhattan	7%
Bronx, Bklyn, Qns, SI	29%
Nassau/Suffolk	7%
Other NY State	9%
Connecticut	4%
New Jersey	45%
Total	100%

area. This data is presented in Table 18.⁴⁴ These drivers include both those that are traveling to the CBD and those that are passing through the CBD en route to another destination. For example, the table shows that 45 percent of toll revenues collected from CBD-bound drivers are paid by residents of New Jersey. Looking back to Table 17 that compares to the 24 percent of CBD-bound drivers from New Jersey.

Who would pay a new charge, fee, or toll under each option?

Third, agency staff analyzed what proportion of congestion mitigation toll and fee revenues would be paid by CBD-bound drivers from each geographic area. This data is presented in Table 19. The payments used to compute this table include:

⁴⁴ Note that “current MTA and Port Authority toll revenues collected from CBD-bound drivers” includes only tolls paid by CBD-bound drivers and not total toll revenues collected by the Port Authority or MTA. The percentages are calculated using the new toll schedules recently proposed by the PA and MTA.

- For the Mayor’s plan: congestion pricing charge paid to the City.
- For the alternative congestion pricing plan: congestion pricing charge paid to the City, \$1 surcharge on taxi/livery/black car trips beginning or ending in the zone during charging hours, additional parking taxes paid by Manhattan residents once the resident tax discount is removed for parking in the CBD, and additional on-street parking fees paid in the CBD.
- For the toll plan: tolls paid on City-owned East River and Harlem River Bridges (which are currently not tolled).
- In each case, the payments in these columns do not include any tolls paid to the MTA or PA, so the columns for each option tabulate mutually exclusive universes of dollars from the column showing tolls currently paid.

For example, under the Mayor’s plan, seven percent of fee revenues are paid by drivers from Nassau and Suffolk counties. Looking back to Table 17, this compares to the seven percent of CBD-bound drivers from Nassau and Suffolk counties.

Table 19: Who would pay a new toll or fee under each option?⁴⁵

Place of residence	What proportion of congestion mitigation fee and toll revenues would be paid by CBD-bound drivers from each geographic area?		
	Mayor’s Plan	Alt. Congestion Pricing Plan	Toll Plan
Manhattan	31%	32%	28%
Bronx, Bklyn, Qns, SI	38%	38%	49%
Nassau/Suffolk	7%	6%	6%
Other NY State	7%	6%	8%
Connecticut	1%	1%	1%
New Jersey	17%	17%	7%
Total	100%	100%	100%

Who would contribute to transit under each plan?

Finally, agency staff analyzed the broader issue of who pays towards the needs of the regional transit system. The purpose of the Commission is to consider plans that reduce congestion in the CBD and that raise new revenues for transit investment. Existing MTA and Port Authority tolls on the Hudson and East river crossings both raise significant funds for transit services and investment and encourage commuters to take transit by increasing the cost of driving. In other words, drivers who use MTA and Port Authority facilities are already contributing revenues to the regional transit system. Therefore, the Mayor’s plan and the alternative congestion pricing plan use fee structures that credit toll revenues already being paid by drivers. The toll plan goes further, and levies no new costs on CBD-bound drivers who use MTA and Port Authority crossings.

⁴⁵ As discussed on page 21, this chart does not reflect the Port Authority’s proposed toll increase.

Hence, agency staff calculated how much CBD-bound drivers from each geographic area contribute to transit, including both MTA and Port Authority revenues used to support transit and proposed new congestion mitigation toll and fee revenues from each of the three plans. The data from this analysis is present in Table 20.⁴⁶ For example, under the alternative congestion pricing plan drivers to or through the CBD from the northern New York suburbs (“Other New York State”) would contribute seven percent of all toll and congestion mitigation toll or fee revenues dedicated for transit. Looking back at Table 17, this compares to six percent of total drivers to or through the CBD from the New York suburbs.

Table 20: Who would contribute to transit under each option?

