Fix NYC
Advisory Panel Report
January 2018

TRANSMITTAL LETTER

January 19, 2018

As New Yorkers, we face two serious transportation crises on a daily basis – one above ground and one below.

While subway delays have always been part of life in New York City (NYC), the frequency of delays and breakdowns in the subway system — largely caused by overcrowding and deteriorating infrastructure — require the development of a plan for immediate action.

Similarly, traffic congestion in Manhattan has long been a defining feature of our city, but over the past few years, the gridlock caused by congestion has become more impactful on daily life. The periods of time during which the Central Business District (CBD) seems to grind to a halt last longer and occur more frequently throughout the day.

Despite these challenges, population, employment and tourism are all at historic highs and show no signs of slowing. NYC is as vibrant and attractive a place to live, work, and visit as it has ever been.

In October 2017, Governor Andrew M. Cuomo brought together a mix of community representatives, government officials, and business leaders from across the region to serve on the Fix NYC Advisory Panel. The Panel was tasked with developing recommendations to address the severe traffic congestion problems in Manhattan's CBD and identify sources of revenue to fix the ailing subway system.

The Panel met in October, November, and December of last year and January of this year, and was supported by staff from New York State's transportation agencies and HNTB Corporation. We received presentations on previous pricing proposals, international case studies, current data and research conducted by experts, and transportation modeling scenarios. The policy recommendations and options for implementation included in this report are based on our analysis of this information and our joint discussions at the Panel meetings.

The Panel believes the MTA must first invest in public transportation alternatives and make improvements in the subway system before implementing a zone pricing plan to reduce congestion. Before asking commuters to abandon their cars, we must first improve mass transit capacity and reliability.

While some may inaccurately claim our proposals are regressive, the Panel's recommendations attempt to consider to the needs of outer borough commuters and present options for congestion relief to New Yorkers in ways that are both fair and feasible.

We urge the Governor and New York State (NYS) Legislature to consider these strategies for reducing congestion in Manhattan and improving mobility across the region. Fixing NYC is everyone's responsibility.

Mitchell L. Moss
Director, Rudin Center for Transportation, NYU

Sam Schwartz
CEO, Sam Schwartz Engineering

Scott Rechler
Chairman, Regional Plan Association

Kathy Wylde
President and CEO, Partnership for New York

Bill Rudin
Chairman, Real Estate Board of New York

John Samuelsen
International President, Transport Workers Union

Peter Ward
President, New York Hotel Trades Council

Tom Prendergast
Former Chairman and CEO, MTA

Fernando Ferrer
MTA Vice Chairman

Reverend Dr. Floyd Flake
Former U.S. Congressman

Hon. David Paterson
Former Governor, New York State

Darryl Towns
Former Assemblyman, Brooklyn
Former Commissioner, NYSHCR

James Molinaro
Former Borough President, Staten Island

Kevin Law
President & CEO, Long Island Association

Hon. Steve Bellone
Suffolk County Executive

Appendix B

Zone Pricing Tolling Analysis Methodologies

The traffic and revenue estimates of various tolling strategies were performed using the Balanced Transportation Analyzer, or BTA. This spreadsheet model, developed by Charles Komanoff, provides a framework for assessing the extent to which zone pricing can both generate revenue and improve traffic conditions in the Central Business District (CBD). The BTA was chosen as the tool for this study because it offers four key advantages in supporting the zone pricing analysis:

- As a spreadsheet model, it can rapidly evaluate and compare multiple tolling strategies.
- The model draws from a broad array of well-documented sources of traffic and transportation data.
- It is transparent. The underlying data is clearly identified and the assumptions governing the use of this data are highlighted.
- It yields the outputs that are most relevant to our analysis—namely, increase in revenue, improvement in average vehicular speed, and reduction in congestion.
- The version of the BTA used to generate the results contained in this report includes:
- Updated taxi and FHV data to include 2017 conditions.
- Updated data on through traffic (i.e. traffic passing through the CBD without making an intermediate stop).
- A revised volume of truck traffic.
- The most recent Hub-bound traffic volumes available from NYMTC (2016).
- Updated time- and price-elasticities based on the latest available research.

The team's efforts were focused on validating and running pricing scenarios using the latest version of the BTA which entailed the following tasks:

- The team reviewed the functionality of the BTA, including a review of the model's structure, its key formulas, and the relationships among the various tabs that comprise the model. Though HNTB had performed a similar review in 2015, the model had evolved in the interim. It was essential to understand how the model had changed.
- Reviewed the key assumptions made by the BTA, the input data used, and the limitations of the model. This was especially critical given the exponential growth in app-based transportation services, accompanied by a gradual decline in the use of yellow cabs.
- Identified and updated data sources to latest available data. This involved a detailed scrub of taxi and for-hire vehicle (FHV) data captured by the Taxi and Limousine Commission (TLC).
- Identified preliminary pricing scenarios.
- Modified the model as needed to accommodate unique characteristics of the various pricing scenarios.
- Ran initial model validation scenarios to develop baseline test cases and to test sensitivities of key variables.
- Interacted with the developer (Charles Komanoff) to provide feedback on functionality, to identify potential modifications to the model, and to update data sources as required.
- Ran zone-based and surcharge based pricing scenarios varying truck volumes, time-based elasticities and cost-based elasticities.
- Evaluated results, which included gross revenue estimation, reduction in vehicular congestion, and increases in average vehicle speed.

A critical component of the analysis was to understand and validate the BTA's handling of trip elasticities. The model uses various elasticity values to help estimate the following:

- First, the "price-elasticity" values measure how vehicles respond to the imposition of new tolls. When drivers are faced with an additional charge, they may choose to either (a) not make the trip at all, (b) change modes (if that is an option), or (c) change their time of travel (if they have the flexibility to do so).
- Second, the "time-elasticity" values measure how vehicles respond to a change in travel time. As drivers are "tolled off" the roadway network, the vehicles that remain experience faster travel times. This improvement in performance will entice some vehicles to re-enter the network.

The BTA captures the current volume of vehicles that enter the CBD in Manhattan, the current toll and taxi and FHV fare structures as the baseline scenario. The team then input various zone pricing scenarios that represent new fees to enter the CBD, including new toll rates and taxi and FHV fare structures. Using the price and time elasticities, the BTA estimates how drivers will respond to these changes and generates post zone charging vehicle volumes. These volumes are then used to generate estimates of revenue for each scenario. Using the new vehicular volumes, the BTA can also estimate the reduction in vehicle miles traveled (VMT) and the associated increases in average speeds.

Because the model's results are strongly related to the assumed values for price-elasticity and time-elasticity the team considered a range of elasticity values to evaluate the sensitivity of the key outputs to these assumed values. The team also studied available elasticity data from the MTA and the PANYNJ from previous reports and studies.

The end result of the analysis was an updated and reliable BTA model that could readily generate results tailored to a diverse array of pricing scenarios.