Place of residence	What proportion of current toll and congestion mitigation toll and fee revenues dedicated to transit would be paid by CBD-bound drivers from each geographic area?		
	Mayor’s Plan	Alt. Congestion Pricing Plan	Toll Plan
Manhattan	22%	24%	24%
Bronx, Bklyn, Qns, SI	32%	34%	41%
Nassau/Suffolk	7%	6%	7%
Other NY State	8%	7%	8%
Connecticut	2%	2%	2%
New Jersey	29%	27%	19%
Total	100%	100%	100%

Comparisons of Tables 18 and 19 with Table 17 show imbalances between geographic areas in the distribution of both current tolls and of congestion mitigation fees or tolls, in comparison to each geographic area’s share of CBD-bound drivers. Given the imbalances in current toll payments, each of the three proposed plans creates a closer correlation between total driver entries to the CBD and their overall level of support for mass transit.

The revenue-related goal of the Commission’s work is to raise funds for mass transit. Table 20 best conveys how much each geographic area contributes to mass transit, as it includes current tolls that are used to subsidize mass transit as well as congestion mitigation tolls and fees. A comparison of Tables 20 and 17 shows that:

- **The Mayor’s plan allocates transit subsidies among drivers largely in proportion to the percentage of CBD-bound drivers in each geographic area.** For example, as shown in Table 20, the proportion of CBD-bound drivers from the Bronx, Brooklyn, Manhattan, Queens and Staten Island is almost exactly equivalent to the proportion of transit subsidies raised from these areas (32 percent and 35 percent respectively) as are the figures for New Jersey (29 percent of transit subsidies and 24 percent of drivers). Manhattan is slightly underrepresented (22 percent of transit subsidies vs. 27 percent of drivers).

⁴⁶ The total amount contributed to transit includes: (1) the proportion of MTA and PA tolls paid by driver to or through the CBD that is dedicated to transit; (2) congestion mitigation fees or tolls paid by drivers to or through the CBD (all of which is dedicated to transit); and (3) in the case of the alternative congestion pricing plan, revenues from the \$1 taxi surcharge and the elimination of the resident parking tax exemption for car owners within the CBD.

- **Similarly, the alternative congestion pricing plan allocates transit subsidies largely in proportion to the percentage of CBD-bound drivers from each geographic area.** Transit subsidies paid by Manhattan residents are slightly closer to their representation among CBD-bound drivers (24 percent of subsidies compared with 27 percent of drivers).
- **The toll plan allocates transit subsidies less proportionately as compared to the two congestion pricing plans.** Drivers from the Bronx, Brooklyn, Queens, and Staten Island pay a greater proportion of transit subsidies from tolls as compared to the proportion of CBD-bound drivers from those four boroughs (41 percent of transit subsidies compared with 35 percent of drivers). Much of this disproportionate impact is due to the tolling of local traffic between the Bronx and Upper Manhattan, much of which is unrelated to the CBD.

Privacy

The degree to which the program creates concerns over personal privacy rights.

The Mayor's plan, the alternative congestion pricing plan, and the toll plan raise similar privacy concerns. All three options employ a network of E-ZPass readers and LPR cameras that will capture the location of a vehicle at a given time and date in order to administer a congestion charge or toll. Currently, drivers on Port Authority and MTA crossings can choose to pay cash instead of using E-ZPass if they wish not to have their vehicles recorded. However, under the two congestion pricing options as well as the toll option, drivers would not be able to avoid having their vehicle information captured by a public agency, either via an E-ZPass read or license plate image. The Mayor's plan would collect the most vehicle information, since over 300 charging locations would be required to record the location and time that vehicles move into, out of, and within Manhattan south of 86th Street. By comparison, the alternative congestion pricing plan would collect the least amount of information, as its 25 charging locations will only record vehicles upon their entry into Manhattan south of 60th Street. Similarly, the toll plan has many fewer charging locations, but will generate records of vehicle movements both into and out of Manhattan.

The collection of large amounts of vehicle information raises the issue of how data should be processed and stored and whether or not it should be made available to third parties, such as law enforcement. If the Mayor's plan, the alternative congestion pricing plan, or the toll plan is implemented, a detailed set of data and personal privacy protections will be required. Adopting the privacy standards of the E-ZPass system, which is used by 23 toll operators in 12 states, is one option. E-ZPass has developed a set of best practices for collecting, exchanging and securing vehicular data and personal information for road charging. These include data archiving limitations, legal restrictions to limit data access by law enforcement or other government agencies, and assurances that no personal information is associated with field data. Several IAG agencies outside of New York are also piloting so-called anonymous E-ZPass accounts. Similar to pre-paid cell phones, an anonymous E-ZPass account provides a tag that can be purchased

with a cash credit on the tag and that can be managed without provision of a mailing address or credit card information to the E-ZPass Customer Service Center.

Implementability

The feasibility of implementing the program given available technology, the program's design, and start-up and operating costs.

Based on the agency staff evaluation, the four options are all feasible within New York City, although each presents a unique set of implementation issues:

- **Feasibility of electronic tolling and LPR technology:** The Mayor's plan, the alternative congestion pricing plan, the toll plan, and the rationing plan with LPR enforcement would all require the use of electronic toll collection and LPR technology. LPR technology has been used successfully in Europe and Canada. Electronic toll collection technology is widely used in the United States, including by the MTA and Port Authority. Under both of the congestion pricing plans, however, these technologies would be applied within an urban street environment, rather than on a highway or at controlled toll plazas. The London system has successfully used LPR technology in an urban environment. The toll plan would be comparatively simpler to implement, as the application would be on bridge approaches with more controlled traffic flows.
- **Alternative congestion pricing plan - 60th Street boundary:** Any northern boundary located within the Manhattan street grid poses similar implementation challenges. Siting the physical charging infrastructure might be more difficult at 60th Street than further uptown because of the presence of cross-town subway tunnels under parts of 60th Street.
- **The Mayor's plan - inclusion of an intra-zonal charge:** As discussed earlier, the inclusion of an intra-zonal charge significantly increases the complexity of a congestion charging system. To charge for intra-zonal travel, charging infrastructure would need to be constructed within the CBD. Preliminary studies show that approximately 225 charging locations would need to be constructed within the zone to charge intra-zonal drivers. Intra-zonal transactions (E-ZPass and license plate camera reads) would constitute a significant proportion of the overall daily volume of transactions requiring data processing.
- **The Mayor's plan – inclusion of a free periphery:** As discussed earlier, allowing free travel for through traffic on the peripheral routes adds implementation complexity to congestion pricing because charging infrastructure would need to be constructed at all entrances and exits of the FDR Drive and at each intersection on Route 9A. Additionally, charging infrastructure would need to be deployed in such a way to preserve free through routes on surface streets between the river crossings and the peripheral roads.

- **Congestion pricing toll offsets:** Both the Mayor's plan and the alternative congestion pricing plan provide a credit to drivers who pay E-ZPass tolls on Port Authority and MTA facilities. This feature adds administrative complexity to congestion pricing. However, it is technically feasible to integrate the City's charging operation with the existing toll operations. This feature may also slightly increase processing costs as compared to the toll option, which does not include offsets.

Economic impact on jobs, business and regional economy

The degree to which the program is likely to have a positive or negative impact on total jobs and the City and regional economy.

Estimates of the annual cost of congestion on the regional economy range as high as \$13 billion.⁴⁷ Any of the four options under consideration are expected to reduce this cost, particularly if commercial vehicles encounter less congestion and improve their productivity. However, each option does have slightly different implications including:

- **Tolls would have the largest impact on commercial vehicles:** One modification with implications for business and the regional economy is the choice between a congestion fee or a per-trip toll. For a commercial vehicle making multiple trips in the CBD, a fee would be a single, daily cost that may be offset by increased trip frequency (as the vehicle made more trips). The increased costs from a toll approach would be greater for commercial vehicles that make repeated trips into and out of the CBD, without any greater productivity savings to offset the costs.
- **Business cost saving through eliminating the intra-zonal charge:** Unlike the Mayor's plan, the alternative congestion pricing plan would not include an intra-zonal charge or an outbound charge. These changes would reduce costs for businesses that use vehicles that do not enter or leave the charging zone and would thus avoid paying a congestion fee.
- **Rationing provides less flexibility:** Under the fee and toll plans, businesses and employees would always have the ability to make auto trips into Manhattan or the CBD, albeit for a price. Under rationing however, businesses would lack that flexibility. If a company's delivery van was banned from the CBD on a given day, that company would simply be unable to make any deliveries with that vehicle. The inflexibility of the rationing plan would impose a cost on companies that depend on deliveries or employees who need to use their vehicles for work. This would be particularly true for small businesses that have a small number of available vehicles.

⁴⁷ PFNYC, 2006. (p. 40)

Options Summary

During the course of this chapter, the four options have been weighed against each other based on the Commission criteria. This section summarizes the comparative strengths and weaknesses of each of the four plans.

The Mayor's Plan

Strengths

- The Mayor's plan is projected to reduce VMT by 6.7% and to generate \$420 million a year in revenues for transit investment.
- The Mayor's plan would reduce traffic across the city, especially in neighborhoods adjacent to the congestion pricing zone, including Upper Manhattan, Long Island City, and Downtown Brooklyn.
- Nearly all low and moderate income commuters take transit to the Manhattan CBD. These workers would benefit from the Mayor's plan through short-term improvements in transit services and long-term expansion of the transit system.
- The intra-zonal charge discourages trips within the congestion pricing zone with the same pricing approach as for all other trips into or out of the zone.
- The 86th Street boundary includes a larger portion of the most congested area of Manhattan.
- The plan's free periphery route allows drivers to travel around the CBD without paying the fee. For example, Brooklyn and Queens drivers could travel to the Bronx or Upper Manhattan via the FDR Drive without paying the fee.
- The plan does not have significant regional equity impacts.

Weaknesses

- Compared to the other three plans, the Mayor's plan has significantly higher capital costs. The Mayor's plan includes a charge on trips within the zone and thus requires many more charging stations, each with an array of E-ZPass and LPR cameras.
- Similarly, the Mayor's plan has significantly higher operating costs. The charge on trips within the zone and the free periphery route significantly increases the number of transactions that must be processed for each paying customer.
- Unlike the alternative congestion pricing and toll plan, the Mayor's plan does not include a charge on taxi and livery trips into or out of the zone—a major source of traffic and vehicle emissions in the Manhattan CBD.
- The Mayor's plan includes the placement of hundreds of cameras within and around the zone's perimeter, compared to only 25 or 13 camera sites needed for the alternate congestion pricing and toll plan respectively. More cameras raise greater privacy concerns.
- As under all four plans, park-and-ride activity could increase in neighborhoods near the zone or adjacent to major transit hubs if measures are not taken by the City to manage parking. Similarly, as with all four plans, the plan could potentially create localized congestion impacts due to changes in traffic patterns in the region.
- A small proportion of low and moderate income workers—those who drive to the CBD and who do not have a feasible transit alternative—would be disproportionately impacted by the congestion fee as compared to higher income drivers.

The Alternative Congestion Pricing Plan

Strengths

- The alternative congestion pricing plan is projected to reduce VMT by 6.8% and to generate \$520 million a year in revenues for transit investment.
- The alternative congestion pricing plan has significantly lower capital and operating costs than the Mayor's plan and is comparable in those categories to the toll plan.
- Similar to the other plans, the alternative congestion pricing plan would reduce traffic across the city especially in neighborhoods adjacent to the congestion pricing zone, including Upper Manhattan, Long Island City, and Downtown Brooklyn.
- Similar to the Mayor's plan and toll plan, the alternative congestion pricing plan would benefit low and moderate income residents through improved transit.
- The alternative pricing plan would further encourage Manhattan residents to use transit by increasing the cost of parking within the CBD and by adding a \$1 surcharge on taxi trips that end or begin within the zone.
- Compared to the Mayor's plan, the alternative congestion pricing plan would be easier to implement.
- The plan does not have significant regional equity impacts.

Weaknesses

- Unlike the Mayor's plan, there is no free peripheral route and drivers would have to pay to travel through the CBD. For example, Brooklyn and Queens drivers that travel to the Bronx or Upper Manhattan via the FDR Drive would pay the congestion fee.
- The elimination of the intra-zonal charge leaves no per-day charge on private auto use within the zone for drivers not using metered parking at their destination. However, the smaller zone minimizes the impact of this problem.
- As under all four plans, park-and-ride activity could increase in neighborhoods near the zone or adjacent to major transit hubs if measures are not taken by the City to manage parking. Similarly, as with all four plans, the plan could potentially create localized congestion impacts due to changes in traffic patterns in the region.
- A small proportion of low and moderate income workers—those who drive to the CBD and who do not have a feasible transit alternative—would be disproportionately impacted by the congestion fee as compared to higher income drivers.

The Toll Plan

Strengths

- The toll plan is projected to reduce VMT by 7.0% and to generate \$859 million a year in new revenues for mass transit—the most of any of the alternatives considered.
- The toll plan would enable the City, the MTA, and Port Authority to move toward a more uniform tolling strategy for Manhattan, including the potential implementation of one-way tolling and/or time-of-day pricing on all crossings into Manhattan.
- The toll plan has significantly lower capital and operating costs than the Mayor’s plan, and slightly lower operating costs than the alternative congestion pricing plan. One-way tolling on all crossings would further reduce operating costs for both the MTA and the City. The plan also includes fewer cameras than the Mayor’s plan.
- The toll plan would eliminate the need to match transactions to calculate a daily charge and enables uniform charges to cash and E-ZPass customers.
- Similar to the Mayor’s plan and the alternative congestion pricing plan, the toll plan would benefit low and moderate income residents through improved transit.
- Similar to the other three plans, the toll plan would reduce traffic across the city. It would have a greater impact on traffic in the Bronx, especially on through truck traffic.
- Compared to the two congestion pricing plans, the toll plan would significantly impact local trips between the South Bronx and Harlem/Washington Heights. This shift would reduce vehicle emissions in these neighborhoods.

Weaknesses

- Tolls would apply to all trips into and out of Manhattan and would be in effect 24 hours a day, seven days a week. By charging at all hours, the toll plan does not distinguish between drivers who contribute to peak period congestion and drivers who travel at less congested times.
- Unlike the Mayor’s plan and the alternative congestion pricing plan, the toll plan does not address trips that start and end within Manhattan. Under the alternative congestion pricing plan, for example, many of these trips would be charged at 60th Street or would be captured by the \$1 taxi surcharge within the zone.
- Compared to the two congestion pricing plans, the toll plan would significantly impact local trips between the South Bronx and Harlem/Washington Heights. This shift could have a local adverse economic impact.
- Per-trip tolls would have a larger impact on commercial vehicles than the two congestion pricing plans. A commercial vehicle making multiple trips in and out of Manhattan would pay for each trip under the toll plan, rather than a flat daily fee under either the Mayor’s plan or the alternative congestion pricing plan.
- The toll plan would institute a toll on the Cross Bronx Expressway/I-95 corridor, causing potential diversions to other regional routes and tolled facilities. This would require further evaluation.
- The plan has disproportional impacts on motorists from the Bronx.
- As under all four plans, park-and-ride activity could increase in neighborhoods near the zone or adjacent to major transit hubs if measures are not taken by the City to manage parking. Similarly, as with all four plans, the plan could potentially create localized congestion impacts due to changes in traffic patterns in the region.
- A small proportion of low and moderate income workers—those who drive to the CBD

and who do not have a feasible transit alternative—would be disproportionately impacted by the toll as compared to higher income drivers.

The Rationing Plan

Strengths

- The rationing plan is projected to reduce VMT by 10.3 percent, assuming that the system coordinates plate numbers for multi-car households.
- Similar to the other plans, the rationing plan would reduce traffic across the city, especially in neighborhoods adjacent to the congestion pricing zone, including Upper Manhattan, Long Island City, and Downtown Brooklyn.
- The plan would require either the installation of LPR cameras around the rationing zone, with similar capital cost to the alternative pricing plan, or a dedicated staff of police officers to manually enforce the restriction.
- The plan would not have a disproportionate impact on low and moderate income commuters; all drivers would be equally impacted. Some income equity issues could emerge if two-car households are able to circumvent the restriction.
- The plan has no regional equity impacts.

Weaknesses

- The plan does not generate revenue and would need to be coupled with a broad-based tax measure in order to fund transit investments.
- The rationing plan provides less flexibility to businesses. Under the congestion pricing and toll plans, businesses and employees would always have the ability to make auto trips into Manhattan or the CBD, albeit for a price. Under rationing however, businesses would lack that flexibility.
- The rationing plan reduces revenue to the Port Authority and MTA.
- As under all four plans, park-and-ride activity could increase in neighborhoods near the zone or adjacent to major transit hubs if measures are not taken by the City to manage parking. Similarly, as with all four plans, the plan could potentially create localized congestion impacts due to changes in traffic patterns in the region.

List of Appendices

Appendices

The appendices are available in a separate document or on-line at:

https://www.nysdot.gov/portal/page/portal/programs/congestion_mitigation_commission

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